2023 HOUSE ENERGY AND NATURAL RESOURCES

HB 1151

Energy and Natural Resources Committee

Coteau AB Room, State Capitol

HB 1151 1/20/2023

relating to baiting deer for hunting.

9:00 AM

Vice Chairman D Anderson opened the hearing. Members present: Vice Chairman D. Anderson, Representatives Bosch, Conmy, Dockter, Hagert, Heinert, Ista, Kasper, Marschall, Novak, Olson, Roers Jones, and Ruby. Chairman Porter arrived at 9:11 AM.

Discussion Topics:

- New CWD Proclamation
- Baiting banned
- Elderly, youth and disabled participants
- Health of domestic livestock
- Health of deer herd

Rep Paul Thomas, District 6, introduced HB 1151, and proposed amendment 23.0021.02001, on Page 1 Line 8, after "<u>hunting</u>" insert "<u>on private lands</u>" Testimony #14761 DJ Randolph, Velva, Testimony # 13234

Jon Pieper, Ranch Operations Manager at Apple Creek Whitetails Testimony # 14613 Randy Schep, ND Resident oral testimony in favor.

Andy Buntrock, ND Resident Testimony # 14675

Dwight Grosz, ND Elk Growers Testimony # 14672

Chris Jorde, ND Resident Testimony # 14549

Gabe Thompson, ND Resident Testimony # 14649

Pete Hannebutt, Director of Public Policy, NDFB oral testimony in favor.

Aaron Esquibel, Prairie Grit Adaptive Sports Testimony # 13915

Jeb Williams. Director of ND Fish and Wildlife oral testimony in opposition

Casey Anderson, Wildlife Division Chief of the NDGF Testimony # 14750

Dr. Charlie Bahnson, Wildlife Veterinarian for NDGF Testimony # 14752

Keith Payne, ND Resident oral testimony in opposition

William Bahm, ND Resident oral testimony in opposition

Chairman Porter closes the hearing at 11:11 AM and appointed a Subcommitte for HB 1151 as follows: Representative Anderson-chairman and members Representatives Dockter, Olson and Conmy.

Additional written testimony #'s:

13131,13152,13154,13274,13275,13276,13277,13295,13300,13310,13316,13328,13332, 13363,13414,13501,13527,13530,13555,13572,13576,13587,13588,13598,13612,13635, 13645,13646,13653,13699,13704,13804,13825,13829,13839,13868,13884, 13889,13891,13894,13937,13943,13951,13952,13967,13982,13990,13993,14006, 14011,

House Energy and Natural Resources Committee HB 1151 1/20/2023 Page 2

```
14032,14058,14069,14071,14074,14092,14115,14122,14185,14196,14211,14215,14216,\\14217,14224,14225,14230,14231,14237,14246,14263,14275,14277,14315,\\14320,14321,14329,14330,14331,14340,14359,14375,14392,14402,14405,14410,14418,\\14423,14425,14426,14427,14435,14436,14437,14439,14440,14441,14450,14452,14454,\\14457,14458,14467,14488,14491,14495,14496,14506,14514,14520,14522,14525,14526,\\14533,14534,14540,14541,14543,14544,14547,14548,14551,14552,14553,14555,\\14563,14573,14574,14593,14608,14610,14611,14614,14620,14624,14626,14629,14635,14638,14641,14643,14647,14652,14655,14656,14667,14668,14669,14671,\\14673,14674,14681,14682,14684,14687,14688,14693,14694,14695,14696,14697,\\14699,14701,14703,14707,14709,14717,14720,14722,14724,14728,14730,14731,14732,\\14733,14734,14738,14739,14740,14741,14746,14748,14751,14753,14755,\\14811,17386,17387,17392,17393,17394,17395.
```

11:57 AM Chairman Porter adjourned the meeting.

Kathleen Davis. Committee Clerk

Energy and Natural Resources Committee

Coteau AB Room, State Capitol

HB 1151 2/3/2023 **SUBCOMMITTEE**

relating to baiting deer for hunting

8:00 AM

Chairman D Anderson opened the subcommittee meeting. Members present: Chairman D Anderson, Rep Olson, Rep Conmy and Rep Dockter.

Discussion Topics:

- G&F Management
- Landowner issue
- Deer congregation
- Mobility
- Time restraints
- State ag vet
- Oversight on CWD
- Humic acid
- CWD early epidemic stages
- Symptoms of disease
- · Dates of baiting
- Average white tail lifespan
- Mule deer, elk

Chairman D Anderson distributed a proposed amendment 23.0021.02002, Testimony 21094 Dr. Charlie Bahnson, ND veterinarian for G&F, was called forward to answer questions Casey Anderson, Wildlife Chief, ND G&F, was called forward to answer questions

Next subcommittee meeting is scheduled for Thursday, February 9 at 4 PM.

8:29 AM Chairman D Anderson closed the meeting.

Kathleen Davis, Committee Clerk

Energy and Natural Resources Committee

Coteau AB Room, State Capitol

HB 1151 2/9/2023 **SUBCOMMITTEE**

relating to baiting deer for hunting

4:33 PM

Chairman D Anderson opened the subcommittee meeting. Members present: Chairman D Anderson, Rep Olson, Rep Conmy and Rep Dockter.

Discussion Topics:

- Limited baiting
- CWD serious
- Deer herd increase
- Food source
- Amendments
- Excludes deer, elk, moose
- Disease task force
- Carcass restrictions
- Habitats

Chairman D Anderson reviewed proposed amendment 23.0021.02003, Testimony 20406 Charlie Bahnson, ND veterinarian for ND G&F, came forward to answer questions Jeb Williams, Director ND G&F, came forward to answer questions

4:54 PM Chairman D Anderson closed the meeting.

Kathleen Davis, Committee Clerk

Energy and Natural Resources Committee

Coteau AB Room, State Capitol

HB 1151 2/16/2023

relating to baiting deer for hunting.

4:00 PM

Chairman Porter opened the hearing. Members present: Chairman Porter, Vice Chairman D. Anderson, Representatives Bosch, Conmy, Dockter, Hagert, Heinert, Ista, Kasper, Marschall, Novak, Olson, Roers Jones, and Ruby.

Discussion Topics:

- Amendment 23.0021.02005
- Supplemental feeding
- Feeder distance

Rep Anderson, Testimony 21034, 27648

Rep D Anderson moved to adopt Amendment 23.0021.02005 with additional changes to Line 9 add plus private property, Line 11 add the dates August 25 through January 27, Line 15, maximum amount 50 gallon capacity, 150 feet from property unless permitted by adjacent property owner, written permission, seconded by Rep Dockter.

Representatives	Vote
Representative Todd Porter	Υ
Representative Dick Anderson	Υ
Representative Glenn Bosch	Υ
Representative Liz Conmy	AB
Representative Jason Dockter	Υ
Representative Jared Hagert	Υ
Representative Pat D. Heinert	AB
Representative Zachary Ista	Υ
Representative Jim Kasper	AB
Representative Andrew Marschall	Υ
Representative Anna S. Novak	N
Representative Jeremy Olson	AB
Representative Shannon Roers Jones	Υ
Representative Matthew Ruby	N

8-2-4 Motion carried.

Rep Anderson moved a Do Pass as Amended, seconded by Rep Ruby.

Representatives	Vote
Representative Todd Porter	Υ
Representative Dick Anderson	Υ
Representative Glenn Bosch	Υ
Representative Liz Conmy	AB
Representative Jason Dockter	Υ
Representative Jared Hagert	Υ
Representative Pat D. Heinert	Υ
Representative Zachary Ista	Y
Representative Jim Kasper	AB
Representative Andrew Marschall	Υ
Representative Anna S. Novak	Υ
Representative Shannon Roers Jones	Υ
Representative Jeremy Olson	AB
Representative Matthew Ruby	Υ

11-0-3 Motion carried. Rep D Anderson is carrier.

4:16 PM Chairman Porter closed the meeting.

Kathleen Davis, Committee Clerk

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1151

Page 1, line 2, replace "deer for hunting" with "big game animals and supplemental feed attractants"

Page 1, line 6, replace "deer" with "big game animals"

Page 1, line 6, remove "not prohibited"

Page 1, after line 6 insert "1."

Page 1, line 8, replace "deer" with "big game animals"

Page 1, line 8, after "hunting" insert "on private property. A person may not provide
supplemental feed attractants for the purpose of baiting and hunting
big game animals except during the period from August twenty-fifth to
January seventh. For purposes of this section, "supplemental feed
attractants" include grain, seed, minerals, salt, fruit, vegetables, nuts,
hay, and any naturally derived scent or lure, including urine, or natural
or manufactured food.

- 2. The quantity of supplemental feed attractants provided to big game animals which may be provided from August twenty-fifth through January seventh may not:
 - a. Exceed fifty gallons [189.27 liters] capacity; and
 - b. Be placed within one hundred fifty feet [45.72 meters] of any property line, unless permitted by the adjacent landowner with written permission.
- 3. A person is not subject to criminal liability under this section if the person is engaged in:
 - Normal agricultural practices.
 - b. The normal feeding of livestock.
 - c. The cultivation of lawns, gardens, or wildlife food plots or orchards.
 - d. The practice of wildlife management activities conducted by or under the direction of the game and fish department.
 - e. The feeding of wildlife in an elevated bird feeder within one hundred feet [30.48 meters] of an occupied residence"

Renumber accordingly



Module ID: h_stcomrep_32_016 Carrier: D. Anderson Insert LC: 23.0021.02006 Title: 03000

REPORT OF STANDING COMMITTEE

- HB 1151: Energy and Natural Resources Committee (Rep. Porter, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS (11 YEAS, 0 NAYS, 3 ABSENT AND NOT VOTING). HB 1151 was placed on the Sixth order on the calendar.
- Page 1, line 2, replace "deer for hunting" with "big game animals and supplemental feed attractants"
- Page 1, line 6, replace "deer" with "big game animals"
- Page 1, line 6, remove "not prohibited"
- Page 1, after line 6 insert "1."
- Page 1, line 8, replace "deer" with "big game animals"
- Page 1, line 8, after "hunting" insert "on private property. A person may not provide supplemental feed attractants for the purpose of baiting and hunting big game animals except during the period from August twenty-fifth to January seventh. For purposes of this section, "supplemental feed attractants" include grain, seed, minerals, salt, fruit, vegetables, nuts, hay, and any naturally derived scent or lure, including urine, or natural or manufactured food.
 - 2. The quantity of supplemental feed attractants provided to big game animals which may be provided from August twenty-fifth through January seventh may not:
 - a. Exceed fifty gallons [189.27 liters] capacity; and
 - b. Be placed within one hundred fifty feet [45.72 meters] of any property line, unless permitted by the adjacent landowner with written permission.
 - A person is not subject to criminal liability under this section if the person is engaged in:
 - a. Normal agricultural practices.
 - b. The normal feeding of livestock.
 - c. The cultivation of lawns, gardens, or wildlife food plots or orchards.
 - d. The practice of wildlife management activities conducted by or under the direction of the game and fish department.
 - e. The feeding of wildlife in an elevated bird feeder within one hundred feet [30.48 meters] of an occupied residence"

Renumber accordingly

2023 SENATE ENERGY AND NATURAL RESOURCES

HB 1151

2023 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee

Peace Garden Room, State Capitol

HB 1151 3/16/2023

A bill relating to baiting big game animals and supplemental feed attractants.

9:00 AM Chairman Patten opened the meeting.

Chairman Patten and Senators Kessel, Boehm, Beard, and Magrum are present. Senator Kannianen is absent.

Discussion Topics:

- Deer Herds
- Disease transmission
- Chronic wasting disease
- Hunter opportunities
- 9:01 AM Representative Paul Thomas introduced the bill and provided written testimony #25545.
- 9:15 AM Representative Ruby spoke in favor of the bill.
- 9:25 AM Pete Hanebutt, Public Policy Director, North Dakota Farm Bureau, testified in favor of the bill #25463
- 9:26 AM Daryl Lies, President, North Dakota Farm Bureau, spoke in favor of the bill.
- 9:38 AM Gabe Thompson testified in favor of the bill and provided written testimony #25222.
- 9:43 AM Megan Langley testified in favor of the bill and provided written testimony #25445.
- 9:49 AM Julie Ellingson, Executive Vice President, North Dakota Stockman's Association, spoke in favor of the bill.
- 9:50 AM Matt Perdue, Government Relations Director, North Dakota Farmer's Union, testified in favor and provided written testimony Matt Perdue #25516.
- 9:51 AM Andy Buntruck testified in favor of the bill and provided written testimony #25453
- 9:57 AM Darrel Belisle, Government and Conservation Director, North Dakota Bowhunters Association testified opposed to the bill #23769, 25554.
- 10:02 AM Rod Froelich spoke opposed to the bill.
- 10:08 AM William Bahm spoke opposed to the bill.

10:15 AM Rachael Bush and Nora Busch testified opposed to the bill and provided written testimony #25444.

10:16 AM Gary Masching spoke opposed to the bill.

10:20 AM Phil Mastrangelo testified opposed to the bill and provided written testimony #25556.

10:22 AM Jeb Williams, Director, North Dakota Game and Fish Department spoke opposed to the bill.

10:30 AM Doctor Charlie Bahnson, Veterinarian, North Dakota Game and Fish Department testified opposed to the bill and provided written testimony #25400.

10:43 AM Vernon Blycke, Wildlife Biologist, spoke opposed to the bill.

11:51 AM Chairman Patten closed the public hearing.

Additional written testimony:

Dirk McWhorter #25395

Kiefer Finley #25387

Damon Finley #25384

Bradley Haberman #25383

Kellen Latendresse #25382

Kirk DeBuck #25380

Lane Johnson #25373

Dave Brandt #25368

Michael Goroski #25367

Wyatt Stanley #25366

Kimberly Thompson #25364

Craig Richardson #25363

Darrell Olson #25360

Joseph Debuck #25358

Andrew McKean #25353

Steve Goroski #25350

Mikayla Obrigewitch #25346

Chad Clapper #25343

Wesley Simmons #25340

Jeff Jacob #25330

Robert Newman #25320

Bob Matthews #25299

Tony Hauck #22297

Tim Sandstrom #25295

Peter Dobitz #25294

Kristi Zimmerman #25293

Lee Zimmerman #25288

Trent Kinzell #25286

Lenyce Simmons #25273

Bridger Duckwitz #25261

Thomas Hanna #25256

Cindy Williamson #25253

Clint Lindemann #25249

Scott Hettinger #25245

Andrew Dusek #25230

Tanner Dolbec #25229

Mason Siegs #25225

Melissa Wittenberg #25219

Shane Ryals #25218

Jodie Provost #25206

Vince Gray #25204

Kory Richardson #25199

Randy St. Germain #25193

Jeremy Wittenberg #25183

George Lemer #25182

Nevin Jennifer #25181

Shirley Schatz #25180

Matthew Williamson #25121

Lance Straabe #25097

David Lunde #25071

Chandler Jacob #25065

Steve Portenga #25058

Timothy Peterson #25052

Kerry Beechie #25049

Luke Jorde #25048

Chris Jorde #25046

Lisa Thorp #25043

Brandon Reiser #25042

James Steen #25040

Wade Williamson #25037

Ben Duben #25030

Joey Ehlers #25529

Matthew Geinert #25526

Jeremy Doan #25524

Rick Warhurst #25510

John Bradley #25507

Travis Rinehart #25506

Jacob Wheeling #25502

Liam Hale #25499++

Luke Sorum #25498

Jordan Dahle #25497

Catrina Terry #25496

Michael Rabenberg #25490

Brady Bauer #25488

Blake Amon #25487

Gage Nelson #25478

Andy Tomanek #25477

Stephanie Ferrero #25474

Krista Lundgren #25472

Dylan Bauer #25465

Terry Kissner #25461

Danica Sinner #25460

Kariann Buntrock #25458

Jeff Sinner #25457

Cody Hilliard #25450

Joseph Doll #25449

Zachary Collins #25448

Curt Francis #25446

Tom Kleven #25443

Ken Carbary #25441

Lyle Sinner #25439

Samuel Dobitz #25438

Emery Duben #25434

Brock Wahl #25432

Wyatt Thompson #25431

Terry Shaffer #25426

Matthew Maguire #25424

Courtney Maquire #25422

Aaron Pearse #25420

Brenton Hell #25418

Gary Mortensen #25417

Joe Solseng #25414

Lindsey Seykora #25412

Brianne McWhorter #25411

James Seykora #25410

Charlie Booher #25408

Greg Schoneck #25407

Jayne Isaak #25405

Carol Finely #25404

Josie Finely #25402

Tim Finley #25401

Jamie Thompson #25399

Otto Williamson #25396

Jeremy Handeland #23800

Julie Schoneck #23772

Matthew Liebel #23751

Dylan Jacobsen #23725

Kerry Whipp #23694

Russell Senske #23685

William Nissen #23655

Richard Hallstrom #23652

Alex Rischette #23590

Jason Zins #23577

Andrew Lindmeier #23543

Travis Johnston #24756

Jamie Eckroth #24691

Chad Miller #24685

David Dewald #24578

Ryan Stevie #24575

Kendra Dallmann #24499

Brad Schatz #24490

Josh Johnston #24488

Andrew Lemer #24481

Derek Belle #24476

Trent Schatz #24465

John Lien #24460

Russell Wahl #23495

Sarah Dobitz #24375

Karson Backer #24371

Tony Manifold #24367

Brad Hoffarth #24345

Allyn Sapa #24324

Jeremy Duckwitz #24310

John Arman #24300

Troy Cooper #24280

Wayne Haag #24273

Levi Nelson #24259

Chris Mack #24243

Scott Mortensen #24159

Dwight Grosz #23984

Jerry Weeks #23973

Matthew Ellingson #23893

Daniel Ackerman #23885

Matthew Nissen #23854

Jeremy Duckwitz #23845

Willy Fielhaber #23828

Joran Dyke #25028

Matt Seykora #25023

Alan Webster #25013

Adam Miller #25000

Lynn Kongslie #24999

Mark Anderson #24990

Clint Seykora #24968

Dave Berger #24966

Tucker Lutter #24961

Cole Thompson #24947

Dan Owens #24942

Sherry Niesar #24940

Levi Schoneck #24919

Brenden Sweeney #24913

Dusty Backer #24908

Hanna Edens #24906

Pat Backer #24904

Jay Gotta #24896

Preston Feakes #24894

MaCauley Haag #24892

Chet Wahl #24880

Taylor Ells #24860

DJ Randolph #24856

Jack Sorum #24844

Jon Pieper #24822

Ed Thvedt #24821

Brent Wollschlager #24814

Derrik Sonsalla #24812

Kayla Wollschlager #24807

Ron Schatz #24758

Robert Lemer #24757

Bill Helphrey #25559

Kevin Kading #25616

10:48 AM Chairman Patten closed the meeting.

Rick Schuchard, Committee Clerk

2023 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee

Peace Garden Room, State Capitol

HB 1151 3/30/2023

A bill relating to baiting big game animals and supplemental feed attractants.

10:34 AM Chairman Patten opened the meeting.

Chairman Patten and Senators Kessel, Kannianen, Beard, Boehm and Magrum are present.

Discussion Topics:

- Amendments
- 10:34 AM The committee has discussion on amendments.
- 10:45 AM Chairman Patten called a recess.
- 10:50 AM The committee has further discussion on amendments to the bill.
- 10:51 AM Chairman Patten closed the meeting.

Rick Schuchard, Committee Clerk

2023 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee

Peace Garden Room, State Capitol

HB 1151 3/30/2023

A bill relating to baiting big game animals and supplemental feed attractants.

2:49 PM Chairman Patten opened the meeting.

Chairman Patten and Senators Kessel, Kannianen, Beard, Boehm and Magrum were present.

Discussion Topics:

Committee action

2:50 PM Senator Kessel moved to adopt amendment LC 23.0021.03002. Senator Boehm seconded the motion. #27101

2:54 PM Roll call vote was taken.

Senators	Vote
Senator Dale Patten	Υ
Senator Jeffery J. Magrum	Υ
Senator Todd Beard	Υ
Senator Keith Boehm	Υ
Senator Jordan L. Kannianen	Υ
Senator Greg Kessel	Υ

Motion passes 6-0-0.

2:54 PM Senator Magrum moved to Do Pass the bill as amended. Senator Boehm seconded the motion.

2:54 PM Roll call vote was taken.

Senators	Vote
Senator Dale Patten	Υ
Senator Jeffery J. Magrum	Υ
Senator Todd Beard	Υ
Senator Keith Boehm	Υ
Senator Jordan L. Kannianen	Υ
Senator Greg Kessel	Υ

Motion passes 6-0-0.

Senator Boehm will carry the bill.

This bill does not affect workforce development.

2:55 PM Chairman Patten closed the meeting.

Rick Schuchard, Committee Clerk

Adopted by the Senate Energy and Natural Resources Committee

March 30, 2023



PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1151

Page 1, line 8, remove "A person may not provide"

Page 1, remove lines 9 through 13

Page 1, line 14, remove "which"

Page 1, line 15, remove "may be provided from August twenty-fifth through January seventh"

Page 1, line 17, replace "one hundred fifty feet [45.72 meters]" with "ten feet [3.05 meters]"

Page 1, remove lines 19 through 23

Page 2, remove lines 1 through 4

Renumber accordingly

Module ID: s_stcomrep_56_010
Carrier: Boehm

Insert LC: 23.0021.03002 Title: 04000

REPORT OF STANDING COMMITTEE

HB 1151, as engrossed: Energy and Natural Resources Committee (Sen. Patten, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS (6 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1151 was placed on the Sixth order on the calendar. This bill does not affect workforce development.

Page 1, line 8, remove "A person may not provide"

Page 1, remove lines 9 through 13

Page 1, line 14, remove "which"

Page 1, line 15, remove "may be provided from August twenty-fifth through January seventh"

Page 1, line 17, replace "one hundred fifty feet [45.72 meters]" with "ten feet [3.05 meters]"

Page 1, remove lines 19 through 23

Page 2, remove lines 1 through 4

Renumber accordingly

TESTIMONY

HB 1151

RE: HB 1151

Dear Energy and Natural Resource Committee and Representatives,

This letter is to express my support of the above referenced bill. I have been a quadriplegic since 1994. I started hunting again in 1998 using a crossbow and shooting from my electric wheelchair. In order to get wild game, mostly deer in a shooting distance I have used the method of baiting. Which usually consists of a couple buckets of corn. Using bait while hunting not only gets the deer closer, it makes them stand still in front of me for a clean kill shot.

There were only a couple years I was not able to fill my bow tag with the use of baiting. I know I am not alone for people with a handicap who depend on this style of hunting to fill their tag and fill their freezer. I know myself and my family depend on the meat that I harvest over bait every year. If there was to be a ban on baiting, I know many deer would not be taken and many meals would not be enjoyed.

Thank you for your time and listening to why I support HB 1151.

Sincerely, Clint Lindemann. 01/12/2023

RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support for HB 1151.

I grew up hunting with my dad, both my uncles, my grandpa and many more family members and friends. We have been avid outdoorsmen for generations including waterfowl and big game hunting. The true desire for us to hunt has been in our blood since the beginning of human civilization, meaning there should be no way someone can tell you the rights and wrongs of feeding animals much less deer. The positive values of baiting deer much outweigh the negatives. Take a look at the 2022-23 Winter North Dakota is experiencing for example, thousands of deer herded up in agricultural fields, coulees, farm yards, ect. This absolute, scientific fact that deer congregate to help each other find food, make trails and alleviate the pressure from predation is the reason deer congregate into herds in the winter. It is vital that outdoorsman, sportsman, and everyone have the ability to bait/feed deer and other sport animals year round including rifle and archery season, its what maintains populations of all animals by keeping them healthy and at optimal conservation numbers. Without this, sportsmen do not have the ability to put out nutritional mineral licks and feed that are a necessity for mothering animals, maturing deer lacking vitamins and other animals preventing disease. Disease in all living organisms happen, so why not be able to combat those problems with nutrition and making animals be at optimal healthy scales for survival. One more impact of allowing baiting / feeding of animals is that it brings in new people to our state, and gets everyone the chance to be apart of the great outdoors. Revenue for the state, local businesses and game and fish will increase with the ability of more people to enjoy hunting. I and many other avid conservationists and sportsmen approve of the baiting bill 1151 and I hope you take these examples to reference in the outcome of this hearing.

Sincerely,

Jayden Votava



The North Dakota Chapter of Backcountry Hunters and Anglers opposes House Bill 1151 that has been introduced to the 68th legislative assembly by Representative Paul Thomas (Velva). This bill would strip authority from the North Dakota Game and Fish to implement their CWD Management Plan by prohibiting the Game and Fish from banning baiting practices in North Dakota.

While we do not have a stance regarding baiting ethics, we do have a stance on legislation or ballot initiatives that seek to restrict or control the ability of the wildlife professionals at the North Dakota Game and Fish to do their job. That job, according to state law, is managing the wildlife resource on behalf of the public, for current and future generations. The legislature should not be overruling biological decisions made by a network of professional and experienced biologists and veterinarians who specialize in the subject matter of North Dakota wildlife.

The North Dakota Game and Fish is an agency driven by wildlife professionals who are also North Dakotans who live, work, and hunt in North Dakota. Their mission is to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use." We believe H.B. 1151 is in direct opposition to that mission.

While we understand that this is a controversial issue, and it is always difficult to change long used practices, the public's deer resource must come first. We understand that baiting bans alone will not stop CWD, that deer do naturally congregate, and some of those natural occurrences will never be a variable managers can control in wild animals. But we also believe it is disingenuous to suggest that thousands of randomly placed bait piles and feeders on the landscape, being replenished repeatedly throughout the year, does not carry an increased and associated risk of disease transmission.

The scientific analysis around the effects and impacts of baiting on disease transmission is well established. Baiting unnaturally congregates deer, shrinks home range size, increases home range overlap, increases face to face contacts, and condenses feeding areas up to thousands of times. Scientific studies around Bovine Tuberculosis and baiting have been conducted in Michigan, and epidemiological research suggests that baiting and feeding of deer enabled the TB outbreak in Michigan to persist and spread, and that declines in TB prevalence were associated with a ban on baiting and feeding. In Wyoming, Brucellosis prevalence in elk that frequently visit feed grounds is 10X that of elk that do not frequent feed grounds. While a baiting study has not been performed specifically around CWD due to the limitations in feasibility and ethics of such a study, the science supporting lateral transmission of CWD amongst deer is strong and well documented. Increasing close contact beyond normal seasonal periods and intensifying that close contact between deer should be minimized as much as possible.

The North Dakota constitution states, "Hunting, trapping, and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people and managed by law and regulation for the public good."

The hunting practices of one user group does not outweigh what is beneficial for the entire public resource. This bill could undo over a decade of work by the North Dakota Game and Fish to slow the spread of CWD. This bill is not in the best interest of the deer held in public trust, or the public, who are beneficiaries of that trust. The North Dakota Chapter of Backcountry Hunters and Anglers finds H.B. 1151 to be in direct violation of the North Dakota constitution, the North American Model of Wildlife Conservation, the mission of the North Dakota Game and Fish, and a breach of the public trust doctrine that all deer in North Dakota belong to. We strongly oppose H.B. 1151.



Board of Directors

North Dakota Chapter of Backcountry Hunters and Anglers



I am a lifelong hunter and outdoorsman. I spend a lot of time in the field taking others hunting, working on habitat projects and planting food plots. The last 4 years I have been one of the coordinators for hunts with Prairie Grit Adaptive Sports in Minot. We work to provide hunting opportunities for people with disabilities. I am writing you because the current NDG&F rules on baiting have adversely affected our program. I have always supported the NDG&F as much as possible but their logic and rules on baiting do not seem logical to me and do not seem to be based in science.

The NDG&F position is that the rules on baiting are designed to reduce the spread of Chronic Wasting Disease (CWD). The theory is that baiting brings deer into close proximity to one another which will expedite the spread of CWD. I do not believe that this theory is supported by science and logic under the current baiting restrictions.

Does banning baiting for deer hunting by individuals, on private land, increase the amount of close contact in whitetail deer:

- The law specifically bans baiting on private property for the purpose of hunting big game. It is still legal to:
 - Put out feed for hunting turkeys. Deer and turkeys eat many of the same things so deer are eating this feed.
 - o Put out feed for the purpose of photography or watching wildlife, including big game.
 - Put out feed just for the purpose of feeding wildlife.
- Deer in North Dakota naturally group up in the winter so our deer herd will come into close proximity regardless of baiting.
 - I fed deer at my house before it was banned in my unit. I estimate that 20-30 deer used the feeder at my house for 3-4 months during the fall archery season. There is a feedlot 1.2 miles from my house. In the winter months there will be 100-200 deer feeding and bedding in the silage and haystacks. The 20-30 deer that may have come into close proximity at my house are part of a much larger herd that will spend 2-3 months in close proximity at this feedlot. This seems to make the effect of my feeder at promoting the spread of CWD mostly insignificant.
 - I can't feed deer at my house for the purpose of hunting big game because it will spread disease, but my neighbor, 1/4 mile away, can feed deer and other wildlife for viewing. Once again this seems to make the effect of my feeder at promoting the spread of CWD mostly insignificant.
 - Deer are naturally social animals, particularly during the fall breeding season. They mark their territory by making scrapes on the ground and using a "licking branch" above the scrape. A licking branch is a low hanging limb that deer rub their faces on to leave their scent. On one evening this fall I sat in a blind overlooking a food plot that had a scrape and licking branch. Over a time span of approximately 2 hours, I watched 8 deer feed through the plot, 3 young bucks, 1 doe with 1 fawn and 1 doe with 2 fawns. Of these 8 deer 6 used the licking branch. The 2 that didn't use the licking branch were fawns that were later groomed by their mothers who had. The potential of disease spread would be approximately 100%. These 8 deer are most likely spending the winter at the feed lot.
- NDG&F permits what is called intercept or preemptive feeding. This is done in cases where livestock feed supplies, silage and hay, are being damaged by wildlife. In these cases, feed is placed away from the farmyard, usually on travel routes that wildlife use to get to the farmyard. This is done to reduce the amount of wildlife damage to livestock feed supplies. At Advisory Meetings the NDG&F was asked if this practice would be stopped to reduce wildlife coming into close proximity of one another, thus increasing the spread of CWD. The response from NDG&F was that the practice would continue because they believe these animals would come into contact with one another anyway. This is the same argument that we have stated to them repeatedly.

Small amounts of feed for hunting is not going to create more contact for wildlife because they are most likely going to come into contact anyway.

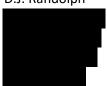
The rules that NDG&F have implemented to ban baiting in certain units do not affect everyone fairly/equally:

- In those areas where a banned unit borders a non-banned unit situations are created where one hunter can bait and another can not. If your neighbor across the road is permitted to put out feed but you are not, then you are at a major disadvantage.
- There are areas where there is a high percentage of success when hunting without bait. Those properties that have wooded areas, river or creek bottoms and coulees with good cover are some great areas to hunt. Those areas are not plentiful in North Dakota and are highly sought-after hunting locations. Getting permission to hunt those locations is difficult. Those hunters that can't get permission to hunt on prime property are left to trying to hunt on open cropland, pastures, CRP and sloughs. Without bait the probability of success in these areas is small.
- Planting food plots is permitted and a great way to bring more wildlife into your hunting area. This is not a practice that is available to most hunters. Planting food plots requires owning property or having access to property that the landowner will allow the planting of food plots. It also requires owning or borrowing the equipment needed to prepare, plant and take care of the crop. Successful food plots also require a commitment of time and money that makes it unrealistic for most hunters.
- The restrictions on baiting have caused more hunters to use public hunting areas like refuges, national grasslands and other wildlife management areas. This has caused increased hunting pressure in these areas for wildlife. It has also caused more issues between hunters in the field.
- While banning baiting can affect all hunters it disproportionality affects those that are disabled, older hunters and younger hunters.
 - O Hunting for disabled hunters presents physical challenges. Hunting blinds usually have to be established in advance to make sure that conditions will allow access. In most cases getting to the areas with heavy cover that are preferred for hunting is not an option. Disabled hunters usually do not get to choose the best location for their hunt. They must choose the best location that can be made accessible. Chances for success at these locations can be very limited without the use of bait. "We can't go to the deer. We have to get them to come to us."
 - O Hunters that are confined to a wheelchair are less mobile in the blind as well. Moving a wheelchair from one shooting window to another without spooking deer is a challenge. For this reason, most disabled setups are designed with one primary shooting window. If the deer don't come within range of that window then success is unlikely.
 - Mobility can also be an issue for older hunters. As we age the ability to hike long distances or over rough terrain decreases. For those hunters an established hunting blind with feed placed nearby may be the only option for a successful hunt.
 - Mobility can also be an issue for those that are trying to get kids involved in hunting. Small children would struggle with hiking long distances or over rough terrain.
 - For those trying to get kids involved in hunting the key is keeping their interest. Most kids are going to lose interest quickly if they are not seeing wildlife. Placing feed nearby increases the odds of seeing deer and other game. It creates a great learning situation when wildlife can be observed and discussed.

Thank you for taking time to read this. I would welcome the opportunity to visit with you personally if you have questions about any of the issues that I have addressed. Please vote "Yes" on HB 1151.

Sincerely,

D.J. Randolph



RE; HB 1151

Dear Energy and natural resource committee

This letter is to express my support for HB 1151

20 years.. 40,000 healthy harvested deer tested, 70 positives.. 69 hunter harvested, 1 found dead and ruled CWD because the stomach was empty. LESS THEN 1% POSITIVE

You can not have true free choice without informed choice.

North Dakota is not like Minnesota, we don't have many tree's for that it makes it super challenging to harvest a deer.

Tell me what the difference is between me spreading a bag of corn on the ground vs a deer eating of the same cob of corn in a food plot, there is none. It is actually better to spread the corn on the ground, then for them to eat in a food plot. I use to spread my corn around to the point to were the corn kernels are almost not touching one another (WAY SAFER). With deer eating out of a food plot each deer comes in and eats of a cob of corn, leaves then the next one comes in and starts slobbering on the same cob, that will spread way faster then me spreading out my bag of corn.

During the winter months when all the deer come together to find food, weather It would be in a farmers yard eating out of their silos or eating out of there snake silos they store harvested products in there field and 70% of them have holes in it. Either way the deer and eating out of the same small hole. Banning baiting for hunters does absolutely nothing but give us less freedom and makes the game fish feel like they can control us.

I have yet to meet someone who actually supports the baiting ban

This is my reasoning why they need to undo the baiting ban and give us our freedom back to doing what we have been doing in the past.

Sincerely - Ethan Pardon Thank you.

RE; HB 1151

Dear Energy and natural resource committee

This letter is to express my support for HB 1151

20 years.. 40,000 healthy harvested deer tested, 70 positives.. 69 hunter harvested, 1 found dead and ruled CWD because the stomach was empty. LESS THEN 1% POSITIVE

You can not have true free choice without informed choice.

North Dakota is not like Minnesota, we don't have many tree's for that it makes it super challenging to harvest a deer.

Tell me what the difference is between me spreading a bag of corn on the ground vs a deer eating of the same cob of corn in a food plot, there is none. It is actually better to spread the corn on the ground, then for them to eat in a food plot. I use to spread my corn around to the point to were the corn kernels are almost not touching one another (WAY SAFER). With deer eating out of a food plot each deer comes in and eats of a cob of corn, leaves then the next one comes in and starts slobbering on the same cob, that will spread way faster then me spreading out my bag of corn.

During the winter months when all the deer come together to find food, weather It would be in a farmers yard eating out of their silos or eating out of there snake silos they store harvested products in there field and 70% of them have holes in it. Either way the deer and eating out of the same small hole. Banning baiting for hunters does absolutely nothing but give us less freedom and makes the game fish feel like they can control us.

I have yet to meet someone who actually supports the baiting ban

This is my reasoning why they need to undo the baiting ban and give us our freedom back to doing what we have been doing in the past.

Sincerely - Ethan Pardon Thank you.

Hi this is Layne Watson writing to regard of bill 1151 about baiting deer. The main reason I want baiting to be legal again is for my kids. It is almost impossible to get a 10 to 12 year old kid close enough to deer to make and ethical shot with a bow without bait. Not only that but it helps to keep children interested in hunting if they have deer up close every evening. If the game and fish wants future hunters then they should realize that baiting is the best way to have kids harvest deer. My son keeps asking me why we don't go bow hunting anymore and I tell him because game and fish won't let us bait anymore, but people in other units can still take their kids out, it's not fair to kids in restricted units.

Hi this is Lorea Watson writing to regard of bill 1151 about baiting deer. The main reason I want baiting to be legal again is for my kids. It is almost impossible to get a 10 to 12 year old kid close enough to deer to make and ethical shot with a bow without bait. Not only that but it helps to keep children interested in hunting if they have deer up close every evening. If the game and fish wants future hunters then they should realize that baiting is the best way to have kids harvest deer. I strongly suggest you legalize baiting so future bow hunters can enjoy a lifetime of hunting.

Deer Energy and Natural Resource Committee

This letter is to express my support for HB 1151

My name is Chandler Jacob and I am a avid outdoorsman from Minot, ND. I began hunting with my father when I was 4-5 years old. When I was 7 years old I harvested my first deer with archery equipment which happened to be over food. Having the ability to supplemental feed allowed me to first, have a bunch of action but most importantly allowed for a controlled shot which Is very important for a young hunter. Ever since that day I have been obsessed with archery hunting. Having the ability to go out as a young kid and see a few deer and be successful made me want to keep hunting. I fear opportunity for young kids, and the awesome people of prairie grit are at an extreme disadvantage with the baiting ban. Using supplemental feeding is a great way to get young kids in the outdoors and experience success which is the way I was introduced to archery hunting whitetails as a young kid.

Since the ban my father and I have started using food plots to hunt deer. The plots consist of different grains and a few types of greens that the deer love in the early season. That food attracts deer the same exact way a food pile does. Heck if you have the ability to plant one big enough it often attracts more deer. This is where I struggle with the ban, why can I plant food but not put some out on the ground. They both are used in the same way. If I were to drive east of Minot I could find a corn field with over 200 deer in it. It feels as if each year we are stripped of more and more rights. Deer naturally are social animals from the moment they are born.

In my opinion from simply spending countless years in the outdoors and specifically hunting whitetails the science simply does not add up. In my 20 plus years of hunting I have yet to find a dead deer or see one showing symptoms of CWD. The science does not show that baiting increases the chance of CWD. If that was the case, you would be finding more ill deer and we just don't see it. I feel if a certain group wants to use feed they should be allowed to do so. If another group does not, then that's your choice. I do not think hunters should be criticizing and picking and choosing how one group does or doesn't hunt, we are all hunters. I believe most people who oppose baiting are not against it due to science, but because they simply don't like baiting. A few years back baiting was in the legislation and The game and fish tried to ban it. The people of ND spoke, and it never passed. Now years later they are using CWD as a way ban it and claiming the science backs it up, When you get into the numbers it does not add up.

Sincerely, Chandler Jacob

01/15/2023

Written testimony in support of HB 1151

Dear Energy and Natural Resource Committee,

I am writing to you today to show my support for HB 1151 which would make it illegal to ban baiting for the purposes of hunting (on private land).

You will hear testimony from experts in favor and support of HB 1151 which will address facts and will utilize scientific data to make a strong argument as to why baiting should be allowed. I will leave those arguments to the professionals and experts.

I however would like to provide insight into my reasoning and support for removing the ban from the perspective of an avid hunter. I myself have been an active hunter all of my life as I started out when I was very young. My father passed on basic hunting skills to me at an early age and I have embraced and practiced hunting my whole life from then on. We have used baiting as a tool in many instances, not all, but have found it to be a very effective means to provide for a pleasant hunting experience, and when it mattered most, also helped to make a clean and ethical harvest on deer. This is a tool that is utilized by many in the field, but not everyone agrees with its practice. I can understand and appreciate their point of view, but that is an argument of ethics and personal beliefs and should be saved for a different debate.

I am writing this letter however to convey my support for baiting today because I believe in it as an effective tool for all sorts of users who would like to enjoy the outdoors and increase their chances of wildlife interaction and success. I actually shouldn't be supporting the ban and here is the reason why;

My family owns some of the best huntable farmland in Mountrail County. My father has spent decades and has poured countless funds from his pocket to develop amazing wildlife habitat including food plots, water points, fruit trees, miles upon miles of tree'd shelter belts and CRP. Needless to say, the wildlife in the area flocks to our land and we have an abundance of it. Simply put, a ban on bait does not hurt our situation one single bit...in fact, it does nothing but help our hunting opportunities thrive, BUT, we are aware and embrace the fact that this is so much bigger than ourselves.

Ultimately, we are proud that we have built a place for wildlife to thrive that has also turned into a hunting haven for us, but for many that is not the case. There are many outdoor enthusiasts who simply do not have the means to develop such a pristine environment for wildlife to flourish, and many are fortunate by the grace of a friendly farmer or rancher to be able to hunt on potentially less wildlife friendly land. For many, the only tool they have for being able to create a successful hunting environment is to have the ability to place a bait pile to attract deer, something that has been done for eons during man's existence in pursuit of wild game. This is

often the only chance many will have, especially those who don't own their own land to develop into a wildlife sanctuary.

Let's also consider other user groups that I especially support the use of bait for, and it is quite a large group of outdoor enthusiasts. This would include our elderly, youth and those who are disadvantaged by potential health issues or those with disabilities. Who are we to limit this large group's opportunities simply because our Game and Fish chooses to ignore hard factual data from other states' trials, that despite banning the practice of baiting, CWD continues to march across their landscape...It can easily be determined that the use of bait is not the detrimental threat to our deer herd they would have us believe.

This is going to be a controversial topic and there will be very good points made from both sides of the issue, but I urge you to look at the data that will be brought forth, information that contradicts the AFWA document and consider that the use of baiting for hunting is a far more beneficial tool to hunters than the benefit of eliminating it altogether. I implore you to consider that this is an issue that affects the future of hunting in North Dakota (as we know it) and to not just blindly follow opinions from a document that has so far proven to be a complete disaster in slowing the spread of CWD in other states who have adopted and utilized its "best management practices".

Let us be the state that thinks for itself and allows common sense, data and science to prevail so our sportsmen can hunt and keep the use of a vital tool to help effectively and efficiently harvest and manage deer within our state. Thank you for your time.

Sincerely,

Matt Williamson Minot, ND 701-721-3380 My name is Jeff Whillock, I am a resident of Kenmare, ND and a landowner in Burke and Mountrail counties. I would like to address the overreach of our NDG&F related to CWD and hunting over bait. I am mostly retired but work part time, and Volunteer as a Junior Shooting Coach at the Minot Rifle and Pistol Club on Saturday mornings.

I am 69 years old and can't cover the ground as I once could, additionally I hunt with disabled Veterans, disabled youth, and my grandchildren. The disabled individuals I hunt with could not possibly do a spot and stalk hunt, and having close supervision of grandchildren's early deer hunts make them better, more ethical hunters in the long run.

As with the Covid overreach the science of CWD is not settled. NDG&F took the easy and authoritative approach and administratively banned hunting over bait. To justify this approach I would like the NDG&F to answer a few questions:

- 1. If it is as bad as you present, how does Colorado and Wyoming have any wildlife left?
- 2. How many of the deer that tested positive for CWD died OF CWD and how many died WITH CWD?
- 3. How many deer did NDG&F kill looking for CWD and what was the percentage testing positive?
- 4. Deer are social animals. What is the percentage of exposure baiting is responsible for?
- 5. Why is it legal to bait for viewing and photographic purposes?

The restrictions on baiting looks to me and others as a government control mechanism for hunters and landowners and a solution looking for a problem. With the current weather and the deer herded up (there are probably 500 within 5 miles of Kenmare) I have seen no weakened or dead deer and they are surely being social.

You hunt your way on land you control, I will hunt how I prefer on my land and we will get along much better.

Jeff Whillock

			INDEX TO	ENTRIES			
— A —	Caironi, 6	Electability, 9	Hideout, 11	Malibu Curl, 6	Officiating, 5	Saint Selby , 7	Thismightbetheone, 4
Abaan,8	Captainsdaughter , 11	Eminency, 1	High Opinion, 10	Mandy Green, 4	Our Flash Drive, 10	Secret Rules , 2	Trinity Titoli, 4
Act of Congress , 11	Caumsett* , 11	— F —	Highland Chief, 8	Masked Marauder , 7	Our Son Jake , 1	Set Sail, 9	- U $-$
Angel Palm, 6	Chateau, 5	Finest Work , 11	Highway Queen , 11	Masterof the Tunes , 11	-P-	Seven Lilies , 7	U Should B Dancing , 4
Angelinka, 6	Complete Agenda, 9	Foolish Ghost , 7	Holiday Jazz, 4	Mia Bea Star, 4	Palace Gossip, 11	So High, 8	— W —
Answer In , 5	Conquist , 1	Fortune's Nephew , 1	- J $-$	Miss Bella Ciao , 6	Plum Ali, 10	Standup, 2	Waterville* , 11
Assertive Style, 3	Cooke Creek, 9	Frank's Rockette, 3	Jemography , 7	Miss Brazil, 3	Prince of Pharoahs , 7	Stanhope, 2	We the People, 9
Autumn Glory , 11	Courageous Girl, 6	Freedomofthepress, 4	Join the Dots , 6	Miss Delicious, 4	-R-	State Planning , 9	Western River, 9
— B —	— D —	- G $-$	— K —	Missing Link , 4	Red Pepper Grill, 4	Steelersfanforlife, 2	-Y-
Baby Blythe, 6	Dee Bo, 2	Gallina , 11	Kept Waiting , 3	Mr Phil, 5	Repo Rocks, 5	Stella Mars, 4	Yibir,8
Belacqua, 6	Denis, 1	Gandy Dancing , 7	— L —	— N —	Rigby, 11	Stolen Holiday , 10	
Bella Sofia , 3	Devil Boy , 1	Gentle Annie , 4	Lay the Groundwork , 6	NY Anthem , 1	Ring of Fire, 2	Sue Ellen Mishkin , 11	
Bingo John , 2	Drafted, 5	Golden Glider, 9	Lemista , 10	Naked On the Beach , 6	Rougir, 10	—T—	
Brew Pub, 7	Dufresne , 11	Gufo,8	Listentoyourheart, 7	Not Yet Charlie, 2	Runaway Rumour , 10	Tellaperfecttale , 11	
Bronx Bomber , 7	— E —	— H —	Loaded Joe , 2	- 0 $-$	— S —	Tenure, 2	
- C $-$	Easter, 8	Happy Hill Lil , 4	- M $-$	Ocean's Reserve , 1	Safalow's Mission, 1	Theodora Grace , 11	

Abreu Jorge R , 4, 10, 11 Albertrani Thomas, 6, 11 Appleby Charles, 8 Arenas Marcelo, 7 Atras Rob , 2, 5, 7

– A –

Bond Harold James, 11 Brisset Rodolphe, 9 Brocklebank Joseph, 1, 6 Brown Chad C , 6, 9, 10

Cash Russell J. 11 Casse Mark, 9, 10 Chatterpaul Naipaul, 8 Clement Christophe, 7, 8, 10, 11 Cox Brad H, 6 — D — De Paz Horacio, 6 DiPrima Gregory, 2, 5 Drysdale Neil, 6 Duggan David P , 4, 5

Dutrow Anthony W, 3, 10, 11

INDEX TO TRAINERS Englehart Jeremiah C . 1 Falcone Robert N Jr , 2, 3, 5 Ferraro James W, 4 — G – Gyarmati Leah, 1, 2 Handal Raymond , 4, 7 Hennig Mark, 4 — J –

Jones Eduardo E , 1

Joseph Saffie A Jr, 5

Kimmel John C, 1 Klesaris Robert P, 4, 11 Lee Joseph, 11 Legall Ricardo E, 2 Levine Bruce N , 1, 11 Lucas Bonnie, 2, 11 Lynch Natalia, 4 — M — Maker Michael J, 6, 11 Mandella Richard, 9

McGaughev III Claude R. 6. 10 Morley Thomas, 3 Motion H Graham, 6, 8 Mott William I, 2, 3 — 0 — O'Dwyer Jeremiah, 9 Persaud Randi, 4 Pletcher Todd A, 8, 9 Pregman John S Jr, 2, 7 Rice Linda, 1, 7

Rodriguez Rudy R . 1, 2, 3, 4, 7 -s-Sciacca Gary, 4, 11 Servis J Tyler, 1 -T-Trites A Lands, 11 Trombetta Michael J , 11 _ V __ Vazquez Juan C, 9 – W — Walder Peter R, 4 Weaver George, 11

Belmont Park

SMd Sp Wt 75k



6 Furlongs (1:073) MAIDEN SPECIAL WEIGHT. Purse \$75,000 For Maidens, Three Years Old And Upward Foaled In New York State And Approved By The New York State-bred Registry. Three Year Olds, 118 lbs.; Older, 124 lbs. (Non-Starters For A Claiming Price Of \$40,000 Or Less In Their Last Start Preferred).

Post time: 1:00 ET	Wagers: Exacta, Trifecta (.50), Super (.10), Picl	k 3, E	arly	Pick	5 (.50)), C	oub	le					В	eyer	r par: 76	
1 Conquist	B. c. 3 (May)			Life	1 M	0	1	\$9,000	56	D.Fst	1	0	0	1	\$9,000	56
Own: Sleeping Giant Stables LLC and KimDon	Sire: Nyquist (Uncle Mo) \$55,000 Dam: Conquest Soprano (Super Saver)			2021	1 M	0	1	\$9,000	56	Wet(386)	-	0	-	-		-
9-2 Green, Orange Diamonds, Orange Sleeves	Br: Sequel Thoroughbreds & Lakland Farm (NY)	() 1	118	2020	0 M	0	0	\$0	_	Synth Turf(248)	-	0	-	-	\$0 \$0	
MCCARTHY T (57 4 7 5 .07) 2022: (420 66 .16)	Tr: Kimmel John C(8 1 1 1 .12) 2022:(67 9 .13)			Bel	1 0	0	1	\$9,000	56	Dst(351)	0	0	0	0	\$0	-

56 10/11 3 52½ 43 21 33¾ Carmouche K 5Nov21-6Bel fst 7f (223 :4611:1221:261 SIMd Sp Wt 75k 119 4.40 67-24 IronLonnZon11923 Bossmknbossmovs1191 Congst119no 3-4w upper, ran on WORKS: May6 Beltr.t 5f fst 1:01¹ B 3/30 ● Apr27 Beltr.t 5f fst 1:00¹ B 1/6 ● Apr20 Beltr.t 4f fst :47¹ B 1/23 Apr12 Beltr.t 4f fst :48⁴ B 4/20 Apr5 Beltr.t 4f fst :50² B 30/51 ● Mar30 Beltr.t 3f fst :36⁴ B 1/23 TRAINER: +180Days(19.11 \$1.03) Mdn2ndStart(25.16 \$1.99) 1stLasix(15.07 \$0.33) Dirt(153.14 \$1.29) Sprint(162.12 \$1.28) MdnSpWt(68.12 \$1.27)

J/T 2021-22 BEL (3 .00 \$0.00) J/T 2021-22(13 .08 \$0.85)

2 Safalow's Mission	Dk b/br g(10.16.21) 3 (Apr) EASDEC21\$130,000		Life	5 M	1 1	2	\$33,750	67				1 2	\$33,300	
Own: Thelma and Louise Stable	Sire: Mission Impazible (Unbridled's Song) \$2,500 Dam: Mosaico (City Zip)		2022	2 M	0	1	\$8,850	67	Wet(334) Synth)		-
8-1 Purple, Black Hoop, Purple Cap LEZCANO J (50 10 5 12 .20) 2022; (302 46 .15)	Br: Sequel Thoroughbreds LLC & Barone's Sunny Crest Farm (NY) Tr: Rice Linda(21 5 2 3 .24) 2022:(163 24 .15)	L 11	2021	3 M	1	1	\$24,900	65	Turf(261)			Ö	7 -	
ELZOANO 0 (30 10 3 12 120) 2022. (302 40 113)	11. Rice Liliua(21 3 2 3 .24) 2022.(103 24 .13)		Bel	1 () 1	0	\$14,000	56	Dst(349)	2	0 (2	\$16,800	66
28Apr22-5Bel fm 6f ⑦ 223 :46 :5741:1013★SIMd Sp Wt 75	k 67 4/10 2 42½ 43 55 84¾ Lezcano J L 1	118 b 9.	0 75-20	Citize	n K 12	5nk Sc	herzando	1253	Heymackit's	jack	1251		Stalked ins, t	ired
5Mar22-6Aqu fst 6f 23 :464 :593 1:133 SMd Sp Wt 70	k 66 1/7 6 69 513 510 344 Cancel E L 1	120 b 5.	0 71-21	HotRo	dRum	ble120	no Kzmik'	1224‡	SflowsMiss	ion1	20 <u>3</u> E	Bmpd	brk,forced in	ı,ins
18Dec21-6Agu fst 7f 223 :4621:1211:254 RNYStInSrsB	iOOk 24 4/11 4 99ៀ 1115 1114 1119鴔 Ortiz J L 1	118b 16.	80 55-15	Geno1	20nk (Jn Ojo	12021 Uni	que	Unions 1204			Stead	lied early,4w t	turn

Previously trained by Weaver George 2021 (as of 11/19): (259 37 40 39 0.14) 119b 6.50 78–19 GMunning1191 BoldJourny1195½ SflowsMission1192¾ 3w1/2,5w3/16,flattened 119b 11.00 73-19 FloridaGator119½ SflowsMission1191 AlsRocket119½ Bmp st,4p,led3/16-1/16

TRAINER: 20ff45-180(99.19 \$1.36) Turf/Dirt(25.20 \$1.16) Dirt(488.17 \$1.24) Sprint(368.16 \$1.23) MdnSpWt(77.19 \$2.09)

J/T 2021-22 BEL (54 .20 \$1.52) J/T 2021-22 (166 .16 \$1.25)

2 Eminency	B. c. 3 (Mar) FTKSEL20 \$80,000		Life	5 N	I 4	0	\$60,200	70	D.Fst			0	\$56,000 70
Own: Kaleem Shah Inc	Sire: Cupid (Tapit) \$5,000 Dam: Snow (Quality Road)	. 4405	2022	4 N	1 3	0	\$46,200	70	Synth	Λ	n r	n n	\$4,200 63 \$0 -
7-2 Red And White Stripes, Royal Blue	Br: Jeremiah Desmond (NY)	L 113 ⁵	2021	1 M	I 1	0	\$14,000	70	Turf(205)	ŏ	0 (Ö	\$0 -
GOMEZ J A (56 6 4 7 .11) 2022: (468 67 .14)	Tr: Rodriguez Rudy R(30 5 4 3 .17) 2022:(190 42 .22)		Bel	0 (0 (\$0	-	Dst(346)				\$0 -
16Apr22-7Aqu fst 7f \$ 224 :4541:1031:233 3↑ SMd Sp Wt 67	t 63 4/5 1 1½ 11½ 22 26½ Gomez J A5 L	L 113b *1.15	85-08 A	Aggre	gatio	n 1186	Eminenc	y 113	i₄ Modern M	idas	11824	V	ied, led, safe 2nd
19Mar22−6Aqu fst 6½f 23 :4641:1131:181 SMd Sp Wt 70I	t 70 13/14 1 2½ 2hd 2½ 22¼ Gomez J A 7 L	L 113b 4.40	86–17	TinPa	nAlle	/1202 [Eminenc	y 1133	¼ FlowingRi	ver1	2053	3p trr	,led1/4,outfnshd
11Feb22-8Aqu fst 1 C 231 :47 1:1241:404 S Md Sp Wt 70I												l w tur	n,chsd,no match
9Jan22-9Aqu gd 7f 224 :4631:1241:27 SMd Sp Wt 70I									nk Raw Cour	age1			4w upper, ran on
5Dec21-7Aqu fst 6½f 224 :4631:13 1:20 SMd Sp Wt 701 WORKS: May9 Rel 4f fst :504 B 69/75 Apr30 Rel 4f fst :512 B 87/93									ssionist 119 1			3-4w 1	urn,chsd,gained

TRAINER: Dirt(597.21 \$2.03) Sprint(477.20 \$2.31) MdnSpWt(80.17 \$4.34) 0 0 Dk b/br g(03.19.22) 4 (Mar) Life 0 M 0 D.Fst 0 Denis Sire: Bank Heist (Maria's Mon) \$1,000 Dam: Extended Applause (Exbourne) Wet(282) 0 0 0 \$0 Own: Rivera Jones Asuncion
Red, White Star, Blue Sleeves And Cap 2022 0 M 0 SO -Synth 0 0 0 \$0 124 Kaz Hill Farm (NY) 2021 0 M 0 \$0 0 Turf(195) 0 0 0 \$0 DAVIS J A (14 2 2 1 .14) 2022: (194 27 .14) Tr: Jones Eduardo E(7 1 2 0 .14) 2022:(54 2 .04) Bel \$0 Dst(331) 0 0 0

Entered 15May22-3 BEL

WORKS: ●May6 Bel tr.t 3f fst :35 Bg 1/37 Apr29 Bel tr.t 4f fst :483 B 4/66 Apr13 Bel tr.t 4f fst :49 B 10/26 Mar8 Bel tr.t 4f fst :50 B 14/29 Feb19 Bel tr.t 3f fst :39° B 22/25 TRAINER: 1stStart(1.00 \$0.00) Dirt(173.06 \$1.75) Sprint(106.06 \$1.02) MdnSpWt(15.00 \$0.00)

J/T 2021-22 BEL (2 .50 \$7.40) J/T 2021-22 (19 .16 \$3.83)

J/T 2021-22 BEL (12 .17 \$1.39) J/T 2021-22(47 .28 \$3.76)

F N V Anthom	B. g(08.31.21) 3 (Jan) EASDEC21\$35,000		Life	1 N	/ N	1	\$4,620	56	D.Fst	1	0	0 1	\$4,620
5 NY Anthem Own: Cash is King LLC and LC Racing LLC	Sire: War Dancer (War Front) \$7,500		2022		1 0		\$4,620		Wet(278)	-	Ō	0 0	\$0
8-1 Green, White Crown, White Sleeves, Green	Dam: Lady June Bug (Elusive Quality) Br: War Dancer Ladies LLC (NY)	L 118		0 1		0	\$4,020	JU	Synth			0 0	\$0
ARMOUCHE K (55 8 11 7 .15) 2022: (382 80 .21)	Tr: Servis J T(—) 2022:(40 11 .28)		Bel		0 0	-	\$0 \$0	_	Turf(307) Dst(332)	0		0 0	\$0 \$0
5Apr22-8Prx fst 7f 233 :4641:1311:271 Md Sp Wt 42k VORKS: May3 Prx 5f fst :594 B 2/11 Apr23 Prx 4f fst :474 B 7/70 N 'RAINER: Mdn2ndStart(7 .14 \$0.80) 31-60Days(52 .15 \$1.51) Dirt(14	Mar31 Prx 4f fst :491 B <i>2/21</i> Mar23 Prx 5f fst 1:013 B <i>5/21</i> Mar1		0 68-26	Jamie	Dren	ns 121 2	₹ Strwber \$ 33/67	•	ne1211 NYAr	ther	n 121	2 <u>3</u> B	umped st, vied 21-22(14 .43 \$3.8
6 Devil Boy	Ch. c. 4 (Mar) SARAUG19 \$75,000		Life	2 N	1 0	1	\$13,500	72	D.Fst	1	0	0 1	\$9,000
Own: Harold Lerner LLC AWC Stables Nehoc S	Sire: Daredevil (More Than Ready) \$25,000 Dam: Zadig (Rio Verde)		2021	2 N	1 0	1	\$13,500	72	Wet(343)			0 0	\$4,500
5-2 Purple And Lavender Diamonds, Lavender	Br: Bloom Racing Stable (NY)	L 124	2020	0 M	1 0	0	\$0	_	Synth Turf(239)	0		0 0 0 0	\$0 \$0
DRTIZ J L (35 4 7 6 .11) 2022: (444 94 .21)	Tr: Englehart Jeremiah C(5 1 1 0 .20) 2022:(72 12 .17)		Bel	2	0 0	1	\$13,500	72		1		0 1	\$9,000
31May21-1Bel myS 6∯f S 22 .4531:1011:1633.∳SIMd Sp Wt 75 2May21-5Bel fst 6f 23 .453:57 1:09 3.∤SIMd Sp Wt 75 VORKS: May8 Sartr. t.4ffst:501 B <i>14/23</i> Apr12 WCT 4f gd: 503 B <i>2</i>	5k 72 7/12 12 1263/4 1111 613 3111/4 Ortiz J L 2/12 Mar 24 WCT 4f gd :50 B 2/7 ● Mar 18 WCT 4f gd :49 1 B 1/1	L118 4.1	0 84-05	River	Dog1	187 <i>Bi</i>	g Bobby118	41 De	l¼ Mr. Buckl vil Boy118no		42		low,pinched ba upper, improv
TRAINER: +180Days(18.11 \$0.53) Dirt(366.19 \$1.20) Sprint(286.16	\$1.10) MdnSpWt(109 .16 \$1.15)						J/	/T 202	1-22 BEL (14 .	07 \$0	0.26)	J/T 20	21-22(29 .10 \$0.5
7 Ocean's Reserve	Ch. c. 3 (Apr) OBSAPR21 \$70,000 Sire: Speightster (Speightstown) \$6,500	Blinkers OFF	Life	1 N	1 0	0	\$3,400	34		1	-	0 0	\$3,400
Own: Bona Venture Stables	Dam: A Cut Ahead (Tiz Wonderful)	440	2021		1 0	0	\$3,400	34	Wet(376) Synth	0	-	0 0	\$0 \$0
15-1 Gold, Kelly Green And White Pentagon CANCEL E (37 4 6 7 .11) 2022; (297 36 .12)	Br: Pioneer Ventures (NY) Tr: Gyarmati Leah(3 0 0 0 .00) 2022:(16 1 .06)	118		0 M	1 0	0	\$0	-	Turf(290)		Ō	0 0	\$0
7711022 2 (0, 10, 111) 2022 (20, 00112)	111 ajarman Ecan(0 0 0 0 100) Ecel(10 1 100)												
			Bel		0 0		\$0	-	Dst(393)			0 0	\$0
VORKS: May 1 Bel tr.t 5f fst 1:013 B 4/20 Apr 24 Bel tr.t 5f fst 1:023	B 6/14 Apr 16 Beltr. t 4f fst : 482 B 19/221 Apr 11 Beltr. t 5f fst 1	:004 B 3/13 Apr5	0 77-11	AvKs	Boy1	191 Th	eInstitute Mar 30 Belt	r.t 5f	Dst(393) Money Mero fst 1:04 B <i>16/</i>	ger11 18	193	Very	rank9/16,check
ORKS: May1Bel tr.t.5f fst 1:013 B 4/20 Apr24 Bel tr.t.5f fst 1:023 RAINER: +180Days(3.00 \$0.00) Mdn2ndStart(4.00 \$0.00) BlinkOf	B 6/14 Apr16 Beltr.t 4f fst :482 B 19/221 Āpr11 Beltr.t 5f fst 1: f(6.17 \$9.58) Dirt (63.05 \$1.04) Sprint (52.08 \$1.61) Mdn SpWt (13 B. c. 3 (Apr) FTKOCT20 \$30,000	:004 B 3/13 Apr5	0 77-11 iBeltr.t	AvKs	Boy1 02 2 B	191 Th 2/20	eInstitute Mar 30 Belt	r. t 5f i J/T 202	Dst(393) Money Mere fst 1:04 B 16/ 21-22 BEL (5 .	ger11 18 40 \$4	19¾ 4.22) 0	Very J/T 20 0 0	rank9/16,check 21-22(16 .19 \$1.
VORKS: May1 Bel tr. t 5f fst 1:013 B 4/20 Apr 24 Bel tr. t 5f fst 1:023 RAINER: +180Days (3.00 \$0.00) Mdn2ndStart (4.00 \$0.00) BlinkOf 8 Our Son Jake Own: Script R Farm	B 6/14 Apr16 Beltr.t 4f fst :482 B 19/221 Āpr11 Beltr.t 5f fst 1: f(6 .17 \$9.58) Dirt(63 .05 \$1.04) Sprint(52 .08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTKOCT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000	:004 B 3/13 Apr5	0 77-11 iBeltr.t	AvKs of fst 1:	Boy1 02 2 B	191 Th 2/20 0	eInstitute Mar 30 Bel t	r.t 5f J/T 20: 53	Dst(393) Money Merg fst 1:04 B 16/ 21-22 BEL (5 . D.Fst Wet(393)	ger11 18 40 \$4 2 0	19¾ 4.22) 0 0	Very J/T 20 0 0 0 0	rank9/16,check 21-22(16 .19 \$1. \$7,200 \$0
VORKS: May1 Bel tr.t. 5f fst 1:013 B 4/20 Apr 24 Bel tr.t. 5f fst 1:023 RAINER: +180Days (3.00 \$0.00) Mdn2ndStart (4.00 \$0.00) BlinkOf 8 Our Son Jake Own: Script R Farm 12-1 Red, Blue Braces, Blue And White 'R,'	B 6/14 Apr16 Beltr.t 4f fst :482 B 19/221 Āpr11 Beltr.t 5f fst 1: f(6 .17 \$9.58) Dirt(63 .05 \$1.04) Sprint(52 .08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTKOCT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000 Dam: Felisa (Harlan's Holiday) Br: Rhapsody Farm LLC (NY)	:004 B 3/13 Apr5	0 77-11 Beltr.t Life 2021	AvKs 5f fst 1: 2 M	Boy1 022 B	191 Th	eInstitute Mar30 Belt \$7,200	r.t 5f J/T 20: 53	Dst(393) Money Merce fst 1:04 B 16/21-22 BEL (5 D.Fst Wet(393) Synth	ger11 18 40 \$4 2 0	19 3 4.22) 0 0 0	Very J/T 20 0 0 0 0 0 0	rank9/16,check 21-22(16 .19 \$1.0 \$7,200 \$0 \$0
VORKS: May1 Bel tr.t.5f fst 1:013 B 4/20 Apr24 Bel tr.t.5f fst 1:023 RAINER: +180Days(3.00 \$0.00) Mdn2ndStart(4.00 \$0.00) BlinkOf 8 Our Son Jake Own: Script R Farm 12-1 Red, Blue Braces, Blue And White 'R,'	B 6/14 Apr16 Beltr.t 4f fst :482 B 19/221 Āpr11 Beltr.t 5f fst 1: f(6.17 \$9.58) Dirt(63.05 \$1.04) Sprint(52.08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTKOCT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000 Dam: Felisa (Harlan's Holiday)	:004 B 3/13 Apr 5 :.08 \$4.46)	0 77-11 Beltr.t Life 2021	AvKs 5f fst 1: 2 M	Boy1 022 B 1 0 1 0	191 Th	eInstitute Mar30 Belt \$7,200	r.t 5f J/T 20: 53	Dst(393) Money Merc fst 1:04 B 16/ 21-22 BEL (5 D.Fst Wet(393) Synth Turf(290)	ger11 18 40 \$4 2 0 0	19 ³ / ₄ 4.22) 0 0 0 0	Very J/T 20 0 0 0 0	rank9/16,check 21-22(16 .19 \$1. \$7,200 \$0 \$0 \$0
VORKS: May1 Bel tr.t. 5f fst 1:013 B 4/20 Apr 24 Bel tr.t. 5f fst 1:023 RAINER: +180Days (3.00 \$0.00) Mdn2ndStart (4.00 \$0.00) BlinkOf 8	B 6/14 Apr16 Beltr.t 4f fst :482 B 19/221 Āpr11 Beltr.t 5f fst 1: f16 .17 \$9.58) Dirt(63 .05 \$1.04) Sprint(52 .08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTKOCT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000 Dam: Felisa (Harlan's Holiday) Br: Rhapsody Farm LLC (NY) Tr: Brocklebank Joseph(—) (—) 22 21 17 0.17)	:004 B 3/13 Apr5 : .08 \$4.46)	Diffe 2021 Bel well and the second se	AvKs 5f fst 1: 2 M 0 M 1	Boy1 022 B 1 0 1 0 1 0	191 Th 2/20 0 0 0	\$7,200 \$7,200 \$3,000	53 53 53 - 35	Dst(393) Money Merg fst 1:04 B 16/ 21-22 BEL(5 D.Fst Wet(393) Synth Turf(290) Dst(351)	ger11 18 40 \$4 2 0 0 0 2	19¾ 4.22) 0 0 0 0 0	Very J/T 20 0 0 0 0 0 0 0 0 0 0	7,200 \$0 \$0 \$0 \$0 \$0 \$0 \$0
VORKS: May1 Bel tr.t. 5f fst 1:013 B 4/20 Apr 24 Bel tr.t. 5f fst 1:023 RAINER: +180Days (3.00 \$0.00) Mdn2ndStart (4.00 \$0.00) BlinkOf 8 Our Son Jake Own: Script R Farm 12 - 1 Red, Blue Braces, Blue And White 'R,' IAVIS D (72 13 8 15.18) 2022: (419 87.21) Previously trained by Miceli Michael 2021 (as of 12/18): (129 80ec21-5Aqu fst 6f 222 :462 :5811:104 §Md Sp Wt 70	B 6/14 Apr16 Beltr.t 4f fst :482 B 19/221 Āpr11 Beltr.t 5f fst 1: f16 .17 \$9.58) Dirt(63 .05 \$1.04) Sprint(52 .08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTKOCT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000 Dam: Felisa (Harlan's Holiday) Br: Rhapsody Farm LLC (NY) Tr: Brocklebank Joseph(—) (—) 22 21 17 0.17) 0k 53 10/12 4 32½ 46½ 513 413¾ McCarthy T	:004 B 3/13 Apr5 : .08 \$4.46) 118 119 39.0	Dife 2021 Bel v. 15 2020 Bel 0 75-15	AvKs 5f fst 1: 2 M 0 M 1	Boy1 022 B 1 0 1 0 1 0	191 Th 2/20 0 0 0 0	\$7,200 \$7,200 \$0 \$3,000	53 53 53 - 35	Dst(393) Money Merg fst 1:04 B 16/ 21-22 BEL (5) D.Fst Wet(393) Synth Turf(290) Dst(351)	ger11 18 40 \$4 2 0 0 0 2	193 4.22) 0 0 0 0 0	Very J/T 20 0 0 0 0 0 0 0 0 0 0 0 0	rank9/16,check 21-22(16 .19 \$1.1 \$7,200 \$0 \$0 \$7,200 de turn,weaken
ORKS: May1 Bel tr.t. 5f fst 1:013 B 4/20 Apr 24 Bel tr.t. 5f fst 1:023 RAINER: +180Days (3.00 \$0.00) Mdn2ndStart (4.00 \$0.00) BlinkOf 8	B 6/14 Apr16 Beltr.t4f fst :482 B 19/221 Āpr11 Beltr.t5f fst 1: f(6.17 \$9.58) Dit(63.05 \$1.04) Sprint(52.08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTK0CT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000 Dam: Felisa (Harlan's Holiday) Br: Rhapsody Farm LLC (NY) Tr: Brocklebank Joseph(—) (—) 22 21 17 0.17) lk 53 10/12 4 32½ 46½ 513 413¾ McCarthy T lok 35 5/8 5 62½ 54 57 56 Davis D	:004 B 3/13 Apr5 :.08 \$4.46) 118 119 39.0 119 12.3	0 77–11 6 Bel tr.t: Life 2021 2020 Bel 0 75–15 0 70–19	AvKs 5f fst 1: 2 M 2 M 0 M 1 Bold a Bali's	Boy1 022 B 1 0 1 0 1 0 0 0	191 Th 2/20 0 0 0 0 0 mey119 de1192	**************************************	53 53 53 - 35 Code1	Dst(393) Money Mery fst 1:04 B 16/ 21-22 BEL (5 D.Fst Wet(393) Synth Turf(290) Dst(351) 19\(\frac{3}{4} \) Raw Coulo 6 Hot Rod Ri	ger11 18 40 \$4 2 0 0 0 2 rage	193 4.22) 0 0 0 0 0	Very J/T 20 0 0 0 0 0 0 0 0 0 0 0 0	rank9/16,checl 21-22(16 .19 \$1. \$7,200 \$0 \$0 \$7,200 de turn,weaker
VORKS: May1 Bel tr.t. 5f fst 1:013 B 4/20 Apr 24 Bel tr.t. 5f fst 1:023 RAINER: +180Days(3.00 \$0.00) Mdn2ndStart(4.00 \$0.00) BlinkOf 8	B 6/14 Apr16 Beltr.t 4f fst :482 B 19/221 Āpr11 Beltr.t 5f fst 1: f(6 .17 \$9.58) Dirt(63 .05 \$1.04) Sprint(52 .08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTKOCT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000 Dam: Felisa (Harlan's Holiday) Br: Rhapsody Farm LLC (NY) Tr: Brocklebank Joseph(—) (—) 22 21 17 0.17) Dik 53 10/12 4 32½ 46½ 513 413¾ McCarthy T Dik 53 10/12 4 32½ 46½ 57 56 Davis D Dik 35 5/8 5 62½ 54 57 56 Davis D Dik 36 2/21 Apr9 Beltr.t 4f fst :491 B 63/187 Mar31 Beltr.t 5f fst 1:03	:004 B 3/13 Apr5 :.08 \$4.46) 118 119 39.0 119 12.3	0 77-11 Beltr.t: Life 2021 2020 Bel 0 75-15 0 70-19 Beltr.t 5	AvKs ffst 1: 2 N 0 N 1 Bold Bali's fst 1:0	Boy1 022 B 1 0 1 0 1 0 0 0	191 Th 2/20 0 0 0 0 0 e1192 9/23 M	eInstitute Mar30 Belt \$7,200 \$7,200 \$3,000 63 Goldent Clash A. J Mar11 Beltr	53 53 53 - 35 Code1	Dst(393) MoneyMerr fst 1:04 B 16/ 21-22 BEL (5 D.Fst Wet(393) Synth Turf(290) Dst(351) 19\frac{3}{4} RawCour tt:50 B 16/128	ger11 18 40 \$4 2 0 0 0 2 rage umb	1934 4.22) 0 0 0 0 0 12062 1e119	Very J/T 20 0 0 0 0 0 0 0 0 14 3wii	rank9/16,check 21-22(16 .19 \$1.1 \$7,200 \$0 \$0 \$0 \$7,200 de turn,weaker upper, weaker
NORKS: May1 Bel tr.t.5f fst 1:013 B 4/20 Apr24 Bel tr.t.5f fst 1:023 RAINER: +180Days(3.00 \$0.00) Mdn2ndStart(4.00 \$0.00) BlinkOf 8 Our Son Jake Own: Script R Farm 12-1 Red, Blue Braces, Blue And White 'R,' OAVIS D (72 13 8 15.18) 2022: (419 87.21) Previously trained by Miceli Michael 2021(as of 12/18): (129 180 22 462 5811.104 S)Md Sp Wt 70 S)	B 6/14 Apr16 Beltr.t4f fst :482 B 19/221 Āpr11 Beltr.t5f fst 1: f(6.17 \$9.58) Dit(63.05 \$1.04) Sprint(52.08 \$1.61) MdnSpWt(13 B. c. 3 (Apr) FTK0CT20 \$30,000 Sire: Tiznow (Cee's Tizzy) \$40,000 Dam: Felisa (Harlan's Holiday) Br: Rhapsody Farm LLC (NY) Tr: Brocklebank Joseph(—) (—) 22 21 17 0.17) lk 53 10/12 4 32½ 46½ 513 413¾ McCarthy T lok 35 5/8 5 62½ 54 57 56 Davis D	:004 B 3/13 Apr5 :.08 \$4.46) 118 119 39.0 119 12.3	0 77–11 6 Bel tr.t: Life 2021 2020 Bel 0 75–15 0 70–19	AvKs ffst 1: 2 N 0 N 1 Bold Bali's fst 1:0	Boy1 022 B 1 0 1 0 1 0 1 0 1 0 1 Shad 12 B	191 Th 2/20 0 0 0 0 0 e1192 9/23 M	**************************************	53 53 53 - 35 Code1	Dst(393) Money Mery fst 1:04 B 16/ 21-22 BEL (5 D.Fst Wet(393) Synth Turf(290) Dst(351) 19\(\frac{3}{4} \) Raw Coulo 6 Hot Rod Ri	ger11 18 40 \$4 2 0 0 0 2 rage	19¾ 4.22) 0 0 0 0 0 1206½ le119	Very J/T 20 0 0 0 0 0 0 0 0 0 0 0 0	rank9/16,check 21-22(16 .19 \$1.0 \$7,200 \$0 \$0

\$0 - Turf(219) 0 0 0 0 \$0 - Dst(340) 0 0 0 0 ORTIZ I JR (29 11 6 3 .38) 2022: (442 122 .28) Tr: Levine Bruce N(5 1 0 1 .20) 2022:(54 7 .13) Bel 0 0 0 0

2

Belmont Park

Clm 35000N3L



6 Furlongs (Turf). (1:053) CLAIMING. Purse \$45,000 (UP TO \$7,830 NYSBFOA) For Three Year Olds And Upward Which Have Never Won Three Races. Three Year Olds, 120 lbs.; Older, 125 lbs. Non-winners Of A Race Since November 1 Allowed 2 lbs. Claiming Price \$35,000 (1.5% Aftercare Assessment Due At Time Of ClaimOtherwise Claim Will Be Void)(If There Are No Three Year Olds Entered, Starting Weight Shall Be 123 lbs). (If the Stewards consider it inadvisable to run this race on the turf course, this race will be run at Six Furlongs on the Main Track.) (Rail at 27feet).

230x27_88el fm 6 fg 214 .44; 5641083 34 Alw 50000s	Post time: 1:34 ET	Wag	ers: Exacta, 0	Quinella, Trifec	ta (.50), Super	(.10), I	Pick	3, Pic	:k 4 (.50),	Dou	ble				Beyer	par: 82	!
The Control Control Primary Name and P	1 Stanhone	D						Life	23	2 3	3	\$123,700	78	D.Fst	4 0	1 0	\$16,451	54
## 500MEZ J. 4(\$ 6.5 4) 7.1) 2012. (68 5 1.4) 9.15 **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5) **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5 **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5 **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5 **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5 **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5 **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5 **Revisional Tuttinet by Posts Stays-2013. 4(\$ 6.5 3) 8.1.5 **Revisional Tutt	Own: Catapano Frank and Primpas Nicho	olas n						2022	4	0 1	2	\$19.920	76					
SeMBEZIA (S. 6.4 9.1.1) 2022-(S. 6.9.7 1)	5-2 Black And Yellow Stripes, Black And	\$35,000 B				L 1	185											
24-92-2-1-94 The Fig. 23-92-2-3-1-94 Alway 2000s 75-7-3-5 2-1-3-2-3-1-94 Alway 2000s 75-7-3-5 2-1-3-2-3-1-94 Alway 2000s 75-7-3-5 2-1-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-	GOMEZ J A (56 6 4 7 .11) 2022: (468 67 .14)				3 .12)							500	- 1					
158-022-4-039 67 22 - 48-110-1124 46 Im 2000ub, 27 15 2 11 12 34 17 14 15 54 17 17 17 17 17 17 17 1			76 4/8 1	1 1 1 21 4	Castellano J J	L121	3.30							NIT(00) 10	, ,		200	
\$36022-5840 gifs ff 622 s.45 351-154 fc 621-100000.h. 223 43 3 1 1 1 1 1 1 1 1			F7 0 /F 0	04 41 041 001	N	1 400	0.00	70.00	ь .		. 4004		1	104 Ct	40002			1 1
Claimed From Witz Frank for \$4,400, Rodriguez Bung R Trainez 201: 151 \$8 80 \$7 0.07	13Feb22-4Aqu siy5 bf 232 :4821:0011:1244A	CIM 25000N3L																
1.4822-7.3624 oil 57 67 22 4-5 371-1039 1 Clin 2000 77 1 / 7 2 7 1 2 11 1 13 Comman JAN 1 10 Comman JAN 1 2 10 22 4-5 371-1039 1 Clin 2000 77 1 / 7 2 7 1 2 1 1 1 1 2 Comman JAN 1 2 1 1 1 1 1 3 Comman JAN 1 2 1 1 1 1 1 3 Comman JAN 1 2 1 1 1 1 1 3 Comman JAN 1 2 1 1 1 1 1 3 Comman JAN 1 2 1 1 1 1 1 1 3 Comman JAN 1 2 1 1 1 1 1 1 3 Comman JAN 1 2 Comm	Claimed from Witz Frank for \$14 000 Rodrigue	UIM C-14000N3L			Gomez J A	L113	" 1.80	DU- 10	Euch	aristi	IQo DE	e Ro IZ3nk	Wacr	10 BOY 1203		UIrZp	// 16,raii 1/4	4,та ае
2800274-049 gd 8f 0					Gomez J A10	L110	10.00	85-14	Dream	n Riad	ner120	1 Dark Mo	nev12	3 Stanhone	1101	Promo	ted led ca	aught
Heave21-Anal og 6 fi															110			
20021-8el fm 6f				31 21 33 541	Lezcano J		9.10	82-18	King	Angelo	1221	UnclGor	q1222	Gonahiftch	v120 1	Chased	2-3w. wkno	d late
289g21-859r fm 1		Alw 50000s	76 7 / 12 1	12 15 14 72	Saez L	L123b	17.90	88-12	Ringo	fFire1	23hd	(ingJame	s 1201	CousinAnd	rew123n	o Instu	rn,drw off	tired
28/26/27-58r fm St fig 21 449. 5611423 4Am 5000s			51 4/12 5	111 13 311 1113	Castellano J J													
Table Tabl			71 3/10 7	761 78 77 431	Ortiz I Jr	L124b												
Claimed from Zimměrman Scott for \$35,000, Toxocan John TJ 71 44 3m +11 4 Castellano J 14 25 m +11 4 25 m +11 4 Castellano J 122			68 7 / 10 14	1 110 17 11 674	Ortiz I Jr													
13.0m2f-3ed fm 6f D 21 43 - 35 1.083 3 Clamon 123 1.083 2 Clamon 123 Clamon 12			72 6 /8 5	42½ 3½ 1hd 3¾	Castellano J J	L 125 b	4.00	90-09	Much	Bette	r123¾	Ahead of	Plan 12	3hd Stanho	je125hd	5-6w 1	4,led,foug	jht on
## WORKS:	Claimed from Zimmerman Scott for \$35,000, 10	oscano John I Jr				1 1226	c 00	00 10	Ctonk	1	2211 C	luan Take	1223	Clama#1221		2	لمسلم سم	
## RAINER: 2014-5-18010. 10 \$150 TurtSprints (8.00 \$10.00 Turt(12.00 \$10.00 Sprint(12.11 \$1.517 Claim/25 88 \$1.00) ## RING OF Fire Comparison Formal LC Substitution (Series West) \$30.00 Sprint(12.11 \$1.517 Claim/25 88 \$1.00) ## RAINER: 2014-5-180 Fire Formal LC Substitution (Series West) \$30.00 Sprint(12.11 \$1.517 Claim/25 88 \$1.00) ## RAINER: 2014-5-180 Fire Formal LC (%) ## RAINER: 2014-5-18				412 3114 112 114	Castellano J J	L IZ3D	6.00	30-10	Stanr	10pe 12	23 4 5	liver Toke	11234	Clamor 123	i.	sw up	pr, eagea	away
Principal Prin				\$1.37) Claim(25 .08 \$	1.09)								J/T 20	21-22 BEL(2	.00 \$0.00) J/T 202	1-22(5 .20	\$3.16)
Over: Windoytes Farm LLC Over: Windoytes Farm LLC Over: Windoytes Farm LLC S35,000 S35								l ife	10	2 3	2	\$94 163	83	D Fst	4 N	1 2	\$14 421	64
2-1 Kelly Green, Gold Circle And Nr. Gold S35,000 Br. Wester Farm LLC (Kry) And Nr. Sold Save And Sold (1987) Br. Wester Farm LLC (Kry) Br. Wester Br. Weste												HART MALES						
DAVIS D (72 13 8 15 .18) 2022 (49 87 21) Tr. After 8 m(n(11 23 0 -1)) 2022 (119 30 25) Tr. After 8 m(n(11 23 0 -1)) 2		\$35 000 D	am: Brushed by a Sta	ar (Eddington)			122					ATTENDED TO SECOND	0.000					
20No/21—Baqu fm 6f @ 23 :46 :574:1994 34 Alw 20000ntx 230x21—BBel fm 6f @ 27 :4 :44 :564:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :564:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :564:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :564:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :564:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 230x21—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1089 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :456:1080 34 Alw 20000ntx 240x22—BBel fm 6f @ 28 :44 :		, в			25)		123	2020	3 1	VI O	2	0.0	- 1				\$71,992	2 83
230x27_88el fm 6 fg 214 .44; 5641083 34 Alw 50000s	DAVIS D (72 13 0 13 10) 2022. (413 07 21)		i. Adas Rou(ii 2	3 0 .10) 2022.(113 30	23)			-									100	
230x27_88el fm 6 fg 214 .44; 5641083 34 Alw 50000s	20Nov21-8Aqu fm 6f ① 231 :461 :5741:094 34	Alw 82000n1x	66 7 / 10 10	981 1010 1010 108	Davis D	L120 f	9.50	77-14	Scutt	lebuzz	122nk	CIIMeHrr	y 122no	ColtonsCo	mmnd12	01 4 wi	de, no resp	ponse
23 23 24 25 27 25 25		Alw 50000s				L123												
Previously trained by Contreras Cipriano 221(as of 6/8): (159 31 33 22 .19) 3_bun21-2Ind sly 6																		
Sum2-2-12ind slys 6f 22! 444: 564-1093 34 Md Sp W1 31k 64 8 / 9 4 42 413 312 22 465 584 1132-13329 34 Md Sp W1 31k 64 8 / 9 4 42 413 312 22 465 584 1132-13329 34 Md Sp W1 31k 64 8 / 9 4 42 413 312 22 Esquive E L124 ** 1.20 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-18ind fist 5jf 22! 465 :584 1.093 34 Md Sp W1 31k 64 8 / 9 4 42 413 312 22 Esquive E L124 ** 1.20 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-18ind by Calabano Wayne M 20200 so f 5j2): 649 9 12 16 0.11) 45 3 1/ 14 52 65 5 6 5 8 30 Esquive E L124 ** 1.20 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-18ind by Calabano Wayne M 20200 so f 5j2): 649 9 12 16 0.11) 45 3 1/ 14 52 65 5 6 5 8 30 Esquive E L124 ** 1.20 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-18ind by Calabano Wayne M 20200 so f 5j2): 649 9 12 16 0.11) 55 43 1/ 14 52 65 5 6 5 6 5 8 30 Esquive E L124 ** 1.20 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-18ind by Calabano Wayne M 20200 so f 5j2): 649 9 12 16 0.11) 55 43 1/ 14 52 65 5 6 5 6 5 8 30 Esquive E L124 ** 1.20 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-18ind by Calabano Wayne M 20200 so f 5j2): 649 9 12 10 0.11 64 1/ 120 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-18ind by Calabano Wayne M 20200 so f 5j2): 649 9 12 10 0.11 64 1/ 120 82-19 Tapit's Spirit1203 Ring of Fire*1242 West Warpath1243 Duel str., exch bmps 13kµr22-14ind by Calabano Wayne M 20200 Spirit by Calab	29Aug21-2Sar fm 51f 7 214 :452 :5721:033 34	Md 50000	75 3 / 10 5	52¼ 41½ 1½ 1no	Franco M	L124	8.40	83-14	Ringo	ofFire	124no	PrtnersH	ope119	11½ RogersG	ingr1192	Fract	ious gate,	4w1/4
4May21-Bind mys 1 & 8 2 42 489 1;131-1329 3 Mid Sp Wt 31k 48 64 8/9 4 42 4½ 3½ 2½ Esquivel E L124 41.201 22 461 : 59 1:054 3 Mid Sp Wt 31k 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L129 34 38 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L129 34 38 Esquivel E L128 45 3,11 4 524 652 584 39 Esquivel E L129 34 67 1,12 1,13 31 44 64 M Sp Wt 45k A5 7,12 11 1bd 2bd 1022 11254 Geroux F L120 34 3,00 84-11 Olson12014 Established12034 Ring of Fire1184 Stalk bwt,faded A5 7,12 11 1bd 2bd 1022 11254 Geroux F L120 34 3,00 84-11 Olson12014 Established12034 Ring of Fire1184 Stalk bwt,faded A5 7,12 11 1bd 2bd 1022 11254 Geroux F L120 34 3,00 84-11 Olson12014 Established12034 Ring of Fire1184 Stalk bwt,faded A5 7,12 11 1bd 2bd 1022 11254 Geroux F L120 34 3,00 84-11 Olson12014 Established12034 Ring of Fire1184 Stalk bwt,faded A5 7,12 11 1bd 2bd 1022 11254 Geroux F L120 34 3,00 84-11 Olson12014 Established12034 Ring of Fire1184 Stalk bwt,faded A5 7,12 11 1bd 2bd 1022 11254 Geroux F L120 34 3,00 84-11 Olson12014 Fire12014 Rother for fire12014 Rother for fire12014 Rother for fire184 Rother f			31 33 22 0.19)	01 40 051 401	E 8 0E	1 404	0.00	05 44			4007		4004	D . T	4004		•	
13Apr21-Blind fist 5\ff 22 4.46 1.36 1.05 23 M d Sp Wt 31k																		
18Lim2D-clind fst 5 22																		
Previously trained by Catalano Wayne M 2020(as of \$12): (84 9 12 16 0.11) Work St. May Beltr. 473 1:1141.3721.494 Md Sp Wt 66k 45 7/10 2 21 123 123 123 123 120 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0					Communication of the second													
2 2 2 2 3 3 3 4 1 1 1 1 3 2 1 2 1 1 1 6 2 6 1 1 2 1 2 3 3 3 3 8 4 1 1 0 1 0 5 1 2 1 2 1 2 1 2 1 2 1 3 2 3 3 3 8 4 1 1 0 1 0 5 1 2 1 2 1 2 1 2 1 2 1 3 2 3 3 8 4 1 1 0 1 0 5 1 2 1 2 1 2 1 2 1 3 2 3 3 8 4 1 1 0 1 0 5 1 2 1 2 1 2 1 2 1 2 1 2 1 3 2 3 3 8 4 1 1 0 1 0 5 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 3 2 3 3 8 4 1 1 0 1 0 5 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1				J-2 002 J02 J0	L'Squivei L	L110	1.00	//- 10	Delili	y 12274	Kon	LIIE KICII I	10°4 K	illy of Fire i	104		otaik biw,i	iaueu
38\frac{1}{3}\frac{1}				1 1hd 2hd 1022 1125	Geroux F	L122	9.40	67-06	Hunt	the Fi	ront12	21 Friar's	Road	1221 WildUn	ion1223	Gave w	av when he	eaded
Ray Reltr. 44f fst : 489 B 27/66 Apr30 Beltr. 44f fst : 489 B 27/67 Apr30 Apr30 Beltr. 44f fst : 489 B 27/67 Apr30																		
Bingo John Own: Pregman Jr John S 12-1 Gray, Red Ball And Collar, Red Dots On CASTELLANO J J (35 5 4 3 .14) 2022: (390 65 .17) B. r. 4 (Apr) 0BSAPR20 \$37,000 Sire: 0xbow (Awesome Again) \$7,500 Dam: A. P. Petal (A.P. Indy) Tr: Pregman John S Jamar22-2Aqu fst 1 Ogredoz-5Aqu fst	WORKS: May9 Bel tr.t 4f fst :493 B 27/66 Apr30 Bel	tr.t 4f fst :484 B 31,	/147 Apr21 Beltr.t	4f fst :482 B 9/56 Apr	10 Bel tr.t 4f fst :512 l	B 135/159	Apr2	Beltr.t:	3f fst :	363 B	3/35	Mar27 Belt	r.t 3f f	t :362 B 6/37	t.			
Size Driving Size	TRAINER: 61-180Days(54.26 \$2.63) TurfSprints(37.	.30 \$2.55) Turf(90 .1	9 \$1.94) Sprint(257	.25 \$1.74) Claim(227 .2	6 \$1.69)							J	T 2021	-22 BEL(13).	15 \$1.15)	J/T 2021	-22(50 .20 :	\$1.36)
11-1 Gray, Red Ball And Collar, Red Dots On CASTELLANO J J (35 5 4 3.14) 2022: (390 65.17) 12-1 Gray, Red Ball And Collar, Red Dots On CASTELLANO J J (35 5 4 3.14) 2022: (390 65.17) 12-1 Gray, Red Ball And Collar, Red Dots On Tr: Preman John S Jr (2 0 0 0 .00) 2022: (22 2 .09) 12-2 Bapt 22-2 Agu fst 1	2 Ringo John							Life	13	2 1	2	\$131,035	73	D.Fst	8 1	1 0		
T2-1 Gray, Red Ball And Collar, Red Dots On \$35,000 Br: Dr Jerry Billinski & Kenny Toye (NY) CASTELLANO J J (35 5 4 3.14) 2022: (390 65.17) Br: Dr Jerry Billinski & Kenny Toye (NY) Tr: Pregman John S Jr(2 0 0 0 0.0) 2022: (22 2.09) 68 5/7 65½ 68 45 47½ 49¾ Castellano J J L119b 25.25 58-32 NoSalt1195½ JustRight119∞ VintgeHollywood1194¼ Saved ground, no avail 1.60 6Feb22-2Aqu fst 1 24 .471:11211.383 44 Clm 25000N3L 72 1/7 1/12 1.381 44 Clm 25000N3L 72 1/7 1/2 1.381 44 Clm 2500N3L 72 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/		D.						2022	5	0 1	D	\$17.615	72					
CASTELLANO J J (35 5 4 3.14) 2022: (390 65.17) Tr:	12-1 Gray, Red Ball And Collar, Red Dots On					L	123											
28Apr22-3Bel fst 1					:(22 2 .09)	_												
31Mar22-2Aqu fst 1 20Feb22-5Aqu fst 1 20Feb22-5Aqu fst 1 224 471:1211:384 4 Clm 25000N3L 72 1/7 42½ 52½ 58⅓ 35½ 26¼ Herndz Moreno 07 L114b 11.60 64-31 Amount1236 Corkman1233½ Majestic Tiger123½ Insturn,2p1/4,mvd out 3/16 6Feb22-2Aqu fst 1 24 471:1211:383 4 Clm 25000N3L 72 1/7 42½ 52½ 58⅓ 35½ 26¼ Herndz Moreno 07 L116b 13.20 74-23 Famished1206¾ Bingo John116hd Corkman1232 Insturn,2p1/4,mvd out 3/16 6Feb22-2Aqu fst 1 24 471:1211:383 4 Clm 25000N3L 75 1/6 43½ 44 47 49¼ Ramos C5 L118b 13.20 74-23 Famished1206¾ Bingo John116hd Corkman1232 Insturn,2p1/4,mvd out 3/16 13.20 74-23 Famished1206¾ Bingo John116hd Corkman1232 Insturn,2p1/4,mvd out 3/16 13.20 74-23 Famished1206¾ Bingo John116hd Corkman1232 Insturn,2p1/4,mvd out 3/16 13.20 74-23 Famished1206¾ Bingo John116hd Corkman1232 Insturn,2p1/4,mvd out 3/16 13.20 74-23 Famished1206¾ Bingo John1120k Air Show1232¼ Garmouche K L123b 13.30 65-27 My First Grammy1138¾ Opt120k Air Show1232¾ Garmouche K L123b 13.20 63-27 My First Grammy1138¾ Opt120k Air Show1232¾ Garmouche K L120b *2.90 69-29 American Rule1224¾ Pier Forty1242¾ Fast Breat1223¼ 5-6w upper, weakened 65 10/14): (789 212 143 106 0.27) Hand timed 120b 17.20 40-19 Americnrvolution1245 Bobby Bo11811½ ItsGmbl124½ Brshd brk,2-3w,falterd 73 5 /8 21 ½ 21 21 710 78 Geroux F L120b 10.20 79-09 Kaz's Beach125hd Saint Selby1204 Devil's Code125¾ 3-4w uppr, noresponse 66 1/6 53 55 54½ 58 51½ 58 33½ Franco M L120b *2.70 65-24 Too Early1261¾ Tiergam12411¾ Our Man Mike1204 3-4wide,drifted in 1/8 28Mar21-3Aqu slys 1 24 4811:14 1.401 SMd SpWt 70k 66 9/9 31 31 31 11 11 11 11 11 Fanco M L120b *1.50 Na 120b 1120b *1.50 Na 120b 1120 My BrothrNI120nk FullMoonFvr1203¾ 3w upper, inched away	004 00 00 1 (. 41 004 40 4444 40 0.	=00 451 /O. N	CO E /7 C	1 00 45 471 402	Occidence III	1 4401	05.05	_										
20Feb22-5Aqu fst 1																		
6Feb22-2Aqu gd 1 22Jan22-2Aqu fst 1 24 :4721:1231:38144 Clm 25000N3L 24 :4721:1231:373 44 Clm 35000N3L 47 6 /7 53½ 74¼ 79¾ 716 621¾ Carmouche K L123b 13.90 63-07 My First Grammy1138¼ Opt120nk Air Show1232¼ 6w upper, tired 140ct21-7Bel fst 1 23 :47 1:1131:363 34 Clm c-20000B Claimed from Mancari, Frank, Greco, Pat and Cloonan, Michael P. for \$20,000, Cox Brad H Trainer 2021(as of 10/14): (789 212 143 106 0.27) Hand timed 27Aug21-9Sar fst 11½ 471 1:1141:37 1:494 [S]AlbanyB250k 73 5/8 21 2½ 2hd 846 Franco M L120b 73.50 74-22 BingoJohn120nk JoeyLooseLips1183 Our Mn Mikt 1204½ 3wide,ask5/16,chsd,up 66 7 7/11 9 88½ 912 710 78 Geroux F L120b 12.20 79-09 Kaz's Beach125hd Saint Selby120d Devil's Code125¾ 3-4w uppr, no response 6May21-3Bul sill 14 1:401 [S]Md Sp Wt 70k 66 9/9 31 3½ 31½ 1hd 11¼ Franco M L120b *1.85 72-22 BingoJohn120nk Joehn120nk																		
22Jan22-2Aqu fst 1 24 :4721:1231:373 44 Clm 35000N3L 47 6 /7 53½ 74¼ 79¾ 716 621¾ Carmouche K L123b 13.90 63-07 My First Grammy1138¼ 0pt120nk Air Show1232¼ 6w upper, tired 140ct21-7Bel fst 1 23 :47 1:1131:363 34 Clm c-20000B 65 6/8 53 53 44½ 57 410½ Franco M L120b *2.90 69-29 American Rule1224½ Pier Forty1242¾ Fast Break1223¼ 5-6w upper, weakened Claimed from Mancari, Frank, Greco, Pat and Cloonan, Michael P. for \$20,000, Cox Brad H Trainer 2021(as of 10/14): (789 212 143 106 0.27) Hand timed 227Aug21-9Sar fst 1½ 471 1:1141:37 1:494 S Albany B250k 73 5/8 21 ½ 2hd 3 1nk Franco M L120b 17.00 17.																		
140ct21-7Be fst 1	22 lan22 2Aqu fet 1 24 .4721.1231.273 44	CIII ZOUUNSL	17 6 /7 53	3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Kallios Co	L 193 h	13.20	62 07	My F	uulida iret Ci	y IZU	11281 On	1072 IV	Air Chow12	290UL 12			
Claimed from Mancari, Frank, Greco, Pat and Cloonan, Michael P. for \$20,000, Cox Brad H Trainer 2021(as of 10/14): (789 212 143 106 0.27) Hand timed 27Aug21-9Sar fst 11/4 471:1141:37 1:494 SBALW 90000N1X 5Aug21-8Sar fst 11/4 484 1:1331:3831:521 34 SBALW 90000N1X 4Jun21-6Bel gd 6gf C 221 :45 1:1011:17 34 SBALW 90000N1X 6Aug21-3Bel fst 11/4 4851:1313-341:503 34 SBALW 9000N1X 6Aug21-3Bel fst 11/4 4851:1313-341:503 34 SBALW 9000N1X 6BMay21-3Bel fst 11/4 4851:1313-341:503 34 SBALW 9000N1X 6BMay21-3Aqu slys 1 4Feb21-8Aqu gd 1 24 :4811:14 1:401 SBM SW t70k 6B 9 9 31 31/2 11/4 11/4 Franco M Claimed from Mancari, Frank, Greco, Pat and Cloonan, Michael P. for \$20,000, Cox Brad H Trainer 2021(as of 10/14): (789 212 143 106 0.27) Hand timed 120b 17.20 40-19 American rovolution 1245 BobbyBo11811½ IssGmbl124½ Brind blk,2-3w,falterd 120b 17.20 40-19 American rovolution 1245 BobbyBo11811½ IssGmbl124½ Swide,ask5/16,chsd,up 27Aug21-8Bar fst 11/4 Franco M L120b 17.20 40-19 American rovolution 1245 BobbyBo11811½ IssGmbl124½ Swide,ask5/16,chsd,up 28-4 221 :45 1:1011:17 34 SBALW 80000N1X 6B 4/6 55 55 54½ 58 514 Franco M L120b 17.20 40-19 American rovolution 1245 BobbyBo11811½ IssGmbl124½ Swide,ask5/16,chsd,up 28-4 221 :45 1:1011:17 34 SBALW 80000N1X 6B 4/6 55 55 54½ 58 514 Franco M L120b 17.20 40-19 American rovolution 1245 BobbyBo11811½ IssGmbl124½ Swide,ask5/16,chsd,up 28-4 221 :45 1:1011:17 34 SBALW 80000N1X 6B 4/6 55 55 54½ 58 514 Franco M L120b 17.20 40-19 American rovolution 1245 BobbyBo11811½ IssGmbl124½ Swide,ask5/16,chsd,up 28-4 221 :143 106 0.27 4-22 BingoJohn120* Swide,ask5/16,chsd,up 28-4 24 1-45 1:1011:17 34 SBALW 80000N1X																		
27Aug21-9Sar fst 1½			P. for \$20 000 Co	x Brad H Trainer 201	1(as of 10/14). (780	212 14	3 106	0.27) 1	Hand	timed	uit ILL	411011	i ty 124	-4 i ast brea	VITT.	J-UW U	ppei, weak	Keneu
5Aug21-8Sar fst 1½ 484 1:1331:3831:521 3↓ SALW 90000N1X 73 5 /8 21 2½ 2½ 2½ 23 1nk Franco M L120b 3.50 74-22 BingoJohn120nk JoeyLooseLips1183 ÕurMnMikl:204½ 3wide,ask5/16,chsd,up 6.6 np. fs. fs. fs. fs. fs. fs. fs. fs. fs. fs												n1245 Boh	byBo'	18111 ItsGn	1b 1241	Brshd I	rk.2-3w.fa	alterd
4Jun21-6Bel gd 64f C 22! :45 1:1011:17 34 SAW 80000N1X																		
6May21-3Bel fst 11/8 463 1:1131:3741:503 34 SALW 80000N1X 28Mar21-3Aqu slys 1 224 :4541:1031:382 SOC 80k/N1X-N 66 9 4 /6 56 57/2 46 454 31/2 Franco M L120 270 65-24 Too Early12612 Tiergan124112 Our Man Mike1201 3-4wide,drifted in 1/8 L122b 4.60 80-15 Lobsta122nk Schokolade120nk Bingo John1221 4-5w 1/4, missed, fog L120b *1.85 72-22 Bingo John120112 MyBrothr N1120nk Full MoonFvr1203 34 wupper, inched away																		
28Mar21-3Aqu slys 1 224 :4541:1031:382 SOC 80k/n1x-N 69 4 /6 56 57½ 46 45½ 3½ Franco M L122b 4.60 80-15 Lobsta122nk Schokolade120nk Bingo John122½ 4-5w 1/4, missed, fog 4Feb21-8Aqu gd 1 24 :4811:14 1:401 SIMd Sp Wt 70k 66 9 /9 31 3½ 3½ 1nd 11¼ Franco M L120b *1.85 72-22 Bingo John120¼ MyBrothr N1120nk FullMoonFvr120¾ 3w upper, inched away			66 1/6 5	3 55 54½ 58 514	Franco M													
4Feb21-8Aqu gd 1 24 :4811:14 1:401 SMd Sp Wt 70k 66 9/9 31 3½ 31½ 1hả 11¼ Franco M L120b *1.85 72-22 Bingo John 1201¼ My Brothr NI 120nk Full Moon Fur 1203¾ 3w upper, inched away			69 4 /6 56	5 571 46 451 31	Franco M	L122b	4.60	80-15	Lobst	ta 122ni	k Sch	okolade12	Onk Bi	ngo John12	21/2	4-5w	1/4, missed	d, fog
	4Feb21-8Aqu gd 1 24 :4811:14 1:401 [s Md Sp Wt 70k	66 9 / 9 31	1 3½ 31½ 1hđ 11¼	Franco M											3w upp	er, inched	away
WORKS: ANGEODETICATED 18:190 9 1//02 Malay DETICATED 18:190 0 1//02 **PORTING A 19-11-11-11-11-11-11-11-11-11-11-11-11-1	WORKS: Apr22 Bel tr.t 4f fst :481 B 10/55 Mar20 Be																	-

 $\label{eq:JT2021-22BEL} \mbox{J/T} \mbox{2021-22} \mbox{BEL} \mbox{(5 .20 $2.84)} \mbox{ J/T} \mbox{2021-22} \mbox{(8 .13 $1.77)}$

TRAINER: 1stTurf(4.00 \$0.00) TurfSprints(15.00 \$0.00) Dirt/Turf(6.17 \$1.33) Route/Sprint(12.00 \$0.00) Turf(47.04 \$0.47) Sprint(39.00 \$0.00)

Daily Racing Form Belmont Park (5/14 Secret Rules Entered For Main Track Only

Secret Kules Entered	For Main Track Only	
4 Secret Rules Own: LRE Racing LLC and JEH Racing Stable 4-5 Hot Pink, Black 'Lre,' Black Seams On \$35,000 LEZCANO J (50 10 5 12 .20) 2022: (302 46 .15)	B. g(07.15.21) 5 (Mar) Sire: Secret Circle (Eddington) \$3,000 Dam: Missy Rules (Peace Rules) Br: Hill 'n' Dale Equine Holdings Inc (Ky) Tr: Mott William I(12 1 2 2 .08) 2022:(190 40 .21)	Life 13 2 6 2 \$210,044 93 D.Fst 10 2 4 1 \$167,444 93 2022 3 0 1 0 \$25,200 78 Wet(412) 3 0 2 1 \$42,600 88 2021 4 0 2 1 \$44,244 93 Turf(318) 0 0 0 0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
2Apr22-6Aqu fst 1 27Feb22-7Aqu fst 6f C 214 :451 :58 1:11 14 0 C 62k/n2x -N 18Jan21-6Aqu fst 6f 13May21-9Bel fst 6f 13May21-9Bel fst 6f 222 :451 :593 1:10 14 0 C 62k/n2x -N 18Jan21-6Aqu fst 6f 224 :465 :573 1:101 44 0 C 62k/n2x -N 18Jan21-6Aqu fst 6f 224 :465 :573 1:101 44 0 C 62k/n2x -N 27Nov20-7Aqu gd 6f 27Nov20-7Aqu gd 6f 224 :451 :5711:102 4+ 0 C 62k/n2x -N 27Nov20-7Aqu gd 6f 225 :451 :5711:102 4+ 0 C 62k/n2x -N 27Nov20-7Aqu gd 6f 226 :451 :5711:102 4+ 0 C 62k/n2x -N 27Nov20-7Aqu gd 6f 227 :451 :5711:102 3+ 0 C 62k/n2x -N 28Feb20-8Aqu fst 6f 23 :4611:1114:19	77 6 / 6 1 3 3 1 2 3 3 1 3 1 45 2 Carmouche K L119 b *1.1 78 5 / 6 3 3 1 2 2 35 2 10 2 Morrison A 10 L108 b 3.5 77 8 / 10 4 3 2 2 3 1 69 2 Zayas E J L121 b 5.5 91 7 / 7 1 2 1 1 1 1 2 1 2 1 1 Morales P L122 b *1.5 90 4 / 8 2 2 2 1 1 1 2 2 2 2 2 2 2 2 2 1 Morales P L118 b *1.5 93 8 / 8 3 2 1 2 2 2 2 2 2 2 2 2 2 2 1 Morales P L118 b *1.5 88 7 / 8 3 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	70-16 Sound Money1191\(^2\) Sibelius119\(^9\) Lil Commissioner119\) 10 82-17 Amundson118\(^2\) Prince James1182\(^2\) Fast Getaway1182\(^4\) 4w turn,bid5/16,tired 55 73-30 \(\text{WdUThnkNow1201\(^2\) ScrtRIs108\(^2\) CompttySnt120\(^4\) Prompted 3w, no match 56 85-16 ThrTchniqu121\(^k\) MontukTrffic121\(^k\) YodIEAWho123\(^2\) Outside,3p turn,tired 57 85-22 \(\text{Mihos1221\(^4\) Secret Rules1221 \(\text{Big Engine124\(^4\)} \) 58 93-15 \(\text{MiTresPorGiento1201\(^4\) WickedTrick1181\(^4\) Secret Ruls1181\(^4\) Dueled 2x, kept on 58 93-19 \(\text{Chateau1191\(^4\) Secret Rules1183\(^4\) T Loves a Fight118\(^k\) Stalked 2w, late gain 70 12 \(\text{Pete's Play Cal/I122} \) Secret Rules120\(^4\) Chateau122\(^4\) JohntaukTrffic1181\(^4\) Secret Rules120\(^4\) Thateau122\(^4\) In hand 2p, tired 70 12 \(\text{Pete's Play Cal/I122} \) Secret Rules120\(^4\) Chateau122\(^4\) TontaukTrffic1181\(^4\) Secret Rules122\(^4\) PolarBearPete120\(^4\) TrashTalker1222 \(\text{In hand 2p, drew off} \) 75 \(\text{4-1} \) Secret Rules122\(^4\) PolarBearPete120\(^4\) TrashTalker1222 \(\text{In hand 2p, drew off} \) 76 \(\text{4-1} \) Secret Rules139\(^4\) AlwyMisbehving119\(^4\) FitterMe119\(^4\) AlwyMisbehving119\(^4\) FitterMe119\(^4\) Default Rate119\(^4\) Secret Rules119\(^4\) Secret Rules119\(^4\) Default Rate119\(^4\) Secret Rules119\(^4\) Secret Rules119\(^4\) Default Rate119\(^4\) Secret Rules119\(^4\) Secret Rules119\
5 Steelersfanforlife Own: Gyarmati Leah and Polar Express Racin 15-1 Gray, White Triangle, White Sleeves CARDENAS L (27 2 1 3 .07) 2022: (83 4 .05)	Tr: Gyarmati Leah(3 0 0 0 .00) 2022:(16 1 .06)	Bel⊕ 12 2 3 1 \$116,458 80 Dst⊕(367) 4 0 0 1 \$7,868 76
	66 3 /11 963 95½ 944 95 108 Hernandez B L121b 29.7 60 1/9 8 844 833 863 79 Alvarado J L120b 17.3 N 69 6 /9 7 87½ 87 98 863 Alvarado J L121b 30.7 N 73 1/12 10 95½ 105¾ 75½ 65¾ Alvarado J L121b 30.7 N 77 3 /12 7 52½ 42½ 2½ 11 Alvarado J L121b 9.2 X 76 7 /9 8 75 74½ 54 32¾ Alvarado J L121b 9.2 X 60 9 /10 54 68 53 55½ 57¾ Alvarado J L121b 14.2 X 60 9 /10 54 68 53 55½ 57¾ Alvarado J L121b 14.2 X 72 5 /12 75¼ 85¼ 72¾ 3½ 41¾ Alvarado J L123b 20.7 X 72 5 /12 75¼ 85¼ 72¾ 3½ 41¾ Alvarado J L123b 20.7 X 56 6 /9 21½ 21 2hd 63 713½ Maragh R R5 L119b 21.2 X 58 3/8 11½ 13 1½ 56½ 714½ Martinez J R L121b 5.7	51-25 DeputyFlg1136 MrchntsofCool120\frac{1}{2} IrishGint123\frac{1}{2} Bmpd brk,easd,wlkd off 51-25 DeputyFlg1136 MrchntsofCool120\frac{1}{2} 3-4w trns,7w into lane 80-11 DncngBuck120n-PhntomSmok1201\frac{1}{2} Swshbuckl120n\frac{1}{2} 5-6w uppr, no impact 78 89-05 CallMeHrry121\frac{1}{2} DncingBuck1201\frac{1}{2} StrwIntoGold120n\frac{1}{2} 2w 1/4p, no response 90 75-22 Mo Maverick120n\frac{1}{2} Bustin Shout124\frac{1}{2} Call Me Harry120\frac{1}{2} 2w,5w 1/8,no bids 20 79-24 Steelersfanforlife1211 BdGuy123\frac{1}{2} OntheCouch118n\frac{1}{2} Bmp st,ins,3w upr,splt 20 92-05 Freewheeler1202\frac{1}{2} VeternsBech123\frac{1}{2} Steelersfinforlif1211 2w1/2,6w1/8,rallied 70 76-19 Mo Ready1201 Danfusi1253\frac{3}{2} Albie1252\frac{1}{2} 2-3w pursuit, weakened 40 87-11 Turbo Drive1201 Sanctuary City120n\frac{1}{2} JimmyJazz125\frac{1}{2} 6w upper, outfinished 27 73-18 Dante's Fire1203 Jack the Cat124\frac{1}{2} Jimmy Jazz126\frac{1}{2} Spar 3w to upper, tired 70 81-11 Nutzforboltz1213\frac{1}{2} SouthernBrigd1183\frac{1}{2} QuitOutEst118n\kinside,succumbed 70 76-16 SouthernKing120\frac{1}{2} Steelrsfnforlif1151\frac{1}{2} GrddOnCurv1203 In hand ins, caught 0 Beltr.t4f fst:502 B 14/40 Mar23 Beltr.t3f fst:38 B 10/21
6 Loaded Joe Own: Iglesias Jesse Imperio Michael Blue C 12-1 Yellow, Black Horseshoe And 'I,' Black SILVERA R (8 0 2 1 .00) 2022: (388 69 .18)	Gr/ro. g(04.18.19) 6 (Mar) Sire: Papa Clem (Smart Strike) \$2,000 Dam: Vintage Brees (Medaglia d'Oro) Br: Legacy Ranch Inc (Ky) Tr: DiPrima Gregory(6 1 1 1 .17) 2022:(36 1 .03)	Life 29 2 7 3 \$134,880 74 D.Fst 7 0 2 1 \$26,863 63 2022 1 0 0 0 \$450 56 Wet(367) 3 0 0 0 \$1,898 33 2021 11 2 3 1 \$74,683 71 Turf(312) 19 2 5 2 \$106,119 74 Bel © 8 0 2 0 \$20,749 67 Dstr@(365) 5 0 3 1 \$32,953 67
SMay22-5Bel fm 11/16 (**) 221	5)N2L 59 8/12 2hd 1hd 2hd 1hd 2hd 1hd 134 Silvera R L121b 3.6 54 4/11 2 52½ 32 74½ 89½ Carmouche K L123b 13.7 62 2/10 6 65½ 66½ 55½ 86½ Lezcano J L124b 16.4 7111/11 1 42½ 41½ 1hd 12½ Lezcano J L124b 4.3 67 5/11 2 5½ 53½ 34½ 24¼ Lezcano J L124b 7.5 59 5/12 2 1 2 2hd 2½ 61¾ 7½ Rodriguez L A L124b 5.4 66 3/12 3 44½ 45 43½ 2¼ Rodriguez L A Rodriguez L A L124b 13.7 56 12/12 1 32 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 80 3½ Rodriguez L A L125b 12.0 12.6 48 9/9 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2½ 2	79-05 Be Here1218 Landbiscuit1231 El Mayor1233½ Vied w/ pair, tired 60 100 - LodedJoe121¾ DoublDvid118n° SuprWickdChrm121n° Vied 2w, edged away 70 80-10 King James120hd ElusiveEdge1231¾ MoreLikeIt1211½ Ins turn,ask1/4,empty 40 82-14 MontukDddy1242 DetrmindFury124¾ ChrilFiv0120¾ Chased ins,no response 30 81-18 LodedJoe1242¾ Everesting119¾ RiverRdmption119n° 3w upper, edged away 50 75-21 Count Down1244¾ Loaded Joe1244¾ Uncle Mo's Cat119¾ 3wide turn,willingly 40 87-08 DtrmndFry1241 RnSmttyRn118¾ CongrtsfrGlry118nk Bmpd brk,ins trn,tired 70 84-15 Ballydooley124¾ Loaded Joe124n° Count Down1241 Tip out 1/16, surged 70 89-09 On the Muscle125n° Thruster118¾ Loaded Joe125¼ 4w upper, fought on 70 58-29 Brzillionire1263¾ PrinceofCps126¾ Johnnypump1265¾ 3w 1st turn, weakened
7Jan21–3Aqu fst 1 24 :4831:1431:402 4↑ M d 20000	55 2 /6 1½ 11 11 2hd 23 Rodriguez L A L122b 7.9 3 B 110/119 Apr12 Bel tr. t 4f fst :494 B 11/20 Apr5 Bel tr. t 4f fst :50 B 24/51 Mar	90 52-29 PintMusicforMe1228 OrphnHllie12224 Bllydooly1224 Prompt outside, tired 90 68-22 Social Group1223 Loaded Joe1223 Lorenzen12263 Ins-2w,ask 3/16,held
7Jan21-3Aqu fst 1 24 :4831:1431:4024+ Md 20000 WORKS: Apr30 Beltr.t 4f fst :51 B 132/147 Apr23 Beltr.t 4f fst :51	55 2 /6 1½ 11 11 2hd 23 Rodriguez L A L122 b 7.9 3 B 110/119 Apr12 Beltr.t4f fst:494 B 11/20 Apr5 Beltr.t4f fst:50 B 24/51 Mar (30 .13 \$1.47) Sprint(53 .11 \$1.27) Claim(51 .12 \$1.69) Gr/ro. g(03.21.19) 6 (Feb) Sire: Into Mischief (Harlan's Holiday) \$250,000	90 52-29 PintMusicforMe1228 OrphnHllie12224 Blfydooly1224 Prompt outside, tired 90 68-22 Social Group1223 Loaded Joe1223 Lorenzen12263 Ins-2w,ask 3/16,held 127 Bel tr.t 3f fst : 364 B 9/37 J/T 2021-22 BEL (2 .00 \$0.00) J/T 2021-22(15 .07 \$0.61) Life 12 2 1 3 \$87,345 82 D.Fst 1 0 0 0 \$820 56 Wet(394) 0 0 0 0 \$0 0 \$0 0 0 \$0 0 0 0 0 0 0 0 0

Q Tenure	B. g(07.19.18) 6 (Jan)	I	Life 12	2 4	0	\$108,010	84	D.Fst	0 0	0	0 \$0 -
Own: John Grossis Racing Corp 5-1 Black, Gold Ball, Black 'Jg,' Gold ROSARIO J (17 1 8 2 .06) 2022: (293 63 .22)	Sire: Uncle Mo (Indian Charlie) \$160,000 Dam: Tears of Joy (Mt. Livermore) Br: Mr & Mrs Bertram R Firestone (Ky) Tr: Falcone R N Jr(7 1 1 2 .14) 2022:(62 11 .18)	123 ₂	021 3 020 4 Bel ① 5		0	\$5,200 \$21,030 \$22,790	83	Wet(403) Synth Turf(332) Dst()(358)	0 0 11 2	0 4	0 \$0 - 0 \$106,010 84
30Jly21-3Sar slyS 5∮f ⊗ 9 221 :453 :5731:04 3↑Clm 35000N3L	23 4/5 5 55½ 55 511 523 Cohen D L 122	13.50 7	71–11 Bor	bonMs	son12	23 AdvncN	tc 124	13 Mchmrthr	1ths 127	23 /	Awkward, hesitant st
21May21–9Bel fm 7f ① \$ 223 :4511:0821:202 3↑ Clm 35000N3L	70 5 / 7 7 79 65 47 45 Carmouche K L123							32∄ OurTrobo		-	Very slow start,6w1/4
24Jan21-8SA fm 6½ f (T) 23 :46 1:103 1:163 44 Alw 50000s								21 Caerulear		•	Off slow, broke in
80ct20-7Bel fm 6f ① 232 :462 :5731:093 3↑ Clm c-35000 N3								231 Qian B C			Hesitated, lunged st
	100, Toscano John T Jr Trainer 2020 (as of 10/8): (102 9 11 15 0.09)					4	. ,				,,
6Sep20-2Sar fm 5½f ⑦ 213 :442 :56 1:02 3↑ Clm 35000 N3L	83 6 /8 1 $2\frac{1}{2}$ $2\frac{1}{2}$ 2hd $2\frac{3}{4}$ Carmouche K L 122	3.65 9	90-09 Boi	rbonC	urrend	cy124≩ Tnu	r1221	NoBngNoBo	om 122	hd	2-3p,led outside 1/16
14Aug20-7Sar fm 5½f ⑦ @ 212 :441 :5531:0113↑Clm 35000N3L	82 3/10 2 11 11 1½ 41¾ Saez L L 122	7.00 9	93–05 Hur	ricneH	lill1241	BourbonC	urren	cy124no FigJe	£11y122ااد	3 I	ns,vs duo1/8-fin 70yd
12Jly20-5Bel fm_6f		4.00 8	37–16 Foo	ch123n	o Teni	ure123hd Va	ariant	Perception	12334	3	-2w pursuit, lost nod
<u>Claimed from</u> Firestone, Mr. and Mrs. Bertram R. for \$35,000), Clement Christophe Trainer 2020(as of 7/12): (204 40 35 17 0.20)										
240ct19–5Bel gd 6f 団 22 :451 :5641:0843↑Alw81216N1x	67 2 /6 3 21½ 41 55½ 59 Ortiz I Jr L 120	2.55 8	30–11 <i>Lon</i>	htwist 1	l23≩ Qι	ıarky1201 ₄	Morr	ning Breez123	∫4 <u>‡</u>	3-	-2w in aim, weakened
29Aug19-4Sar fm 5½f ① 214 :444 :5611:02 3↑Alw 50000s	84 4 /7 1 $1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$ 12 Rosario J L 120	2.90 9	9 2–07 Ten	ure120	² Lunc	dqvist 124 nk	Wild	l One Foreve	r1201 <u>1</u>	In	s,confident handling
28Jly19–3Sar fm 5½f ① 211 :433 :5531:0143↑Alw 50000s	77 6 /7 1 1½ 1½ 11 2½ Rosario J L 120	2.15 9	92-08 Foo	ch122½	Tenur	<i>re</i> 120≩ Lund	dqvist	t1243 3			3p turn,led past 1/16
29Jun19–5Mth fm 5½f ⑦ 221 :451 1:024 3↑ Md Sp Wt 41k	73 2 /7 3 1½ 1hd 12 14 Lopez P L 119	*1.10 9	93–07 Ten	ure119	4 Engl	ish Humor	∙11 9 hd	Global Natio	on1243	<u>3</u>	Set pace, kicked clr
24May19–1Bel gd 6f 🗇 🚱 221 :444 :5541:072 3↑ Md 40000	73 3 /6 1 32 31½ 34 23 Rosario J L 118							BlacktopLeg		314	Chased 2p, mild kick
WORKS: May1 Bel tr.t 4f fst :49 Bg 20/66 Apr25 Bel tr.t 4f fst :511 E	3 22/24 Apr 18 Bel tr.t 4f fst :52 B 29/31 Apr 10 Bel tr.t 4f fst :502 B 103/159	Apr3 Bel	ltr.t 4f fst	:491 B	17/123	Mar 26 Bel	tr.t 4f	fst :492 B 112	/194		
TRAINER: +180Days(8.00 \$0.00) TurfSprints(39.10 \$0.86) Dirt/Turf	(5.00 \$0.00) Turf(90.11 \$0.82) Sprint(103.17 \$1.20)						J/T 20)21-22 BEL (4	.25 \$1.4	(3) J	I/T 2021-22(9 .11 \$0.63)

Not Yet Charlie Entered For Main Track Only

Q Not Yet Charlie		B. g(12.09.21) 3 (Feb) EASMAY21\$45,000		Li	fe	6 2	0	0	\$53,390	57	D.Fst	2		-	\$30,850	
Own: EV Racing Stable	625 000	Sire: Fed Biz (Giant's Causeway) \$4,500 Dam: Platonic Love (Elusive Quality)		202	22	2 1	0	0	\$30,800	57	Wet(353) Synth	2)	\$16,510 \$0	
10 - 1 Green, Royal Blue Circle And 'Ev,' Blue	\$35,000	Br: Mystic Bloodstock (Ky)	L 1	20 ₂₀₂	21	4 1	0	0	\$22,590	56	Turf(319)				\$6,030	
NO RIDER		Tr: Rodriguez Rudy R(30 5 4 3 .17) 2022:(190 42 .22)		Ве	ı	0 0	0	0	\$0	-				0	\$0	
25Mar22-9Aqu gd 1 231 :4641:1231:391	OC50k/SAL50k	57 3/8 1½ 41½ 76½ 69 610¼ Rodriguez L A L	_120 1	9.90 67-	-19 D	ontth	rght	wy 122	1 Brcol120)2 Bo	ssmknbssmv	s 122	Н	eaded	5/8,ins trn,w	knd
21Feb22–2Aqu fst 7f 3 232 :4641:1321:272	Clm 32000	52 1/4 2 21 31 3½ 11½ Franco M L	_120	2.35 73	-21 N	lotYt(Chrl1	201½ G	innsWrrr1	2023	AlwysChrmi	1g 120	23 3	3w upp	er, inched a	way
3Dec21-3Aqu fm 6f ① 221 :454 :5731:094	OC 80k/n1x	43 8 /8 6 31 41½ 86½ 712½ Vargas J A Jr	122 3	5.00 72-	-14 P	ure P	anic'	122 0	uraika1191	¼ Mi	dnight Work	er122	1 2	3w tı	ırn,5w1/4,em	pty
8Sep21-4FL slyS 5½f 222 :4641:00 1:07	Md Sp Wt 28k	56 6/8 2 1hd 1hd 12½ 15½ Perez L E	121 *	1.00 85	-17 N	lotYt(Chrli	121 ⁵ ‡ I	DonBrnrd	ر. 121 o	nk Dointthrgh	twy12	- 113	Drew o	lear, ridden	out
6Aug21-1Sar fm 5½ f 🗇 221 :451 :5721:04	RMd Sp Wt 80	k 36 6 /8 3 42 32 34 43 4 Vargas J A Jr	119	2.20e 78	-12 B	BronCs	sco11	19nk <i>E</i> .	mmsWltz1	19 <u>3</u> K	ingofHollyw	oo'd1'	921	3w tur	n,4w1/4,no k	kick
23JJy21–1Sar fst 5½f 222 :462 :59 1:052	RMd Sp Wt 80	k 49 5/9 8 65½ 66 67½ 69¼ Rosario J	119 1	5.40 78	-16 S	Stolenl	Bs119	91 <u>4</u> Bu	ickinghmF	rinc	11913 BigScu	//y119	41	5w trn	carried out	3/16
WORKS: May 12 Bel 4f fst :502 B 22/44 May 5 Bel 4	f fst :494 B <i>31/43</i>	Apr25 Bel 4f fst :502 B 17/29 Apr16 Bel 4f fst :50 B 35/89 Apr9 Bel 4	4f fst :53	B 34/34	! Mar	19 B el	tr.t 4	f fst :5	OB 65/104		. •		-			
TRAINER: Route/Sprint(69 .17 \$1.82) 31-60Days(3	313 .17 \$1.63) Dirt(597 .21 \$2.03) Sprint(477 .20 \$2.31) Claim(278 .18 \$1.51)														

10 Dee Bo	B. g(12.01.20) 4 (Mar)		l	Life	16	2 4	1	\$72,911	73	1		1 2		\$48,759	
Own: Ashley Racing Stable	Sire: Majestic City (City Zip) \$2,500 Dam: Queen Buxley (Super Saver)			022	2	0 1	0	\$7,800	73	Wet(336) Synth	6	12 00		\$23,840 \$0	
20 - 1 Royal Blue, Orange Horseshoe And Horse \$35,000	Br: Clark O Brewster (NY)	L 12	23 2	021	10	2 2	1	\$47,449	73	Turf(174)		00			26
ODRIGUEZ L A (21 2 3 1 .10) 2022: (153 14 .09)	Tr: Legall Ricardo E(1 0 0 0 .00) 2022:(8 1 .12)		В	Bel 🗇	1	0 0	0	\$312	26	Dst()(311)		0 0			26
6Mar22-3Agu fst 6f 231 :472 :5941:1314★KellyKip55k	73 4 /7 1 31½ 43 44½ 55½ Davis J A	L120fb 33		_						1242 Tapizer		423	2-4p 1	turn.5p1/4.	wknd
3Feb22-5Agu qdS 6f										ho Boy 12033				n,angled o	
Claimed from Photos Robert for \$14,000, Englehart Jeffrey										, 4			- p	J	
DDec21-4Aqu slyS 6f 231 :47 :59 1:114 3↑ Clm 25000 N3L	59 1/6 1 41½ 42½ 46½ 67¼ Davis D	L 120fb 4	.80 7	77–17	Hoop	la118	2¾ De	mo Doctor	·1203‡	Conformist	120no	Cł	nased :	2-3w, weak	cened
6Nov21-1FL gdS 6f 221 :452 :5831:1213∱S]Alw 24000n1	70 4/6 4 21 31 32 22 Worrie A S	L 120fb 5	.70 8	35-10	The K	(ing (Cheel	12021 Dee	Bo120)1½ Trigger P	u11120)nk	4w t	rn, second	l best
1Nov21-7FL gdS 5⅓f 🕟 221 :46 :5911:06 3∱͡SAlw 24000n1	61 1 / 7 6 6 6 7 6 72 4 53 4 Davila J R Jr	L120 fb *	.95 8	36-15 I	Lette	rcarr	ierhe	nry1221 Ro	ry Mo	or122nk Dr. L	oyd1	22¾	Е	Broke slw,2	2p trn
3Sep21-5Sar fst 6f						3 o 120	43 Ma	itty's Mara	uder'	123½ Litterbo	x 1201	1 2	2p,3	o1/4,bid1/8,	,clear
Claimed from Krakow Racing, LLC and America's Pastime S							•	-		=		_			
1Aug21–3Sar fst 6½f 22 :4511:1031:173 Clm 25000	63 5 / 6 4 2hd 2hd 42½ 55¼ Herndz Moreno 01	° L 109b 10	.50 7	77–15	Full C	ourt i	Press	118 3 Megat	ap118	🛂 Frosted In	dian1	181	Vied b	etw foes,	wknd
3JIy21-7Sar fst 6f C 22 :451 :5741:1143↑Clm c-16000n2		L 120 b *2	:.65 7	79–16 l	Deput	ty Fla	ag 122	no Forest S	Spirit1	241 Dee Bo1	<u>1033</u>		Ins tr	n,chsd,will	lingly
Claimed from Brewster Clark O. for \$16,000, Asmussen Steve															
6Jun21-12Mth sly\$ 6f ⑤ 22 :443 :57 1:093 3∧ Md 12500(12.5-1										n1115¼ Khoza				off, ridde	n out
2Jun21-2Mth fst 5½ f 222 :462 :5841:0523↑Md 10000	60 4 / 6 6 524 312 222 23 Corrales G	L 118b *1	.20 8	36–15	Confe	ection	er123	🖁 Dee Bo11	310 AV	vesome Yet .	Again	1116	Bur	nped hard	start
3May21–9Bel fst 6f	39 10/12 10 64½ 46½ 66 910¾ Saez L	L 118b 9	.30 7	75-14 .	JoyLo	oosL	os 118	₹ FlppngFı	11192 <u>1</u>	TrplAmrcno	124nk	Вm	pd brk	c,5w turn,e	mpty
7Apr21–40P myS 6f ⑤ 221 :46 :5811:104 3↑ Md 30000 -W	51 1/8 1 1½ 2hd 44½ 59 Santana R Jr	L 121b 4	.20 7	79–15 <i>i</i>	Battle	Hero	1261	American	Unity'	1213 Galilee1	<u>2</u> 13 <u>1</u>	G	ave wa	ay when he	eaded
ORKS: Apr24 Bel tr.t 3f fst :36 B 2/17 Apr16 Bel tr.t 4f fst :482 B	17/221 ● Mar 19 Bel tr.t 3f fst : 353 B 1/17 Mar 11 Bel tr.t 4f fst : 472	B 7/255							-		-				
RAINER: TurfSprints(1.00 \$0.00) Dirt/Turf(3.00 \$0.00) 31-60Days	10.00 \$0.00) Turf(4.00 \$0.00) Sprint(16.06 \$2.61) Claim(13.00 \$0.0	ነበ)							J/T 2	021-22 BEL (2	nn \$r) NN) .	J/T 202	1-22(3 00 :	(00.02

3

Belmont Park

FVagrncyH-G3



63 Furlongs (1:142) THE VAGRANCY HANDICAP. Grade III. Purse \$150,000 A Handicap For Fillies And Mares Four Year Olds And Upward. Non-Lasix Race pursuant to 4043.2 (7)(e)(5) Lasix not permitted within 48 hours of post time. By subscription of \$150 each which should accompany the nomination; \$750 to pass the entry box and an additional \$750 to start. For horses not originally nominated, a supplemental payment of \$750 along with the entry and starting fees may be made at any time prior to the publication of weights. The purse to be divided 55% to the owner of the winner, 20% to second, 12% to third, 6% to fourth, 4% to fifth and 3% divided equally amongst the remaining finishers. A trophy will be presented to the winning owner. Closed Saturday, April 30, 2022 with 18 Nominations.

Post time: 2:05 ET	Wagers: Exacta, Trifecta (.50), Super	(.10), Pi	k 3, D	ouble					Beye	r par: NA
1 Assertive Style	Dk. b or br f. 4 (Mar)		Life	16 5	1 3	\$175,814	83 D.Fst	7 1	0 1	\$49,074 80
Own: Flying P Stable	Sire: Nyquist (Uncle Mo) \$55,000 Dam: Sca Doodle (Scat Daddy)		2022	2 1	1 (\$42,800	80 Wet(37		0 2	\$114,600 83
20-1 Hot Pink, Black Diamond Frame And 'P,'	Br: Machmer Hall (Ky)	116	2021	10 3	0 3	\$102,206	83 Turf(29	5 5	0 0	\$0 – \$12,140 80
CASTELLANO J J (35 5 4 3 .14) 2022: (390 65 .17)	Tr: Morley Thomas(9 1 0 3 .11) 2022:(70 8 .11)		Bel	0 0	0 0		- Dst(387	있는 것은 것	0 0	\$40,108 83
25Mar22-7FG fm *5\fm 221 :471 :5921:053 44 @ O C c-80k/c	80 3 /5 5 45½ 44 1½ 2½ Mojica 0	L122 13.10							6p upr	led1/8,worn dwn
Claimed from Quarter Pole Club VI, LLC for \$80,000, Hartm	n Chris A Trainer 2021: (316 69 51 42 0.22)									* 0 160 001000 100 000
14Feb22−7FG fst 6f 221 :454 :5741:103 4♠ ® 0 C 80k/c										ed3/16,game,held
27Dec21-9FG fm 1 ⊕ 24 :491 1:382 ⊕PagoHopL7										st,gain 5w,flattnd
25Nov21-5CD sly ^S 6½f										r,3wd str,cleared
5Nov21–9CD fst 1¼ 482 1:1311:3832:031 3↑ €0 C 62k/n2x										st, pace,faltered
100ct21-3Kee fst 6f C 214 :453 :58 1:11		L120 4.20	78–13	Albert S	Sun1204 <u>‡</u>	SilverCloud'	11814 Assertiv	eStyl1201	½ 4p trn	,5p upr,moved up
Claimed from Machmer Hall Thoroughbreds for \$40,000, He										
21Sep21–4Ind slyS 170 ⊗ 244 :4841:1311:423 3↑ €0 C 40k/N2x										w,bid4w,drew off
13Aug21-7EIP fm 1 ① 25 :4841:1311:3613↑@OC40k/n\$y	N 71 3 /7 1hd 1hd 1hd 21½ 53 Morales E	L118 20.40	79–21	Burnin	gAmbiti	on11813 PtrsK	ttn124½ Jzbls	Kttn122nk	Vied 2v	v,lugged out,wkn
21Jly21-7Ind fst 6f 223 :45 :57 1:092 3♠ (Clrksvlle66)	67 2 /6 3 32 42½ 45½ 510½ Morales E	L118 50.10	84-12	Munda	ye Call	l17월 Euphoric	1215 She Ca	n't Sing12	1½ Stlk	inside,faded turn
30Jun21-1Ind sly 6f	. 74 3/3 1 21½ 1hd 15 15½ Morales E	L118 *.90	91-11	Assert	iveStyle	11851 LilysW	oofy11851 Ste	IlrGrc118	Pres2w	clrd,geared dwn
8Jun21-7Ind slyS 6f 213 :442 :57 1:101 @OC 50k/N1x	N 59 1/6 3 1hd 1½ 22½ 38 Morales E	L121 4.40	83-13	Patty F	/1216a G	reatest Love	1211 Assertiv	Style121	Due	l inside,no match
3May21-5Ind gd 6f 223 :454 :5741:094 (F)Alw 35100n1		L119 4.30	84-17	Vincaia	1197 H	ingarinPrinces	ss11613 Assert	iveStyle1	1971 Ho	p st,inside,no bid
WORKS: May5 Bel 4f fst :482 B 6/43 Apr24 Bel 4f fst :511 B 31/35	Apr16 Bel 4f fst :483 B 4/89 Apr10 Bel tr.t 4f fst :482 B 22/159 Mar16	FG 4f fst :4				•	-	•	-	/
TDATMED, 1ctCloim (A4 25 \$2.11) Turt/Dirt(15.07 \$0.26) 21 60 Dave	114 14 61 CC) Dist(127 10 62 2C) Conint(124 14 61 EQ) CodOtt/(0 12 6)	00)				1/1	2001 22 DEL	10 10 010	C) I/T 20	24 22/40 20 62 07)

TRAINER: 1stClaim(44 .25 \$3.11) Turf/Dirt(15 .07 \$0.36) 31-60Days(114 .14 \$1.66) Dirt(137 .18 \$2.26) Sprint(124 .14 \$1.58) GrdStk(8 .12 \$0.99)

LOSER LOOK: 4yo had entered vs, stakes rivals twice previously on dirt, finishing last of eight, beaten over 27 lengths early on at Keeneland as a 2yo, and then checking in a well-beaten fifth last July at Indiana at 50:1 odds; she has also tried stakes company on turf last December at Fair Grounds and was not a factor in that race; she did win her most recent dirt start while staying gamely to hold a short lead all through the stretch, and she then came right back to run well in a turf sprint last time; she has won three in a row over wet dirt, so she is one to perhaps upgrade should those conditions prevail; steps up for this first off the claim for a trainer who tends to claim the right ones - and then improves them - Morley is 14 for his last 58 first off the

Prank's Rockette Own: Frank Fletcher Racing Operations Inc	B. m. 5 (May) Sire: Into Mischief (Harlan's Holiday) \$250,000 Dam: Rocket Twentyone (Indian Charlie)	2	- 1200 (10) - 520 - 1200 (10) - 520	0 8 7	5077	\$928,753 9 \$40,000 9	Wat/420) 2 1 1 0 \$110,000 02
3-1 Red, White Circle And 'Ff,' Black	Br: Frank Fletcher (Ky)	120 ₂	021	8 2 2	3	\$282,650 9	
PRAT F (10 3 2 1 .30) 2022: (340 94 .28)	Tr: Mott William I(12 1 2 2 .08) 2022:(190 40 .21)	В	el	3 2 1	0	\$217,500 9	
2Apr22-50P fst 6f 22 :45 :57 1:091 44 (CarouselL20	0k 92 2/6 2 41½ 41½ 21½ 2½ Prat F	L117f *.50 9	5-07 A	tingOut	124 1 F	ranksRocket	te11721 NovelSqual/1241 Splt foes3/16,slw gain
18Dec21-8GP fst 6f 213 :44 :561 1:092 3↑ (F)SqrSwrl-G3	91 3/8 6 2hd 2hd 2hd 21 Alvarado J	122 *1.10 9	4-10 Ce	enterAis	le1201	FrnksRocket	te1225 BronxBeuty1202 Duel gamely,2nd best
13Nov21-40CD fst 6f 212 :451 :5711:10 3♠ €DrmSprmeL	300k 82 6/6 2 35 21 2½ 34½ Geroux F	122 3.10 8	2-14 Be	ellsthe0	ne124	ClubCar1203	FrnksRockette12223 Bid between, flattened
90ct21-7Kee fst 6f C 221 :452 :5711:091 3♠ ®TCA-G2	85 1/6 4 31 42 2hd 52 Alvarado J						Ohd Estilo Talentoso 1221 Ins, rail bid, faltered
Hand timed							5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
23Aug21-7Cnl fst 7f 224 :4431:0811:21 3↑ €SkngTPerlE	100k 91 4 /7 7 53½ 54 4¾ 3nk Alvarado J	L124 *.50 10	5 - Cl	1eetr 122 1	nk Ne	/rEnoughTim	124hd FrnksRocktt1241½ Step slow st,5wd1/4p
3Jly21-9PrM fst 6f \$ 222 :443 :5621:0843♠€SaylrvlleB95	k 89 4/4 1 1½ 1 ^{hd} 12 1¾ Alvarado J	LB123 *.10 9	7-08 Fr	ank's Ro	ocket	te123≩ Blinker	s1208½ Quick Decision117hd Held rival safe
22May21-5CD fst 6f 213 :442 :5621:084 44 @WnngClrs-(3 84 2 /5 4 21 2hd 21 333 Geroux F	118 *.60 8	9-07 Sc	onsin11	83¼ Ri	sing Seas 1182	Frank's Rockette 1182 2wd, outkokd, denied plo
10Apr21-60P fst 6f 222 :46 :58 1:10 44 (Carousell 25	0k 91 4/6 4 52 31 21 23 Geroux F	L124 *1.00 9	1-11 E	dgeway1	193 Fr	ank's Rockett	te1241 Casual 1215 Early bump, 3w, 2nd best
30Jan21-80P myS 6f 212 :443 :57 1:10 44 (E)AmrcnButy	.150k 92 5 /6 1 21 21 1hd 11½ Geroux F	L122 *.60 9	2-12 Fr	nksRckt	t1221	AmysChling	1222 WlddsBty11513 Stalked3w,wore dwn foe
7Nov20-8Kee fst 6f @ 213 :443 :5621:083 34 BCSprint-G1	86 6 / 14 9 751 104 1061 1181 Alvarado J	L121 5.80 9	4 - W	hitmore	12631	C Z Rocket126	nk Firenze Fire126 2-3wtrn,5w1/4,no impct
30ct20-5Bel fst 6⅓f 223 :4531:0911:16 34 (F)GIntBImH-(/ay1182 RoylChrlotte11812 2w 1/4, comfortably
5Sep2040Sar fst 6f 221 :443 :5621:084 @Prioress-G2	97 4/8 2 21 1hd 121 121 Alvarado J						lge1181 CenterAisle1182 Brsh aft st,2w,ask3/16
WORKS: May6 Bel 4f fst :492 B 23/68 Apr29 Bel tr.t 4f fst :492 B 19	/66 Apr22 Bel tr.t 4f fst :481 B 9/55 Mar27 Pay 5f fst 1:02 B 1/1 N	Mar 18 Pay 4f fst :50	1 B 17/2	3 Mar11	Pay 4f	fst :503 B 11/20	rā
TPAINED: 20ff//5_180(122, 24, \$2,00), 31_60Days (316, 20, \$1,72), Dirty	420 23 \$1.72) Sprint (306 18 \$1.52) GrdStk (145 21 \$1.73)					I/T	[2021_22 RFI (1 00 \$0 00) I/T 2021_22(5 20 \$0.76)

TRAINER: 20fr45-180(122 .24 \$2.00) 31-60Days(316 .20 \$1,72) Dirt(420 .23 \$1,72) Sprint(306 .18 \$1,52) GrdStk(145 .21 \$1,73)

J/T 2021-22 BEL(1 .00 \$0.00) J/T 2021-22(5 .20 \$0.76)

CLOSER LOOK: Ultra-consistent mare tipped her hand early on while multiple Grade 1-placed as a juvenile; put together a solid 3yo campaign in 2020 when winning 5 of her 7 starts, including three straight graded stakes in NY leading up to her taking a shot in the Breeders' Cup Sprint; hasn't gotten much better since then, though she was a two-time stakes winner again last year; returned from the layoff in the Carousel last month, where she conceded the early advantage to the eventual winner early on and then couldn't chase her down late; not out of this.

3 Kept Waiting	B. m. 5 (Apr)	Lif	e 12	5 4	1 1	\$296,600	88	D.Fst	1	0 1	0	\$30,000	88
Own: Goldfarb Sanford J Goldfarb Irwin and	Sire: Broken Vow (Unbridled) \$20,000 Dam: Orient Moon (Malibu Moon)	202	2 3	2 1	1 0	\$130,100	88			2 0		\$100,100	
5-1 Hot Pink, Black Circle And 'Ngs,' Black	Br: John Lauriello (NY)	18 202	1 4	2 () 1	\$92,420	85	Synth Turf(301)		3 3	1	\$0 \$166,500	_ 85
CARMOUCHE K (55 8 11 7 .15) 2022: (382 80 .21)	Tr: Falcone R N Jr(7 1 1 2 .14) 2022:(62 11 .18)	Bel		0 0		\$0	- 1	Dst(351)		00			-
9Apr22-5Aqu fst 7f	88 4 / 5 1 11 1½ 23 25 Carmouche K 119fb	12.60 97-	03 Glas	ssCeili	ina 122!	KeptWait	ina11	1983 SearchRe	sults	12331	Inh		
13Feb22-8Aqu sly\$ 6f C 223 :463 :5921:124 44 @SBroadway								Brekfsttbo					
6Feb22-6Aqu gd 6f 223 :461 :58 1:103 4↑ ⊕ Ālw 82000 N1								1½ RuviesinT				i,2p,easd up	
2Dec21-2Agu fm 6f (r) 22 :45 :5631:082 3↑ (F)[S]0 C 45k/N2	(-N 85 6 /7 1 43 41 11 15 Ortiz I Jr L122 b	6.10 92-	09 Kep	t Waiti	ing122	Social Wh	nirl120	O ^{nk} Fetching	120hd	3	-4w t	urn,strong d	drive
290ct21–7Bel gd 6f T 1:094 3↑ €SO C 45k/N2	(-N 616/8 3 63½ 53 44 56½ Carmouche K L123fb	1.75 77-	16 <i>Gru</i>	dge125	≩ Soci	al Whirl120	⅓ Jill'	's a Hot Mes	1204	14	3w t	urn,5w into	lane
Hand timed													
30Apr21-5Bel gd 7f ① 232 :4641:1121:233 3★ ⑤SIAIw 80000	1x 75 8/9 3 41½ 21 13½ 1nk Franco M L126fb	1.40 79-	17 Kep	ıt Wait	ting126	S ^{nk} Kinky S	ox 124	42¼ Out First	12023		3w -	uppr, clear,	safe
31Jan21-2SA gd 1 ① 232 :47 1:1111:354 4↑ @ 0 C50k/SAL	0k-N 74 5 /7 54½ 55 33½ 32½ 32½ Rosario J L 122fb ⁵	2.10 78-	17 Qui	etSecr	etry 12	214 LdyNo	guez1	1221¼ KeptWi	ing1	22nk	Pulld	early,up for	r 3rd
230ct20–3Bel fm 7f ⑦ 224 :4621:1111:234 3↑ €SMd Sp Wt	70k 70 6 /9 2 53½ 53 13 12¼ Ortiz I Jr L 120fb ³	1.05 78-	22 Kep	tWait	ing120	2¼ LuckyLa	tkes1	201½ Dncingŀ	(iki1	2021/4	2w1/2	,3w,ask3/16-	-1/16
24Sep20-4Bel fm 116 ⊕ 233 :4731:12 1:421 3↑ €SMd c-4000		*.75 82-	21 <i>Mic</i>	romilli	on 120 n	o KeptWitir	ng120°	1½ MemorisE	trn11	24no	Up 1/	4p, clear, na	ailed
Claimed from Bulger Joseph for \$40,000, Miceli Michael Trai					40.17		4000					0/0 // 4	
21Aug20-9Sar fm 1								Gaelic Gold1		1400		up 3/8,nail 1/	
22JJy20–7Sar fm 1 16 T 24 :49 1:1411:441 3↑ €SMd Sp Wt		9.60 /6-	24 Cre	scent	Lady	4nk KeptW	aitin	g1201≩ Gaeli	Gold	d120m	< Ins	ide,led past	, 1/16
Previously trained by Danner Kelsey 2020(as of 6/28): (100 ′ 28Jun20-9Bel fm 1½ ⊕ 234 :4821:1241:433 3★⊕SMd Sp Wt		11 20 73	23 Cia	-00-12	01 Twa	Cont Too	tcia1	25½ Crescent	2011	1251	5 Gu	upper, milo	d hid
								492 B 45/158	.auy i	120'	J-0W	upper, illic	מומ ג
TRAINER: 20ff45-180(36.19 \$1.63) 31-60Days(83.16 \$1.80) Dirt(9)		JC1 (1.1.17)	31 100-	ודוו ט	100 IVI			1-22 BEL (12 .:	25 \$2.	70) J	/T 202′	1-22(37 .27 \$	2.03)

CLOSER LOOK: NY-bred made the first nine starts of her career on turf, posting three wins and hitting the board four other times; showed that she can handle dirt when parlaying a perfect trip into a dominant win vs. entry-level allowance rivals in February, and she was then wheeled back a week later to take the sloppy Broadway easily after another perfect trip; stepped up into a Grade 3 last time and earned a new top figure while only second-best; probably needs to imrprove again vs. this field.

A Miss Brazil Own: Team D and Madaket Stables LLC White, Black Diamond Frame, Red 'D,' CANCEL E (37 4 6 7 .11) 2022: (297 36 .12)	B. f. 4 (Mar) KEESEP19\$170,000 Sire: Palace Malice (Curlin)\$12,500 Dam: Baytree (Forestry) Br: Haymarket Farm LLC (Ky) Tr: Dutrow Anthony W(6 0 1 3 .00) 2022:(26 1 .04)	117 202 Bel	2 1 1 1 5 2	1 2 0 0 1 1 0 1	\$48,400 \$180,700	93 D.Fst 90 Wet(375) Synth 93 Turf(279) 93 Dst(328)	0 0	0 0	0 0 1	\$267,100 \$6,000 \$0 \$9,600 \$101,700	75 - 57
22Apr22-3Aqu fst 6f 223 :461 :58 1:104 3♠ ♠0 C 80k/n3x	N 90 1/5 2 1½ 12 13½ 11½ Cancel E L119	*.65 89-	23 MissBr	zil1191 <u>‡</u>	PieceofMyH	ert 119hd Dling Ji	ıstic12	1hd	In ha	nd 2p, held v	well
10Jly21-8Bel gd 6½f (224 :4531:0911:153 (VctryRde-0	3 75 2/6 1 $1\frac{1}{2}$ 1hd 33 $59\frac{1}{2}$ Ortiz J L 122	1.95 84-	11 Souper	Sensat	ional 120 3¼ <i>0 v</i>	aCharged1202 In	ject122	221	Coaxe	d 2p, weake	ened
6Jun21-7Bel fst 6f 222 :453 :57 1:09	5k 90 4/5 5 41½ 2½ 1hd 31 Castellano JJ 120	*.90 94-	08 Austra	lasia120	¹ Bella Sofia11	8hd Miss Brazil'	206골	B	roke t	hru gate,4w!	/5/16
23Apr21–3Bel fst 6⅓f 232 :4621:0941:162 3♠ ₱0 C 80k/N2x	N 93 1/5 2 11 11 14 15 Ortiz I Jr L118	*.20 90-	14 Miss B	razil118	54 Slam Dunk	1241 Invaluable	1243	2p	ath tui	rn,geared do	own
6Mar21-6Agu fst 1 242 :4931:15 1:393 @BusherInvL	250k 92 1/6 1½ 11 11 11 2½ Cancel E 120	*1.90 74-	30 Search	Results1	183 MissBrazil	។205≩ TheGrssIs	Blue 12	201	Ins6F,	out 1/8,brus	shes
8Feb21-3Aqu fst 7f	k 79 1/3 1 1½ 1½ 15½ 16¼ Cancel E 118	*.45 80-	18 Miss B	razil118	6¼ GulfCoast1	2245≩ DealingJı	stice11	18 ⁻ I	n hand	l 3-2w, drew	ı off
29Nov20-5Agu fst 6½f 22 :4521:1021:17	k 93 4 /7 1 1hd 1½ 12 12½ Cancel E 119	7.60 94-	10 MissBr	azi/1192	CaramelSwir	rl1198 DH Precip	itte119	61	Dueled	d, led, edged	d clr
250ct20-2Bel fm 6f 🗇 233 :463 :58 1:092 🕟 M d Sp W t 8	k 57 5/8 2 31 2½ 22½ 34½ Cancel E 119	9.60 81-	13 Honey	Pants11	194 So Enchan	nting119¾ <i>Miss B</i>	razil119	113	3w	upper, kept	ton
WORKS: May9 Bel 4f fst :484 B 25/75 Apr 18 Bel 3f fst :354 B 1/1	Apr 10 Bel 4f fst: 472 Bg 1/31 Mar 31 Bel tr.t 4f fst: 483 B 7/70 ● Mar 22 B	l tr.t 5f fst 1:	:01 B 1/10	Mar 14 B o	el tr.t 4f fst :51	B 65/72		-			
TDAINED: 20ff(0vor180(2.50.\$3.55) Word actStart(20.20.\$1.30) Di	(68 10 \$1.08) Sprint(50 22 \$1.02) GrdStk(7 00 \$0.00)				1/	T 2021_22 REL (5	በበ ቁበ በ	I (n	/T 2021	_22(26 27 \$1	1 68)

TRAINER: 20ffOver180(2.50 \$3.35) WonLastStart(20.20 \$1.30) Dirt(68.19 \$1.08) Sprint(50.22 \$1.02) GrdStk(7.00 \$0.00)

J/T 2021-22 BEL (5 .00 \$0.00) J/T 2021-22(26 .27 \$1.68)

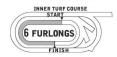
CLOSER LOOK: Lone loss in her first four dirt starts came when stretched to a mile and settling for second in the Busher last March behind Search Results - though she was on a rated pace that day; cut back in the Jersey Girl for her next start, where she broke through the gate before the start, and then came out last after being re-loaded; didn't fire in the Victory Ride in July before going to the sidelines, concluding an unsatisfying 3yo campaign; returned from the layoff last month at Aqueduct, where she had the best speed vs. only four others and did what she had to do to prevail with a 90 Beyer; can build off of that return and is dangerous if she does.

5 Bella Sofia	Dk. b or br f. 4 (Apr) OBSOPN20 \$20,000		Life	6 4	1	0 \$592,60	102	D.Fst			1 0	\$592,600 102
Own: Imperio Michael Medallion Racing Soar	Sire: Awesome Patriot (Awesome Again) \$2,500 Dam: Love Contract (Consolidator)		2021	6 4	1	0 \$592,600	102	Wet(257) Synth	-	-	0 0	\$0 – \$0 –
4-5 White, Pink Heart, Black 'Pt' And	Br: Two Tone Farms (Ky)	123	2020	0 M	0	0 \$6) -		-	-	0 0	\$0 - \$0 -
SAEZ L (8 3 0 0 .38) 2022: (565 117 .21)	Tr: Rodriguez Rudy R(30 5 4 3 .17) 2022:(190 42 .22)		Bel	4 3	1	0 \$267,600	102	Dst(314)	1	1	0 0	\$137,500 102
6Nov21-4Dmr fst 7f 221 :4441:0831:21 3♠ ⊕BCFMSprt-	31 91 5 / 5 2 2½ 2½ 42 45 Saez L	122 2.60	100 -	Ce Ce1	242 <u>1</u>	Edgeway124¾	Gamin	e 124 1¾			Vie 3	lp/4w trn,bpd upr
26Sep21-9Bel fst 6⅓f 222 :4521:09 1:153 3↑ (€) GIntBImH-G	2 102 1/4 1 1 ¹ 1 ¹ 14 13 Saez L	119 *.40	94-14	Bella S	ofia1	1931 Lady Roc	ket118	89 Lake Aven	ue 12	15	2p tu	rn,mild hand ride
7Aug21-8Sar fst 7f 224 :4531:09 1:212 @Test-G1	101 8 /8 2 2½ 2½ 12½ 14¼ Saez L	118 4.20	95–11	BellaSo	fia11	841 SouperSe	nsatio	nl12011 Serc	ıRes	ults	1242 3	p turn,drift in 1/8
11JIy21-7Bel fst 6f () 214 :444 :5711:094 3↑ (€) Alw 92000 N1	94 4 /7 4 2hd 1½ 13½ 16½ Ortiz J L I	L120 *.75	91–13	Bella So	ofia12	061 Glass Cei	ling 12	41월 Primacy1	2411			2w 1/4p, drew off
6Jun21-7Bel fst 6f 222 :453 :57 1:09	5k 90 2 /5 2 1½ 1½ 2hd 21 Saez L	118 3.10	94-08	Austral	lasia1	120 ¹ Bella Sofi	a118hd	Miss Brazil1	2063		Bobbl	d brk,2p trn,game
6May21–2Bel fst 6f 222 :451 :5711:093 3★ ₱ M d Šp W t 90	94 5/6 3 2½ 1½ 14½ 111¼ Saez L	L118 8.50	92-16	BellSof	fi1181	14 StlMySun	shin11	82월 BigCityN	lomi	n118	3 <u>1</u> 30	uppr, went clear
WORKS: May 10 Bel 4f fst :493 B 20/34 ● May 3 Bel 5f qd 1:001 B 1/7	● Apr 25 Bel 5f fst 1:001 B 1/11 ● Apr 16 Bel 5f fst 1:011 B 1/7 Apr	r9 Bel 4f fst :	50 B 17/3	74 Apr21	Bel tr	.t 4f fst :503 B	131/19	6				

TRAINER: +180Days(22.23 \$1.49) Dirt(597.21 \$2.03) Sprint(477.20 \$2.31) GrdStk(13.15 \$1.02) J/T 2021-22 BEL (33 .27 \$2.48) J/T 2021-22 (52 .27 \$2.82) CLOSER LOOK: Earned a big 94 Beyer for her blowout debut win last May, then stepped right up to face Miss Brazil in the Jersey Girl, where she dueled with that rival in the stretch before the blowout debut win last May, then stepped right up to face Miss Brazil in the Jersey Girl, where she dueled with that rival in the stretch before they were both own late; bounced out of that game performance to bury older allowance rivals, then broke through to the big time when cruising in the Grade 1 Test at Saratoga with a 101 Beyer; defeated older rivals again without breaking a sweat in the Gallant Bloom while prepping for the Breeders' Cup and earning another triple-digit Beyer; tired at Del Mar after contesting the pace and then got a well-deserved break; appears to be training strongly on the way back and id going to be tough in here if she is close to ready.

Belmont Park

(F)Alw 50000s



6 Furlongs (Inner Turf). (1:063) STARTER ALLOWANCE. Purse \$60,000 Inner Turf (Up To \$10,440 Nysbfoa) For Fillies And Mares Three Years Old And Upward Which Have Started For A Claiming Price Of \$50,000 Or Less And Which Have Never Won A Race Other Than Maiden Or Claiming. Three Year Olds, 120 lbs.; Older, 125 lbs. Non-winners Of A Race Since November 1 Allowed 2 lbs. (If There Are No Three Year Olds Entered, Starting Weight Shall Be 123 lbs). (Rail at 9 feet).

Post time: 2:34 ET Wagers: Exact	ta, Quinella, Trifecta (.50), Super (.10), Pick 3	(4-6), Mandatory Payout Pick 5 (4-8), Double Beyer par: NA
Thismightbetheone own: Cutair Racing and Dark Horse Racing S 8-1 Blue, Gray Ball, White 'Cr,' Gray MCCARTHY T (57 4 7 5 .07) 2022: (420 66 .16)	B. f. 4 (Mar) Sire: Get Stormy (Stormy Atlantic) \$7,500 Dam: Doc's Leading Lady (Doc's Leader) Br: Hurstland Farm & James H Greene Jr (Ky) Tr: Abreu Jorge R(9 0 0 3 .00) 2022:(48 3 .06)	Life 7 1 1 1 1 \$43,901 65 D.Fst 0 0 0 0 0 \$0 - \$0 - \$0 - \$0 - \$0 - \$0
15Apr22-9Aqu fm 6f ⊕ 214 :444 :5711:10134 ⊕ Md 40000 11Mar22-9GP fst *170 ⊗ \$ 234 :4711:12 1:414 44 ⊕ Md Sp Wt 53 Previously trained by Handal Raymond 2021(as of 11/19): (21 19Nov21-10Aqu fm 1₁ ⊞ 223 :4731:1231:43434 ⊕ Md 40000 170ct21-1Lrl gd 5½ ⊕ 213 :461 :581:04234 ⊕ Md Sp Wt 53 5Sep21-5Sar fm 5½ ⊕ 213 :444 :5621:02234 ⊕ Md 50000 23Jly21-10Sar fm 5½ ⊕ 22 :46 :581:04134 ⊕ Md 650000 Claimed from Maĥer, Teresa M. and O'Brien, Keith for \$50,0 1Jly21-6Bel fm 7f ⊕ 23 :4711:11 1:23 34 ⊕ Md 50000 WORKS: May9 Beltr.t 4f fst :50 B 34/66 Apr29 Beltr.t 4f fst :514 B TRAINER: TurfSprints (35 :20 \$2.79) WonLastStart(27 :22 \$2.94) Tur	17 31 38 33 0.14 17 18 18 18 18 18 18 18	L125 9.20 85-12 Thismightbetheone125½ Cdnci1253 MisplldMooon1183½ 2w 1/4, up fin 70yds 68-15 Sanura1222 Mozay1225½ The Flying Pharoah122½ Pressured pace,tired L121 13.30 79-10 ContrlFnctn121½ MySnnyVIntn1211 WckdHppy1241 Prompted 2p, weakened L122 2.80 78-13 WckdWorkout1221½ FunnyEnogh126½ BtflFrwll121½ Flttnd out,late steady L121 10.70 84-11 PrtyLnVot1214¾ Thsmghtbthn121½ Thgddssfsnks121½ 1/2 step slw brk,3-4w L119 23.80 62-20 Thrill1241¾ Miss Domina1191½ Artyistheparty119½ Broke out st, tired L119 49.00 76-18 EvidencBsd1193½ LittlNuttr1192¼ Thismightbthon119¾ 3w turn,bid1/8,wknd 24 B(d) 13/14 Mar22 PmM 4f fm :51 B(d) 11/12 Mar6 PmM 481 B(d) 7/47 J/T 2021-22 BEL (1.00 \$0.00) J/T 2021-22 (2. 18 \$2.91)
Missing Link Own: Royal Bamboo Racing and Walder Peter Light Blue, Yellow Crown, Black 'Rbr,' CASTELLANO J J (35 5 4 3 .14) 2022: (390 65 .17)	Ch. f. 4 (Mar) Sire: Kantharos (Lion Heart) \$20,000 Dam: Visarno (Kitten's Joy) Br: Fifth Avenue Bloodstock (NY) Tr: Walder Peter R(4 1 1 1 .25) 2022:(77 16 .21)	Life 13 4 1 3 \$84,430 71 D.Fst 3 0 0 2 \$4,420 16 Wet(369) 0 0 0 0 \$0 - Synth 1 0 0 0 \$250 50 Turf(340) 9 4 1 1 \$79,760 71 Bel © 0 0 0 0 \$0 - Dstp(392) 1 0 0 1 \$6,600 64
16Apr22-9Aqu fm 6f ⑦ 223 :454 :5731:10 34 ⑥Alw 50000s 19Feb22-9GP fm *5f ⑦ 221 :444 :562 44 ⑥ 0 C 25k/N1X 6Jan22-6GP fst *5∮f ◆ 223 :452 :5721:04 44 ⑥ Clm c-(20-16) Claimed from e Five Racing Thoroughbreds for \$20,000, Faw		L124b *2.90 84-11 ThodorGrc1191¼ Thgoddssofsnks126nk MissingLnk124¾ In hand ins, caught L120b 8.70 88-07 HittheWoh120nd TrcyAnnsLegcy120nk Trevess1222¾ Bmp st,keen ins,3w3/16 L122b 2.80 88-02 DiltoWin1204 DesignedbyKitten1203¾ MyMstrpic1181¾ Weakened inside uppr
AJun21-6GP fm 5f 21 :434 :561 34 © Clm 35000(38 7May21-9GP gd 5f 22 :454 :565 34 © Clm 20000(20 25Feb21-1GP fm 5f © 212 :434 :564 © Clm 20000(20 25Feb21-1GP fm 5f © 214 :443 :564 © Clm 16000(20 13Dec20-4GP fm 5f © 211 :441 :561 © 0 C25k/SAL2 24Sep20-1GP fm 5f © 214 :441 :554 © Md 40000(40 13Jug20-1GP fm 5f © 214 :441 :554 © Md 40000(40 13Jug20-1GP fm 5f © 214 :441 :554 © Md 40000(40 13Jug20-2GP fst 4½1 22 :454 :552 © Md 25000(25 14Jun20-2GP fst 5f 23 :463 :593 © Md 25000(25 WORKS: May7 Bel 4f sly :483 B 1/2 Apr2 GP 4f fst :482 B 9/84 Max Max	-25)B	L122b *.70 86-10 Beauty Boss120½ Mudslide Wicked124½ Dannyhill120¾ 3wd, aim, weakened L120b *1.80 87-12 MissingLink1201¼ SammysTown1257½ LaCrBonit125nk Brk out, bump st, rail L122b *.70 90-07 Missing Link1221 Very Savvy122½ She's Classy1201½ Hustled,vied rail,held Shook clear,ridden out 120b 2.30 73-14 CntBuyLove118hd DncingCrne1204¾ HertofGod118¾ Led,outpaced,steadied 119b 3.10 86-13 Missing Link1193 Domineering1191½ BallLightning1193 Soon clear, mild drive 120b 3.60 82-11 I Am the Boss1207¼ Missing Link1201 Patrick's Lass1204 Steady sarly, rail run 120b 3.70 89-13 Mshugn120½ WorldGonWild1202¾ MissngLnk1204¾ Bumped st,chased2-3wd 120b 3.30 75-12 Say Cheese120½ Kirtan1202¼ Hidden Dreams1202 Vied inside trio,tired
TRAINER: 20ff45-180(58.17 \$1.30) TurfSprints(13.08 \$0.58) Turf(5	8 .14 \$1.17) Sprint(167 .16 \$1.29)	J/T 2021-22(12 .08 \$1.13)

Trinity Titoli. Gentle Annie and Mia Bea Star Entered For Main Track Only

3 Trinity Titoli	Dk. b or br f. 3 (Mar) OBSAPR21 \$60,000		Life	5 1	0 1	\$41,700 5	6 D.Fst	4 1 0	0	\$31,500	56
Own: e Five Racing Thoroughbreds	Sire: Lord Nelson (Pulpit) \$10,000 Dam: Princesa de Papi (Birdstone)		2022	2 1	0 0	\$24,200 5	6 Wet(364)		38	\$10,200	38
8-1 Neon Green, Purple Ball, Green 'E,'	Br: Milfer Farm Inc (NY)	L 115 ⁵	2021	3 M	0 1	\$17,500 5	Synth Urf(249)	0 0 0		\$0 \$0	-
GOMEZ J A (56 6 4 7 .11) 2022: (468 67 .14)	Tr: Rodriguez Rudy R(30 5 4 3 .17) 2022:(190 42 .22)		Bel	1 0	0 0	\$4,500 4	1(,	5 1 0	3 75	\$41,700	
19Mar22-7Agu fst 6f C 222 :463 :5921:13	(€) O C 50 k/SAL 50 k 40 9 /9 1 12 2½ 44½ 66¾ Gomez JA7	L113fb *2.60	71-17	Lnfrnko	phile122	KingdomQu	n 12023 Closing	DIs12023	Hustle	d st, weaker	ned
12Feb22-9Aqu fst 6f 223 :4731:0021:142	© SMd 40000 56 3/11 2 12 11 1½ 13 Gomez J A7						1202½ BgBnCh				
26Nov21-6Aqu fst 6f ⊗ 224 :4731:0041:143	©SMd Sp Wt 70k 54 8 / 10 1 2½ 3½ 32½ 55 McCarthy T	119fb 21.30	65-24	Fontnfr	edd1191 <u>4</u>	ToughStret1	119nk TruEmpr	ss1191 Pr	rompte	d 2p, wknd la	ate
26Sep21-6Bel fst 6f 224 :471 :5921:121	©SMd Sp Wt 75k 45 8 / 12 5 64 53½ 55½ 46½ Lezcano J						oireU1192 <u>4</u> Silv				
20Aug21-2Sar gd 6f 214 :444 :5711:104	⑤SMd Sp Wt 85k 38 1/7 5 2½ 46½ 412 314¼ Gaffalione T						191ą TrinityTit	oli119 ^{hd}	Lunge s	t, brushed 1	./2p
	If fst :504 B 29/34 Apr22 Bel 4f fst :494 B 15/20 Apr13 Bel 4f fst :503 B 11/15 Apr4 I	Beltr.t3ffst:39	B 12/13	Mar11 B	el tr.t 4f						
TRAINER: 31-60Days (313, 17, \$1,63), Dirt (597, 21, \$.2 03) Sprint (477 20 \$2 31)					.I/T 2	021-22 RFI (12	17 \$1 39)	J/T 2021	-22(47 28 S3	76)

TRAINER: 31-60Days (313 .17 \$1.63) Dirt(597 .21 \$2.03) Sprint(477 .2	\$2.31)	J/T 2021-22 BEL (12 .17 \$1.39) J/T 2021-22(47 .28 \$3.76)
△ Gentle Annie		Life 46 4 5 9 \$205,332 76 D.Fst 33 3 4 8 \$141,563 76
Own: Blue Streak Racing LLC		2022 4 1 2 0 \$42,260 76 Wet(349) 11 1 1 1 \$63,385 68 Synth
5-2 Red, Gray Ball, Blue Emblem, Royal Blue NO RIDER		2021 15 1 1 6 \$54,080 67 Turf(311) 2 0 0 0 \$384 27
NO RIDER	Tr: Lynch Natalia(1 0 0 0 .00) 2022:(22 3 .14)	Bel 14 2 2 3 \$71,298 66 Dst(357) 25 2 3 5 \$106,473 76
3Apr22-7Aqu myS 6f \$ 231 :47 :5921:121 3♠ €SCIm 25000		82–19 Gentle Annie121nk Diva Banker1213 Prairie Fire12314 Vied w/ pair, gamely
25Mar22-3Aqu my 6½f 224 :4631:1141:183 3♠ €SAIw 72000		75–19 Towering Orbit1262 Solib120no Mia Bea Star1241 Inside turn,empty
28Jan22-2Aqu fst 6f 23 :461 :5811:11 4♠⊕Clm c-10000 Claimed from In Front Racing Stables for \$10,000, Potts Wa		87–17 Violent Point120½ Gentle Annie1238¼ Cover Photo1131 2w 1/4p, closed well
14Jan22-4Aqu fst 7f 243 :50 1:1631:30 44 @Clm 12500		60-33 Cover Photo112no Gentle Annie1238 Shadolamo1232 Chased 3-2w, denied
17Dec21-2Aqu fst 6f 232 :48 1:0031:133 3↑ (€) Clm c-10000		66-23 Cover Photo1103½ Gringotts1221¼ Mebs Web1223¾ Inside turn,no threat
Claimed from Krakow Racing, LLC and America's Pastime S 28Nov21-3Agu fst 6f		27 26 U.15) 77-16 <i>Bustin Bay</i> 1203½ Effiemeister122hd Gentle Annie1221¾ Bmp brk.ins-2p.4w1/4
18Nov21–6Aqu fst 7f S 23 :4621:11 1:241 3♠ (€CIM 20000		60–23 SartogBeuty1227 AnnikGold120nk <i>AwesomeIndr</i> 1226½ Lost footing st,5 wide

ZØUCIZI-TIBEL 1SL 6f C 221 :45 :5821:12 34 €CIm c-10000 66 5 /6 3 69 49 45 214 Cancel E L123b 5.00 79-17 QulityStones12314 GentlAnni12333 LovlyLdyLxi1232 4p1/2,2p3/8,mvd out1/8 Claimed from Henning Michael A. for \$10,000, Sciacca Gary Trainer 2021(as of 10/28): (183 15 23 0 0.08) Previously trained by D¹Alessandro Ralph 2021(as of 10/11): (155 17 14 14 0.11)

110ct21-9FL fst 170 243 .4941:1431.451 34 €SAlw 24000N1R 62 2 /8 43 414 312 2 hd 312 Worrie A S L122 fb 5.00 83-12 OuchThatHurt12223 DosageandMimoss1223 GentleAnnie12214 Rail trn,rallied Previously trained by Sciacca Gary 2021(as of 8/24): (150 13 16 26 0.09)

224Mg21-1FL fst 6f 9 231 .462 .59 1:122 34 €SAlw 24000N1R 58 4/5 3 524 424 434 312 Worrie A S L122 fb 5.00 84-14 CityTemper1223 DosageandMimoss1223 GentleAnnie12214 3p trn, good energy 22.lly21-3Sar fst 7f 223 .463 1:111:242 34 €Cim 12500 40 2/6 2 613 624 614 6193 Cancel E L124 7.20 60-20 Mongolian Humor17744 Viradia17423 ParsianQuaga13241 Characteristics and the state of the sta

WORKS: May8 Beltr.t 4f my :51 B 10/13 May1 Bel 4f fst :492 B 20/50 Apr23 Bel 4f fst :48 B 5/85 Mar20 Beltr.t 4f fst :492 B 57/82 Mar14 Beltr.t 4f fst :483 B 13/72 Mar4 Beltr.t 4f fst :491 B 5/26

Daily Racing Form	Belmont Park (5/14/20	22)
5 Mia Bea Star Own: Reyana and Reya Racing and Rampersaud 5-1 Hot Pink, Chartreuse Circle And 'R,' CARDENAS L (27 2 1 3 .07) 2022: (83 4 .05) 2Apr22-3Aqu fst 1 \$ 24 :48 1:1331:40 3★€SAlw 69840N		L 125 Life 26 3 3 5 \$137,237 67 Life 26 3 3 5 \$137,237 67 Cife 67 Ci
25Mar22-3Aqu my 6½f 11Mar22-7Aqu fst 1 24feb22-2Aqu fst 6½f 4Feb22-4Aqu slys 1 Placed 8th through disqualification 23Jan22-7Aqu fst 7f 224 :4631:1141:183 3♠♠SAlw 72000N 23 : 4631:12 1:383 3♠♠SAlw 72000N 231 :4731:1411:204 4♠♠Clm 25000N3L 233 :4821:1421:442 4♠♠Clm 2500N3L 233 :4821:1421:442 ♣♠Clm 35000N3L 23Jan22-7Aqu fst 7f 224 :4521:0931:221 4♠♠SAlw 72000N	1x 67 5 /6 53 32½ 31½ 34 37½ Camacho S Jr 62 2 /7 7 78¼ 77½ 33½ 14 Camacho S Jr -0 7 /9 63¼ 63½ 912 920 940 Rodriguez L A 1x 47 7 /8 4 65 77 613 518½ Camacho S Jr	L124fb 7.90 84-19 Towering Orbit1262 Solib120no Mia Bea Star1241 2p turn,chsd,willingly L121fb 11.10 72-23 ShalimarGardens12353 Raffinity12113 MiaBeStr12133 Brushed st, wknd late L120fb 13.60 75-18 MiBeStr1204 RWorkingGirl1231 InvstmntGrd12023 Brushed st, edged away L120fb 27.50 26-31 Pendolino12013 SwetMission12313 Chysnbryn12052 4-3path turn, faltered L120b 18.00 80-12 Cazilda Fortytales12033 Snicket1231 Bella Principessa12083 Chased 3w, tired
31Dec21-2Aqu my 1	iner 2021(as of 12/31): (253 37 30 37 0.15) 56 4/7 6 74\{2} 67\{2} 410 312\{2} Davis D 54 1/12 11141113 1210 1113 914\{2} Rodriguez L A 57 2/8 6 53 53 36 37\{2} Franco M 1x 39 7/8 2 55 64\{2} 77 716\{2} Cancel E 61 4/4 1 31\{2} 31\{2} 23 27\{2} Cancel E 51/66 Apr13 Beltr.t 4f fst :523 B 26/26 Mar5 Beltr.t 3f fst :383 B	L116fb 2.80 71–14 Magnetique121113 MiaBeStr1163 ClibogueSound11031 4-5w trn,drift in late L122b 4.50 69–16 CzldFortytls1221034 HghSchoolCrsh122134 MBStr122nk Inside turn,up for 3rd L123b 62.50 81–10 GamblingCt1202½ ExoticWest120nk GbbySqured12024 3w pursuit, no impact L123b 14.40 65–21 Big Al's Gal12374 Kerik120no Mia Bea Star1238 4-5w upper, improved L121b 8.60 64–18 HppySophi12354 Mosienko116nk CinderllsCus120134 Bmpd brk,3w turn,4w1/4 L124b 4.00 83–16 Jades Gelly1247½ Mia BeaStar1244½ ARingThing124223 3w off duel, 2nd best 30/38 J/T 2021-22 BEL (9.00 \$0.00) J/T 2021-22 (22.00 \$0.00)
6 U Should B Dancing 8-1 Cobalt Blue, White Circle And 'Ssw.' GOMEZ J A (56 6 4 7 .11) 2022: (468 67 .14)	Dk. b or br f. 4 (Feb) Sire: War Dancer (War Front) \$7,500 Dam: Spa City Princess (Roaring Fever) Br: War Dancer LLC & SSW Stables (NY) Tr: Rodriguez Rudy R (30 5 4 3 .17) 2022: (190 42 .22)	Life 16 1 5 2 \$138,188 68 D.Fst 7 0 1 1 \$20,568 46 Wet(269) 1 0 0 0 \$3,120 48 Synth 0 0 0 0 \$3,120 48 Synth 0 0 0 0 \$3,120 68 Bel © 3 0 2 0 \$32,000 68 Dst(321) 5 1 2 0 \$73,300 68
22Apr22-2Aqu fm 6f ⑦ 231 :471 :5921:112 3+ ♠ IM S W t 6Mar22-8Aqu fst 6f 23 :48 1:0131:154 3+ ♠ IM d 40000 23Jan22-1Aqu fst 6f 223 :464 1:0011:141 4+ ♠ IM d 40000 19Dec21-1Aqu fst 6f 231 :48 1:01 1:141 3+ ♠ IM d 40000 21Nov21-1Aqu fm 6f ⑦ 221 :451 :57 1:091 3+ ♠ IM d 5M d 5 W t 80ct21-1Bel fm 6f ⑦ 222 :453 :5611:074 3+ ♠ IM d 5 W t 25Sep2141Bel fst 6f ⊗ 222 :453 :58 1:104 3+ ♠ IM d 5 W t Previously trained by Kelly Patrick J 2021(as of 8/8): (28 1 3	19 8 /9 8 86 1 64 54 69 1 McCarthy T 26 5 /6 6 69 33 31 33 McCarthy T 20 7 /7 1 21 1 h 23 2121 Franco M 70k 61 1/10 5 32 12 21 55 Ortiz J L 75k 50 4/10 5 83 35 53 54 56 38 Saez L 75k 12 5 /7 7 74 77 714 724 Castellano J J	L120 9.30 79-21 UShouldBDancing120\frac{3}{2} Lisas Vision1182\frac{1}{4} Voleuse1183\frac{3}{4} 3-4w turn,\text{ow}1/4,rally
8 Aug21-3Sar fm 5 1 0 22 :451 :564 1:024 3 ↑ ₱ S M d S p W t 16 J l y 21 4 3 5 :57 1:032 3 ↑ ₱ S M d S p W t 1 25 J un 21 -6 B e l fm 6 f	1	L119b *2.00 87–13 KresLWrot119hd UShouldBDncing1191½ Cumstt119¾ Drft out2x?s str,pausd L119b *1.20 81–15 UnclsGm1241¾ KrsLWrot1191¼ UShouldBDncng1194¾ Bmpd brk,ins-2p,3p1/4 18b 5.60 88–09 GtthCndy1182½ UShouldBDncing118hk NoPyn1182½ Bmp st,ins trn,bmp3/16 17.80 33–19 Lobnonpryr1228 JllsHotMss1193½ ShnsPrttyLdy120no 2w,puled,bore out 1/8 119b 5.00 77–17 LttlDutchGrl119hk USholdBDncng1191½ KrsLWrot119½ Drifted thru stretch Mar20 Bel tr.t 4f fst :492 B 52/82 Feb28 Bel tr.t 4f fst :514 B 34/40 J/T 2021-22 BEL (12 .17 \$1.39) J/T 2021-22 (47 .28 \$3.76)
7 Happy Hill Lil Own: Cimbora Jr Roger 9-2 Red, Yellow Stars, Red Sleeves, Two Blue ROSARIO J (17 1 8 2 .06) 2022: (293 63 .22)	B. m. 5 (Feb) Sire: Handsome Mike (Scat Daddy) \$2,500 Dam: Brazo de Oro (First Dude) Fr: Roger Cimbora Jr (NY) Tr: Sciacca Gary(13 1 2 4 .08) 2022:(79 7 .09)	Life 13 2 0 1 \$65,478 80 D.Fst 6 0 0 1 \$8,894 48 2021 8 2 0 0 \$56,708 80 Synth 0 0 0 0 \$56,323 80 Bel © 4 1 0 0 \$25,523 80 Dst%(349) 3 1 0 0 \$25,343 80
SNov21-5Bel fm 6f T 221 :452 :573 1:10 3 + ₱ SAI w 80000N	1X 66 9/10 3 73 84 75 63 Cancel E 80 12/12 3 31 1hd 1½ 1hd Cancel E 66 12/12 4 105 105 14 43 11 Cancel E 53 9/10 7 95 83 63 63 44 Vargas JAJr 56 12/12 10 104 94 53 62 Samuel JL 18 1/14 3 74 910 1217 1217 Hernandez B -0 7/9 4 85 81 810 916 93 McCarthy T	L120 13.20 73-17 GettheCandy120hd She'stheOne1201½ HighwayQueen1182 Chased 4-3w, tired L121 7.00 84-16 ShowMetheHoney1201 UnclesGem123¾ HighwyQun118hd 2p3/8,swung 6w1/4 L123 16.60 87-15 HappyHillLil123hd TheodoraGrace1234 Appreciate1211 3w uppr, got the bob L124 81-19 HappyHillLil123hd TheodoraGrace1234 Appreciate1211 3w uppr, got the bob L124 33.25 81-13 WriteThisDown1191 NewYorkSuprem124½ Orm124½ Bmp brk,bmp early,3w L124 84.50 74-23 TisaPity1241¾ Escpewithfriends119½ LookintoFly124nk 4-5w uppr, outkicked L124 34.00 55-17 Sweeter118½ Ob La Di118½ Maria's Gift1181 Ins-3wide turn,empty L125 10.10 43-18 BigTonysGirl1183 TinyMgoo1252¼ CptivtngCr1181½ Chased 3-4w, no impact
22Aug20-6Sar fst 6f 223 .452 .5741:104 3 ♠ ⑤ IM d 25000 22JJy2040Sar fst 7f 232 .47 1:1231:253 3 ♠ ⑥ ⑤ IM d 25000 26Jun20-9Bel fst 6¼ 5 224 .4621:1121:181 3 ♠ ⑥ ⑤ IM d 25000 4Jun20-6Bel fst 6f 222 .463 .5841:114 3 ♠ ⑥ ⑤ IM d 30000 WORKS: May9 Beltr.t 4f fst :50 B 47/66 Apr30 Beltr.t 4f fst :491 B . TRAINER: +180Days(9 .22 \$5.02) TurfSprints(46 .09 \$3.13) Turf(87 .0	43 8 /8 6 68½ 66½ 56 59½ Cardenas L7 - 9 /13 10 31 106¾ 1340 13 Cohen D 48 13/14 9 74½ 53½ 44 33¾ Ortiz I Jr 43 13/13 10 44 52¼ 42 42¾ Cancel E 4/147 Apr23 Beltr.t 4f fst :511 B 102/119 Apr6 Wnd 4f fst :491 B	L112b 6.80 76-12 CntrlExt11913 ShnndohRvr11923 LovMTomorrw1191 Inside half,2w,no bids L122b 9.10 - 18 ManiPedi12013 AdriaticHoliday 12013 MebsWeb1203 Retreat,eased,wlkd off L120 4.30 79-13 Kefaliani1203 Hey It's Tati12023 Happy Hill Lil1201 4w upper, kept on L120 8.60 78-12 A d'Oro12013 Queentigua1203 Empress Luciana1153 4w,6w1/8,stayed on 1/1 Mar29 Wnd 4f fst :52 B 1/1 Mar22 Wnd 3f fst :39 B 1/1 J/T 2021-22 BEL(1 1.00 \$7.10) J/T 2021-22(1 1.00 \$7.10)
Miss Delicious Own: Hibiscus Stables LLC and Dig That Min 3-1 Royal Blue, Fuschia And Blue Emblem ORTIZI JR (29 11 6 3 .38) 2022: (442 122 .28)	B. f. 4 (Apr) Sire: California Chrome (Lucky Pulpit) \$300 Dam: Exchange Funds (Speightstown) Br: Robert Spiegel (Ky) Tr: Klesaris Robert P(6 2 1 0 .33) 2022:(47 8 .17)	L 125 Life 10 2 2 0 \$100,654 80 D.Fst 1 0 0 0 \$2,760 36
Previously trained by Klesaris Steve 2021: (237 32 29 36 0.1 25Mar22-6GP fst ⁴170⊗ 242 :4841:1311:414 44 ⊕ Alw 40000s Hand timed	4) 75 2 /7 11½ 11½ 12 11½ 2½ Castellano J J	L120b *1.60 89-09 Lido Key120½ Miss Delicious1204¾ Short Circuit1202¾ Pace,reeled in late
26Jan22-8GP fm *1₁ ⊕ 1:453 4↑ ⊕ Clm c-(35-25)1 Claimed from Dubb Michael for \$35,000, Maker Michael J Tra 22Dec21+10GP fm *1 ⊕ 1:373 3↑ ⊕ Clm c-(35-25)1	iner 2021: (1340 214 213 190 0.16) Hand timed 12L 69 6/8 3½ 2½ 21 53 53½ Panici L Trainer 2021(as of 12/22): (496 88 61 70 0.18) Hand timed	L122b *.70 71–29 Miss Delicious1222a Systematic1181a AlphaBabe122no 2wd, 4wd 1/4, drew off L122b 3.30 - MeirWine122a MeettheButy122a MiAtMidnight1202 Bumped 1st,3p,evenly 1 Previously trained by Donk David 2021(as of 10/14): (228 23 37 25 0.10) L120b 23.50 88–09 Princess Fawzia122nd Evvie Jets1181a Messidor118a 2p trn,headed3/16,wknd
17Sep21-3Bel fst 1	67 1/9 1½ 11½ 11 53¼ 99½ Velazquez J R 69 8/8 44½ 42½ 53 74¼ 76½ Velazquez J R 80 6/7 11 11 1½ 11 2½ Lezcano J 79 1/9 1½ 11 1½ 11 1¼ Lezcano J	L120b 19.00 60-13 Trinni Luck1225½ Primacy1224 Perfect Grace1185 3-4wide turn,faltered L122b 10.40 85-08 Jordan's Leo120½ Town Avenger120² Magisterium120nk Hit gate st, wknd L122b 9.80 74-19 Third Draft122no Misspell122¹ Magisterium120n 3w in range, no rally 122b 9.10 85-14 Amy C120½ Miss Delicious122¾ Third Draft122no In hand,ins trn,fought 118b 25.50 85-15 MissDelicious1181¼ Anglou1181¼ InfinitPotntif125no Ins,asked1/4,responded 112b 36.25 50-40 TrafficLane119¾ Candace01191¼ LinerThinking119no Saved grd, no response

J/T 2021-22 BEL(2 .50 \$2.90) J/T 2021-22(2 .50 \$2.90)

15Nov20-6Aqu gd 116 ① 234 :49 1:15 1:474 @Md Sp Wt 80k 47 7 /12 75 75½ 96½ 812 79¾ Cardenas L7 112b 36.25 50-40 TrafficLane119¾ Candac WORKS: May6 GP 4f fst :484 B 19/27 Apr18 GP 4f fst :473 B 3/11 Apr10 GP 4f fst :49 B 17/52 Mar12 GP 4f fst :474 B 6/130 Feb24 GP 4f fst :483 B 9/15 Feb15 GP 4f fst :49 B 7/12

Holiday Jazz Entered	For Main Track Only	
9 Holiday Jazz Own: Pirillo Louis Bridge Racing and Dugga 3-1 Green, White Hoop, Electric Blue CARMOUCHE K (55 8 11 7 .15) 2022: (382 80 .21)	Ch. f. 4 (Jan) SARAUG19 \$150,000 Sire: First Samurai (Giant's Causeway) \$10,000 Dam: Alma Llanera (Distorted Humor) Br: Teneri Farm Inc & Bernardo Alvarez Calderon (NY) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 .27)	L 125 Life 3 1 0 0 \$22,900 61 D.Fst 2 1 0 0 \$22,450 Wet(404) 0 0 0 0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
80ct21-1Bel fm 6f T 223 :453 :5611:074 3↑ €SMd Sp V	000 61 7 / 11 3 31 ½ 2 hd 14 ½ 19 Carmouche K iner 2021: (38 2 2 6 0.05) Previously trained by Casse Mar /t 75k 39 6 / 10 4 107 ½ 94 ¾ 88 ½ 711 Carmouche K B 56/221 Apr9 Bel tr.t 4f fst : 492 B 71/187 Apr2 Bel tr.t 3f fst : 37	L125f 4.40 59-29 That Is Key1273¾ Stone Creator 1186¾ I'm Fine1251¼ Ins foe-2pth,wknd L125 4.70 78-22 HolidayJazz1259 ReeleyPsyched1253¾ BlindSight1253¾ 3w turn,eased up 1/
Stella Mars Own: Pavilion Racing Dark Horse Racing Sta Turquoise, Black Circle And Horsehead DAVIS D (72 13 8 15 .18) 2022: (419 87 .21)	Dk. b or br f. 4 (May) FTK0CT19 \$70,000 Sire: Point of Entry (Dynaformer) \$7,500 Dam: Romance Is Passion (In Excess*Ire) Br: Mt Sackville Bloodstock (NY) Tr: Handal Raymond(5 0 1 0 .00) 2022:(86 17 .20)	L 125 Life 13 2 3 2 \$97,370 71 D.Fst 1 0 0 0 \$1,400 0 0 0 0 0 0 0 0 0
6Apr22-9Aqu fm 6f	13L 71 3/8 74\frac{3}{4} 75\frac{1}{2} 84\frac{3}{4} 83\frac{1}{4} 41\frac{1}{2} \] Samuel J L 66 8 / 11 7 95\frac{1}{4} 87\frac{3}{4} 74\frac{1}{2} 10^{\text{o}} \] Samuel J L 64 7 / 12 5 67\frac{1}{4} 68 44 10^{\text{o}} \] Davis D 63 4 / 12 5 93\frac{3}{4} 84\frac{1}{4} 63\frac{3}{4} 21 Davis D 63 4 / 12 2 42 53\frac{1}{4} 42 2\frac{3}{4} \] Rosario J 63 4 / 12 2 42 53\frac{1}{4} 42 2\frac{3}{4} \] Rosario J 5-10 27 8 / 12 11 128\frac{3}{4} 111 912 714\frac{3}{4} \] Ramos J D 26 8 / 8 1 41\frac{1}{4} 83\frac{1}{4} 74\frac{3}{4} 2\frac{3}{4} \] Cancel E tr. t70k 44 10/12 43 43 31\frac{1}{2} 56 710\frac{1}{2} \] Davis D 38 4 / 11 6 55\frac{1}{4} 45\frac{1}{4} \] Apr3 Bel tr. t4f fst: 48\frac{1}{4} 8 11/123 \] Mar26 Bel tr. t4f fst:	L126 8.30 84-11 ThodorGrc1191¼ Thgoddssofsnks126nk MissingLnk124¾ Nudged 1/8, kept L120 9.40 89-13 TwoCntTootsi121½ KissingFrogs121¾ MorGoodTms123nk 6w upper, mild t L120 6.70 81-17 StellaMars120no ARingThing122nk ProperGrmmr1201 7w upper, good fini L121 3.70 88-10 StellaMars121nk PathLessTaken121no CndyMonet1212¾ Ins turn,mvd out3, L121 3.35 80-19 HappyHillLit1241 StellaMrs1212 NewYorkSupreme1241½ 2p,traffic3/fslelaLlit18 3.25 71-27 Socilhwiri1193 StellMrs1191½ NewYorkSupreme1124nk 4w trn,7w1/4,belatec L118 5.00 85-12 Byhubbyhellomony118¾ StllMrs118¾ HighwyQun118¾ 2-3w turn,swung 5w L1205 7.10 74-10 Until Now1204¼ Volnay1201 Pettigo Girl1203¾ Never close outsi L122fb *2.45 50-37 Gun HillGirl1221½ ViveLaLiberty1222¾ Tremayne1226¼ 6-7w uppr, weaken L120fb 3.25 74-16 InvestmntGrd120nk CptivtingCr1202¾ StllMrs120nk Near ins,5w1/8,won sl 119b 11.70 56-33 Mendhm1191½ PhotofinishJenne119¾ Cumstt1141¼ Chased 2-3w, weaken 7.40 73-17 LttlDtchGrl119nk USholdBDncng1191½ Krst Wrot119½ Bumped betw after 150 B 150/194 Mar21 Beltr.t4ffst:491 B 30/76 Mar11 Beltr.t4ffst:53 B 252/255 J/T 2021-22 BEL(11 .18 \$3.16) J/T 2021-22(100 20 \$1.7)
11 Mandy Green Own: Windylea Farm LLC Kelly Green, Gold Circle And 'N,' Gold RAT F (10 3 2 1 .30) 2022: (340 94 .28)	Ch. f. 3 (Mar) Sire: Include (Broad Brush) \$5,000 Dam: Doeling (Purim) Br: Tom Proctor (Ky) Tr: Hennig Mark(9 0 1 2 .00) 2022:(86 10 .12)	L 120 Life 3 1 0 0 \$19,730 55 D.Fst 0 0 0 0 \$0 \$0 \$0 \$0
2Mar22-12GP fst *170 ⊗ 244 :5011:1531:442		L118b 15.90 74-20 KnKndm11824 SndpprMmrs118nk StrnEmbrc118nk 3w btw,5w3/16,one-p. L118b 7.60 61-31 Thataint Tooshabby1183 Hatari1181 Vexednrelaxed1184 Bid 1/4p,vied,fac
3Jan22-6GP fst $470 \otimes 252$:51 1:1621:44 \textcircled{P} Md c-(35-3) Claimed from Proctor Thomas F. for \$35,000, Proctor Thom ORKS: May6 Bel 4f fst :492 B 22/68 Apr29 Bel 4f fst :483 B 3/34 RAINER: 61-180 Days (38 .13 \$2.72) TurfSprints (25 .08 \$5.50) Syr	as F Trainer 2021: (100 ⁻ 16 ⁻ 13 ⁻ 16 0.16) Hand timed Apr 21 Bel 4f fst :5 01 B <i>12/16</i> Apr 9 GP 4f fst :49 1 B <i>46/12</i> 7 Mar	
T2 Freedomofthepress Own: Amsterdam Two Stables Red, Yellow Circle, Black 'A,' Yellow AEZ L (8 3 0 0 .38) 2022: (565 117 .21)	Dk. b or br f. 4 (Apr) KEENOV18 \$170,000 Sire: Mshawish (Medaglia d'Oro) \$5,000 Dam: Frere Pilgrim (Indian Charlie) Br: Sarahsponda Racing LLC (Ky) Tr: Ferraro James W(6 0 2 0 .00) 2022:(65 5 .08)	L 125 Life 7 2 1 1 \$74,200 75 D.Fst 0 0 0 0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
6Apr22-9Aqu fm 6f	000, Rice Linda Trainer 2022(as of 4/29): (144 19 26 17 0.13 51 4 /8 6 65½ 63¾ 53½ 76 Lezcano J 75 8 /10 5 2½ 1½ 13 12¾ Lezcano J 68 1 /10 98½ 86 83½ 62½ 4½ Ortiz J L	L126 3.15 86-16 Frdmfthprss1261½ Ofllthgnints1202¾ HlfBrthdy120⅓ 2wd,dueled,edged aw
Claimed from Klaravich Stables, Inc. for \$40,000, Brown Cl <u>14JJy21-2Sar fm</u> 1	100k 70 2/9 85 65½ 64½ 63¾ 61¾ Ortiz J L	L118 *2.75 72-23 Pathetique118nk SoEnchnting1181 LdyVlentine118nk 4-5w uppr, no headw

TRAINER: 1stClaim(12 .17 \$1.70) TurfSprints(15 .07 \$0.61) Turf(42 .05 \$0.58) Sprint(156 .06 \$0.61)

Daily Racing Form Entered For Main Track Only

Apr22-2Bel fst 6⅓f Mar22-9Aqu fst 7f Mar22-4Aqu fst 6f Feb22-5Aqu fst 1 Jan22-9Aqu fst 6f Dec21-3Aqu fst 6f	42 6 /6 5 31 3nk 54½ 512¾ Gomez J A5			2021 Bel	-	0 3 0 2		\$28,890 \$18,000	- 1	Synth Turf(287) Dst(410)		0 0 2	0	\$0 \$1,950 \$37,360	40
Mar22-9Aqu fst 7f Mar22-4Aqu fst 6f Feb22-5Aqu fst 1 Jan22-9Aqu fst 6f 9 241 :49 1:1441:28 34 €CIm 14000n3L \$ 231 :4741:0041:144 34 €CIm 16000n2L \$ 23 :4631:1231.421 44 €CIm 16000n2L \$ 242 :452 :5731:103 44 €CIm 25000n2L		L118 b							- 1	ncil1231	′ '	_		wknd btw	
Mar22-4Aqu fst 6f \$ 231 :4741:0041:144 34 €CIm 16000n2L Feb22-5Aqu fst 1 \$ 23 :4631:1231.421 44 €CIm 16000n2L Jan22-9Aqu fst 6f \$ 224 :452 :5731:103 44 €CIm 25000n2L	66 5 /6 4 1½ 1½ 1¾ 17½ Franco M	L123 b								123¾ MebsW	eb121				
Feb22-5Aqu fst 1 \$ 23 :4631:1231:4214↑ € CIm 16000N2L Jan22-9Aqu fst 6f € 224 :452 :5731:1034↑ € CIm 25000N2L										Appreciate				uit, edge	
										SummryJud					
Dec21_3Agu fst 6f 233 -471 -5941-1243★@Clm c=25000N2		L120								Sehorsd0rd				3w, impro	
		L118	4.90	69-22	BigTiı	neLad	ly 1184	∄ MzlEigh	nteen	1221½ Linnyk	te120	2골 01	ff step	slw,3-4w	turn
Claimed from Toga Party Racing Stable for \$25,000, Martin Ca						_									
Oct21-3Bel slyS 6½f 232 :4721:1311:1943♠ (€) Clm 30000N2L		L118								ll1183 ₄ Hndlt					
Oct21–3Bel fst 6f 224 :463 :5911:1143↑ (€) Clm 25000 N2L	62 1/7 5 65½ 56 32½ 22 Roberts C	L118								82 MzlEightı					
Sep21-3Sar fst 6f		L 118b	*.95	64-11	Danny	Deep	Cuts1	20 4≩ Bust	inmy	groove1112ą	Miss	\lex1	208≩ 5\	v upper, t	ired
Claimed from Sharp Joe for \$16,000, Sharp Joe Trainer 2021(as									_						
Aug21-8Sar gd ^S 11% ⊗ S 483 1:1231:38 1:511 3↑ (€) Clm 40000 N2L		L 118b								s1181 ItlinTw					
Jly21-7Sar fst 6f 221 :454 :583 1:121 3↑ (€) Clm c-16000 N2		L118b	8.50	74-20	Chloe	Rose1	.183 <u>3</u> F	ted Peppe	er Gri	II118½ Traffi	: Lan	e118¾	6w up	per, mild	kick
Claimed from Loures, James J. and Bakker, Eric for \$16,000, L			00.40	00 00	11	ar . e .	400	CEP. Lan.	C1	1.31401 Aug 1		107 A			
Jun21-8Prx fst 1 231 :4611:1031:37				80-88	Hybri	a⊨c∥p	se izu '	· Filantto:	Snang	ihi118½ CttiLl	seileT	א יאו A	ıngied (out, flatte	aned
DRKS: May10 Bel 3f fst :373 B <i>9/13</i> Apr25 Bel 4f fst :52 B <i>25/29</i> A AINER: Dirt(597 .21 \$2.03)			1 AE E_1	E01 D -				t 4f fst :50							

Wagers: Exacta, Trifecta (.50), Super (.10), Pick 3, Pick 4 (.50), Double



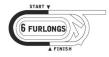
Post time: 3:06 ET

Belmont Park

LH 1:113 34 Saudia Cup Sprint Stk 1500000

Runhappy-G3

New York Centra/126hd Matera Sky1262 Gladiator King126nk



Beyer par: NA

No threat

6 Furlongs (1:073) THE RUNHAPPY. Grade III. Purse \$150,000 For Four Year Olds And Upward. Non-Lasix Race pursuant to 4043.2 (7)(e)(5) Lasix not permitted within 48 hours of post time. By subscription of \$150 each which should accompany the nomination; \$750 to pass the entry box and an additional \$750 to start. For horses not originally nominated, a supplemental payment of \$750 along with the entry and starting fees may be made at any time prior to the closing of entries. The purse to be divided 55% to the owner of the winner, 20% to second, 12% to third, 6% to fourth, 4% to fifth and 3% divided equally amongst the remaining finishers. Weight: 124 lbs. Non-winners of a Graded Sweepstake in 2021-22 allowed 2 lbs.; of a Sweepstake in 2022 allowed 4 lbs.; of two races other than maiden, claiming, starter or statebred allowance in 2022 allowed 6 lbs. A presentation will be made to the winning owner. Closed Saturday, April 30, 2022 with 14 Nominations.

1 Chateau	Dk b/br g(02.27.17) 7 (Feb)	Life 40 8 11 10 \$655,019 98 D.Fst 27 6 8 6 \$576,353 98
Own: Dubb Michael	Sire: Flat Out (Flatter) \$3,000	2022 1 0 1 0 \$40,000 83 Wet(402) 4 2 0 1 \$53,280 97
5-2 Yellow, Pink Circle And Rose, Pink Cuffs	Dam: Distinct Sparkle (With Distinction)	124 Synth 8 U 3 3 \$25,175 55
CARMOUCHE K (55 8 11 7 .15) 2022: (382 80 .21)	Br: Preston Stables LLC (Ky) Tr: Atras Rob(11 2 3 0 .18) 2022;(119 30 .25)	124 2021 8 3 1 2 \$293,450 98 Turf(196) 1 0 0 0 \$211 -
CAR MODGITE R (33 0 11 7 .13) 2022. (302 00 .21)	11: Atlas Rob(11 2 3 0 .10) 2022:(113 30 23)	Bel 4 0 1 2 \$51,920 95 Dst(384) 21 6 6 5 \$491,465 98
5Mar22-3Agu fst 6f 223 :46 :5841:1214+TomFoolH-G3	83 5 /5 1 11 11½ 11 25½ Carmouche K	123b *.50 76-21 Officiating 1235 Chateau 1231 Repo Rocks 1197 In hand 2p, kept on
19Dec21-7Agu fst 6f 231 :471 :5841:111 34 GravesendL97		126 b *1.60 87–22 Chateau 1263 Jaxon Traveler 122 Drafted 1205 J 3-4w turn, hand urging
28Nov21-8Agu fst 6f 222 :453 :58 1:11 34 FallHwtH-G3	87 1/8 3 11½ 12 11½ 13½ Carmouche K	131b 2.90 84-16 HopefulTreasure128hd <i>GreenLightGo</i> 1293\(\frac{1}{2}\) Chateu1311\(\frac{1}{2}\) In hand ins, collared
13Sep21-9Prx fst 6f C 214 :444 :5741:10 34 Alw 50612NC	52 4 /7 2 1hd 2½ 57 720½ Carmouche K	L123b *1.10 73–20 Dontmswthm1232¼ Trngl1232 Forthluvofbourbon1267¾ Vied inside, stopped
4JJy21-40Pim fst 6f 224 :452 :5711:092 3 LiteTFuseB96		L126b 3.10 87-15 Yaupon1261 Laki1261 Chateau 1263 Lost whip past 3/16
8May21-4Bel fst 6f 222 :452 :5721:093 4↑ Runhappy-G3	95 3 /5 2 12½ 12½ 2½ 23¼ Carmouche K	124b 1.40 89–17 Firenze Fire1243 Chateau124 Town Classic118no Coaxed 2p, ran on
3Apr21–6Aqu fst 7f 23 :4541:1021:234 4↑ CarterH-G1	96 5 /5 1 11½ 12½ 2hd 46½ Carmouche K	120b 3.30 78-25 MschvosAlx1235½ MndContrl1231 SprStnhng118hd In hand 3-2w, weakened
6Mar21-7Aqu fst 6f		119b 3.80 83-27 Chateau1193½ Wendell Fong1203¼ Speed Pass1181¾ In hand ins, held clr
18Jan21−6Aqu fst 6f 222 :451 :5711:102 4♠ OC 62k/N2X	96 7 /8 1 11½ 12½ 13½ 11½ Carmouche K	L119b 3.70 91–19 Chateau1191½ Secret Rules1183¼ T Loves a Fight118nk 2w,sail along,ask3/16
19Dec20-6Aqu fst 6½f 223 :46 1:12 1:191 3♠ O C 62k/N2x	85 3/10 2 $1\frac{1}{2}$ 12 11 $24\frac{1}{2}$ Marquez C ⁵	L119b *2.10e 78-24 Mi Tres Por Ciento 1244 Chateau 119nk Cost Basis 122nk In hand 2p, collared
27Nov20-7Aqu gd 6f 221 :451 :5721:101 3↑ OC 62k/N2X	87 5 /8 1 11½ 12½ 11½ 32¾ Carmouche K	L122b *1.45e 89-12 Pete's Play Call1222 Secret Rules 1203 Chateau 122hd In hand 3-2w, wknd Ite
	88 6 /7 1 1½ 1½ 1½ 34¼ Franco M	L123b 10.20 91–08 LastJudgment123hd PetesPlay Cal/1234 Chateau 123 In hand 3-2w, wknd Ite
250ct20-8Bel fst 61f 222 :4441:0911:153 34 OC 62k/N2X		
250ct20−8Bel fst 6½f 222 :4441:0911:153 3 ↑ 0 C 62k/n2x WORKS: ●May8 Bel tr.t 4f my :48 B 1/13 Apr30 Bel tr.t 4f fst :483 I	3	³ B <i>37/46</i> Mar20 Beltr.t 3f fst : 384 B <i>20/20</i> Feb27 Beltr.t 4f fst : 503 B <i>86/155</i>
		3 B 37/46 Mar20 Beltr.t 3f fst : 384 B 20/20 Feb27 Beltr.t 4f fst : 503 B 86/155 J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77)
WORKS: •May8 Bei tr.t 4f my :48 B 1/13 Apr30 Bei tr.t 4f fst :483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2	5 \$1.74) GrdStk(21 .14 \$2.40)	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77)
WORKS: ●May8 BeÎtr.t 4f my :48 B 1/13 Apr30 Bel tr.t 4f fst :483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in h	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start;
WORKS: ●May8 BeÎtr.t 4f my :48 B 1/13 Apr30 Bel tr.t 4f fst :483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec	5 \$1.74) GrdStk(21.14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) I his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 48³ I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rechowever, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem	5 \$1.74) GrdStk(21.14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend after s likely he'll get away with manageable fractions; still hard to true	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price.
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 48³ I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rechowever, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem	5 \$1.74) GrdStk(21.14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend aftes likely he'll get away with manageable fractions; still hard to true Gr/ro. g(02.21.17) 8 (Mar)	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 D.Fst 22 6 2 2 \$750,193 93
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 48³ I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rechowever, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted	5 \$1.74) GrdStk(21.14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to true Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) In his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 D.Fst 22 6 2 2 \$750,193 93 Wet(376) 3 1 0 1 \$106,500 97
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 48³ I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rechowever, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm)	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 Life 26 7 2 3 \$856,693 97 Wet(376) 3 1 0 1 \$106,500 97 Synth 0 0 0 0 \$94,500 97
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on ma nearest early pursuer figures to be another Atras trainee, so it seem Drafted Own: Dublin Fjord Stables LLC Racepoint St Green And Orange Quarters, Orange	5 \$1.74) GrdStk(21.14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend aftes s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla)	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 7 7 7 7 124 2021 7 0 1 2 \$71,560 87 7 7 7 7 7 7 7 7
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on manearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm)	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 Life 26 7 2 3 \$856,693 97 Wet(376) 3 1 0 1 \$106,500 97 Synth 0 0 0 0 \$94,500 97
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on ma nearest early pursuer figures to be another Atras trainee, so it seem Drafted Own: Dublin Fjord Stables LLC Racepoint St Green And Orange Quarters, Orange	5 \$1.74) GrdStk(21.14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend aftes s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla)	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 70 1 2 \$71,560 87 70 1 0 0 0 0 0 0 0 0
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St 3-1 Green And Orange Quarters, Orange ORTIZ JL (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 23 :46 1:0921:2114+ CarterH-G1	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 27) 93 6/7 7 753 634 672 5104 Carmouche K	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 97 97 97 97 97 97
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 48³ I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on manearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 23 :46 1.0921:211 4+ CarterH-G1 5Feb22-3Aqu my 7f 232 :47 1:1141:25 4+ Toboggan-G3	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 .27) 93 6/7 7 75¾ 63¼ 67½ 510¼ Carmouche K 97 3/5 4 54½ 31½ 14 14½ Ortiz J L	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 871 19 28.75 94-03 Spkrs Cornr 1244½ RnvstmntRsk 1172½ MndControl 1232¾ 6w upper, weakened 118f 6.90 85-24 Drafted 1184½ Repo Rocks 1186 Happy Medium 1205¼ 4-3p trn,rallied,clear
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on ma nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 5Feb22-3Aqu my 7f 232 :47 1:1141:25 44 Toboggan-G3 19Dec21-7Aqu fst 6f 231 :471 :5841:111 34 GravesendL97	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 .27) 93 6/7 7 75\frac{3}{4} 63\frac{1}{4} 67\frac{1}{2} 510\frac{1}{4} Carmouche K 97 3/5 4 54\frac{1}{2} 31\frac{1}{2} 14 14\frac{1}{2} 0 \text{ Ortiz J L} (81 4/5 4 36\frac{1}{2} 36 35 34\frac{1}{4} Davis D	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 D.Fst 22 6 2 2 \$750,193 93
WORKS: ●May8 BeÎtr.t 4f my: 48 B 1/13 Apr30 Bel tr.t 4f fst: 483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7 5Feb22-3Aqu my 77 232 :47 1:1141:25 4+Toboggan-G3 19Dec21-7Aqu fst 6f 20Nov21-6Aqu fst 6f 20Nov21-6Aqu fst 6f 20 32 :461 :58 1:103 3+ OC 80k/w2x	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 27) 93 6 /7 7 75\frac{3}{4} 63\frac{1}{4} 67\frac{1}{2} 510\frac{1}{4} Carmouche K 97 3 /5 4 54\frac{1}{2} 31\frac{1}{2} 1 4 14\frac{1}{2} 0 Ortiz J L 81 4 /5 4 36\frac{1}{2} 36 35 34\frac{1}{4} Davis D 87 3 /7 7 68 65\frac{1}{2} 45 21\frac{1}{3} Davis D	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 D.Fst 22 6 2 2 \$750,193 93
WORKS: ●May8 BeÎtr.t 4f my: 48 B 1/13 Apr30 Bel tr.t 4f fst: 483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 5Feb22-3Aqu my 7f 19Dec21-7Aqu fst 6f 20Nov21-6Aqu fst 6f 20Nov21-6Aqu fst 6f 31Oct21-7Bel sly5 7f 231 :461 :58 1:103 34 OC 80K/N2X 310ct21-7Bel sly5 7f 232 :47 1:231 34 BoldRirH-G3	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to true Gr/ro. g(02.21.17) 8 (Mar) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0.00) 2022:(22 6 27) 93 6 /7 7 75 3 63 4 67 2 510 4 Carmouche K 97 3 /5 4 36 2 36 35 34 4 10 2 Vortiz JL Gr/ro. g(02.21.17) Gr/ro. g(02.	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) In his last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 97 97 97 97 97 97
WORKS: ●May8 BeÎtr.t 4f my : 48 B 1/13 Apr30 Bel tr.t 4f fst : 48³ I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted 2 Drafted 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 23 :46 1.092 1:211 4+ Carter H-G1 5Feb22-3Aqu my 7f 232 :47 1 :1114:25 4+ Toboggan-G3 19Dec21-7Aqu fst 6f 23 :461 :58 1:103 3+ OC 80k/w2x 231 :464 1:231 3+ BoldRIrH-G3 10ct21-7Bel fst 6f 223 :453 :5711:094 3+ OC 80k/w2x	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0.0) 2022:(22 6 27) 93 6/7 7 75\frac{3}{4} 63\frac{1}{4} 67\frac{1}{2} 510\frac{1}{4} Carmouche K 97 3/5 4 54\frac{1}{2} 31\frac{1}{2} 1 4 14\frac{1}{2} Ortiz JL (8 11 4/5 4 36\frac{1}{2} 36 35 34\frac{1}{4} Davis D 87 3/7 68 65\frac{1}{2} 45 21\frac{1}{4} Davis D 88 3/7 6 75 63\frac{1}{4} 47\frac{1}{2} 48\frac{1}{4} Davis D 85 8/8 6 85 74\frac{1}{4} 64\frac{1}{4} 52 Davis D	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 70,000 70 70,000 70 70,000 70 7
WORKS: ●May8 BeÎtr.t 4f my :48 B 1/13 Apr30 Bel tr.t 4f fst :483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 23 :46 1:092 1:211 4+ Carter H-G1 5Feb22-3Aqu my 7f 232 :47 1:1114:25 4+ Toboggan-G3 19Dec21-7Aqu fst 6f 23 :461 :58 1:103 3+ OC 80k/n2x 310ct21-7Bel sly 5 7f 233 :464 1:23 3+ BoldRIrH-G3 10ct21-7Bel fst 6f 223 :453 :5711:094 3+ OC 80k/n2x 8May21-4Bel fst 6f 222 :452 :5721:093 4+ Runhappy-G3	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0.00) 2022:(22 6 27) 93 6/7 7 75½ 63¼ 67½ 510¼ Carmouche K 97 3/5 4 54½ 31½ 14 14½ Ortiz J L (8 81 4/5 4 36½ 36 35 34¼ Davis D 87 3/7 7 68 65½ 45 21¾ Davis D 88 3/7 6 75 63¾ 47½ 48½ Davis D 88 3/7 6 75 63¾ 47½ 48½ Davis D 88 3/7 6 75 63¾ 47½ 48½ Davis D 88 3/8 6 85 74¼ 64½ 52 Davis D 85 8/8 6 85 74½ 64½ 52 Davis D 44 5/5 5 45 56½ 511 526½ Saez L	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 70,000 1 2 2000 1 2 2000 1 2 2000
WORKS: ●May8 BeÎtr.t 4f my :48 B 1/13 Apr30 Bel tr.t 4f fst :483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 5Feb22-3Aqu my 7f 19Dec21-7Aqu fst 6f 20Nov21-6Aqu fst 6f 20Nov21-6Aqu fst 6f 310ct21-7Bel slys 7f 233 :461 .0921:211 4+ CarterH-G1 231 :471 .584 1:111 3+ GravesendL97 232 :47 1:1141:25 4+ Toboggan-G3 10ct21-7Bel slys 7f 233 :464 1:231 3+ BoldRirH-G3 10ct21-7Bel fst 6f 8May21-4Bel fst 6f 30Jan21-4Aqu fst 7f 5 24 :48 1:1141:241 4+ Toboggan-G3	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 .27) 93 6/7	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 2 2 2 2 2 2 2 2
WORKS: ●May8 BeÎtr.t 4f my :48 B 1/13 Apr30 Bel tr.t 4f fst :483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on ma nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9 Apr22-9 Aqu fst 5 Feb22-3 Aqu my 7 f 232 :47 1:1141:25 4+ Toboggan-G3 19 Dec21-7 Aqu fst 6f 201-4 fst 6f 201-21-7 Bel sly 7 f 201-21-7 Bel sly 7 f 310ct21-7 Bel fst 6f 301-21-4 Aqu fst 7 f 24 :48 1:1141:241 4+ Toboggan-G3 24 :48 1:1141:241 4+ Toboggan-G3 24 :48 1:1141:241 4+ Toboggan-G3 24 :48 1:1111:173 4+ GravesendL97 24 :48 1:111:173 4+ GravesendL97 25 :44 8 1:111:173 4+ GravesendL97 26 :4641:1111:173 4+ GravesendL97 27 :48 1:111:173 4+ GravesendL97 28 :4641:1111:173 4+ GravesendL97	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profft (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 .27) 93 6/7	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 2 519,448 87 87 87 87 87 87 87
WORKS: ●May8 BeÎtr.t 4f my :48 B 1/13 Apr30 Bel tr.t 4f fst :483 I TRAINER: 61-180Days(54 .26 \$2.63) Dirt(367 .23 \$1.59) Sprint(257 .2 CLOSER LOOK: Has been sent off at short prices in most of his rec however, rationing that speed for the finish has been an issue on me nearest early pursuer figures to be another Atras trainee, so it seem 2 Drafted Own: Dublin Fjord Stables LLC Racepoint St 3-1 Green And Orange Quarters, Orange ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) 9Apr22-9Aqu fst 7f 5Feb22-3Aqu my 7f 19Dec21-7Aqu fst 6f 20Nov21-6Aqu fst 6f 20Nov21-6Aqu fst 6f 310ct21-7Bel slys 7f 233 :461 .0921:211 4+ CarterH-G1 231 :471 .584 1:111 3+ GravesendL97 232 :47 1:1141:25 4+ Toboggan-G3 10ct21-7Bel slys 7f 233 :464 1:231 3+ BoldRirH-G3 10ct21-7Bel fst 6f 8May21-4Bel fst 6f 30Jan21-4Aqu fst 7f 5 24 :48 1:1141:241 4+ Toboggan-G3	5 \$1.74) GrdStk(21 .14 \$2.40) ent starts despite the fact that he's been victorious just once in hany occasions; pulled it off two back winning the Gravesend afte s likely he'll get away with manageable fractions; still hard to trus Gr/ro. g(02.21.17) 8 (Mar) Sire: Field Commission (Service Stripe) \$2,500 Dam: Keep the Profit (Darn That Alarm) Br: John Foster Barbara Hooker & Field Commission Pa (Fla) Tr: Duggan David P(2 0 0 0 .00) 2022:(22 6 .27) 93 6/7	J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22(147 .25 \$1.77) this last 7 races; the name of his game is Speed, and he will be in front barring some disaster at the start; ter setting a very slow pace, but fell apart in the last furlong with little excuse last time in the Tom Fool; his rust at a short price. Life 26 7 2 3 \$856,693 97 2022 2 1 0 0 \$94,500 97 2021 7 0 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 \$71,560 87 70.00 1 2 2 2 2 2 2 2 2 2

LH 1:112 34 Al Shindagha Sprint-G3 Stk 200000 Gladiator King 1281 Truck Salesman 12614 Ibn Malik 126 no Ran on well w/o seriously threatening 108 WORKS: May9 Bel tr.t 4f fst :483 B 6/66 May1 Bel tr.t 4f fst :492 B 26/66 Mar31 Bel tr.t 4f fst :474 B 2/70 ●Mar21 Bel tr.t 4f fst :463 B 1/76 Mar11 Bel tr.t 4f fst :474 B 25/255 Mar1 Bel tr.t 4f fst :491 B 5/43 TRAINER: 20ff45-180(8.25 \$3.02) 31-60Days(20.30 \$2.58) Dirt(58.21 \$2.15) Sprint(37.16 \$1.82) GrdStk(5.20 \$3.16)

J/T 2021-22 BEL(8 .25 \$1.93) J/T 2021-22(14 .21 \$2.23) CLOSER LOOK: It took him a long time to reach the winner's circle after being imported to David Duggan's barn following a career in the UAE; finally broke through with a bang in the Toboggan two back, rocketing past the field on the far turn en route to a decisive victory; that performance hardly came out of nowhere, as he had finished well into slow paces on a few occasions prior to that; can't fault him for failing to make an impact in the G1 Carter last time, especially considering the moderate early pace; may want a bit longer than 6F these days, but he's the best finisher in the field and is reunited with winning rider Jose Ortiz; plenty to like.

13 663 Dobbs P J

8 421 Dobbs P J

127

126

29Feb20 K. Abdulaziz (KSA) ft *6f

Timeform Rating:

30Jan20 Meydan (UAE)

DI- I- (I--- -- (OD 4E 04) A (M---) KEECED 40 670 000

Own: Double B Racing Stables Yellow, Green Diamonds, Light Green	Dk b/br g(08.15.21) 4 (Mar) KEESEP19 \$70,000 Sire: Tapiture (Tapit) \$10,000 Dam: Hawaiian Love (Not For Love) Br: Mrs C Oliver Iselin III (Va) Tr: DiPrima Gregory(6 1 1 1 .17) 2022:(36 1 .03)	2022 2021	4 13	1	1	5 \$332,971 1 \$110,500 2 \$198,246 1 \$126,600	99 89	Wet(436) Synth Turf(268)	0 () 1) 0) 0	0 0 0	\$293,619 \$38,400 \$0 \$952 \$149,150	89 - 76
28Apr22-7Bel fst 6f 223 :452 :5721:101 3 t O C 62k/N2x-N								Tost(931) SpunndWon					
Previously trained by Vazquez Juan C 2021: (390 43 45 46 0.1 26Mar22-9Agu qds 7f		79–18	3 Whi	istlin	na Bir	rds1243 7 oom	er 124	₃ Son of an E	x 1202	()ff slo	w,2p turn,w	vknd
5Mar22-3Aqu fst 6f 223 :46 :5841:121 4↑ TomFoolH-G3								po Rocks119				nt st, bid, w	
5Feb22–3Aqu my 7f 232 :47 1:1141:25 4↑ Toboggan–G3								appy Medium				away,2-3p,4	
28Dec21-9Prx fst 6f C 214 :45 :5721:102 3 A BlitzenB100k								12 Forthlyofbr				ride, closed	
10Dec21-7Aqu fst 6½ C 221 :4531:11 1:173 3★ Alw 82000n1x 11Nov21-7Aqu fst 6f 222 :46 :58 1:102 3★ Alw 50000s								arch1202 <i>Sibe</i> 112no ChrlieFi					
230ct21–6Bel fm 6f T 214 :441 :5641:083 3 ↑ Alw 50000s								CousinAndr					
18Sep21-11Bel fst 6f								20 ^{nk} Manolito				uppr, Íed, na	
3Sep21–3Sar fst 7f \$ 224 :4531:1021:234 3↑ Clm c-40000N2L		82-16	No 1	Quel	No11	9월 Repo Rock	(s 120 n	k Risk Profile	123nk	В	mp br	rk,clipped h	ıeels
Claimed from Rainbow's End Racing Stable LLC for \$40,000, N		00 1	1 511	C	.	100nk ##:-4		.:4400 Jal.aDa	11 ماد	001 I	104		
20Aug21−8Sar fst 7f 222 :4511:0941:224 3 Alw 50000s 17JIv21−2Sar fst 6f \$ 224 :46 :5731:101 3 Alw 50000s								<i>gi</i> 1182 JakeRo Repo Rocks1				te st, no im _! t slw. 2-3 w.4:	
WORKS: ● Apr22 Beltr.t 4f fst :47 B 1/55 Apr10 Beltr.t 4f fst :48 B 5		02- 1-	ı Dav	y 100	ua I LU	Jake NUCK	3 1220	MEHO MOCKS I	200	,	ווט ווג	L 31W,4-JW,4	VV 1/1
TRAINER: Worl astStart(10, 10, \$1,04) Dirt(82, 09, \$1,25) Sprint(53, 11,5							I/T 20	21_22 RFI (2)	ነበ ቁበ በ	nn) L	T 2021	L-22(15 N7 \$1	N 61)

TRAINER: WonLastStart(10 .10 \$1.04) Dirt(82 .09 \$1.25) Sprint(53 .11 \$1.27)

J/T 2021-22 BEL(2 .00 \$0.00) J/T 2021-22(15 .07 \$0.61)

6222.074 00 D.E-4

CLOSER LOOK: Finished behind some of today's rivals in his two prior graded stakes attempts this winter; though it should be noted that he completely botched the start on both of those occasions; gate issues have been a real vulnerability for him over the past year or so; however, he produced one of his better starts last time when going out for new trainer Greg DiPrima; that allowed him to stalk and pounce, drawing away impressively while earning a

Λ Answer In		(03.28.19) 5 (J							Life	16 4	4	2	\$421,580	96	D.Fst	14	4 4	4 2	\$417,330	
Own: Beast Mode Racing LLC		: Dialed In (Mi 1: D'va Knowwh			ow)				2022	2 0	1	0	\$18,800	95	Wet(386)			0 0	\$4,250	
6-1 Black, Silver Horse Head Emblem, Black	Br:	Glen Oak Far	n & Two	Stamp Sta	ables (I			118	2021	7 3	1	0	\$162,568	96	Synth Turf(290)	0		0 0	\$0 \$0	
PRAT F (10 3 2 1 .30) 2022: (340 94 .28)	Tr:	Falcone R N .	r(7 1 1	2 .14) 20	22:(62	11 .18)			Bel	1 0	0	0		- 1		-	2 2		\$139,398	
26Mar22-9Aqu gds 7f	34↑CaixEltrnc80k	79 3 /7	5 62	531 731	77	Carmouche K	L124	2.75	75-18	Whistl	ing E	3irds1	124 <u>3</u> Zoome	r124	Son of an E	x 120	2	3w	turn,mvd o	ıt 1/8
9Feb22-3Aqu fst 6f 224 :461 :5831:1	3 4+ OC 80k/n3x -N	95 2/5	4 31	3 <u>1</u> 31	21	Carmouche K	L119	2.70	84-27	Big En	igine	1181 /	Answer In1	19½ S	mooth B118 ^t	d		В	umped st, ra	ın on
17Dec21-7Agu fst 6f 222 :462 :5831:1	13↑Clm c-40000	90 6/8	6 52	22 2hd	1nk	Franco M	L122	*1.15	87-23	Answe	r In1	22nk ,	Zoomer122	Mor	e Graytful122	5		Rate	ed,4w turn,ra	llied
<u>Claimed from</u> LaPenta, Robert V. and Mad	laket Stables LLC for \$	40,000, Cox Br	ad H Ti	rainer 202	1(as o	f 12/17): (971 254	180 137	0.26)						•	•					
10ct21-7Bel fst 6f 223 :453 :5711:09	4 3 ↑ O C 80k/n2x	85 5/8	7 62	523 433	42	Franco M	L125	5.40	89-14	Newbo	mb1	22hd (Cost Basis1	2113 7	ΓLoves a Fig	ht12	1no	3w t	urn,4w1/4,w	lling
6Aug21-4Sar fst 6½f 221 :4441:0821:14	3 3∱ O C 100k/n3x -N	71 4/6	5 54	531 591	515 <u>1</u>	Gaffalione T	L126	*1.75	81-09	Jalen J	lourn	ey124	B₁ Rock Or	Luk	e124hd Endor	sed'	223	В	ump btw st,	tired
25Jun21-9CD fst 6f 213 :441 :5611:08	1 3 ↑ OC 62k/n2x - N	96 8 / 11	6 52	; 51¾ 2hd	13 <u>1</u>	Gaffalione T	L121	*2.40	96-08	Answe	r In1	213 <u>‡</u> [Night Time	121no	Coltonator'	121ho		Bi	d 5w, edged	clear
P7May21–7CD fst 7f 224 :4531:0931:22	113↑OC62k/N2x- N	79 1/10	0 109	1064 623	$52\frac{1}{4}$	Geroux F	L123	4.80	89-13	Home	Base	121 ^{nk}	Bourbon '	Nar12	211 Borracho	1212		5p 1	trn,6p upr, b	d str
9Apr21−8Kee fst 6½f (22 :4431:09 1:15	¹² 4↑ Alw 75940n1x	94 5/8	7 63	531/21/2	1no	Castellano J J	L118	*1.30	97–12	Answe	r In1	18no ,	4loha West	118 <u>‡</u> ŀ	King Snake1'	82		4w,5	iw1/4,up 1/16	,held
31Jan21-9GP fst 1 233 :46 1:1031:37	4 ↑ OC 25k/N1x -N	82 3/9	1hd 1hc	1 1 1 1 1 1	2nk	Gaffalione T	L118	*1.60	87-15	Summ	er K	id118 ^r	ık Answer I	n1185	¼ Kid Bourbo	n11	11	٧	ie ins, grudg	ingly
9Dec20-8GP fst 1 231 :4541:10 1:35	³ 3↑ OC 25k/n1x -N	81 5 / 7	2hd 2½	2hd 221	341	Jaramillo E	L118	*1.20	89-16	War St	орре	r1183	Roman En	npire'	11811 Answer	In1	182	Pres	sed winner,	tired
1Nov20-8CD fst 6f 1:10	3 ↑ Alw 86010n1x	78 3/8	8 73	844 42	42	Geroux F	L118	2.00e	87–11	Violnt	City	11814	Brking Nw:	120h	d Girolmos At	tck	183	Pulle	d,stdy7/16,7	p3/16
4Apr20-80P slys 11 231 :4731:1321:45	3 OC 80k/n1x - N	76 4 / 10	33 32	3nk 3½	53 <u>3</u>	Talamo J	L117	*.50	72-28	D Wnn	ngIr	nprss	on1201 Fnr	ickth	Frc117nk Gni	Trv	1221	Stal	ked 3w.tigh	. 1/16

WORKS: May9 Beltr.t 3f fst :382 B 16/24 Apr30 Bel4f fst :49 B 23/93 Apr13 Beltr.t 4f fst :482 B 2/26 Mar18 Beltr.t 4f fst :492 B 70/136 Mar11 Beltr.t 4f fst :501 B 184/255

TRAINER: 31-60Days(83.16 \$1.80) Dirt(92.24 \$2.19) Sprint(103.17 \$1.20) GrdStk(6.00 \$0.00)

J/T 2021-22(4 .00 \$0.00)

CLOSER LOOK: He's been plagued by consistency issues for much of his career; looked like a good claim for \$40k in December, as he ran a big race that day, making a strong move into a quick pace before holding off the hard-knocking Zoomer; earned a nice speed figure in his first start for Falcone in February, but he hung a bit in the late stages that day; most horses have also exited that race to regress, including him; didn't get an ideal trip over a wet

5 Officiating	B. c. 4 (Feb)		Life	17	4 4	3	\$336,097	95	D.Fst	8 2	0	2 \$	199,542	95
Own: Vegso Racing Stable	Sire: Blame (Arch) \$20,000 Dam: Come a Callin (Dixie Union)		2022	3	1 0	1	\$129,550	95			2 0		\$73,705 \$650	
4-1 White, Red Triangular Panel, Two Red	Br: Vegso Racing Stable (Fla)	124	2021	10	3 2	2	\$174,635	87	Synth Turf(321)		2		\$62,200	
FRANCO M (46 10 5 8 .22) 2022: (371 71 .19)	Tr: Joseph S A Jr(3 1 0 0 .33) 2022:(285 59 .21)		Bel	1	0 1	0	\$12,600	64	1		ō		115,000	
27Mar22-11Tam fst 6f 223 :451 :5711:09 4+ SSprintB100k	83 3 /6 4 41½ 52½ 33 46½ Gonzalez E L 124 b	*1.40	93-11	Pudo	ina12	Onk T			CajunCasnov	1183	Track			
5Mar22-3Aqu fst 6f 223 :46 :5841:1214 TomFoolH-G3									epo Rocks119				r, drew o	
29Jan2240GP fst 1	84 $3/8$ $41\frac{1}{4}$ $31\frac{5}{2}$ $2\frac{1}{2}$ $33\frac{1}{2}$ $310\frac{1}{2}$ Gaffalione T 124b								249 ₄ Officiatin				3/8p,kep	
11Dec2140GP fst 7f	87 7 / 7 1 43 42½ 1hd 1¾ Saez L 122 b	7.40	93-10	Offic	iating	g122¾	Endorsed1	22½ D	ennis' Mome	ıt120 <u>‡</u>	Cha	sed,3w	d bid3/8,	,held
6Nov21-10GP fst *170◆ 224 :4611:1131:412 ShowingUpB6	5k 62 12/12 953/4 54 31/2 881/2 10161/2 Jaramillo E 123 b	9.30		King	of Dr	eams	1233 Fighti	ing Fo	orce1233¾ Sigi	loso1	2011 3	3&4w,fa	aded int	o str
5Sep21-7GP slyS 7f ⊗ 222 :4511:0941:23 BearsDenB75k	79 2/8 4 31 41½ 1hd 13½ Jaramillo E 118b	7.80	89-13	Offic	iating	g1183	Papetu122	4 Dar	k Timber 118n	(3	wd 3/16	Sp,kick o	clear
31JJy2141GP fm *7½f ⑦ 242 :4721:11 1:284 3↑ ⑤OC 16k/N1x-	N 83 5/9 6 84 844 31½ 3nk Zayas EJ L118b	6.00	90-15	Lahii	1ch 12	3nk P	lenum 123hd	Offic	ciating 118 nk		2١	vd turn	s,rail bi	d str
3Jun21-3GP fm 1 ① 233 :47 1:1031:35 [S]Alw 51000N1: Previously trained by Mott William I 2021(as of 4/30): (173 4		2.20	84–15	Fulm	ini120)no Si	giloso 120 1½	May	or Remo111¾		R	ail, ang	le 1/8,m	ildly
30Apr21-5GP fst 1 \$ 231 :45 1:0941:363 SAIW 47000N1	62 4/6 42 53½ 35½ 35 37¼ Zayas E J L120 b	2.20	82-11	Little	e Dem	10n11	81 Sososub	tle120	064 Officiatin	1202		2١	vd, best	rest
28Mar21-5Tam fm 116 (1) \$ 241 :4821:1131:423	00k 73 1/6 41½ 42 64 32½ 2no Zayas E J L 118 b	6.10	88-10	Indy	_yon1	118no	Officiating	118nk	Chess's Dream	n 1241;	Insc	l,easd b	ack,bid	btw
5Mar21–5GP fm 1 ⊕ C 1:38 ⑤ Md Sp Wt 44 Hand timed	k 71 3/11 31½ 41¾ 52¼ 1½ 1¾ Alvarado J L118b	*1.40	71–16	Offic	iating	g118¾	Flight to P	'aradi	se 118 14 Borka	ın118 ⁿ	k Sp	lit 3/16	, edge al	nead
4Feb21-1GP fm *7\frac{1}{2}f \frac{1}{2} 241 :4831:1311:301 \subseteq Md Sp Wt 40 \bigwide WORKS: May9 GP 4f fst :50 \bigwide B 17/26 \bigwide Apr24 GP 5f fst :593 \bigwide B 3/13 /1	k 60 5 /8 2 21½ 21 21 21 Alvarado J L118b pr17 GP 3f fst :394 B <i>36/41</i> Mar20 GP 3f fst :353 B <i>4/30</i> Feb27 GP 4f fst							ing118	8≩ Borkan1182	<u>3</u>	Pro	npt wii	ner out	iside
TRAINER: 31-60Days (468 .25 \$1.95) Dirt (570 .26 \$1.90) Sprint (597 .2			,-, .					J/T 20:	21-22 BEL(6 .1	7 \$1.42) J/T	2021-22	(14 .14 \$	1.56

CLOSER LOOK: Everything worked out for him in the Tom Fool, as he was able to attain better forward position than usual; was sitting in the perfect spot to pounce when Chateau threw in the towel, as that rival tends to do; the 95 Beyer he earned for that victory sticks out in his PPs, as his surrounding form isn't quite as convincing; was fairly dull when wheeled back just 22 days later at Tampa, failing to launch a rally against weaker competition; Saffie Joseph has been dangerous with his NY runners over the past several months, so maybe it's as simple as shipping back up north; mixed signals.

<u> </u>	· ·									
6 Mr Phil	B. g(08.07.20) 5 (Mar)		Life	30 7	7 1	\$386,873 93	2 D.Fst	24 6	6 1	\$341,513 92
Own: Goldfarb Sanford J Kahn Alan Estate o	Sire: Mr Speaker (Pulpit) \$5,000 Dam: Appeal to the Win (Successful Appeal)		2022	5 2	1 0	\$108,370 92	Wet(371)			\$44,910 81
6-1 Black, Metallic Gold Yoke And 'Cgs,'	Br: Peter Berglar Racing Interests LLC & Narola LLC (Ky)	120	1				Synth	0 0		
ADORNO A (—) 2022; (220 33 .15)	Tr: Atras Rob(11 2 3 0 .18) 2022:(119 30 .25)			13 4			1411(001)			\$450 32
ASSERTE A () LOLLI (LLC COTTO)	THE PARTIES AND A TO STORY ESTERNING OF EACH		Bel	72	3 0	\$123,230 8	9 Dst(345)	19 5	3 1	\$245,863 92
21Apr22-7Aqu fst 6f 214 :441 :5621:094 3↑ 0 C 80k/N3x	92 1/6 4 1 ^{hd} 1 ¹ 2½ 1½ Carmouche K	L121 3.6	0 94-12	MrPhil1	21 1 Jax	onTraveler1194	1≩ SagmoreMis	chief119	11 In 1	hand ins, gamely
27Mar22-7Agu fst 6⅓f \$ 224 :4631:1131:182 3↑ OC 62k/N2x-N	91 5 / 7 2 11 11 11 11 11 Carmouche K	L119 4.5	0 87-27	MrPhil11	91 Am	ericnMonrch12	121 Arthurs Ho	pe11421	2p turi	n,responded well
27Feb22–3Agu fst 6f 221 :453 :5741:104 4↑ Clm c-32000	88 4 /6 1 32 32½ 33 2hd Lezcano J					3hd <i>Mr Phil</i> 1201				ırn,chsd,qain1/16
Claimed from Cammarota Racing LLC for \$32,000, Ryerson									.,	,, ,
15Feb22-9Prx fst 6f 214 :444 :5731:102 4 \ 0 C 35k/N2x -N		L121 5.8	0 85-17	Mojovti	n1243	BreezvGust124	PnutbutterS	pecil121	nk Pur	sued, faded turn
16Jan22-6Agu fst 6f 232 :471 1:114 4+ OC 62k/N2x -N										sh gate, faltered
18Dec21-4Agu fst 6⅓f 22 :45 1:0911:154 3↑ 0 C 62k/N2x-N	76 8 / 8 4 57 3 58 49 514 Carmouche K									path turn,empty
20Nov21-6Agu fst 6f	81 5 / 7 2 1½ 21 23 44½ Ortiz J L					3 Drafted 12013 S				ed 4w, weakened
10ct21–7Bel fst 6f 223 :453 :5711:094 3 ↑ 0 C 80k/n2x -N						Cost Basis1211				p ins5/8,4w,5w1/4
29Auq21-8Sar fst 6⅓f 22 :4441:0831:15 3↑ 0 C 80k/N2x-N	2 7 7 7					Night Time122n				rn,4w1/4,mvd out
1Aug21-7Sar qd 6f 222 :46 :5731:093 3 ★ O C 80k/N2x -N						 Night Time12 				3-2w, weakened
27Jun21–7Bel fst 6f	89 3 /6 2 21½ 32 1hd 11 Ortiz J L					ggle1251 Tale o				ppr, inched away
23May21−6Bel fst 7f 232 :4621:1021:231 3↑ Alw 50000s	81 3 /7 3 1½ 11 12 1½ Ortiz J L									and 2p, held safe
WORKS: Apr16 Bel tr.t 3f fst : 37 B 15/46	010// 0 12 1 1 12 010202	= 120 1.2	.0 00 11		•2 III u		011010111001	//g///120	4 211 111	and Ep, nera sare

TRAINER: WonLastStart (82.18 \$1.39) Dirt (367. 23 \$1.59) Sprint (257. 25 \$1.74) GrdStk (21.14 \$2.40)

CLOSER LOOK: Comes into his first stakes attempt seeking a 3rd consecutive victory since being claimed by Rob Atras; notably he's the uncoupled stablemate of Chateau, and is the main pace rival for that foe, though he's just not as naturally fast as that other Atras trainee; got a perfect trip last time setting the pace while hugging the rail on a day when the inside path was an advantage; has to improve on that form to beat this field; also it's somewhat curious that Atras named a rider that isn't based at this circuit, prompting one to wonder if this horse is a serious participant in this race or just helping it fill for Chateau.



Belmont Park

FAIW 92000N1X



1 MILE (Turf). (1:311) ALLOWANCE. Purse \$92,000 (UP TO \$16,008 NYSBFOA) For Fillies And Mares Three Years Old And Upward Which Have Never Won \$15,000 Other Than Maiden, Claiming, Starter Or State Bred Allowance Or Which Have Never Won Two Races. Three Year Olds, 120 lbs.; Older, 126 lbs. Non-winners Of A Race Other Than Claiming Or Starter At A Mile Or Over Allowed 2 lbs. (If There Are No Three Year Olds Entered, Starting Weight Shall Be 123 lbs). (If the Stewards consider it inadvisable to run this race on the turf course, this race will be run at One Mile on the Main Track.) (Rail at 27 feet).

Coupled - Join the Dots and Baby Blythe

Post time: 3:39 ET Wagers: Exacta, Trifecta (.50), Super (.10), Pick 3, Pick 6 (\$1), Double Be

Beyer par: 85

Courageous Girl Entered For Main Track Only

2 Courageous Girl	Gr/ro. m. 5 (Apr)		Life	25 3	6	4 \$292,576	78	D.Fst	17 :	3 2	3	\$218,788 78
Own: Take a Shot Stables East Coast Partne	Sire: Bourbon Courage (Lion Heart) \$2,500 Dam: Focus Curiosity (Holy Bull)		2022	3 0	1	2 \$38,240	76	Wet(371)				\$73,168 76
5-2 White, Red Ball, Black 'Ecp,' White	Br: Brady Horse Racing LLC & RUSBA V Stables LLC (NY)	L 126	2021	7 2	1	1 \$123,270	78	Synth				\$0 -
FRANCO M (46 10 5 8 .22) 2022; (371 71 .19)	Tr: De Paz Horacio(12 4 0 1 .33) 2022:(70 12 .17)			100 000	200	er transcriptions	200	Turf(225)				\$620 35
ACCOUNTS AND AND WATER AND CONTRACT PROPERTY AND	Here was a second-control of the second seco		Bel	7 1	2	1 \$91,400	78	Dst(318)	10 7	2 3	2	\$156,648 78
27Mar22-2Aqu fst 1 \$ 242 :50 1:153 1:411 3↑ (€) Alw 79540 N1:	(70 3/5 1½ 1½ 2½ 32 36½ Franco M	L123b 2.25	60 - 27	Lovean	dLove	1233 Frost Me	e 12335	Courgeous	ir1123	31 F	ated	3–2w, wknd late
3Feb22-3Agu qdS 1 \$ 233 :4731:1231:38144 (F) Alw 82000 N1:	76 3/6 1½ 11½ 2hd 22 22½ Franco M	L123b 6.20	79-27	DfultPr	otcto	112323 Corgo	sGrl12	232 Hony Mor	y 123	1114	Outsi	de,2p,headed1/4
2Jan22-8Agu myS 7f \$ 23 :47 1:1141:25 44 (F)[S]LaVerdad	B97k 66 3/5 3 52½ 52¾ 59 310 Franco M	118b 11.30	75-18	BnkStin	q124nk	EloguntSpk	r1189	CourgousG	rl118	3 4-	luq w	rsuit, weakened
21Nov21-5Aqu fst 7f 231 :4641:1141:242 3↑ €Alw 82000 N1:												beh st, kept on
170ct21-1Bel fst 1 \$ 231 :4641:1141:374 34 (F)[S]O C 45k/N2												lead1/4,driving
19Sep21-8Bel fst 7f 23 :4621:1111:24 3★ (₱)S O C 45k/N2												urn,5w into lane
22JJy21-4Sar fst 7f 23 :4641:12 1:244 34 (F)CIm c-35000												trn,mvd out3/16
Claimed from Brady Horse Racing and Rusba V Stables for				- unomig		4		101140111000	- 4			or riginity as out of the
17Jun21-7Bel fst 7f 23 :4621:1031:233 3★ € 50 C 45k/n2			74-12	Dublino	rnoth	in 1231 Midnl	Butv1	255 FightOnl	ucv1	213	1-5w 1	1/4, passed tired
26Feb21-4Agu fst 6f 223 :454 :58 1:11 44 (F) (S) O C 40k/N2		L120 b 18.40										bble st,2w1/2,3w
17Jan21–5Aqu fst 7f 232 :4731:1311:262 4♠ €SAIw 720001						Girl123no I'm F						v upper, held on
31Dec20−2Aqu slys 1 232 :4711:13 1:40 3★ ♠ S A W 720001						rageous Girl1				CILO		nased 2p, ran on
5Dec20-8Aqu slys 1 232 :47 1:121 1:38 34 (F)[S]Alw 720001		L120 b 6.40								62		ide,4w into lane
WORKS: ●May9 Lrl 5f gd 1:00 B 1/7 Apr29 Lrl 5f fst 1:013 B 3/9								rimadachar	CCII	0-	1112	iuc, TW IIILU IAIIE
		41 131 30 D 33//	o iviai ii	DEI U.L	41 151 1			14 22 DEL /0 3	2 62 6	201	T 202	1 22/20 40 62 42)
TRAINER: 31-60Days (101 .12 \$1.18) Dirt (178 .16 \$2.20) Routes (107 .	13 AIW (04 . 13 \$2.01)						J/ I ZUZ	1-22 DEL(9	3 \$3.	33) J	1 202	1-22(28 .18 \$2.12)

3 Lay the Groundwork	Dk. b or br f. 3 (Feb) KEESEP20\$125,000 Sire: Speightstown (Gone West) \$90,000		Life	2 1	0	0	\$32,330	71	D.Fst Wet(447)		0 0			49
9-2 Own: Klaravich Stables Inc White, Red Braces And 'Ks,' White And PRAT F (10 3 2 1 .30) 2022: (340 94 .28)	Dam: Cool (Caleb's Posse) Br: DJ Stable LLC & Speightstown Syndicate (Ky) Tr: Brown Chad C(33 12 8 3 .36) 2022:(271 90 .33)	L 120	2022 2021	0 M	0	0	\$32,330 \$0	-	Synth Turf(360)		1 0	-	\$31,800	71
- KATT (10 3 2 1 .30) 2022. (340 34 .20)	11. Brown Glad G(33 12 0 3 30) 2022 (271 30 33)		Bel 🗇	0 0	0	0	\$0	_	Dst() (366)	0	0 0	0	\$0	-

13Feb2241GP fst ⁴70 ⊗ 243 ·4811·1321·422 ⊕Md Sp Wt 53k **71** 3/7 53 56 32 1hd 11 Saez L L120 3.50 87-14 LythGrondwork1201 *Wikthon*1202¼ *Hwbtdmppls*1201¼ 4wd bid,swept past 1/8 9Jan22-7GP fst 6f 221 ·452 ·5741·11 ⊕Md Sp Wt 53k **49** 10/11 2 64½ 54½ 65½ 56 Gonzalez E L120 3.60 81-12 StellrRid1201 *VtrnsHighwy*120hd *CustomrDrivn*1201¼ Midpack,5wd upr,flatnd **WORKS:** May9 Be1 4f fst :494 B *57*/75 May1 Be14f fst :49 B 14/50 Apr24 PmM ⊕ 5f fm 1:003 B 7/12 Apr16 PmM 4f fst :50 B 39/55 Apr8 PmM 4f fst :50 B 12/14 Apr1 PmM 4f fst :494 B *27*/75

TRAINER: 61-180Days(242.26 \$1.90) 1stTurf(138.20 \$1.63) Synth/Turf(19.37 \$2.05) WonLastStart(248.27 \$1.63) Turf(679.24 \$1.88) Routes(842.27 \$1.88)

 $\label{eq:JT2021-22BEL(13 .46 $3.32) J/T 2021-22(62 .32 $2.09)} \ \ \,$

Malibu Curl Entered For Main Track Only

∆ Malibu Curl	Ch. f. 4 (Jan)	Blinkers ON	Life	6 1 1	1 \$71,27	2 78 D.Fst 5	1 1 0	\$53,272 74
Own: Woodslane Farm	Sire: Curlin (Smart Strike) \$175,000 Dam: Prospector's Moon (Malibu Moon)		2022	1 0 1	0 \$5,880		0 0 1	\$18,000 78
6-1 Cobalt Blue, Ingot Gold Epaulets, Gold	Br: Woodslane Farm (Ky)	L 124	2021	2 0 0	8.0	Synth 0	0 0 0	\$0 –
NO RIDER	Tr: Albertrani Thomas(3 0 0 1 .00) 2022:(40 7 .17)		-		(a) Na. (a)	1(20,7	0 0 0	\$0 -
	,,		Bel	2 0 0	0 \$7,360	0 69 Dst(375) 1	0 0 0	\$3,680 69
3Apr22-8Tam fst 11/16 241 :4811:13 1:454 44 ⊕OC 16k/N1x-I	N 67 1/7 33 42½ 32 22½ 23¼ Camacho S	L120 *1.40	77-24	All Good Ti	mes12034 Mal	ibu Curl1204¾ Azura1201	1 Tracke	ed btw,angld rail
25Jun21-3Bel fst 1½ 231 :4631:11 1:4313↑ (€) Alw 92000 N1x	69 5/6 32 22 56 58½ 58½ Ortiz J L	L118 5.90	73-25	So DarnHo	t12613 GoodCr	edence124nk Jordan'sLe	o1186 5w i	n aim, weakened
20May21-7Bel fst 1 \$ 231 :4641:1121:361 @OC 80k/n1x-1	N 69 4 /5 3½ 31½ 32 48 514 Saez L	L120 4.20	67-25	AlwaysCari	n12093 Stndby	You1201 JordnsLeo120	24 Chased	4-5w, weakened
5Dec20-9Aqu slyS 11/8 C 482 1:1311:39 1:521 @Demoisel-G2	. 78 4/6 42½ 32 32 23 35¼ Alvarado J	118 8.00	81-11	Malathaat1	.0≩ Millefeuille	e1184½ Malibu Curl1181	3w 1st	t turn, wknd late
6Sep20-1Sar fst 7f 231 :4631:1031:224	k 74 5 /7 3 21 2½ 12½ 12¾ Ortiz J L	119 5.70	88-09	Malibu Cur	111923 Bellamo	ore1193 Jamsstar1193	Chaser	d 2–3w, edged clr
2Aug20-6Sar fst 6f C 222 :454 :5811:113	k 47 7/10 9 910 88½ 87¼ 64½ Ortiz J L	120 32.75	76-15	Lady Lilly1	20nk Mo Dean'	120½ Spun d'Etat1201¾	2-3w	,8w1/8,improved
WORKS: May9 Bel 4f fst :493 B 56/75 Apr29 Tam 4f fst :504 B 18/23	Apr22 Tam 4f fst :493 B 13/32 Apr16 Tam 4f fst :501 B 34/70 M	ar26 Tam 5f fst 1	:021 B 1	1/26 Mar 17	Tam 4f fst :503	Bg 20/29		
TDAINED: 20ff()vor180(7 00 \$0.00) 1ctRlink(9 00 \$0.00) Rlink()n(10	0 00 \$0.00) 31-60Daye(84 14 \$2.67) Dirt(73 14 \$2.10) Boutce(127	12 \$2 14)						

TRAINER: 20ffOver180(7.00 \$0.00) 1stBlink(9.00 \$0.00) BlinkOn(10.00 \$0.00) 31-60Days(84.14 \$2.57) Dirt(73.14 \$2.19) Routes(127.12 \$2.14)

5 Belacqua (Ire)	B. f. 3 (Feb)	> 040 200				Life	3	2	1 (\$13,045	-			0			\$0	
Own: Eclipse Thoroughbred Partners	Sire: Havana Gold*Ire (Teofilo*I Dam: Chatting*Ire (Intikhab)	re) \$10,200		•	400	2021	3	2	1 (\$13,045	-	Wet(280) Synth	123	0	19	850	\$0 \$13.045	_
4-1 Black, Light Blue Sash, White Sleeves CASTELLANO J J (35 5 4 3 .14) 2022: (390 65 .17)	Br: Chatting Partnership (Ire) Tr: Motion H Graham(1 0 0 0	.00) 2022:	(115 18 .16)	U	120		_	M (-	Turf(324)	0	0	0	0	\$0	
,	iii motorii aranan(i o o o	ioo, Lolli	(110 10 110)			Bel 🗇	0	0 () () \$0	-	Dst@(257)	0	0	0	0	\$0	-
Previously trained by George Boughey																		
18Dec21 Lingfield (GB) ft 1 ◆ LH 1:372 ● Coral F Timeform Rating: 81 ◆ LH 1:372 ● Coral F	Racing-EBF 0	11 11	Moore R L	133	*1.35		Bela	cqua'	331	Makinmedoit	1265	Just A Tad1: Trckd, bi	265 d 1f	out,	to i	lead 1	100y, going av	way

WORKS: May8 Faitr.t ◆ 4f fst :-493 B 7/9 ◆Apr30 Faitr.t ◆ 5f fst 1:03 B 8/13

TRAINER: 1stNA(15.07 \$0.35) 1stW/Tm(28.18 \$1.51) 61-180Days(73.14 \$1.11) 1stTurf(67.06 \$0.74) 1stLasix(65.28 \$2.17) Synth/Turf(13.00 \$0.00)

J/T 2021-22 BEL(1.00 \$0.00) J/T 2021-22(12.00 \$0.00)

Daily Racing Form	В	elmont Park (5/14/2	2022)							
Naked On the Beach 8-1 Yellow, Green Hoops, Green Bars On SAEZ L (8 3 0 0 .38) 2022: (565 117 .21)	B. f. 4 (Jan) Sire: Malibu Moon (A.P. Indy) Dam: Sweet Talkin (Candy Ridd Br: Glencrest Farm LLC (Ky) Tr: Maker Michael J(17 3 5	e*Arg))	L 126		1 1 0 M 0 1	\$56,400	79 Wet(418) Synth 74 Turf(292)	1 0 1 4 1 0	0 \$12,40 1 \$53,69	60 – 60 – 90 72 96 79
15Apr22–5Aqu fm 1	58k 72 9/11 3 84½ 5	2 21½ 1½ Davis D 2¼ 21 21¼ Corrales G					ndthe Mp1182¼ Lib the Beach1255½ Bud		Tracked ins, 4-5wd run t	
24Jly21-8Sar fm 1	100k 67 8/9 76½ 78 79	6 95¾ 88¾ Santana R Jr	L118 18.80	69–23 Rast	afara1181 E	go Trip 118 1	Split Then Doubl	e1181 <u>1</u> C	chased ins, no i	impact
15May21–6CD fm 1 ⊕ 234 :4841:14 1:37 3+ €Md Sp Wt 11Apr21–4Kee gd 11 ⊕ 224 :4641:1241:434 €Md Sp Wt Placed third through disqualification	101k 54 10/12 85 ³ / ₄ 94 ³ / ₄ 97 77k 74 6/9 74 ³ / ₄ 76 ¹ / ₂ 93	6 ¹ / ₄ 119 ¹ / ₄ 118 ¹ / ₂ Arrieta F 3 ¹ / ₄ 43 41 ¹ / ₂ Lanerie C J	L 120 34.90	74–26 Fair	child120no	D Tracy Flic	eLikeWater1181 T ck120nk Tayet1201;	1	ad step/stumb Trouble st,	
WORKS: May9 Bel tr. 14f fst :492 B 19/66 Apr29 Bel tr. 14f fst :49 TRAINER: WonLastStart (273.21 \$2.02) Turf (958.16 \$1.51) Routes	4 B 25/66 Apr 9 TP ③ 4f fst :474 s(1162 .16 \$1.59) Alw(390 .15 \$1.78)	B 5/32 Mar12 TP ◆ 5f fst 1:	013 B <i>3/6</i> Mar5 TP	◆ 5f fst 1:	02 Bg <i>30/40</i>		ॐ 5f fst 1:02° B <i>40</i> T 2021-22 BEL (56 .2		2021-22(140 .16	\$ \$1.74)
Join the Dots Entered	For Main T	rack Only								
1 Join the Dots Own: Courtlandt Farms 3-1 Green, Blue Emblem And Collar, Blue NO RIDER 18Mar22-8GP fst 1 234 :4541:10 1:36 4♠ ® 0C 25k/N1 7Jan22-8GP fst 1 243 :4731:12 1:363 4♠ ® 0C 25k/N1 290ct21-3Bel fst 7f 232 :4621:1141:251 3♠ ® Md Sp Wt	x-N 70 8/8 32 42½ 3	o*Ire) \$100,000 r)	L120 *.70 L120 *.90	2022 2 2021 1 Bel 1 87–09 Miss 85–12 Fmi	lyTime1201	\$17,280 \$49,500 \$49,500 \$033 Join the	74 Wet(422) Synth	0 0 0 0 0 0 2 0 1 aRed120 ³ 4 F Dots120 ^{nk}	0 \$ 0 \$ 0 \$ 1 \$17,28 Tutile chase,be 3wd, one-pace	60 - 60 - 60 - 80 74 est rest
WORKS: May4 Bel 4f gd: 483 B 1/1 Apr27 Bel 4f fst: 514 B 9/10 TRAINER: 31-60Days(160.21 \$1.38) Dirt(202.18 \$1.18) Routes(34	● Apr20 Bel 3f fst :364 B 1/8 Apr1						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		2110 2 p 01 11,10 a 0	, •, •
Ta Baby Blythe 3-1 Green, Blue Emblem And Collar, Blue ROSARIO J (17 18 2 .06) 2022: (293 63 .22)	Gr/ro. f. 4 (Apr) KEESEP19: Sire: American Pharoah (Pion Dam: Susie's Baby (Giant's Cau Br: Diamond Creek Farm (Ky Tr: McGaughey III Claude R(eerof the Nile) \$80,000 Iseway) /)	L 126			\$85,350 \$75,750 \$9,600 \$20,000	90 Wet(400) Synth	0 0 0 0 0 0 4 1 0	0 \$ 0 \$ 1 \$85,35	50 – 50 – 50 – 50 90 50 73
18Sep21–9Bel fm 1¾ ∏ S 513 1:18 1:4312:164	100k 90 6 /9 78 710 4 100k 73 2 /9 54 54½ 5 80k 68 9 /10 75½ 99 8 Apr20 Bel 4f fst :493 B 5/17 5/17 Apr11	1½ 15½ 17 Rosario J 3 63 65½ Rosario J 9 65 31 Rosario J	L118 3.85 L118 4.20 119 5.40	91-09 Bab 72-23 <i>Rast</i> 69-30 Amo	y Blythe118 afara1181 E ortization1	7 Palamos1 go Trip1181 ^{ghd} MissBo <i>6</i>	.h121 ² Harajuku12 1241 <u>½</u> Fleeting Glir I Split Then Doubl nnieT1121 BbyBly J/T 2021-22 BEL (7	npse118 ^{hd} le1181 <u>‡</u> the1192 <u>‡</u> 2	2w 1/4p, no re lw,pinch off he	lr2p1/4 sponse eel late
7 Angel Palm (GB) 12-1 Green, Pink Sash, White Sleeves, Pink FRANCO M (46 10 5 8 .22) 2022: (371 71 .19)	B. f. 4 (Apr) Sire: Dark Angel*Ire (Acclama Dam: Palmette*GB (Oasis Drea Br: Juddmonte Farms Ltd (G Tr: Cox Brad H(5 1 0 2 20)	am*GB) B)	Blinkers OFF L 124	Life 9 2022 1 2021 5 Bel ① 0	0 0 0	\$28,732 \$900 \$15,621 \$0	69 Wet(280*) Synth Turf(380)	1 1 0 8 1 0	0 \$14,61 0 \$14,11	60 – 60 – 15 – 17 69
8Apr22-10Kee gd 5½f ⑦ 214 :453 :57 1:03 44 ⊕ Alw 85350≀ Previously trained by G. M. Lyons	69 3 / 12 9 96 ¹ / ₄ 100	64 664 674 Geroux F	L 118b 9.10				m1181 Mamba Wa			
12Sep21 Curragh (Ire) gd 6f ⊕ Str 1:123 3+ Irish Stallic Timeform Rating: 79 Hcp 147600	on EBF Bold Lad Sprint Hc	22 1993 Keane C T	133 b 18.00	Big	Gossey 123	Arnhem118	B1½ Hightimeyouw	on 128 ^{no} Chas	ed near side, ga	ave wav
15Aug21 Dundalk (Ire) ft 6f ◆ LH 1:104 3↑ Baroneraci Timeform Rating: 105 Hcp 24800	ng.com Mourne Handicap	14 121 Keane C T	127 b 9.00	Ang	el Palm127	4 Harry's B	Bar 137hd Riot 1331‡ Dwelt, 5th halfwa			
11JJy21 Fairyhouse (Îre) gd 7f 🗇 RH 1:263 3+ 🕞 Irish Stal Timeform Rating: 84	lion Farms EBF Brownstown S-	-G3 12 863/4 Ewing S	128 50.00				lessalina13614 Bip	artisanship	1281 <u>1</u> One paced thro	
Timeform Rating: 85 Hcp 25100	isurances Hcap	8 643 Keane C T	135 *3.00				re Porter1122½ Fer		2nd halfwa	y, tired
11Jun21 Fairyhouse (Îre) gd 6f ⑦ RH 1:144 3↑ Fairyhouse Timeform Rating: 92 Hcp 18900	On Instagram Handicap	16 41 Keane C T	130 7.00	Drea	ım Today13	6 ^{hd} Indeper	ndent Missy1 28 ‡ N <i>12t</i>	Ars Bouque <i>h halfway,</i> g	t129 <u>1</u> gained appr 1f, i	kept on
27Sep20 Curragh (Îre) sf 7f (†) Str 1:28 (†) Weld Par Timeform Rating: 67 Stk 58200	k Stakes-G3	10 86 ¹ / ₄ Keane C T	128 4.00	Elys	ium 1281 <u>1</u> A		128¾ Thinking of Y Prominent, to lea		t, headed insd :	1f, tired
Timeform Rating: 73 Maiden 194	lion Farms EBF 00	10 13 Keane C T	128 *1.20	Ang	el Palm128	3 Friendly12	8 ^{nk} Harannda 1281 2nd h		ead 1 1/2f, kept	on well
Timeform Rating: 67 Maiden 184 WORKS: May9 Bel tr.t 4f fst :482 B 4/66 Apr30 Bel tr.t 5f fst 1:02	4 B 14/20 Apr23 Bel tr.t 4f fst :501			1f fst :48 Bg		- FG 5f fst 1:0	014 B <i>12/33</i>		ain into str, one	
TRAINER: 20ffOver180(42 .26 \$1.41) BlinkOff(22 .27 \$1.23) Spring	/Houle(143.31 \$1.91) 31-60Days(330 .26 \$1.69) TUIT(326 .22 \$1.33) Houles (763 .27 \$1	./4)		J/	/T 2021-22 BEL (22 .	23 \$1.42) J/		\$1.40)
O Miss Polla Ciao	B. f. 4 (Feb) KEESEP19 \$900	1.000		Life 6	1 1 1	\$46,340	82 D.Fst	0 0 0	0 8	60 –
8 Miss Bella Ciao Own: Al Shiraaa Farms Black, Red Epaulets, Black Sleeves, Red VELAZQUEZ J R (5 2 0 2 .40) 2022: (217 35 .16)	B. f. 4 (Feb) KEESEP19 \$900 Sire: Tapit (Pulpit) \$185,000 Dam: Courtisane* Arg (Silver Fi Br: Gainesway Thoroughbred Tr: Drysdale Neil(—) 2022:(\$	inder) s LTD (Ky)	L 126				82 Wet(390) Synth Turf(284)	0 0 0 6 1 1	0 \$ 0 \$ 1 \$46,34	60 – 60 – 60 – 10 82 10 68

9 Angelinka (Fr) 0wn: Dubb Michael Madaket Stables LLC an 9-1 Yellow, Pink Circle And Rose, Pink Cuffs 0RTIZ I JR (29 11 6 3 .38) 2022: (442 122 .28)	B. f. 4 (Jan) Sire: Pedro the Great (Henryth d Dam: Silent Cause (Giant's Cau Br: SCEA Haras Des Evees & Tr: Cox Brad H(5 1 0 2 20)	seway) Daniel Cherd	o (Fr)	0	126	Life 2021 2020 Bel ①	12 4		3	1	\$82,785 \$61,587 \$21,198 \$0	-	D.Fst Wet(2 Synth Turf(3 Dst①(93) 861)	9	0 0 2 2 3 2	0 0 2 1 0	\$0 - \$0 - \$43,821 - \$38,964 - \$9,501 -
Previously trained by Nicolas Caullery 11Jly21 Hannover (Ger) gd *1 ① LH 1:39 3+ GP of Timeform Rating: 91 Stk	der Burckhardt Gruppe 17800	11 1½	Pacaut C	116	3.50		Ang	elink	a116	1 Mrs	Appleb	ee125	½ Victor	ia Pla	ıca17	25 <u>3</u>		Held on gamel
20Jun21 Hannover (Ger) gd *7f ⊕ LH 1:251 3↑ ⊕GF	on Burger King Deutschland	11 2114	Santiago D	119	11.40		Diad	lora1	191 <u>‡</u>	Ange	linka 119 ^l	nd Sur	1 Bear 12		haar	lad fi	nal fuu	
24May21 Cologne (Ger) gd *6⅓f ⊕ RH 1:162 3♠ Prei	17800 s der Annette Hellwig Stiftung-G3	8 451	Santiago D	114	7.60		Maj	estic	Colt	1281	Walders	ee119	1½ Paloi	na Óh	ne 125	53 <u>‡</u>		long, outfinished
7May21 Chantilly (Fr) ft *6⅓f ◆ RH 1:17 Prix	40200 du Bois d'Orival	14 113	Santiago D	120	*3.50		Ang	elink	a 120 °	1 <u>1</u> Má	ana Mah	a 120 n	k What i		laba	loo12	31/2	ed to 3rd, kept o
Timeform Rating: 73 C1 22 24Apr21 Nancy (Fr) gs ★6¾f ⊕ RH 1:233 Prix	2900 de l'Ecole de Nancy	_	Santiago D	126	*1.60		_			_	onstrati				S	Straig	ht to l	ead, comfortabl
CI 14	1500 du Bois des Bouleaux		Santiago D	117	7.30		•				gelinka1		•				To I	ead 1f out, driver
Timeform Rating: 77 Cl 32	2200		•								•	-		11123	4		Не	ld safe by winne
Timeform Rating: 59 Cl 22			Barzalona M	123	4.00				7		23nk We		•			Ch	ased le	aders, weakene
18Mar21 Chantilly (Fr) ft ★6½f ◆ RH 1:172 Prix Timeform Rating: 52 Cl 27	du Bois Bonnet 7600	10 863	Crublet E	112	3.30		Wha	ıt's U	lp131	3 Ma	rcella M	ia128	¹º Roost	er123	no		Wε	akened 1 1/2f ou
Timeform Rating: 65 Cl 22	de la Dorette 2700	9 2hd	Crublet E	119	*1.50		Ken	or 122	hd A	ngeli	nka1191;	1 Cap	la Knigh	t128n	0		ı	Finished strongly
Previously trained by Jean-Claude Rouget 24Feb21 Cagnes-sur-Mer (Fr) ft *6∮f ◆ LH 1:17 Prix Timeform Rating: 66 CI 19	des Genevriers	8 11 <u>1</u>	Pacaut C	121	*1.50		Ang	elink	a121	1 <u>4</u> Go	ld Shiva	1283 <u>1</u>	Giulio (:esarı	e 119	<u>!</u>	To I	ead 1f out, drivei
6Feb21 Cagnes-sur-Mer (Fr) ft *6½f ◆ LH 1:174 Prix	Jean Massard	9 43	Planque S	128	*2.00		Don	na Le	epant	to117	1‡ Silver	Lake	118no T	ess11′	113		101	,
	26500 de la Promenade des Anglais	12 323	Plangue S	128	5.50		Iden	tified	/1312	1 Alm	neida Gir	∕ 118n	k Angeli	nka12	282			Kept o
Timeform Rating: 78 Hcp WORKS: May9 Beltr.t 4f fst :482 B 4/66 Apr30 Beltr.t 4f TRAINER: 1stNA(7.14 \$0.69) 1stW/Trn(52.23 \$1.44) +180					Apr 9 I	Bel tr.t	4f fst	:491	B <i>52/</i>	187						. 46) J		e <i>d 2f out, kept oi</i> 1-22(22 .36 \$1.55)
10 Caironi	Gr/ro. f. 3 (Mar)		••			Life	3	1	1	0	\$75,500	79	D.Fst		0		•	\$0 -
Own: King of Prussia Stable 5-1 Purple, Light Blue Triangular Panel LEZCANO J (50 10 5 12 .20) 2022: (302 46 .15)	Sire: Cairo Prince (Pioneerof ti Dam: Proud and Fearless (Prou Br: Brereton C Jones (Ky) Tr: Brocklebank Joseph(—)	ıd Citizen)	00		118	2021 2020 Bel ①	0	1 M 1	0	0	\$75,500 \$0 \$69,500	-	Wet(3 Synth Turf(3 Dst①(322)	0	0 0	-	\$0 - \$0 - \$75,500 79 \$0 -
6Nov21-7Bel fm 1 1 0 232 :4641:1111:424 (Ch)	70 9/10 85 73¼ 84 IseyFlwL100k 79 5/9 812 811 75 Sp Wt 90k 73 5/7 4 46 47	5½ 22 2½ 7 1hd 1nk		120 120 119 B 1/3 A	12.10 13.50	78-23 84-14	Miso Cair	chiev oni1	ous I 19nk I	Kiss1 Rosel	a Mia12 20½ Cair bug1193 26 Bel tr.	oni12 { Radi	04 <u>1</u> Knee iant Ger	e <i>snhip</i> n 1193	os 120	2 A	wkwai	rns,6w into land rd st,closed wel n,4w1/4,lead3/10

Belmont Park

SOC 45k/N2X



7 Furlongs (1:194) ALLOWANCE OPTIONAL CLAIMING. Purse \$85,000 For Three Year Olds And Upward Foaled In New York State And Approved By The New York State-bred Registry Which Have Never Won \$15,000 Twice Other Than Maiden, Claiming, Or Starter Or Which Have Never Won Three Races Or Optional Claiming Price Of \$45,000. Three Year Olds, 120 lbs.; Older, 123 lbs. Non-winners Of Two Races Other Than Claiming Or Starter Since November 1 Allowed 2 lbs. Such A Race Since Then Allowed 4 lbs. Claiming Price \$45,000 (Allowance Horses Preferred)(1.5% Aftercare Assessment Due AtTime Of Claim Otherwise Claim Will Be Void)(If There Are No Three Year Olds Entered, Starting Weight Shall Be 123 lbs).

Coupled - Jemography and Saint Selby

Post time: 4:12 ET Wagers:	Exacta, Trifecta (.50), Super (.10), Pick 3, Grai	nd Slam (7-	-10), L	ate Pic	k 5 (.50), D	ouble		В	eyer	par: 89	
9 Prince of Pharoahs	Dk b/br g(07.09.21) 5 (Apr)		Life	17 2 4	3 \$193,96	0 87 D.Fst	11	1 2	3	\$110,170	87
Own: Bilinski Darlene and Patten Harry	Sire: American Pharoah (Pioneerof the Nile) \$80,000 Dam: My Dixie Doodle (Dixie Union)		2022	3 0 0	1 \$14,06	76 Wet(4		1 2		\$83,120	
10-1 Black, Gold Ball, Black 'Vm,' Pink	Br: Dr Jerry Bilinski & Harry Patten (NY)	L 119	2021	7 1 1	55 OF STATE	Synth		0 0		\$0 \$670	
LEZCANO J (50 10 5 12 .20) 2022: (302 46 .15)	Tr: Rice Linda(21 5 2 3 .24) 2022:(163 24 .15)			2 2 (1000 120	1		0 1		\$32,220	
10A90 10 A fet Cf 90 A42 E7 1 102 21 E0 CC 4EL/1/20	N 79 2 /0 2 751 C7 25 22	1404 540									
16Apr22-10Aqu fst 6f 22 :443 :57 1:102 34 50 C 45k/N2X					91½ BustinTmbi						
19Mar22-8Aqu fst 6f 223 :454 :574 1:104 3↑ SOC 45k/N2x					Mn1141 Scoccto						
14Jan22-8Aqu fst 1 252 :4941:1521:413 44 SOC 45k/N2X					ivision120½ Wat						
17Dec21–3Aqu fst 1 232 :4711:1231:374 3↑ SOC 45k/N2x					sion125hd SvnLi						
18Nov21-3Aqu fst 1	-N 81 6/8 1½ 21 2hd 1½ 42 Ortiz J L	L123 9.70	80-18 I	Kaz's Bea	ch121½ Thorny7	ale121nk Durk	n's Call 12	11¼ D	ueled 2	2p, caught	t late
140ct21–5Bel fm 7f ⑦ 231 :4611:0841:202 3↑ ⑤ 0 C 45k/N2x	-N 51 2/12 5 31½ 42 85¾ 1214½ Ortiz J L	L123 11.10	80-05	CallMeHa	rry12113 Dncing	Buck12011 Str	vIntoGol	d 120no	Chas	ed 2p, falt	tered
24Sep21-7Bel my 1 ⊗ \$ 233 :4721:1231:38 34 SAIW 80000N1	x 79 6 /6 3½ 31 1½ 1½ 1½ Lezcano J	L124 2.85	72-25	Prince of	Pharoahs 1243 1	Vater's Edge11	23 Barra	re 1206	1 Off (duel 4-3w,	safe
3Sep21-8Sar fst 7f 223 :4521:10 1:222 3↑ SAIW 90000N1	x 80 3/9 3 1½ 1½ 1hd 34¼ Ortiz J L	L123 6.70	86-16	Gold Pand	da 1202 BigBobb	y1202 Princeof	Pharoahs'	2321	İn hand	2p, wkno	late
5Feb21-7Agu gd 7f C 232 :4641:1111:243 44 SIAIw 72000n1					y123nk Kaz's Bo						
8Jan21-7Agu fst 7f 232 :4741:1211:243 44 SIAIw 72000 N1					k Now 1231 Prno						
13Nov20-6Agu slyS 1					One119∄ Prince						
15Mar20-8Agu fst 7f 23 :4631:12 1:254 SDamonRnyi					gger12273 More						
WORKS: May6 Bel tr.t 5f fst 1:032 B 22/30 Apr10 Bel tr.t 4f fst :481						,		1000	æ.	,	
TRAINER: Dirt (488 .17 \$1.24) Sprint (368 .16 \$1.23) Alw (163 .13 \$1.04						/T 2021-22 BEL	54 .20 \$1.	52) J/	T 2021-2	2(166 .16 \$	\$1.25)

3 Listentoy	ourheart		(09.02.21) 5 (Mar		Adlask	ec con				Life	8	2 2	1	\$180,114	79	man of the same	-	2 1	: 8	\$156,864	
Own: Merrylegs	Farm	Dam	: Afleet Alex (Nor n: Je T'aime (Gold			30,300	,	٥.	440		1	0 0	0	\$850	61	Wet(363) Synth	(5)	150 4	0	\$23,250 \$0	61
	Blocks, White Sleeves	DI.	Merrylegs Farm				0000 (400 00 40)		119	2020	2	0 1	0	\$22,400	79				Ö		_
ROSARIO J (17 1 8 2 .06	0) 2022: (293 63 .22)	ir:	Clement Christop	ne(21	6 4 2	29)	2022:(163 29 .18)			Bel	4	1 1	0	\$57,350	79	Dst(338)	1	0 1	0	\$20,000	79
29May21-6Bel slyS 6f	\$ 223 :453 :5721:10	34 SOC 45k/n2x -N	61 5/9 3	$2\frac{1}{2}$	31/2	31 89	Rosario J	L121	13.10	80-14	Wow	Brow	n121n	TLovsFig	ht121	¹ BronxBom	or 12	1112	Presse	ed 3w, weake	ened
10Jly20-9Bel slyS 6f	213 :443 :57 1:10	GoldFeverL80k	32 3/6 3	33	56	510 62	231 Alvarado J	L124	10.10	63-18	Lims	Pride	120hd	D Wondrw	hered	crigis1201 Lo	1gW	eknd	12411	5w upper, t	tired
14Jun20-9Bel fst 7f	222 :4521:0911:21	SMikeLeeB100k	79 7/8 2	11	11/2	112 21	Alvarado J	L120	38.25	93-09	Cptnl	Bomb	ostc12	014 Lstnto	yorhr	t1201 DrmBg	gr12	2nk	In hai	nd 2p, caugh	t lte
30Sep19-7FL fst 6f	223 :453 :5741:11	SNYBrdrFutB204k	43 1/7 5	311	331	311 41	¹⁵ Franco M	122	3.70	75-16	DrmB	iggr1	19103	MyItlinRbl	bi1194	MissionWr	tup	1221	Brk s	tep slow,3p	turn
9Sep19-8FL fst 6f	23 :4721:00 1:13	S Aspirant B114k	64 4 /8 3	21/2	11	12 12	Franco M	121	*.80	79-25	Lstnt	oyou	rhrt1	212 MssonV	Vrptu	1p12121 AMz	ngF	p121	11 4W	3/8, kept to v	whip
23Aug19-8Sar fst 61f	221 :4511:1011:16	SFunnyCideB200k	59 9 / 9 5	654	521	321 35	Franco M	122	5.00	83-09	CityN	Man 12	2243 C	leonJones12	221 Li	istentoyourhe	rt122	14	ost f	ooting brk,3	w1/2
17Jly19-2Sar sly5 6f	\$ 223 :463 :5911:13	SRVioletteB97k	60 2/5 1	11/2	11	2 2r	Franco M	122	2.25	76-13	Skyo	fHoo	k 122n	Listntoyo	urhrt	t12254 Thitlin	mri	:n118	1 2pt	urn, led past	1/16
23Jun19-6Bel fst 5f	223 :453 :57	SMd Sp Wt 62k	69 1/7 1	11/2	11	111 11	Gutierrez R	118	16.00	99-07	Liste	ntoyo	ourhe	rt11814 Dou	ıblSh	ot1182 Impti	ous	11812	Ins,	drive 3/16,ou	t bit

17Jly19-2Sar sly^S 6f S 223 :463 :59¹1:13 SRVioletteB97k 6U 2 /5 1 1½ 1¹ 1² 2nº Franco M 1ZZ Z.25 76-13 Skyo†Hook1ZZnº Listntoyourh 23Jun19-6Bel fst 5f 223 :453 :57² SMd Sp Wt 62k 69 1 /7 1 1½ 1¹ 1¹ 1½ Gutierrez R 118 16.00 99-07 Listentoyourhert118¹½ DoublS WORKS: May9 Bel 5f fst 1:02 B 7/9 Apr30 Bel 5f fst 1:02 B 8/14 ●Apr23 Bel 5f fst 1:03 B 1/5 Apr9 Bel 5f fst 1:03² B 7/9 Mar31 Bel tr.t 4f fst :48⁴ B 10/70 Mar22 Bel tr.t 4f fst :51² B 41/43 TRAINER: +180Days(68.21 \$1.28) Dirt(118.19 \$1.15) Sprint(293.22 \$1.65) Alw(204.18 \$1.25)

TRAINER: 61-180Days (34.12 \$0.52) Dirt (219.19 \$1.88) Sprint (231.19 \$1.99) Claim (103.15 \$1.76) Alw (55.16 \$2.05)

J/T 2021-22 BEL (87 .16 \$1.09) J/T 2021-22 (148 .20 \$1.45)

and the second s	STREET STOCKHOOLEN, WINGSBOOK											
1 Foolish Ghost B. g(11.24.17) 7 (Apr)		Life 3	38 9	7 5	\$462,962	97	D.Fst	28	8 4	1 4	\$341,733 94
Own: Russell Ken and Richard Newman Racing	Mineshaft (A.P. Indy) \$10,000 Roaring Ghost (Roaring Fever)		2021	11 3 2	2 1	\$191,890	97	Wet(377)	100	E	3 1	\$120,941 97
6-1 Blue, Gold Circle And 'Kr,' Two Gold \$45,000 Br:	Pinnacle Farms I LLC (NY)	L 119	2020	8 3	3 1	\$136,540	89	Synth Turf(238)	133	22 3	0	\$0 – \$288 55
FRANCO M (46 10 5 8 .22) 2022: (371 71 .19) Tr:	Handal Raymond(5 0 1 0 .00) 2022:(86 17 .20)					to smaller man	-		122	Su	3 19	
			Bel 1	14 5	1 2	\$185,300	89	Dst(354)	D	1	1 1	\$50,664 80
18Dec21-4Aqu fst 6½f 22 :45 1:0911:1543↑0C62k/N2X	38 4 /8 2 31 34 818 833 Samuel J L	L124f 13.50	67-15 H	ppyMdn	n1227	WddUThnk	Vow12	431 Chstrto	wn12	213	Chase	d,ins3/8,faltered
300ct21–5Bel slyS 64f 221 :45 1:103 1:172 3↑ SHudsonHB 150k	65 3 /8 1 1½ 1½ 24½ 412¼ Samuel J L	121f 7.00	73-21 N	yTraffic	12483	Chestertow	n1183	3 Jemogrph	iy 119n	o Ir	hand	3-2w, weakened
11Sep21-5Mth fst 5f 213 :45 :571 3↑ RumsonB100k	75 2 /6 5 42 41 43 44 Corrales G	124f 2.30	93-12 F	rnctelli1	17nk (uickTempo	1141	SgmoreMi	schie	f1192	Rail	bid 1/4, weaken
13Aug21-9Sar fst 6f 223 :45 :5641:092 4↑ R Tale Th Cat L 120k	87 6/6 1 2½ 21 22½ 35 Rosario J	124f *2.15	87-16 V	ondrwh	rcrgs	12223 MyBoy	/Tt124	121 FolshGh	st124	31 !	ōw upp	r, floated, wknd
29JIy21-9Sar slyS 6⅓f	97 7/8 2 $2\frac{1}{2}$ $2\frac{1}{2}$ 1^2 $1^3\frac{3}{2}$ Rosario J	119f 4.10	87-16 F	oolishGl	host11	933 MyBoy	Tate1	2313 OurLst	Buck	1231	3p tu	rn,5p1/4,drft out
4JIy21-6Mth fst 6f 214 :434 :5531:0813↑ OC 30k/n2x-N	90 5/5 1 1 1 1 1 1 12 12 12 Corrales G	L120f 3.20	101-06 F	oolish Gl	host12	121 T Loves	a Fig	ht12013 Fire	Swo	rd11	741 Re	eluctant loading
25May21-8Prx fst 6f 22 :441 :5621:0843+0C35k/n2x-N	91 1/6 1 11 11 11 22 Russell S	L123f 1.90	98-14 S	tllHvngF	Fn1232	FoolshGhos	st1231	1 Forthlyof	borbi	1123	Clea	r pace, game try
8Apr21-6Aqu fst 6f C 222 :453 :5741:112 34 OC 62k/N2X-N	44 2 /6 6 52 65 65 68 68 622 Morales P											ed badly brk,5w
7Mar21-6Agu fst 6f 23 :461 :5811:113 34 Alw 82000N1x	94 6 /6 1 11 14 15 16 Morales P	L126f 1.60	85-22 F	olshGhs	t1266	MrnngBrz12	141 I	nstnctvRhy	thm1	263	In han	d 3-2w, drew off
4Feb21-7Agu qd 6f 222 :453 :5731:104 44 Alw 82000n1x	85 2 /7 1 11½ 11½ 13 2¾ Morales P											ask 3/16, nail late
21Jan21-7Agu fst 7f C 223 :4531:1121:25 44 Alw 82000N1x	56 2 /7 5 1hd 11 633 615 Davis D											Sumped st, tired
11Dec20-8Agu fst 6⅓f	81 2 / 10 5 11 12 12 12 23 Davis D											sk top str,driftd
WORKS: May9 Bel tr.t 4f fst :504 B 53/66 Apr30 Bel tr.t 4f fst :483 B 24/147	Apr23 Bel tr.t 4f fst :484 B 14/119 Apr16 Bel tr.t 4f fst :							-		**	,	

J/T 2021-22 BEL(13 .08 \$0.49) J/T 2021-22(46 .11 \$0.63)

Daily Racing Form	Belmont Park (5/14/20.	22)												
5 Gandy Dancing	Dk b/br g(03.13.21) 5 (Mar)		Life	17	3	1 1	\$138,188	86			3 1		\$130,520	
Own: Pregman Jr John S	Sire: Flatter (A.P. Indy) \$35,000 Dam: Wild Grace (Forest Wildcat)		2022	4	0	0 1	\$11,250	72	Wet(411)		0 0		\$6,400	76
30 - 1 Gray, Red Ball And Collar, Red Dots On	Br: Jay Hanley (NY)	L 112 ⁷	2021	7	1	0 0	\$38,978	80	Synth Turf(249)		0 0		\$0 \$1,268	55
HERNDZ MORENO O (6 0 1 1 .00) 2022: (61 5 .08)	Tr: Pregman John S Jr(2 0 0 0 .00) 2022:(22 2 .09)		Bel	4	0	0 0			1 (=)	3		Ö	\$6,000	
31Mar22-6Aqu fst 6⅓f 222 :4531:1131:19 3★ \$ CIm 25000	72 8 / 8 5 42 32 36 47 Herndz Moreno 07	L114b 28.75		Bror	-				, , ,	-		-		
4Mar22-8Agu fst 6f 234 :4741:0021:133 3★ SCIm 25000	71 1/7 3 41½ 32 33½ 33½ Herndz Moreno 07													
19Feb22-7Agu fst 7f 232 :4711:1221:253 44 S Clm 25000	59 3 / 7 5 1hd 1hd 511 5143 Herndz Moreno 07													
27Jan22-8Aqu fst 6f 222 :451 :5711:094 4↑ SCIm 25000	56 10/11 5 52½ 610 710 918 Ramos C5	L118b 41.50												
11Dec21—2Aqu sly ^S 7f	67 1/9 3 42½ 44 35 47 Castellano J J	L 122 b 16.50	72–17	Whis	stling	Birds	12213 True	Gold1	223 <u>1</u> Bad Gu	y12213	2	:-3w tı	urn,4w1/4,em	npty
18Nov21-7Aqu fm 6f ⑦ 224 :452 :57 1:09 3★\$\(\)0 C 45k/N2X-	N 55 8 /9 5 73 63 63 65 911 Castellano J J	L120b 51.25	78-11	Dan	cingl	Buck1	20no Phntoi	mSmo	oke1201 <u>‡</u> Sw	shbuc	kle12	Onk ?	3w pursuit, t	ired
170ct21–7Bel fst 6f 224 :454 :5821:103 3↑ SClm v-25000	54 5 / 8 6 55 65 1 75 2 712 4 Castellano J J	L123 4.30	74-17	Man	iifest	Desti	ny 121½ Mor	eGray	tful123³¾ <i>Ju</i>	istRigh	ıt121 <u>‡</u>	4w t	urn,5w into l	lane
30ct21-10Bel fst 6f 221 :45 :5711:10 3↑ \$\subseteq 0 C 45k/n2x -		L121 20.90	80-10	Judg	ge N	Jury 1	203 <u>4</u> Bron x I	Bomb	er121no <i>Rive</i>	rDog11	22 <u>1</u> B	mpd b	brk,3-2path t	turn
25Aug21-7Sar fst 6f 222 :451 :5731:1023↑SSCImc-25000 Claimed from Wise Racing LLC for \$25,000, Brown Chad C T		L 122 *2.25	87–14	Gan	dyDa	incing	1221¾ JustR	Right1	223 <u>1</u> DrkMo	ney 126	61 <u>1</u> 6	òw up	per, edged a	way
21JJy21-8Sar yl 5∮f ⊕ 231 :4731:00 1:064 3∱ SIO C 45k/N2x-		L122 8.70	54-33	Shir	az12	2nk Fa	st Getaway	12231	Alphalfa124	nk		Ηı	ustled st, out	trun
29May21-6Bel slys 6f \$ 223 :453 :5721:10 34 SOC 45k/N2x-											2111		d ins, wknd	
15Nov20-8Agu fst 6⅓f C 222 :4521:10 1:162 3↑ SOC 40k/N2x-													3w pursuit, t	
WORKS: ● Apr28 Bel 4f fst :472 B 1/26 Apr22 Bel 4f fst :49 B 9/20			• •• • • • • • • • • • • • • • • • • • •		,					٠, ۲۰	o 	4	··· parsara, c	• •
TRAINER: 31-60Days(19.05 \$3.18) Dirt(28.04 \$2.16) Sprint(39.00 \$								J/T 20	21-22 BEL (2	.00 \$0	.00) J	./T 2021	1-22(14 .07 \$4	4.32)
1 Jemography	B. g(05.27.19) 6 (Apr)		Life	33	9	10 4	\$378,525	91	D.Fst		7 6		\$259,535	
Own: Dubb Michael and Murphy Karen A	Sire: Big Brown (Boundary) \$5,000 Dam: Liza Lu (Menifee)		2022	2	0	0 1	\$13,260	83	Wet(362)			1		
4-1 Yellow, Pink Circle And Rose, Pink Cuffs \$45,000	Br: Golden Goose Enterprise (NY)	L 119	2021	9	3	2 1	\$175,285		Synth Turf(273)	0		0	\$0 \$22 500	_ E0
ORTIZ I JR (29 11 6 3 .38) 2022; (442 122 .28)	Tr: Rodriguez Rudy R(30 5 4 3 .17) 2022:(190 42 .22)					- :	4.70,E00		Turi(2/3)		1 0	U	\$23,690	59

	יטוווטי	ai an	117					Cina	. Die Dunum	/Dan	daw)	000												144 14000				005 000	00
	wn: Dub			Murp	hy Karei	1 A	-	_	: Big Brown 1: Liza Lu (M			90,000					20	022	2 (0 0	1	\$13,260	83	Wet(362)				\$95,300	
4-1 Y	ellow, Pin	k Circle	And Ro	se, Pir	k Cuffs	,	\$45,00		Golden Go			e (NY)				L 119) 21	021	9 :	2 2	1	\$175,285	91	Synth				\$0	
ORTIZI	JR (29 1	63.38) 2022:	(442 1	22 .28)								2022	:(190 42 .22)										Turf(273)				\$23,690	
	(,	•						•	•	•					В	el	6 () 4	1	\$73,560	91	Dst(319)	3	0 1	0	\$22,525	91
27Mar22-	7Aqu fst	6 <u>1</u> f	S 224	:4631:	1131:182	34 OC c-	62k/n2	(75 2 / 7	7 3	731	751 67	671	Davis D	L119	fb 9.0	0 7	9-27 /	MrPhi	/1191	Amer	icanMona	rch12	121 Arthurs	Hope	1142	3w ti	ırn,swung 6v	w 1/4
Claim	ed from V	Viñdyle	a Farm	LLC	for \$62,5	500, Hen	nig Ma	rk Trair	ner 2021: (2	14 22	26 2	8 0.10)	-											7	•	,		, ,	
19Feb22-	BAqu fst	6f	S 23	:463	583 1:11 ·	4∧SHIie	eHughs	B97k	83 2/5	5 4	56 <u>1</u>	57 48	39 <u>1</u>	Vargas J A	Jr 124	b 16.1	0 7	8-27 \	NddU	Thn	k Now	12044 MyB	yTt12	2454 Jmgrphy	/1243	<u> 1</u> Br	k in,b	mp btwn,pin	ıchd
5Dec21-1	Aqu fst	7f	23	:4641:	1141:244	34 RNY	StInSrs	B150k	73 1/1	11 4	1141	943 693	6123	Davis D	124	b 15.0	0 6	7-22 [obsta	118	My B	oy Tate124	4 Our	r Last Buck1	246		2-5p t	urn,6p into	lane
300ct21-	Bel slys	6 <u>1</u> f	221	:45 1:	103 1:172 :	3∤SHu	dsonHB	150k	65 5 /8	3	42	421 36	312	Davis D	119	b 23.8	0 7	3-21 I	NyTra	ffic'	12483 (Chestertow	n 118	3½ Jemograp	hy11	9no (Chased	13-2w, up fo	or 3d
30Aug21-	SFL fst	6f	223	:452 :	573 1:104	3∱SGW	Barker/	B49k	87 1/0	5 5	32	32 22	1nk	Davis D	124	b *.9	5 9	4-13 .	lmogi	phy	124nk	FlyngEmpr	r1227	7¼ TmmythT	rch12	421	Slgsh	st, drftd out	1/16
29Jly21-	Sar slys	6 <u>1</u> f	214	:45 1:	10 1:163	3∱§JMı	rrissyH	B100k	63 8 /8	3 5	421	321 65	716	Davis D	120	lb 5.4	0 7	1-16 F	oolis	h Gh	ost119	3¾ MyBoyT	ate1	231½ OurLast	.Buc'	k 1231	4w t	ırn,7w1/4,en	npty
10Jun21-	Bel fst	7f	234	:4721:	1111:234	34 O C 80	lk/n2x-	N	91 3/0	6 2	311	$2\frac{1}{2}$ $2\frac{1}{2}$	21	Alvarado J	L125	ib 7.2	0 8	2-16 J	lalen	Jour	ney12	11 Jemogra	iphy'	125no <i>Town C</i>	lassio	:1214	₽ Bo	bbled st, rai	n on
1May21-	Bel fst	6 <u>1</u> f	222	:4511:)921:152	3+ O C 80	lk/n2x-	N	80 3 /	10 1	1hd	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	573	Bravo J	L125	ib 11.5	0 8	7–16 7	ThrTc	hniq	ıu121nl	< Montuk Tr	ffc12	1nk YodIEA\	Nho1	2353	Ins t	ırn,drift out	3/16
8Apr21-	Aqu fst	6f	C 222	:453 :	5741:112	34 O C 62	k/n2x-	N	89 6/0	3 1	42 <u>1</u>	424 412	211	Alvarado J	L126	b 4.1	0 8	5-17 E	BigEn	gin1	221 <u>4</u> J	mogrphy 12	262 R	unningwscss	ors1	263½	4w tur	n,chsd,willin	ngly
4Feb21-	7Aqu gd	6f	222	:453	573 1:104 A	4+ Alw 8	2000 n 1×		86 1/3	7 3	45	341 331	13	Davis D	L123	b 3.4	0 8	9–16 J	lemo	grapi	hy 123	Foolish Gh	ost123	3≩ Rejected A	Agai r	11201	Ins h	alf,5w1/8,ral	llied
7Jan21-1	2Aqu fst	6 <u>1</u> f	C 223	:4611:	1121:18	44 SOC	40k/n2>	(-N	82 1/0	6 4	54 <u>1</u>	541 41	1nk	Davis D	L123	b 3.1	0 8	9–15 J	lemog	ıraph	y123nk	Scilly Cay	1181	The Caretak	er118	31	4-5w 1	/4,up last ju	mps
20Dec20-	Aqu fst	6f	223	:463	5911:123	3∱SAIw	/ 72000 N	1x	81 7 /9	9 2	421	421 12	14	Davis D	L122	b 2.8	58	0-22 .	lemog	irphy	1224 B	ustinTimb	erlk1	20½ LptoGlo	ry 117	no (hased	3-2w, edged	d clr
WORKS:	May 10 B	el 4f fst	:492 B	19/34	May 3 B e I 4	lf gd :49	3 B 6/13	Apr 25	Bel 5f fst 1:0)4 B 8	/11 Ap	r 16 Bel	4f fst :	50 2 B <i>57/89</i>	Mar11 Beltr.t	4f fst :50)3 B	197/25	5										

TRAINER: 1stClaim (56 .25 \$1.95) 31-60Days (313 .17 \$1.63) Dirt (597			137/233			J/T 202	1-22 BEL (24 .08	\$0.50) J	/T 2021-	-22(47 .09 \$0.58)
6 Masked Marauder	Dk b/br g(04.28.21) 4 (Feb) SARAUG19 \$55,000		Life 1	5 2 3	5 \$13	34,554 96	D.Fst	4 0 0	2	\$20,715 73
Own: Red Storm Stable Cotrone Theresa Gabr 3-1 Red, Yellow Lightning Bolt, Yellow Ball	Sire: Palace Malice (Curlin) \$12,500 Dam: Court Dress (Speightstown)	I 1105		3 1 1		53,400 96	Synth	4 1 1 1 0 1		\$55,950 96 \$5,400 63
GOMEZ J A (56 6 4 7 .11) 2022: (468 67 .14)	Br: Wildwood Farm (NY) Tr: Rodriguez Rudy R(30 5 4 3 .17) 2022:(190 42 .22)	L 116 ⁵		7 1 1		10,514 74				\$52,489 74
, , , ,			Bel 2	200	U \$	6,750 62	Dst(346)	1 U U	U	\$675 64
1Apr22-8Aqu my 6½f 223 :46 1:1111:1743★SAlw 72000n1x	96 6/9 7 62¼ 4¾ 12 1no Gomez J A5	L 119b 20.60	90–19 Ma	asked Ma	rauder119	9no Key Pol	int1204¾ Kid d'(Iro1265 <u>‡</u>	4w	pursuit, game
20Feb22–9Aqu fst 6½f 224 :4531:1041:173 4↑ Alw 50000s	73 7 /8 5 53½ 54½ 37 38 McCarthy T	L 123 b 9.80	83–16 Tr	ash Talke	er1236 <u>‡</u> Si	ubsidize120	11 Masked Mara	auder123	1 <u>4</u> 2pa	th turn,no kick
2Jan22-2Aqu my ^S 6f 224 :462 :5831:113 4↑ Clm c-25000 N2L	. 63 1/7 6 74¾ 73¼ 33 2nk McCarthy T	L123b 6.50	85-18 M	o Mischie	f123nk Ma	asked Mari	auder1231‡ Hal	pert 120 3	<u>1</u> 3w i	upper, repelled
Claimed from Acclaimed Racing Stable and Gumpster Stable	LLC for \$25,000, Potts Wayne Trainer 2021: (442 66 63 5	54 0.15)					_			
19Dec21-3TP fst 6½f♦ C 224 :46 1:1041:171 3↑ Clm c-(15-10) N2			92–10 Pe	ercentage	1202 Mas	kedMarau	der1182 HotPst	rmi1183	Angl	led in for place
Claimed from American Made Thoroughbreds, LLC for \$15,0	00, Lawrence James L II Trainer 2021 (as of 12/19): (128 13									
18Nov21-8Aqu fm 116 T 233 :48 1:1141:423 3↑SAlw 72000 N1x	58 3 / 12 85½ 89½ 109¾ 107¼ 119½ McCarthy T						lt1211 Lord Flii			Dropped back
90ct21-8Bel fm 6f 🕇 222 :45 1:074 3∱SJAlw 80000 n1x	74 4/10 9 73¼ 72¼ 72¾ 82¾ Franco M	L 118b 42.25	91–05 Pr	ıantom S	moke 120 1	1 Sheriff Bi	ianco120n∘ Neu	ro123no	3w upp	or, no response
3Sep21–8Sar fst 7f 223 :4521:10 1:222 3↑ SAIw 90000 N1x	64 2 / 9 7 74 74 56 612 1 Castellano J J	L 118b 50.00	78–16 Go	old Panda	12024 Big	Bobby1202	Prince of Pharo	ahs1232 <u>‡</u>	В	obbled st, tired
8Aug21–5Sar fm 5½f ⊕ C 214 :45 :5641:0243↑SMdc-40000	66 8 / 10 8 75½ 54½ 1hd 11 Cancel E	L 119b 5.20	87–13 Ma	askedMai	rauder 119	91 Babagrm	1124∄ SonicSpe	ed119no	5w trn	,rallied,lead1/8
Claimed from River Card Stable for \$40,000, Potts Wayne Tr	ainer 2021(as of 8/8):(315 47 41 43 0.15)					-				
1Jly21–2Bel fm 1 ① 233 :4721:1121:3623↑SMd c-40000	62 8 / 10 2½ 21 1hd 2hd 33¼ Davis D	L 118b 3.80	71–23 Vo	oliero124¾	Dreampo	oint1182 <u>1</u> <i>N</i>	lasked Maraude	r118nk	2p t	urn,led1/4-3/16
Claimed from Windylea Farm, LLC for \$40,000, Atras Rob Tr	ainer 2021(as of 7/1):(172 37 33 30 0.22)									
31May21–1Bel myS 6½f \$ 22 :4531:1011:1633★SMd Sp Wt 75	k 47 5 /8 7 75¼ 75¼ 78½ 817 Carmouche K	119b 16.60	72–16 Bi	g Bobby1	181월 Blitz	z to Win118	1¼ Mr. Buckley	1242	Off bit	t slw,3w,5w3/16
29Nov20-2Aqu gd 6f ① 223 :463 :59 1:114 SMd Sp Wt 70	k 61 10/10 1 21 41½ 32 35¾ Alvarado J	119b *1.95	69–23 Pr	fctMunnn	gs1192 Dr	ncngBck119	3≩ MskdMrdr1 [.]	934 Pr	mpted	l 2w, weakened
12Nov20-1Aqu myS 6f 23 :47 :5911:121 S M d Sp Wt 67	k 57 4/5 1 42 44 37½ 38½ Ortiz I Jr	119 *1.45	74-19 Ur	10 119 3≩ B	igBrown9	Shoes 11943	MaskedMrude	r119≩ E	irsh brl	k,2w,outkicked
WORKS: May 9 Bel 4f fst :50 B 61/75 May 1 Bel 4f fst :48 B 3/50 Apr	23 Bel 4f fst :494 B <i>47/85</i> Apr14 Bel 4f fst :49 B <i>3/6</i> Mar29 Bel tr.	.t 4f fst :494 B 5/	20 Mar 21 B	el tr.t 4f fs	st :51 B 67	7/76				

TRAINER: 31-60Days (313 .17 \$1.63) WonLastStart (120 .22 \$2.29) Dirt (597 .21 \$2.03) Sprint (477 .20 \$2.31) Alw (110 .24 \$2.52) J/T 2021-22 BEL (12 .17 \$1.39) J/T 2021-22 (47 .28 \$3.76)

Dk b/br g(12.13.18) 6 (Feb) Life 36 5 7 6 \$334,147 23 5 3 \$249,353 87 **Bronx Bomber** Sire: Take Charge Indy (A.P. Indy) \$12,500 Wet(392) 12 0 4 \$81,594 88 2 2022 \$40,080 87 Own: Winning Move Stable
6-1 Fluorescent Orange, Black Ball, Orange Dam: Latin Lynx (Forest Wildcat) 0 0 Synth 0 \$0 L 119 SF Racing Group Inc (NY) 2021 10 0 3 3 \$92,940 88 Turf(260) 1 0 0 \$3,200 ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21) Tr: Rice Linda(21 5 2 3 .24) 2022:(163 24 .15) \$62,020 81 Dst(357) 2 0 1 0 Bel 9 0 3 1 \$17,000 74 87 7/8 2 12 12 15½ 12¼ Gomez J A5 31Mar22-6Aqu fst 61f 222 :4531:1131:19 34 SCIm c-25000 L116b 3.05 84-23 BronxBomber1162 SiciliMike123 MonyinthBnk1234 Ins trn,2p,wknd,held Claimed from Dubb Michael for \$25,000, Rodriguez Rudy R Trainer 2021: (551 96 80 67 0.17) 19Mar22-8Aqu fst 6f 223 :454 :5741:104 31 SOC 45k/N2x -N 72 4/11 1 753 66 441 561 McCarthy T 7.50 83-17 ReggMusicMn1141 Scoccitor1193 BustinTimbrlk1194 Bmpd early,2-3w turn 223 :453 :5741:103 44 SOC 45k/N2x-N 77 5/6 3 67 66 45 31 2.80 89-17 Rnnngwscssors120nk Scocctor123\frac{3}{2} BronxBombr118hd 3w upper, closed well 28Jan22-8Agu fst 6f McCarthy T **L**118b 58 4 /8 2 64 67 59 718 McCarthy T 84 2 /7 7 66 63 51 31 31 McCarthy T 1Jan22-7Aqu slyS 6½f 222 :4531:1011:163 41 50 C 45k/N2x-N L118b 8.30 78-14 MoreGrytful1184 BustinShout1193 MoneyinthBnk1231 Chased 2-3w, tired 3Dec21-7Aqu fst 6f C 223 :463 :5931:123 3↑ \$\overline{\sigma} O C 45k/N2X L120b 11.80 78-22 Saratoga Pal124½ Big Bobby1221 Bronx Bomber1201¼ Blocked 3/16-1/8, wait 300ct21-5Bel sly5 621 221 :45 1:103 1:172 3↑ SHudsonHB150k **37** 6/8 4 63 55½ 89 825¾ Vargas J A Jr 118b 37.75 59-21 Ny Traffic12483 Chestertown11832 Jemography119no 30ct2140Bel fst 6f 221 :45 :5711:10 3+ SOC 45k/N2x-N **70** 2 / 10 3 **5**3 321 311 231 Franco M L121b 12.30 87-10 Judge NJury12034 BronxBomber121no RiverDog1225 Hit gate,bmp brk,4w1/4 L122b *1.35 77-12 PerfectMunnings12053 BlueGator1185 BourbonBy12211 In tight 3/4,2p,3p1/4 224 :4541:0941:221 34 SOC 45k/N2x -N 29Aug21-4Sar fst 7f 64 3 /6 3 551 54 461 514 Ortiz I Jr 25Jly21-4Sar myS 6f (22 :452 :573 1:10 3↑ SOC 45k/N2x -N L122b *.40e 87–12 Amundson1221½ Bronx Bomber1222¼ Binkster124¾ 5-6w upper, belatedly

L121

L122

84 5 /6 4 65½ 63¾ 51¾ 21½ Ortiz I Jr 81 6 /9 1 32½ 2½ 2⅓ 31 Ortiz I Jr 88 2 /6 1 42½ 21½ 2½ 2nk McCarthy T 86 4 /8 7 713 69 44 3nk McCarthy T 20Mar21-8Agu fst 6f C 221 :451 :5731:114 3 ★ SOC 40k/N2x -N L122 WORKS: May6 Bel tr.t 4f fst :474 B 3/111 Apr22 Bel tr.t 4f fst :472 B 4/55 Mar6 Bel tr.t 4f fst :481 B 8/72 Feb20 Bel tr.t 3f fst :38 B 5/15

\$ 223 :453 :5721:10 34 SOC 45k/N2x-N

231 :461 :57 1:092 3↑ SOC 40k/N2x-N

29May21-6Bel slyS 6f

16Apr21-4Aqu gd 6f

J/T 2021-22 BEL(29 .21 \$1.48) J/T 2021-22(53 .19 \$1.73)

*1.90 89-14 Wow Brown121no T LovesaFight1211 BronxBomber12111 Chased 4w, ran on 4.70 96-09 Scilly Cay122nk Bronx Bomber12222 Steam Engine1224 Ins-2p,3p1/4,bid1/8

9.00 84-19 DrkMony122no BustnTmbrlk126nk BronxBombr1221 Leapt st, good courage

Brew Pub 20-1 Blue And White Quarters, Blue Sleeves MENA R E (12 0 0 0 .00) 2022: (104 7 .07) 16Apr22-10Aqu fst 6f 22 .443 :57 1:10² 3 ★ Sin C 45k/n2x. 20Mar22-9Aqu fst 1	100k	118f 26.1 L123f 3.1 L122f 4.1 L122f 6.1 L122fb 5.1 L122fb 3.1 L120fb 6.4	2022 2021 Bel 10 83-0 00 70-1 75 80-2 00 81-2 50 70-3 60 86-1 70 82-2 40 67-3 30 80-1	13 M 3 8 RivrD 3 Wters 12 Brewl 10 Brew 13 The C 17 Forty 10 Swint 11 Blitz	2 1 0 2 0 2 0 1191 5 Edge Pub12 0 obble Come con122 to Win	0 4 1 1184; 334; 7 214; S r122; ets 12 1 ³ ; F 11203	t Chestert RggMusicN cat Brat12 Paga Brew Pu 24½ B C GI Porty Comet Umbria1: 1211½ Brw	80 71 70 k1191; own12 ln1231; 221 ₄ So b1222 oryDa s122 ₂ 201 ₄ B	2 PrncofPhro 201 ₂ OurLstE 4 BigBrown cherzando12 Feathers Ro tys122 <u>4</u> Brew Scherzando rew Pub120	8 0 6 1 Buck Shos 22no 0ad12 7Pub 12212 4	2 0 0 0 194 ¹ / ₄ 1222 51201 1221 14	0 1 3-4wid Bmp ½ 3-4v 6w u (2-3w 3v Outs		80 - 63 56 Ireat s trn rally away n on lane kick vknd
11Aug21-10Sar fm 1½	62 5 / 11 89½ 810 75½ 76½ 55¾ Gaffalione T 56 4 / 7 6 74½ 64½ 55¼ 34¾ Ortiz I Jr	L 119fb 7.0	00 70-1	6 Quick	Retu	rn12	11½ Clear H	lumor1	183 <u>1</u> Arrowh 1193 <u>1</u> Brew F 21-22 BEL (1	ub1	1943	4w	awkwrd brk,3 turn,5w into 21-22(13 .15 \$7	lane
Seven Lilies Own: Windylea Farm LLC Kelly Green, Gold Circle And 'N,' Gold DAVIS D (72 13 8 15 .18) 2022: (419 87 .21)	Gr/ro. g(07.02.20) 7 (Apr) Sire: Rattlesnake Bridge (Tapit) \$7,500 Dam: Eleni's Daughter (Freud) Br: Tim Mawhinney Karen Mawhinney Jay Lieberman & Ca (NY Tr: Atras Rob(11 2 3 0 .18) 2022:(119 30 .25)	n L 12	2022	10	8 9 0 2 2 1 0 0	0	\$301,191 \$34,040 \$127,374 \$25,800	91 93	D.Fst Wet(328) Synth Turf(182) Dst(320)	3 0	4	6 4 3 3 0 1 0 0 1 0	\$176,958 \$121,763 \$2,470 \$0 \$55,800	91 58 -
1Apr22-6Aqu my 1 233	N 84 4 / 6 6 6 6 7 ½ 56 45 ½ 24 ¼ Davis D 89 1/8 84 ¼ 64 57 46 41 ½ Davis D 89 3 6 / 7 52 ¼ 42 41 ¼ 21 ½ 2hd Davis D 82 5 / 8 4 41 ¼ 31 1½ 14 ½ Davis D 84 62 % 45 33 Davis D 84 65 ¼ 65 ¼ 65 ¼ 65 ¼ 65 ¼ 65 ¼ 65 ¼ 65	L120b *1.: L118b *1.: L121b 5.: L122b *2.: L123b 9.: L123b *1.: L125b 16.: L124b 6.: L124b 6.: L124b 6.: L117b 19.	85 80-2 35 86-1 30 63-3 00 84-2 65 76-2 70 80-1 80 88-1 40 85-1 90 85-0 80 75-1 60 76-2	8 Dr Ar 6 Whist 9 Yank 1 Ynkee 4 SvnLi 7 BigBo 1 Quick 1 Dark 9 Scilly 6 Fox R 3 DSte 8 Sever	dito 12 lingBil ee Divisi EDivisi Silis 122 Dbby 12 Retur Money Cay 12 MEng nLilies	13 S. rds11 ision on12: 4 <u>1</u> L c 202 <u>1</u> 11253 112 To ine1 1174	even Lilies 84¼ Seven 120½ Wate 5hd Seven 100kinforTr BigBrown: ½ Lookinfo ½ StemEng Bronx Bom 100kinfo 2 StemEng War Jak 122 184 South Afridar Mar 11 Bel tr	.1194 J Lilies'r's Edy .ilis12 roubl1 Shoes Shoes prTroi 1 The Afric1: .t 3f fs	ust Right11 12024 MorGr ge1203 No Sc 164 PrincofP 203 Our Mn M 1193 SevenL uble1204 Sev 534 SevenLi 224 Steam E Queens Jules 2314 Double k GolaniBrig t: 37 B 17/46 1-22 BEL (13	964 yytfu Phroh lik120 ilis12 nnLil Engir 11221 Shot		Chase 3w p 5w 4½ 2p Mvd up Bmp bi 12 3-2p Bum Chase Chase	ed 4-3w, 2nd l oursuit, mild l upper, belat turn, mvd our pi/2,4w trn,dr twn aftr brk,i trn,drift out ped st, belat turn,no respo sed 5-4w, kep ch st,3w,5w up d 3-4w, edgec 21-22(50 .20 \$	best kick edly it 1/8 rvng 2-3p t1/16 edly onse ot on pper d clr
Saint Selby Own: Michael Dubb and Michael J Caruso Yellow, Pink Circle And Rose, Pink Cuffs CARMOUCHE K (55 8 117.15) 2022: (382 80.21)	Dk b/br g(02.28.21) 4 (Mar) SARAUG19 \$75,000 Sire: Kantharos (Lion Heart) \$20,000 Dam: Valala (Majestic Warrior) Br: Fifth Avenue Bloodstock (NY) Tr: Atras Rob(11 2 3 0 .18) 2022:(119 30 .25)	L 12	2022 1 2021 Bel	1 2	2 1 1 0 1 1 0 1	0	\$94,100 \$39,600 \$54,500 \$16,000	78 84	D.Fst Wet(388) Synth Turf(316) Dst(344)	1 0 0	0 0	0 0 1 0 0 0 0 0	\$78,100 \$16,000 \$0 \$0 \$38,500	84 - -

Ta Saint Selby Own: Michael Dubb and Michael J Caruso Yellow, Pink Circle And Rose, Pink Cuffs CARMOUCHE K (55 8 11 7 .15) 2022: (382 80 .21)	Dk b/br g(02.28.21) 4 (Mar) SARAUG19 \$75,000 Sire: Kantharos (Lion Heart) \$20,000 Dam: Valala (Majestic Warrior) Br: Fifth Avenue Bloodstock (NY) Tr: Atras Rob(11 2 3 0 .18) 2022:(119 30 .25)	L 121	Life 2022 2021 Bel	3 1 2 1	1 1 0	0 1 1	0 0 0 0	\$94,100 \$39,600 \$54,500 \$16,000	 Synth Turf(316)	1 0 0	1 (0 (0 \$1 0 0	78,100 6,000 \$0 \$0 88,500
Entered 15May 22- 4 BEL													

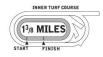
TRAINER: 61-180Days 54 26 \$2.83 | WonLastStart (82 .18 \$1.39 | Dirt (367 .23 \$1.59 | Light (187 .24) Start (182 .18 \$1.39 | Dirt (367 .23 \$1.59 | Dirt (**L**125b *1.05 80–26 SaintSelby1251 LookinforTrouble1252 TcoBen1231 $\frac{1}{2}$ In hand 4–3w,held safe L120b 24.00 87-09 Kaz's Beach125hd Saint Selby1204 Devil's Code12534 Coaxed 2p, nailed L120b 3.45 66-22 SintSlby120no OnWhirlwindRid1201½ BCGloryDys1205¼ Ins1/2,ask5/16,3w,up

J/T 2021-22 BEL (42 .19 \$1.12) J/T 2021-22 (147 .25 \$1.77)



Belmont Park

ManOWar-G1



136 MILES (Inner Turf). (2:101) THE MAN 0' WAR. Grade I. Purse \$700,000 Inner Turf For Four- Year-Olds And Upward. Non-Lasix Race pursuant to 4043.2 (7)(e)(5) Lasix not permitted within 48 hours of post time. By subscription of \$700 each which should accompany the nomination. \$5,250 to pass the entry box and an additional \$5,250 to start. A supplemental nomination fee of \$5,250 in addition to the entry and starting fees can be made at any time prior to the closing of entries. The purse to be divided \$375,000 to the winner, \$130,000 to second, \$70,000 to third, \$46,000 to fourth, \$30,000 to fifth, \$20,000 to sixth, \$16,000 to seventh and \$13,000 to eighth. Weight: 124 lbs. Non-winners of a Grade/Group I race at a mile or over in 2021-22 allowed 2 lbs.; of a Grade/Group II race at a mile or over in 2021-22 allowed 6 lbs. A trophy will be presented to the winning owner, trainer and jockey. The New York Racing Association reserves the right to transfer this race to the Main Track. In the event that this race is taken off the turf it may be subject to downgrading upon review by the Graded Stakes Committee. Closed Saturday, April 30, 2022 with 15 Nominations. (Rail at 9 feet).

Post time: 4:46 ET	Wagers: Exacta, Tri	ifecta (.50), Super (.10)	, Pick 3,	, Pick 4	(.50), Double	Beyer par: NA
1 Easter (Fr) Own: Madaket Stables LLC 10-1 Aqua, Pink Hoop, Pink Cap PRAT F (10 3 2 1 .30) 2022: (340 94 .28)	B. g(12.11.21) 4 (Mar) Sire: Exosphere*Aus (Lonhro* Dam: Excellent Girl*GB (Excee Br: Aleyrion Bloodstock Ltd (I Tr: Motion H Graham(1 0 0 0	d And Excel*Aus) Fr)	1	2022 18 2021 Bel (1	1 0 0 1 \$9,840 86 5 0 1 0 \$28,964 - Wet(276) Synth Turf(319*)	
15Apr22-8Aqu fm 1 1	Alw 82000n1x 86 4 /7 77½ 79 76	½ 63 31½ Castellano J J	L123 2	2.45 90-12	2 Lonesome Fugitive1231½ So High 123hd Easte	er12334 Off slow,3-4path,2p1/4
24Sep21 Chantilly (Fr) gs *1 ① RH 1:384 Timeform Rating: 95	Prix de Saint-Nicolas d'Acy Alw 36400	7 423 Peslier 0	126 1	16.00	Midtown1282 Fort Payne128hd Midlife Crisis1	0ne paced final furlong
13Jun21 Longchamp (Fr) gs *11/4 ① RH 2:063 Timeform Rating: 91	Prix Ridgway Stk 66600	6 52 ¹ / ₄ Peslier 0	10000	9.00	Parchemin125no Lord Charming125½ Cash E	Led to 1f out, weakened
16May21 Longchamp (Fr) sf *1 ① RH 1:40 Timeform Rating: 93	Poule d'Essai des Poulains-G1 Stk 728600	12 10 ⁷ Demuro C		23.00	St Mark's Basilica12813 Colosseo128nk Breizh	Toward rear throughout
18Apr21 Longchamp (Fr) fm *1 ① RH 1:393 Timeform Rating: 98	Prix de Fontainebleau-G3 Stk 95900	8 41½ Cheminaud V		23.00		128nk ear, ran on well outer final furlong
21Mar21 Saint-Cloud (Fr) hy *1 ① LH 1:46 Timeform Rating: 90	Prix Omnium II Stk 65700	6 21½ Barzalona M	128 *	*2.00	Galik1281½ Easter1282½ Perseverants128¾	Second best
9Nov20 Lyon-Parilly (Fr) sf *1 ① LH 1:384 Timeform Rating: 81	Prix des Chrysanthemes Alw 28900	6 14½ Cheminaud V	126	*.80	Easter1264½ Everstorm126½ Punta Canaille1	26nk To lead 1 1/2f out, drew off
120ct20 Lyon-Parilly (Fr) sf *1 ① LH 1:451 Timeform Rating: 71	Prix des Camelias Maiden 18700	7 1¾ Barzalona M		1.90	Easter1283 Shallali128no Morton12822	To lead insd 1f out, ran on well
3Sep20 Longchamp (Fr) gs *1 ① RH 1:40 Timeform Rating: 70	Prix de Fontenoy Maiden 29400	8 33¾ Barzalona M	128	7.00	Normandy Bridge1281 Baby Rider1282 Easter	283½ Evenly

TRAINER: 20ffOver180(24.25 \$1.98) Turf(361.14 \$1.39) Routes (426.15 \$1.39) GrdStk (67.10 \$0.80) J/T 2021-22 BEL (1.00 \$0.00) J/T 202

Qufo Own: Otter Bend Stables LLC 7-5 Hunter Green And Athletic Gold Diamonds	Ch. h. 5 (Feb) Sire: Declaration of War (War Front) \$21,200 Dam: Floy (Petionville) Br: John Little & Stephen Cainelli (Ky) 124	Life 15 8 2 4 \$1,360,030 104 2022 1 1 0 0 \$121,520 102 2021 6 2 1 2 \$787,500 104 Turf(375) 15 8 2 4 \$1,360,030 104
ROSARIO J (17 1 8 2 .06) 2022: (293 63 .22)	Tr: Clement Christophe(21 6 4 2 29) 2022:(163 29 .18)	r 2021
_2Apr22-9GP fm *1½ ① 483 1:1422:0322:271 4↑ PanAmer-G2	102 3 /7 66 66½ 62¼ 41¼ 12 Rosario J 122 *1.30	0 Gufo1222 Abaan12423 Novo Sol1182 4w3/16, inhale leade
6Nov21-11Dmr fm 11/2 1	91 9 / 14 118 1112 138 129 1010 Rosario J 126 b 8.00	0 92-06 Yibir 122 Broome 126 Teona 119 Wheeled out, empt
90ct21-7Bel fm 1½ ① 492 1:143 2:0242:253 3↑ TfClscIv-G1	97 3 /7 77 76½ 1½ 21 33½ Rosario J 126b *1.85	5 95-10 Rockemperor1262 Serve the King12613 Gufo12613 Bmp st,4w rally2nd,le
28Aug21-11Sar fm 1½ T C 482 1:1422:04 2:281 4↑ SwrdDncr-G1		5 81-17 Gufo122nk Japan12033 Cross Border1223 3w upper, dug in, gam
5Jly21-6Bel gd 1½ ⊕ 51 1:1622:0442:283 4∧ GrdCtrierB150	(98 3 /6 65 66½ 5½ 11 11 Rosario J 124b *.90	0 84-16 Gufo1241 Tide of the Sea124nk Shamrocket11821 Ins1st,3-5w2nd,bid1
5Jun2140Bel gd 11/4 T 464 1:11 1:3521:59 4★ Manhttn-G1	100 9 / 10 10 11 10 17 99 4 75 34 Rosario J 118 4.00	0 91-05 Domestic Spending 12423 <i>Tribhuvan</i> 11814 <i>Gufo</i> 11825 Ins,6w1/4,ducked ou
8May21-10Bel gd 1% 🗍 472 1:1221:3722:131 4★ ManOWar-G1	97 8/8 614 614 86½ 52½ 2no Rosario J 124 *1.50	0 88-15 Channel Cat118no Gufo124nk Moon Over Miami11814 7w upper, closed we
28Nov20-9Dmr fm 11/8 ① 4811:1211:3531:47 HolDerby-G1	96 11/11 11731181 107 741 3nk Prat F L122 3.20	0 95-07 DomesticSpnding122hd SmoothLikStrit122nk Gufo1223 Came out 3/16, surge
30ct20-9Bel fm 11/4 T 503 1:1521:3912:021 BelDby-G1	94 2 /8 63 54 54 42 31 11 Alvarado J L122 *1.48	5 79-20 Gufo1221 No Word12213 Mo Ready1223 Tracked 2p, edged c
15Aug20-8Sar fm 136 473 1:12 1:3521:522 SarDrbyIvB50	k 93 5 /8 78 1/4 77 77 73 1/4 2hd Velazquez JR L122 5.80	0 96–10 Domestic Spending122hd Gufo122½ No Word122hd Bmp st,mvd out2x's s
4Jly20-9Del fm 11/8 T C 472 1:1111:3521:464 Kent-G3	90 5 /7 69½ 69 64½ 4¾ 1½ McCarthy T L118 *.60	0 106 - Gufo118½ <i>Pixelate</i> 1182½ <i>Vanzzy</i> 1181¼ Awk st,4w1/4,confider
2May20-11GP fm 116 T 232 :47 1:1021:393 EngChnnlB75	91 4 / 11 117 ½ 106 84 63 11½ Ortiz I Jr L120 *2.20	0 99-07 Gufo1201½ ProvenStrtegies1201½ SummertoRmmbr120½ Kicked in strong
ZMAYZU-11GP fm 1音(T) Z32 :4/ 1:1U21:393 EngChnnIB/51 WORKS: MayS Roll (T Aff fm :51 R/d) 12/12 May1 Roll 5f fet 1:04 R 1/		U 99-U/ Gufo12U1½ ProvenStrtegies12U1½ SummertoRmmbr12U½ Kicked in strongi i fet 1.04 R 1/2 Mart? Dav Affet -49 R 12/44

WORKS: May6 Bel ☐ 4f fm :51 B(d) 12/12 May1 Bel 5f fst 1:04 B 14/15 Apr16 Pay ⊕ 5f fm 1:02 B 3/11 Mar26 Pay ⊕ 5f fm 1:02 B 5/12 Mar19 Pay 5f fst 1:04 B 1/2 Mar12 Pay 4f fst :49 B 12/44

TRAINER: 20/f145-180(97 .26 \$2.17) 31-60Days(244 .20 \$1.85) WonLastStart(124 .18 \$1.54) Turf(577 .20 \$1.84) Routes(434 .18 \$1.76) GrdStk(59 .17 \$1.85)

UT 2021-22 BEL (87 .16 \$1.09) J/T 2021-22(148 .20 \$1.45)

CLOSER LOOK: Clement won this race in back-to-back years starting in 2009; this multiple Grade 1 winner ran too good to lose in this race last year; he has shown a true affinity for the local grass and he has a devastating late kick;

runner has repeatedly shown he can put wins together; clearly the one to beat.

Yibir (GB) Own: Godolphin LLC Royal Blue, White Chevrons On Sleeves BUICK W T (—) (—)	Ch. g(05.27.21) 4 (Apr) Sire: Dubawi*Ire (Dubai Millenniu Dam: Rumh*Ger (Monsun*Ger) Br: Godolphin (GB) Tr: Appleby Charles(—) (—)	ım*GB) \$3	341,600		124	Life 2022 2021 Bel ①	14 6 3 2 \$4,126,386 105 D.Fst 0 0 0 0 0 0 - 2 0 2 0 \$1,230,806 - Synth 0 0 0 0 0 - 0 - 8 4 1 1 \$2,878,083 105 105 14 6 3 2 \$4,126,386 105 1 1 0 0 \$535,000 94 Dstr@(403) 1 0 1 0 \$14,339 -
29Apr22 Newmarket (GB) gd 1½ ① RH 2:38 4 Timeform Rating: 120	↑ Betfair Exchange Jockey Club SG2 Stk 143300	5 21 3	Buick W T	130	*.25		Living Legend 1271 Yibir 130 Outbox 1278 T.k.h: hld up in bhd ldrs: pushed along 3f out: rdn 2f out: hung
	↑ Longines Dubai Sheema Classic-G1 Stk 6000000	15 2nk	Buick W T	125	-		Shahryar 125nk Yibir 125½ Authority 126no Sttld last, r.o. very wl ful 400m, nrst fin
6Nov21-11Dmr fm 11/2 ① @ 481 1:1222:0212:254 34	BCTurf-G1 105 8 / 14 12101313 116	65 1 <u>1</u>	Buick W T	122	8.50	102-06	Yibir122½ Broome1261½ Teona1191½ Circled, full of run
	JCDerbyIvB980k 94 2 /7 75\frac{3}{4} 75\frac{1}{2} 72\frac{1}{2}	111/2 121/2	Spencer J P	122	2.65	96-04	Yibir1222½ Soldier Rising122nk Slicked Back1222¾ 2-3w2nd,6w1/4,drift in
18Aug21 York (GB) gd 1½ ① LH 2:281 Timeform Rating: 113	Sky Bet Great Voltigeur Stakes-G2 Stk 206100	8 1114	Doyle J	126	6.00		Yibir12614 The Mediterranean1264 Youth Spirit126no Held twrd rear, lckd rm 2f out, gained to lead 1f, ran on well
29JJy21 Goodwood (GB) gs 1½ ① RH 2:401 Timeform Rating: 97	John Pearce Racing Gordon Stakes-G3 Stk 243300	8 68	Buick W T	130	3.30		Ottoman Emperor 127½ Sir Lucan 1271¼ Third Real m 127 nk Trckd Idrs halfway, to lead 5f out, headed appr 2f, tired
8JJy21 Newmarket (GB) gf 1% ① RH 2:463 Timeform Rating: 109	Bahrain Trophy-G3 Stk 207000	5 12½	Doyle J	127	*1.50		Yibir1272½ Mandoob1273 Dancing King1275½ Held twrd rear, gained 2f out, to lead appr 1f, strongly
21May21 Goodwood (GB) sf 1% ① RH 2:351 Timeform Rating: 95	British Stallions EBF Cocked Hat Stks Stk 66700	6 24	Buick W T	126	3.30		Lone Eagle1314 Yibir1266½ Gentleman Joe1266 Chased winner throughout
6May21 Chester (GB) gs 15 (T) LH 2:14 Timeform Rating: 93	Tote.co.uk Dee Stakes Stk 83500	7 45 <u>3</u>	Buick W T	126	*2.50		El Drama1261 Maximal1262 Earlswood1262 Led early, headed 2f out, weakened
23Apr21 Sandown Park (GB) gd 11/4 ① RH 2:12 Timeform Rating: 102	Bet365 Classic Trial-G3 Stk 62300	10 33/4	Buick W T	127	4.00		Alenquer127½ Adayar127nk Yibir1273¾ Led early, headed 2f out, yielded late
18Sep20 Newbury (GB) gd 1 ① Str 1:373 Timeform Rating: 90	Haynes, Hanson & Clark Alw 18200	5 11	Buick W T	124	2.50		Yibir1241 Megallan124½ Jumby 124hd Straight to lead far side, kept on strongly, ridden out
2Aug20 Sandown Park (GB) gd 7f ① RH 1:293 Timeform Rating: 81	British Stallion Studs EBF Maiden 8400	10 13/4	Doyle J	131	*1.60		Yibir131% King Vega1315 Bake128hd Straight to lead, kept on well, gamely
TRAINER: Turf(18.50 \$4.18) Routes(17.53 \$4.44) G	ardStk(15 .53 \$4.56)						J/T 2021-22(3 1.00 \$8.40)

CLOSER LOOK: Any horse that can win in England at Belmont and at Del Mar in consecutive races is a flat-out star; Buick is behind the wheel once again and he knows this monster like the proverbial book; runner has already shown he can make the Euro to New York ship successful; should be right there when the smoke clears.

4 Abaan Own: Eclipse TB Partners&Daigneault Alex 9-2 Black, Light Blue Sash, White Sleeves SAEZ L (8 3 0 0 .38) 2022: (565 117 .21)	Ch. g(01.07.21) 5 (Apr) Sire: Will Take Charge (Unbridled's Song) \$5,000 Dam: Anchorage (Tapit) Br: Rosilyn Polan (Ky) Tr: Pletcher Todd A(17 2 5 2 .12) 2022:(323 75 .23)	Life 12 4 5 0 \$393,470 100 D.Fst 4 0 2 0 \$38,910 76 2022 3 1 1 0 \$163,920 100 Wet(398) 0 0 0 0 0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
2Apr22-9GP fm *1½ ① 483 1:1422:0322:271 4↑ PanAmer-G	100 5 /7 32 33 2hd 11 22 Saez L	124 2.30 Gufo 1222 Abaan 1242 Novo Sol 1182 3wd bid, clear, no match
5Mar2241GP fm *1% ① C 493 1:143 1:383 2:14 4★ M Diarmd-G	90 1/11 54½ 85¾ 52¼ 33 45½ Saez L	124 *.60 92-11 Temple1181 Shamrocket12234 Media Blitz11814 Steadied 1st,bid,wknd
Hand timed	0C 0 /40 04 04 41 42 40 CI	400 ±450 Ab. 4000 T
29Jan22-7GP fm *1½ ① 501 1:1522:0512:292 4A WLMcKnt-(120 *1.50 Abaan 1202 <i>Temple</i> 1183 Media Blitz 11814 Took over final tn, clr
24Dec21+10GP fm *2 ⊕ S 3:21³ 3↑ HAInJrknsL	00k 92 2 /8 11½ 11 11 13 14½ Saez L	122 *1.40 Aban1224½ Ajourneytofreedom1223¾ Fntsioso1241¼ In command throughout
Hand timed		
14Nov21-3Aqu gd 1% 🗇 \$ 51 1:16¹1:41⁴2:18¹ 3↑ Alw 82000 N1>		L121 *.85 87–15 Abaan1212 Jarreau1193½ Gloucestershire118no In hand ins, edged clr
100ct21–4Bel fm 1½ ⊕ § 522 1:1822:0622:302 3↑ Alw 92000 N1>	89 7 /8 11 1½ 1½ 2hd 2½ Velazquez J R L	L122 *1.95 74-21 Cold Hard Cash122½ <i>Abaan</i> 122¼ Shady McGee1182½ Ins,jstld3/16,bmpd1/16
6Sep21–5Sar yl 1½ (T) (S) 234 :4811:1211:432 3↑ Md Sp Wt 10	k 90 3 /7 1½ 1½ 1½ 15½ 17½ Velazquez J R L	L124 2.35 81–22 Abaan12473 Conglomerate12423 Aruba124hd In hand 2p, drew off
12Aug21-10Sar fm 116		L124 4.00 91-09 Amano124 [†] Abaan124 ² Group Hug1194 ² 3-2w 1st, led, ran on
17JIv21-11Sar fst 7f 223 :4531:1011:23 3♠ Md Sp Wt 10		L124 8.80 76-14 Ducale1192 Askin for a Baskin1196½ Southern Flag119no 5w upper, tired
Previously trained by Peitz Daniel C 2020 (as of 10/30): (62		- 1
300ct20-2CD fst 1⅓ 243 :49 1:143 1:443 3↑ Md Sp Wt 82		L121 9.50 80-19 TwentyTwice1212¼ Abn1215¾ SpeightstownAgin1212¾ Came in st, lugged upr
24Sep20–3CD fst 1 6 9 24 :4841:1341:45 3 Md Sp Wt 73		L121 2.40 77–22 Distorted Moon1212\frac{1}{2} Abaan121\frac{1}{2} May May 1212 Bmpd foe 2x str, veered
5Sep20–3CD fst 1 23 :4641:1111:344 3+ Md Sp Wt 93		L120 14.60 82-02 One Nation124 ² 4 Pit Boss120 ² 4 Fastly120 ⁵ 4 Bumped, carried out
WORKS: May6 Bel tr.t 4f fst :49 B 20/111 Apr29 PBD 4f fst :49 B		Mar 19 PBD 4f fst :48 2 B 1/25 Feb 26 PBD 4f fst :48 B 3/32
TRAINER: 31-60Days (524 .25 \$1.79) Turf (446 .17 \$1.35) Routes (88		J/T 2021-22 BEL (51 .20 \$1.56) J/T 2021-22(273 .26 \$1.64)

CLOSER LOOK: This charge gave Gufo all he could handle last time but runner could be compromised on the lead by the runner on the extreme outside; the distance is of no concern and it will be up to the rider to try to slow down the pace and tow-rope this short field all the way around; backers figure to get a thrill deep into the lane.

Highland Chief (Ire) Own: Hay Mrs Fitriani Pink, Emerald Green Triangular Panel MCCARTHY T (57 4 7 5 .07) 2022: (420 66 .16)	B. h. 5 (Apr) Sire: Gleneagles*Ire (Galileo*Ire Dam: Pink Symphony*GB (Montj Br: Mrs Fitri Hay (Ire) Tr: Motion H Graham(1 0 0 0	eu*Ire)	115 18 .16)		2022 118 ₂₀₂₁ Bel	Per 1 0 0 0 \$360 84 Wet(280*) 0 0 0 0 \$0 - \$0 - \$0 - \$0 - \$0 - \$0 -
14Apr22-8Aqu fm 1 1/16 T 231 :4741:12 1:412 3↑ OC 62k/Ni Previously trained by Paul F I Cole	2x -N 84 3 /12 129½1212 1111	1111 951	McCarthy T I	L119	4.60 88-1	15 Flop Shot119¾ Buy Land and See119¾ Kuramata1191¼ Pinched st, no impact
4Jun21 Epsom (GB) gs 1½ ⊕ LH 2:421 4★ Coral Co Timeform Rating: 98 Stk 4656		6 5144	Probert D	126	40.00	Pyledriver126nk Al Aasy1267 Japan1261½ Led early, headed 6f out, gave way
90ct20 York (GB) sf 1½ ⊕ LH 2:371 3↑ Cumberl Stk 62101	land Lodge Stakes-G3 0	4 39½	Probert D	120	4.50	Euchen Glen126½ Desert Encounter1269 Highland Chief120nk Trckd ldrs, near side 4f out, outpaced
	rix de Paris-G1 00	10 564	Peslier 0	129	16.00	Mogul1292½ In Swoop129no Gold Trip1291¾ Toward rear, stayed on w/o threatening
19Aug20 York (GB) gd 1½ ⊕ LH 2:302 Great V € Stk 99301	oltigeur Stakes-G2 0	8 231/2	Probert D	126	11.00	Pyledriver 1293½ Highland Chief 126½ Mogul 126hd Midpk, gained 4f out, kept on well
30JJy20 Goodwood (GB)	arce Racing Gordon Stakes-G3 0	6 23/4	Probert D	127	22.00	Mogul1273 Highland Chief1273 Subjectivist12713 Chsd ldrs, gained appr 2f out, bumped foe, kept on
4JIy20 Epsom (GB) gd 1½ ① LH 2:342 Invested Stk 6242	c Derby-G1 00	16 10 ¹³ 3	Curtis B A	126	20.00	Serpentine 1265 Khalifa Sat 126 Amhran Na Bhfiann 126 Close up early, soon dropped back
	Gates Handicap Stakes 00	14 1½	Ryan R G	133	20.00	Highland Chief133½ Tritonic1272¼ Global Storm124no Dwelt, twrd rear, gained outer insd 2f out, kept on strongly
28Sep19 Newmarket (GB) gd 1 🗇 Str 1:35 Royal Lo Timeform Rating: 63 Stk 1536	odge Stakes-G2 00	7 613	McDonald P J	126	5.00	Royal Dornoch126nk Kameko1261½ Iberia1262¼ Off slow, never involved
	n Stakes 100	14 34 <u>1</u>	Da Silva R	129	14.00	Pinatubo1293¼ Lope Y Fernandez1291¼ Highland Chief1292½ Trckd ldrs, chckd appr 1f out, could not quicken
12Apr19 Newbury (GB) sf 54f ① Str 1:044 West Be Maiden	erkshire Brewery EBF 13000	9 1nk	Da Silva R	131	16.00	Highland Chief 131nk Separate 1261& Chattanooga Boy 1312 Midpk, gained 2f out, to lead appr 1f, stayed on

WORKS: May7 Faitr.t ♦ 5f fst 1:014 B 4/12 Apr8 Faitr.t ♦ 5f fst 1:024 B 4/6 ◆ Apr1 Faitr.t ♦ 5f fst 1:023 B 1/4 Mar25 Faitr.t ♦ 5f fst 1:03 B 4/6 Mar18 Faitr.t ♦ 6f fst 1:15 B 3/5 Mar11 Faitr.t ♦ 5f fst 1:02 B 3/6 TRAINER: 20ffOver180 (24 .25 \$1.98) Turf(361 .14 \$1.39) Routes (426 .15 \$1.39) GrdStk (67 .10 \$0.83)

J/T 2021-22 BEL (2 .00 \$0.00) J/T 2021-22(6 .00 \$0.00)

CLOSER LOOK: The Chief seems to need a softer assignment; the last win was against 13 foes but it was eons ago and the New York debut leaves much to be desired; he did catch a couple of repeaters in his final two Euro starts but not sure that will be enough to put him over the top here.

yy	•	
6 So High (GB)	Ch. g(05.13.20) 6 (Feb)	Life 16 3 4 1 \$136,580 94 D.Fst 1 0 0 0 \$3,000 31
Own: Knight RB Stables LLC	Sire: Nathaniel*Ire (Galileo*Ire) \$20,500 Dam: Fugitive Angel (Alphabet Soup)	2022 1 0 1 0 \$16,400 87 Wet(295*) 1 0 1 0 \$10,000 70
30 - 1 Banana Yellow, Light Blue Chess Piece	Br: George Strawbridge (GB)	118 2021 4 0 0 1 \$56,320 94 Turf(389) 11 2 2 1 \$115,721 94
RODRIGUEZ L A (21 2 3 1 .10) 2022: (153 14 .09)	Tr: Chatterpaul Naipaul(5 0 0 1 .00) 2022:(22 0 .00)	Bel ① 3 0 0 1 \$53,040 94 Dst①(332) 1 0 0 0 \$30,000 94
15Apr22-8Aqu fm 116 T S 241 :4831:1131:413 3↑ Alw 82000n1x	87 5 /7 13 1½ 1½ 1hd 21½ Rodriguez L A	L123 28.00 90-12 Lonesome Fugitive 12313 So High 123hd Easter 1233 Ins, headed ins 1/8
4Jun21-10Bel yl 2	85 1/9 14 11½ 1hd 2½ 58½ Cancel E	118 26.00 39–35 BronSmdi12223 Fntsioso1221 Ajournytofrdom11831 Spurted in tandem 2-3w
8May21-10Bel gd 1% 🗍 472 1:1221:3722:131 4↑ ManOWar-G1	94 4/8 34 34½ 32½ 42½ 52 Cancel E	118 90.00 86-15 Channel Cat118no Gufo 124nk Moon Over Miami11814 6w upper, kept on
22Apr21–2Bel fm 1 1	76 4/6 31½ 31½ 32 32½ 33¾ Hernandez B	L123 9.40 58-38 PrincipldStnd123nk RdStormRisn1203½ SoHigh1239¾ 3w trn,ask5/16,no kick
_2Apr21-6Aqu gd 116 T 24 :4921:1411:4413↑ Alw 82000 N1X	78 5 / 8 52½ 64½ 66½ 57 55¾ Cancel E	L127 10.80 80–14 Kuramata1272½ La Hara125nk DreamsofTomorrow127½ Tracked ins, no rally
19Dec20-9Aqu fst 11/8 481 1:13 1:39 1:524 3↑ Queens CoL10	0k 31 6/6 66¼ 66½ 613 632 651¼ Worrie A S	L123f 43.75 32-17 Bcksdofthmoon1236 MscIHrt123124 EmptyTomb12334 3w 1st, thru after 6F
11Dec20-7Aqu gd 116	82 9/12 96½ 98½ 96½ 116 5¾ Rosario J	L123 *1.50 83-16 Jack the Cat123½ Soulmate123 ^{hd} Good Old Boy123 ^{no} Cut corner, outkicked
Claimed from Augustin Stable for \$25,000, Thomas Jonatha		
20Nov20-8Aqu fm 11/16 ① 234 :4921:1411:443 3↑ Clm 35000N3L	84 2/10 36½ 34 33 21½ 1nk Rosario J	L124 7.90 76–24 So High124nk Malthael124\(\frac{3}{4}\) Dream Friend1222\(\frac{3}{4}\) 3w uppr, betw, game
70ct20–3Kee fm 1½ ① 49 1:1342:03 2:264 3↑ Alw 72899n2x	75 9 / 11 43 53 87½ 109¼ 1013 Leparoux J R	L121b 10.80 96 - TideoftheS1232¼ LogicIMyth1212 BourboninMy123hd Chased, folded far trn
29Aug20−9Mth sly\$ 1½ ⊗ \$ 484 1:144 2:392 3↑ O C 30k/n2x -N	70 5 / 5 31 31 ½ 12 11 ½ 2 ¾ Vargas J A Jr	L120b *1.10 Terry's Charm120₃ SoHigh12011 CandyCaneLane12012₂ 3w trip, led, gamely
1Aug20-8Mth fm 11/8 ⊕ \$ 484 1:1241:37 1:491 3↑ OC 30k/N2x -N	80 7 / 7 76 4 64 5 63 4 44 5 44 5 Vargas J A Jr	L122b 3.60 77-18 ServetheKing12014 EpicBromance12014 ArtemusBridge12214 Inside, 4w 1/4
17Jun20-6Tam fm 1 1 1 1 241 :49 1:1311:43 4 ↑ Alw 20000 N1x	81 8/9 64 $63\frac{1}{2}$ $53\frac{1}{2}$ 31 $12\frac{1}{4}$ Morales P	L118b 2.20 86-17 SoHigh11824 BlackProng11912 ErictheSalesmn11914 3wd, up and clear late
WORKS: May6 Bel 7 7f fm 1:27 B(d) 1/1 Apr 30 Bel 5f fst 1:011 B	4/14 Apr9 Bel tr.t 4f fst :50 B 102/187 Apr2 Bel tr.t 4f fst :502 B 11	15/196 Mar 26 Beltr.t 4f fst :483 B 44/194 Mar 17 Beltr.t 4f fst :503 B 16/30
TRAINER: 20ffOver180(2.00 \$0.00) Turf(23.00 \$0.00) Routes(29.0	0 \$0.00) GrdStk(3.00 \$0.00)	J/T 2021-22 BEL(3 .00 \$0.00) J/T 2021-22(5 .00 \$0.00)

TRAINER: 2OffOver180(2 .00 \$0.00) Turf(23 .00 \$0.00) Routes(29 .00 \$0.00) GrdStk(3 .00 \$0.00) GrdStk(3 .00 \$0.00)

CLOSER LOOK: Still eligible for an N1X event, this one was pushed along last time but he may prefer to settle just off the lead and try to outkick that foe; that is kind of what happened in the last win but that win was vs. restricted claimers; note runner regressed a bit on the Beyer scale in the last 2nd off the layoff run; hard to adore.



Belmont Park

PeterPan-G3



11/8 MILES (1:452) THE PETER PAN. Grade III. Purse \$200,000 For Three Year Olds. Non-Lasix Race pursuant to 4043.2 (7)(e)(5) Lasix not permitted within 48 hours of post time. By subscription of \$200 each which should accompany the nominations; \$1,000 to pass the entry box and an additional \$1,000 to start. For horses not originally nominated, a supplemental nomination payment of \$1,000 (along with the entry and starting fees) may be made at any time prior to the closing of entries. The purse to be divided 55% to the owner of the winner, 20% to second, 12% to third, 6% to fourth, 4% to fifth and 3% divided equally amongst the remaining finishers. For original Triple Crown Nominees NYRA will waive the entry and starting fees to the Belmont Stakes for the first two finishers of the Peter Pan. Weight: 123 lbs. Non-winners of \$90,000 at a mile or over in 2022 allowed 3 lbs.; of a Sweepstake other than state-bred at a mile or over or two races other than maiden, claiming, starter or state-bred allowance allowed 5 lbs. A trophy will be presented to the winning owner. Closed Saturday, April 30, 2022 with 29 Original Nominations and 1 Supplement.

Post time: 5:19 ET	Wagers: Exacta, Trifecta (.50), Super (.10)), Pic	k 3, D	oub	le							Ве	yer	par: NA	
1 Set Sail	B. c. 3 (Feb)		Life	2	1	0 1	\$48,240	89	D.Fst	2	1	0	1	\$48,240	89
Own: LNJ Foxwoods	Sire: Malibu Moon (A.P. Indy) \$35,000 Dam: Fleet of Gold (Medaglia d'Oro)		2022	2	1	0 1	\$48,240	89					0	\$0	-
7-2 Dark Blue, Gold Triangular Panel, Gold	Br: LNJ Foxwoods (Ky)	118	2021	0	м	0 0	200 000		Synth	-	-	9.50	0	\$0	-
ROSARIO J (17 1 8 2 .06) 2022: (293 63 .22)	Tr: Mandella Richard(—) 2022:(65 12 .18)			100				_		-53	800	123	0	\$0	-
					-	0 0		-			U		0	\$0	_
27Mar22–6SA fst 1	89 1/6 1½ 1½ 1½ 14 17½ Hernandez JJ L 118								4 Q B One 126					off, ridden	
26Feb22-8SA fst 7f 23 :4541:1011:2313↑ Md Sp Wt 68k	85 5 /7 2 42 42½ 24 36 Hernandez JJ L 118	*1.80	83-17	Elect	or126	643 Ar	nerican Adm	iral12	614 Set Sail 11	81		Α	Alterd	early,2w,no	bid

WORKS: May7 SA 7f fst 1:254 H 2/2 ● Apr25 SA 5f fst :59 H 1/29 Apr17 SA 5f fst :59 H 2/48 Apr9 SA 4f fst :474 H 4/43 Mar20 SA 6f fst 1:123 H 3/8 ● Mar12 SA 4f fst :471 H 1/62 TRAINER: 31-60Days (99.21 \$1.49) WonLastStart (44.18 \$1.46) Dirt (77.26 \$1.75) Routes (139.20 \$1.43) GrdStk (72.18 \$1.17)

CLOSER LOOK: Homebred by Mailbu Moon and from the female family of multiple Grade 1 winner Fleet Indian (13 for 19 in her career, 112 Beyer top, \$1,7 in earnings) ships in for Mandella right off an impressive maiden win in March; actually ran well in his debut sprinting behind the impressive Elector in a race from which the first four finishers all returned to win; this colt stretched out for his second start and raced off the favorite on the pace before going clear in the stretch to win easily with a solid figure; has a lot of upside and the added distance is not supposed to be an issue; dangerous.

2 Electability	B. g(12.04.21) 3 (Feb) KEENOV19\$300,000		Life	3 2	2 0	0	\$90,100	87	D.Fst	2	2	0	0 \$89,100 87
Own: Klaravich Stables Inc	Sire: Quality Road (Elusive Quality) \$150,000 Dam: Spindle (Hard Spun)	440	2022	2 2	_		\$89,100	87	Wet(423) Synth			0	
7-2 White, Red Braces And 'Ks,' White And ORTIZ I JR (29 11 6 3 .38) 2022: (442 122 .28)	Br: Purple H Bloodstock (Ky) Tr: Brown Chad C(33 12 8 3 .36) 2022:(271 90 .33)	118	2021 Bel	1 N			\$1,000 \$0		Turf(335)			0	0 \$1,000 62
8Apr22-7Aqu fst 1 231 :4611:1031:353	OC 80k/n1x-N 86 3 /8 2hd 2hd 1½ 1½ 1hd Cancel E L122	*.75			21 (24)	10.70	80,000		ing Good Skat				rompted 2p, gamely
5Mar22-2Aqu fst 1	Md Sp Wt 77k 87 5/5 2hd 2½ 2½ 1hd 1½ Cancel E L120 Md Sp Wt 100k 62 1/8 6¾ 6¼ 7¼ 85½ 75₺ Castellano J J 119								Improper 120		1103		trn,lead outside1/8 upper, no response
	fst :49 B 17/93 Apr23 Bel 4f fst :49 B 13/85 Apr2 Bel tr.t 4f fst :49 B 80/196 Mar26 Bel tr.									յիլ լ	1137	JW	upper, no response

TRAINER: 31-60Days (375 .28 \$1.86) WonLastStart (248 .27 \$1.63) Dirt (409 .27 \$1.61) Routes (842 .27 \$1.88) GrdStk (241 .20 \$1.52)

J/T 2021-22 BEL (87 .18 \$1.27) J/T 2021-22(289 .25 \$1.49)

CLOSER LOOK: Made his dirt debut in his first start back from a long layoff and gamely prevailed over a favored rival who was settling for second for the fourth consecutive time after a long battle; faced allowance rivals last time and made it 2 for 2 on dirt in an effort that is even better than it may appear on paper, even though that may not have been the strongest field; has speed and is bred to handle the added furlong he takes on here; don't overlook.

Complete Agenda Own: Repole Stable and St Elias Stable Green, White 'Ste,' Two White Hoops On ORTIZ J L (35 4 7 6 .11) 2022: (444 94 .21)	Ch. c. 3 (Jan) KEESEP20 \$250,000 Sire: Curlin (Smart Strike) \$175,000 Dam: Constellation (Bellamy Road) Br: Don Alberto Corporation (Ky) Tr: Pletcher Todd A(17 2 5 2 .12) 2022:(323 75 .23)	Life 5 1 1 1 \$55,530 77 2022 3 1 0 1 \$49,830 77 118 2021 2 M 1 0 \$55,500 63 Bel 0 0 0 0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
21Apr22-1Aqu fst 11/8 484 1:1321:3841:52 3★ Md Sp Wt 80k	77 6 /6 53½ 42½ 43½ 31 1½ Ortiz J L L118	8b 2.00 87-08 CompleteAgend118½ AmericnLw126½ Predicted1182¾ Stumbled st, up late
26Feb22-9GP fst 11/8 C 492 1:1341:3821:511 Md Sp Wt 53k	70 2 / 10 42 2 52 2 62 3 64 67 Ortiz I Jr L120	0b 4.80 75-15 IconicAdventure120nk MgiNr120nk MontukPoint120nk Midpack,4-5w,no bid
29Jan22-2GP fst 1 241 :4911:1411:453 Md Sp Wt 53k	75 9 / 10 31 2½ 2½ 32 34 Ortiz I Jr L120	0b 4.90 73-13 HppyBoyRockt12023 MontkPnt12011 CmpltAgnd1201 5wd 1st, 2wd bid btw
22Dec21-5Tam fst 140 3 23 :4721:1311:423 Md Sp Wt 25k	63 3 /6 611 561 47 441 211 Centeno D E 119	9b 2.80 79-28 <i>PonrofMdn</i> 1191½ CompltAgnd1191½ ThThundrr1195½ Bumped brk, up 2d 3wd
21Nov21-8GP fst 1 \$ 234 :4631:1131:38 Md Sp Wt 52k	51 9/9 64 $65\frac{7}{2}$ $65\frac{1}{4}$ $64\frac{3}{4}$ $56\frac{7}{2}$ Zayas E J 118	8 *1.90 75-13 Mr Rum Runner118nk Uranium1181½ Dominican Ice1182½ Hard to load,3&4w
WORKS: May 6 Bel tr.t 4f fst :50 B 56/111 Apr 14 PBD 5f fst 1:013 B	4/6 Apr7 PBD 5f fst 1:003 B 3/6 Mar24 PBD 4f fst :50 B 7/8 • Mar17 P	BD 4f fst :484 B 1/5 Feb 19 PBD 4f fst :51 B 19/23
TRAINED, 20645 100(461 24 6152) Worl oot Ctort (264 27 6150) D	#(7E2 2C 61 77) Douboo(00C 22 61 CE) CrdCHz(220 20 62 12)	L/T 2024 22 DEL/E 20 60 E0\ L/T 2024 22/26 20 64 04\

TRAINER: 20ff45-180(161.24 \$1.52) WonLastStart(264.27 \$1.59) Dirt(753.26 \$1.77) Routes(886.22 \$1.65) GrdStk(228.20 \$2.12)

J/T 2021-22 BEL (5 .20 \$0.58) J/T 2021-22(36 .28 \$1.94) CLOSER LOOK: Curlin colt out of a Grade 1-winning sprinter recently broke his maiden over this distance while making the fifth start of his career; earned a new Beyer top of 77 or that initial victory and did so while closing down the favorite on the lead with a game finish; is versatile enough to stay within range of the pace is moderate and is eligible to improve again here for top connections, which he is going to have to do.

atomic of the load many a foldation of the state of the s														
⚠ We the People	B. c. 3 (Feb) FTFMAR21 \$230,000		Life	3	2	0 0	\$120,250	89	D.Fst	3	2	0	0 \$120,250 89	9
Own: WinStar Farm LLC CMNWLTH and Siena Fa	Sire: Constitution (Tapit) \$85,000		2022	2	2	0 0	\$120,250	89	Wet(436)	0	0	0	0 \$0 -	-
3-1 White, Green And Black Emblem, Green	Dam: Letchworth (Tiznow)	118					,,		Synth	0	0	0	0 \$0 -	-
PRAT F (10 3 2 1 .30) 2022: (340 94 .28)	Br: Henley Farms Inc (Ky) Tr: Brisset Rodolphe(1 0 0 0 .00) 2022;(64 11 .17)	110	2021	0 1	VI	0 0	\$0	-	Turf(323)	0	0	0	0 \$0 -	-
PRATE (10 3 2 1 .30) 2022: (340 34 .20)	17: Brisset Roudiphe(1 0 0 0 .00) 2022:(04 11 .17)		Bel	0	0	0 0	\$0	-	Dst(400)	1	0	0	0 \$6,250 73	3
2Apr22420P fst 11/8 462 1:1111:3711:502 ArkDerby-G1	73 9 / 9 55½ 53 85¾ 611 713¼ Prat F 119	2.40	74-07	Cybe	rkni	fe119	용 Barber Ro	ad11	93 Secret Oat	h117	41	١	Vashy,5w 7/8, empty	y
12Mar22-40P fst 116 S 234 :4831:1311:433 OC 80k/N1x-N	89 4/6 2½ 2hd 1hd 12½ 15 Geroux F L122	*.40	91-15	We t	1ePe	eople'	225 The Skip	perT	0011721 Bar	ossa	1201	1 S	oft duel, ridden out	t
12Feb22-110P fst 1 224 :4731:1241:384 Md Sp Wt 84k	83 4/11 22 33 32 12 153 Geroux F L122	3.60	85-15	We th	ie Pe	eople1	2253 Deputy	Con	nect12211 Ch	ilend	122	3 3	Bw bid, quickly clear	ır
WORKS: May8 Kee 4f fst :483 B 17/54 ● May2 Kee 5f fst 1:001 B 1/4	Apr24 Kee 4f fst :483 B 14/58 Apr16 Kee 4f fst :50 B 69/106 Mar26 OP 4											7		

TRAINER: 31-60Days (89 .17 \$1.73) Dirt (132 .21 \$1.72) Routes (165 .18 \$1.90) GrdStk (23 .04 \$0.44)

J/T 2021-22(9 .11 \$0.96)

CLOSER LOOK: Winning debut in a two-turn mile at Oaklawn was impressive while powering clear readily despite still looking a bit green; came right back to dominate entry-level allowance rivals a month later under strong handling with an 89 Beyer that makes him co-fastest on the way into this race; tried the Grade 1 Arkansas Derby last time and was never a factor after backing off the early pace; rebound chance with Prat sticking.

Golden Glider Own: Barber Gary Conrad Manfred and Conrad Red, Black Sash, Red Sleeves, Gold DAVIS D (72 13 8 15 .18) 2022: (419 87 .21)	Ch. c. 3 (Apr.) KEENOV19 \$395,000 Sire: Ghostzapper (Awesome Again) \$75,000 Dam: Golden Scarf (Orientate) Br: Nursery Place & Dicken Equine (Ky) Tr: Casse Mark(6 1 1 0 .17) 2022:(374 55 .15)	118	2021	5 2 4 1 1 1 0 0	I 0	0 \$85,3 0 \$33,7	22 87 50 87 72 76 \$0 -	Turf(334)	2 1 0	0 (0 0 0 0 0 0 0 0	\$21,600 \$63,750 \$33,772 \$0 \$46,250	87 76 –
9Apr22-9Kee gd 11/8 481 1:123 1:374 1:501 BlueGras-G1	87 7 / 11 21½ 21 21 44 46¾ Santana R Jr 12	3 59.80	81-18	Zando	n1232	Smile Hap	py 1233	Emmanuel1	231	P	ress 2	v,outkck,kept	ton
12Mar22-11Tam gd 1 233 :48 1:13 1:444 Tam Dby-G2	81 6/10 743 741 64 531 43 Gallardo A A 11	8 38.90	82-11	Classi	cCaus	eway11821	Grnthm	118nk Shipsti	onl11	8nk	Inside	e,late interest	4w
12Feb22-10Tam fst 116 @ 223 :4631:1121:424 SF Davis-G3	77 4/12 743 733 854 543 573 Gallardo A A 11	8 8.30	87-04	Classic	Cause	eway11833 S	nipsatio	nl1221 Volcn	c118	13 F	{ated,⁴	ipped 3w,ever	nly
7Jan22-2Tam fst 140 24 :4821:13 1:411 OC 75k/N1x-N	78 3 /5 54½ 52½ 42 11½ 11¾ Gallardo A A L12	0 *.90	87-22	Golder	nGlide	er 12013 Boit	ano 120	k TriggerHpp	y 122	13 F	Reserv	ed, 4wd advan	nce
27Nov21-6W0 fst 11 ← C 243 :49 1:1331:451 Md Sp Wt 85k	76 5/12 129 127 104 84 11 Husbands P L12	1 3.50	85-17	Golden	Glide	r1211 Hall o	f Drean	1s118nk Laraq	ue118	33	Los	t path,last to	1st
WORKS: May8 Bel tr.t 4f my :521 B 11/13 ● May1 Bel tr.t 5f fst 1:00	B 1/20 Apr 3 Kee 4f fst :492 B 32/77 Mar 26 Caa 4f fst :482 B 2/13 Mar 1	Caa 4f fst	:481 B	7/23									

TRAINER: 31-60Days(536.15 \$1.17) Dirt(299.14 \$1.02) Routes(898.17 \$1.67) GrdStk(187.12 \$1.38)

J/T 2021-22 BEL (11 .09 \$0.70) J/T 2021-22(20 .15 \$1.29)

CLOSER LOOK: Looked good winning his first two starts from off the pace; stepped up looking for Derby points at Tampa in his next two starts but could not make a serious impact in either the Davis or the Tampa Bay Derby, though he didn't run poorly either time; did his best in the Blue Grass last time but simply didn't have enough to seriously contend in the late stages at a big price; things aren't getting that much easier for him here, but he does have some things to recommend him and does appear to be getting better with each run.

Dany Racing Form	Belmont Park (3/14/2022)	
6 Western River	Gr/ro. c. 3 (May) KEESEP20 \$30,000	Life 5 1 1 1 \$73,377 87 D.Fst 2 1 0 1 \$62,400 87
Own: September Farm LLC Union Park Thoroug	Sire: Tapit (Pulpit) \$185,000 Dam: Morena*Per (Privately Held)	2022 2 1 0 1 \$62,400 87 Wet(390) 1 0 0 0 \$423 48
6-1 Cerise And Purple Diagonal Quarters	Br: Mt Brilliant Broodmares I LLC & Tapit Syndicate (Ky)	118 2021 3 M 1 0 \$10,977 49 Turf(292) 2 0 1 0 \$10,554 49
SAEZ L (8 3 0 0 .38) 2022: (565 117 .21)	Tr: Brisset Rodolphe(1 0 0 0 .00) 2022:(64 11 .17)	Bel 0 0 0 0 \$0 - Dst(366) 0 0 0 0 \$0 -
2Apr22-60P fst 11 C 222 :4611:1131:432 Md Sp Wt 90	c 87 7 / 9 918 813 53 31 13¾ Santana R Jr L 122 b	b 4.70 92–07 WesternRiver12233 RidersSpecif122nk PlusibleDenil1223 4w 2nd, going away
26Feb22-80P fst 110 232 :4741:1311:453 Md Sp Wt 841		b 17.30 80–18 Curly Tail122½ Life On the Nile122nk <i>Western River</i> 1222 4w 1/4, mild rally
3Sep21-5EIP fm 116 ① 234 :4821:1211:423 Md Sp Wt 50		b 8.20 81–12 RedytoPurrform119no WesternRivr1191½ Hston119hd 3-5w2nd,surged,missed
15Aug21–9EIP fm 1 ① \$ 253 :5111:1631:392 Md Sp Wt 51i	41 9/10 78 1083 974 895 763 Graham J 119	
17JIy21–4EIP qd 1 ⊗ 233 :4741:1221:371 Md Sp Wt 51I	48 4 / 8 75¾ 79 78¾ 78¾ 710¾ Arrieta F 119	9.60 78-07 Lucky Boss 11913 Kiss the Sky11933 Call Me Gusto 1193 Never involved

WORKS: • May8 Kee 5f fst 1:011 B 1/9 • Apr25 Kee 4f fst :483 B 1/7 Apr16 Kee 4f fst :493 B 58/106 Mar26 OP 4f fst :493 B 38/94 Mar19 OP 4f fst :50 B 60/107 Mar11 OP 4f fst :493 B 51/114 TRAINER: 31-60Days (89.17 \$1.73) WonLastStart (38.16 \$1.35) Dirt (132.21 \$1.72) Routes (165.18 \$1.90) GrdStk (23.04 \$0.44)

J/T 2021-22(8 .13 \$0.75)

CLOSER LOOK: Full-brother to Arkansas Derby and Belmont Stakes winner Creator has come back an improved horse in his first two starts as a 3vo; he did have strong paces in front of him in both Oaklawn starts since returning and. after coming up short off the layoff, he rallied strongly into a great setup to break his maiden early last month; earned a solid figure for that maiden victory and will likely look to follow in his older brother's foot steps if he runs well here.

7 Cooke Creek	Dk. b or br c. 3 (Mar)	Blinkers ON	Life	5 2	1	1 \$102,05	0 78	D.Fst	3	2 1	0	\$82,800 78
Own: Cheyenne Stable LLC	Sire: Uncle Mo (Indian Charlie) \$160,000 Dam: Genre (Bernardini)		2022	2 0	0	1 \$19,25	0 71			0 0		\$19,250 71
15-1 Green, Gold Sash, Gold Cap	Br: Candy Meadows LLC (Ky)	400	2021	3 2	1	0 \$82,80		Synth Turf(312)	-		0	\$0 – \$0 –
FRANCO M (46 10 5 8 .22) 2022: (371 71 .19)	Tr: O'Dwyer Jeremiah(1 0 0 0 .00) 2022:(51 3			1 0	1	0 \$30.00			-) 0	\$1,250 60
5Feb22-8Agu my 11/8 C 48 1:1411:4131:554 Wit	ners-G3 60 11/11 56½ 67 55½ 815 817½ Fran	co M 120 7.20				. ,		Gilded Age11				both turns, tired
										3≩ 4\		,chsd,outkicked
	nua-G3 78 5 /6 53\frac{1}{2} 52\frac{1}{2} 31\frac{1}{2} 21\frac{1}{2} 22\frac{2}{4} Fran							2023 Judge D				ased 4w, kept on
160ct21-7Del fst ^S 1 251 :4931:14 1:393 Roo	kyRun51k 69 3/10 42 43½ 3nk 1hd 1½ Suar	ez A 118 13.80	85-19 C	ooke(Creek	118½ Affable	Monar	ch1182¼ ŇoS	oe N d	1201	₹ Sta	lked, 4w, driving
								≩ Grumley118	nk		4wd t	urn, drove clear
WORKS: May6 PmM 4f fst :49 B 6/10 Apr29 PmM 5f fs	1:03 B 4/5 Apr23 PmM 4f fst :494 B 41/63 Apr13 PmM 4f fst	:48 B 2/9 Mar31 PmM 4f fst :49	34 B <i>17/2</i> :	5 Feb2	26 Pml	M 4f fst :491	B 54/12.	?				

TRAINER: 61-180Days(27.11 \$1.66) 1stBlink(17.06 \$1.09) BlinkOn(20.05 \$0.93) Dirt(180.19 \$2.11) Routes(123.12 \$1.53) GrdStk(7.00 \$0.00)

J/T 2021-22 BEL(2 .00 \$0.00) J/T 2021-22(7 .00 \$0.00)

CLOSER LOOK: Came with a strong finish to break his maiden first time out over a short sprint distance, then came right back to win a stake over a two-turn mile in his next start - he won that race more impressively than it may appear after a wide trip; placed in two NY stakes over the winter, then landed in that fast-paced Withers in February and tired after trying to keep in in range; will add blinkers for his return and is eligible to improve for an underrated trainer; interesting to try to use somewhere at a price.

8 State Planning	Gr/ro. c. 3 (Feb) KEESEP20 \$25,000		Life	4	2 0	1	\$86,920	81	D.Fst	3	2	0	1 5	86,500	81
Own: New Horizon Farm 15-1 Blue, White Sash, White Sleeves, Blue	Sire: Liam's Map (Unbridled's Song) \$40,000 Dam: Two Susans (Purge)	110	2022		2 0		,,	81	Wet(386) Synth	-	-	0	-	\$420 \$0	
MCCARTHY T (57 4 7 5 .07) 2022: (420 66 .16)	Br: Sugar Maple Farm (NY) Tr: Vazquez Juan C(5 1 1 0 .20) 2022:(154 20 .13)	110	2021 Bel	0 I	0 N 0 0	-	\$0 \$0		Turf(258) Dst(350)					\$0 \$0	-
31Mar22-5Aqu fst 1 234 :4721:1241:401	SIOC 80k/N1x-N 81 4 /7 774 664 45 22 14 McCarthy T	L 122fb 7.20	72–31	StteF	Innin	ıg122¾	Pinepple	/n 122	27 ConvrtiblF	rz11	1861	4w	uppr, up	o last ju	mps
5Mar22-5Aqu fst 1 24 :4841:1511:421 11Feb22-8Aqu fst 1 C 231 :47 1:1241:404	SIMd Sp Wt 70k 66 6 /7 53½ 53 31 13 113½ McCarthy T SIMd Sp Wt 70k 68 9 /10 73½ 96¾ 69½ 47 33¾ Gomez J A7	L120fb 2.25 L113fb 27.50													
9Jan22-9Aqu gd 7f 224 :4631:1241:27	SMd Sp Wt 70k 41 5 / 10 10 1014 1013 1013 9113 Ortiz J L	120fb 8.00	63-25	Hot S	tepp	er120 ^h	d Člash A.	J.120	^{nk} Raw Cour						
WORKS: May9 Prx 4f my :48 B 7/9 Apr30 Prx 5f f:	t 1:02 B <i>7/21</i> Apr25 Prx 6f fst 1:153 H <i>1/1</i> Apr16 Prx 4f fst :504 B <i>39/49</i> Mar26 I	Bel tr.t 4f fst :492	B 112/19	4 Mar	19 Bel	tr.t 4f	fst :481 B :	7/104							

TRAINER: 31-60Days (162.11 \$1.22) WonLastStart (58.16 \$2.33) Dirt (498.12 \$1.33) Routes (199.12 \$1.24) GrdStk (9.00 \$0.00)

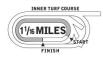
J/T 2021-22(3 .67 \$7.63)

CLOSER LOOK: NY-bred has steadily improved from race to race and will take on his toughest test to date following back-to-back wins, the most recent of those when just getting there with an 81 Beyer; obviously in need of further improvement as he stretches out in distance vs. a much tougher field of horses; likely to be the longest shot on the board if he runs here.

10

Belmont Park

FBeaugay-G3



116 MILES (Inner Turf). (1:384) THE BEAUGAY. Grade III. Purse \$150,000 Inner Turf For Fillies And Mares Four Year Olds And Upward. Non-Lasix Race pursuant to 4043.2 (7)(e)(5) Lasix not permitted within 48 hours of post time. By subscription of \$150 each which should accompany the nomination. \$750 to pass the entry box and an additional \$750 to start. For horses not originally nominated, a supplemental payment of \$750 (along with the entry and starting fees) may be made at any time prior to the closing of entries. The purse to be divided 55% to the owner of the winner, 20% to second, 12% to third, 6% to fourth, 4% to fifth and 3% divided equally amongst the remaining finishers. Weight: 124 lbs. Non-winners of \$90,000 twice at a mile or over in 2021-22 allowed 2 lbs.; of such a race in 2021-22 or two Sweepstakes at mile or over since September 1, 2021 allowed 4 lbs.; of a Sweepstake at a mile or over in 2021-22 allowed 6 lbs. A trophy will be presented to the winning owner. The New York Racing Association reserves the right to transfer this race to the Main Track. In the event that this race is taken off the turf it may be subject to downgrading upon review by the Graded Stakes Committee. Closed Saturday, April 30, 2022 with 17 Nominations. (Rail at 9 feet).

Post time: 5:50 ET	Wagers: E	xacta, T	rifecta (.50), S	Super (.10), I	Doub	le			Be	yer par: NA	4
Rougir (Fr) Own: Brant Peter M and Tabor Michael 1-1 Royal Blue, Orange Ball, Orange Stripes PRAT F (10 3 2 1 .30) 2022: (340 94 .28)	Ch. f. 4 (Mar) Sire: Territories*Ire (Invincible Dam:Summer Moon*Fr (Elusive Br: Jan Krauze (Fr) Tr: Brown Chad C (33 12 8 3 .	City)	•		122	Life 2021 2020 Bel ①	14 4 1 8 1 1 6 3 0 0 0 0	3 \$552,643 1 \$440,439 2 \$112,204 0 \$0	91 Wet(280)	4 4 1	0 \$0 0 \$0 0 \$0 3 \$552,643 0 \$0	0 – 0 – 3 91
Previously trained by Rossi Cedric 2021(as of 1 6Nov21-7Dmr fm 1¾ ⊕ 474 1:13 1:3812:134 34 30ct21 Longchamp (Fr) hy *1¼ ⊕ RH 2:11 34 Timeform Rating: 117		\$ 65½ 77½ 14 1no	Guyon M H Guyon M H	120 123	14.20 *2.20				t 124hd <i>WrLikGodds</i> 81 ₄ Eudaimonia 128 <i>Twrd rear, ga</i>	nk	eckd early,tigh	
21Aug21 Deauville (Fr) sf *1¼ ⊕ RH 2:10 Timeform Rating: 109	©Prix de la Nonette-G2 Stk 152100	10 3nk	Guyon M H	126	9.00		Rumi126no P	enja126nk <i>Roug</i>	gir126nk		If out, ran on str	
3Aug21 Deauville (Fr) sf *1 ① Str 1:354 34 Timeform Rating: 109	Prix Rothschild-G1 Stk 356200	14 4nk	Guyon M H	123	22.00		Mother Eart	.h123 ^{hd} <i>Sagami</i> y	ra130no Speak of t	he Devil130		
18JJy21 Chantilly (Fr) gs *11/6 Timeform Rating: 104	©Prix Chloe-G3 Stk 94500			125	4.50					5f out, to 3	3rd 1 1/2f, kept o	on well
20Jun21 Chantilly (Fr) gs *15 ⊕ RH 2:09 Timeform Rating: 106	©Prix de Diane-G1 Stk 1186400	17 514	Blondel F	126	38.00	۵	Joan of Arc1	263 Philomene	126no Burgarita126	In touch	, kept on, not ei	nough
16May21 Longchamp (Fr) sf *1 ① RH 1:391 Timeform Rating: 97	©Emirates Poule d'Essai des Pouliches-G1 Stk 607200	13 84	Guyon M H	126	17.00				Earth126nk Kennell	T	oward rear, no t	threat
18Apr21 Longchamp (Fr)	Prix de la Grotte-G3 Stk 95900	8 611/2	Barzalona M	126	6.50		Cirona126hd	Silvestri126 ^{hd} k	Sing's Harlequin12 Tr	ino acked cent	re, no serious la	ate bid
200ct20 Deauville (Fr) sf *1 ① Str 1:492 Timeform Rating: 88	©Prix des Reservoirs-G3 Stk 74200	7 1nk	Barzalona M	123	*2.10		Rougir123nk	Cirona123nk Sk	xy Sister 1231 1 n touch, gained 1f o	ut, to lead	100v. kept on str	rongly
40ct20 Longchamp (Fr) hy *1 ① RH 1:43 Timeform Rating: 95		14 32 <u>1</u>	Barzalona M	123	32.00		Tiger Tanaka		1231½ Rougir1231¼ Midpack, stayed o			
1Sep20 Lyon-Parilly (Fr) gs *1 ① LH 1:392 Timeform Rating: 71	Prix Christian Rollet Alw 29000	6 3nk	Barzalona M	127	4.00		King Shalaa1	26 ^{hd} Ursuly122 ^h				te gain
1Aug20 Deauville (Fr) fm *7f ① Str 1:241 Timeform Rating: 58	©Prix Six Perfections-G3 Stk 74200	6 58	Bachelot T	123	3.50				Dance123nk Coeur	samba 123 4		
WORKS: May6 Bel 1 5f fm 1:022 B(d) 2/2 ● Apr29	I Pay (↑) 41 fm :483 B 1/4	U2 B 1/8 Ap	r16 Pay①5f fm 1:0	Z B 3/11	Apr9 P	'ay⊕4	t tm :491 B 1/	7 Apr2 Pay 4f fs	st :503 B <i>21/25</i>			

TRAINER: 1stW/Trn(41.34 \$1.77) +180Days(148 .28 \$1.76) Turf(679 .24 \$1.88) Routes(842 .27 \$1.88) GrdStk(241 .20 \$1.52)

LOSER LOOK: 4YO French import is among the most intriguing participants on this card; won the G1 Prix de l'Opera last fall, prompting her connections to take a shot at the BC Filly & Mare Turf; the trip just didn't work out for her, as her jockey was unreasonably aggressive in the opening furlong, leading to early trouble; was subsequently purchased for about \$3.3 million at the Arqana December sale, at the same time that Brant also picked stablemate Speak of the Devil, who just walloped a field in Churchill's Distaff Turf Mile last week; had been working in company with that mare at Payson this winter, and now makes her own much anticipated debut for Chad Brown; the one to beat.

Lemista (Ire) 5-2 Forest Green, Light Green Yoke, Light ORTIZIJR (29 11 63 .38) 2022: (442 122 .28)	Dk. b or br m. 5 (Jan) Sire: Raven's Pass (Elusive Quality Dam: Shortmile Lady*Ire (Arcano' Br: Drumlin Bloodstock (Ire) Tr: Brown Chad C(33 12 8 3 .36	*Ire)	1 90 .33)		118		10 4 1 1 \$218,350 100 D.Fst 0 0 0 \$0 \$0 - 3 0 1 1 \$75,056 100 Wet(317*) 0 0 0 0 \$0 - 5 0 \$134,285 - Turf(270) 10 4 1 1 \$218,350 100 1 0 1 0 \$30,000 100 Dst()(292) 1 0 1 0 \$30,000 100
14Aug21-7AP gd 1⅔ ⊕ 4911:1311:37 1:5423♠ ⊕Beverly D-G	1 93 5/5 42½ 42 42	421 331	Prat F	L123	5.80	87-16 S	Santa Barbara 1173 Mean Mary 123nk Lemista 1232 2w 1st,3p 2nd,willing
17JJy2140Sar gd 11/8	87 7 /8 63½ 74 74½	861 883	Ortiz I Jr	120	3.85	82-19 A	Althiqa1223 Summer Romance12013 La Signare118nk 2p turns,no response
8May21–6Bel gd 11/6 団 26 :5041:1511:432 4↑ €Beaugay–G3 Previously trained by G. M. Lyons	3 100 2/6 54 43 52	32 21/2	Ortiz I Jr	120	3.90	80-15 H	HarveysLilGoil122½ Lemista1203 PlatinumPaynter118no 3w upper, rebuffed
13Sep20 Curragh (Īre) gd 1¼ ⊕ RH 2:09 3★ € Moyglare J Timeform Rating: 47 Stk 207300	ewels Blandford Stakes-G2	11 10331	Keane C T	128	12.00	C	Cayenne Pepper1284 Amma Grace1281½ Thundering Nights1281¾ <i>Never involved</i>
19Jly20 Curragh (Ire) yl 1½ ⊕ RH 1:583 3∱ ⊕Kilboy Esta Timeform Rating: 102 Stk 91400		8 13/4	Keane C T	128	3.00	L	emista1283 Lovelier1283 Kiss For A Jewel1372 6th halfway, swtchd left 2f out, gained outer 1f, to lead 150y
19Jun20 Gowran Park (Ire) sf 1½ ⊕ RH 2:043 34 ⊕Victor McC Timeform Rating: 101 Stk 53200	Calmont Mem EBF Stks	11 12	Keane C T	129	2.50	L	Lemista1292 Come September1372½ Snapraeceps137hd 2nd appr halfway, gained into str, soon to lead, drew clear
23Mar20 Naas (Ire) hy 1 ① LH 1:493 34 @Lodge Park Timeform Rating: 93	(Irish EBF Park Express St-G3	9 13/4	Hayes C D	123	8.00	L	Lemista123¾ Hamariyna142nk Even So123¾ 3rd early, bid 1 1/2f out, soon to lead, kept on well
140ct19 Gowran Park (Ire) hy 1 ① RH 1:484 ⑤Thomastov Timeform Rating: 81 Maiden 13200	vn Median Auction	14 141	Keane C T	126	4.00	L	Lemista12644 Gin Blossom12654 Bestrella12613 5th halfway, gained into str, to lead appr 2f, kept on well
1Sep19 Cork (Ire) gd 1 🗇 RH 1:44 🖗 Irish Stallin Timeform Rating: 62 Maiden 18100	on Farms EBF	12 57	Keane C T	126	4.00		Passion12624 Unknown Pleasures1264 Amma Grace12614 5th halfway, swtchd left over 2f out, one paced
15Aug19 Leopardstwn (Ire) gd 7f 🗇 LH 1:343 (Pirish Stallio Timeform Rating: 66 Maiden 19500	on Farms EBF	14 413	Keane C T	126	16.00	R	Ridenza1261½ Tasalka126hd Mythic126no Dwelt, 8th halfway, kept on well

WORKS: May6 Bel ☐ 5f fm 1:02° B(t) 1/2 Apr29 Pay ⊕ 4f fm :49 B 3/4 Apr23 Pay ⊕ 5f fm 1:011 B 3/8 ◆ Apr16 Pay ⊕ 5f fm 1:013 B 1/11 Apr9 Pay ⊕ 5f fm 1:013 B 3/9 ◆ Apr1 Pay ⊕ 5f fm 1:012 B 1/18

TRAINER: +180Days(146.28 \$1.76) Turf(679.24 \$1.88) Routes(842.27 \$1.88) GrdStk(241.20 \$1.52)

J/T 2021-22 BEL (87 .18 \$1.27) J/T 2021-22(289 .25 \$1.49)

CLOSER LOOK: Brown's other entrant is no slouch, having just missed in this race last year when arguably putting in the best effort; got no pace to close into in last year's Beaugay, yet still unleashed a strong finishing kick to fall just short; at that time Harvey's Lil Goil looked like one of the top turf fillies in the country, though the form of that race didn't pan out in the long term; this mare took money in the G1 Diana, but was inexplicably dull, never launching a rally while fading to last; fared better in the Beverly D. but was still no threat to the top two; now returns following an illness and has reportedly trained well; the main threat.

3 Stolen Holiday	B. m. 5 (May)		Life	832	1	\$136,740	90	D.Fst 0 0 0	0 \$0 -
Own: Allen Annette	Sire: War Front (Danzig) \$100,000		2022	2 1 1	0	\$35,900	90	Wet(331) 0 0 0	
8-1 White, Purple Ball Sash, Purple Sleeves	Dam: Silk And Scarlet*GB (Sadler's Wells) Br: Orpendale (Kv)	118					- 1	Syntn UUU	
CASTELLANO J J (35 5 4 3 .14) 2022: (390 65 .17)	Tr: McGaughey III Claude R(5 0 0 1 .00) 2022:(113 21 .19)			4 1 1		\$85,080	- 1	Turf(380) 8 3 2	. , ,
ONO 1 E E E MITO 0 0 (00 0 1 0 111) E CEEL (000 00 111)	11. Intoducincy III oldade N(0 0 0 1 .00) Loll (110 21 .10)		Bel 🗇	411	1	\$84,000	83	Dst①(370) 4 1 1	1 \$46,200 89
2Apr22-7GP fm *116 ⑦ 24 :4811:12 1:4214↑ PSndSprngsL	3L 100k 89 3 /8 32 32 41½ 41½ 22¾ Castellano JJ 118	2.80	85-10 C	ystlClff	s 1182	StolnHldy	1183 5	StnnngPrncss1181 Bun	mp upper,trafic 1/8p
23Feb22-5Tam fm 1 🗇 \$ 233 :4721:11 1:334 4+ 🕞 0 C 32k/N2x -	(-N 90 4/6 12 11½ 12 13 16½ Morales P L118	*.60	97-15 St	olenHol	idy118	61 BrmbleB	y1184	GenniHighwy118hd Sp	ed clear, ridden out
21Nov21-7Agu fm 6f ⑦ 23 :453 :5711:09 3♠ ⑥ 0 C 80k/n2x-	(-N 81 9 / 9 2 63 1/3 83 1/3 53 1/4 1/3 Castellano JJ L122	*2.10	87-13 M	iss J Mch	(av120	₽ Gotta Go	Mo12	241 Tass 120no	4-5w uppr, mild bid
220ct21-8Bel fm 6f 🗊 22 :444 :5621:081 3↑ ♠Alw 92000 N1	1x 83 3/10 6 $63\frac{1}{2}$ $63\frac{1}{2}$ 31^{-1} 1 $\frac{1}{2}$ Castellano JJ L123	4.00	92-08 St	olenHol	idy 123	3 1 OGotten (Girl12	201 AbuseofPowr123no 5	w 1/4, up last jumps
10ct21-6Bel fm 7f 🕤 233 :4621:09 1:21 3↑ ♠Alw 92000 N1	1x 74 6/9 4 $2\frac{1}{2}$ $2\frac{1}{2}$ 32 $2\frac{4}{4}$ Saez L L123	5.30	87-08 Lo	oveAndT	hund	- er1234∄ <i>Stol</i>	enHo.	lidy123no Rivendell1231	Attended 2p, ran on
24Apr21-4Bel fm 1⅓ [T] 241 :4831:12 1:412 4★ ♠Alw 92000 N1)	1x 80 3/6 $1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$ 1hd 32 Ortiz J L L123	3.55	89-09 P	ublicatio	n120¾	HighOpinio	n1201	14 StolenHolidy1231 Ins	-2p,ask1/4,outfnshd
14Jun20-3Bel fm 1指	1x 81 7 /7 23 21 21 1hd 41 Ortiz J L L122								Bw uppr, outfinished
29Apr20-8Tam fm 1⅓ (7) (9) 224 :4731:1141:43 3↑ (F) Md Sp Wt 20	20k 74 3 / 9 1 nd 1 1 1 1 1 1 1 1 1 1 1 Gallardo A A L 1 1 8							tikliesnlovrs1181¼ Assu	
	Apr23 Bel 3f fst :383 B <i>6/9 M</i> ar27 Pay 4f fst :501 B <i>13/31 M</i> ar21 Pay 4f fst :						•	•	,
TRAINER 04 00D (400 04 04 00) T ((057 47 04 50) D : (044	40 04 00) O 1011 (00 40 04 07)			-		1.75	T 0004	. 00 DEL (4E 40 64 00) LIT	0004 00/00 40 04 40)

TRAINER: 31-60Days(160.21 \$1.38) Turf(257.17 \$1.50) Routes(344.18 \$1.39) GrdStk(68.16 \$1.07)

J/T 2021-22 BEL (15 .13 \$1.26) J/T 2021-22(80 .19 \$1.48)

CLOSER LOOK: Well-bred mare always had talent, but she's really started to come around recently for Shug; wasn't facing much at Tampa two back, but she couldn't have been more impressive in that gate-to-wire score, winning under wraps; not sure that she would have won the Sand Springs with a clear trip, but she did get bottled up in traffic at a critical juncture in upper stretch; should be more forwardly ridden here as the likely controlling speed; won't be surprised if she produces a career-best here, but she could do so and still finish 3rd to the two-headed beast from the Chad Brown stable; exotics player.

 ∕ Plum Ali	Ch. f. 4 (Apr) KEESEP19 \$65,000		Lif	e 12	5	1	1	\$731,000	89	D.Fst			0 0	\$0 -
Own: Dubb Michael Madaket Stables LLC and	Sire: First Samurai (Giant's Causeway) \$10,000 Dam: Skipping (Stroll)		2022	! 1	1	0	0	\$55,000	89	Wet(358) Synth			0 O 0 O	\$0 - \$0 -
b-1 Yellow, Pink Circle And Rose, Pink Cuffs	Br: Stone Farm (Ky)	12	22 ₂₀₂	7	1	1	1	\$232,500	88	Turf(322)				\$731,000 89
FRANCO M (46 10 5 8 .22) 2022: (371 71 .19)	Tr: Clement Christophe(21 6 4 2 .29) 2022:(163 29 .18)		Bel	① 5	1	1	0	\$166,500	87	Dst@(348	3	3	0 0	\$204,600 88
16Apr22-4Aqu fm 1	3k 89 2 /4 32 31½ 32 21 1½ Franco M	120 3	.70 93-)8 Pli	ımAl	i120	Tec	hnicalAnl	ysis 12	3hd Flowerl	oint	1202	Ins t	ns,mvd out,rally
14Nov21-8Aqu gd 116 T 233 :4931:1511:45 @Wntr Memrs	3150k 88 2 / 11 1½ 1½ 1½ 12 1¾ Franco M	124 4	.60 82-	15 <i>Pl</i> ı	ım Al	/i1243	Whi	ite Frost1	24no [/	liss Dracary	s 120 r	0	Wellr	ated ins,respond
160ct21-6Bel fm 11/8 50 1:14 1:3641:482	87 5 /7 32 32 42 52 513 Franco M	118 9	.50 84-	15 FIi	ıffyS	ocks	3118n	k RunwyR	umour	•118½ HghrT	ruth1	18 <u>3</u>	Track	ed 2p, outkicked
19Sep21-9Bel fm 1 ① 24 :4741:1041:34	t 81 1/11 105¾107¾ 105¾ 85¾ 54 Ortiz J L	122 *2	50 82-	15 Sp	nishl	_ove	ffir1	202 ₄ Jordr	1sLo1′	181 RunwyR	umou	r122'	o 8w	upper, improved
Hand timed														
8Aug21-9Sar fm 136 5 50 1:1411:3731:542														3/16,carry out 1/8
10JJy21-7Bel gd 11/4 T 511 1:1621:4032:033										Higher Tru	th121	112		1 early,2-3p,5p1/
3Jun21-8Bel gd 11/8 T C 511 1:151 1:384 1:513	86 9 / 9 96 4 97 4 96 64 2 2 2 Rosario J	122 4	.00 69-	30 Co	n Lir	na12	2 <u>₹</u> PI	um Ali122	₿ Gift	List1221ą			Tigh	: hold,2-3w,5w1/
Hand timed	00 4 /C 401 441 451 05 00 D	400 0	20 70	10 1.		4404	1 0:0		DI	A 1:40001			T 1	
3Apr21-6Kee gd 1 ① 244 :4941:1411:364							-	t List118½		-		•••		v upr,stayed wel
6Nov20-9Kee gd 1 ① C 222 :4711:1211:353										^{2nk} Miss Am				rough, flattened
40ct20-7Bel fm 11/16										or At Large		i		SF,2w&ask 3/16p
7Sep20-8KD fm 1 ① 233 :4811:1231:353 ⑤JuvFillisL50	k 73 5 / 11 84½ 64 53 11½ 12¾ Gaffalione T	120 *1	.20 98	- Pli	ım Al	//1202	열 Flo	o <i>wn</i> 118nk C	Oliviao	fthedesert	20nk		Hit g	ate,botherd star
23Jly20–3Sar fm 1 ₁₆ ① 242 :4911:1341:442										20nk Uptowi	ıFlirt	1203	2-3w	ide,4w5/16,rallied
WORKS: May6 Bel 1 4f fm :51 B(d) 11/12 Apr29 Bel 4f fst :502 B i	//34 ● Apr6 Pay 5f fst 1:012 B 1/7 Mar28 Pay 4f fst :503 B 9/13 M	lar 21 Pay 4f '	fst :503 E	9/15	Mar	14 Pa	ıy 4f f	st :513 B 1	14/15					
TRAINER: 20ff45-180(97 .26 \$2.17) WonLastStart(124 .18 \$1.54) Tu	f(577 .20 \$1.84) Routes(434 .18 \$1.76) GrdStk(59 .17 \$1.85)							J	/T 202	1-22 BEL (39	.15 \$2	.00)	J/T 202	(1-22(83 .17 \$2.11

CLOSER LOOK: Has taken a step forward since her connections have started to make more use of her tactical speed; led from gate to wire in the Winter Memories last year and picked up right where she left off when notching another Aqueduct stakes win last month; was only beating 3 rivals that day, and favorite Technical Analysis didn't show up with her best; this gal figures to sit a good trip again, but she's a little light on speed figures compared to the favorites; a minor award seems like the ceiling.

	s. f. 4 (Apr)		Life	9 3	32	1	\$257,250	91	D.Fst	0 0	0	0	\$0 –
Own: Goichman Lawrence 15-1 Red And Purple Diamonds, Red Sleeves	ire: Flintshire*GB (Dansili*GB) \$7,500 lam:Elusive Rumour (Elusive Quality) ir: Lawrence Goichman (NY) ir: Abreu Jorge R(9 0 0 3 .00) 2022:(48 3 .06)	120		1 (8 3 5 3	3 2	1	\$4,000 \$253,250 \$198,250	91	Synth	0 9 3	0 2	-	\$0 – \$0 – \$257,250 91 \$46,000 85
12Mar22-7Tam gd 11/8 ① 464 1:1121:3631:481 4↑ ⑥ HIsborgh-G2	71 7/9 911 99½ 86½ 63½ 612 Ortiz J L L 1	8 4 20	•				. ,		i 118≩ Gladys118				t slow. fanned5w
14Nov21-8Agu gd 11/16 T 233 :4931:1511:45 (F)Wntr Memrs B									liss Dracarys1				v turns.mild gain
160ct21-6Bel fm 11/8 T 50 1:14 1:3641:482													ed 5w 1/4, missed
19Sep21-9Bel fm 1 📆 24 :4741:1041:34 🕞 Pebbles L 150k	83 11/11 85 4 96 4 74 54 2 33 4 Lezcano J 12	2 5.40	83-15	Spnish	ıLovf	ffir12	:02¼ Jordns	Lo118	31 RunwyRum	our 12	22no	5w	upper, mild kick
Hand timed													
21Aug21-9Sar yl 1 1 243 :50 1:144 1:462 (F)LakePlcd-G2	85 4 / 6 43 44 43½ 33 23½ Lezcano J 12	.0 5.60	62–34	Tchnic	clAnl	yss12	223½ Runwy	Rum	our120½ EgoTr	p118	I골 2-	-3w ti	rns,chsd,earn2nd
23JJy21-9Sar fm 1 🔳 232 :4741:1131:363 @LkGeorge-G3	83 2 / 9 96½ 88 87 75 42¾ Santana R Jr 12	2 7.10	74-29	Tchnic	Anly	sis12	01ఓ FluffyS	ocks	120nk TobysHr	1221	1/4 3	p turi	ns,4p1/4,improvd
26Jun21-9Bel fm 1 📆 223 :4711:1131:341 🕟 WldAppiseL1	lk 83 8 / 8 76 75 1/2 12 31 11 Cardenas L 1	8 13.50	85-15	Runav	vayŔı	umot	ır1181 Mina	aun 12	21 Nevisin Sunr	ise11	81	6w u	ppr, inched clear
5Jun2142Bel fm 1 ① ② 24 :4731:1121:3523↑ ⑤ S Alw 80000 N1	81 1/10 87 89 85 3 52 1nk Santana R Jr L1												urn,6w1/4,rallied
9May21–9Bel fm 6f 🗍 223 :462 :5811:093 3↑ 🖲 🖫 M d Sp W t 7	c 66 10/12 12 127¼ 94½ 63 11¾ Lezcano J L 1	8 10.80	85-15	Runaw	yRun	10ur1	181월 Krees	LWro	ote 118 nk Cums	ett11	182	7w u	ppr, edging clear
WORKS: May9 Bel 4f fst :50 B 62/75 Apr29 Bel tr.t 4f fst :514 B 62/66	Apr9 Bel tr.t 4f fst :52 B 181/187 Mar31 Bel tr.t 4f fst :48 B 3/70 Mar	6PmM(T)	5f fm 1:0	11 B(d	8/18	8 Fel	27 PmM ①	5f fm	1:012 B(d) 15/	18			
	44.00\ 0.1011./40.00.40.00\								4 00 DEL (4E 40	440		-	4 00(00 44 64 40)

TRAINER: 61-180Days(51.14 \$1.21) Turf(131.11 \$1.51) Routes(126.11 \$1.28) GrdStk(13.00 \$0.00)

J/T 2021-22 BEL (15 .13 \$1.88) J/T 2021-22(28 .11 \$1.12)

CLOSER LOOK: NY-bred won the first 3 starts of her career and hasn't visited the winner's circle since; though she's been placed in some pretty tough spots during that time, trying multiple graded stakes; ran her best race over this course last October in the Sands Point; however she failed to back up that effort in the Winter Memories; returned from the layoff at Tampa and was surprisingly dull, never launching a rally despite getting pace ahead of her; must rebound in her return to NY, and even if she does she's no guarantee to make an impact against this salty field; prefer others.

High Opinion Own: Woodford Racing LLC and Team D Forest Green, Yellow Hoop, Green Sleeves CANCEL E (37 4 6 7 .11) 2022: (297 36 .12)	Br: Fred W Hertrich III & John D Fielding (Ky) Tr: Dutrow Anthony W(6.0.1.3.00). 2022-(26.1.04)		1 (0 0	0	\$5,040	82 94	Wet(378) Synth Turf(326)	0 0 10	0 0 0 0 2 5	0 0 0		- 94
16Apr22-6Aqu fm 6f ⑦ 222 :45 :5641:084 3↑ ⓒ 0 C 62k/N2x-	N 82 3 /7 7 75½ 75½ 72¾ 41¼ Cancel E L119 2.75	91–11	Can't	Buy L	Love	119hd Athwa	aaq1	21no Minaun1	191		Insi	de turn,willing	lу
230ct21-8Bel fm 1 ⑦ 231 :4611:0921:331 3↑ ♠ NblDmsl-G3	91 3/8 31 42 31 32 21½ Saez L 122 2.30	88-16	Shifty	She1	1241;	High Opini	ion 12	21 Flower Poi	nt122	1 .	4w tu	rn.good courag	qе
28Aug21–4Sar fm 1⅓ T 223 :4721:12 1:414 4↑ ⊕BlstSpa-G2								Kalifornia Qı			In	s,2p3/16,rail ral	ĺу
31JIy21-7Sar gd 1 📆 244 :4931:1421:38 3↑ 🖺 Alw 103000 N1	\times 89 5/8 $63\frac{1}{4}$ $63\frac{1}{9}$ $62\frac{1}{4}$ $52\frac{1}{9}$ $1\frac{1}{2}$ Ortiz I Jr L 122 4 .10	70-25	High0	pinio	n 122	LovAndT	hund	r12514 ScrtT	im 122	3 4	w upp	r,up final jump	ρs
5JIỹ21-7Bel gd 1¼ 🗍 46³1:12 1:3722:0123↑ ♠Alw 92000 N1> Hand timed	78 7 / 7 68 610 53½ 32½ 21 Ortiz I Jr L 121 *2.55	82–28	Sister	Otoo	le12:	§1 High Opin	nion1	21nk Creative	Cair	118n	k 6w	upper, mild kid	:k
10Jun21-7Bel fm 1¼ 🗇 494 1:15 1:3922:023 3↑ ⊕Alw 92000 N1x	74 6 / 8 87 88 63 52½ 55 Bravo J L 122 *2.70	72–23	Higher	r Tru	th118	81 <u>‡</u> Coastana	a1241	¾ Made In Ita	aly 12	4 1 ;	2-3w 1	trns,4w into lar	1e
24Apr21-4Bel fm 11/16 T 241 :4831:12 1:412 4↑ € Alw 92000 N1X	82 1/6 64 65½ 63½ 42¾ 2¾ Ortiz I Jr L 120 *1.35	90-09	Public	atior	1120 ₄	HighOpini	on12	114 StolenHol	iday'	232	Ins,3v	v3/16,mvd out1	/8
15Nov20-9Aqu gd 116 T \$ 243 :50 1:1421:444	3100k 89 6 /7 42 31½ 31 31 2¾ Cancel E L 120 25.00	81-20	Duopo	ly1202	∄ Hig	h Opinion1	20½ l	igilantes Way	1222		3w	turns,ask3/16,4	W
100ct20–3Bel fm 7f 0 22 :4511:0911:213 3↑ @Md Sp Wt 63	k 79 5/11 9 118 4118 45 1hd Cancel E L 120 97.00	89-11	High () pinio	on 120)hd <i>Translat</i>	e1203	Zaccapa120	3		Ins	1/2-3/8,2w,3w,u	ıр
13Jun20-7Bel fm 1 ⑦ 23 :4621:10 1:34 3♠ € Md Sp Wt 64	k 58 10/12 1010107½ 109¼ 1110 107½ Lezcano J L 120 35.50e	e 78-14	Cost E	Benef	it 120	^{no} Dovima1	20hd	Windfall Prot	it120	3	2w p	ursuit, 3w upp	er
8Mar20-1Aqu fst 1 24 :4841:1531:424 @Md Sp Wt 68	k 51 1/8 51½ 73¼ 41½ 42¼ 44½ Lezcano J L 120 3.20e	e 54 –32	Tonal	Visio	n120	² Sky Quee	n120	Dare to Try	/120h	d	Chase	ed ins, wknd lat	te
WORKS: May6 Bel T 4f fm :49 B(d) 5/12 Apr 10 Bel 4f fst :482 B 3/3	71 Apr3 Beltr.t 4f fst : 491 B 17/123 Mar26 Beltr.t 4f fst : 49 B 74/194 Mar 10 Beltr	r.t 4f mv	:513 B	8/9	Mar3 I	Bel tr.t 3f fst	:373	B 9/16					

TRAINER: 20f45-180(17.12 \$0.89) Sprint/Route(12.00 \$0.00) Turf(31.16 \$1.88) Routes(49.14 \$1.52) GrdSk(7.00 \$0.00)

J/T 2021-22 BEL (5.00 \$0.00) J/T 2021-22 (26.27 \$1.68)

CLOSER LOOK: Wouldn't put too much stock in the result of her last race since that was purely an old-school prep; she's not a 6F horse and Dutrow was just getting some air in her lungs for this stretch-out in distance; was firing some nice efforts when she reached her peak last season, just missing in the G2 Ballston Spa, albeit with a nice ground-saving trip; 8.5F is her best distance, and she's not as pace dependent as some others in here; that said, she's landed in a pretty tough spot, so even 3rd-place behind the two Chad Brown favorites would be considered a success. J/T 2021-22 BEL (5 .00 \$0.00) J/T 2021-22(26 .27 \$1.68)

Own: Live Oak Plantation	1. f. 4 (Feb) ifre: Ghostzapper (Awesome Again) \$75,000 iam: Dynamotor (Dynaformer) ir: Live Oak Stud (Fla) r: Casse Mark(6 1 1 0 .17) 2022:(374 55 .15)	Life 8 3 1 0 \$221,937 88 D.Fst 2 0 0 0 \$4,752 36
27Mar2240Tam fm 1 16 ① 234 :4721:1131:412 3↑ ② SDistafTrfB1	Ok 86 3 /9 54½ 54 33 23 24 Gallardo A A L 124 2.60	80 89–13 ShiftyShe1264 OurFlashDrive124no MonaStell12414 Rated inside,shifted3w
160ct21-6Bel fm 11/6 T 50 1:14 1:3641:482 (F)SandsPnt-G2	88 7 /7 21 21 21 21 411 Davis D 120 10.90	30 84-15 FluffySocks118nk RunwyRumour1183 HighrTruth1183 3w upper, outfinished
19Sep21–9Bel fm 1 📆 24 :4741:1041:34 🕞 Pebbles L 150k	83 2 /11 116 3 119 4 9 5 4 4 4 4 4 4 Davis D 124 13.20	20 83-15 SpanishLoveaffir12024 JordnsLeo1181 RunwyRumour122no 2w 1/4p, mild bid
Hand timed		
22Aug21-6W0 fm 1 ① \$ 242 :4811:1141:343 ② OntColln-G3	82 2 /7 21½ 21½ 1hd 11½ 11½ Husbands P L 121 2.45	15 87–11 OurFlshDrive1211½ Sesons1191¼ SpeightstownShirl119½ Bid 3/8, proved best
10JJy21–7W0 fst 116 ◆ \$ 243 :49 1:1241:443	79 3 /6 22½ 21 2hd 13 12¼ Husbands P L 118 *1.35	35 88-13 OurFlshDrive11821 MunnyforRo11821 SweetSouprSwt1183 Led str.ridden out
19Jun21−6WO fst 7f ♦ 223 :4441:0921:214 ♠Md Sp Wt 84k	77 8 / 14 12 92 73 1 1hd 13 3 Husbands P L121 6.80	30 95-04 Our Flash Drive12133 Emmeline12013 Big Ginger1183 3w,led str,rdn out
16Aug20−1Sar fst 6⅓f 224 :4631:1121:18	36 2 / 6 4 44½ 53 59 418 Rosario J 119 11.50	50 62-17 Cntt119101 NevisinSunris11932 SchoolofThought1194 4w on turn, gave way
19JJy20-7Sar fst 5½f 221 :454 :5821:051 @Md Sp Wt 72k	35 10/10 8 63 43 56½ 79 Rosario J 120 14.10	10 79-12 Lucifers Lair 1203 Stone Town 120½ Peachy Queen 120½ 4w upper, weakened
WORKS: ● Apr29 Caa 4f fst :474 B 1/13 ● Apr22 Caa 4f fst :472 B 1/1	R Apr 14 Caa 5f fst 1:03 B 4/4 Mar 17 Caa 5f fst 1:004 B 1/2 ● Mar 8 Caa 5f fst 1	1:013 B 1/6 Mar1 Caa 4f fst :492 B 17/23

TRAINER: 31-60Days (536 .15 \$1.17) Turf (799 .13 \$1.35) Routes (898 .17 \$1.67) GrdStk (187 .12 \$1.38)

J/T 2021-22 BEL (11 .09 \$0.70) J/T 2021-22(20 .15 \$1.29)

CLOSER LOOK: Was twice beaten by today's rival Runaway Rumour here last fall; returned from the layoff at Tampa this spring and was no match for winner Shifty She, who had everything her own way on the front end; would have liked to see a little more improvement in that spot, but she does have a right to move forward second off the layoff; also possesses some tactical speed, which is an asset in a race lacking pace; that said, this is an awfully ambitious spot; others are a little more convincing.

11

Belmont Park

SFAIW 80000N1X

5.70 83-13 Hideout12014 Miss Pab12044 Yadi's Catch12024

27.25 74-13 Thin Legs1205 She's a Tripp120101 Hideout12051

Dkd in,bmp fo st,drvg

Brk 2 lengths slw



7 Furlongs (Turf). (1:191) ALLOWANCE. Purse \$80,000 For Fillies And Mares Three Years Old And Upward Foaled In New York State And Approved By The New York State-bred Registry Which Have Never Won \$15,000 Other Than Maiden, Claiming, Or Starter Or Which Have Never Won Two Races. Three Year Olds, 120 lbs.;Older, 125 lbs. Non-winners Of A Race Other Than Claiming Or Starter Allowed 2 lbs. (If There Are No Three Year Olds Entered, Starting Weight Shall Be 123 lbs). (If the Stewards consider it inadvisable to run this race on the turf course, this race willberun at Seven Furlongs on the Main Track.) (Rail at 27 feet).

the turt course, this race will be	erun at Seven Furlongs on the Main Track.) (F	Rail at 27 fe	et).											
Post time: 6:21 ET	Wagers: Exacta, Trifecta (.50)), Super (.	10)										er par	
T Captainsdaughter Own: Birnbaum Joseph 15-1 Green And Pink Diagonal Quarters, Green FRANCO M (46 10 5 8 .22) 2022: (371 71 .19) 27Mar22-8Aqu fst 7f 23 .4621.1221.261 ②PRXFutrtyB 21Nov21-9Aqu fst 6f 222 .461 :5911.12 ②300ct21-7Bel slys 1	100k	120 4.00 120 50.75 120 28.50 119 22.80 L117 13.30 L118 6.10 L118 *2.30 119 10.60	2022 2021 Bel © 70-27 76-20 79-18 60-32 79-14 67-16 71-15 83-10 66-27	YoC Stno Clss Ven Cap Cust Wat Kolf	0 1 0 dUpo yEd tiVa ttinso erwo Prince	0 0 2254 S Comi ition lenti dugh er Lis orks1 e1192	1 2 0 6tone 12232 12232 112232 11794 11794 1884 [4 Cptinso Cptinsd 133 Cptin 1921 Crgt 21 Pearl I Solid Tu Determin ckPower	69 69 - 119nk lught ught e1194 e1194 Earrin ne118 dHop Np11	D.Fst Wet(390) Synth Turf(306) Dstm(377) Cptinsdught er 1202½ Miss er 120nk Shsw hter 1203½ Du ‡ TwistJustR g1172½ Pegs 1½ Captains 117hd Cptins 31 OkLovesF 1½ TwoSids	1 0 0 0 3 0 0 0 er1189 Interpridjokr iresne1 ight119 A. K. Gi laughte dughtr	0 0 0 1 0 0 122½ 5 122½ 3w 12½ 3w 11171 1181½ 13 3w	\$5 \$1 ed 4-3w, 3w turn, v upper, v upper, trn,4w1 Inside, Chased turn,ch	i, rallied 2 r, belatedl r, belatedl 1/4,rally,cl No facto r, belatedl 2w, rallie nased,tire
WORKS: Apr30 Mth 3f fst :361 B 2/30 Apr11 Ovr 4f fst :52 B 2/17 N FRAINER: TurfSprints(10 .00 \$0.00) Dirt/Turf(8 .00 \$0.00) 31-60Days	ar 4 Ovr 4f fst :523 B <i>1/3</i> (6.00 \$0.00) Turf(17.00 \$0.00) Sprint(32.03 \$1.49) Alw(9.00 \$0.00)							J	/T 202	1-22 BEL (2 .5	\$23.80	-	021-22(4	.25 \$11.90
Act of Congress 6-1 Hot Pink, Black Diamond Frame And 'P,' CASTELLANO J J (35 5 4 3 .14) 2022: (390 65 .17) 14Apr22-9Aqu fm 6f ⊕ 223 .46 .573 1.10 34 ⑤[5]Md Sp Wt. WORKS: May9 Beltr.t 4f fst :491 B 18/66 May1 Beltr.t 4f fst :491 B 18/104 Trainers: TuriSprints (22 .14 \$1.56) WonLastStart(16 .06 \$1.06) Turit	23/66 Apr9 Bel tr.t 4f fst :482 B 24/187 Mar27 Bel tr.t 5f fst 1:02 B	L 120 L118 8.00 19/33 Mar19 B	2022 2021 Bel († 86-11 el tr.t 5f	1 0 0 Acto	1 M 0 of Co	0 0 0 ngre	0 0 0 ss11	r11 Beltr	62 - - talk1	D.Fst Wet(439) Synth Turf(344) Dst(394) 181½ RoyalDi t 1:014 B 15/3 21-22 BEL(6.	0 0 0 0 1 1 0 0 cer113	0 0 0 0 0 0	\$3 urn,stea	
Master of the Tunes own: JADS Racing Blue, White Stars, White Sleeves, Blue DRTIZ J L (35 4 7 6 .11) 2022: (444 94 .21)	B. m. 5 (Apr) Sire: Emcee (Unbridled's Song) \$5,000 Dam: Strike Accord (Smart Strike) Br: Chester Broman & Mary R Broman (NY) Tr: Lee Joseph(—) 2022:(9 2 .22)	L 125	Life 2022 2021 Bel ①	1	0	0	0 1	\$74,485 \$2,880 \$66,007 \$42,073	66 78	D.Fst Wet(344) Synth Turf(252) Dstn(336)	1 0 0 0 9 1	0 0	\$7	\$2,800 4 \$318 4 \$0 71,367 7 \$0
14Apr22-5Aqu fm 6f	X	L122 18.40 L123 40.75 L123 60.25 L124 31.00 L124 48.75 L125 23.80 L125 6.30 L124 12.80 L120 31.50 L120 82.00	87-11 87-14 96 - 86-13 77-11 70-26 75-16 84-10 52-29 78-16 64-18	Sass Shes Tim Cho Mrv MyL Pure Mst ImF Data	sy M sthet lssJo osH lous ips e Bo erof ine1	elissi One12 Durny ppins Md12 AreSe de12! theT 244 M	a1241 102 <u>1</u> U 1211 1201 H 1201 H 1201 H 1201 H 1201 H 1201 H 1201 H	A Palace Jncls Gm k Mrvlou Mstrof lomfor Cl 2hd Mrvlo y Lips Are 125hd Sho ings Mus Malace Lange Sho long Sho l	Gossi 122no is Muc th Tur irstm ous Mu Seale esth Or e117n ig Kik	p1261½ No P. MstrofthTui 1122¾ Instnct 1s123½ FinstV s1184¼ FnstV d120¾ Unico d118¾ EponsI o BeautifulKi i120no Vivazi gnk BellDom	ayne 126 1 s 122½ v 12100 / ork 119 / ork 118 rn S lly 1: k a 1230 rm 118 e n 124½ i o 1200k	Lacke Bmp e no Ins 3 3-4v 222½ 6 4 4 1¼ Rai Chase Trou 2¾ Nea	v turn,7v d room early,cho s turns,5v -7w upp -3w 1st t I rally,g d 3-4w, bled tri ar 2w to	1/8,altere ckd bad3/ mvd out1/ w into lan pr, by tire turn, wkn lot the no weakene ip,boxed i
4 Rigby Own: Arindel 8-1 White, Light Green Ball, White Tree DRTIZ I JR (29 11 6 3 .38) 2022: (442 122 .28)	B. f. 3 (Jan) Sire: Brethren (Distorted Humor) \$5,000 Dam: Romin Robin (Pure Precision) Br: Arindel (NY) Tr: Maker Michael J (17 3 5 2 .18) 2022:(412 76 .18)	L 120	2022 2021 Bel ①	1	0	0 0 0 0	0	\$46,800 \$540 \$46,260 \$45,250	35 72	D.Fst Wet(322) Synth Turf(232) Dstn(294)	1 0 3 1	0 0	\$4	\$510 4 \$0 \$540 3 15,750 7
19Jan22-4GP fst 5f	72 4 / 10 7 1012 87 85½ 52¾ Vargas J A Jr 57 7 / 13 43 42½ 31½ 95¼ 118½ Santana R Jr 75k 61 8 / 12 5 31½ 2½ 1hd 11 Cancel E 15k 41 1 / 10 5 89 811 78 614½ Santana R Jr 50/147 Apr23 Beltr.t 4f fst :483 B 10/119 Apr16 Beltr.t 5f fst 1:03	118 b 77.80 119 b 17.90 119 b 31.75 31 B <i>31/49</i> Apr	90 - 81-17 65-21 79-17 75-16	Fiftl Mys Clife Righ	h An tic E orni oy11!	niver Eyes1 Ange 91 Kn	rsary 120nk 1118h 11Hu 1195 <u>‡</u>	1212¾ Ba Hot Fud d Dimon rryLove1 ToughS Mar28 Be	li Del ge120 dWov 191‡ L trt119 l tr.t 5	Sol1212 Bab ½ Gal in a Ru v118nk Turnr .dyofThorot 01½ KntHurry	r's Dial sh120nd oos120 on11912 Lov119	ed In 1 7 1 Sta 4 W u	194½ Ti v upper, lked 3wo pper, ind s turn,m	, improve d,tired up ched awa nvd out 1/
5 Hideout Own: McConnell Racing Stable and Bilinski 30-1 White, Red'M,' Blue Sleeves, White SAEZ L (8 3 0 0 .38) 2022: (565 117 .21)	Dk. b or br f. 3 (Apr) Sire: Run Away and Hide (City Zip) \$6,500 Dam: Two Foot Up (Copelan Too) Br: Dr Jerry Bilinski DVM Bruce McConnell & Linda Mc (NY) Tr: Trites A L(—) 2022:(6 0 .00)	() 120	2021 2020 Bel ①	2 0	1 M	0 0 0	1 0	\$22,791 \$22,791 \$0 \$0		D.Fst Wet(337) Synth Turf(288) Dst@(327)	0 0 0 0 0 0	0 0		22,791 2 \$0 \$0 \$0 \$0 \$0

4Aug21-1FL fst 5f

19JIy21-1FL fst 5f

233 :48

223 :47

®Md Sp Wt 31k

TRAINER: 1stW/Trn(7.14 \$3.54) +180Days(3.33 \$8.27) 1stLasix(1.00 \$0.00) TurfSprints(2.00 \$0.00) Dirt/Turf(2.00 \$0.00) Turf(13.00 \$0.00)

:594

120

29 4/6 2 11 12 14 114 Ignacio R

6 4/5 5 56 451 411 3151 Ignacio R

WORKS: May6 Beltr.t 3f fst :382 B 22/37 Apr29 Beltr.t 4f fst :50 Bg 30/66 Apr16 Beltr.t 4f fst :502 B 143/221 Apr10 Beltr.t 4f fst :50 B 91/159 Apr2 Beltr.t 4f fst :51 B 153/196 Mar26 Beltr.t 4f fst :50 B 91/159

Daily Racing Form	Belmont Park (5/14/2	2022)	
Finest Work Own: Hoover Ted 5-1 Royal Blue, Gold Cross Sashes, Blue And PRAT F (10 3 2 1 .30) 2022: (340 94 .28)	B. f. 4 (Mar) OBSOCT19 \$40,000 Sire: Outwork (Uncle Mo) \$10,000 Dam: Nero's Pleasure (Pleasantly Perfect) Br: Repole Stable Inc (NY) Tr: Weaver George(14 1 4 1 .07) 2022:(112 20 .18)	L 125 2	Life 6 1 1 2 \$55,050 73 D.Fst 3 0 1 0 \$11,610 53 2021 6 1 1 2 \$55,050 73 Wet(317) 0 0 0 0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
6Sep21-7Prx fst 6f 224 :464 :5921:121 34 ©N 27Jly21-7Prx fst 7f	1C 40k/N2L-N 42 4 /6 2½ 2½ 2² 46½ 512 Gonzalez J L 5]Alw 72000N1x 73 5 /12 42 42½ 32 2½ 31 Gonzalez J L 5]Alw 80000N1x 66 6 /10 31 33½ 33 42 35¼ Gonzalez J L Ad Sp Wt 42k 57 6 /8 4 67½ 67½ 1½ 1½ 11 Gonzalez J L Ad Sp Wt 66k 46 9 /9 1 1hd 21 37 514 Bowman A	L119 11.70 8 L118 55.25 8 L121 10.60 9 L121 6.70 6 L121 20.40 7 18 WCT 3f qd :372 B	59-28 VinoYQueso1183¾ SwtSmuri1213 RollsRoycJoyc1212 Pressed winner, empty 86-13 ChoosHppinss121½ MstrofthTuns123¾ FnstWork119no 3-4p,light bmp3/16,bid 87-11 MrvlosMd1201 Homfrchstms1184¾ Hard held,2-3w2nd,wknd 19-09 Finest Work1211 Cajole121nk Sisi1211 Bore out, very wide,up 69-19 BoldConfection1216¾ GiasFuego1213¾ AmericnBstet121no Vied outside, empty 73-16 Billieanne1211½ Finest Work121½ Nyssa1141¾ Rallied nicely inside 2/11 Mar9 WCT 3f gd :373 B 6/21
7 Dufresne Own: Commonwealth New Era Racing 10-1 Kelly Green, Yellow Maltese Cross LEZCANO J (50 10 5 12 .20) 2022: (302 46 .15)	B. f. 3 (Apr) FTKOCT20 \$62,000 Sire: Uncaptured (Lion Heart) \$6,000 Dam: Rapids (Pioneerof the Nile) Br: Newtownanner Stud Farm (NY) Tr: Trombetta Michael J(—) 2022:(196 31 .16)	L 120 2	Life 5 1 0 2 \$92,040 68 D.Fst 1 0 0 0 \$3,400 52 2021 5 1 0 2 \$92,040 68 Wet(387) 1 0 0 1 \$30,000 62 2020 0 M 0 0 \$0 - Turf(292) 3 1 0 1 \$58,640 68 Bel 0 1 0 0 0 \$1,125 68 Dst(318) 0 0 0 0 0 0 0 0
90ct21-6Bel fm 6f T 214 :441 1:073 © 1 19Sep21-7W0 fm 5f T 214 :444 :57 © V 12Aug21-6Sar fm 5¼f © 222 :451 :57 1:032 © 5 16Jly21-6Sar fst 5½f 221 :454 :5821:05 © 5 WORKS: May9 Faitr.t & 4f fst :492 B 3/9 Apr30 Fait	SimaidOMstB250k 62 8 /9 75¾ 67½ 63½ 66 37½ Lezcano J Matron-G3 68 4 /9 5 64 85½ 76¼ 75¾ Cancel E VO CaresL126k 68 6 /6 4 4 3 45 55 33½ Stein J Simd Sp Wt 85k 61 1 /10 1 1½ 1nd 11½ 1nk Lezcano J Simd Sp Wt 85k 52 8 /10 6 55 66½ 56 59¾ Lezcano J x.t.≪ 5f fst 1:012 B 4/12 Apr23 Fai 5f fst 1:02 B 3/5 Apr15 Fai 4f fst :49 B \$1.94\) Dirt/Turf(63 .14 \$2.68\) BlinkOff(4 .00 \$0.00\) Route/Sprint(62 .15 \$1.41)	120 48.25 8 L120 6.95 8 119 11.40 8 119 54.00 7 g 3/18 Apr 9 Faitr.t <	56-32 VentiVlentine1203¾ Cptinsdughter 1203¾ Dufresne1204 Chased ins, improved 89-05 Bubble Rock120½ Gal in a Rush120½ <i>Mystic Eyes</i> 120½ Chased 2p, no response 88-09 Derrynane1202¾ Fifth Anniversary120¾ Dufresne120½ Brk out,hung,came on 84-14 Dufresne119nk CricketWest119no MyCaraMiaMine119¾ Drifted 1/8p & 1/16p 79-16 <i>NovemberRein</i> 1195½ ToughStrt1191¼ KntHurryLov119nk 3-2path turn,empty 4f fst:493 B <i>16/38</i> Apr2 Fai 4f fst:494 B <i>12/36</i> J/T 2021-22 BEL (2 .50 \$20.60) J/T 2021-22(5 .40 \$13.20)
8 Sue Ellen Mishkin Own: Gold Square LLC 15-1 Black, Gold Block Frame, Gold Cuffs On MCCARTHY T (57 4 7 5 .07) 2022: (420 66 .16)	Dk. b or br f. 3 (Mar) Sire: Mohaymen (Tapit) \$7,500 Dam: Robin of Halfmoon (Uncle Mo) Br: Gold Square LLC (NY) Tr: Abreu Jorge R(9 0 0 3 .00) 2022:(48 3 .06)	① 120 ²	Life 3 1 0 0 \$50,875 69 D.Fst 1 1 0 0 \$46,750 69 2021 3 1 0 0 \$50,875 69 Wet(398) 2 0 0 0 \$4,125 34 2020 0 M 0 0 \$0 - Turf(228) 0 0 0 0 \$0 - Bel © 0 0 0 \$0 - Dst©(332) 0 0 0 0 \$0 - \$0 -
5Sep21-11Sar gd 7f (9 22 :4431:0921:222 (6)5 13Aug21-6Sar fst 6f 221 :452 :58 1:112 (6)5 WORKS: May9Beltr.t4ffst:50 B 33/66 Apr30Bel4ffs	Signaid O Mst B250k 23 5/9 2½ 21 53 711 831 Saez L Signaway-G1 34 9/9 4 53½ 53½ 714 729¾ 0rtiz J L Signame Signame 69 5/10 7 2½ 2nd 12 17¼ Saez L 15t L482 B 32/93 Apr24 Beltr.t 4f fst :49 B 15/64 Apr16 Beltr.t 4f fst :48 B 17 1stLasix(18.11 \$1.26) TurfSprints(35 20 \$2.79) Dirt/Turf(15 .07 \$0.35) Route/	120 16.50 6 119 3.45 8 <i>16/221</i> Apr 10 Bel 4f f s	33-32 VentiVlentine1203 3 Cptinsdughte r1203 3 Dufresne 1204 Prompted 4-3w, falter 60-14 <i>Echo Zulu</i> 1204 Tarabi1203 3 Saucy Lady T1204 3 Hit gate,4-5wide,6w1/4 82-16 SueEllenMishkin1197 4 RoylCurrency119 5 Crgte1191 5 3p turn,steady urging st :49 B 10/31 Mar 27 Beltr.t4f fst :48 3 B 34/126 J/T 2021-22 BEL(1 .00 \$0.00) J/T 2021-22(22 .18 \$2.91)
9 Palace Gossip 9-2 White, Green Shamrock, Gold 'Nb,' Green CANCEL E (37 4 67 .11) 2022: (297 36 .12)	Ch. f. 4 (Mar) Sire: Palace Malice (Curlin) \$12,500 Dam: Pilamaya (Grand Slam) Br: Stephanie Baltzan (NY) Tr: Dutrow Anthony W(6 0 1 3 .00) 2022:(26 1 .04)	L 125 2	Life 5 1 2 0 \$72,022 76 D.Fst 0 0 0 0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
6Nov20–6Aqu fm 6f ① 214 :451 :5741:101 ⑥ ③ WORKS: May9 Bel 4f fst :484 B <i>30/75</i> Apr29 Bel 4f fst :	Md Sp Wt 70k 74 2 / 10 2 11 2½ 11 11½ Cancel E Md Sp Wt 75k 38 8 / 12 5 32½ 73½ 73¾ 66 Cancel E Jd Sp Wt 80k 76 5 / 9 3 2½ 2½ 2hd 43 Lezcano J	L122 *2.35 8 121 2.90 6 119 2.60 7 119 10.70 8	89-11 Sassy Melissa1241¾ Palace Gossip1261½ No Payne126no 3p turn,4p1/4,bid3/16 88-13 PalaceGossip1221¾ SinfullySweet122¾ SrtogGze1222½ In hand 2p, inched clr 66-21 CandyMonet121nk SteppinHwk1241¾ JulinsRose1213 3w turn,5w1/4,std3/16 79-19 MissDrcrys1191 StuckOnKittn1191¾ OGottnGrl119nk 2w,ask upper,wknd1/16 81-16 Kokopel/i/1191½ Palace Gossip1196¼ Mondeuse112½ In hand ins, caught B 99/194 Mar14 NBS 4f fst :51 B 5/5 J/T 2021-22 BEL (5 .00 \$0.00) J/T 2021-22(26 .27 \$1.68)
Theodora Grace 8-1 Copper, Two Black Hoops, Black Cap GOMEZ J A (56 6 47 .11) 2022: (468 67 .14)	B. m. 5 (Feb) Sire: Noble Mission*GB (Galileo*Ire) \$20,000 able Dam: Pascal's Paradox (Monashee Mountain) Br: Alien Farm LLC (NY) Tr: Albertrani Thomas(3 0 0 1 .00) 2022:(40 7 .17)	L 118 ⁵ 2	Life 7 2 1 0 \$67,438 79 D.Fst 1 0 0 0 \$2,480 47 2022 1 1 0 0 \$30,250 68 Wet(294) 0 0 0 0 \$0 \$0 \$0 \$0 2021 5 1 1 0 \$34,708 79 Turf(298) 6 2 1 0 \$64,958 79 Bel 0 3 1 1 0 \$34,150 79 Dst_(274) 1 1 0 0 \$24,750 63
	5] Alw 80000 N1x 67 2 / 11 6 52 1/2 42 42 42 42 64 Pennington F Film 40000 N2L 79 8 / 12 6 52 1/2 12 12 21 21 22 2hd Davis D NIW 50000s 72 8 / 12 21 21 21 21 22 31 62 1/2 Davis D NIW 50000s 64 5 / 11 53 52 1/2 53 88 11 1/2 Castellano J J 5] Mid 40000 63 11/12 8 86 52 12 11 13 0rtiz J L	L119 4.60 8 L120 9.10 7 L123 *3.20 8 L122 23.60 7 L123 19.90 6 L124 2.65 8 L120 7.50 7 Mar27 Bel tr.t 4f fst :4	86–11 ThodorGrc1191½ Thgoddssfsnks 126nk MssngLnk124¾ Tracked ins, inched ci 79–17 GettheCandy120nd ShestheOne1201½ HighwayQueen 1182 3w upper, wknd late 87–15 HappyHillLi123nd TheodoraGrace1234 Apprecite1211 4w uppr, lost the noo 78–16 BselineDriv124nd LucysCksFly120no ExoticWst1201½ 2-3p,bid1/4,out-kickec 80–19 Kitten by the Sea1231½ Honor Hop1253½ Ocean Air125nd Brushed st, rank early 84–16 ThodorGrc1241½ Constttnlrg1182½ WrtThsDwn1182½ 4w pursuit, edged away 71–15 MidnightSurpris1201½ BnkrsDughtr1203½ Vivzno1202¼ 4w turn,3w upr,empty
11 Autumn Glory 6-1 Own: Gallaghers Stud Yellow, Red Sash And 'G,' White Sleeves DAVIS D (72 13 8 15 .18) 2022: (419 87 .21)	B. f. 3 (Mar) Sire: Hard Spun (Danzig) \$35,000 Dam: Spring Leaf*Fr (Footstepsinthesand*GB) Br: Gallagher's Stud (NY) Tr: Clement Christophe(21 6 4 2 .29) 2022:(163 29 .18)	① 120 2	Life 1 1 0 0 \$38,500 65 D.Fst 0 0 0 \$0 - 2021 1 1 0 0 \$38,500 65 Wet(373) 0 0 0 0 0 - \$0 - 2020 0 M 0 0 \$0 0 0 0 \$0 - Bel (T) 0 0 0 0 \$0 - - Dst()(342) 0 0 0 0 \$0 -
	<u>5]</u> Md Sp Wt 70k	Bel tr.t 4f fst :52 B <i>10</i>	

Daily Racing Form	Deimoni Park (5/14/20.	22)	
19 Highway Queen	Dk. b or br f. 4 (Feb) OBSOCT19 \$14,000		000 40
Own: Hibiscus Stables LLC	Sire: Super Saver (Maria's Mon) \$900 Dam: Bear On the Run (Empire Maker)	2022 3 0 0 0 \$5,420 55 6 11 2 0 0 0	970 70 \$0 -
20 – 1 Royal Blue, Fuschia And Blue Emblem	Br: WinStar Farm LLC (NY)		эо <u>–</u> 870 74
CARMOUCHE K (55 8 11 7 .15) 2022: (382 80 .21)	Tr: Klesaris Robert P(6 2 1 0 .33) 2022:(47 8 .17)	1 , , ,	500 71
Previously trained by Klesaris Steve 2022(as of 4/16): (73 5	12 12 0.07)		
16Apr22-9Aqu fm 6f 🗇 223 :454 :5731:10 3↑ (PAlw 50000s	39 3 /8 4 42½ 32½ 65 810½ Franco M	L124f 6.30 75–11 ThodorGrc11914 Thgoddssofsnks126nk MissingLnk1244 5w upper, w	eakened
4Feb22-7Aqu slyS 7f 232 :48 1:1331:263 4↑ ♠Alw 50000s	3 1/8 4 68½ 78½ 715 833 Davis D	L120f 12.60 44–20 Gallina123¾ Norman Queen1237 Chloe Rose123hd Bumped st, no	impact
1Jan22-9Aqu sly ^S 6f 222 :461 :5841:113 4♠ © SAlw 72000i		L120 3.85 75-14 Electric Youth 1231 $\frac{1}{4}$ Snicket 1234 Towering Orbit 1234 $\frac{1}{2}$ Chased 4w, on	
3Dec21-10Aqu fm 6f ⑦ 214 :45 :57 1:084 3↑ ♠SAIw 72000i		L118 6.40 87–14 ShestheOne1202½ UnclesGem122no MstrofthTuns122½ Inside turn,ch	
6Nov21-5Bel fm 6f 🗇 221 :452 :5731:10 3↑ ♠SAIW 80000i		L 118 10.30 82–17 GettheCndy120hd ShestheOne12014 HighwyQueen1182 Tracked 2p, m	
160ct21-5Bel fm 7f ⑦ 231 :4621:10 1:2143↑ ⊕SAIw 80000i		L118 2.75 86–16 ShowMetheHony1201 UnclsGm1234 HighwyQun118hd Ins3/8,3w1/4,v	
23Sep21-8Bel fm 6f	v1x 74 8 /12 8 843 74 641 3nk Velazquez J R	L118 16.90 88-12 SocialWhirl118no BlameItOnMry120nk HighwyQueen118½ 6w upper	, missed
1Sep21–7Sar fm 5½f ⊕ 222 :453 :5711:0243↑ ⊕SAIw 900001	v1x 69 10/11 1 11 1½ 11 32 Santana R Jr	L119 17.80 85-12 JillsaHotMess11814 TisaPity1214 HighwyQueen119nk 2p-ins trn,col	lard1/16
30JIy21-10Sar gd 11/8 ⊗ ③ 473 1:1241:39 1:522 3↑ ⑤ SMd c-4000		L118 2.55 73-20 HighwyQueen1185 TotheTune11813 ReelyPsychd11864 Inside,eased	l up late
Claimed from Paradise Farms Corp. for \$40,000, Maker Mich			
20Jun21-10Bel fm 6f		L118f 6.90 84-12 Byhubbyhellomoney118¾ StllMrs118¾ <i>HighwyQun</i> 118¾ Bmpd brk,3-4	.w,6w1/4
	esaris, Steve for \$40,000, Klesaris Steve Trainer 2021(as of 6/2		
21May21–7Bel fst 1 232 :4711:1131:371 3↑ ⊕SMd Sp Wt		118f 3.00 58-24 Voice of Spring125\(\frac{2}{3} \) Raffinity1193\(\frac{2}{3} \) A Bito'IrishSass1187 5w turn,no r	
11Jly20–1Bel gd 5½f 222 :461 :593 1:063		113 6.30 84-16 Infringement120¾ HighwyQun113½ Shsdirtydncr1155¼ Ins,2w upr,ali	.er3w1/8
WORKS: May6 Bel tr.t 3f fst :381 B 21/37 Apr2 Fai 4f fst :50 B 15/3		04.44\	00 00 00)
TRAINER: 1stW/Trn(36 .17 \$2.24) 2Off45-180(27 .00 \$0.00) TurfSpr	nts(17.18 \$1.59) Turr(45.09 \$0.82) Sprint(118.16 \$2.16) Alw(19.11	\$1.41) J/T 2021-22 BEL (5 .00 \$0.00) J/T 2021-22(8 .1	JU \$0.00)

Also Eligible:

13 Caumsett	Dk. b or br f. 4 (Feb) SARAUG19 \$60,000 Sire: The Factor (War Front) \$17,500		Life 11 1 2 3 \$107,232 68 D.Fst 1 0 0 0 \$1,050 -
Own: Henning Michael A and Payne Olga 15-1 Dark Green, Tangerine Chevrons, Green	Dam: Sister Diane (Giant's Causeway)	L 125	2021 8 1 2 2 \$94,282 68 Synth 0 0 0 0 \$0 -
VELAZQUEZ J R (5 2 0 2 .40) 2022: (217 35 .16)	Br: Milfer Farm Inc (NY) Tr: Sciacca Gary(13 1 2 4 .08) 2022:(79 7 .09)	L 123	
OD 04404 6 05 0 044 45 57 4 004 0 074 1 70000	4 64 5 (40 0 44 4) 1 52 072 0 4 11 1 1	1 4001 40 40	Bel ① 4 0 2 1 \$39,350 64 Dst①(335) 1 0 0 0 \$350 48
3Dec2140Aqu fm 6f ⑦ 214 :45 :57 1:084 3↑ ⓒSAlw 72000i			0 82-14 <i>ShestheOne</i> 1202½ UnclesGem122no MsterofthTuns 122½ Ins-2p turn,gave way
11Nov21–1Aqu fm 1	70k 68 6 /8 13 14½ 11 13½ 11¾ Castellano J J	L 121b 4.70	0 88-03 Caumsett12114 SaratogaGze121nk <i>LdyThornhill</i> 1211 2path,ask1/4,responded
19Sep21–1Bel fm 1 16 ① 234 :47 1:1041:4143↑ ⑤ SMd Sp Wt	75k 64 2 /8 11 11½ 11 11½ 2nk Castellano J J	L120 b 5.80	I 84–15 Pop the Bubbly120nk <i>Caumsett</i> 1201 Out of Sight120₃ In hand 3-2w, nailed
Hand timed	• •		
27Aug21-5Sar fm 5½f ⑦ 22 :454 :573 1:032 3↑ €SMd Sp Wt	85k 59 6/9 2 41½ 51¾ 41 44¾ Ortiz I Jr	L119b *2.50	$1.79-16$ NoPyn1192 $\frac{1}{4}$ Escpwthfrnds119 $\frac{3}{4}$ RodtRmmbr1191 $\frac{3}{4}$ Bmp brk,bmp4-1/2,4w1/4
8Aug21–3Sar fm 5⅓f (r) 22 :451 :5641:024 3↑ (F)(S) M d Sp W t	85k 62 1/9 3 42 31½ 2½ 31½ Ortiz I Jr	L119 3.70	1 85-13 KresLWrot119hd UShouldBDncing1191⅓ Cumstt119⅔ Ins-2p trn.bid.outkckd
11Jun21–6Bel fm 1 0 232 :47 1:11 1:35 3↑ (ĒS)Md Sp Wt	75k 63 2 /8 11 11 11 23 223 Rodriguez L A	L118 5.70	78-20 JustOkIsNotOk11823 Cumstt118hd MrvlousMd118hd Ins,headed1/8,outfnshd
9May21-9Bel fm 6f T 223 :462 :5811:093 3↑ ♠SMd Sp Wt		L118 12.70	1 83–15 <i>RunawayRumour</i> 11813 KreesaLWrote118nk Cumsett1183 3w uppr, led, ran on
10Jan21-5Agu fst 1 234 :4821:1521:421 (F)[S]Md Sp Wt		L120 8.40	- 42 Coffee Bar120% Vallarand1201% Pop the Bubbly1206 Vie ins.protected lane
11Dec20-5Aqu gd 116 ① 241 :49 1:1411:462 ② ③ M d Sp Wt	70k 59 7 / 12 11 11 11 11 321 Marquez C5	114 8.60	0 65–33 Mendham11913 Photofinish Jeanne1193 Caumsett11413 In hand ins, ran on
20Nov20-2Aqu fm 6f 🕦 221 :46 :5911:12 🕞 🖺 M d Sp Wt	70k 55 9/10 1 31 2hd 2hd 42½ Ortiz J L	119 2.70) 72-22 Athena Dancer 119¾ No Payne1191⅓ GettheCandy119no 3w uppr, led, kept on
240ct20-5Bel fm 7f 🕥 232 :4731:1221:25 🕞 S M d Sp W t			I 69-24 BigTimeLdy1191≩ UShouldBDncing119nk BCBell119nk 2w,ask uppr,btw lane
WORKS: ● May 9 Bel tr.t 4f fst :481 B 1/66 Apr 30 Bel tr.t 4f fst :481			'10 Bel tr.t 4f fst :491 B <i>56/159</i> Mar 29 Ing 3f fst :3 64 B <i>1/1</i>
TRAINER: 61-180Days (30, 10, \$2.73) TurfSprints (46, 09, \$3.13) Turf (37 08 \$2 16) Sprint(184 07 \$1 82) Alw(27 15 \$1 27)	•	•

Waterville Own: Waterville Lake Stables 5-1 Kelly Green, Orange Sash, White Sleeves ROSARIO J (17 18 2.06) 2022: (293 63.22)	Gr/ro. f. 3 (Apr) Sire: Kitten's Joy (El Prado*Ire) \$50,000 Dam: Strike It Rich (Unbridled's Song) Br: Waterville Lake Stables LTD LLC (NY) Tr: Clement Christophe(21 6 4 2 .29) 2022:(163 29 .18)	L 120		3 1 1 0 2 1 0 0	1 0 1 0 0 0 0 0	\$62,650 \$14,400 \$48,250 \$0	73 61	Wat/2721	0 0 3		0 0 0	\$0 \$0 \$62,650	
10Apr22-7Aqu gd 1½ (1) 241 :49 1:1411:454 3↑ (€) SAIw 72000 N	IX 73 6 /6 33½ 33½ 22 11½ 21 McCarthy T	L120 2.40	75-24	optheB	ubbly12	71 Watervi	lle120)5½ SweetFra	nnyl	Lu1254	½ Ins	-2p,led 3/16	-1/18
25Aug21-6Sar fm 1 1 241 :4931:1431:453	15k 61 7 / 10 53 53 53 53 51 11 2 2 Gaffalione T	119 *1.50	69-25 [SrtogC	hrom11	9월 WtrvII11	191 <u>4</u> V	Vhtlovlooks	lk 11	94 <u>1</u> B	mp b	rk,2p1st,3-5	ρ <mark>2</mark> ης

29Aug21-65ar fm 14g II 241 '493 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1491 '1493 | 1: 1493 | 1: 1493 | 1: 1493 | 1: 1493 | 1: 149

Entered For Main Track Only

Entereur of main ma	ck Only											
15 Gallina	Dk. b or br f. 4 (Feb)		Life	10 2	2	2	\$109,225	72 D.Fst	6	0	2 2	\$39,800 52
Own: Bond Racing Stable and Clifton Jr Wil	Sire: Mineshaft (A.P. Indy) \$10,000 Dam: Smart Engagement (Smart Strike)		2022	2 2	0	0	\$68,750	72 Wet(402)			0 0	
3-1 Royal Blue, White Ball, Blue 'B,' White	Br: Song Hill Thoroughbreds LLC (NY)	L 125	2021	6 M	2	2	\$35,975	72 Synth 52 Turf(280			0 0	
MCCARTHY T (57 4 7 5 .07) 2022: (420 66 .16)	Tr: Bond Harold James(6 0 2 0 .00) 2022:(49 7 .14)		Bel	2 0	2	0	\$17,000	52 Dst(370)			0 1	
4Feb22-7Aqu sly ^S 7f 232 :48 1:1331:263 4♠ €Alw 50000s	72 6/8 7 8 ¹³ 6 ⁸ 2 ³ 1 ³ / ₄ McCarthy T	L123b 5.00	77-20	Gallina	123¾	Norm	nan Queen123	7 Chloe Rose1	23hd		3w	1/4, shied, up 1/16
2Jan22-3Aqu myS 7f 223 :46 1:1231:26 4↑ ⊕SMd Sp Wt	70k 60 3 /8 8 89½ 88 3½ 13¾ McCarthy T	L 122 b 2.95	e 80–18	Gallina1	12233	Tale	nti1222¾ Viva	azano 1221 <u>1</u>		В	mpd s	oundly brk,chckd
280ct21–2Bel fst 1 ¹ / ₁₆ ⊗ © 233 :4641:1131:472 3↑ (P) S M d 40000	52 3/3 2hd 21 21½ 21½ 21¾ Saez L	L 120 b 1.20	59-31	Talesof	fMak	enna	12013 Gllin12	013½ Cusewyo	fDre	ms11	5 Due	el, chased, kept on
21JIy21–5Sar fst 7f ③ 233 :4711:1221:254 3♠ ⓒ S M d 40000	50 4/7 2 54 53 57 38½ Saez L	L119b 4.30	65-19	Raffini	ty119	941 Li	ve in Five 12	43¾ Gallina119	nd		St	died early,5p turn
13Jun21–1Bel fst 1 241 :4811:1341:392 3↑ ⊕ S M d 30000	42 2/8 73¼ 83¾ 63¾ 43 22½ Saez L	L 118b 4.00	62-35	Scott A	\laia	1182 <u>‡</u>	Gallina1181	Tia Vicky118	11/2		61	v upper, belatedly
15May21–8Bel fm 1	75k 38 1/11 58 56 844 993 9111 Cardenas L5	L 113 b 61.50	72-10	Master	ofthe	Tune	s125hd She's	theOne1183 Ep	onas	Drea	m1181	1 3w upper, tired
6Mar21-1Aqu fst 1 \$ 244 :4921:16 1:43 F SMd Sp Wt	70k 51 1/6 1hd 1½ 2½ 34½ 411 Cardenas L ⁵	L 115b 17.70	47-30	Dstnto	nwnr	scr12	209½ StormC	tLdy120¾ Epo	ısDrı	n 120	Inh	and 2p, weakened
30Jan21–1Aqu fst 1 🔞 243 :4941:16 1:413 🕒 🖫 🖺 Md Sp Wt		L 117b 21.60	57-24	Teetota	iler12	263 D	uckphat122	🕯 Gallina1171			Vie	early,2w1/2,3w upr
20Dec20-1Aqu fst 1 231 :47 1:1311:42		112 b 19.40	46-26	Chasin	gCar	a 119 r	^{ik} Teetotaler	I19½ StormiCt	Ldy1	1416 <u>1</u>	3w ι	appr, by tired foes
19Nov20-6Aqu fm 116 T 25 :5111:16 1:463 @SMd Sp Wt								ubbly 119 ^{hd} M		n1192	Sav	e ground no avail
WORKS: May9 Bel tr.t 3f fst :38 B 10/24 Apr30 Bel tr.t 4f fst :50 B s	· · ·	3 <i>30/123</i>	l tr.t 4f	fst :50 ¹ l	B 71/	104						
TRAINER: 61-180Days(56 .12 \$1.60) WonLastStart(21 .29 \$6.98) Di	t(129 .13 \$1.83) Sprint(137 .14 \$2.09) Alw(18 .06 \$0.48)						J/T	2021-22 BEL (8	.00	(00.00	J/T 2	021-22(49 .20 \$2.66)

Tellaperfecttale 5-2 Own: Tournas Peter Black, Gold Circle And Emblem, Black GOMEZ J A (56 6 47.11) 2022: (468 67.14)	B. f. 4 (Jan) Sire: Forty Tales (Tale of the Cat) \$3,000 Dam: Perfect Posse (Posse) Br: C Robert Valeri (NY) Tr: Lucas Bonnie(13 1 2 4 .08) 2022:(26 3 .12)	L 118 ⁵	2022 2021 Bel	5 2 7 1	4 2 1 1 3 1 1 0	\$65,250 85 \$50,473 56	Wet(367) Synth Turf(207)	0 (2 3 I 1 O 0 O 0	0 \$ 0 0	87,323 8 28,400 8 \$0 \$0 \$0	80 - -
25Apr22-8FL fst 4½f 224 :463 :531 3↑⊕SAlw 24000n Previously trained by Potts Wayne 2021: (442 66 63 54 0.15		L 124fb *.35	88-07	Sweet	Shallots	1221 <u>1</u> Sniff1223 <u>1</u>	Tellaperfec	ttale12	42 <u>3</u>	Stm	bld st,4w1	1/4
31Mar22-4Aqu fst 6f C 223 :461 :59 1:123 34 © Alw 50000s	85 2 /7 1 2hd 11½ 14½ 19¼ Gomez J A5	L 121fb *1.65	80-23	Tellape	rfecttal	e1219 ₄ Boss Car	a 126 no <i>To a</i> 1	1243	I	ns,hand-	ride last 1	1/8
4Mar22-4Aqu fst 6f 224 :464 :5921:13 3↑ ⊕Alw 50000s	76 4 / 6 3 31½ 22 24 25¾ Gomez J A 7	L 116fb 4.90	72-27	Normn	Queen12	35¾ Tellperfctt/1	164 ‡ Thgodd	ssofsn	ks 123	½ 3w upp	er, 2nd be	est
18Feb22–3Aqu my 6½f \$ 231 :4731:1241:193 4♠ € Clm 25000 N2						e1168‡ NewYork						
23Jan22-9Aqu fst 6f 3 224 :452 :5731:103 4↑ © Clm 25000N2		L 123fb 11.20	83-12	MazalE	ighteen	1205½ Violentim	120≩ Sehorse	ed0ro1	20nk /	1w 1/4,lug	in, kept o	on
5Nov21-2Bel fst 6½f S 23 :4641:1311:203 3↑ €SM d c-2500		L 122fb *1.35	69-24	Tellper	fecttle1	2no NewYorkB	ıkr1221 <u>‡</u> <i>Cpi</i>	ivting(r122½	2w 1/4p,	clr, held	on
Claimed from Mitsumrdream Farm for \$25,000, Morley Thon												
17Sep21–9Bel fst 6f 22 :451 :5811:114 3★ ₱SMd 25000	41 9 / 9 5 56 34½ 21½ 23¼ Castellano J J					131 Tellperfectti						
21Aug21-4Sar fst 6f 223 :46 :59 1:13 3★ ₱SM d 25000	50 3 / 9 6 41 32 31½ 2no Gaffalione T					l 19 no Tellperfec						
30Apr21–6Bel fst 6f 232 :473 :5941:122 3↑ ♠SMd Sp Wt						DorothysthBss						
20Mar21-9Aqu fst 6f 222 :462 :5911:133						024 Irresistible (
19Feb21- 4Aqu my 6f \$ 234 :4821:01 1:132						「IIprfcttI1205≩ [)oyoknowwl	10m 12U	no 4v	v upper, c	luel, deni	ed
Claimed from Valeri C. Robert for \$40,000, Levine Bruce N Tr. 9Jan21-4Agu fst 6f 233 :4741:0021:132 (F)S Md 40000	11ner 2020: (178 16 24 22 0.09) Previously trained by Scia 56 5/9 6 74\frac{1}{2} 56 45\frac{1}{2} 34 Cardenas L ⁵					12223 BetsyBlue	12213 Tellpe	fecttle	117hd	Brush b	twn brk,2	2w
WORKS: Apr 14 Wst 3f fst : 371 B 1/2 Mar 26 Bel tr.t 4f fst : 481 B 32/					•	,					,	
TRAINER: Dirt(36 .14 \$1.71) Sprint(37 .11 \$1.37) Alw(6 .00 \$0.00)						J/T	2021-22 BEL (2 .00 \$0	.00) J	/T 2021-22	(5 .20 \$3.1	16)

ANALYSIS by Mike Beer

BEST BET: Seven Lilies (7th race)

First Race

OUR SON JAKE has a new trainer subbing for the suspended Miceli as he makes his 3yo debut off the layoff; wasn't a real threat in either of his starts late last year while racing on both times in races that were dominated toward the front; starts back with Lasix on and is going to get overlooked. **SAFALOW'S MISSION** did a lot of work on the pace in his career debut before getting nailed by a closer, then landed in a tougher race second time out while improving; rallied gamely from far back in his return from the layoff in March, but doesn't have to be that far away this time as he switches from turf to dirt. **CONQUIST** debuted going seven last November and took some money before chasing a solid pace in a race that went to closers; Lasix on for his 3yo debut after breezing a pair of bullets last month. DEVIL BOY looked like he needed his career debut when breaking slowly and then racing on late with too much to do; paired up his debut figure second time out after once again getting away from the gate last; threat off the long layoff.

Second Race

RING OF FIRE went two for three upon switching to turf last summer for Atras, and he also ran well between the two victories when chasing a sharp winning going seven and finishing a clear second-best; back into the claiming ranks off the layoff after landing in a very tough allowance when last seen. STANDUP a closing sprinter in need of some pace as he makes his second start back from an extended layoff following a pure prep on dirt two months ago; was in good form prior to that long break, including a win at Saratoga with a strong finish. STANHOPE returned to turf last month at Aqueduct and showed his usual speed to lead that field into deep stretch, only to get overtaken once again; speed makes him dangerous every time, but he rarely lasts.

Third Race

BELLA SOFIA burst onto the scene with a fast blowout won over this track on debut, an effort she backed up well when dueling and prevailing for second in the Jersey Girl; dominated the Grade 1 Test two starts later with a triple-digit Beyer and then easily handled older rivals in her Breeders' Cup prep while making it 3 for 4 at Belmont; starts back facing a short field with tactical speed from the outside, **FRANK'S ROCKETTE** has attained a level but she is a multiple graded stakes winner and shows up every time; Prat might have made a tactical error off the layoff when conceding to the eventual winner early and then failing to catch in the stretch. **MISS BRAZIL** won her first three starts sprinting on dirt, then had an excuse when breaking through the gate before the Jersey Girl, and then coming out last after being re-loaded; wound up dueling with BELLA SOFIA in the stretch of that race before they were both closed down by the rallying winner, who was undefeated at that time; steps back up after an easy win off the layoff.

Fourth Race

STELLA MARS ran well while settling for second-best in each of her first three starts upon returning to turf last summer; came with strong finishes to erase several lengths in the late stages of her back-to-back wins over this course and distance before the layoff; lacked a bit of room in the stretch off the layoff before switching out and racing on gamely too late. THISMIGHTBETHEONE cut back for her second start off the layoff last month and finished gamely to close down odds-on Cadencia once getting out into the clear in the stretch; tactical from the rail and still has some upside. HAPPY HILL LIL went back-to-back in a 20-day span last year over courses with some 'give' to them, including a game score over two-life claimers with an 80 Beyer; has been effective with different running styles and is back at the right level off the layoff.

Fifth Race

DRAFTED finally broke through when making a sharp run around the turn to overpower the leaders en route to a dominant Toboggan win two back with a 97 Beyer; tried a similar run in the Grade 1 Carter vs. a much better field last time but it wasn't that kind of race and he couldn't make an impact; back in a better spot here and can factor again if retaining his form. **OFFICIATING** cut back to make it two in a row on dirt when defeating a weak field in the Mr. Prospector at Gulfstream in December, then shipped up here while cutting back again and defeated an even weaker group in the Tom Fool; best sprinting and tactical enough to keep the speedy **CHATEAU** in range, as he did in the Tom Fool. CHATEAU the speed once again and the horse to catch and beat; he isn't really that good and he does not finish strong in his races, especially when forced to go early, but Atras has done an excellent job with him since taking over.

Sixth Race

BELACQUA only competed on the all-weather as a 2yo in England but he ran well in all three starts over there, including the lone loss when just getting nailed on the wire after taking over in the stretch; bred for turf and showed tactical speed over there, which could serve him well stateside. **ANGEL PALM** made her stateside debut sprinting at Keeneland in a very tough allowance field going 5.5 furlongs; got held up a bit behind horses on the turn of that race, before getting clear in the stretch with too much to do and failing to finish strongly; stretches out to a better distance with the pedigree to handle it. **LAY THE GROUNDWORK** had her route debut rained off the grass when last seen and improved anyway to break her maiden over synthetic; overcame some trouble to win that race easily over two next-out winners and this is the surface she is bred for.

Seventh Race

SEVEN LILIES is just 1 for 7 since being claimed by these connections last June, but he has run well in all of those races while not always getting lucky; might have made it two in a row in December if not for having to alter course late, and he came right back with another good effort in January when left with too much to do after rating the break; one more try cutting back again. **JEMOGRAPHY** had no chance in either the Hudson or Thunder Rumble at the end of last year, then got wired in each of his first two starts off the layoff at Aqueduct; back in with NY-breds off the claim for Rudy. **FOOLISH GHOST** makes his seasonal debut after getting a much-needed break following a poor effort in a fast race last December; dangerous speed when he is right and he can get the seven.

Eighth Race

YIBIR went 2 for 2 stateside as a 3yo, including a strong effort at the Breeders' Cup when closing stoutly into a fast pace; was defeated in each of his first two starts this year but ran well both times with excuses; the horse to beat though he could be compromised by pace once again as he drops back a furlong. HIGHLAND CHIEF managed only one start last year as a 4yo, that after a solid 2020 campaign vs. some top-class 3yo competition; Aqueduct run off the bench going shorter looked like a pure prep and he ran better than it may appear in that spot with plenty of trouble. GUFO could not take advantage in that strongly run Breeders' Cup Turf and was no factor behind the top one; bounced back with a strong effort off the bench when running over ABAAN in the stretch after a good setup; multiple Grade 1 winner could be set for a big 4yo campaign.

Ninth Race

COMPLETE AGENDA is slowest on the way into the Peter Pan with a 77 Beyer top showing, but he is likely better than he looks on paper and is not going to struggle with the distance – which might be a question for some of the others; improved to run down a clear leader over this trip in his maiden win last month, and he did not get a great trip in his prior start at Gulfstream; improving through racing for Pletcher and steps right up with tactical speed. **SET SAIL** debuted in a strong race going seven in February and chased a sharp winner to no avail before tiring late; stretched out for his second start, where he turned away a challenge from the favorite before going on to a clear-cut win with a solid figure; speed from the rail and bred to handle the added ground. **ELECTABILITY** stayed gamely to close down favored Long Term (settling for second for the fourth straight start) while making his dirt debut off the layoff; didn't face a particularly strong field of allowance rivals last time, but he did all the hard work in that spot while turning away several challenges en route to prevailing; might be better than he looks and could get lost in here despite starting for top connections.

Tenth Race

HIGH OPINION surprised when breaking her maiden at a huge price as a 3yo but quickly proved that effort was no fluke while just missing in her next start vs. stakes company; kept improving last year after being cut back in the summer and just missed getting up in the Ballston Spa over this distance with a 94 Beyer; looked like she was prepping off the layoff when rated to last right away and then finishing gamely too late going six. PLUM ALI was often unlucky during a frustrating 3yo campaign last year and finally took matters into her own hands when wiring the Winter Memories in her 2020 finale with a new Beyer top; strong effort off the layoff last time to gun down a talented rival who had the jump; might be set for a big 4yo campaign. ROUGIR kept coming up just short vs. top competition in France as a 3yo, then finally broke through with a coming out on the right side of a photo in a Group 1 on Arc Day; was never winning the BC Filly & Mare Turf but she did have some traffic issues in that race; makes her 4yo debut with a change to Chad Brown and the shorter distance is not an issue for her.

Eleventh Race

FINEST WORK overcame a trip to easily break her maiden first-time turf at Parx, then improved in her next two starts on this circuit despite settling for minor awards; was headstrong in those longer races and might have a chance to settle a bit going a one-turn seven off the layoff while switching to Weaver. RIGBY stalked the pace before gamely dueling down the leader in the stretch to win her turf debut going shorter last September at a price; made her final two starts as a 2yo vs. much tougher competition and didn't run poorly either time; back to turf after failing to factor behind a sharp winner on synthetic when last seen. AUTUMN GLORY debuted at the very end of last year going a route of ground and looked good winning that race easily after a good trip from off the pace; starts back at seven with forward to go and Lasix on.

SELECTIONS

	CELECTIONS				
	Mike Beer 87–18 (50)	HANDICAP Kenny Peck	HERMIS David Aragona	CONSENSUS 92-28 (58)	
1	Our Son Jake	Denis	Devil Boy	Devil Boy	6
	Safalow's Mission	Conquist	Conquist	Denis	5
	Conquist	Devil Boy	Safalow's Mission	Our Son Jake	5
2	Ring of Fire	Stanhope	Tenure	Ring of Fire	8
	Standup	Ring of Fire	Loaded Joe	Stanhope	8
	Stanhope	Tenure	Ring of Fire	Tenure	6
3	Bella Sofia	Assertive Style	Miss Brazil	Bella Sofia	8
	Frank's Rockette	Frank's Rockette	Bella Sofia	Miss Brazil	6
	Miss Brazil	Bella Sofia	Kept Waiting	Assertive Style	5
4	Stella Mars	Mandy Green	Happy Hill Lil	Happy Hill Lil	6
	Thismightbetheone	Freedomofthepress	Miss Delicious	Stella Mars	6
	Happy Hill Lil	Stella Mars	U Should B Dancing	Mandy Green	5
5	Drafted	Repo Rocks	Drafted	Drafted	12
	Officiating	Chateau	Repo Rocks	Repo Rocks	7
	Chateau	Mr Phil	Chateau	Chateau	4
6	Belacqua	Angelinka	Caironi	Belacqua	7
	Angel Palm	Angel Palm	Belacqua	Angelinka	5
	Lay the Groundwork	Lay the Groundwork	Baby Blythe	Caironi	5
7	Seven Lilies	Jemography	Prince of Pharoahs	Seven Lilies	10
	Jemography	Bronx Bomber	Seven Lilies	Jemography	8
	Foolish Ghost	Seven Lilies	Jemography	Prince of Pharoahs	5
8	Yibir	Yibir	Yibir	Yibir	15
	Highland Chief	Highland Chief	Gufo	Highland Chief	5
	Gufo	Gufo	Highland Chief	Gufo	4
9	Complete Agenda	Golden Glider	Western River	Complete Agenda	6
	Set Sail	Set Sail	Set Sail	Western River	6
	Electability	Western River	Complete Agenda	Set Sail	6
10	High Opinion	Rougir	Rougir	Rougir	11
	Plum Ali	Lemista	Lemista	High Opinion	6
	Rougir	Runaway Rumour	High Opinion	Lemista	4
11	Finest Work	Finest Work	Masterof the Tunes	Finest Work	11
	Rigby	Sue Ellen Mishkin	Palace Gossip	Masterof the Tunes	5
	Autumn Glory	Palace Gossip	Finest Work	Palace Gossip	3

Consensus Totals Based on 5 points for First (7 for Best Bet), 2 for 2nd,1 for 3rd. Best Bet in Bold Type.

I am testifying in opposition to HB 1151. I am not going to give my opinion on the ethics of baiting, nor am I going to tell anecdotal stories to try and influence an emotional response. Instead, I will tell you that HB 1151 is irresponsible and lacks foresight. On the surface this bill is about baiting deer in North Dakota. However, the consequences of this bill have a much greater impact to the long term viability of not only deer, but other wildlife and natural resources we entrust our ND Game and Fish Department to manage.

The North Dakota Game and Fish Department is comprised of educated, science-based staff that were sought after and hired for their expertise in the management of this States wildlife, habitat, and natural resources. The management decisions they make are well researched, analyzed and scrutinized to make sound policy. Even though we may not like the short-term implications of some decisions, we can trust that these science-based decisions are made for the best interest and longevity of the wildlife resource.

If HB 1151 is allowed to move forward, it would not only reverse current ND Gamed and Fish Policy for managing Chronic Wasting Disease (CWD), it will strip the department of their ability to utilize a economically responsible and efficient tool to slow the spread of the disease.

To manage CWD, currently 28 states have a full ban on baiting deer. Fourteen states allow baiting, but with restrictions. In other words, 42 states have either a full ban or a partial ban on baiting deer as policy to manage CWD. This includes our neighbors Minnesota, South Dakota and Montana.

On December 23, 2022 The United States Congress approved the **Chronic Wasting Disease Research and Management Act.** This legislation would allocate approximately \$70 million to the USDA for distribution to states and tribes for research and development of CWD policy. Recognizing that this legislation got bipartisan support, it should also be noted that our own Senator Hoeven was a lead sponsor of the bill.

Therefore, please leave the management of our wildlife and natural resources to the professionals and oppose HB 1151.

Thank you for your service,

Kerry Whipp

I am in full support of Bill HB 1151 in favor of keeping hunting rights. Hunters are losing their rights due to a disease that has been around for over 20 years and has very few confirmed deaths due to this (CWD) disease.

By not supporting this bill many people who love to hunt, but are restricted in their time are not going to be able to enjoy this great sport. Kids, veterans, older individuals, and people who just do not have time to go out and work the fields and pastures for their hunt will not be able to hunt anymoe.

If this right is taken away from hunters, what right is next?

Again I am in full support of Bill HB 1151

Peter Dobitz Dickinson, ND Attn:

Rep. Todd Porter

Rep. Dick Anderson

Rep. Glenn Bosch

Rep. Jason Dockter

Rep. Jared Hagert

Rep. Pat Heinert

Rep. Jim Kasper

Rep. Andrew Marshall

Rep. Anna S. Novak

Rep. Jeremy Olson

Rep. Shannon Roers Jones

Rep.Matthew Ruby

Rep. Liz Conmy

Rep. Zachary Ista

Re; HB 1151

Dear Energy and Natural Resources Committee,

This letter is to express my support of the above referenced Bill.

Hi, my name is, Wyatt Rollman, and I'm an avid hunter with Muscular Dystrophy. Muscular Dystrophy impairs individuals in many different ways. I am wheelchair-bound with a loss of muscle strength in all extremities. Since joining Prairie Grit Adaptive Sports, I have been given a whole new opportunity to do things I love. Hunting especially is a passion of mine that would not be possible without the efforts of everyone involved.

Baiting creates an opportunity to attract wildlife to particular areas in order to meet the needs of individual hunting. It is extremely difficult to maneuver a wheelchair in the rugged outdoors, let alone do it myself. Baiting has been an ongoing battle for years, without baiting in regard to the special needs group of individuals, the possibility of having a successful hunt would be more difficult. The efforts that the Prairie Grit Hunting Experts put forth in regard to baiting and education have made me become a more knowledgeable and successful hunter with great respect for the outdoors.

Sincerely,

Wyatt Rollman

1/15/2023

Granville, North Dakota

		٠		-
Δ	т	т	n	
_				

Rep. Todd Porter

Rep. Dick Anderson

Rep. Glenn Bosch

Rep. Jason Dockter

Rep. Jared Hagert

Rep. Pat Heinert

Rep. Jim Kasper

Rep. Andrew Marschall

Rep. Anna S. Novak

Rep. Jeremy Olson

Rep. Shannon Roers Jones

Rep. Matthew Ruby

Rep. Liz Conmy

Rep. Zachary Ista

RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support of the above referenced Bill.

Dear Representatives,

I support this Bill, because I believe it is crucial to the future of hunting in ND. The future lies in the hands of our youth hunters, which many would not have the opportunity to hunt, if not for baiting. Rapid increase of posted lands restrict hunting more and more every day, and limit youth hunters opportunities, not to mention ethical shots, if you cannot bring game into range, or onto land available to these hunters.

Also, my father is handicapped, and has had to guit archery hunting, because he cannot get into a treestand, or access a blind on game trails, or other habitat where deer are within range to harvest. He was able to hunt deer when baiting was allowed, and enjoyed archery season, especially when you only draw a gun tag every 4-6 years. Archery hunting in ND is a tradition, and baiting is a very important tool, that should be allowed, so everyone of all ages can enjoy our great outdoors. Thank you

. North Dakota

Sincerely,

Town

Name: _	Todd M. Gath	man
Date:	01/17/2023	
Town	Berthold	. N

My name is Ryan Hanson, and I am writing in support of HB 1151. My Wife Heather and I belong to an organization called Twist of Fate. Our organization puts on a hunt for the physically challenged and over the past 25 years have had over 200 different hunters from 15 states with various challenges. Our hunt is only 1 weekend a year and our guests have 5 opportunities to harvest a deer, 2 morning hunts and 3 afternoon hunts. If baiting is made illegal and with the challenges our hunting guests already face it would greatly hurt their chances of harvesting a deer. So, I am asking for your support of this bill to not protect my right to bait but to protect our guest hunter's chances of harvesting a deer. When it comes down to it, personally this bill does not affect me and my wife. Neither of us have ever hunted but volunteer around camp to help give our guests the best experience possible and show them what a great state North Dakota is.

Here is a quote from one of our past hunters. Nate Aalgaard, Former Executive Director of Freedom Resource Center for Independent Living and Twist of Fate Hunter

"They try to eliminate some of those barriers for you and they just want everyone to have an equal chance, an equal shot at it."

If you get a chance, I urge you to visit our website and look at the pictures and videos of the lives Twist of Fate has changed.

Thank You

Ryan & Heather Hanson www.twistoffatend.org



















RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support for HB 1151

I am in favor of this bill. Hunting is great for North Dakota. Allowing Game and Fish to place a baiting ban on big game is nothing more than taking away an opportunity. Its up to the individual to decide if they want to use bait or not use bait for hunting. Youth Hunters especially will benefit from being able to use bait. Kids are the future of our sport, and they need every opportunity possible to keep the tradition alive. A Bait pile is a great tool for kids to harvest deer. I also fear that if Game and Fish implements a baiting ban where do they draw the line? Will hunting in a feed lot suddenly become hunting over bait? Will placing a blind near a hay bale be considered hunting over bait? If a farmer spills grain in a field and you hunt near it will that be considered hunting over bait? There are just too many variables here.

I would have a completely different opinion if the science showed that CWD was truly spread through baiting. But CWD is a smoke in mirrors game, and they have proven time and time again that it is not being spread through baiting. So please do not allow Game and Fish to take away another opportunity.

Ken Carbary

701 230 2875

The North Dakota Bowhunters Association (NDBA) has the following comments on House Bill 1151 that seeks to prevent any agency from banning baiting for the lawful hunting of deer. That would include preventing the North Dakota Game and Fish Department (NDGF) from implementing science-based restrictions designed to help reduce the spread of Chronic Wasting Disease (CWD) in North Dakota ungulates including deer and elk in and near units where CWD has been found.

CWD is an infectious and always fatal disease spread by deer which have the disease. CWD has continued to expand across the country and North Dakota. There are still many unknowns with CWD, but like all infectious diseases, putting distance between animals with the disease and those without it, helps reduce the spread of the disease. That is why we don't sit next to people who are sniffling and coughing, because we know it helps reduce the chance of us catching a common cold. If it would kill us, we would move as far away as possible. When CWD is identified in a Deer hunting Unit, banning baiting is one of the steps in the NDGF strategic plan to reduce the spread of CWD by putting distance between animals.

NDBA does not have a stance on the ethics of baiting as our members are diverse and some engage in lawful baiting, and some do not. We all want to see the deer herd managed in the way most beneficial to the resource. If the deer herd is significantly reduced by disease or mismanagement, it would have a significant impact on our members to hunt deer in this state.

The North Dakota Game and Fish Department holds Spring/Fall Advisory board meetings at multiple locations across the state to allow open public input. In addition, the NDGF professionals are always open to listening to comments and input on decisions affecting management of our game populations. After considering such input, the NDGF department attempts to apply the science and best management practices to their stated mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

NDBA has seen loss of hunting opportunity, including outright hunting bans, in many other states when game management is left up to their popularly elected officials influenced by well-funded outside sources. NDBA believes that game management decisions are best left to professional, science-based game and fish departments like the NDGF Department after considering public input. Passage of this bill would prevent the North Dakota Game and Fish Department from implementing science-based restrictions designed to help reduce the spread of wildlife diseases in North Dakota. For the above reasons the North Dakota Bowhunters Association (NDBA) opposes House Bill 1151.

Steve Goroski



Steve Goroski Board President North Dakota Bowhunters Association www.ndbowhunters.org

Dave Lunde

From:

Dave Lunde <davelunde@hotmail.com>

Sent:

Sunday, January 15, 2023 8:25 AM

To:

Dave Lunde

Subject:

Members of the Legislature,

Members of the Legislature,

In reference to Bill 1151 I am supporting this bill as I believe the North Dakota Game and Fish Dept overstepped their authority by not allowing hunting over bait.

There is not enough evidence to prove this theory. Every winter deer gather in herds of 50, 100 or even more throughout the state.

In the unit where I reside and hunt there is an ample deer population. Hunter success would be improved by supporting this bill.

Many deer are hit by vehicles which should be in a hunters deep freeze instead of laying along the highway.

A concerned Hunter,

David Lunde

Sent from my iPhone

To: North Dakota House Energy & Natural Resources Committee

From: Jay Gotta

900 Prospect Pt.

Bismarck, ND 58501

Re: HB1151

Dear Committee Members,

My name is Jay Gotta of Bismarck. I am here to testify in support of HB1151, the North Dakota Deer Baiting bill.

As a citizen of North Dakota, a father of four boys, and a sportsman, I applaud the North Dakota Game and Fish Department's efforts to expand hunting opportunities. The Department's recent ruling on baiting bans limits hunting opportunity. This bill is in response to the Department bypassing the will of North Dakota citizens and their elected legislature by fiat, to ban a common hunting practice, with limited scientific data to back the department's ruling.

The Department's response to confronting a disease in cervids known as Chronic Wasting Disease(CWD) has been to try and control the spread by trying to keep deer from congregating. The Department wants us to "Trust the Science". Or in other words, try to keep deer from acting like deer. That seems to me to be about as constructive as trying to hold water in your hands.

In exchange for potentially slowing the spread of CWD, the department has dictated that sportsmen give up their hunting right to pursue a harvest in a manner they enjoy. Some will argue that hunting over bait is not ethical. Does that not then call into question all hunting methods? What will be said when methods such as hunting from a heated box or ground blind is questioned? Or hunting over a food plot? Should trail cameras be allowed? Are these methods ethical? What happens when someone else's Ox gets gored?

I urge your support of HB1151 and the protection of North Dakota hunting opportunities.

Thank you.

RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support for HB 1151.

My name is Will Smith I am from the Sherwood area (3A2) where I have lived and hunted here my entire life. I have used baiting as a tool to help me get better shots at deer while bow and rifle hunting using a small pile of grain or even a bucket of apples. As a local sportsman and farmer I see a lot of deer activity all year round. Anyone can take a drive going any direction from town in the cold winter months and you will run into groups of 100+ deer standing in a field with their faces to the ground eating away digging up grain or eating piles of spilt grain with nose to nose contact. This is a natural occurrence that has been going on forever with no problem.

Sincerely,

Will Smith



January 16, 2023

TO: ND House Energy and Natural Resources Committee

FR: Ryan Bronson, Director of Government Affairs

RE: Concerns with HB 1151 Regarding Baiting

The RMEF mission is to ensure the future of elk, other wildlife, their habitat and our hunting heritage. We represent more than 225,000 members nationwide and more than 4,000 in North Dakota. Since 1991 RMEF has completed more than 250 conservation and hunting heritage projects in the state, enhancing over 59,422 acres and improved access to 36,317 acres.

RMEF is a founding member of the CWD Alliance, and we recently allocated \$100,000 in grant funding to assist with research to improve scientific understanding of CWD and to enhance ways to fight it. We worked closely with Senator Hoeven this past Congress to successfully pass the CWD Research and Management Act. We consider CWD a significant threat to deer and elk.

Baiting and feeding deer and elk can increase the risk of transmission of CWD prions, and the Department of Game and Fish have utilized baiting restrictions in areas where CWD transmission is of highest risk. Taking their authority away is counterproductive for slowing or stopping the spread of CWD.



NUMBER OF PROJECTS

Land Conservation & Access	15
Habitat Stewardship	44
Hunting Heritage	159
Wildlife Management	33
Total Projects	251

ACRES AFFECTED



Acres Conserved

Acres Enhanced

ND RMEF Chapters: 11 ND RMEF Members: 4,036



RMEF.ORG

NORTH DAKOTA

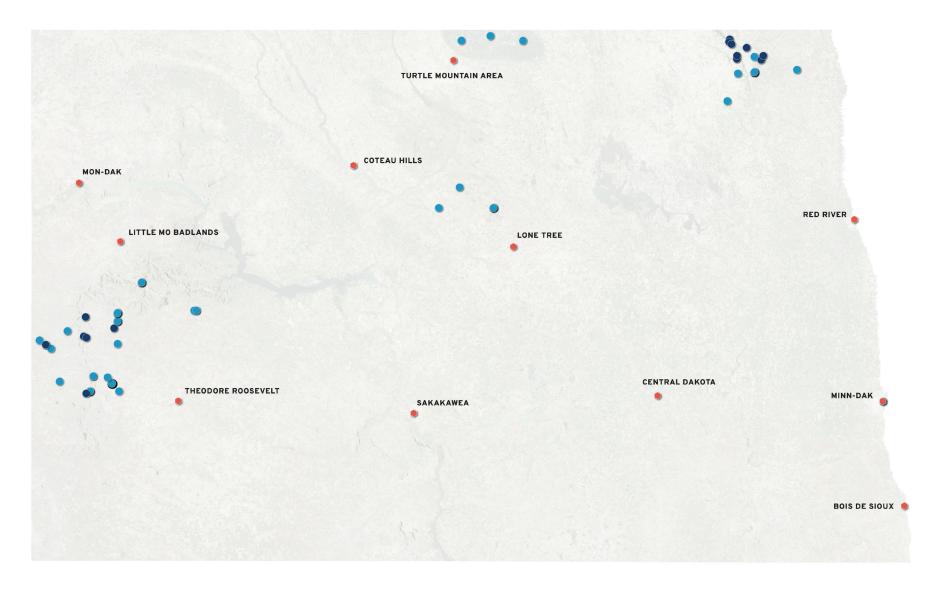
Project History Summary as of December 31, 2021

Since 1991, RMEF and its partners have completed 251 conservation and hunting heritage outreach projects in North Dakota with a combined value of more than \$13.6 million. These projects conserved and enhanced 59,422 acres of habitat and opened or improved public access to 36,317 acres.



Total Value of RMEF Efforts in North Dakota: \$13,639,928

CATEGORY	RMEF\$	PARTNER\$	TOTAL\$
Land Conservation & Access*	* Land Conservation projects r at time of transaction ra	\$6,844,633	
Habitat Stewardship	\$596,739	\$1,306,551	\$1,903,290
Hunting Heritage	\$261,145	\$3,114,242	\$3,375,387
Wildlife Management	\$314,088	\$1,202,530	\$1,516,618





NORTH DAKOTA

RMEF CHAPTERS



Dear Energy and Natural Resource committee,

This letter is to express my support for HB 1151

I am in favor of HB 1151 because if the game and fish bans baiting I feel like we will see a significant decline in the younger generation getting into deer hunting if not allowed to use bait. A bait pile is used to help make a clean ethical shot so the animal doesn't have to suffer. Also I dont think there is any science out there to suggest that a baiting ban will reduce cwd just look at other states that have banned baiting for decades and they are still finding cases at a record number but yet still seem to have a healthy deer herd. And lastly go for a drive around the country side in any winter especially this winter

and you will find hundreds of deer herded up together so is banning a bait pile that 10 to 20 deer come into really going to do anything when there is hundreds of deer eating out of the same hay piles and silage piles.

Thank you for taking time to read this and please vote YES on HB 1151

Sincerely
Trent Schatz

16 January 2023

Greetings,

I am writing in regards to HB 1151. I believe the ND Game and Fish has implemented a ban with the though "we just need to do something". We really do not know if banning baiting for hunting would stop the spread of CWD.

I can tell you that without this tool, recruitment of young hunters and women will be much more difficult. The ability to take my kids out at a young age (8 years old) to sit in a blind and hunt deer would be nearly impossible. Just seeing the wildlife that visit that small pile of corn or apples is a wonder in its itself. The memories made with my children in the blind are absolutely some of the best times of my life.

Thanks for your time.

Chad Clapper

Hello committee members I am writing this to letter in support of HB1151. I am a life long outdoorsman I have grown up bowhunting rifle hunting upland and waterfowl hunting and predator hunting. I have spent many hours in our great outdoors observing wildlife. As of recent the NDGF has implemented baiting bans on units in the western half of the state. This has ended a lot of opportunities for many people in the outdoors. Baiting will not spread disease any faster than one winter or one cycle of the rut. Deer are social animals that interact with one another year round. Our game and fish has tested 40,000 animals in 20 yrs and found 70 positive cases all of which were killed by bullets or arrows. The rules state you cannot hunt over bait but you can still bait. So the only time it spreads disease is when the hunter enters the equation. Without baiting my archery hunting will be a thing of the past and my children will never get to experience the thrill and exciting times Ive gotten to spend in the outdoor. Please suggest a do pass recommendation on HB1151 and lets enjoy the outdoors.

Damon Finley

(701) 693-6754

Damonhf12@icl

January 16, 2023

Mr. Chairman and Members of the Natural Resources Committee:

My name is Wade Williamson and I live in the rural Parshall, ND area.

I am in support of HB 1151 because I truly think that CWD is being used by the North Dakota Game & Fish Department as a means of pushing their personal agenda against the baiting of deer.

I am 70 years old and have been a hunter, land owner and conservationist for all of my life. I own about 4,000 acres of really good wildlife property and I usually spend in excess of \$20,000 a year planting food plots, developing habitat and feeding wildlife through the winters. I usually have 200-350 deer and over 1,000 pheasants plus all kinds of other wildlife right out my living room window. From breeding season through the winter until spring whitetail deer are very gregarious and "yard up." Until we can figure out how to change this natural phenomenon close contact of deer is not going to change.

Every year I have first-time bow hunters on my land and I realize the importance of having deer available to hunt. I am more fortunate than most people, but it is very hard to hunt whitetails in the prairie areas without bait. By using bait, I have found how important it is to have time and position for a successful harvest. We have lost a lot less deer while hunting over bait.

When the No Baiting/Feeding bill was defeated approximately 4-5 sessions ago I saw the North Dakota Game & Fish Department start to take a back door piece meal approach to the issue. Initially, banning baiting in mule deer units where CWD had been found and then on public and state land. After that they added adjoining units. I did not like what they were doing but until it affected what I did on my own property I did not verbally oppose it... now I most certainly do!!!

While visiting with a biologist this summer we started talking about CWD and baiting. His comment to me was that they did not know if baiting had an effect on CWD but if it "blew up" they did not want egg on their face... basically CYA!

I would like you to know that the North Dakota Game & Fish Department is not always right! I also don't think that they are totally aware of what is going on outside of Bismarck and are very slow to react to changes. Through the winters of 2008-2010 approximately 75% of the deer herd in our area starved to death but the North Dakota Game & Fish Department continued to sell excess doe tags for several years after that. I am not totally unhappy with the North Dakota Game & Fish Department, as there are a lot of good employees there. But, I do believe the baiting ban is being pushed by a select few using CWD as a reason. Please support HB 1151. Thank you for your time. If you have any questions for me my cell number is 701-898-0054.

To whom it may concern,

I am writing in regard to HB1151 and my support of it.

As a deer hunter for 38 years, I am concerned that my rights as an outdoors person are being infringed upon for no just reason. It also seems the ND Game and Fish (NDG&F) is doing a major overreach in the banning of baiting/feeding for deer due to Chronic Wasting Disease when there is little to no evidence to support such moves. The scientific research or proof that supports CWD being 100% fatal in deer, and/or that baiting/feeding helps to spread CWD is non-existent. So, in an attempt to stop the supposed spread to CWD, the NDG&F is allowing attractant/bait to be put out for the purpose of taking pictures of deer with a camera in bait banned units, but it's not allowed to harvest a deer with a weapon using that same attractant in bait banned units. That makes no sense and has nothing to do with the supposed "spread" of CWD. Instead, it sounds like someone is trying to tell us how we should hunt.

There has been 20 years of CWD testing in ND, involving 40,000 deer. Of those 40,000 deer, 70 tested positive, 69 of which were hunter harvested and killed by a bullet or broadhead. The other positive case was a deer found dead by Game and Fish and they chalked it up to CWD because the stomach was empty. That is less than 1% positive rate and no proof that CWD kills deer because all but one of the positive cases were brought in by hunters, the other because it had an empty stomach (starvation?). The subject of whether CWD even exists is still in question, but the debate that no deer have been proven to actually die from CWD in ND isn't. IF the hysteria over CWD and how easily it is spread is true, why is it only found in 1-4 deer out of 1,000? It's because many of the "facts" about CWD and how or why it is spread are questionable.

The NDG&F uses the Association of Fish and Wildlife Agencies Technical Report out of Washington, DC to come up with their CWD management plans. I invite you to read it over. In that report, 30 different words that leave doubt are used over and over as there doesn't seem to be much concrete, scientific, or factual about it. Here are a few examples: the word "can" was used 12 times, the word "likely" was used 10 times, the word "may" was used 46 times, the words "may be" were used 18 times. Yet over \$100,00,000 has been spent nationwide on testing and other CWD "issues". That money would be much better spent in other areas of deer health than chasing CWD. Alas, state agencies and money go hand in hand, unfortunately a lot of times common sense and what the people of the state want don't factor into it.

OK, aside from the lack of science and facts that prove CWD is 100% fatal to deer, or the fact that NDG&F allows bait to be put out for pictures, but not for hunting, and the contradicting rules they have in place in bait ban units. The other argument that has been presented when it comes to baiting/feeding is "ethics". If

there was ever a slippery slope on someone telling another person what is right or wrong when it comes to hunting, this is it. Bottom line, if you want to hunt over bait, do it. If you don't want to, don't. Nobody can tell me what is right or wrong based on their thoughts or beliefs. Both of my kids shot their first archery deer with the help of bait. My son was 9, and my daughter was 16, BOTH had the most amazing experience because of it! The odds of a well-placed and lethal shot are exponentially higher with the help of bait, than without. What is unethical about that? Instead, is it better and more ethical to be slinging arrows and bullets as deer pass by, not knowing the exact yardage, unable to get them to stop, wounding them with low percentage shots, etc.? This argument is similar to rifle hunters looking down on muzzleloader hunters, who look down on compound bow hunters, who look down on recurve hunters, and vice versa because they feel the way others hunt is unethical. Hunt how you want! Both of my kids are hooked on hunting now because of their first few experiences they had in the deer stand and the success they had with the help of bait. I could say the same for the older generation of hunters that I know who physically aren't able to walk far into the woods, climb trees, or quickly be ready for a shot opportunity as a deer approaches. Hunting over bait, where things can happen a little slower, or a little more often, has brought them many great experiences and has kept them afield for years longer. For me, as I've gotten older, it's more about the management of the deer herd in the area I hunt. It's easier for me to pick out the mature and older deer as I can study them for longer periods of time, and simply watching the interaction of deer gives me great pleasure. Right now, in unit 2B where I do the majority of my hunting, I'd normally be supplemental feeding the deer to help them get through the harsh winter. Instead, due to the confusion of baiting/feeding, and the fact a CWD positive deer was shot by a hunter last year 27 miles away in Minnesota, the deer in my area are digging and pawing through 2' of snow to try to find a small morsel of food. The inevitable winter die off of even a handful of deer due to starvation is still way more than CWD has ever been proven to kill. Finally, there are dozens of extremely knowledgeable people that have degrees and a lifetime of experience in testing and observing whitetail deer that do not believe in or support the CWD hysteria. If you are going to listen to just one of them, I would encourage you to see what Dr. James Kroll (aka Dr. Deer) has to say about it. He is substantially more qualified, in my opinion, than anyone in Washington, DC or the North Dakota Game and Fish in regard to CWD. CWD has yet to be proven as a deer killer even though it's been around for decades, as a result, the banning of baiting is uncalled for and unsupported.

Thank you for your time. John Lien

Hello, my name is John Arman. I am a lifelong resident of ND. I am the owner of Ultimate Outdoor Adventures TV, a Bismarck school teacher, and a Ranch owner. I am also a certified Bow-hunters education teacher and run a Bow-hunting camp here in Bismarck called "Raised at Full Draw"

I am fortunate that this baiting bill will not affect me either way or my ability to hunt. Being a landowner, I have the ability to put in food plots and manage the deer on my property. I am not opposed to baiting or for it. I believe it is up to the individual hunter to decide if this is what he/she wants. My main concern and why I support this bill is because of the lack of science behind the Game and Fish's decisions. I understand that CWD is real, it has been on the land scape since the 60s. I know it is spreading and there are some concerns. However, if you look at the true data and break it down there is absolutely no evidence that CWD is being spread by baiting. I have visited with the Game and Fish several times and have asked them to show me the periodic review or data that shows CWD is spread by baiting and there is none. We have found one deer in over 20 years in ND that was dying or dead from CWD. The rest of the positive cases were killed by hunters and a few by cars. I am all for the Game and Fish to continue looking for cures and testing but without the numbers/data I do not understand how they can take opportunities or a style of hunting away from the average hunter. As a landowner or non-hunter, I can feed deer all day every day without any problems. Now as soon as I become a hunter, I get punished. If CWD was truly this deadly always fatal disease, why would this be allowed. There are too many ifs and butts and not enough science to make these baiting bans and that is why I support HB1151. Thank you for your time and service to our state. John Arman

Dear Energy and Natural Resources Committee,

I am testifying in opposition to HB 1151. I am neutral on the practice of baiting itself, I do feel strongly however in allowing the state's hired scientists and professionals at the Game and Fish to do their job. They are the experts in such subject matters and should be allowed to do their job as they see fit in order to ensure we have healthy populations of all game and non-game species alike on the landscape.

Our elected officials are experts in many subject matters and they should be using their time and resources to answer the tough questions that are needed to run the state and leave all game and fish matters to the game and fish department as that is their area of expertise and their job. I believe it sets a dangerous precedent to allow the legislature to overrule the experts on any subject matter and could have dire consequences in the future for the wildlife in our state.

Thank you for your consideration.

Kevin Kuechle

RE: HB 1151

Dear Energy and Natural Resources Committee and Representatives,

I am submitting this letter in support of HB 1151. Prior to writing this letter I read some of the other letters, it is clear the studies that have been performed do not support the idea that baiting is the cause of cwd. I am a ND resident, but I also own land in MN which bans baiting of any kind yet continues to have cwd. If stopping baiting would cease the spread, why does MN still have it? The only logical conclusion is that banning baiting doesn't stop the spread, but simply makes the appearance of doing something even if it isn't effective.

I agree with all the others who referenced that deer feeding in a food plot have a much higher chance to come in contact with another deer then a bait pile as from what I have watched since 2013 when I bought the land, a single deer doesn't just eat the whole plant, they eat part of it and move on while another deer will come up and finish the plant. And on that same thought, deer spend much less time at a bait pile then in a food plot as the bait pile is only created to gain their attention for a short period of time while on their way to a natural food source. Deer in a food plot spend much more time as that is the natural food they are looking for.

I have been a bow hunter for about 20 years now. I am absolutely convinced that using a bait pile allows the hunter to make more ethical shots, creating the most humane kill possible as the animal is in a more predictable spot versus just trying to shoot one as it happens to walk by. I also don't believe that bait piles are the cause of cwd as the deer regularly visit what is called a licking stick. A place where both male and female deer visit to rub a hanging stick with their mouth to let each other know who has been there. This is used every year during the rut. If bait piles are supposed to cause cwd, why do deer naturally go to this licking stick? You would have to imagine that if transferring saliva from one to another is a cause of cwd, would they have been made to use a licking stick? Wouldn't they naturally be drawn to a better method of communicating with one another? Animals aren't made to engage in an act that will kill themselves.

Lastly, while not related to cwd, but an effect of banning baiting is that you loose hunters. For some, that 5 gallon bucket of corn is the difference between success and failure. Why the argument can be made that the hunter should become better, putting out that inexpensive pile of bait vs creating a food plot is most likely the difference between a person hunting and not hunting. Most people can afford that bag of corn, most can't afford the land, the equipment, the seed, the fuel or the time to create food plots. I know this first hand owning land in MN. I am fortunate to be able to afford planting food plots, but I don't have kids. If you want to continue to have hunters harvest the needed amount of deer each year to maintain healthy numbers in the herd, don't do something that will counteract that.

Thank you for your time....

Jim Steen

1/16/23

		٠		8
Δ	•	r	n	
_	и.	ы	п	

Rep. Todd Porter

Rep. Dick Anderson

Rep. Glenn Bosch

Rep. Jason Dockter

Rep. Jared Hagert

Rep. Pat Heinert

Rep. Jim Kasper

Rep. Andrew Marschall

Rep. Anna S. Novak

Rep. Jeremy Olson

Rep. Shannon Roers Jones

Rep. Matthew Ruby

Rep. Liz Conmy

Rep. Zachary Ista

RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support of the above referenced Bill.

I am 67 years old, and have been hunting in ND all my life. One of my favorite hobbies is archery hunting. I have health issues that restrict me from climbing into treestands. I cannot access a blind unless I am dropped off at the blind. I do not have access to thousands of acres of hunting land to hunt, and the land I have access to, and can physically access, does not generally hold deer. Baiting is the only tool that will help me, in my situation, bring deer onto land that I can hunt and help me harvest one. I have bought tags the last two years, but have not been able to hunt, because of the baiting ban in our area. I also love spending time with my grandchildren in the blind, and watching them hunt, and its not very fun for them to sit in a blind, if there are no deer coming in. They lose interest very fast, and probably will just give up hunting also. I would like them to experience the tradition of hunting, like myself and my children have over the years, and keep carrying it on. So please, help us get our rights to bait back. Thank you.

Sincerely,

Name:	Steve Gathman	
Date: _	01/17/2023	
Town	Berthold	, North Dakota

I would like to share my opinion on house bill HB1151.

First let us talk business. After all that is what game and fish is. A business with Employees and Wildlife valued as commodities and I truly have zero issue with that. Has the game and fish department considered the long term financial impact of non-baiting? Game and fish has really stumbled into a financial cash cow of bow tags with an average of 28,000 tags a year over the last 4 years at \$20.00 or more per a tag is \$560,000.00 a year or roughly 2.2 million in the last four years. Now why is this number important?

I for the first time since I began bowhunting did not fill my tag. My stepsons who are 16 and 14 also did not fill a tag. Collectively we hunted over 150days. For me it was a sour grape amongst a large bag of success but for my sons it was a large bag of sour grapes and it got to the point of where I was begging them to hunt. If they don't taste success soon bow hunting for them will be quickly forgotten. Now as the populations ages is game and fish willing and able to watch the bow tag purchase along with what is likely other tag purchase's combos etc. that are made when buying the bow tag slowly fade away as game and fish has made the sport unfulfillable for so many of todays young hunters? Seems to be a large monetary impact coming.

Now I would like to talk sensibility.

I can feed deer to look at out my window but I can not feed deer to harvest?? I mean really how could a person have even wrote this law without cracking up laughing realizing how ludicrous, Unsensible and Unenforceable it really is. Now I have zero argument that CWD is real and a potential problem. But how is not allowing me to have a way greater chance of filling my tag and thinning the population out safer for the deer then feeding them for my viewing enjoyment only? Science or no science there is no logical answer for that.

Secondly. What are you creating in hunters? Unsuccessful? Unethical? How many individuals have to wrestle with following a law that makes no sense and attempt to create success for themselves, Spouses , Children etc. that we so desperately want and need in this sport for a sustainable wildlife and game and fish future. Or break a law that is virtually unenforceable unless the game and fish is sitting on private property attempting to play gotcha. Seems to be an extreme can of worms that I have zero interest opening and nor should the game and fish as property owners do have rights to protect them from trespassing. How does game and fish show up door to door and say (we think you're doing something illegal and were going to go check it out) If game and fish is right lucky them. If game and fish is wrong ?.....

Lastly. Now I understand my arguments are all a double edged sword. CWD is real and Game and Fish has the nearly impossible job of curing what seems to be a uncurable disease. What will fix CWD? if the answer is science I can be on board with that quickly but science cost's money. Why not create a baiting stamp/tag? It alleviates the did you or didn't you break the law of baiting question. It is no different than do you or do you not have appropriate tags to hunt. And it would give your field staff an enforceable law Now I have no data on this but I am assuming 50% of the tag purchasers would hunt over bait. Charge 10-20 dollars for a baiting stamp and put several hundred thousand dollars a year or more since you potentially wouldn't see a decline in tags and put it all into a CWD fund and continue to try and find the

solution versus saying we don't want deer to congregate on a bait pile. But they can congregate everywhere else. Game and fish employ smart people. They all know bait piles are a very very small percentage of the issue. In the summer months I have more deer attack my garden and apple trees then my bait pile.

All I am asking for is a logical, sustainable way for my family's traditions to continue and for Game and Fish to put forward logical options that may cost us a dollar or two in the end but allow all of us to continue to thrive.

Respectfully

Josh Rauser

I am an avid hunter and love the outdoors. Over the last 4 years, I have gotten the opportunity to participate as an adaptive athlete/hunter with Prairie Grit Adaptive Sports and Prairie Grit Outdoors. I, along with several others in our outdoors group, have become very close and created lifelong memories spending time together hunting and enjoying the outdoors. We have volunteers that have spent A LOT of their time taking us out in blinds, traveling with us, preparing and setting up hunting spots for us to be able to hunt. None of the hunting opportunities would be possible without these volunteers in our group.

I am writing this because the rules on baiting by the ND Game & Fish have affected our hunting group and made it very difficult for us to enjoy a hunt. I respect the ND Game & Fish and think they do a wonderful job on so many things for North Dakota outdoors. But, these rules on baiting are hindering our experiences and making it very difficult for successful hunts for our adaptive hunters. The science behind these baiting restrictions do not seem to make sense to us and we'd love to have further discussions in order to make these hunts possible and successful for our adaptive hunters.

Growing up in North Dakota, I have always enjoyed our outdoors and hunting/fishing, but without Prairie Grit and the amazing volunteers we have, successful hunts and fishing outings would not be possible for me as a wheelchair user. Prairie Grit Outdoors and the people involved in Prairie Grit have drastically improved my quality of life and I wouldn't be where I am today, in life, without this group and the opportunities, confidence and friendships they have given to me.

As a person in a wheelchair, it is very difficult to navigate the outdoors in North Dakota in the winter. It is difficult for an able bodied person some days in the winter to navigate after snow storms, as we all know! So, getting the opportunity for a successful hunt is already few and far between for a wheelchair user like myself and several others in our group. By putting these baiting rules in place, that is making it even harder for us. Based on the science and the statistics of baiting wildlife, it hasn't shown that it really produces more spread of Chronic Waste Disease (CWD) and we have submitted the proof of that through others testimony in support of HB 1151.

I appreciate you taking the time to read this testimony. Please vote "Yes" on HB 1151.

Sincerely,

Drew Hanson

13 1st Ave SW #303

Minot, ND 58701

drew.hanson23@gmail.com

701-340-4996

Dear Energy and Natural Resource Committee,

This letter is to express my support for HB1151.

My name is Karson Backer, and I currently live in Dickinson, North Dakota. I know a multitude of friends, family, and coworkers that are avid hunters, and this bill will greatly affect the way they hunt, or if they are able to hunt at all. I used to hunt when I was in middle school and early high school, but since then my passion for the activity has faded. Nonetheless, my family relies on the meat produced each deer season to carry us through the years and feed our extended families. I live with my fiancé, my brother lives with his girlfriend, and my parents live together. These three households all are fed by the deer hunted on an annual basis, and the decision of this bill may decide whether or not we can continue to live off of the land, as God has intended. This meat is not only food for our bodies, but is a place for my family to come together and bond. Every year we take one-to-three days to process the meat from that year's hunt(s), and this quality time is precious to our family, as it brings us together for an occasion that is not simply a major holiday.

Please take this testimony into account when making a decision. This bill will be affecting more than those who are avid hunters.

Have a blessed day

Karson Backer

Does banning baiting for deer hunting by individuals, on private land, increase the amount of close contact in whitetail deer:

- The law specifically bans baiting on private property for the purpose of hunting big game. It is still legal to:
 - Put out feed for hunting turkeys. Deer and turkeys eat many of the same things so deer are eating this feed.
 - o Put out feed for the purpose of photography or watching wildlife, including big game.
 - Put out feed just for the purpose of feeding wildlife.
- Deer in North Dakota naturally group up in the winter so our deer herd will come into close proximity regardless of baiting.
 - o I fed deer at my house before it was banned in my unit. I estimate that 20-30 deer used the feeder at my house for 3-4 months during the fall archery season. There is a feedlot 1.2 miles from my house. In the winter months there will be 100-200 deer feeding and bedding in the silage and haystacks. The 20-30 deer that may have come into close proximity at my house are part of a much larger herd that will spend 2-3 months in close proximity at this feedlot. This seems to make the effect of my feeder at promoting the spread of CWD mostly insignificant.
 - I can't feed deer at my house for the purpose of hunting big game because it will spread disease, but my neighbor, 1/4 mile away, can feed deer and other wildlife for viewing. Once again this seems to make the effect of my feeder at promoting the spread of CWD mostly insignificant.
 - o Deer are naturally social animals, particularly during the fall breeding season. They mark their territory by making scrapes on the ground and using a "licking branch" above the scrape. A licking branch is a low hanging limb that deer rub their faces on to leave their scent. On one evening this fall I sat in a blind overlooking a food plot that had a scrape and licking branch. Over a time span of approximately 2 hours, I watched 8 deer feed through the plot, 3 young bucks, 1 doe with 1 fawn and 1 doe with 2 fawns. Of these 8 deer 6 used the licking branch. The 2 that didn't use the licking branch were fawns that were later groomed by their mothers who had. The potential of disease spread would be approximately 100%. These 8 deer are most likely spending the winter at the feed lot.
- NDG&F permits what is called intercept or preemptive feeding. This is done in cases where livestock feed supplies, silage and hay, are being damaged by wildlife. In these cases, feed is placed away from the farmyard, usually on travel routes that wildlife use to get to the farmyard. This is done to reduce the amount of wildlife damage to livestock feed supplies. At Advisory Meetings the NDG&F was asked if this practice would be stopped to reduce wildlife coming into close proximity of one another, thus increasing the spread of CWD. The response from NDG&F was that the practice would continue because they believe these animals would come into contact with one another anyway. This is the same argument that we have stated to them repeatedly. Small amounts of feed for hunting is not going to create more contact for wildlife because they are most likely going to come into contact anyway.

The rules that NDG&F have implemented to ban baiting in certain units do not affect everyone fairly/equally:

- In those areas where a banned unit borders a non-banned unit situations are created where one hunter can bait and another can not. If your neighbor across the road is permitted to put out feed but you are not, then you are at a major disadvantage.
- There are areas where there is a high percentage of success when hunting without bait. Those properties that have wooded areas, river or creek bottoms and coulees with good cover are some great areas to hunt. Those areas are not plentiful in North Dakota and are highly sought-after hunting locations. Getting permission to hunt those locations is difficult. Those hunters that can't get permission to hunt on prime property are left to trying to hunt on open cropland, pastures, CRP and sloughs. Without bait the probability of success in these areas is small.
- Planting food plots is permitted and a great way to bring more wildlife into your hunting
 area. This is not a practice that is available to most hunters. Planting food plots requires
 owning property or having access to property that the landowner will allow the planting of food
 plots. It also requires owning or borrowing the equipment needed to prepare, plant and take
 care of the crop. Successful food plots also require a commitment of time and money that
 makes it unrealistic for most hunters.
- The restrictions on baiting have caused more hunters to use public hunting areas like refuges, national grasslands and other wildlife management areas. This has caused increased hunting pressure in these areas for wildlife. It has also caused more issues between hunters in the field.
- While banning baiting can affect all hunters it disproportionality affects those that are disabled, older hunters and younger hunters.
 - O Hunting for disabled hunters presents physical challenges. Hunting blinds usually have to be established in advance to make sure that conditions will allow access. In most cases getting to the areas with heavy cover that are preferred for hunting is not an option. Disabled hunters usually do not get to choose the best location for their hunt. They must choose the best location that can be made accessible. Chances for success at these locations can be very limited without the use of bait. "We can't go to the deer. We have to get them to come to us."
 - Hunters that are confined to a wheelchair are less mobile in the blind as well. Moving a
 wheelchair from one shooting window to another without spooking deer is a
 challenge. For this reason, most disabled setups are designed with one primary
 shooting window. If the deer don't come within range of that window then success is
 unlikely.
 - Mobility can also be an issue for older hunters. As we age the ability to hike long distances or over rough terrain decreases. For those hunters an established hunting blind with feed placed nearby may be the only option for a successful hunt.
 - Mobility can also be an issue for those that are trying to get kids involved in hunting. Small children would struggle with hiking long distances or over rough terrain.
 - For those trying to get kids involved in hunting the key is keeping their interest. Most kids are going to lose interest quickly if they are not seeing wildlife. Placing feed nearby

increases the odds of seeing deer and other game. It creates a great learning situation when wildlife can be observed and discussed.

Thank you for taking time to read this. I would welcome the opportunity to visit with you personally if you have questions about any of the issues that I have addressed. Please vote "Yes" on HB 1151.

January 17, 2023

To: ND House Energy and Natural Resources Committee

I am testifying in opposition to HB 1151. I am a lifelong North Dakota resident and hunter and I have spent many seasons bowhunting whitetails over bait. I do not have a problem with the ethics of baiting deer. I do have a problem with restricting our state wildlife agency's ability to manage our wildlife and our future hunting opportunities effectively.

If HB 1151 is approved it will set a dangerous precedent. It takes an important wildlife decision away from the scientific professionals at the North Dakota Game and Fish, and turns it over to our Legislature where there is more opportunity for emotional, non-scientific influence from lobbying groups and the general public. The North Dakota Game and Fish has many tough decisions to make, but they have proven themselves to act in the best interest of wildlife and future hunting in North Dakota. States like Washington and New Jersey serve as examples of the dangers HB 1151 sets precedent for. These states have lost hunting rights and hunting seasons because wildlife decisions were taken away from their state wildlife agency and turned over to their legislature and public vote.

The folks at the North Dakota Game and Fish are pro-wildlife, pro-hunting, and are trying to do what's best to ensure quality hunting for future North Dakotans. Please allow these professionals to act in the best interest of future hunting opportunities and oppose HB 1151.

Thank you,

Jordan Gleason

My name is Jeff Chamberlain. I reside in district 8.

I am in favor of HB 1151 and recommend that it is passed. The bill moves to protect the right of hunters to pursue game over bait. I do not currently see myself utilizing bait for hunting, but I will not tell others what they should or shouldn't do. Please pass this bill.

January 17, 2023

To Whom It May Concern:

I am writing in support of House Bill #1151.

If you outlaw baiting it will hurt the bowhunting industry, from archery equipment sales to gas, food & lodging, outfitters will have fewer clients, license sales and the archery industry will drop to under 3/4's of what it is now.

The schools are teaching archery to our youth to promote the sport thus more hunting by youth. Right now, we have more interest in bowhunting than ever before, let's not destroy it.

Deer are a social animal, they are in constant contact with each other. Hard winters show them bunching up in herds of 200-300 in cattle feed lots and fields.

Do not outlaw baiting, just to say we did something. The Game & Fish Dept. has said there is nothing they can do to stop CWD and yes that came from the Game & Fish Dept.

Let's not put an end to bowhunting in ND.

Thank you,

Greg Kolstad Dakota Whitetail Guide Service Wild Things Taxidermy Sheyenne, ND RE: HB 1151 Dear Energy and Natural Resource Commitee,

This letter is to express my support for HB 1151.

I will not take up much of your time. I just wanted to take a moment to express my opinion and support for being able to bait big game for the purpose of hunting in North Dakota. I am an avid hunter and outdoorsman, I have 4 children that enjoy the outdoors as much as myself. When baiting restrictions were put into place in my area of northern ND a few years back, my children started to lose their interest in bowhunting. They were accustomed to going out and sitting in the blind or stand and seeing a wide variety of wildlife coming into the small 5-10 gallon bait pile that I would place out for the purpose of hunting. The squirrels, pheasants, rabbits, and numerous other types of wildlife would provide entertainment and help sustain interest in the outdoors for my kids as they wait for a deer to possibly come in. Unfortunately, now I have 2 children that do not wish to bow hunt anymore as it is boring to them without the wildlife activity that they were used to seeing at the bait pile. We all know we live in a world of expected instant gratification as anything our young hunters need to know is at the touch of a button. Hunting over bait provided this need our youth desired. If we do not assist in keeping our youth interested in hunting and enjoying the outdoors, what does the future of hunting look like?

Building our youth hunters interest in North Dakota's outdoors and hunting heritage along with increasing the odds of a clean/ethical shot at harvesting big game are just a couple benefits that hunting over bait provide. In my honest opinion, just these few benefits greatly outweigh the unproven science and the "possibility" that banning hunting big game over bait in North Dakota will slow the spread of CWD. CWD has been around for 100's of years. Our deer herd will continue to flourish and thrive for 100's more even with a bucket of corn on the ground.

Thank you for your time.

Sincerely,

Jeremy Handeland 701-334-6043 First I want to say thank you for the opportunity to speak on this. My name is Aaron Esquibel. I am here representing not only myself but Prairie Grit adaptive sports and I'm here to share my experience. I'm not talking in front of you today from the point of somebody who is pro-baiting or anti-baiting. I believe any talking point that views baiting as being anything more than a tool for hunting should be left out of this conversation. What I can tell you for sure is that I am conflicted. I'm not a Veterinarian. I'm not a wildlife biologist. There are people who are going to talk on both sides, who know much more than me. However, I do have a degree in biology and I know a bit on how to read research. The conclusion that I've come up with after doing my own research and talking to very knowledgeable people on both sides is that I just don't know. Because of that I am coming to you from the viewpoint of someone who would love to see continued research on the topic of chronic wasting disease. I believe it is our responsibility as hunters and conservationists to know what effect we do or do not have on the animals we hunt.

Here's something that I do know, I've spent the last three years assisting with facilitating hunting experiences for people with disabilities. I do know that we rely on the ability to bring the deer to us because our participants can't go to them. I know there are people out there who defend bait bans by saying "you're not real hunters if you can't hunt without bait." I've heard peolpe say "you're just lazy and refusing to learn a new way to hunt".

I'm here to spread some light on what hunting in our life is like. Our participants deal with everything from degenerative neurological diseases, to congenital birth defects, as well as injuries resulting in the loss of the use of limbs. Our participants can't hike. They can't climb trees. They can't get way back in the bush and spot and stalk. The reality for us is that the work comes in the form of modification and preparation. There are logistics in our way of hunting that significantly increases the level of difficulty. If you want just a taste of it, I challenge you to spend one day in a wheelchair. Just a normal day-to-day with infrastructure designed for people with disabilities is Challenging. Now, transfer those challenges to the outdoors and understand the increased difficulty.

Some of the necessary things that we've done to make hunting accessible is build wheelchair friendly blinds, constantly grooming and maintaining trails into those blinds and work our tails off to try to get deer in front of those blinds, yes with the use of bait.

Two years ago we lost one of our best and most accessible blinds when the unit just north of Velva was shut down for baiting. That change made our trip between 40-50 miles each way to get to a unit where baiting is still allowed. That's almost 100 miles every time we try to bring one of our hunters out. We are a nonprofit organization, and we rely on volunteers. These bans make life for our volunteers and our participants significantly more difficult, and in some cases adds a layer of difficulty that completely takes away the ability for someone to get into the outdoors with any chance of success.

To wrap up my testimony I want to reiterate that I don't know the answer, and after many conversations with the game and fish department, wildlife, biologists, wildlife veterinarians and other concerned sportsman. The consensus is they don't know for sure either. For every "may" in the research there could be a "may not", but contrary to that every "may not" could also be a "may".

My purpose here today is to remind everyone that the decisions the game and fish have to make have consequences. The decisions the legislature has to make have consequences. The decisions that we have to make as hunters and conservationists have consequences. Some of the consequences are intended, but some were unknown. I am here spread light on the fact that one of these unknown consequence to baiting bans happens to affect people that I love dearly and that I spend numerous days a year hunting with. People with whom the only chance I have to enjoy the outdoors and enjoy hunting with them is in an adaptive blind with bait.

So to everybody in the room I want you to make sure that you're not taking this lightly. No matter what way this bill goes and no matter what way baiting in the future of North Dakota goes, I want you all to remember that there are people who are going to hurt because of the choice to ban baiting, so if you choose to do such a thing or choose to not lift the bans, you need to make sure that you're doing it based on something. You need to be certain. I need you to make sure that you're OK with those consequences.

Thank you for your time.

Aaron Esquibel

HB1151

I support HB1151

Counties or hunting units that do not have CWD should not be restricted from baiting for deer hunting.

Shawn Schafer

1223 18th Ave NW

1-17-23

Turtle Lake, ND 58575

701-448-9189

23.0021.02000

Sixty-eighth Legislative Assembly of North Dakota

HOUSE BILL NO. 1151

Introduced by

Representatives Thomas, Cory, Grueneich, Heinert, D. Ruby, M. Ruby, Tveit Senators Elkin, Hogue, Meyer, Patten, Vedaa

- 1 A BILL for an Act to create and enact a new section to chapter 20.1-05 of the North Dakota
- 2 Century Code, relating to baiting deer for hunting.

3 BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

- 4 **SECTION 1.** A new section to chapter 20.1-05 of the North Dakota Century Code is created
- 5 and enacted as follows:
- 6 Baiting deer for hunting not prohibited.
- 7 The department may not issue rules or adopt a policy or practice prohibiting the baiting of
- 8 deer for lawful hunting.

Subject: I Oppose HB 1151

Dear committee -

We urge you to reject legislation that seeks to restrict or control the ability of the wildlife professionals at the North Dakota Game and Fish to do their job. That job, according to state law, is managing the wildlife resource on behalf of the public, for current and future generations.

The legislature should not be overruling biological decisions made by a network of professional and experienced biologists and veterinarians who specialize in the subject matter of North Dakota wildlife.

Article XI, Section 27 of the North Dakota constitution states,

"Hunting, trapping, and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people and managed by law and regulation for the public good."

H.B.1151 is in direct violation of the North Dakota constitution, North Dakota State Law, the North American Model of Wildlife Conservation, the mission of the North Dakota Game and Fish, and a breach of the public trust doctrine that all wild deer in North Dakota belong to.

Do Not Pass H.B. 1151.

Please stand with me and the North Dakota Chapter of Backcountry Hunters & Anglers in defending North Dakota's public deer resource.

Sincerely,

Eric Veidel

1017 W Avenue B

Bismarck, ND 58501-2407

In regards to bill HB 1151 $\,$. I feel that we will lose a lot people from the outdoors. We are taking away opportunity from the young kids and the handicapped $\,$. We need to give everyone a fair chance to enjoy what the outdoors has to offer. And get as much interest from the younger generation as we can. So I 100 % support bill HB 1151. Thanks for your time Troy Cooper.

Good Day,

I'm a longtime resident of North Dakota and have hunted here most of my life since I can remember. Today is a big day in the world of big game hunting because what is done here in North Dakota could set precedence everywhere in North America. The issue for CWD has been an issue for over 50 years. I remember doing a speech in 1987, 1988 in High School over this issue. I used articles from Outdoor Life, Field and Stream, and a couple other national magazines. From what the Game and Fish have done or not done from 50-30 years ago is nothing. The only things that has change are scare tactics calling this disease Zombie Disease to scare people into their agenda.

This disease is a money grab for the Game and Fish not sure where the Government funding goes but what they get from the Government could not be all spent on CWD study because if it was there would probably be an idea of what this disease really does. The Game and Fish says the deer will die from this disease but don't all animals die eventually, they say they will die a slow painful death but how do they know that when there has not been alive deer to test and monitor what happens to them. It is all a guess no science behind what they say, they say herds will be whipped out non have due to this disease the only herds being whipped are the ones that DNR have done to try rid the disease which has not worked. The forty some odd deer they killed back a few years ago near Williston found zero positives what good did that do nothing but take out 100 deer from our herds. Because many were pregnant does. The only thing done is test already dead animals from car accidents, hunting or other causes of death none have been found alive and then tested. They post pictures of mostly the same deer over and over and over again on the internet saying this is CWD which is probably EHD which is another issue. The DNR has no scientific evidence to support that hunting over food stops or slows the spread of CWD, they have no scientific evidence that herds are whipped out from this disease. Wouldn't you think that there would be more to testing this disease to find out more information from us hunters. Like when a deer head is turned in a questionnaire that would go along with the head or animal carcass like how was the animal acting, the shape of the animal, was it alone, was it near water, was it doing animal things, etc. Then when the results are out wouldn't it be good to know the age of the deer, the heath of the deer was it pregnant, etc. There is so much to know.

I believe this disease is to prevent game farms mostly but honestly the game farms are going to be the ones that will save the herd because they are the ones doing the most research on this disease. I believe that is where the funding should go is to people that are doing real research on this disease not where only testing is going on. Plus the DNR is the only tester of these animals. Shouldn't we have an independent company testing these animals has a community of sportsmen I don't believe a lot of what the DNR tells us. I would think after 50 yrs of finding this disease there would or should by now have an idea of what can slow or even stop the spread of this disease but we are still doing the same stuff that hasn't stopped or slowed the spread of this disease isn't that call insanity doing the same stuff over and over again with the same or no results.

So now I will support the issue for legalizing baiting or feeding of animals. I hunted over bait for about 12-15 years before the DNR changed the issues of feeding big game animals in certain areas of our state. I killed only 1 deer because I hunt a specific animal and stick to it. Now I have taken youth hunters out and have gotten many of them their first deer with a bow and now those kids are dedicated outdoorsmen and spend lots of money on the outdoors. To me this is the biggest issue growing our youth in the outdoors numbers are dropping with our youth in the outdoors due to mostly not having success in the outdoors. Feeding animals helps with the success especially where I hunt the prairies of North Dakota where animals really don't have a trail/place they go everyday like in wooded areas or thick cover where a trail or pattern is formed to set up on. The placing of feed is great to get animals to get a routine a place to go to with regularity. This keeps the youth involved when seeing animals in natural habitat and to get that close to them to hear them breathe, eat, and interact with each other a lot is learned. Like respect and patience. The feeding of deer also helps to determine health, age and populations of animals in your area to help with herd reduction and keeping a healthy herd. I know this works because before the hit of EHD I had animals in my area recover faster from the rut and the end of winter they were happy well feed so there was less stress on them. The bucks carried their head gear till the end of May and even into June I seen some of my best deer with their head gear late into the spring. I also had most of the doe have twins and even had 2 does that had triplets this to me is a good indicator of the health and no stress on the animals.

I would also want to talk about the ethics of feeding big game animals I do believe the Native Americas also fed animals to help their success rate so when people talk about ethics and that it isn't right because of ethics they can't tell me that hunting over food is not ethical. Hunting over food has been done since the beginning of time I have seen articles of Native Americans using corn to take turkeys using leaves and corn. They would cover themselves in leaves and have another Native American spread corn over the leaves then call the turkeys in and the turkeys would then walk on the leaves and the Native American would grab the turkey by their feet. If ethics is an issue then everyone needs to carve their own long bows, shape and cut their own arrows, chip their own hunting heads, and weaver their own bow string. Never use a gun again with a long range scope, use a range finder, use a bullet that is manufactured, etc. Hunting over food is almost the most humane way of taking an animal because they are relaxed can give you a better kill area for taking the animal clean and fast so animal doesn't need to suffer. "ethics"

The so called baiting of animals and not being able to hunt over food seems to me only singles out the hunters. Baiting/feeding of animals still can be done just can't hunt over feed right there that is saying can't hunt over bait singles out hunters. Seems to me if you want to stop or slow the spread all feeding of animals should be done but that is only if the science says it, there hasn't been proof that feeding animals speeds up the spread. I don't know the numbers of people that feed deer for hunting purposes or the numbers of people that just feed deer but I'm thinking there are more animals then people feeding animals that lick, rub, smell, ect what animals do to communicate with each other than feeding will ever due. Also how many carcasses are left in an area the animals walk by and smell, predators eat and then leave their excrements for animals to smell, lick, eat causing spread. If the DNR truly want to slow the spread then there shouldn't be any remains of the animal taken left in the field and the DNR should have a place to dropped off and burned. I bet there is also more animal carcasses left in the field then there are food piles for hunting purposes in a given area.

These are just a couple reasons of many that hunting over food should be legal as an American it should be my right to choose on my land to have healthy strong no stress animals that love to live there. If you don't want to hunt over food that is your choice I won't tell you that is right or wrong it is your tag and money spent to hunt how and what you want. Also it really isn't fair for some areas that can hunt over food and others close to the area can't animals don't know they can't cross a border to eat because some animal in there herd that test positive caused a border. Plus that positive animal is gone from the area so might not be anymore animals that would test positive. Age is also an issue with this disease the older deer they say test more positive then young animals well of coarse just like humans the older we get the more sick we get no different in animal world.

Plus in North Dakota the average deer killed is like 2.5 - 3.5 yrs old are those the animals testing positive or if you get lucky and shoot a mature animal more likely to test positive we don't know.

To me when animal test positive in an area there should be a study not just shut down or ban stuff there should be at least a ten year study of the area then that would give you a better idea of numbers age health all that to make a scientific plan to slow Or prevent the spread. I have read a lot about this disease and have found minerals that can be fed to animals that help slow or even stop the spread of CWD why aren't these issues being talked about there is so much out there that independent studies have found to help and a lot as to do with feeding animals that help.

In closing I hope that bill passes because it will help not hurt our animal herds and the economics of our communities and help getting more people into the outdoors. I feel a lot of people that don't support this bill don't read/study this issue and truly don't know what the DNR is pushing for their agenda to us hunters. They have singled us out on this ban without the science. So please vote yes to support all animals and outdoors people.

Lane Johnson
A life time hunter
Williston ND

I am a hunter and live in a family where we all hunt, including my wife and two daughters. We enjoy spending time in the great outdoors and look forward to our family time together around the hunting seasons. By the use of baiting, it allows my family to take good, clean shots on the deer that we harvest. This encourages our daughters to look foward to the hunting seasons and enjoy the feeling of providing food for the family. This time of year, especially with a winter with this much snow, I have seen many groups of deer all together out in the fields, all eating from whatever natural food they can find. I really do not see how a bait pile on private land that may bring in 5-8 deer in a season is a great concern. These memories will last a lifetime and get passed on for generations. They enjoy sitting in the blind and watching the wildlife and just getting outside (and not on video games or their phones!). For this reason, please vote yes on HB1151.

Regards, Thank you for your time! Jeremy Wittenberg Dear natural resources committee I am writing this in hopes you will vote in favor of HB 1151. This bill will ensure that myself and my dad will be able to continue our hunting traditions together.

Thank you for your time
Sincerely Kiefer Finley

Dear Representatives,

I am in support of HB 1151. I have been an avid hunter in ND for 35 years. I believe that this bill is very important for the future of deer hunting in ND. Baiting deer is very valuable for our youth hunters, and a great way to give them an opportunity they need to get started, and have success while building memories. Baiting is also essential for allowing opportunities for our handicapped hunters, and some elderly hunters, who would otherwise not have these opportunities. I also believe that because of the baiting restrictions that are already in place, we are seeing a lot of bowhunters going to public lands (Badlands) of western ND. In my opinion, there is too much hunting pressure in the Badlands. These hunters can no longer bait in their home unit, so they have to go where they have land access, and opportunity. Baiting also allows for clean, ethical shot placement as the deer are usually standing at close distance. This would result in fewer wounded deer on the landscape. Baiting allows hunters to target mature animals, allowing younger deer to grow. I believe that during harsh winters, baiting/feeding deer provides some extra nutrition and fat reserves that could prevent winter kill in some deer herds. I believe that deer will "yard up", or group together during the winter months regardless if bait is used or not. So as far as preventing disease, I do not think that making baiting illegal is the right answer. I think there are too many benefits with baiting, to prohibit it. Whether we as hunters are for, or against this bill, we need to realize the real reasons for hunting. For me, hunting means conservation, family tradition, memories, and getting youth involved, while creating opportunities for their success.

Thank you for helping me support HB 1151

January 17, 2023

Jodie Provost 3986 – 117th Ave. SE Valley City, ND 58072

Dear House Energy and Natural Resources Committee,

Please oppose HB 1151. Baiting of deer is not necessary to harvest them and it concentrates deer, greatly increasing the chance of disease transmission such as Chronic Wasting Disease (CWD). To keep a healthy and sustained deer population, deer should remain wild in their behavior and not artificially concentrated through baiting (or feeding).

CWD is a great threat to our state's cervid populations and the collateral damage from it spreading and becoming more prevalent is great. This damage includes a lower deer population, less recreation opportunity, fewer people hunting due to less deer and concern over diseased deer, less license fee revenue, a drain on staff and budget from spending more time on the issue, and increased chance it spreads to elk, moose, and mule deer, further exasperating the damage done.

Let's manage our public resource of wildlife smart, help ourselves out in the long term and do the right thing now - do not allow baiting (or feeding) of deer.

Thank you,
Jodie Provost
218-838-3553

RE: Support of Bill HB 1151

Doug Thorp

921 75th St. NE

Willow City, ND 58384

I am in support of this bill for many reasons. As a bowhunter and a grandfather, hunting over bait encourages the sport of bowhunting. I was able to help my children learn and enjoy the sport, and would like to do the same for my grandchildren. Being able to sit among the deer and learn their behavior makes for a better hunter. It is also more enjoyable to sit in a deer blind and watch the deer. Now they are unable to do this. Without bait, I do not think they will take up the sport of deer hunting if they don't get to sit and watch the deer. The placing of a small amount of bait increases the excitement for them as they watch a deer close up and encourages them to place an ethical shot.

I am not a wildlife biologist, but as a rancher, I have had many years of experience with hundreds of deer congregating in my cattle feed. I am also a hunting guide who has used baiting in the past. Typically, there would be 1-5 deer in the bait. It is hard to understand why the small amount of deer gathering around my bait is more of a problem than when the deer naturally congregate by the hundreds. As a rancher and hunting guide, it feels like we are losing more of our private property rights.

Once again, I am in favor of this bill.

Sincerely,

Doug Thorp

Not allowing hunting over bait, I will discourage youth at people with

Physical impairments from hunting all together

Shawa Kitzman

Dear legislators,

As a sportsman, I'm writing today in opposition of House Bill 1151 as it is written. The bill as currently written is very vague. It needs to be more specific and limited to special needs situations. Not only that it should be controlled and managed by the North Dakota Game Fish (NDGF), whom have the expertise in wildlife management.

North Dakota prides itself on accessibility for people with disabilities being able to hunt. There are groups for disabled veterans, quadriplegics, and others with limited mobility that assist in their hunting adventures. Therefore, allowing for baiting in these cases would be one of the special needs areas that should be allowed and supported.

If this bill is passed as written, it will prevent the NDGF from utilizing the tools they currently have to decrease or eliminate the spread of Chronic Wasting Disease (CWD). Right now, NDGF has put a ban on baiting in specific hunting units that have the positive cases of CWD. The ban prevents the gathering of animals that possibly carry the disease from spreading it. North Dakota is not the only state that is dealing with the CWD and baiting issues at the fore front. The Saskatchewan Ministry of Environment (2022) stated that within a 15-year period the infection rates in mule deer have risen from approximately 3% to 70% where bating is widely used and not regulated. Do we want the same thing to happen in North Dakota?

This is not about the right to hunt your private land the way you desire or restricting your way of hunting. It is about preserving our wildlife for future generation and most importantly controlling the spread of disease. NDGF is not trying to take away hunting rights with the current measures put in place to control baiting. If the spread is not controlled for the example in the case of CWD, the population will be reduced to a point that licenses will be almost impossible to get.

In closing, my recommendation would be to continue allowing the NDGF to manage our wildlife as they are the experts, not legislators. Bans are easier to reverse or change and can be implemented on an as needed basis. Laws are more permanent and take a majority to change

Thanks, you for your time and I encourage you again to think of the long-term effects and what's best when placing a vote for this bill

Pat

Dear Energy and Natural Resource Committee,

This letter is my way of expressing the reasons why I support bill 1151

I am a 16 year old hunter who has experienced the effects of baiting and no baiting. In my first couple years of bow hunting over bait, I would see some kind of wildlife on each sit and would come into range for a better chance of a closer ethical shot. During the change where there was no baiting allowed, I would go multiple sits without seeing anything and if I did see deer often times they wouldn't be within 50 yards. As a youth hunter it would be very easy to walk away from hunting. When I do go out for a sit I have to schedule around sports and other activities. When we had baiting, I could go out and would see wildlife activity within bow range and I could go out when my schedule allowed me. With no baiting, hunting requires a longer period of time to hopefully get lucky and have deer comes within range. For a youth hunter it can be hard to justify going out and sitting for hours knowing that there is a good chance that you won't have anything come close to you. No baiting does not help youth feel more involved in the outdoors and not many youth hunters have the chance to get close to wildlife and feel like they are connected to it. When I shot my first doe when I was 11, she was 20 yards on a bait pile and I dropped her. I instantly fell in love with hunting. Now I have seen how the effects of no baiting on new hunters through my siblings who are younger than me. They don't get any close shots and do not bow hunt because of that. When they hunt with a rifle they take far shots and often times miss. To me every missed shot gives you more of a reason to give up. When you are not an experienced marksman with longer shots, this can be very challenging and at this point hunting seems like more of a game rather than being close and seeing the animals every movement and then harvesting them. I have friends my own age who have completely quit hunting because of how challenging it now is with no baiting. I support this bill because if you don't get youth involved with hunting people will miss out on a great outdoor experience that teaches you a lot about life.

Sincerely,

Luke Jorde

Towner, ND

1/17/2023

Testimony in Support of HB 1151

I, like many other sportsmen in North Dakota, are very passionate about hunting. Spending most of my spare time educating myself by observing deer or reading about them. Deer health is always a top priority to ensure a bright future for our sport.

Deer constantly like to be congregated and are very social animals. Making direct contact by communicating through licking branches and grooming one another. Besides that most are eating together at the same destination food source. All this exposure naturally takes place year after year. Research shows that CWD prions in soil and on plants last for at least two years but likely longer. Deer are creatures of habit and will often use the same trails and eat on the same food sources each year. How does a deer briefly stopping at a bait have such a detrimental effect?

The data I have read shows in the past twenty years there have been 40,000 harvested deer and tested for CWD. In that time frame there have been 70 positive cases. Out of these 70, 69 were harvested deer and only one of them was a deer that was found dead. That is less than one percent of the tested deer testing positive for CWD. The numbers in all the current and past research do not add up to needing restrictions on baiting.

Currently you can bait if you want to get pictures but not if you have a weapon in your hand. Theories and speculation are taking away rights of hunters. Baiting should be a choice that is optional to all hunters. To limit educated, health conscious hunters who are trying to add nutrition to a deer's daily diet does not make sense to me.

Allowing baiting could get more elderly and disabled people involved in the sport. It also is appealing to out of state hunters in turn will increase hunting license sales. It is a great way to get young hunters outdoors and let them enjoy watching game in a close proximity. Baiting is a tool often used to help position deer for a more ethical shot placement. There are more pros than cons when it comes to baiting.

There is not enough factual data to justify not allowing baiting. I would appreciate it if you could reflect on what I have said and give back to sportsmen who are trying to enjoy their sport. Please vote yes on HB 1151.

Ιt	:hank '	vou for [,]	your time a	ınd consid	leration.

Sincerely,

Jordan Dahle

Hello, Im writing this letter in support of HB1151. Life long deer hunter with two sons following in my footsteps. My oldest has shot a few deer over bait and our hunting spots are mostly wide open crp and crop fields, without some kind of bait in front of him the chances of getting a deer in range of a 10 year old with a stick and string is slim to none. My youngest is 8 and going to start bowhunting this fall. Keeping him interested in bowhunting with not seeing any deer or not getting them in range will be a challenge. The banning of baiting will hurt the youth and the disabled hunters the most. Please support HB1151.

Thanks, Jesse Suckut

2023 HB 1151

As I look around this room, I can't help but think there are individuals here that, like many of us, will watch our favorite football team on the tv set. How many times do we complain about the plays our favorite team tries. "They should have run the ball, why didn't they try a deep pass, they should have kicked the ball." At times we feel we know more than the professional coaches and quarterbacks. If in fact we did, why aren't we the coaches or quarterbacks. We are what is referred to as an "armchair quarterback".

In 1930 the North Dakota Legislature passed legislation that established the North Dakota Game and Fish Department to be the authority on wildlife management for the State of North Dakota. They are the ones that have contacts all over the United States that can share experiences in the field of wildlife management. They have the wildlife biologists on staff. They are the people who work full time managing the wildlife that belongs to the people of North Dakota. They are the experts.

Who are we, the "armchair quarterbacks" to tell them how to do their job by passing legislation we think will "win the game".

We are not saying ban or don't ban baiting. This is not a baiting issue. We are saying let the North Dakota Game and Fish Department do their job for which they were created.

Vote a "do not pass" on this legislation.

The North Dakota Bowhunters Association (NDBA) has the following comments on House Bill 1151 that seeks to prevent any agency from banning baiting for the lawful hunting of deer. That would include preventing the North Dakota Game and Fish Department (NDGF) from implementing science-based restrictions designed to help reduce the spread of Chronic Wasting Disease (CWD) in North Dakota ungulates including deer and elk in and near units where CWD has been found.

CWD is an infectious and always fatal disease spread by deer which have the disease. CWD has continued to expand across the country and North Dakota. There are still many unknowns with CWD, but like all infectious diseases, putting distance between animals with the disease and those without it, helps reduce the spread of the disease. That is why we don't sit next to people who are sniffling and coughing, because we know it helps reduce the chance of us catching a common cold. If it would kill us, we would move as far away as possible. When CWD is identified in a Deer hunting Unit, banning baiting is one of the steps in the NDGF strategic plan to reduce the spread of CWD by putting distance between animals.

NDBA does not have a stance on the ethics of baiting as our members are diverse and some engage in lawful baiting, and some do not. We all want to see the deer herd managed in the way most beneficial to the resource. If the deer herd is significantly reduced by disease or mismanagement, it would have a significant impact on our members to hunt deer in this state.

The North Dakota Game and Fish Department holds Spring/Fall Advisory board meetings at multiple locations across the state to allow open public input. In addition, the NDGF professionals are always open to listening to comments and input on decisions affecting management of our game populations. After considering such input, the NDGF department attempts to apply the science and best management practices to their stated mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

NDBA has seen loss of hunting opportunity, including outright hunting bans, in many other states when game management is left up to their popularly elected officials influenced by well-funded outside sources. NDBA believes that game management decisions are best left to professional, science-based game and fish departments like the NDGF Department after considering public input. Passage of this bill would prevent the North Dakota Game and Fish Department from implementing science-based restrictions designed to help reduce the spread of wildlife diseases in North Dakota. For the above reasons the North Dakota Bowhunters Association (NDBA) opposes House Bill 1151.

Steve Goroski



Steve Goroski Board President North Dakota Bowhunters Association www.ndbowhunters.org

I am in favor of HB 1151 for the following reasons. As a landowner I feel its not ok for the Game and Fish to rule that we cannot bait especially if its on my own property. On a winter like the one we are experiencing either way I am feeding the deer/wildlife weather its in my pastures or in my yard where I keep the feed for my livestock. And its not only on winters like the current one it's every year that I get deer that accumulate to my ranch and they help themselves to my corn silage piles, alfalfa bales(or any bales) and to my grain piles used to feed my calves. One thing that helps is spreading feed out away from the yard to keep them out in the open in smaller groups. I dont believe there is an issue with disease as far as I can see because ever winter for a number of years these deer are grouping up at my ranch and the numbers do not decrease.

I also do not see an issue with hunting over bait. It helps get our youth more involved in hunting and also allows for a better shot opportunity. As long as we are lawfully hunting there shouldn't be a reason we cannot bait.

Thank you for reading this and please vote YES on HB 1151

Andrew Lemer

From: Jeremy D. Martinez (Twist of Fate)

Subj: In support of Bill #1151

To whom it may concern,

I was asked to write this letter in regard to a pending Bill that will eliminate the baiting of Deer in ND. As a resident of MN I know very well what it means to not bait deer. I have never personally harvested a deer over bait, but due to the proximity of states I am intimately familiar with hunting deer over a bait site.

The Twist of Fate annual hunt is a hunt specifically designed for Physically Challenged hunters. Each year we put together the event with many volunteers and several donations to host 12 hunters that would likely never have a chance to hunt and harvest a deer. I would like to take the next few minutes to share with you a few experiences I've had while guiding and volunteering at this hunt.

Back in 2007 I had the privilege of guiding my first hunter, he was a Navy Veteran with a cancerous brain tumor, doctors were unsure if he'd live another year. I brought him out to Kindred, ND for the ToF Hunt from Minneapolis Mn and he harvest his first ever deer....and sadly his last and only deer.

In 2019 I flew back from California to guide a special guest, my grandfather. At this point in his life, he was wheelchair bound and would likely never have another chance to hunt again. I had grown up with him teaching me how to hunt, but this time I was guiding him on his last hunt. He harvested a small deer which might as well been a trophy buck. I tied the deer to the front post of his wheelchair and pulled him and his deer backwards out of the woods nearly a ½ mile, all the time he was just reliving the moment and talking away. My Grandpa sadly passed a year later. Before he passed, I made a hunting video of that hunt for him to watch in his room as he was bed ridden and could barely move. His last days in bed were spent watching and remembering that final hunt.

In 2021 I guided a gentleman that was completely paralyzed from the neck down. He rode in a huge wheelchair that he controlled with his mouth. He had an assistant that never left his side. Using a crossbow mounted on a tripod, he also controlled by his mouth, he could aim and shoot. His ability to track a moving animal or even take a shot "quickly" was basically all but impossible. We watched several deer step feet and even inches away from where we could shoot them, but unless they were perfectly still over the bait pile I did not allow him to take an unethical shot.

In 2022 I guided a 100% blind Gentleman from Fargo ND. The experience will last with me forever. His inability to see did not limit his passion for the outdoors and he was very excited to be able to participate in a hunt like the Twist of Fate. Having to customize a crossbow for him and being his eyes was a difficult feat but having deer that came to a certain location and remained still enough for a shot made it possible for him to harvest a nice mature doe on his second day of hunting.

I can not speak for the rest of the state and the rest of the able body hunter populaton, but I can unequivocally tell you that without the ability to bait deer in ND our Twist of Fate hunt would not be possible. At this point in our almost 20+ year history there are hundreds of stories just like mine from the Twist of Fate. I look forward to that weekend hunt more than any other personal hunt. If any law prohibiting hunting deer over bait is ever passed, I would hope that there is an exception placed in the law that allows organizations like ours to either remain doing so or apply for a special permit. Thousands of memories and hundreds of lives have been touched by our organization and I fully understand these issues are complex but eliminating baiting could eliminate this hunt forever. I'm sure there are other organizations similar to ours, that would also be impacted by any limitations placed on baiting deer. I do not deer hunt personally in ND, so the Bill does not impact my freezer or my family, but I do know it will impact the success rate of this hunt if it is even able to be continued.

Thank you for your time

Semper Fi,

Jeremy D. Martinez USMC Retired

HB1151:

To whom it may concern:

Energy and Natural Resource Committee,

This Letter is being written to show my support of HB1151

I believe the North Dakota Game and Fish department does not have our best interests at hand. Almost every decision they make is based off of projected revenue. This year they still gave out whitetail deer tags in 3b2, 3d2, 3b3, 4a, ect. In these units there were almost no whitetails to be found in these units but they couldn't not get their revenue from licenses!

As a hunter and a landowner, I do not care weather or not we can bait. I care more about the fact that the NDGF thinking they have the ability to impose rules to private landowners is acceptable, but yet they have such good relations with all these said landowners. Private lands are exactly as they sound. Private for the owner of the land to decide what takes place on their land. If the NDGF wants to ban baiting they should go through legislation and ban the entire state not just a unit at a time.

That being said they're ban on baiting that keeps being imposed on us hunters and a landowners alike makes no sense. They're reasoning behind the baiting ban has no value or factual evidence that it will help "stop the spread of CWD." This winter is a perfect example of it as well. There's only so many food sources available to the deer and they all gather together around those couple of food sources' IE: haystacks, cornfield hill tops, ect. On top of the evidence the NDGF is providing, they are breaking their own rules on the ban of baiting by placing a ranchers hay bail in the middle of a pasture for the deer to congregate to prevent the deer from eating directly on that said ranchers haystacks.

The NDGF claims a deer with CWD only has a lifespan of 3.5 years. In our state with the section line rules and amount of rifle tags given out year in and year out the deer don't even make it to an average life of 3.5 years old to begin with!

I am in favor of HB1151 and have plenty more to ramble on about if you would like to hear more you can reach me at the number below.

Tanner Dolbec 701-880-8471 Hello, I am writing in favor of the HB1151 baiting bill. I have been a hunter all of my life and I am raising two kids of my own and want them to grow up hunting. Sitting there for hrs and not seeing any deer has them lose interest, if we could put bait out deer would be around all the time and help set them up for a more ethical shot. As far as CWD I have never seen a deer die from it, all the deer this time of year are all congregated to one area anyways so stopping the ban of baiting isnt stopping anything. But I hope we can get this passed and get our rights back. Please support HB 1151

Thank you
Josh Johnston

All,

I'm not in favor of or against baiting for deer. But I am against state laws that would directly affect the ability of the wildlife professionals at the North Dakota Game and Fish to do their job (House Bill 1151).

Legislators should not be overruling biological decisions made by a network of professional and experienced biologists and veterinarians who specialize in North Dakota wildlife.

House Bill 1151 is in direct violation of the North American Model of Wildlife Conservation (#7):

- 1. Wildlife resources are conserved and held in trust for all citizens.
- 2. Commerce in dead wildlife is eliminated.
- 3. Wildlife is allocated according to democratic rule of law.
- 4. Wildlife may only be killed for a legitimate, non-frivolous purpose.
- 5. Wildlife is an international resource.
- 6. Every person has an equal opportunity under the law to participate in hunting and fishing.
- 7. Scientific management is the proper means for wildlife conservation.

Thank you,

Brad Nickelson



Attn: House Committee on Energy & Natural Resources

Re: House Bill 1151 – Deer Baiting

Date: January 18, 2023

Position: Oppose

Honorable Members of the House Committee on Energy & Natural Resources,

I write to you today on behalf of the Congressional Sportsmen's Foundation in opposition of House Bill 1151, a bill that would strip the North Dakota Game and Fish Department of its ability to promulgate hunting rules. Specifically, the bill would bar the department from adopting any policy that prohibits the baiting of deer for hunting. In North Dakota, the Game and Fish Department (GFD) is the authority best-equipped to make science-based wildlife management decisions and should accordingly retain the ability to promulgate rules pertaining to hunting and wildlife generally. To ensure that the GFD may continue to manage North Dakota's wildlife resource through science-based principles, I respectfully urge the honorable members of this committee to oppose HB 1151.

Founded in 1989, the Congressional Sportsmen's Foundation (CSF) is the informed authority across outdoor issues and serves as the primary conduit for influencing public policy. Working with the Congressional Sportsmen's Caucus (CSC), the Governors Sportsmen's Caucus (GSC), and the National Assembly of Sportsmen's Caucuses (NASC), CSF gives a voice to hunters, anglers, recreational shooters, and trappers on Capitol Hill and throughout state capitols advocating on vital outdoor issues that are the backbone of our nation's conservation legacy.

Wildlife management decisions in North Dakota should be science-based, and the Game and Fish Department is unequivocally the best-equipped entity in the state to make those decisions. The GFD is comprised of capable wildlife biologists that understand the ever-evolving threats to wildlife species and can use this extensive knowledge to make timely adjustments through administrative action. It is imperative that the North Dakota Game and Fish Department, the agency specifically established by this legislature to protect the storied fish and wildlife resources of North Dakota, does not have their decision-making authority legislated away. I respectfully urge the honorable members of this committee to oppose the passage of House Bill 1151, thereby retaining the Game and Fish Department's authority to practice sound science-based wildlife management. I thank you for the opportunity to provide comment on this bill and welcome any questions that you may have.

Sincerely,

Robert Matthews

Robert & Matthey

Senior Coordinator, Upper Midwestern States

Congressional Sportsmen's Foundation

rmatthews@congressionalsportsmen.org | 517-210-2890

My name is Jeremy Shuck and I am writing in opposition of HB 1151.

This bill seeks to create vague legislation that prohibits a possible management tool of the NDGF for deer management now and in the future. There's already a growing body of evidence that demonstrates feeding wildlife increases the likelihood of spreading disease. As more studies are completed should they find known and unknown diseases that are spread more rapidly due to feeding of deer, it is deeping concerning to me that the management tool of prohibiting baiting would not be allowed because of legislation. Please oppose this bill that would limit wildlife management strategies now and for future management programs.

Best Regards Jeremy Shuck. Bill HB1151 is very important to get passed for many reasons. As many of you probably heard Ted Nugent and Keith Mark say on KFYR 550 raido, baiting deer does not affect the CWD disease at all. What it DOES affect is the success of the hunt, getting the youth and new hunters involved in the sport. This also allows for clean ethical shots for bow and gun deer hunters. Deer congregate in large herds and lick each other with or without the baiting law. A deer baiting band like is in place now isn't helping the health of deer at all. It is also very difficult to enforce the baiting law. An imaginary line (deer units) or (state lines) that does not matter to the deer we hunt, so having different rules for one unit vs. another unit is very silly. Please consider putting back our baiting law the way it was, This is very important to thousands of hunters across the state of North Dakota.

Devin Dorval
Construction Coordinator
Mountrail Williams Electric Coop
701-627-3550 (Office)
701-421-1490 (Cell)

I am opposing House Bill 1151. Much has been written about how few deer in North Dakota have been found with CWD. Let's keep it that way and not turn the great hunting of our state into what's happening in Colorado or Wyoming, where CWD is contributing to the decline in deer herds in certain areas of those states. In the very constitution of North Dakota does it state that "Hunting, trapping, and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people and managed by law and regulation for the public good". For the public good. Wildlife are a public resource and should be managed by the experts in a state game agency. Congregating deer herds in the winter and causing the spread of CWD is in direct opposition to the constitution of North Dakota. I've had great luck deer hunting in this state without the aid of bait and there's no reason why other hunters can't have similar success. My biggest nightmare is that my son won't be able hunt as I have because deer populations have been greatly diminished by CWD. There's nothing wrong with asking inquiries about the science used by any agency, but when the science is overwhelmingly saying "This is hurting deer populations", we need to listen. If we start doing this with every law or regulation that we don't personally like, even if the science supports the regulation, where's it going to stop?

Thank you for your time

Mike Bush

Members of the Energy and Natural Resources Committee,

I am writing to express my support for HB1151.

My position on baiting is neutral, and I believe it should be a hunter's choice on whether they want to utilize this method of hunting.

My concern with the ban on baiting is that the science just doesn't add up. In the 10+ years of CWD testing in the state, there have been zero deer that have been found dead where CWD has been determined to be the actual cause of death. The deer that have tested positive have either been hunter killed, or found dead, but the cause of death was unknown.

In 2020 and 2021, EHD ravaged hunting units in the Western part of the state, including the deer unit where my family farm is located, 3F2. The deer population in areas was reduced to a mere fragment of what it was before the disease hit, yet ND Game and Fish issued more deer tags for the 2022 season in the name of population decreases for CWD. The department failed the hunters in the state by doing this in my opinion. For the first time in my 38 years of rifle and archery hunting, our family did not fill one deer tag this past season.

The current baiting restrictions are only imposed on hunters, but anyone can bait or feed deer for any other reason-365 days a year. It just doesn't make sense to me.

Sincerely,

Jason Zins

I oppose House Bill 1151. This bill would strip authority from the ND Game and Fish Department (NDGF) to implement their Chronic Wasting Disease (CWD) Management Plan by prohibiting the NDGF from banning baiting practices in ND.

I do not have a stance on baiting ethics, but I do have a strong stance on legislation or ballot measures that seek to restrict or control the ability of wildlife professionals at the NDGF to do their job. Their job is to manage wildlife resources on behalf of the public, for current and future generations. The legislature should NOT be overruling biological decisions made by a network of professional and experienced biologists who specialize in the subject matter of ND wildlife. Period.

I strongly oppose H.B. 1151.

RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support for HB 1151.

I am from Sherwood and hunt unit 3A2. I started bow hunting only within the last 7-8 years. I have had to teach myself everything by learning from experience or listening to advice from friends that are bow hunters. In those 8 years, I have harvested one single deer. In those 8 years, there were MANY times I thought of giving up bow hunting as it became too difficult.

The other day as I was driving, I looked out into a harvested corn field and saw well over 150 deer eating close in proximity. I have seen 10-20 deer at a time in my back yard eating out of the same pile of fallen apples. Deer congregation is a natural occurrence whether hunters lay bait or not.

Sincerely,

Morgan Feland

My name is Wesley Maley, I am a law enforcement officer, licensed outfitter in the state and have a degree in wildlife management; the well-being of our deer population is my top priority. House Bill 1151 is essential to helping protect deer population and the economic impact hunting brings to our state. Many people are trying to use chronic wasting disease (CWD) as the reason to ban hunting deer over bait saying that several deer feeding on the same bait spreads the disease. The science over the spread and fatality rates of CWD is still being debated. Deer are extremely social animals that herd together from December to March, they do this for safety from the elements and predators. During this time, they eat from the same food sources. During the fall, deer constantly mark their territory by licking the same branches and hitting the same scrapes. Yet, somehow a 5-gallon bucket of corn is going to cause the demise of the whitetail population. Studies indicate male/antlered deer appear to contract CWD most often, but experienced outdoorsmen know they are the ones that spend the least amount of time eating from food plots and supplement feeding. Minnesota allows you to bait 10 days prior to the hunting season, South Dakota allows baiting 30 days prior to the hunting season. Both states talk about CWD but apparently it doesn't spread other than hunting season?

The North Dakota whitetail population is very unique and parts of the state have had habitat diminished drastically due to various reasons, increasing habitat should be a larger concern than CWD. Our weather also plays a significant part on deer population. This winter has already been devastating on North Dakota wildlife, the number of deer found dead from the storms is shocking. My family spends the winter months trying to help the deer survive by scraping fields down to the dirt and leaving up to 50 acres of standing crops. In places where these measures are not taken deer move into farms and elevators where corn is stored, if we can't stop deer from congregating in these areas what effect will banning baiting have in the long term?

Population control is another part of this debate. In the areas of the state that have a healthy population some degree of control needs to be in place. Bow hunting currently has a 40% success rate, remove the baiting element and that will decline drastically. This will leave a majority of the population control up to the 16 days of rifle season and car deer accidents. When population control can't be maintained disease is more likely to break out; the snow geese population was allowed to balloon leading to disease spread which has led to the deaths of numerous birds of prey all over the state.

Hunting over bait is very important for archery hunts to ensure an ethical hunt. Outfitters, like myself, that offer bow hunts want to ensure deer are harvested ethically and not left wounded and suffering. This is very difficult without bait as it helps ensure the deer are at the proper distance and angle from the hunter. This fall I will be hosting four Wounded Warrior hunters; this would not be possible without the knowledge that I can have the deer in the proper location for these individuals that may have limited mobility or require special aids. I invite those that say hunting over bait isn't a sport to come try a bow hunt with us.

Land owners already control if they want to allow baiting on their land. Baiting is illegal on state and federal land already. Banning baiting will only affect private property owners, the same individuals that care about our deer population and work to support it by building habitat, developing food plots and working to help wildlife survive our sometimes harsh and deadly winters.

The science does not support overreacting to CWD. If you read into it, you can find a theory to support any decision you want. Testing from Game and Fish indicates we have no problem with the disease. Yet it seems to be a priority during every conversation. Our issues with wildlife in North Dakota is habitat

and getting youth involved in the outdoors. I honestly believe that's where the time and money should be spent. HB 1151 simply gives the landowner the decision how they want hunting to occur on their land. You can debate how hunting is ethical from weapons to electronics. It simply comes down to how people want to hunt for themselves. HB 1151 leaves it to the outdoorsman and the land owners to decide how they hunt.

It doesn't matter if you'r talking EHD, CWD, or Avian Flu there is nothing man will do to stop it in the wild. It's based on population, and the good lord. We can't control disease in humans yet here we sit talking about stopping it in wildlife by locking things down. Game and Fish controls every aspect of hunting now and does a good job. I don't think there is a need for them to be involved in the fine details. This conversation is about much more then baiting. This is doing what we can to assist wildlife in the winter months to get them through. House Bille 1151 is simple and leaves the decision to the property owners in the state. Game and Fish made the decision for State and Federal Land and it's illegal to use a food source on them. I am fine with that. State Government shouldn't decide that its wrong if I leave an Alfalfa bale out for the deer in the winter.

My name is Bryan Backer, owner/operator of Gone Fishin' Taxidermy. I am writing to express my opposition to HB 1151.

North Dakota is currently experiencing low numbers due to EHD and drought to name a few root causes. CWD has minimal effect on deer.

Baiting deer allows hunters to ethically harvest animals, which keeps the herds strong and has downstream effects including patronizing butcher shops and taxidermists as well as ensuring healthy animals can reproduce and ultimately build stronger generations.

In addition, when hunting with a muzzle loader or bow, it is difficult to achieve a range close enough to the animal to make an accurate enough shot to harvest the animal as humanely as possible. Baiting makes this possible.

Furthermore, farmers or other landowners can "feed" deer during the winter, conditioning the animal to keep returning to a particular area. There is no difference between this and baiting deer for hunting purposes.

In summary, baiting deer affects one's ability to humanely harvest an animal as well being able to contribute to healthy commerce within a community.

Please take my brief comments into consideration and do not pass HB 1151.

I am in favor of HB 1151 please vote yes

Dear members of the natural resources committee. I am writing this in favor of HB1151. Please vote yes on this bill. Without the use of bait I'm afraid my bowhunting will be all but done. I am an avid hunter who loves to take kids hunting and myself. The congregation of deer is happens with or without bait this winter is an excellent example. Thank you for your time.

Sincerely Brian Schwan



Hello. My name is Adam Miller, resident of Bismarck and I am writing in opposition to HB 1151.

No matter the job or vocation, people work best when their ability to work is not being actively hindered or hamstrung by those around them. This can happen a number of different ways, from inadequate funding, micromanagement of competent people and even taking tools away from them, which this bill does. This bill would remove a tool the NDGF has, no different from removing a wrench from a mechanic's toolbox and still insisting that the mechanic can do their job as described.

Leave wildlife decisions to trained professionals. Please vote no on HB1151.

Dear members of the natural resources committee. I am writing this in favor of HB1151. Please vote yes on this bill. There is no science to prove that baiting spreads CWD. Our deer herds in ND are constantly in contact with one another. A baiting ban will do nothing to stop the spread of a disease. What it will stop is people from enjoying the outdoors. Thank you for your time.

Sincerely Craig Felchle

Please pass HB1151 my husband lives for hunting and taking kid's hunting. Baiting has been a very useful tool for him to introduce the outdoors to many new comers. The ndgf is not using common sense and science needs to be questioned. Thank you for your time.

Brenda Finley

Please pass HB1151. My dad takes me hunting and that is really fun. I like to watch the birds and squirrels and the deer are super fun to watch.

Josie Finley

Please pass HB1151. I'm strong for land owner rights. I'm a land owner in benson county. And the ndgf should not be able to tell me I cannot bait for deer on my own land.

Tim Finley

Dear Energy and Natural Resources Committee, I am testifying in opposition to HB 1151.

I am neutral on the practice of baiting itself, I do feel strongly however in allowing the state's hired scientists and professionals at the Game and Fish to do their job. They are the experts in such subject matters and should be allowed to do their job as they see fit in order to ensure we have healthy populations of all game and non-game species alike on the landscape.

Our elected officials are experts in many subject matters and they should be using their time and resources to answer the tough questions that are needed to run the state and leave all game and fish matters to the game and fish department as that is their area of expertise and their job.

I believe it sets a dangerous precedent to allow the legislature to overrule the experts on any subject matter and could have dire consequences in the future for the wildlife in our state. Thank you for your consideration.

Michael J Thomas

Life Long North Dakota Hunter

I'm in favor of HB1151. I'm an elderly woman who enjoys the outdoors. And have been hunting deer for many years please don't let the ndgf take away my right to bait deer on my own land. Carol finley

Please vote yes on HB1151. I'm not a land owner but I'm the guy who stops at your farm and will lend a hand and help anyone I can. I always ask for permission and have made many friends over the years stopping and talking to land owners. I have hunted over bait for many years. I don't own land and I don't have equipment to make food plots. The Game and Fish will give you seed to plant food plots. How is that not congregating deer into one small area. And they themselves have a baiting interception program where they place feed for deer to stop them from coming into peoples hay yards. Please vote yes on HB1151

Sincerely Kent Kaufman

I am in favor of HB1151. Please recommend a do pass recommendation. Gene Rosinski



TESTIMONY OF KEITH MARK

FOUNDER/PRESIDENT OF HUNTER NATION

RE: HB 1151

January 18, 2023 Mission, KS

On behalf of Hunter Nation and its thousands of members nationwide, I want to thank the North Dakota House Energy and Natural Resources Committee for giving me the opportunity to provide the following written testimony. Hunter Nation was founded to be the united voice protecting the American Hunter, our sport, our lifestyle, and our heritage, while standing for the principles of God, Family, Country, the Outdoor Lifestyle, and our Nation's Constitution. We have been involved in many policy fights across the nation, always in support of the American Hunter. We are testifying today in support of HB 1151, that states in part: "The department may not issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting."

As you consider the merits of HB 1151, Hunter Nation reminds this committee that in 2000, by an overwhelming 77% of the vote, North Dakotans supported The North Dakota Right to Hunt, Trap and Fish Referendum that stated in part, "Hunting, trapping and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people..." Therefore, any law or regulation must keep that constitutional guarantee in mind.

Hunter Nation contends the 2022-2023 Chronic Wasting Disease Proclamation that states in part: "It shall be unlawful for an individual to hunt big game over bait or place bait to attract big game for the purpose of hunting deer in deer units ..." (Thereafter, some specific units are listed that are defined on a map with arbitrary boundaries.) violates this constitutional guarantee. The proclamation is neither based on proven science, nor does it protect the public or hunter safety.

Although there may be some good intentions behind the proclamation, it fails both scientific and common-sense testing. Rest assured, Hunter Nation understands and agrees that CWD is an issue among whitetail deer and that it is transmissible among deer. Thus, if we start from a position of preventing transmission of CWD, or any contagious disease, management practices should seek to isolate all deer from contact with any other deer. Obviously, that is unsustainable even to the most germ-aware, good intentioned, among us. If we look at deer that range within the entire state of North Dakota, we must accept that deer that are part of the North Dakota herd are free to associate with other deer as they choose. Then, no matter the county, zone, or property deer are on at this moment, they are certainly able to readily associate with any other deer in North Dakota. The difficult thing with CWD is that it can be spread in deer feces, urine, saliva and secretions, and the misfiled protein can persist for years in the environment. Since CWD has already been confirmed in North Dakota deer, and deer defecate and urinate in the woods, CWD is also likely found in the soil in North Dakota. Therefore, CWD can be found in the dirt, whether deer are baited or not. There is no way to prevent deer from eating dirt for minerals, which they do, or from browsing on foliage, or any food source, that has contact with deer urine or other deer bodily fluids.

¹ "Discovery of CWD Prions in Soil Adds Piece to Deer Disease Puzzle" by Scott Gordon. Published May 22, 2018, WisCONTEX.

Additionally, all of us that have spent any time in the deer woods know that deer are naturally social animals. Deer constantly lick and groom each other for multiple reasons. Deer groom one another to remove external parasites, like ticks, from each other. They also groom to provide relief from the annoyance from hippoboscidae, known as a Keds, a biting fly that comes from Aisa. Grooming also maintains social bonds. This behavior is usually instigated by a dominant deer and then subordinate deer participate. Mothers lick fawns, including their tarsal glands and anal areas.² All deer participate in licking each other and engaging in nose-to-nose contact. This is a constant, daily activity.

Although deer are herd animals, studies have proven that deer are not exclusive to just one herd and can range many miles per day. In one research study, a deer traveled nearly three hundred (300) miles, eight and one half (8 ½) miles per day, in just over three weeks. The deer's movement was not restricted by a major river, railroad tracks or interstate highways.³ Obviously, he was not constrained by arbitrary boundaries drawn on a map, crossing both property lines and game zones.

Research also proves that as deer travel, they interact with deer from other herds, and they participate in the same social interactions.⁴ No arbitrary proclamation will prevent that. This God-created interaction will continue whether North Dakota prohibits deer baiting for hunting or not. Deer travel is unimpeded by property line or game zone. As they travel, they interact with other deer and perform daily grooming and other close contact social behaviors.

² "Field Talk: A field guide to whitetail communications" uncredited. Published 2006, Whitetails Unlimited.

³ "The Buck Stops Where?" by Jon Roberts, Joshua Millspaugh, Kevyn Wiskirchen, Jason Sumners, Jason Isabelle, Barbara Keller, and Robert Montgomery. Published June 8, 2021, Science News.

⁴ "Social affections and contact patterns among whitetail deer in disparate landscapes: implications for disease transmission" by Eric Schauber, Clayton Nielsen, Lene Kjaer, Charles Anderson and Daniel Storm. Published March 27, 2015, by the Journal of Mammology.

Therefore, allowing or denying deer baiting based on arbitrary lines on a map that deer readily cross over is not only without logic, it is not based on any scientific principle.

There are other issues that Hunter Nation would ask this committee to consider as part of its consideration of HB 1151. Hunting is a quintessential American pastime ingrained in our culture. From the Native Americans to the early settlers, from the men who fought for independence to the adventurers who explored new frontiers, hunting has played an unmistakable role in building and growing our nation. As our nation recovers from an unprecedented pandemic and faces social upheaval and a polarizing culture war that continues to rage, America's outdoor heritage and our country's fundamental values are under attack more than ever. The unique character and strong, rugged individualism of the American hunter is needed now more than ever. Any policy or legislation that hurts the recruitment or retention of hunters, is not only bad for the future of hunting, it is bad for the future of America. Our nation has seen a steady decline in hunting license sales since the mid-1980's, except for a small spike during the Covid pandemic. Cayla Bendel, North Dakota Game and Fish Region 3 Coordinator, attributes most of the blame for the decline in hunting license sales to an aging hunter and a decreased interest from younger people.⁵ Considering that the North Dakota Game and Fish Department relies entirely on license sales and federal excise tax, this is a trend that needs to be considered and taken seriously. No new hunters mean a certain extinction of hunting and the American Hunter. As it is the American Hunter that funds our conservation efforts, agencies like North Dakota Game and Fish will cease to exist. This will lead to the demise of the North American Model of Conservation and to the severe detriment of all species, game or otherwise. North Dakota and America need more hunters, not less.

⁵ "North Dakota sees continued decline in fishing; hunting interest for non-residents is up" by Makenzie Huber. Published in The Bismarck Tribune, October 30, 2021.

Unnecessary laws, like the arbitrary deer baiting ban, hurts the recruitment and retention of hunters.

Several factors should be considered when analyzing the recruitment of new young hunters. Hunting is competing with the fast-paced social media world and a society that demands immediate results. What once had to be researched in a library, can now be found in seconds online. Any law or regulation that makes gaining access to hunting, or impedes the success of a hunt, without just reason, is anti-hunting, and it should not be adopted. Some that oppose baiting say it creates killing and is not hunting. Who are they to impose their ethics on other legal North Dakota hunters? Every deer that is harvested in North Dakota, no matter the means or method, is killed. When biologists and other trained professionals complete accurate population studies, the key is that North Dakota deer hunters harvest the surplus number of deer to make room for the new fawns that arrive as part of God's miraculous renewable resources plan. It shouldn't matter if the method used is rifle, muzzleloader, cross bow, compound bow, or traditional archery equipment. As long as the hunter obtains the proper license and permit, hunts at the proper time and place, during the prescribed season, it should be legal. The key is to promote a successful harvest. Using a particular weapon or method doesn't make a hunter better or more ethical. The same is true with baiting or scent. Isn't the goal to make a clean kill so we can put pure organic protein on our family's supper table? Isn't a twenty-yard shot more makeable that a two-hundred-yard shot? Isn't a young hunter likely to enjoy his time afield with close encounters and success as opposed to no encounters and diminished chances of success? The questions are rhetorical as the answers are obvious! If baiting aids in a successful harvest, especially because there is no data that banning baiting prevents the spread of CWD, it should be permitted.

5

From a commonsense perspective, we can all agree the 2022-2023 deer baiting ban only applies to hunting over bait. If we are basing our decisions on sound science principles, are we to believe that close contact of deer around a food source only spreads CWD if there is hunting involved? Again, science does not support such an incredulous position. Yet some say the decision is based on science. They are not telling the truth.

There are many potential alterior motives. Some may have the misguided impression that if they can prevent deer baiting in their zone, then they have a better chance of keeping deer on their property. However, these individuals ignore deer movement studies, one of which I previously referred to! Some have the belief that real hunters don't need bait. Do real fishermen fish with a bare hook? Some say the amount of bait should be limited. Will they next want to regulate how big a worm can be used when fishing? These are the same people that sow discord among the hunting community by pitting gun hunters against bow hunters, bow hunters against cross bow hunters, high fence against no fence, traditional weapon against modern weapons, everyone against trappers, hound hunters, predator hunters and baiters. In the end, anti-hunting groups will never succeed in destroying our perfect hunting lifestyle. If we lose it, we will do it to ourselves. What a shame!

6

Lastly, Hunter Nation is opposed to unelected bureaucrats imposing wrong, immoral, cumbersome, or anti-hunting regulations on the American Hunter. This is an issue that should be addressed by the elected members of the North Dakota legislature. This should not be partisan. This should not be done by unelected bureaucrats. This should not be decided behind closed doors. This should be based on science, facts, data, and reason. This bill should not die in committee but must be moved to the House floor for a vote.

Respectfully submitted,

Keith Mark

Founder/President of Hunter Nation



To Whom It May Concern

In regard to HB1151
I am in favor of baiting deer in ND for hunting.

Yes, I believe CWD is a thing, however any ND resident that looks out the window today going down the highway or the farm to market roads can see the deer yarded up. I have listened to countless hours on both sides of the issue and think CWD has received all this attention in regard to a federal bill close to 500 million dollars on CWD Research, How do I get some of that?

I have seen a lot of deer in my lifetime die from EHD and ND Blizzards, we should focus our efforts on those two causes and work to better solutions.

I have a 77-year-old mother, who is a pancreatic cancer survivor, and an 80 year old father who was a bricklayer, I have two daughters that are just getting into hunting. My brother and I bought a quarter of land in 2014 and have planted thousands of trees and made the land better we removed 100 acres of pasture and let it grow wild, because there is a river that runs through it. We plan to bait because our family getting together to deer hunt is important, I think that could be said for most NODAKS.

The places where deer were during the hunting season are gone to bigger groups even if baited.

Is it legal to bait deer for photography, but we are then unable to hunt take an animal through baiting?

The NDBA severely discredited themselves with their letter, not even a membership vote? I was a lifetime member and am in the process of removing my membership.

There is no clear science whatsoever on CWD, Always a fatal disease? and science based restrictions? This sounds exactly the way Covid was peddled and only a few people know whats best and you have to listen to them?! The absolute waste of tax dollars on CWD is absurd and should be investigated.

Sincerely

Mark J Merck

January 18, 2023

Dear Chairman, and Members of the House Energy & Natural Resources Committee,

For the record, my name is John Weinand. I'm a farmer-rancher, sportsman from Hazen, ND.

My testimony is given in support of: HB 1151.

ND Game & Fish does not need any more power to ban hunting activities in ND. If the yarding up of deer is the basis for the ban, then we would have to change the natural activity of whitetail deer to be effective.

Over the years, I personally have observed large natural concentrations of whitetail deer along the Knife River and Spring Creek near Zap. I've seen concentrations of 200-300 in a very small area (prior to the EHD outbreak).

I see no benefit to a baiting ban as a method of fighting the spread of disease. It only reduces hunting opportunities and infringes on landowner rights.

Sincerely,

John Weinand

The North Dakota Bowhunters Association (NDBA) has the following comments on House Bill 1151 that seeks to prevent any agency from banning baiting for the lawful hunting of deer. That would include preventing the North Dakota Game and Fish Department (NDGF) from implementing science-based restrictions designed to help reduce the spread of Chronic Wasting Disease (CWD) in North Dakota ungulates including deer and elk in and near units where CWD has been found.

CWD is an infectious and always fatal disease spread by deer which have the disease. CWD has continued to expand across the country and North Dakota. There are still many unknowns with CWD, but like all infectious diseases, putting distance between animals with the disease and those without it, helps reduce the spread of the disease. That is why we don't sit next to people who are sniffling and coughing, because we know it helps reduce the chance of us catching a common cold. If it would kill us, we would move as far away as possible. When CWD is identified in a Deer hunting Unit, banning baiting is one of the steps in the NDGF strategic plan to reduce the spread of CWD by putting distance between animals.

NDBA does not have a stance on the ethics of baiting as our members are diverse and some engage in lawful baiting, and some do not. We all want to see the deer herd managed in the way most beneficial to the resource. If the deer herd is significantly reduced by disease or mismanagement, it would have a significant impact on our members to hunt deer in this state.

The North Dakota Game and Fish Department holds Spring/Fall Advisory board meetings at multiple locations across the state to allow open public input. In addition, the NDGF professionals are always open to listening to comments and input on decisions affecting management of our game populations. After considering such input, the NDGF department attempts to apply the science and best management practices to their stated mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

NDBA has seen loss of hunting opportunity, including outright hunting bans, in many other states when game management is left up to their popularly elected officials influenced by well-funded outside sources. NDBA believes that game management decisions are best left to professional, science-based game and fish departments like the NDGF Department after considering public input. Passage of this bill would prevent the North Dakota Game and Fish Department from implementing science-based restrictions designed to help reduce the spread of wildlife diseases in North Dakota. For the above reasons the North Dakota Bowhunters Association (NDBA) opposes House Bill 1151.

Steve Goroski



Steve Goroski
Board President
North Dakota Bowhunters Association
www.ndbowhunters.org

I am writing in support of HB 1151.

I am 18 years old and a senior in high school. Baiting for deer has helped me get the opportunity when I was young to get into bow hunting. It helps guys with younger kids get deer in closer and makes the shot easier. It also helps create opportunities for young kids to have the opportunity to harvest a deer. We need to have state law against this ban if we want a future generation of deer hunters.

Thank you for your consideration.

Brody R. Nelson

Minot, ND

RE; HB 1151

Dear energy and natural resource committee,

This letter is to express my support for HB 1151.

Regarding the batting ban

There is many reason why this "law" needs to be abolished

- 1. I would like to know the difference between being allowed to dump food for deer to acquire pictures and then it's illegal to sit over that same pile with a firearm does the spread of EHD only transfer from deer to deer when you're armed?
- 2. There's a lot of people that don't have the capability to make long shots or stalk deer with bows and not allowing these people the opportunity to hunt over bait is taking away the out doors from them. Ex. Elderly, disabled, youth
- 3. There is a lot of people who don't own land and have to get permission from land owners to hunt deer on their land and putting in food plots is out of the question.
- 4. Getting a deer to come into a little pile of corn 20 yards away to make a ethical shot is a lot more humane then now having people take long shots and crippling deer that go off and die
- 5. There is know difference between a small pile of corn or a farmer or rancher feed lot or grain bins in the winter we're hundreds of deer gather and eat out of the same pile

Sincerely: Cody pardon

RE: HB 1151

Dear Energy and Natural Resource Committee.

This letter is to express my support for HB 1151.

As a North Dakota resident and avid sportsman, I believe it is our responsibility to decide what we can and cannot do in respect to our natural resources. Not unelected NDGF officials with no scientifically based facts.

Sincerely,

Aaron Liebelt

The North Dakota Bowhunters Association (NDBA) has the following comments on House Bill 1151 that seeks to prevent any agency from banning baiting for the lawful hunting of deer. That would include preventing the North Dakota Game and Fish Department (NDGF) from implementing science-based restrictions designed to help reduce the spread of Chronic Wasting Disease (CWD) in North Dakota ungulates including deer and elk in and near units where CWD has been found.

CWD is an infectious and always fatal disease spread by deer which have the disease. CWD has continued to expand across the country and North Dakota. There are still many unknowns with CWD, but like all infectious diseases, putting distance between animals with the disease and those without it, helps reduce the spread of the disease. That is why we don't sit next to people who are sniffling and coughing, because we know it helps reduce the chance of us catching a common cold. If it would kill us, we would move as far away as possible. When CWD is identified in a Deer hunting Unit, banning baiting is one of the steps in the NDGF strategic plan to reduce the spread of CWD by putting distance between animals.

NDBA does not have a stance on the ethics of baiting as our members are diverse and some engage in lawful baiting, and some do not. We all want to see the deer herd managed in the way most beneficial to the resource. If the deer herd is significantly reduced by disease or mismanagement, it would have a significant impact on our members to hunt deer in this state.

The North Dakota Game and Fish Department holds Spring/Fall Advisory board meetings at multiple locations across the state to allow open public input. In addition, the NDGF professionals are always open to listening to comments and input on decisions affecting management of our game populations. After considering such input, the NDGF department attempts to apply the science and best management practices to their stated mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

NDBA has seen loss of hunting opportunity, including outright hunting bans, in many other states when game management is left up to their popularly elected officials influenced by well-funded outside sources. NDBA believes that game management decisions are best left to professional, science-based game and fish departments like the NDGF Department after considering public input. Passage of this bill would prevent the North Dakota Game and Fish Department from implementing science-based restrictions designed to help reduce the spread of wildlife diseases in North Dakota. For the above reasons the North Dakota Bowhunters Association (NDBA) opposes House Bill 1151.

Steve Goroski



Steve Goroski Board President North Dakota Bowhunters Association www.ndbowhunters.org To the House Energy and Natural Resources Committee,

As a North Dakota hunter, I believe strongly in ensuring hunting privileges are available to current and future generations. I side with Theodore Roosevelt who believed science should be the underpinning of wildlife policy. To this end, I oppose HB1151 as it is a direct attempt to circumvent the ability of wildlife professionals to manage our North Dakota deer herd, based on the best available science. The best scientific evidence to-date shows "Although important gaps in the scientific literature exist, current information is sufficient to conclude that providing food to wildlife through supplemental feeding or baiting has great potential to negatively impact species health and represents a non-natural arena for disease transmission and preservation."

Here is the research article where the authors make this statement: https://doi.org/10.1016/j.prevetmed.2013.11.010.

On a personal note, I lived in Wisconsin in the 1990's and 2000's when Chronic Wasting Disease (CWD) got out of control due to improper management. During the early years of CWD in Wisconsin, people were naturally upset about potential bait bans, but when CWD reached levels where it started to affect deer numbers, people quickly changed their tune. It certainly changed my attitudes towards baiting and regulation thereof. But by then it was too late. We had larger numbers of deer eradicated from entire counties by a combination of CWD and hired sharpshooters, which meant virtually no deer tags and hunting opportunities for several years. We are in the early years of CWD in North Dakota but the time to act is now. We can slow the spread of CWD and keep it at manageable levels so that it doesnt negatively impact our hunting opportunities. We will never eradicate CWD from the state but we can ensure it doesnt affect our hunting privileges.

Wr	nat	good	is a	corn	pile	withou	t deer	or a	license?	' Join	me ir	oppos	ing HB	11	15	1.
----	-----	------	------	------	------	--------	--------	------	----------	--------	-------	-------	--------	----	----	----

Sincerely,

Clint Otto

As someone with nearly 5 decades of work with whitetail deer I am firmly of the belief that the hysteria some have promoted over CWD is without warrant. In fact, the solution to dealing with this disease may very well be tied to providing a well-balanced diet to our wild deer herds through supplemental feeding. Unfortunately this disease has been politicized with many uniformed people blindly falling for the propaganda. I strongly urge the North Dakota legislature to allow North Dakota sportspeople and landowners to continue supporting wildlife populations through supplemental feeding.

I grew up hunting with a rifle. I don't think I even knew anyone who hunted with a bow. All that changed when I met Paul from Velva, a left-handed bow hunter. That fall I found myself up a tree in Paul's stand with his bow, on his property, and in walked a deer. Houston, we are go for launch.

The second year I was still pretty green but I had me one of those new lightning-fast compounds, with sights and trigger. I tried the more traditional approach. It's not ethical for me to shoot at something with a recurve or longbow. Fact is, after countless weeks of disciplined practice, I could just pass for a hunter the deer would consider a vague threat.

There is no substitute for experience and first year archery for me was filled with questions, only answered by time. Where to set up? How high, what tree, won't they see me? How do you know when to draw? I've since found out that many questions have nothing to do with first year hunting. I'm still asking myself those same questions.

The trail camera helped me the most. Having a picture of a buck gave me confidence and while I never really figured out a pattern, I always went out knowing there was at least one good buck in the area. He came by one night and alerted Houston that I was ready for lift off. Too late, too dark, too excited.

I started paying more attention to details. Picking the best wind and what I hoped would be a good night to sit. One of those nagging questions I asked, and still do is, "Won't I scare him off by over hunting?" I decided once a week at most would be my best strategy.

One of the best aspects of archery hunting is waiting. Silence and stillness bring out the best in nature. From birds to squirrels, clouds to leaves, it all takes on new meaning. Maybe we don't do enough of that, just sitting, being still and waiting. Just maybe sitt'n and wait'n brings out the best in people too.

It's Sunday, late November and we have a warm up with SE winds 10-15. Perfect. There is at least 16 inches of snow on the ground but the air is warm. I climb into the stand and follow my routine. Draw back, check for branches, sit down and wait. My rule in those days was ½ hour before sunset I would stand up and stay standing, just in case.

I'm an hour from standing when I notice a great set of horns moving my way through the trees, just like a TV hunting show. Glimpses of horns, testing the wind, cautious, silent, slowly moving my direction. He is at least 50 yards out yet. Slowly I stand, bow ready.

I'm certain he will hear my heart pounding. Mr. Big Buck sends reconnaissance ahead. I hardly remember the spiked scout as I was focused on a bigger target. Draw? Wait-- not yet- - easy-- wait. By now I'm not even sure I will be able to get my bow back.

Finally broadside, 11 yards, head down and slightly turned away, I make my move. I'm not that good of a shot and even 11 yards is no sure bet, particularly in my advanced stages of buck fever. Looking back everything was perfect. Broadside, head turned slightly, wind in my favor. Even the shot was perfect. The arrow sliced through and stuck deep into the snow.

Someone else was on launch sequence with Houston. I have never seen a deer move faster. Out of the trees, up the field edge, gone from sight in 2 seconds! Certainty and doubt meet in a head on collision.

Finally, I get a breath of air and realization begins to take effect. Snow is splashed red as far as I can see. Waiting for that necessary half hour is completely forgotten.

With a blood trail the color blind could follow, it was no challenge. 20 yards into the trail I remember my bow is still hanging in the tree. I still have symptoms of the fever. Back on the trail, through the deep snow, I see antlers on the ground. Deer Down!

Soon as I got home I told my wife, "Those guys who snort coke have no idea what a rush is!" Houston we are go for launch!

That set-in motion a series of lift offs. Jesse, age 9, my oldest, was in a tree 30 yards from my observation post. In walked a buck that turned broadside at 12 yards, his first. Now was my son's turn to run through the questions. We were quietly standing together at the base of his tree after his first encounter. Suddenly he exclaimed, "Dad, there is something wrong with my legs!" Looking down I could see the problem. Severe knee knocking had set in. Turns out the fever is contagious.

The next shot into space was a father, son team. Levi inherited his brother's bow. We were together in a pine tree. I silently whispered, "Easy, get your bow ready, draw, now!" I have no idea if the fever got him as I was too busy trying to manage my own symptoms. Levi, age 9, first buck.

All that family building adventure was the result of baiting. The extent of my permission was the outer edges of town on small 10-20 acre parcels. Baiting turned poor habitat into endless weekend adventures. A bonus was the flowers and gardens got raided a little less.

I won't get to decide if I introduce my grandkids to archery hunting. Big government has taken that privilege away from me and the landowners who used to let us hunt.

Coming up in a week or so is House Bill 1151. It would restore my right to choose if I want to hunt with bait or not. I know some won't bait, just not something that sits right with them. I'm ok with that. Choice is what gives us color, helps ourselves, and others see who we are. We are created unique, one of a kind, for a purpose.

I am, however, asking for something that will be hard for all of us. Some need to stand up and fly your colors. Others need to lower their flag to half-mast and let uniqueness have a chance.

I Matt Meredith am in support of Bill 1151.

Not only is baiting the deer a great way to make an ethical shot and have time to judge age of the animal. Its also a great way to keep the deer from having to travel miles to get to food sources and have the potential for coming into more contact with other deer. Have the right to bait deer also helps get the youth more excited about it being able to see more deer and for then to make an ethical shot and that in turn keeps the future of the sport going. I believe the answer is more baiting not less. There still hasnt been a single deer in ND that has been a confirmed death from CWD. This should be a choice, if you dont want to bait then dont but that choice shouldnt be made for you especially on private land.

Thanks for your time.

I am providing testimony in opposition to HB 1151. As a hunter of more than 50 years in North Dakota I am deeply concerned with this bill and the long term negative effects of this type of legislation to the North Dakota Game and Fish Department (ND G&F). This type of potential legislative over reach is dangerous to the function of the ND G&F and their ability to manage wildlife and wildlife diseases and threats. I believe North Dakota has an excellent Game and Fish Department with highly educated, experienced, and dedicated staff. Game and Fish personnel are professional biologists, veterinarians, and wildlife epidemiologists who are fully capable of making decisions and taking proactive actions to protect our wildlife resources in order to protect and enhance the great hunting and fishing heritage we enjoy in North Dakota.

I further believe that Chronic Wasting Disease (CWD) is an increasing and viable threat to our states deer, elk, and moose populations. CWD is expanding in both number of states and prevalence throughout the United States and is now in 30 states, 5 Canadian Provinces, Norway, and South Korea. CWD has been identified by wildlife managers, conservation groups, and researchers as one of the greatest threats to the future of deer and deer hunting and other large cervids such as elk and moose. As a landowner I am concerned with this disease and the effect it will have on wildlife which inhabit my land and all of North Dakota. This disease and the ability of ND G&F to manage this disease is so much bigger and more important than someones ability to bait deer.

I am asking you to please allow the Game and Fish Department to manage wildlife and wildlife diseases. I am asking you to vote no on HB 1151 for the future of North Dakota wildlife and our treasured hunting heritage.

Thank you allowing me to testify on this important issue.

Respectfully,

Jack Sorum

January 18, 2023

North Dakota Game and Fish Department 100 North Bismarck Expressway Bismarck, ND 58501-5095

RE: HB 1151

Dear Energy and Natural Resource Committee:

This letter is in strong support of HB 1151. My name is Travis Rinehart and I have hunted the great state of North Dakota since 2012. Our target game are white-tailed and mule deer but I've also had the pleasure of chasing upland game in your beautiful state.

North Dakota is often overlooked as a hunting destination but its truly blessed with quality trophy animals. Each year we strategically place trail cameras in July with hopes of catching a monarch buck snapshot by early October. And more often than not we are successful because of the use of bait.

Our hunting journal is chock-full of harvest memories from 2012 Curly Buck to 2014 Perfect Buck to 2016 Backer Buck to 2019 Bullberry Buck. The chase list goes on and on with Flattop, PJ, 60, Gregg, Sven, and Casper to name a few. I'm happy to report the North Dakota deer herd is healthy and bursting with world-class bucks!

All of these experiences are dependent on the use of bait. As the hunting season approaches we continue to use bait for a couple reasons. As an avid archery hunter I appreciate the fact of knowing the exact distance to my target. This provides the best opportunity to secure a clean kill shot and for my quarry to expire quickly. As the father to four children bait also provides increased success rate to my young hunters. The hunter as we know it faces extinction and its important we provide successful hunting opportunity to foster the passion our parents extended to us.

To recapitulate I strongly encourage you to support HB 1151 and keep providing quality hunting opportunity for the residents, non-residents, and youth of our Great Nation. Thank you for the consideration.

	essi		

Travis Rinehart

I am writing in support of HB 1151.

I think it's really interesting that you say we can feed deer all year around but once I put a hunter in a position to harvest this animal all the sudden it's illegal like we are the ones now spreading cwd, in the area I hunt these deer have herded up every year for last 42 years and I haven't seen a change where all the sudden deer are dead everywhere, no matter what you'll have weak or young deer die every winter. I have 3 young boys that absolutely love hunting and enjoy going to sit in a blind watching these deer. You take baiting away these kids lose interest pretty fast, I've explained it's hunting you can't always kill something every trip out but I promise taking baiting away these kids will lose interest pretty dang fast. You start taking young hunters away from hunting what do you think the future of ND hunting will look like? Rather than fighting us over this just so you can have more control that you don't need why not listen for once?

RE; HB 1551

Dear Energy and natural resource committee

This letter is to express my support for bill HB 1151

Hunting over foods plots is no different then hunting over a bag of corn I put down, if they really knew that feeding deer causes the spread of the disease then they wouldn't allow you to have food plots either.

So they say you're allowed to feed Deer to take pictures of them and is ok... but as soon as you have a bow or a firearm its illegal.

Hunting over bait and making a 20 yard shot is better due to the fact that 99% of the time you make a shot the deer will die within 10-20 seconds.. making a 70 yard to 90 yard shot on a spot and stock, most of the time you don't make the best shot and sometimes you may even hit them in a bad spot and run of un-trackable and they die and go to waste...

They tested 70,000 deer harvested and the percent that had the disease was less than 1%.

What's the difference between the deer eating the corn I put out or the 100's of deer eating the bails in the field's.

To Whom it concerns,

My name is Roy Aafedt and I own over 1000

Acres of land in the state of North Dakota. I am completely opposed to the NDGF having the authority to ban deer baiting on private land. I will give many reasons why I support baiting.

1. I grow trees and if deer populations are not managed it makes it

literally impossible to grow trees. A number of years ago when Randy Kriel

was the Biologist for the NDGF and I grew trees south of Fargo with considerable damage from deer the advice given to me was to and shoot. That seemed to work very well and I invited many bow and gun hunters to harvest

deer and in turn limited the damage caused from deer. In 1997 | counted as many as 116 deer wintering on my property and after that point reduced the deer population through baiting and hunting to manageable levels. Without baiting it would have been a disaster.

2. I am involved in a Nonprofit located in

ND that takes terminally

ill children and combat disabled veterans hunting. Without the ability to bait because of there health issues the programs we offer would have very little success. We have private land owners that are generous enough to

offer a place for these folks to hunt and bait for success.

3. Baiting also allows me as a land owner to allow bow hunters after

rifle season to have success harvesting deer if we feel the numbers are to

high going into the winter. Without out this option it could be devastating.

4. The science on CWD does not seem to support what is being proposed by the NDGF and I feel it just a way for the

NDGF to control land owners from managing their own properties. Owning land in 3F2 and not ever finding a deer dying tells me it is not as big of a problem that would justify banning baiting

Sincerely

Roy Aafedt

2597 116th Ave SE

Valley City ND 58072

Phone 701-588-4135

Chairman Porter, Committee members my name is Jamie Thompson a seventeen highschool student from Antler ND. I am here today testifying in favor of HB1151.

I was introduced to the sport of archery at an early age at our local bow club. After several years of becoming proficient my dad and brothers introduced me to the sport of bow hunting. We use baiting as a tool to position the deer for a clean ethical shot at a known yardage I am proficient at as an archer. That is the simple mechanics of bow hunting that has led to two successful archery hunts over the years, but the sport of bow hunting is so much more.

Being part of the archery community growing up has been a huge part of my life. I have learned that with one arrow you can take the life of an animal. With that being said, becoming a proficient archer was a top priority of mine. As the years went by I was finally old enough and ready to invest in a youth bow tag, which came with a lot of responsibilities. Not only trying to find the time I could put into sitting in the stand, but to practice and stay adept at shooting my bow. As the years went on and I slowly got more involved in school activities and sports, I soon came to realize that finding the time would be difficult. Every moment I had that was not filled with school activities or sports I found myself sitting in the archery stand waiting and hoping I could harvest a deer that time. Bow hunting takes a lot of time and patience, but time for me was not at the essence. I was very limited on when I would be able to sit for a deer. A person only has so much time to shoot a deer before the season comes to an end. Archery season goes into the cold, cold temperatures of the year; therefore, getting a good shot off on a deer can lead to more than just a short walk to find the deer. It can help protect the people from being out in the freezing temperatures for too long. Baiting has helped us to get the correct position of the deer to get a proficient shot off on a deer. Getting a good shot off on the deer also means the deer does not suffer from having an arrow inside of them and not dying. Baiting is used to help an archery have a successful bow season with a happy ending.

Bow hunting to me is so much more than just shooting a deer. It allows me to spend time and make memories with my family. Over the years the memories I have made with my friends and family while bow hunting have been some of the greatest memories I have. From sitting in the stand playing card games with my dad waiting for the deer to come in; to uncontrollable giggling with a friend even though you are supposed to be quiet while hunting. For me it has allowed me to see the happiness it brings to not only me, but to my family. After I got a good shot off at my deer this year and heard my dad say "Nice shot kid, you got him" then giving me a fist bump gave me the biggest feeling of happiness ever. Then hearing the voice of a couple of proud brothers as they got the call saying "Your sister got her buck" was something I will never forget.

The last thing I would like to say is that bow hunting allows a person to enjoy the peacefulness that nature brings. Seeing the wind blow through the field and the trees. Seeing the birds fly around singing their songs. Seeing the deer wander the land finding food and relaxing in the sunshine. Taking in the beauty of nature allows people to take a deep breath and enjoy the time we all have on this earth. To me bow hunting is so much more than just harvesting a deer. It is a whole life lesson waiting to be taught through generations to come.

In closing I would encourage a yes vote on HB1151.

Thank you, Jamie Thompson

I am writing in opposition to House Bill 1151.

Removing hunting ethics and hunting styles from this conversation leaves only one thing, the science. This legislation would remove the ability for wildlife professionals to use science and data to manage wildlife resources on behalf of the public. The system of wildlife management balances the needs of people and wildlife using the best available science. This is what our North Dakota Game and Fish Department is charged with and it is in the best interest of citizens of North Dakota to let them manage fish and wildlife populations.

I urge you to not base your decision on ethics and emotions, but rather, the science. The North Dakota Game and Fish Department is the agency with the data and the trained biologists to make informed wildlife management decisions. My family trusts the North Dakota Game and Fish Department staff, their data and their decisions on this matter, and we urge you to oppose HB1151.

Thank you for your consideration.

Kevin and Erin Kading Bismarck, ND



Date: January 18, 2023

From: Clifford F. Shipley DVM, DACT

To Whom it May Concern:

I have been asked to opine on supplemental feeding in deer in North Dakota. For background about my opinion, I offer the following information. I am a cervid farmer currently in Illinois where I have raised elk, whitetail deer and mule deer for approximately 20 years. I am also a veterinarian that has worked on Cervidae for almost 40 years in many states and hundreds of farms. I have been asked to speak at numerous state and national meetings and hearings on Chronic Wasting Disease (CWD) as well as other subjects related to Cervidae. I am an avid hunter with over 50 years of experience with deer hunting as my passion. As such, I offer the following for your information related to supplemental feeding.

First and foremost, supplemental feeding is recognized as a major factor in keeping a deer herd healthy. Dr. James C. Kroll of Stephen F. Austin State University has written extensively about the advantages of supplementing deer. Increased body weight, decreased death loss, more fawns born and raised to weaning and increased antler growth to name some of the most important benefits. In times of drought, increased predator pressure and severe winters, supplemental feeding is even more important. Getting adequate protein, energy and vitamins and minerals are important to animal health and welfare. We do this with all other classes of livestock and many states allow it. In fact, a state like Wyoming supplemental feeds its elk herd while at the same time bans private citizens from doing same.

Most of the concerns about supplemental feeding are based on a couple of different concerns. First, that supplemental feeding increases the risk of spreading disease. To the best of my knowledge, only one paper (recent from WI) indicates that it may cause spread. In areas where deer feeding has been banned due to disease (TB) in Michigan, the disease has continued to spread. CWD has the same story in many states that ban feeding. Illinois is a great example of that. First "discovered" in 2002 in northern Illinois, feeding was been banned prior and since, yet the disease keeps spreading. What most people fail to realize is that deer are very social animals and as such, spread diseases the same as humans usually do, through close contact and shared items. In this case, deer share licking branches, scrapes, rubs, groom each other, lick and smell each other, mate with multiple partners and so on.

The second major concern relates primarily to "fair chase" hunting or more simply put, hunting over bait to draw the animal in so the hunter has an "unfair advantage. To cover this properly, I'd probably need to write a book (and several have) to fully address this. After 50 plus years of hunting around the world, I can tell you that each person, area, community, or culture have their own value system that has been dictated by a variety of factors. In some areas deer are driven and hunted by pushing them past hunters. Other areas primarily hunt over feeders due to the fact that you can't see into the brush and cover and it allows a hunter to be very selective about the age and sex of the animal. Other people tend to pass judgement over the way animals are hunted but have rarely ventured past the way they were either taught to hunt or read about. It has proven very hard to dictate moral values (in this case the way deer are hunted) in this country.

Last but not least, I would have you think about making criminals out of people that just want to help animals. Are we going to ban bird feeders, cover crops, food plots and more? The last thing hunters want to do is to hurt the deer population. They see this as a way of caring for the animals while at the same time harvesting deer to feed their families and manage the population. Feeding wild animals also creates a market for grain and supplements that helps to drive the local economy. Texas routinely feeds more corn to wildlife than any other state yet have a population of deer estimated at over 5 million and growing.

In short, I would summarize by simply saying that the scientific evidence strongly supports supplemental feeding. If at a later time, it is shown that it isn't, laws may be changed to conform to new evidence.

Clifford F. Shipley DVM, DACT

Emeritus Associate Clinical Professor

Clifford F. Shipley DVM, DACT

University of Illinois

College of Veterinary Medicine

Salt Fork River Ranch

217-493-2958

cshipley@illinois.edu

Dear Ladies and Gentlemen of the House,

I am writing you today in opposition of HB 1151, not only as the Vice President of the North Dakota Bowhunter's Association, but also as a lifelong hunter, outdoorsman and conservationist.

I have volunteered thousands of hours and dollars over the course of my 33 years, and as Life Member and Board member of NDBA and Rocky Mountain Elk Foundation. I am also a life member of the National Rifle Association, Missouri Basin Bowmen, American Bear Foundation and annual member of the Pope and Young Club, Wild Sheep Foundation, Compton's Traditional Archery Club, Professional Bowhunter's Society, and others.

To put it briefly, my life revolves around hunting with my wife and family, while supporting the wild lands and critters that I hold so dear. While we can never satisfy everyone, I strive to do what is best for our PUBLIC wildlife resource, and for the majority of outdoor enthusiasts, now and in the future. Having taken my first deer with a bow at age 8, I have never found it necessary to bait a big game animal. Sometimes successful hunts don't conclude with a harvest. That said, we have amazing hunting opportunities in North Dakota, and I find it irresponsible to risk our wildlife simply because some individuals cannot be bothered to put in the time and effort to learn the woodsmanship and hunting skills that baiting substitutes for.

Many of the opinions that you are bound to digest will simply portray this bill as a "my rights" issue. I remind you that hunting is not a right, it is a privilege that countless hunters and conservationists have earned for not only us, but future generations. If this was just a private property issue, could the same not also be said for things like bag limits and legal hunting hours? Another defense often used is the youth, and how they can't be presented with opportunities without bait. I counter that if more of the mentors teaching them had the skills to hunt without bait, that the kids would benefit much more from learning said skills.

A debate often thrown around is "Where is the science?". It is quite available; however, science is rarely dealt with in absolutes. Science is nearly always a theory, backed up by probabilities and statistics. That is why no one can promise something when it comes to methods of preventing the spread of a given disease. If the G&F has this scientifically-proven method removed from their quiver, chances are that remaining tools will have to be reinforced.

In 25+ years of attending ND G&F Advisory Board meetings, I could probably count on one hand how many I missed in my region. Over that time, I have had the pleasure of getting to know many of our fine Department employees. I will be the first to tell you that our G&F staff are passionate and regularly go far above and beyond. I have hunted in many other states, and would not hesitate to say that we have the best Department I've ever encountered.

I encourage you to allow the fantastic professionals at the ND G&F to do what they have always done, and protect our PUBLIC resource for folks of North Dakota, not only today, but into the future. Please vote NO on House Bill 1151.

Sincerely,

Nevin Jenner – Williston, 701-570-0250

01/18/2022

House Bill 1151

Hello, I would like to say that I support this bill because it helps youth and elderly who cannot hunt other ways have a better opportunity to harvest a deer. Not being able to bait has caused many bowhunters to not be able to hunt anymore because they do not have a way to hunt otherwise. It is a good tool to make a good and ethical shot on deer. Please vote Yes on House Bill 1151. Thank you.

Otto Williamson Minot, ND I am a retired farmer and life long sportsman from North Dakota. I strongly support this bill. Norman Petrick I am in favor of HB1151. Please recommend a do pass recommendation. I am an avid whitetail hunter I take my elderly father hunting and my young kids. Without the aid of bait there is little chance my dad would have any type of opportunity.

Sincere Matt Seykora

I support 1151

I am a **sportsman**, **business owner** and **land owner**.

A Baiting Restriction is in effect because of CWD.

20 years of testing healthy harvested North Dakota deer.... 40,000 deer that hunters have turned in.... 70 positive tests in which 69 were hunter harvest, so no DEATH by CWD confirmed.

One was found dead, in Williston, that was classified as CWD death because the stomach was empty.

For that one possible CWD death, I feel that I should not lose the choice to bait.

If one wants to bait.....then bait.
If one does not want to bait....then don't

Pat Backer Center, ND

I support HB-1151

Hunting is an enormous portion of who I am and this is due to the RELATIONSHIPS that hunting fosters. Relationships with God, nature, wildlife, and people. The outdoor time that creates a tranquility and appreciation for what God has created to the time that the hunting process sets aside for me to relish in my family and friends.

I hunt because I value the tradition and it feeds my soul as well as my family and friends with the healthiest protein the land has to offer. I like contributing to conservation and management and making sure the deer have everything they need to be healthy. I appreciate what it takes to have the ideal habitat for wildlife and I feel it is my duty to take part in conservation. I enjoy the adventure and challenge of contributing to habitat and the physical, emotional, and mental tests hunting, conservation, and management challenges me with.

Section 1 of the North Dakota Constitution states: All individuals are by nature equally free and independent and have certain inalienable rights, among which are those of enjoying and defending like and liberty: acquiring, possessing and protecting property and reputation: pursuing and obtaining safety and happiness: and to keep and bear arms for the defense of their person, family, property, and the state, and for **lawful hunting**, recreational, and other lawful purposes, **which shall not be infringed**.

The CWD false hysteria is infringing on my lawful right to hunt in North Dakota. The restriction of baiting, is decreasing my opportunity to provide clean harvests. My children are being denied prime opportunities due to the restriction of not being able to have bait at the forefront of a hunt. My mobility challenged father-in-law is being restricted and this breaks my heart.

I am on the prairie for my profession and spend hours a day watching wildlife. EHD hit me hard to the soul to see, smell and witness the death of so many deer. The death and suffering was torture. In my area, 95% of the whitetail deer died from EHD yet we are placed in a CWD Baiting Ban unit because of a "case" within 25 miles of my unit.

When questioning what is the conservation and management plan for EHD, the response was one of low priority and proceeded with, "They will bounce back". In adverse commentary, the response to maybe one deer, in 20 years, of dying from CWD, has been complete hysteria and money mongering.

Because of the soul shaking event of EHD devastation, and the newly imposed baiting ban, I began researching CWD. Once you train yourself to get away from Google and seek uncensored resources, the current, on the ground, live research and experiences are abundant.

Over \$100 Million has been spent on CWD and recently another \$420 million was Federally approved. This for a toxicity that is on the landscape, in the soil, and has been for decades. The current average national prevalence rate is 1% positivity: Hardly a lethal percentage.

25% of the wild whitetail deer have CWD resistant genes and this is due to the natural survival mechanisms of our wildlife. CWD is NOT always fatal. Privately funded research has demonstrated this statement and continues to foster healthy deer.

I am out on the land for the majority of the day and I am not going to do something to the land, wildlife and area that would harm. I am not seeing deer being taken by CWD and at the same time, I KNOW there are procedures, we as stewards, can do to enhance the deer environment, habitat and health: Supplemental feeding being one.

The inability to bait, or supply supplements, has crushed the Hunter. What is the management plan when there is not longer the Hunter to aid in conservation and management all because of a false hysteria and big money?

I support HB-1151

Hello. I am writing to express my support for bill HB1151. I am a lifelong North Dakota resident and hunter. Some of my best memories growing up were sitting in a ground blind or tree stand waiting for deer to show up. Up close encounters with the deer are thrilling and bow hunting has been in my blood since I was a child. I'd dump a 50 pound bag of corn and it allowed me to see numerous animals on every trip to the woods.

I am a father of 5 kids. I would love for all of my children to also become bow hunters and experience that excitement. My oldest daughter is 11 and just able to start bow hunting. Currently the game and fish have prohibited hunting over bait in my hunting unit due to fears of CWD. As an average hunter, without owning private lands or the means to put in food plots, taking my daughter into the woods to shoot a deer with her bow is now extremely difficult. It is hard to gain new youth bow hunters with the thought of endless hours on stand without getting those up close encounters with the deer. I would appreciate it if you could support the bill to eliminate the power of the NDGF to unilaterally prohibit baiting for lawful hunting.

Thank you for your time,

Scott Mortensen

(701) 629-1696 New Town, ND I am in support this bill I am a farmer and long time hunter . I plant a lot of food plots .

I am in favor of HB 1151 please vote yes

In support of HB1151

I am a resident of Beulah, ND. I have hunting property in Oliver County (45 minute drive). The terrain of my hunting property consists if rolling hills and cat tails. My property is a passing through for the deer and baiting provides me opportunity.

I work 12 hour shifts and this delays me of being able to scout and hunt for deer. With a possible 1 CWD death, this does not warrant restrictions when it comes to baiting. Not only as a hunter, but landowner.

Energy and Natural Resource Committee, PLEASE pass HB1151

Brenden Sweeney

Written testimony in support of HB 1151 Dear Energy and Natural Resource Committee, I am writing to you today to show my support for HB 1151 which would make it illegal to ban baiting for the purposes of hunting (on private land).

Dear Energy and Natural Resource Committee,

Thank you for your time and consideration in hearing the general public input on a serious matter here in North Dakota.

I have been an avid outdoorsman my entire life, thus it was somewhat natural to pursue a degree in Biological Sciences from North Dakota State University, along with graduate studies at Northwestern. I have been following the CWD discussion closely over the last 10 years, when it became more mainstream in states to our east. I understand that this is a hot topic all around, and I do see both sides of this argument, but I hold my support in favor of HB 1151, due to my in depth Biology background, but more for common sense regarding this topic.

Until recently, my wife and I owned land along the Little Knife River, just west of Hebron. This area provides some of the best deer habitat in that county. 7 years ago we decided to start planting food plots and habitat for the wildlife. Over the years the food plots started getting larger; the final year of food plots was around 10 acres. During the fall and winter months, it was common to see 60-70 deer on our food plots in the evenings. During the cold spells, it was not uncommon for us to winter 100-125 deer every single evening. Simply put, the deer congregate, for survival, where there is food. Currently food plots are considered legal in North Dakota, but a 5 gallon bucket of corn or supplement feed is not, in the current banned units. I can say without hesitation, that food plots have congregated 10x more deer, than any 5 gallon bucket of corn that I have put on the ground. If there is concern about CWD and how it is spread, the game and fish is going down a very slippery road. The idea of stopping CWD in the game and fish's eyes, is to stop the congregation of deer from passing saliva to one another. There lies a huge problem. Deer naturally will congregate in the winters here in ND, and it doesn't matter if it's over a bucket of corn, cut corn field, standing beans or cut beans, the deer will congregate where they can survive, and they will always be in touch/contact with one another.

Following the science has been a huge topic from both sides of this argument. There is multiple sources to support both sides of the argument, but I think we need to look at these other states from a common sense standpoint. Some of these states have had baiting bans in place for many, many years, but CWD has not stopped or declined in many areas. Less than 1% of the deer tested in ND have tested positive for CWD. 40,000 deer tested showed positive results in 70 or so total deer. These were hunter harvested deer, not deer found deceased from "CWD" and then tested. This number alone should send shockwaves if we are "following the science". I think we all know we have heard that saying before, which focuses on my next point. Private land ownership.

While the game and fish talks about having great relationships with private landowners, these relationships are becoming more and more strained over the years, whether they want to admit it or not. Having the game and fish tell private land owners what they can, or cannot put on their own property will only heighten this strain. What is going to happen is we will go down another road of "Lock Out" that we saw the past couple years regarding private property ownership and access of those

properties. North Dakotans are getting very tired of being told of what they can, or cannot do in their own homes, or on their own lands.

My intent is not to rip apart our game and fish department. I am thankful for many of the things that they do to try to help our wildlife, however, in recent years, there has been a severe mismanagement of deer tags. For many in central and western ND, we saw the devastating effects of EHD on our whitetail population. For many units, there should have been no whitetail tags given out, but yet, there still was. The population was decimated in areas, yet, still tags were given out. The voices of ranchers and farmers telling the game and fish about these dire times fell on deaf ears. Only until a second year in a row of EHD, did the game and fish significantly drop tag numbers, but only in some units. While this is an entirely different topic, it does follow in with the bait ban discussion. Why are we not spending more time and funds focusing on how to ensure herd health, when we've lost estimated 100X-200X more deer to EHD death, than to that of CWD death? These are questions that need answers, but taking away more private landowner rights, is never going to fix the current issue at hand. For reference, on our old property in Hebron, and our neighbor's property to the west of us in Hebron, we found 100 dead deer in one season. This is on less than 300 acres of total property with the Little Knife River meandering through most of it. If we are following the science, we need to concentrate our efforts on EHD compared to that of CWD, because only one of those is the real threat to our deer herd in North Dakota.

I would like to sincerely thank you for your time reading this. I hope that you will continue to fight for us private landowners and hunters in North Dakota.

Sincerely,

Jordan Dyke Stanton ND 701-880-9965 I am in favor of HB1151. Please pass this bill I'd like to continue to hunt deer with my own chosen method. The NDGF cannot prove that baiting spreads CWD any faster than one cycle of the rut or one harsh winter.

Thank you Curt Peterson

I am in favor of HB1151. Please take landowner rights into consideration when deciding on this bill. I am a land owner and I would like to bait deer on my property and continue to be a steward of the land.

Thank you Dean Torfin

The game and fish have no reason to make it illegal to bait. No science behind it to back it up. Its all a power play. You drive into almost any farm yard/feed lot in the middle of winter there are several deer herded up. Its natural for deer to eat at the same food source. It makes bow hunting a little easier for our kids/elders, and normal guys that dont have a ton of time.

Im in favor of bill hb 1151.

I am in support of bill 1151 limiting the NDGF authority to control baiting in North Dakota. I feel the NDGF is cherry picking science to fit the narrative they want. I feel the NDGF thinks it is unethical to hunt over bait and they are using CWD to get rid of it. There is plenty of "Science" out there going against what they are doing in ND. Is there CWD sure but it is not the huge issue the NDGF is making it out to be! We lose more deer to EHD every year than we ever will to CWD. I feel this is governmental overreach and loss of rights/freedoms. If the NDGF is allowed to continue their goal of closing the whole state to hunting over bait than you will lose hunters and hunters do a lot for the wildlife.

House Energy and Natural Resources Committee:

I am writing today to submit testimony in opposition to HB1151.

My concern with this bill is not with the act of baiting in and of itself. My concern is with having legislative bodies create statute that will inhibit the NDGF's ability to manage game populations utilizing the latest science and best management practices. This bill may be well intentioned but it sets a dangerous precedent. Other states have had legislatures enter the wildlife management arena and have thus managed by "popular opinion" and have seen declines in opportunities and outright bans of some hunting opportunities. I don't want to see North Dakota go down that same road and therefore would like to see HB1151 defeated.

Thank you, Joseph R. Doll I am a yes vote on HB 1151.

I believe baiting is a good a good thing for the wildlife and I feel it gets more people involved in hunting especially our youth and female hunters. I also think baiting is beneficial to the wildlife as it gives them some extra feed sources.

I live on a ranch and therefore we keep adequate feed sources on hand for our livestock such as alfalfa hay, corn silage, different types of processed grains, and also various types of grass/forage hay. When fall/winter comes we always see lots of deer coming to our ranch and finding these feed sources in large numbers. That being said I believe if we are allowing baiting it will help keep these deer more spread out in smaller groups instead of all gathering in one area in a large group. So from what I'm seeing if

baiting is banned these deer will be in larger groups where ever they can find these feed sources which I feel is worse than keeping them spread out.

Please vote yes on HB 1151. Thank you

Kendra J. Dallmann

Please vote yes on HB1151. This bill will ensure that myself and my family will be able to continue to hunt and carry on a family tradition. Bans of any kind only hurt the sportsmen.

Thank you Jake Schwan

Dear members of the natural resource committee please vote yes on HB1151. The spread of disease is the cause of baiting. But I have to disagree. If there is a disease why aren't they trying to find a cure for it? Instead they are just trying to make sure they can find and ban hunting units. The game and fish have repeatedly said that they can do nothing to stop the spread of a disease. Why have they not tried to spend our money to find a cure rather they use it to make a smear campaign against the sportsman that bait.

Thank you Mike Buseth

I am providing testimony in opposition of HB 1151.

I've lived in North Dakota my entire life (36 years old) and have hunted and fished here for the past 30 years. I have also hunted in over 7 different western states for big game and I can tell you from experience, the North Dakota game and fish department is one of the best there is in this country. I truly believe that our G&F department has done a superb job over the years. They are professional, highly educated, experienced, and very willing to hear out public input and do what's best for the resource.

This bill is extremely concerning to me on many fronts. This type of legislative over reach is dangerous to the NDGF and their ability to manage the resources that we have in this great state while also being able to protect against wildlife diseases and threats.

CWD is a major threat to deer, elk, and even moose populations and is expanding throughout the U.S. People that have spent hours upon hours and years upon years studying and furthering their education becoming professionals in wildlife biology are showing us the data. In my opinion there should be a statewide ban on baiting not only due to cwd but also to ethics and fair chase of the resource. The current path we are on is not sustainable. Extremely high success rates due to long range rifles, advanced archery equipment, technology, hunters ability to spend more time in the field/spend more money towards equipment etc., 4 month seasons going well into post rut/winter, and the list goes on. Baiting not only increases CWD threats but is not fair chase.

I'm asking you to please allow the Game and Fish Department of North Dakota to continue to be able to manage the wildlife and wildlife diseases of this great state now and for the future generations. Please vote NO on HB 1151 for the future of this great state.

Thank you for your time and allowing me to testify on this important issu	ıe.
Respectfully,	

Blake Amon

1/18/2023

Chairman Porter and all members of the Energy and Natural Resources Committee,

My name is Chris Jorde and I am a 4th generation business owner, farmer/rancher, & landowner from Towner (District 6). I am testifying in favor of HB 1151.

My farm/ranch consists of mainly sandy soils that makes it very challenging to grow crops in years where limited precipitation is available, such as in last year's drought (2021). I mention this to start out because growing food plots are also almost impossible in dry years also. The crops I grow are Alfalfa, Corn, Oats, Soybeans, and cover crops; with a majority of my acres being in Alfalfa production to accommodate the sandy soils that I practice conservation on. Obviously with these crops grown bring a very large deer herd to my farm/ranch for those reasons every year! Like any other farm/ranch management, managing the deer herd that frequents my property is just part of the job. Most of my pasture land that consists of poplar trees and native grasses is within a very large block of mostly privately owned land similar to my own. This chunk of land is approximately 3 miles by 5 miles (approximately 9,600 acres) with no major roads within. Within this land is a very large deer herd (400-500) which has excellent cover and habitat, however does not have any agricultural crops within that only start on the outside borders on 2 sides. The other special feature about this chunk of land is that over time all of the farmsteads/ranch headquarters have been developed on the borders. Over the last few years, 2 large feedlots have been developed also in close proximity.

In the year 2000, I purchased a quarter of land from my grandfather with the intent of wintering my livestock on this land because of the excellent cover available on the border like others had done. Now I knew that with the large amount of deer in the area that I would have to do some major research and work to make both deer and livestock thrive in the environment. My grandparents had received a habitat award for this land in the 1980's from the Game & Fish department so I knew that keeping deer out of the feed that I planned to have there would be a challenge. Working with Game & Fish like most landowners do, we came up with a plan to erect a deer proof hay yard to try to mitigate any problems with feedstuffs. I took this process one step further, an old rancher once told me "Feed the best and they will stay out of the rest." So this is what I did from past experience seeing Game & Fish manage livestock feed problems thru their intercept feed program. So every fall, I would keep back 10-15 large 2nd, 3rd, & occasionally 4th cutting alfalfa bales to feed the deer periodically throughout the winter months. Feeding these bales in the best deer habitat I had within this large chunk of land proved to be the best thing to do as very seldom would I ever or other landowners have deer coming close to their winter hay supplies because they finally received quality feed in their prime habitat and were content staying there. Solving land management issues with a common sense approach goes a very long way! With the effectiveness of this practice, in 2008 I also started feeding high quality feeds and minerals to this deer herd year round all over my farm/ranch and actually was able to spread this large herd into smaller herds that would prove to be a valuable tool to help aid in disease control. This was a large benefit to all the hunters that had access and adjacent landowners in the area because the deer were everywhere!

Then in 2010, I started an Ag-Tourism business that promoted people coming to my farm/ranch and experiencing what we had to offer on 7-day stays on a working farm/ranch with abundant amounts of wildlife to experience. I went as far as going to hunting/outdoor shows in other states to promote my place as well as the state of North Dakota. Working with ND Tourism, offers were made to carry tourism

literature promoting ND in exchange for booth reimbursement at these shows. Now what I was doing was not unheard of because many other farmers/ranchers were doing the same thing to supplement their operations in "leaner" times also as North Dakota tourism promoters as well.

So when my area (3A4) lost the ability to hunt over feed that we had been doing many years in 2021, many producers lost valuable incomes and revenue that was being brought to the state of North Dakota thru tourism dollars and were not being spent in our communities. Most producers in my area were only bringing in ½ to 1/3 of what typically came before the rules changed; that is a major revenue loss to the state of North Dakota thru tourism! Many people love to experience hunting in North Dakota because of our large deer numbers and the ability to hunt open areas of land over feed that they may not be able to do in other places.

I know that most people say that management decisions should only be left to Game & Fish professionals with Biology degrees, but what about all the Farmers/Ranchers, Landowners, and Sportsmen who hold degrees in Farm/Ranch Management, Animal Science, Economics, or even Biology or Wildlife Management? These professionals also know what they are talking about too! Livestock producers know that most disease problems are usually feed related. I don't know very many producers that don't take their jobs seriously because in all reality, sick animals don't make you money and only cost you! So that is why landowners and producers want to have the ability to manage their property the way that they see fit! All landowners know that there has to be a balance between livestock and wildlife for all to strive on their private lands. With more than 90% of the state privately owned, you would think that the people who own the land and are driving part of the state's economy should be in control of their own property! As far as any possible disease outbreaks that could happen in the future, I believe that the North Dakota Board of Animal Health has the ability to control the ability and Game & Fish should not.

Now with the hunting over feed ban in place, more producers are having more trouble controlling the deer populations in their feed supplies with the fear of breaking the law if they feed and hunt over it while the Game & Fish can still "intercept feed" and not spread disease. The 2 large feedlots in the area now are having deer depredation problems that are causing them new problems that seemed to be under control for so many years before. Being able to hunt over food is a very effective and valuable tool that needs to be available for producers to continue to use to properly manage the deer herds on their property!

In closing, land & wildlife management should be done by the owners of the property since most land in our state is privately owned. Landowner, Game & Fish, & Sportsmen relations all need to developed in the future for success!

For these reasons I ask that you support HB 1151 and allow this valuable tool to be used again to aid in controlling the wildlife population on privately owned lands in North Dakota!

Thank You for your time and the jobs you do!

Respectfully,

Chris Jorde – Heart J Ranch

701-240-8696

chrisjorde@hotmail.com

January 19, 2023 TO: ND House Energy and Natural Resources Committee

FR: Robbie McQueen CWB®, M.S. Wildlife Behavior

RE: Concerns with HB 1151 Regarding Supplemental Feed Sites

This letter is to express support of HB 1151.

I am a Certified Wildlife Biologist® with a wildlife and habitat consulting company, M4 Outdoors LLC, located in Texas. Texas had the highest number of hunting participants with approx 1.12 million licenses being sold during 2022. We have also been dealing with Chronic Wasting Disease (CWD), with the first case being discovered in 2012, for a decade, with the current majority of cases being found in captive herds. Texas also allows supplemental feeding programs, which many refer to as baiting, which is wordplay that carries a negative connotation, but only when hunting is involved, not when any other interaction with wildlife is intended.

The driving factor for the opposition of this bill is said to be minimizing the spread of CWD in North Dakota by banning supplemental feed sites, but only for the hunting community, not for the wildlife viewing community as a whole. In order to increase the spread of a disease within a population you must increase the densities within an area where the disease is known to be present, then those newly exposed animals must move to a location where there is no known presence of the disease, therefore introducing and spreading the disease.

Hunting is one of the five tools described by Aldo Leopald, who is considered to be the father of wildlife management, in order to sustain a healthy and thriving population of wildlife. Hunting allows for the harvesting of what would be surplus individuals so that the carrying capacity of the habitat is not exceeded. Once carrying capacity is exceeded then we see the negative impact of higher densities in an area, not only on the habitat itself, but also the wildlife that is present. With over population we see increased starvation, increase of predators present, and increase of the spread of disease. By decreasing harvest opportunities, the opposition of this bill will in fact, create a situation in which it is intended to minimize.

The average home range for a male white-tailed deer is approximately 650 acres, with the core range being between 50 - 75 acres, this is where a buck will spend the majority of their life, and as they mature this tends to get smaller and smaller. Of course these ranges are directly impacted by available resources: food, water, cover, along with the space and arrangement of these limiting factors.

Supplemental feeding programs are utilized by game managers nationwide in order to allow for increased encounters and the opportunity for survival during the more harsh times of the year; the end of the summer and winter. Supplemental feeding programs, in essence, allows for increased food resources spread about the landscape, minimizing the impact on the habitat on a local scale, and decreasing densities within a specific area. If we are providing additional food sources across the landscape we are already addressing the increased density potential which would directly impact the potential for the spread of a disease, by minimizing the need for movement outside of this core range. As we see above with the core range being 50 - 75 acres, if we are able to provide supplemental feed throughout the year, within these core ranges, the white-tailed deer would continue to maintain its presence within this core area. Minimizing the need to search for food will allow for the minimization of the spread of any disease.

I have conducted research on "attractants and baiting techniques", which are said to draw deer to a certain location in order to increase encounters. In these studies it was concluded that attractants/baits, of any form, do not draw deer from distant locations, nor change their day to day behavior on any scale. One study was performed on a captive herd with known densities, known travel patterns, and multiple species of ungulates present. This study showed there was no significant change in their daily movements to suggest attractants or "baiting" would cause an animal to change their behavior. Therefore to say supplemental feed sites would unequivocally lead to the increase of the spread of any disease is misleading at best.

The opposition to this bill appears to be targeting the hunting community alone, if supplemental feed sites increased the potential for the spread of disease, wouldn't "attracting" these animals to a site, without removing any individuals, increase the potential of transmission. Whereas harvesting the surplus would only contribute to the minimization of the spread of any communicable disease.

Thank you for your time,
Robbie McQueen CWB®, M.S. Wildlife Behavior
M4 Outdoors LLC
Robbie.McQueen95@gmail.com

To Energy and Natural Resource Committee

RE: HB 1151 (in support of)

What happens when the government for the people take away all baiting practices whether it is fishbaiting, trap baiting, deer baiting, squirrel baiting or bird baiting. My point is down the line it's just another attack on meat eaters.

All outdoorsmen know that there is nothing meaner than Mother Nature at times. I have seen it in all wild creatures.

I read the testimony in favor of this bill and they all have said to let the experts handle this. We as humans just went through and may not have finished with one of the worst pandemics ever. All the money, scare tactics, shots, masks didn't seem to help and we as humans still show up by the thousands in one spot and we are the most intelligent species.

I'm no expert on this, but after 60 plus years, I'm confident that this bill does hold water and I am for it.

My family and I like using bait. Maybe we don't always hunt or fish using it but it is a tool for a successful day.

Therefore, I encourage you to vote yes on this House Bill 1151.

William T Nissen, Minot ND

Dear members of the natural resource committee please vote yes on HB1151. I am a young man who lives and breathes the outdoors. I shot my first deer at the age of 9 over a bait with my dad. Now my dad's eye sight is starting to fail and I find myself taking him now like he took me. I respect the land and the wildlife. In our harsh winters in our great state of ND our deer need every advantage they can get. This winter is an excellent example of why we should be able to help out the wildlife. If a disease is here the banning of baiting will do nothing to stop the spread of it. The deer are in huge bunches all congregated together as I type this. Please pass the bill. Our game and fish needs to use more common sense and not follow in suit with MN and other anti baiting states. Thank you Grant Meyer

Dear Energy and Natural Resource Committee

This letter is to express my support for HB 1151.

I have been an outdoorsman my whole life. Some of my fondest memories are hunting with my family and friends. This bait ban seems like a total government over reach to me. We have had "follow the Science" jammed down our throats for the past two years. I don't see the science. In the past 20 years 40,000 healthy harvested deer tested, 70 positives, 69 hunters harvested and 1 found dead rule cwd, that's less then 1%. Deer are social animals that naturally herd. Bait or no bait when it's 20 below in ND the deer are herded up. I don't understand why it's alright for animal watchers and photographers to feed deer but a hunter can't put out a bait pile. The people that are being hurt the most by the bait ban are the youth and handicap hunters. For these reasons I support HB 1151.

Members of the Natural Resources Committee,

I am in favor of HB1151. Please vote yes on HB1151.

After researching the data and reviewing the numbers on CWD, there are been less than 1% positive. The studies do not show the postitive numbers are coming from bait piles. I am thankful for the trained biologists and others for doing research to help control this disease, but the studies/data/numbers are not enough at this time to prohibit baiting. Prohibiting the baiting of deer for the short hunting season is not the solution, as it will not prevent the hundrends of deer that group together for the long winter months in North Dakota. Any winter night driving around the country side you will see hundreds of deer bunched together at farm yards eating on grain piles/bales, coulees or whatever resources they can find and will continue to go back to the same spot to find food to survive the winter months. Once again, since we live in North Dakota this will continue for the deer to bunch up and eat at the same resource in order to survive the winter months. It is a fact that deer congregate to help each other find food in the winter months, banning bait piles will not prevent this. Due to the North Dakota winters, the data and science needs to prevail so our sportsmen can continue to hunt.

I have been hunting since I was able to get a youth tag in North Dakota with my dad, brothers and cousins. I have 2 daughters, a 12 and a 14 year old that are now involved in the outdoors and hunting. The family and friend time, excitement, outdoor time and education that happens watching the wildlife while hunting will be memories that will never be forgotten. With the fast pace of lives right now, I cherish the time I get to spend with my family sitting in the stand. The learning experience that comes from hunting that my daughters get by watching wildlife, the farmers in the field, nature and the other things from hunting is something that can not be learned in a classroom. If we lose bait piles I know will lose my daughters interest in hunting as well as others such as the younger generations, elderly and the disabled. Everyone deserved the opportunity to get out and hunt. Kids are the future of this great sport, they need every oppourtunity to keep the tradition of hunting.

By the use of baiting we have had more success and we have been able to take clean shots on the wildlife that we harvest. Allowing us to provide food for our families.

Our bait piles are not just used to harvest wildlife. We are providing mineral blocks to provide vitamins for the wildlife and supplemental food.

The positive values of baiting deer much outweigh the negatives.

The memories from hunting will last a lifetime and hope they get passed on for generations. For this reason, please vote yes on HB1151.

Lets continue to enjoy and pass on the traditions of the great North Dakota outdoors.

Thank you for your time! Melissa Wittenberg

I am opposed to House Bill 1151. I find the reasoning used to bait deer to be illogical.

The practice of baiting, no matter the amount used, draws deer away from others. This is called herd privatization. In all reality, this is where the real loss of opportunity lies.

Other consequences of baiting include land price increases, out of state manipulation, corporate canned hunting, and the disruption of multi-generational ranching practices and neighbor cooperation.

In addition to CWD, there are other illnesses that need to be considered such as Tuberculosis, Brucellosis, and Acidosis.

In closing, I recommend we trust the professionals at North Dakota Game and Fish Department. We need to support them in keeping all of our wildlife as healthy as possible, not fight them thinking we know better.

I urge our legislators to not let this nonsensical Bill out of the gate.

Thank you.

Todd Boechler

House Energy and Natural Resources Committee C/O Rep. Todd Porter, Chairman State Capitol 600 East Boulevard Avenue Bismarck, ND 58505 19 January, 2023

RE: Opposition to House Bill 1151 - Relating to baiting deer for hunting

Dear Committee Members:

On behalf of the National Deer Association (NDA), I am writing to provide our comments in opposition to North Dakota House Bill 1151 (HB 1151). Introduced by a handful of Representatives and Senators, HB 1151 would severely undermine the North Dakota Game and Fish Department's (NDGF) authority and ability to manage deer and deer hunting with the best-available science. Specifically, the bill removes the authority from NDGF to issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting. The bill, and the removal of management authority from NDGF, is a direct attempt to undermine chronic wasting disease (CWD) management efforts in the state.

The practice of baiting and its role in deer management have grown in terms of controversy and complexity in recent years. The NDA acknowledges the available scientific data surrounding this issue is incomplete and, at times, inconsistent. However, baiting increases density around a single food source and therefore increases the potential for direct and indirect contact among individuals. Currently, there are 12 deer diseases that are thought to be spread by direct contact, two of which are bovine tuberculosis (TB) and CWD.

The NDA opposes the expansion of baiting where not currently legal. The NDA will not work to repeal baiting where currently legal, except where CWD (or other known diseases) is present. Similarly, the Association of Fish and Wildlife Agencies (AFWA) sites that unnatural concentration of cervids facilitates CWD transmission and establishment if CWD prions are present. AFWA lists the prohibition of baiting or feeding wild deer as a best management practice (BMP) for the prevention of CWD introduction and establishment. HB 1151 intentionally and irrationally removes this management practice from the authority of NDGF.

Please consider joining the National Deer Association (NDA) in opposing this legislation. Wildlife management decisions, and especially disease management decisions, should remain in the hands of professional wildlife managers – not lawmakers. HB 1151 would result in a massive setback for disease and deer management in North Dakota. Please vote 'no' on HB 1151.

Please don't hesitate to reach out with guestions or for more information.

Sincerely,

Torin Miller

Senior Director of Policy

Dear committee members,

As an avid outdoorsman and life long hunter I am writing to show support for HB 1151.

Please vote YES on HB 1151

Thank You Derek Belle

HB Bill 1151

I am in support of HB 1151.

I believe ND Game & Fish has overreached its authority and this is also a private property issue.

Emery Duben

Dear Ladies and Gentlemen of the Committee,

I am writing you today in opposition of HB 1151. I am an avid, lifelong outdoorswoman and huntress, involved in many local and national hunting- and conservation-oriented organizations.

I fear that HB 1151 is not what is best for North Dakota's deer population in the battle against the spread of CWD. Since the proposal of HB 1151, I fear that many sportsmen and women have become absorbed in the debate between baiting versus non-baiting of deer that we are nearly missing the underlying point. The passage of this bill would take control away from the ND Game and Fish Department, taking away their resources and ability to act on wildlife-related issues in our state. Today, the issue may be CWD and combating the spread. Tomorrow, there may be an entirely new and different issue facing North Dakota's deer (or other game) population. Passing HB 1151 only ties the hands of the Game and Fish Department and takes away their resources and ability to act on such issues.

I firmly believe in leaving it up to the trained professionals within the Game and Fish Department to take a scientific approach to decide what they feel is best for the future of our deer and wildlife for today, tomorrow, and years down the road. Therefore, I encourage you to oppose HB 1151.

Sincerely,

Courtney Jenner - Williston, 701-799-4049

I oppose House Bill 1151. This bill undermines the authority of the N.D. Game & Fish Department to manage the public resource that is the deer herd in North Dakota. Baiting can be a vector of spread for the fatal Chronic Wasting Disease. The management of baiting should be left to the dedicated professionals who "protect, conserve, and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

Saskatchewan is a great example where unregulated baiting has led to the fasting rising prevalence rates of Chronic Wasting Disease in North America. Don't let the selfishness of the few outweigh the benefit for the entire public resource. Vote no for Bill 1151. Thank you.

My name is Jon Pieper and I'm the ranch operations manager at Apple Creek Whitetails located in Gillett Wi. I have been with ACW since 2010 and have been asked to come talk to you about Humic Acid.

Humic acid is the only substance on the planet that has been known to kill CWD prions on contact. The only other way to kill the prions is to burn at extreme temperatures. Humic acid is decomposed rain forest deposits in the earth. When mined it looks like charcoal. It basically contains all the good materials that mother nature planned them to be before man started using chemicals to control mother nature.

When raw humic acid is pulverized into granules it can be used as a natural fertilizer (ground conditioner). To make crops grow better as well as killing cwd prions. We use it on the ranch at 250 pounds per acre. Pulverized down to a dust can be added to the feed to actually promote healthier bodies. We add this to our deer feed at 30 pounds per ton.

After using humic acid as a fertilizer, I have noticed a drastic change in food plot growth rate even through dry times. When added to the feed we noticed within a couple of months we could visibly see the health within the deer improve, coats are fuller, less coughing.

I believe baiting deer is a good thing, baiting deer with feed that includes humic acid is a great thing!

Cwd prions naturally.

TE



RE: HB 1151

Dear Energy and Natural Resources Committee and Representatives

I am writing this letter in support of HB1151. I am an avid hunter and rancher in 3A2 where we have not been able to bait for a few years now because we bordered a unit with a positive case in 3A1. The non-baiting rule that we have is one of the dumbest written laws I have ever seen. I would like to know why CWD is only carried in 5-gallon buckets by hunters? Why can my grandma put out feed to watch wildlife come into her front yard be ok but if I stop by to visit with my bow, now I have just increased the chance of the disease spreading? This law they have implemented is not to stop or slow the spread of the disease but to control how hunters harvest deer plain and simple. In our area lots of farmers use grain bags in fields for grain storage, guess what they get holes in them and lots of deer come in to eat the grain that spills from the bag, I can hunt that because I didn't put it there and that is ok but if I carried 5 gals over and piled beside the bag that was leaking 10,000 bushels out of it then I can't hunt there, makes perfect sense. The amount of grain used by hunters to bait in deer to get in closer range for a more ethical shot or for a chance of youth hunter to take their first deer is a minute amount of grain that is spilt or lost by farmers and elevators.

Now that we can't bait, we have started growing several food plots which are ok to hunt over. I'm still drawing deer into one area but that is ok because I'm not carrying feed out in a bucket, buckets spread CWD. Now after my corn has matured, I mow it and the cobs shatter spreading the corn all over the ground, still ok. Now if I took my spinner feeder and stuck up there filled with corn and it spread corn out in a 30' diameter circle, I would be increasing the chances of the spread of CWD, makes sense again.

I have taken both my kids hunting for their youth seasons during this non baiting session, we have been able to fill all their tags throughout the years but it has been a battle and I hate to say it but there has been some longer range and quicker shots taken that have resulted in some wounded deer and unfound deer, not to mention tears and lost interest in the sport. Had I been able to bait in the deer to a closer range and keep them there longer, this could've been prevented. Youth have a limited time to hunt and gain interest in the sport the way it is, and nothing ruins it faster than having an unsuccessful season because their right to bait was taken away from them but someone 10 miles away in another unit could bait. Deer don't stop at the unit borders either, they intermingle.

The main thing that irritates me the most with this no baiting rule is the lack of common sense behind it and the fact that there is no science if no baiting is doing any good. Deer are social animals, and the small amount of bait out there is not going to put a dent in the problem, it is just a control rule for the hunters.

Thank you for taking the time to read my opinions, please pass this bill and give us our rights back.

Sincerely Ryan Ones

Dear Energy and Natural Resource Committee,

I am writing this letter in support for HB1151. My name is Steve Portenga and I am nonresident bow hunter and own my second home here in North Dakota. I have been coming here to hunt since 2016. In the time that I have spent here my observation is in direct conflict with the ban of baiting. I have spent many hours studying the deer and their patterns. What I have concluded is that it doesn't take baiting to make deer congregate. It's a in their nature. That makes the ban on baiting unproductive. If for one second, I thought that a ban on baiting would curb the spread of CWD and save the deer population I would be all for it, but that doesn't seem to be the case, if there is even a case to be had.

I have countless video and pictures of deer on my property congregating without the enticement of baiting. The only science I know is what I can see with my own eyes and I'm sure most can too.

Furthermore, why is it okay to allow deer to feed in food plots in the winter but baiting is not allowed.

This makes absolutely no sense. So, this makes me wonder why the ban on baiting?

I am writing in opposition to HB 1151.

Limiting the North Dakota Game and Fish Department's tools to try and limit the spread of Chronic Wasting Disease across

North Dakota is not a way to manage deer. The legislature should not be trying to become wildlife biologists as they do not have any training in the craft.

Good Afternoon,

My name is Erik Myre. I am an avid outdoorsman, conservationist, and landowner from Sawyer ND.

I am contacting you regarding HB1151.

I feel this bill is very poorly written and will do nothing but undermine the authority of the biologists and wildlife professionals of the North Dakota Game and Fish to manage our states deer population.

I also feel that HB1151 will set a very dangerous precedent going forward and will remove the authority of the NDGF to manage the wildlife of ND as they (and the science they follow) see fit.

HB1151 will begin to place that authority within the state legislature. Politicians are not biologists and should not be making decisions regarding the health of the wildlife populations of North Dakota.

I would like to take this opportunity to ask you to NOT vote in favor of HB1151.

Sincerely,

Erik Myre

Erik Myre

Sawyer, ND

701-721-2220

erikmsd@srt.com

Members of the House:

I am writing in opposition of HB 1151 for multiple reasons. As a supporter of science based wildlife management this bill falls far short of my expectations of the state to use proven science to make decisions and not emotion. As a hunter I support the Game and Fish Department in their work to support healthy wildlife populations, and this bill would strip them of a management tool that they do not use lightly to begin with. I do not believe that the legislature should be setting the precedent of making wildlife management decisions and taking power away from the biologists who specialize in making decisions on behalf of our shared wildlife. I also worry about the lack of ability to respond to outbreaks of TB and Brucellosis within our cervid herd that could have detrimental effects to the livestock producers of our state. It has been long held in the United States that the wildlife is held and managed by the states for the public trust, HB 1151 goes directly against this by eliminating a necessary management tool for our public wildlife. I urge you to Vote No on HB 1151.

-Logan Anderson

January 19, 2023

To Whom it May Concern:

My name is Dylan Hotovec, I am 22 yrs old and live in Elbow Lake, MN and I am a disabled hunter with Cerebral Palsy. I deer hunt from my power wheelchair and am limited in my range of motion nor can I walk or stand on my own. The group Twist of Fate which is based out of the Fargo/Moorhead area, who provides a deer hunting weekend once a year to disabled people has allowed me to be able to be successful at deer hunting with being able to bait deer for a few weeks before the hunt. With baiting of the deer near the spot I would hunt from or all the other spots for the other hunters, allows for me and others to be able to be successful at harvesting a deer. If baiting was no longer allowed, Twist of Fate would have a very hard time making their weekend successful for many disabled people. With this being said, if baiting of deer was no longer allowed I would have a very hard time harvesting a deer because of all the limitations of movement that I have.

Thank you Dylan Hotovec I am Kent Reierson from Williston ND and oppose HB 1151. I concur in the statement offered by North Dakota Bowhunters Association. There is no logical reason not to follow the best scientific evidence related to CWD management. Those who oppose the North Dakota Game and Fish Departments CWD management plan to eliminate baiting in units where CWD has been found is sound and common sense. Those who believe baiting in those areas should continue are either short sighted or simply ignoring the presently known facts about CWD. They would rather selfishly have an increased opportunity to kill a deer over bait rather than take a more conservative approach to try and reduce the spread of CWD and maintain a deer herd in future years for others to enjoy the hunting opportunity.

The NDGF department attempts to apply the science and best management practices to safeguard our resources such as deer. Putting this issue in the political arena simply is being done by those with self-serving motives. There is no biologically beneficial element to baiting deer. I believe that game management decisions related to CWD are best left to professional, game and fish departments like the NDGF Department. Thank you for the opportunity to present these comments.

I am in support of house bill 1151

2023 HB 1151 Testimony

Authored by: Tim Sandstrom

Dear Committee:

I support the HB 1151's intent to retain a hunter's ability to hunt over bait. However, in support of HB 1151 I'm also asking the North Dakota Game and Fish (NDGF) retain reasonable ability to limit how wildlife is baited for the purpose of hunting. To what extent? Open for debate but I'm willing to say we as hunters should be open to compromise such as quantity or truck loads reduced to bucket loads. But to the topic at hand...

I understand the NDGF's concerns with chronic wasting disease (CWD). I share them. The approach has continued to be a debate among many in this nation's game and fish departments, landowners and hunters. To this date, there is no right answer from what I can gather.

So to me it goes to perception.

The passionate perceive by feeding birds, deer or other wildlife they are providing for them. We can debate that topic another time! But no NDGF rules nor the legislated law prohibit people from feeding wildlife.

Then there are those that perceive hunting deer or other game over "bait" as unethical. Again, debate for another time. Or is it, could this play a role in NDGF decision making?

What cannot be debated (we should all agree on) is deer congregate "naturally" at all times of the year. CWD isn't just about congregation but its often the main talking point for those against baiting or for baiting. So lets agree...

- Bachelor herds of bucks travel late spring and summer months together.
- Does with fawns travel together for most of the year.
- In the fall to winter months deer congregate in the 10s to 100s (i.e., rut, cold weather).

I found this series of quotes provided by the Fargo InForum interesting where Wildlife Division Director Casey Anderson stated, "Disease is spread by urine, saliva and feces," Anderson said. "It's more likely to be spread when they're pulled together in times of year when they normally aren't."

I'm not the biologist here so this is my perception and translation. Mr. Anderson is stating "hunting over bait" is a means to pull deer together. Ok, I can concede to a point, but many things/circumstances pull deer together. However, when baited deer are said to be more prone to CWD infection versus "naturally" congregated I struggle to accept. And lets go back to the definition of bait. A bait pile is more prone than a bait (food) plot or a water supply?

Here's a real-world example available to anyone's eyes just outside Minot as you read this:

On my way home I drive by five alfalfa bales. Four remain in an alfalfa field assumed never loaded onto a trailer and hauled to a hay yard. The other bale sits upright in my neighbor's yard for the purpose of feeding wildlife.

Every night the past two months there's been multiple deer at each (up to 20 at a time) exposed to urine, saliva and feces.

Again, per above a perception is told CWD spread is not as likely for the random bales or the do-gooder feeding wildlife. But if my other neighbor had a bait pile, then we're elevated to "it's more likely."

I simply cannot support that perception and do not support the NDGF's decision to focus on the hunter utilizing a bait pile versus a bait plot.

Source - Fargo Inforum: Bill would stop officials from banning deer baiting in North Dakota

Chairman Porter, committee members, my name is Wyatt Thompson. I have been involved in the outdoors since before I was able to walk, being carried along to the deer stand by my dad or grandpa. At 9 years old, and after a couple years of practice at our local youth archery club and becoming proficient at 15 yards with my bow, I set out on my first archery hunt, sitting over a bait pile that was placed at that known 15 yards I had been practicing at, harvesting my first deer that fall with a clean, ethical shot. Since then, my love for the outdoors has exploded, not only myself, but for also getting youth involved. I am hoping that I can carry my son with me to the bow stand and have him be able to observe the various degrees of wildlife interacting at a bait pile that kept me entertained at such an early age. Therefore, I am here today testifying in favor of HB 1151.

I will be taking my time to talk about the data that has been collected from hunter harvested heads, roadkill finds and sick or suspected animals from units around the state, with a focus on unit 3F2.

CWD was first found in North Dakota in 2009 in the southwestern part of the state, more specifically inside the borders of unit 3F2. The North Dakota game and fish department then moved quickly, implementing the first restriction on hunting over bait in state within the borders of unit 3F2 through their 2010 Chronic Wasting Disease proclamation, even after a bill to ban baiting introduced into the legislature in 2007 and 2009 was shot down.

Since 2010, the baiting ban has been moving unit by unit, and is now up to 20 of the 38 units in North Dakota. Although over 50% of the units in North Dakota have a baiting restriction currently, I would like to dive into the numbers that have come from around the state while looking at unit 3F2 a little deeper, where the ban was implemented in 2010.

The results of the testing are as follows:

From 2009-2011 as stated by Dr. Dan Grove, State Game and Fish Department wildlife veterinarian, "three consecutive years of surveillance in deer hunting unit 3F2 have resulted in a total of three CWD positive animals."

https://www.deeranddeerhunting.com/content/articles/deer-news/deer-transport-and-baiting-restrictions-set

2012: O positives, and this is also the year that the baiting ban expanded to surrounding units.

2013: 2 positives, Both from unit 3F2

https://cwd-info.org/second-mule-deer-from-3f2-tests-positive-for-cwd/

2014: 2 deer, both from unit 3F2

https://cwd-info.org/two-deer-test-positive-for-cwd/

2015: 0

2016: 2 Positives, both from 3F2 2017: 2 Positives, both from 3F2

https://www.valleynewslive.com/content/news/Two-deer-test-positive-for-CWD-in-North-Dakota-471649964.html

2018: Three deer taken during the 2018 North Dakota deer gun season have been confirmed positive for chronic wasting disease, according to Dr. Charlie Bahnson, wildlife veterinarian for the North Dakota Game and Fish Department. While two of the positive deer were taken in unit 3F2, an area of North Dakota known to have CWD, the third was taken from Divide County in deer unit 3A1 https://gf.nd.gov/news/2831

2019: 8 Deer, six from unit 3F2 and two from 3A1.

2020: 18 Deer, Fourteen were from hunting unit 3F2, two were from unit 3A1 and one was from unit 4B, and one was harvested in unit 3A2

https://gf.nd.gov/news/4463

2021: 26 Deer total found positive, Fourteen were from hunting unit 3F2, eight from unit 3A1, and one was found in unit 3B1. There were also Single positive deer were also found in three units (3C, 3D1 and 3E2) where the disease had not been previously detected

https://www.newsdakota.com/2022/02/23/north-dakota-game-fish-cwd-test-results/

2022: No Results posted yet (Usually available around the 20th of January)

After hearing this data, I would like to point out that out of the 70 positive deer that have been found in North Dakota in 13 years of results, 48 of these have come from unit 3f2, with 34 of them being from the fall of 2019 or later, all with only 1 deer being found dead in state... which was a possible death due to CWD but is unable to be determined for certain because the deer was found dead, then tested and was found positive, so it was assumed CWD as the cause of death.

The Game and Fish Department is arguing that this is not an ethics driven agenda, but rather data and science based. They also state that there cannot be an accurate study used to determine that baiting specifically helps spread CWD. I would like to use the data that the Game and Fish Department collects and posts every year to point out that a long-term ban on baiting in fact does NOT slow the spread over an extended period of time.

68.6% of positive CWD cases in North Dakota have come from 3F2. Of that 68.6%, only 29.2% of cases came from the first 10 years of collection. That means that in the last 3 collection seasons (2022 data has not be released), 70.8% of all positives, this also accounts for 48.5% of all positive cases found statewide since the start of monitoring and testing, have come from 3F2 after a baiting ban had been in place for 9 years prior.

After running through those numbers, did the baiting ban that has been in place for now 12 years actually have a long-term effect on reducing CWD, or do these numbers, specifically the drastic spike the last 3 years of testing suggest that the ban on hunting over bait the Game and Fish imposed is ineffective at impacting spread out of natural deer interaction.

One last thing that I would like to bring up in closing... If the North Dakota Game and Fish Department is a science and data driven department, why are they moving away from the emphasis on data collection in the southwest corner of the state, specifically from unit 3F2 as we were told at a fall CWD meeting that took place in Minot? This is and has been the best data collection site from North Dakota that would back up the science they want us to believe... That a baiting restriction slows the spread of CWD, yet they are moving away from data collection there, specifically after a huge leap in positives the last 3 years. Perhaps the data and science does not match the narrative and agenda.

I thank you for the opportunity to testify today and will answer any questions to the best of my ability that the committee may have.

Chairman Porter, committee members, my name is Gabe Thompson a 4th generation rancher from Antler ND and past instructor for 15 years in our local youth archery club Berthel Crossed Bows. I am here today testifying in favor of HB 1151

I believe strongly that the creation of law should have 3 foundational principles, a three legged stool if you would

- 1. A clear need for a new law
- 2. Fact and truth be the basis of advocating for or against a bill
- 3. All bills be written in accordance with our state and Federal Constitutions and simple common sense.
- 1. As a result of the actions of the NDG&F over the past few years on this issue there has been demonstrated a need for this bill ...in a series of 3 public meetings on CWD and baiting held this fall which I attended in Minot, those sportsmen in attendance were told at the start of the meeting we would not be allowed to ask questions during the presentation. We were then told we would not be allowed to ask questions after the presentation in an open forum setting where each person in attendance could hear both the questions from sportsmen and the answer from the G&F ... we were then told we would be allowed to ask questions in private one on one settings with G&F employees positioned at various locations around the room NO public open forum setting discussion was allowed on this very important topic and the regulations this state agency with no elected positions or real direct accountability to the people those regulations directly impact even after they were asked to reconsider. We NEED an open forum where issues, regulations and laws impacting us as sportsmen and women can be debated and the legislature allows that forum when state agencies do not.
- 2. In advocating to support their restrictions on baiting there have been claims made that the science of the G&F simply does not back up. There has been no studies done directly looking at the spread of CWD by baiting and yet the claim has been made baiting is the action that accelerates spread of CWD and yet the unit 3F2 where hunting over bait has been banned for over a decade...3 life cycles of the average deer in ND according to the G&F....CWD positives are increasing at rates far beyond units where hunting over bait is still allowed..The G&F position is that if the ban reduces risk by 1% it is worth it.....but yet that position is ignored when the real science they share on their website that shows CWD prions live in the environment on things such as corn or turnip plants in a food plot can remain viable and transferable forever and can be transferred by saliva contact just as they claim is done at a bait pile is discounted and worse ignored as the NDG&F actually encourages and FUNDS the planting of food plots that are used by sportsmen to attract, congregate and hold deer to an area which starts in early spring when the plants first start emerging and carries though by design into late winter early spring months providing a food source for deer that naturally yard up in numbers by the hundreds in some of these G&F funded food plots.... If you are going to claim science is the basis of your regulations.....you can not ignore and pick and choose what science you follow or it begins to appear an agenda is driving the narrative rather than the actual science.
- 3. ND sportsmen felt so strongly about the importance of protecting the opportunity of hunting in our state we created a constitutional amendment that reads as follows

Hunting, trapping and fishing and the taking of game and fish are a valued part of our heritage and will forever be preserved for the people and managed BY LAW and regulation for the good of the people. We knew that the voice of the people is critical in protecting that heritage and the words "by law" were specifically placed into the amendment to allow the legislative venue to give the people that opportunity when unelected state agencies unaccountable to the people do not ...that is the constitutional language this bill is in accordance with

In closing, with this issue common sense seems to rise in importance possibly more than degrees or training. A few years back when ranchers saw deer numbers congregating in their feedyards all winter long increasing by the hundreds each year and that information shared with the NDG&F that they had a rapidly growing deer herd to the point of being out of control was ignored and the agency finally had to sell unlimited amounts of deer tags to sportsmen at numbers almost twice what is typically sold...to try and rectify the mismanagement, on our ranch we saw over 600 deer congregating from mid Oct as a result of a blizzard. We opened our ranch where our homes are to people asking on social media for hunters to come in and fill tags. In the Nov and special late Jan rifle season held to reduce population we had over 30 deer harvested. In the last month of bow season in Dec. we had over 70 additional deer taken out of a heated elevated stand that allowed people who otherwise would have stayed home in minus 20 degree weather the opportunity to harvest a deer. This reduction of the numbers of deer in our ranch yard by 15% was done because of the tool of baiting that brought those deer to the hunter. Out of 70 archery harvested deer only 1 was not recovered the rest were taken at a known yardage of 15 yards with a clean ethical shot that brought success to kids from age 11 to our neighbor who harvested the last deer of her bow hunting seasons at age 82 all without any financial exchange

Later that winter when a biologist from the G&F finally traveled to our ranch in response to our request....as we stood watching 500 deer congregated in front of a corn silage pile and ground hay piles where for 2 ½ months they had been interacting with nose to nose contact depositing saliva over unmeasurable areas of feed to be contacted by hundreds of other deer over the next 3 months....I relayed what we had done to reduce deer numbers in our yard.....when I was done this biologist with an alphabet soup of letters behind his name listing his qualifications looked me in the eye and suggested that the tool of baiting we had used to reduce that population of deer when they had not been able to for 3 years through their management was what was spreading CWD....Common sense would suggest otherwise. I strongly encourage a do pass on this bill.

I thank you for the opportunity to testify today and would answer any questions to the best of my ability the committee may have.

Dear committee members,

As an avid outdoorsman, life long hunter, and landowner I am writing to show support for HB 1151.

Please vote YES on HB 1151

Thank You Brad Schatz Chairman Porter,

My name is Wyatt Stanley and I've been an avid outdoorsman in North Dakota for the last 20 years. My first deer ever harvest was with a bow over a bait pile. That bait pile was a tool that I used at a young age to be able to take an ethical shot, at a known yardage I had been practicing at.

I have helped 8 youth fill their tags the last couple years and would like to continue to do so, and if baiting is a tool I can use again, I would like to use our stands to help get youth into archery hunting. I feel like after helping kids practice shooting, and then being able to place a bait pile at that same yardage, it is a very valuable thing to keep kids entertained and help them take that ethical shot.

Deer are naturally herd animals... between spending time in bachelor groups in the summer, or congregated in the winter, or using the same food plot or scrape as other deer, they have contact with a number of other deer year around, and the data that has been released by the department does not back that a baiting restriction has helped slow the spread.

For these reason I Support HB 1151.

Thank you,

Wyatt Stanley

In support of bill HB 1151

Brady Tuchscherer

2691 67th St NE

Rugby, ND 58368

As an avid outdoorsman I feel that the Game and fish is over stepping there boundaries when it comes down to the baiting law. Don't get me wrong, the game and fish does many great things for the outdoors/ wildlife in this state. The baiting law/ CWD talk is getting out of hand. When researching the CWD history and listening to other states talk about it, I just cant get my head wrapped around the issue at hand. When these deer can go about themselves how ever and wherever they want its just doesn't make sense to shut off the baiting because it can possibly spread the disease.

Baiting is beneficial for many reasons other than "killing big bucks" every year. I've been hunting since I could and that's been about 17 years now. Since then I've been proud to kill the few deer I have with bow/gun. As far as bowhunting over bait I've killed 3 bucks and 2 does. That's been for 17 years. People often think of baiting as "cheating". I say no. Is it an advantage? Yes. I don't make the deer come there. Its just another tool in the bag to better your chances of harvesting something nice. Make a clean ethical shot and recovering your kill. That's just the bonus. Sitting there watching the animals interact is what I love about it. Your almost a fly on the wall in a sense. Even after I harvest a deer I continue baiting as long as the winter will let me access my spots. I'm not just feeding deer. I'm feeding the wildlife. They benefit from it to help them get through the winter months.

I am for this bill because the CWD just doesn't have me convinced as the science behind it just doesn't hold its ground. If CWD was like EHD, my stance would be a lot different about the disease. IF it comes to that then we can address it as needed.

Sincerely,

Brady Tuchscherer

Members of the Committee,

I am providing testimony in opposition of H.B. 1151. While I have no views on whether baiting is ethical or not, I do hold strong views on science-based decisions and common sense. What HB1151 has introduced is not legislation based on years of scientific data, it's based off of short-sided emotions. By overriding the wildlife management plans that Game & Fish has in place, you would be also introducing a dangerous precedent that multiple states have already negatively experienced.

Based off of the discussions since the bill was introduced, I see a majority of people would want this bill enacted because it best suits their style of hunting. In my opinion, the focus should be shifted to the resource. The scientific consensus is that congregating animals, in any fashion, is a good way to laterally transmit disease. We all know that deer are a social creature and we obviously can't stop them from their natural tendencies. But why is it so difficult to stop the one factor, the human factor, which could contribute to the spread of CWD?

As Representatives of the state, you are also the trustees of a public resource. Your responsibilities in managing that public resource are to take into account the best available data, not the loudest emotional response. Deer do not know the physical boundaries of property lines. Therefore, we can say this effects all people who take joy in seeing deer, whether they are hunters or wildlife viewers. Your decision today has the potential to damage a public resource for years to come. As stewards of this unique public trust, you need to realize that "It's not ours, it's just our turn".

I'll leave you with a quote from Theodore Roosevelt. "Defenders of the short-sighted men who in greed and selfishness will, if permitted, rob our country of half its charm by their reckless extermination of all useful and beautiful wild things sometimes seek to champion them by saying the 'game belongs to the people'. So it does; and not merely to the people now alive, but to the unborn people. The 'greatest good for the greatest number' applies to the number within the womb of time, compared to which those now alive form but an insignificant fraction. Our duty to the whole, including the unborn generations, bids us restrain an unprincipled present-day minority from wasting the heritage of those unborn generations. The movement for the conservation of wild life and the larger movement for the conservation of all our natural resources are essentially democratic in spirit, purpose, and method."

I implore you, Do Not Pass for HB 1151.

Very respectfully,

Liam Hale

Minot, ND

I am writing in opposition of HB 1151.

The North Dakota Game and Fish Department is tasked with managing wildlife. Professional biologists dedicate their careers to sustaining healthy wildlife populations. They utilize data and make decisions based on best available science to protect, conserve and enhance wildlife populations.

This bill is a misguided attempt to restrict scientific based management and boil wildlife management down to emotion and opinion. This bill sets a precedent that removes science-based wildlife management.

As a hunter, I want informed, science-based decisions to guide wildlife management. I urge you to oppose HB 1151.

Sincerely,

Curt Francis

To the members of the Natural Resources committee.

We have charged the Game and Fish Department with the responsibility of managing our wildlife resources that have been placed in the public trust. These wildlife professionals have been trained to use science-based and current best practices to manage our resources for hunters and non-hunters alike. This bill should not move forward as it limits the Game and Fish's ability to respond to not only CWD, but any future situations which may arise. If defeated, no sportsman in ND will lose their opportunity to hunt. It could possibly eliminate one method. It may make it more difficult for some. There is much we don't know about CWD. I do believe the best people to follow the science both here, and around the country, are the professionals we have in place to do their very best to manage our resources. This cannot be done every other year by legislators. I would ask everyone if they are more worried about a single method of hunting, or the continued health and maintenance of our resources by trained professionals. Thank you.

House Energy and Natural Resource Committee,

I am in support of bill HB1151.

I have been archery deer hunting on private land for 35 years. I support this measure. I have hunted with and without baiting. The success rate is better with baiting because it drawers the deer in and other wild life. Such as bluejays, squirles, turkeys, phensents. I hope we can continue baiting on private land.

I am involved in an organization called Twist of Fate. The organization puts a hunt for the physically challenged. The organization puts this hunt on 1 weekend a year and our guests have a good opportunity to harvest a deer. If baiting is made illegal and with the challenges the hunting guests already face it would greatly hurt their chance to harvesting a deer.

Sincerely,

Jerome Mogard Fargo, ND 1/19/2023

AFWA Technical Report on Best Management Practices for Prevention, Surveillance, and Management of Chronic Wasting Disease

Association of Fish and Wildlife Agencies, Washington. D. C.



AFWA Technical Report on Best Management Practices for Prevention, Surveillance, and Management of Chronic Wasting Disease

Association of Fish and Wildlife Agencies, Washington, D. C.

Report Editors: Colin Gillin, Oregon Department of Fish and Wildlife and Jonathan Mawdsley, Association of Fish and Wildlife Agencies

Editorial Review Team: Colin Gillin, Lou Cornicelli, Mark Drew, John Fischer, Jonathan Mawdsley, Kelly Straka, Margaret Wild, Rachel Boswell

Contributors and Reviewers:

Jen Ballard, Arkansas Game and Fish Commission

Lou Cornicelli, Minnesota Division of Fish and Wildlife

Melinda Cosgrove, Michigan Department of Natural Resources

Mark Cunningham, Florida Fish and Wildlife Conservation Commission

Bob Dittmar, Texas Parks and Wildlife Department

Mark Drew, Idaho Department of Fish and Game

Hank Edwards, Wyoming Game and Fish Department

Heather Fenton, Northwest Territories Department of Environment and Natural Resources

John Fischer, Southeastern Cooperative Wildlife Disease Study

Colin Gillin, Oregon Department of Fish and Wildlife

Daniel Grove, North Dakota Game and Fish Department

Anne Justice-Allen, Arizona Game and Fish Department

Megan Kirchgessner, Virginia Department of Game and Inland Fisheries

Lane Kisonak, Association of Fish and Wildlife Agencies

Wayne Laroche, Pennsylvania Game Commission

Mitch Lockwood, Texas Parks and Wildlife Department

Lindsey Long, Wisconsin Department of Natural Resources

Jonathan Mawdsley, Association of Fish and Wildlife Agencies

Brandon Munk, California Department of Fish and Wildlife

Daniel O'Brien, Michigan Department of Natural Resources

Maria Palamar, North Carolina Wildlife Resources Commission

Margo Pybus, Alberta Fish and Wildlife

Jennifer Ramsey, Montana Department of Fish, Wildlife & Parks

Annette Roug, Utah Division of Wildlife Resources

Mark Gregory Ruder, Southeastern Cooperative Wildlife Disease Study

Krysten Schuler, Cornell University College of Veterinary Medicine

Kelly Straka, Michigan Department of Natural Resources

Margaret Wild, National Park Service

Peregrine Wolff, Nevada Department of Wildlife

Mary Wood, Wyoming Game and Fish Department

Citation: Gillin, Colin M., and Mawdsley, Jonathan R. (eds.). 2018. AFWA Technical Report on Best Management Practices for Surveillance, Management and Control of Chronic Wasting Disease. Association of Fish and Wildlife Agencies, Washington, D. C. 111 pp.

Contents

AFWA Best Management Practices for Prevention, Surveillance, and Managen Disease (CWD)	
1 - Introduction	
2 - Background	
Section 1: PREVENTION of CWD Introduction and Establishment	
3 - Movement of Live Cervids	
4 - Movement of Hunter-Harvested Cervid Carcasses and Tissues	
5 - Cervid Urine Products Related to the Introduction of Prions to the Environ	
6 - Import of Reproductive Tissues/Products and Gametes	
7 - Preventing Unnatural Concentrations of Cervids – Baiting and Feeding	
Section 2: SURVEILLANCE	
8 - Validated CWD Testing for Cervids	
9 - Surveillance Strategies in CWD-Negative States and Provinces or Population	
Section 3: MANAGEMENT	
10 - Development of a CWD Management Plan	
11 - Managing CWD Prevalence	
12 - Monitoring of CWD Enzootic Populations	
13 - Rehabilitation of Deer and other Cervids	68
14 - Carcass Disposal	73
15 - Recommended Decontamination and Disinfection Methods for Equipment	t 76
Section 4: SUPPORTING ACTIVITIES	84
16 – Internal and Public Communications	84
17 – Human Dimensions	87
18 - Economic Impacts of Chronic Wasting Disease	91
19 - Optimizing the Contribution of Research to CWD Management	95
20 - CWD and Cervid Regulations in North America	100
21 – Relevant Case Law	102
22 CWD and Public Health	106

1 - Introduction

Chronic wasting disease (CWD; Williams and Young 1980), is considered the most important disease threatening North American cervids. A fatal, transmissible, and degenerative disease of deer, elk, moose, and other species of the family Cervidae, CWD affects all native North American cervid species. The persistent, infective, environmental contamination caused by the causative agent means that state and provincial wildlife management agencies have relatively few options to mitigate the effects of this disease.

The intended audience of this document is the leadership of the United States and Canadian state, federal, provincial, and territorial fish and wildlife agencies, including directors, program administrators, and managers who make management and policy decisions for wildlife populations within their authorities and jurisdictions. The goal of this document is to provide directors, administrators and managers with an account of current tools and recommendations available so they can craft and implement their own suite of management practices to help in the fight against CWD on a state or provincial scale.

In the March 2017, the Association of Fish and Wildlife Agencies (AFWA) charged the AFWA Fish and Wildlife Health Committee with developing a set of concise best management practices (BMPs) for prevention, surveillance, and management of CWD. This guidance document represents contributions from more than 30 wildlife health specialists, veterinarians, biologists and agency leaders who are actively managing CWD across North America. The document is built on the best peer reviewed science and field-tested methods that can inform decisions regarding the prevention or management of CWD. The format provides AFWA Directors with topical summaries accompanied by best practices or guidance based on science, along with appropriate literature cited or other resources. Where appropriate, the document also provides agencies with options or alternatives, including those that may not feasible or practical for all jurisdictions or under every scenario. However, the authors approached this task with the objective of presenting the BMPs to exclude detect, and/or manage CWD within their jurisdictions. Because our knowledge of this disease continues to evolve, these BMPs are meant to be a dynamic, living document that can be updated when new information is available. It should also be noted that these BMPs are scientific guidance documents and cannot by themselves affect or alter any state's laws regarding public ownership of wildlife.

2 - Background

Chronic wasting disease (CWD) became well known to wildlife managers well after it appeared in North American free-ranging deer and elk populations in the early 1980s (Spraker et al. 1997, Miller and Kahn 1999, Miller et al. 2000). CWD is a transmissible spongiform encephalopathy (TSE) or "prion" disease affecting species in the family Cervidae. In North America, CWD has been documented in wild populations of deer (Odocoileus spp.), elk (Cervus elaphus.), and moose (Alces alces). The disease was first diagnosed in captive deer and elk at wildlife research facilities in Colorado and Wyoming (Williams and Young 1980, 1982). Scientists diagnosed CWD as a TSE through histopathological evaluation of brains from affected mule deer (O. hemionus) and elk showing clinical signs of neurological disease and physiological wasting (Williams and Young 1980, 1982). It has not been possible to determine, retrospectively, if CWD first occurred in captive or free-ranging animals (Williams and Young 1992, Williams et al. 2002), although modeling suggests that CWD likely was present in wild populations prior to its identification in captive facilities since the early 1960s, if not earlier (Miller et al. 2000). Additionally, the theoretical possibility exists of more than one introduction of CWD into wild cervids. Presumably, if CWD originated from scrapie, as has been hypothesized by Miller et al. 2000, then there could have been more than one instance of transfer to wild cervids (Miller and Fischer 2016). Captive elk exported from Saskatchewan to South Korea marked the first detection of the disease outside of North America (Williams et al. 2002). Recently, two forms of apparent CWD have also been discovered in reindeer (Rangifer tarandus) and moose in Norway (Benestad et al. 2016) and in Finland, but these cases have not been linked to North America.

CWD continues to spread across North America, likely through movement of infectious animals or materials, either naturally in migrating /dispersing wild populations, or through anthropogenic movement of infectious live animals, carcasses, or other materials. Over the past 50 years, CWD has been detected in captive and/or wild cervids in 25 states and three provinces (CWD Alliance http://www.cwd-info.org/ or USGS:

(https://www.nwhc.usgs.gov/disease information/chronic wasting disease/; Dube et al. 2006).

The effects of CWD on populations of the affected species are significant in some areas. Research and predictions via simulated modeling have indicated that CWD is likely additive to white-tailed deer population mortality and could impact populations, particularly at higher prevalence (Edmunds et al. 2016), to the extent that hunter opportunity would also be impacted (Foley et al. 2016). Mule deer research also showed populations declines with a CWD prevalence >20% versus stable populations without CWD present (DeVivo et al. 2017). Recently published research on CWD and elk also concluded that mortality from CWD can exceed that of natural deaths (Galloway et al. 2017), reduce survival of adult females, and decrease population growth of elk herds (Monello et al. 2014). The disease is invariably fatal in infected animals. Williams (2005) found in mule deer that the pathogen has early widespread distribution of

specific protease-resistant disease-associated prion protein (PrP^{cwd}) in lymphoid tissues, and only later is PrP^{cwd} evident in central nervous system (CNS) and peripheral tissues. The pathogen ultimately causes normal prions in neurological tissue of the CNS to convert to the abnormal PrP^{ewd}. These abnormal prions accumulate in the brain (and other tissues), and eventually cause neurological disease, emaciation, and death. A long incubation period (16-18 months to 5 years or longer for some genotypes of deer and elk) between acquiring the infection and showing clinical signs makes managing CWD extremely challenging. The maximal incubation period is unknown; however, CWD prions are shed from an infected animal into the environment during this extended incubation period, meaning that non-clinical animals may be infectious before signs appear (Tamgüney et al. 2009). Some genotypes, currently believed to be rare in wild populations, may exhibit varying incubation periods; however, no genotype is fully resistant. These individuals may have prolonged incubation periods and therefore shed prions into the environment longer than the more common genotypes. The rarity of these genotypes in wild populations raises questions about their genetic fitness. Currently, CWD infection is fatal to all North American deer, elk, and moose challenged experimentally, in captive settings, or in freeranging populations (Williams et al. 2014).

A prion is a 'proteinaceous particle' consisting only of protein, with no nucleic acid genome (DeArmond and Bouzamondo 2002, Prusiner 2004). The abnormal prions are similar to normal prions found in the membranes of normal cells, but the PrP^{cwd} has an altered shape, or conformation. Distorted PrP^{cwd} can bind to normal prions and cause alteration in their conformation, producing a reaction that begins the disease process and generates new infectious material. Other pathogens like bacteria and viruses have nucleic acids that allows them to reproduce but also makes them susceptible to ultraviolet light and disinfectants. Misfolded prions are resistant to many common disinfectants, heat, sunlight, and freezing, as well as many of the other methods used to kill conventional pathogens (Travis and Miller 2003). They have been shown to persist in the environment for years, potentially decades, and remain infectious to susceptible animals. Research conducted since the discovery of CWD in the 1980s suggests that CWD probably is transmitted by direct contact between infected and susceptible animals and indirectly via consumption or exposure to materials contaminated with prions shed in the urine, saliva, feces (Mathiason et al. 2009), or from decomposed carcasses of infected animals (Miller et al. 2004).

Researchers also have shown that CWD prions are able to bind to montmorillonite, a type of clay in soil, suggesting that some soils and soil minerals may facilitate CWD infectivity (Johnson et al. 2006). Although the maximum length of time that prions can remain infective in the soil is unknown; if CWD is similar to other TSEs such as scrapie then environmental prions may be infectious years to decades. Related research also has shown certain plants can assimilate and uptake small, nearly undetectable levels of the CWD prion from contaminated substrate, suggesting a potential route for susceptible animals to ingest the pathogen from contaminated habitats (Rasmussen 2014). The prolonged incubation period, persistent shedding by clinically

normal animals, along with environmental contamination and persistence of CWD prions, make the disease difficult to detect early and manage before it spreads. Depopulation of an entire wild or captive herd may not eradicate the disease because of untreatable and widespread persistence of infectious CWD prions in a highly contaminated environment. Subsequent reintroduction of susceptible animals can and likely will result in new infections.

No vaccine, treatment, or medical cure for CWD currently exists. Although live animal tests have been used in research applications, in captive cervid operations as a whole-herd test, and for some interstate publicly owned, free-ranging interstate cervid translocations, no practical or validated live animal test for individual animals is available. The tests that are available are for detection of disease in cervids and should not be regarded as food safety tests. The minimum infectious dose of CWD prions is unknown, so determination of the level or degree of infectivity is unknown. Species in the family Cervidae appear to be the only animals naturally infected with CWD, although infection in other species outside this family has been demonstrated with varying success in experimental inoculation studies. Researchers at the National Institutes of Health were unable to demonstrate transmission to non-human primate test subjects (Race et al. 2009; 2018). However, unpublished work from a Canadian and German research team indicates apparent of CWD transmission to macaques via several inoculation methods including consumption of meat from infected, clinically normal deer (Czub et al. 2017). Apparent transmission of bovine spongiform encephalopathy to humans indicates that the species barrier may not completely protect humans from animal-borne prion diseases (Belay et al. 2004). To date, no human CWD infections have been reported, although humans undoubtedly consume CWD-infected animals. Public health authorities recommend that animals that test positive for CWD should not be consumed, nor should any animal that appears unhealthy.

Movement of infected live animals is considered one of the greatest risks for spreading CWD to new locations (Williams et al. 2002; Joly et al. 2003; Travis and Miller 2003; Belay et al. 2004). Movements of wild animals via migrations or dispersal have been implicated in the spread of CWD (Miller et al. 2000; Conner and Miller 2004; Miller and Williams 2004; Miller et al. 2006; Potapov et al. 2016) including probable transmissions from New Mexico to Texas, West Virginia to Virginia, Wisconsin to Iowa, and from Saskatchewan to Alberta. CWD also has been spread via human-facilitated live captive cervid movements including 1) the spread of CWD to 38 captive elk herds in Saskatchewan that received elk directly or indirectly from a single infected herd (Argue et al. 2007) that apparently imported infected elk from South Dakota, and 2) the spread of CWD to captive elk herds in Colorado and one in Kansas when elk from a single infected facility in Colorado were shipped to 19 states and more than 40 other captive facilities within Colorado (unpublished SCWDS Briefs April 2002, Vol.18, No. 1). CWD -infected elk were shipped from Canada to South Korea in 2001 (Sohn et al. 2002) causing major international animal import trade concerns from the resulting epidemiological investigation. The disease reoccurred in a captive elk in the affected Korean area in 2004 and has since occurred in additional cervid case in 2005 and 2010 (Lee et al. 2013), resulting in the closure of that nation to

international trade of captive elk. However, documented movement of live animals cannot explain all new CWD detections.

To control movement of the disease in the captive cervid industry within the United States, the USDA-APHIS's National Herd Certification Program (HCP) was fully implemented in 2012 (Code of Federal Regulations: 9 CFR Part 55 https://www.law.cornell.edu/cfr/text/9/part-55) to regulate interstate shipment of live cervids. Participation in the HCP is voluntarily; however, only animals from HCP-certified herds may be shipped interstate. Prior to implementation of this federal program, individual states regulated the movement of captive cervids. The national HCP certifies herds in approved state CWD programs as being at low risk for having CWD after five years of disease-free monitoring. However, there is no "CWD-free" certification of captive cervid herds. Individual states may implement regulations more stringent than the national HCP and their regulations preempt the Federal requirements with one exception: states must allow transit of captive cervids through the state, even if they do not allow captive cervid operations within the state.

From 2002–2012, federal funding was available to states for surveillance, monitoring, and management of CWD in wild and captive cervids and to the captive cervid industry for indemnity payments to owners/managers if their herds became infected and required depopulation. Since 2012, no funding for state surveillance, monitoring, or management of CWD in wild deer has been available and the economic burden has fallen solely on the states. House Bill 4454 (Chronic Wasting Disease Management Act) was introduced in the 115th Congress (2017–2018) to provide funding "To support State, provincial, and tribal efforts to develop and implement management strategies to address chronic wasting disease among deer, elk, and moose populations, to support applied research regarding the causes of chronic wasting disease and methods to control the further spread of the disease, and for other purposes".

The U.S. federal HCP has not prevented the continued spread of CWD or eliminated CWD in captive herds enrolled in the program. Since implementation of the HCP in 2012, CWD has been detected in additional captive cervid herds, including HCP-certified herds. Intra- and interstate movement of animals from HCP-certified herds later found to be infected is well documented and has resulted in infection of linked herds within the same state as well as at one Wisconsin herd that received an infected deer from a certified Pennsylvania herd. According to information provided by officials in affected states, all certified herds had been monitored for more than the five years required by the HCP before CWD was detected. Similar situations have been documented in Saskatchewan. Until there is a highly-sensitive antemortem test for CWD, live animal movements remain a significant risk for the spread of the disease. Evidence for long-term persistence of prion proteins in the environment, combined with the long incubation periods observed in many prion diseases, suggests that the current five-year monitoring period may be inadequate. Regulators need to be aware that HCP (U.S.) and VHCP (Canada) may create a false sense of security among the public and industry that CWD cannot be spread through movement of live animals from certified herds. The fact CWD continues to be detected in HCP-certified

captive herds after more than five years of monitoring suggests the certification program may not be as effective as desired.

The management of CWD in captive cervid operations in Canada is a joint responsibility of captive cervid producers, provinces/territories, and the federal government. Chronic Wasting Disease is a "reportable disease" under the Health of Animals Act and all suspected cases must be reported immediately to the Canadian Food Inspection Agency (CFIA). The CFIA implemented a national CWD eradication policy in 2000 and in 2002 adopted national standards for a Voluntary Herd Certification Program (VHCP) similar to that in the U.S. In recent years, the CFIA determined that eradication of CWD was not achievable and revised the national policy including the VHCP and biosafety standards applied to captive cervids in the national program (Canadian Food Inspection Agency (CFIA) CWD program information: http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/cwd/herd-certification/eng/1330187841589/1330187970925.)

Canada applies appropriate standards regarding international trade in captive cervids to meet U.S., European, and other countries' import criteria. Similarly, high standards are required to bring live cervids or their products into Canada. More restrictive import criteria are applied by most provinces and territories. Within Canada, surveillance of CWD in captive and wild cervids is conducted under the authority of individual provinces and territories.

Extensive, repeated, and complex animal movements within the captive cervid industry can make epidemiological investigations challenging, and many trace forward cases are lost to follow up if animals are shipped to nonparticipating facilities such as shooting enclosures. Additionally, captive cervids often are regulated by state or provincial agricultural agencies; thus, wildlife managers may not have ready access to captive cervid records. Consequently, epidemiological investigations may be difficult to conduct and will depend on a high level of coordination and cooperation between agencies.

Escapes of animals from captive cervid facilities are common and poses a serious threat of CWD exposure of uninfected wild cervid populations. An audit in Wisconsin in 2003 found that 432 deer that escaped between 2000 and 2002 never were recovered. Many of the escapes occurred because a gate was left open. In 2002 in Wisconsin, an escaped captive deer was killed outside the fence and tested positive for CWD six months after it had escaped from a facility known to be affected by CWD. This occurred again in 2015 when two animals from an affected Wisconsin facility tested positive for CWD months after their escape and miles from the affected facility. The escape of infected captive cervids leads to contamination of the surrounding environment and an increased risk of exposure for the free-ranging cervids around the captive facility. Similarly, exposure of captive cervids likely occurs from free-ranging animals entering captive facilities through compromised fencing, through fenceline contact (Vercauteren et al. 2007, Miller and Fischer 2016), or from environmental contamination occurring prior to facility establishment.

There is evidence that increased hunting pressure to sustain long-term population reduction of wild cervids in disease hotspots may be effective for CWD control. Further modeling efforts suggest that optimizing harvest to target portions of the population most likely to be infected may be effective in limiting CWD (Potapov et al. 2016; Jennelle et al. 2014). In studies conducted in Illinois and Wisconsin, sustained culling by sharpshooters was the only management action that appeared to control CWD (Uehlinger et al. 2016). It is possible that this strategy may eliminate CWD in a focal area with few infected animals. However, in regions, states, or provinces where the disease is established, this strategy would require extensive funding and other resources (Bishop 2010), and may have differing levels of success in reducing prevalence. Ultimately, very few CWD management strategies have been implemented and measured (Uehlinger et al. 2016), highlighting the need for new experimental applications and evaluation of CWD management strategies.

Potential costs and impacts of CWD to states and provinces include detection and management activities, reduced hunter participation, loss of public support for agency missions, and loss of license fees and excise tax revenues that fund wildlife conservation. Without effective education and outreach efforts, hunters can feel alienated and mistrustful of agency management decisions. The human dimensions challenges associated with CWD cannot be overemphasized. In many areas, particularly in rural and Indigenous communities, wild cervid meat is an important source of protein and any threat to wildlife populations threatens food security in these areas. Additional steps (e.g. mandatory check stations, waiting for a test result prior to consumption, and disposal of positive carcasses) may threaten a traditional way of life that has tremendous economic and sociocultural value. Many North American cervid populations are facing declines (e.g. caribou, moose, and mule deer) and the introduction of CWD into such herds could threaten the sustainability of the populations and indigenous rights to hunt.

Additional costs can include indemnity payments to owners/managers of affected captive herds, clean-up funds, surveillance and monitoring, contracted sharpshooters, testing laboratories, personnel for sample collection, and loss of other indirect expenditures (meals, lodging, transportation, etc.) by consumptive and non-consumptive users of the wildlife resource.

Prevention and management of CWD in free-ranging cervid populations is fiscally prudent and forward thinking as an investment by state and provincial agencies. History has shown (*Brucella* in elk and bison, bovine tuberculosis in deer, etc.) that prevention is the key to avoiding long-term population health and economic impacts caused by chronic transmissible diseases in wildlife. Science ultimately may reveal how to effectively manage CWD in free-ranging wildlife but, to date, no demonstrated agency action has been shown to eliminate CWD after it has become established in the wild (although the rapid response in New York seems to have eliminated an early spillover from a captive deer herd). The continued spread of CWD across the landscape has raised concerns about long-term viability of affected wild cervid populations among wildlife managers and the citizens who hunt, photograph, and appreciate wild deer, elk, and moose.

The following topical chapters define best practices supported by strategies of current science and experience-based knowledge with citations to relevant scientific literature.

(Portions of this background material were excerpted from Gillin, C. M. and J. R. Fischer. 2018. State management of wildlife disease, Chapter 12 *in* State Wildlife Management and Conservation, ed. T. J Ryder. John Hopkins University Press. 238 pp.)

Literature Cited and References

Argue, C. K., C. Ribble, V. W. Lees, J. McLane, and A. Balachandran. 2007. Epidemiology of an outbreak of chronic wasting disease on elk farms in Saskatchewan. Canadian Veterinary Journal 48(12):1241–1248.

Belay, E. D., R. A. Maddox, E. S. Williams, M. W. Miller, P. Gambetti, and L. B. Schonberger. 2004. Chronic wasting disease and potential transmission to humans. Emerging Infections Diseases 10(6):977–984.

Benestad, S. L., G. Mitchell, M. Simmons, B. Ytrehus, and T. Vikøren. 2016. First case of chronic wasting disease in Europe in a Norwegian free-ranging reindeer. Veterinary Research 47: 88.

Bishop R. C. 2010. The Economic Impacts of Chronic Wasting Disease (CWD) in Wisconsin, Human Dimensions of Wildlife, 9:3, 181–192, DOI: 10.1080/10871200490479963

Conner, M. M., and M. W. Miller. 2004. Movement patterns and spatial epidemiology of a prion disease in mule deer population units. Ecological Applications 14(6): 1870–1881.

Czub, Stefanie, W. Schulz-Shaeffer, C. Stahl-Hennig, Michael Beekes, H. M. Schaetz, and Dirk Motzkus. 2017. "First Evidence of Intracranial and Peroral Transmission of Chronic Wasting Disease (CWD) into Cynomolgus Macaques: A Work in Progress." In Deciphering Neurodegenerative Disorders. Edinburgh, Scotland.

DeArmond, S. J. and E. Bouzamondo 2002. Fundamentals of prion biology and diseases. Toxicology, 181, pp.9-16.

DeVivo M. T., D. R. Edmunds, M. J. Kauffman, B. A. Schumaker, J. Binfet, T. J. Kreeger, B. J. Richards, H. M. Schatzl, and T. E. Cornish. (2017) Endemic chronic wasting disease causes mule deer population decline in Wyoming. PLoS ONE 12(10): e0186512. https://doi.org/10.1371/journal.pone.0186512

Dubé, C., K. G. Mehren, I. K. Barker, B. L. Peart, and A. Balachandran. 2006. Retrospective investigation of chronic wasting disease of cervids at the Toronto Zoo, 1973–2003. The Canadian Veterinary Journal, 47(12), 1185.

- Edmunds D. R., M. J. Kauffman, B. A. Schumaker, F. G. Lindzey, W. E. Cook, T. J. Kreeger, R. G. Googan, and T. E. Cornish. (2016) Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PLoS ONE 11(8): e0161127. https://doi.org/10.1371/journal.pone.0161127
- Foley A. M., D. G. Hewitt, C. A. DeYoung, R. W. DeYoung, and M. J. Schnupp. 2016. Modeled Impacts of Chronic Wasting Disease on White-Tailed Deer in a Semi-Arid Environment. PLoS ONE 11(10): e0163592
- Galloway, N. L., R. J. Monello, D. Brimeyer, E. Cole, and N. T. Hobbs. 2017. Model forcasting of the impacts of chronic wasting disease on the Jackson Hole elk herd. National Elk Refuge Final Report. National Park Service. 32 Pp.
- Gillin, C. M. and J. R. Fischer. 2018. State management of wildlife disease, Chapter 12 in State Wildlife Management and Conservation, ed. T. J Ryder. John Hopkins University Press. 238 pp.
- Johnson, C. J., K. E. Phillips, P. T. Schramm, D. McKenzie J. M. Aiken, and J. A. Pedersen. 2006. Prions Adhere to Soil Minerals and Remain Infectious. PLoS Pathog 2(4): e32. doi:10.1371/journal.ppat.0020032
- Joly, D. O., C. A. Ribic, L. A. Langenberg, K. Beheler, C. A. Batha, B. J. Dhuey, R. E. Rolley, G. Bartlelt, T. R. Van Deelen, and M. D. Samuel. 2003. Chronic wasting disease in free-ranging Wisconsin white-tailed deer. Emerging Infectious Diseases 9(5):599–601.
- Lee, Y., H. Sohn, M. Kim, H. Kim, K. Park, W. Lee, E. Yun, D. Tark, Y. Cho, I. Cho, and A. Balachandran. 2013. Experimental Chronic Wasting Disease in Wild Type VM Mice. J. Vet. Med. Sci. 75(8): 1107–1110.
- Mathiason, C. K., S. A. Hays, J. Powers, J. Hayes-Klug, J. Langenberg, and S. J. Dahmes. 2009. Infectious Prions in Pre-Clinical Deer and Transmission of Chronic Wasting Disease Solely by Environmental Exposure. PLoS ONE 4(6): e5916. doi:10.1371/journal.pone.0005916
- Miller, M. W. and R. Kahn. 1999. Chronic wasting disease in Colorado deer and elk: recommendations for statewide monitoring and experimental management planning. Colorado Division of Wildlife, Denver, USA.
- Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T.J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of Wildlife Diseases 36:676–690.
- Miller, M. W. and E. S. Williams. 2004. Chronic wasting disease of cervids. Pp. 193–214 in D. A. Harris (ed.). Mad cow disease and related spongiform encephalopathies. Springer-Verlag, Berlin and Heidelberg. 249 pp.
- Miller, M. W., N. T. Hobbs, and S. J. Tavener. 2006. Dynamics of prion disease transmission in mule deer. Ecological Applications 16(6):2208–2214.

- Miller, M. W., and J. R. Fischer. 2016. The first five (or more) decades of chronic wasting disease: lessons for the five decades to come. *Transactions of the 81st North American Wildlife and Natural Resources Conference*.
- Monello, R., J. Powers, N. T. Hobbs, T. Spraker, M. Watry, and M. Wild. 2014. Survival and Population Growth of a Free-Ranging Elk Population with a Long History of Exposure to Chronic Wasting Disease. Journal of Wildlife Management. 78. 214-223. 10.1002/jwmg.665.
- Potapov, A., E. Merrill, M. Pybus, and M. A. Lewis. 2016. Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. PLOS One: https://doi.org/10.1371/journal.pone.0151039
- Prusiner, S. B. 2004. Prion biology and disease. Cold Spring Harbor Laboratory Press. ISBN: 0879696931, 1050 pp.
- Race B., K. D. Meade-White, M. W. Miller, K. D. Barbian, R. Rubenstein, G. LaFauci, L. Cervenakova, C. Favara, D. Gardner, D. Long, and M. Parnell. 2009. Susceptibilities of Nonhuman Primates to Chronic Wasting Disease. Emerging Infectious Diseases 15:1366–1376. doi:10.3201/eid1509.090253.
- Race, B., K. Williams, C.D. Orrú, A.G. Hughson, L. Lubke, B. Chesebol. 2018. Lack of Transmission of Chronic Wasting Disease to Cynomolgus Macaques. Journal of Virology. Apr 25. pii: JVI.00550–18. doi: 10.1128/JVI.00550–18. [Epub ahead of print]
- Rasmussen, J., B. H. Gilroyed, T. Reuter, S. Dudas, N. F. Neumann, A. Balachandran, N. N. V. Kav, C. Graham, S. Czub, and T. A. McAllister. 2014. Can plants serve as a vector for prions causing chronic wasting disease? Prion Vol. 8, Iss. 1.
- Sohn H. J., J. H. Kim, K. S. Choi, J. J. Nah, Y. S. Joo, Y. H. Jean, S. W. Ahn, O. K. Kim, D. Y. Kim, A. Balachandran. 2002. A case of chronic wasting disease in an elk imported to Korea from Canada. J Vet Med Sci 64:855–858, 2002
- Spraker, T. R., M. W. Miller, E. S. Williams, D. M. Getzy, W. J. Adrian, G. G. Schoonveld, and P. A. Merz. 1997. Spongiform encephalopathy in free-ranging mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*) and Rocky Mountain elk (*Cervus elaphus nelsoni*) in northcentral Colorado. Journal of Wildlife Diseases 33:1–6.
- Tamgüney, G., M. W. Miller, L. L. Wolfe, T. M. Sirochman, D. V. Glidden, C. Palmer, A. Lemus, S. J. DeArmond, and S. B. Prusiner. 2009. Asymptomatic deer excrete infectious prions in faeces. Nature 461, 529–532.
- Travis, D. and M. W. Miller. 2003. A short review of transmissible spongiform encephalopathies, and guidelines for managing risks associated with chronic wasting disease in captive cervids in zoos Journal of Zoo and Wildlife Medicine 34:125–133.

Uehlinger F. D., A. C. Johnston, T. K. Bollinger, and C. L. Waldner. 2016. Systematic review of management strategies to control chronic wasting disease in wild deer populations in North America. BMC Veterinary Research 12:173.

Vercauteren, K. C., M. L. LaVelle, N. W. Seward, J. W. Fischer, G. E. Phillips. 2007. Fence-line contact between wild and farmed cervids in Colorado: potential for disease transmission. J. Wildl. Manage. 71 (5):1594–1602.

Williams, E. S. 2005. Chronic wasting disease. Vet. Pathol. 42:530-549.

Williams, E. S., and S. Young. 1980. Chronic wasting disease of captive mule deer: a spongiform encephalopathy. Journal of Wildlife Diseases 16:89–98.

Williams, E. S., and S. Young. 1992. Spongiform encephalopathies in Cervidae. Revue Scientifique et Technique (International Office of Epizootics) 11:551–567.

Williams, E. S., M. W. Miller, T. J. Kreeger, R. H. Kahn, and E. T. Thorne. 2002. Chronic wasting disease of deer and elk: a review with recommendations for management. Journal of Wildlife Management 551–563.

Williams, A. L., T. J. Kreeger, and B. A. Schumaker. 2014. Chronic wasting disease model of genetic selection favoring prolonged survival in Rocky Mountain elk (*Cervus elaphus*). Ecosphere 5(5):60. http://dx.doi.org/10.1890/ES14–00013.1

Section 1: PREVENTION of CWD Introduction and Establishment

3 - Movement of Live Cervids

Best Management Practice to reduce the risk of CWD transmission and establishment of CWD through the movement of live cervids:

• To eliminate the risk of anthropogenic movements of CWD in potentially infected live animals, states, provinces and tribes should prohibit the movement of live cervids including interstate/interprovincial translocations by the captive cervid industry and animal movements undertaken by wildlife management agencies to promote conservation. Similar to the previous chapter, this regulated import action is most effective when employed by states and provinces that do not have CWD documented in their state. However, from a regulation efficiency perspective, a ban across all states and provinces would largely eliminate new cases occurring other than via natural migrations.

Alternative Management practices include:

- Importation ban on all live cervids from CWD-positive states and provinces where CWD has been detected in either captive or free-ranging cervid populations. This restriction increases the risk of importing CWD, as CWD-infected animals may migrate from infected states/provinces/areas to adjacent or distant CWD negative areas and subsequently could be moved unknowingly. Also, animals infected in the early stages of the disease may not test positive in antemortem or postmortem diagnostic testing. As stated in previous chapters, certified low-risk herds have consistently been involved in the movement of CWD to new areas. USDA certified low risk captive herds should be rigorously evaluated prior to importation of animals. States/provinces should evaluate the level of risk for importation of CWD they are willing to accept given the shortcomings of the USDA CWD Program Standards, limitations in diagnostic testing of recently infected animals, unknown environmental contamination challenges, and recent repeated relocation of CWD from certified low risk herds.
 - Oue to the increase in positive CWD cases in certified captive herds as part of the federal herd certification program, states and provinces should evaluate their importation policies and standards (i.e. consider a minimum of 10 years or more for facilities to be CWD free, require importing state/province to have tested all (100%) deceased animals ever residing in a certified facility including slaughter animals and animals sold to shooting facilities, review importing state's /province's import records over time, etc.).

- Restrict interstate/interprovincial movement of live cervids from states, provinces, territories, or tribal lands to those animals from herds that have had annual CWD testing of the herd for at least 5 years (with a statistical confidence of 95% to find the disease at an occurrence of 1% in the translocated herd) including antemortem testing of entire captive herds and all free-ranging animals being translocated. It must be noted that this practice provides increased risk from the identified best management practice for moving the pathogen in live animals due to 1) unknown emigration/immigration movements of free-ranging animals into and out of the herd at any point in time; and 2) captive cervid undocumented/illegal transfers, complex and frequent farm-to-farm movements of potentially infected animals, fenceline contact with infected wild animals, infection from environmental contamination; and 3) infected animals which are in the early stages of the disease will not be detected in antemortem testing.
- Prohibit intrastate, intra-provincial, intra-territorial, and intra-tribal movement of live cervids from CWD enzootic areas. Similar to the identified best management practice, prohibiting movements of live cervids within the jurisdictional boundaries will reduce the risk of CWD transmission and establishment of CWD through the movement of live cervids. This movement restriction will be most effective when applied directly to CWD enzootic areas/states/provinces.

Supporting Strategies and Evidence

The anthropogenic movement of live cervids is widely considered to be one of the greatest risk factors in spreading chronic wasting disease (CWD) to new areas (Williams et al. 2002; Joly et al. 2003; Travis and Miller 2003; Belay et al. 2004). Natural movements of wild cervids contribute to the spread of the disease (Miller et al. 2000; Conner and Miller 2004; Miller and Williams 2004; Miller et al. 2006; Potapov et al. 2016), and anthropogenic movements of captive and wild animals have the potential to both increase the rate at which the disease is spread and also facilitate introductions of the disease into novel geographic areas (Williams et al. 2002; Belay et al. 2004). Transfer of live animals between captive cervid facilities has been implicated in the introduction of CWD from North America to captive elk facilities in South Korea (Sohn et al. 2002; Williams et al. 2002) and has also been widely implicated in the spread of CWD among captive deer and elk facilities within North America (Williams and Young 1982; Williams et al. 2002; Williams and Miller 2002; Miller and Williams 2004; Belay et al. 2004; Kahn et al. 2004; Sigurdson and Aguzzi 2007). Despite ten years of the USDA APHIS Herd Certification Program, CWD-positive animals are still being detected among certified "low-risk" captive herds. Circumstantial evidence suggests that anthropogenic movements of CWD-infected captive cervids may also have been responsible for the introduction of CWD into naïve wild cervid populations in Canada and the United States, including populations in Saskatchewan (Miller and

Williams 2004), Nebraska (Williams et al. 2002), South Dakota (Miller and Williams 2004), and Wisconsin (Joly et al. 2003).

Guidelines and practices for movement of live cervids have been articulated for zoos and similar institutions by Travis and Miller (2003) and for captive facilities by USDA (2014). However, information gained over the last 50 years by scientists indicating an apparent 100% mortality rate among infected animals, a long incubation period for CWD leading to infected, asymptomatic animals shedding prions into the environment through the early course of the disease, a high likelihood of direct or indirect transmission of CWD from infected animals to other captive and/or wild cervids, and the possibility of long-term prion contamination of natural habitats, holding pens, and facilities occupied by CWD-positive animals (Williams et al. 2002; Travis and Miller 2003; Miller and Williams 2004; Belay et al. 2004; Mathiason et al. 2009), managers and regulators are left with making high-stakes, risk-based decisions when allowing or facilitating the movement of cervids. Additionally, given current limitations in surveillance strategies, budgets, staff capacity, and diagnostic tools, the management option providing the most effective elimination of risk for spreading or acquiring CWD from anthropogenic movements of live animals is simply not to move live cervids.

Federal and State/Province Legal Requirements

Federal legal requirements exist for interstate or interprovincial movement of live captive cervids and wildlife agencies should be familiar with the respective requirements of USDA or CFIA. Individual states and provinces may impose additional regulations on transport of live captive cervids. Transport of game meat and other products derived from captive cervids for purposes of interstate commerce are regulated by the Food and Drug Administration (in U. S.) or by individual provinces (Canada). Similarly, transport of carcasses and other parts derived from hunter-harvested wild cervids, which may contribute to the risk of spread of CWD, are regulated by appropriate state or provincial agencies. In the U. S., Violations of state laws governing transport of cervids may be prosecuted under the federal Lacey Act.

Literature Cited and References

Belay, E. D., R. A. Maddox, E. S. Williams, M. W. Miller, M. W., P. Gambetti, and L. B. Schonberger. 2004. Chronic wasting disease and potential transmission to humans. Emerging Infections Diseases 10(6):977–984.

Conner, M. M. and M. W. Miller. 2004. Movement patterns and spatial epidemiology of a prion disease in mule deer population units. Ecological Applications 14(6): 1870–1881.

Joly, D. O., C. A. Ribic, J. A. Langenberg, K. Beheler, K., C. A. Batha, B. J. Dhuey, B. J., R. E. Rolley, G. Bartlelt, T. R. Van Deelen, and M. D. Samuel. 2003. Chronic wasting disease in free-ranging Wisconsin white-tailed deer. Emerging Infectious Diseases 9(5):599–601.

Kahn, S., C. Dube, L. Bates, A. Baluchandran. 2004. Chronic Wasting Disease in Canada: Part 1. Canadian Veterinary Journal 45(5):397–404.

Mathiason, C. K., S. A. Hays, J. Powers, J. Hayes-Klug, J. Langenberg, S. J. Dahmes, D. A. Osborn, K. V. Miller, R. J. Warren, G. L. Mason, and E. A. Hoover. 2009. Infectious Prions in Pre-Clinical Deer and Transmission of Chronic Wasting Disease Solely by Environmental Exposure. PLOS One: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0005916

Miller, M. W. and E. S. Williams. 2004. Chronic wasting disease of cervids. Pp. 193–214 in D. A. Harris (ed.) Mad cow disease and related spongiform encephalopathies. Springer-Verlag, Berlin and Heidelberg. 249 pp.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, amd E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of Wildlife Diseases 36(4):676–690.

Miller, M. W., N. T. Hobbs, and S. J. Tavener. 2006. Dynamics of prion disease transmission in mule deer. Ecological Applications 16(6):2208–2214.

Potapov, A., E. Merrill, M. Pybus, and M. A. Lewis. 2016. Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. PLOS One: https://doi.org/10.1371/journal.pone.0151039

Sigurdson, C. J. and A. Aguzzi. 2007. Review: Chronic wasting disease. <u>Biochimica et Biophysica Acta (BBA)</u> - Molecular Basis of Disease 1772:610–618.

Sohn, H. J., J. H. Kim, K. S. Choi, J. J. Nah, Y. A, Joo, Y. H., Jean, S. W. Ahn, O. K. Kim, D. Y. Kim, and D. Y., Balachandran, A. 2002. A case of chronic wasting disease in an elk imported to Korea from Canada. Journal of Veterinary Medical Science 64:855–858.

Travis, D. and M. Miller. 2003. A short review of transmissible spongiform encephalopathies, and guidelines for managing risks associated with chronic wasting disease in captive cervids in zoos. Journal of Zoo and Wildlife Medicine 34(2):125–133.

United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA APHIS VS). 2014. Chronic Wasting Disease (CWD) Program Standards. USDA APHIS, Washington, D. C. 66 pp.

Williams, E. S., M. W. Miller, T. J. Kreeger, R. H., Kahn, and E. T. and Thorne. 2002. Chronic wasting disease of deer and elk: A review with recommendations for management. Journal of Wildlife Management 66(3):551–563.

Williams, E. S. and M. W. Miller. 2002. Chronic wasting disease in deer and elk in North America. Scientific and Technical Review of the Office International des Epizooties (Paris) 21(2):305–316.

Williams, E. S. and S. Young. 1982. Spongiform encephalopathy of Rocky Mountain elk. Journal of Wildlife Diseases 18(4):465–471.

4 - Movement of Hunter-Harvested Cervid Carcasses and Tissues¹

Best Management Practice for reducing the risk of CWD transmission and establishment of CWD via movement of hunter-harvested cervid carcasses and tissues:

• Prohibit the importation of intact cervid carcasses (e.g. carcasses with spinal column and brain tissue) from all states and provinces. This restriction would allow cut/wrapped meat, deboned meat, cleaned skulls or skull cap with no brain material, shed antlers, hides, canine teeth, and finished taxidermy mounts to be imported from a hunter-harvested cervid. Restricting the interstate/province movement of all potentially infective neural tissue from CWD infected states and provinces, and states and provinces with unknown or no known detection of CWD, will greatly reduce the risk of moving CWD between states and provinces. An interstate/province import ban on high risk carcass parts originating from captive or shooter facilities from all states and provinces regardless of CWD status would reduce risk of importing CWD contaminated tissues into a state/province. Agencies would need to provide a program for hunters to report that their meat is from a CWD positive animal and provide directions or a means for destroying the meat or other materials from that animal.

The following list describes several additional and alternative scientifically grounded management practices for reducing or eliminating risk of disease transmission. Implementation of any of these practices will depend on a range of factors in each state, including acceptability of the proposed practice to hunters, decision-makers and the general public.

- Allow importation of quartered carcasses with no central nervous system tissue (spinal
 column or brain tissue), in addition to the permitted items above. This restriction would
 provide additional flexibility for hunters but would increase risk of importation of CWD
 from carcass part disposal issues associated with waste bone from quartered animal parts.
- Prohibit the intrastate/intraprovincial movement of intact cervid carcasses from CWD-infected areas. This restriction would allow only cut/wrapped meat, deboned meat, cleaned skulls or skull cap, shed antlers, hides, canine teeth, and finished taxidermy mounts to be moved outside known CWD-infected areas. Restricting the intrastate/intraprovincial movement of potentially infective neural tissue from a CWD area to a new CWD-free environment, will limit short and cumulatively more significant movements of the prion across the landscape. Agencies would need to provide a program for hunters to report when their meat is from a CWD positive animal and provide directions for destroying the meat or other materials from that animal.

Adapted from MAFWA resolution supporting restriction of the importation of hunter-harvested cervid carcasses

- Implement an import ban on all parts, including meat and antlers, from CWD-positive states/provinces/territories. This alternative will restrict movement of all carcass parts and reduce the risk of moving prions from known CWD positive areas to uninfected environments. An interstate/province/territory import ban on carcasses including high risk carcass parts originating from captive or shooter facilities from CWD positive states and provinces would reduce risk of importing CWD contaminated tissues into a state/province/territory.
- Prohibit importation of intact cervid carcasses from the states and provinces where CWD has been detected in captive or free-ranging cervid populations. This restriction would allow cut/wrapped meat, deboned meat, cleaned skulls or skull cap, shed antlers, hides, canine teeth, and finished taxidermy mounts to be imported from a hunter-harvested cervid from a CWD positive state. However, with this practice, challenges exist for agencies because of the dynamic nature of CWD discoveries (both wild and domestic) involving the potential undetected movement of CWD to new areas and the non-uniform sampling effort by which states and provinces conduct surveillance. Many states currently employ this practice however, it does present more risk than a more comprehensive prohibition, leaving states with decisions on how much risk they are willing to accept. Agencies would need to provide a program for hunters to report that their meat is from a CWD positive animal and provide directions or a means for destroying the meat or other materials from that animal.
- blanket import ban on harvested cervids inclusive of meat and antlers, from all areas, regardless of CWD status. This alternative would provide the greatest reduction in the risk of importation of CWD. However, its implementation has the greatest economic and political impacts to states/provinces impact to states/provinces, along with reduced hunter opportunity by restricting or eliminating non-resident hunting. While this is an option, it would likely is considered be viewed as the least acceptable alternative, given the consequences. A blanket import ban would simplify import regulation of carcasses for agencies and enforcement purposes. However, the regulation will be unpopular with the state's hunting public who enjoy hunting in other states and particularly those hunters who hunt as nonresidents in non-CWD areas. In addition, such restrictions would significantly impact states, provinces, and territories economically, due to direct economic losses from a decrease in non-resident license sales and indirect expenditures (e.g., hotels, fuel, and groceries). An interstate/interprovincial carcass import ban on carcasses originating from captive or shooter facilities would also reduce risk for importing CWD contaminated tissues from these sources.

In addition, states and provinces should consider adopting the following regulations and policies:

- Provide educational material (online videos) for hunters on how to field-dress and debone carcasses and prepare skull caps or taxidermy mounts to ensure they are in compliance with CWD regulations.
- Require all meat be processed in the state where the animal was harvested, especially when hunting in CWD-enzootic states. Regulations may be required to ensure that local butchers do not process animals from out-of-state.
- Ensure consistent enforcement of regulations with carcass seizures and penalties for violations.
- Provide information about CWD-positive counties, state, provinces, and countries on wildlife
 agency websites that are updated regularly.
- · Provide web resources showing how and where a hunter can have their animal tested.
- Provide a web resource that has a better user interface to display such as, <u>Cervid carcass</u>
 <u>regulations by state Michigan DNR where hunters can search by their destination</u>
 <u>state/province and their residence state/province to ensure they are in compliance.</u>
 - All states, provinces, and territories should provide a notification protocol for CWD-positive animals harvested by a non-resident hunter. This would include direct notification to the state/provincial agency of a nonresident hunter and the hunter. This procedure allows for contact between the home state/provincial agency and the hunter to determine 1) if the carcass was legally imported and 2) if the carcass, parts, or game meat can be recovered for proper disposal by incineration or digestion.
- States and provinces positive for CWD should notify all non-resident hunters at time of license purchase or thereafter, that they likely are prohibited from importing carcass parts or entire carcasses to their home states and provinces. In some jurisdictions this may not be feasible.

Additional Considerations

- States and provinces that may restrict importation of carcasses or parts should consider
 allowing through passage of appropriately cut/wrapped meat, quarters with no part of the
 brain or spinal column attached, deboned meat, cleaned skulls or skull cap from CWD
 positive states/provinces.
- State /province/territory could consider allowing importation of whole cervid carcasses, provided the carcass is accompanied by a 'not detected' CWD test. This may be difficult to implement, due to the turn-around time required for CWD testing.
- Current regulations by state, <u>Cervid carcass regulations by state Michigan DNR</u>

Supporting Strategies and Evidence

States, provinces, and territories should develop carcass transportation recommendations and regulations that are uniform and consistent in order to, 1) stop movement of prions across the landscape, 2) simplify carcass importation laws to reduce confusion to hunters, and 3) minimize inconsistencies with regulations from other states and provinces. CWD has been found at varied, albeit reduced levels in meat and other tissues (Angers et al. 2006, Kramm et al. 2017).

Movement of infected cervid carcasses is one of the known risks for introducing CWD prions to new areas. Individual state/provincial/territorial wildlife agencies retain authority for regulation of carcass movement from hunter-harvested North American wild cervids, both intra- and interstate or province. However, regulations vary across states, provinces, and territories, ranging from complete import bans on whole carcasses from any state or province to a ban on importation from known CWD-affected areas (either entire states or identified zones/areas within states and provinces), while others lack any carcass movement restrictions. Several states/provinces restrict the importation of high risk parts such as brain material and spinal columns.

Management strategies and management units/areas of wild cervids varies among states and provinces. Depending on the size of the state, hunting population, harvest numbers, distribution of animals challenges the ability of state/provincial/territorial wildlife agencies to comprehensively test wild cervids for CWD and is often dependent on such factors as current CWD status, agency staffing, budgets, and political influences. Without detailed and current information provided by agency websites, it may be difficult for a nonresident hunter to determine if he/she is in a CWD-affected zone and the import restrictions that apply from their home state/province/territory. The information required for a hunter to remain compliant with CWD regulations, coupled with the increased geographic distribution and prevalence of CWD across North America, requires a more consistent and precautionary approach to cervid carcass movements.

Literature Cited and References

Angers, R. C., S. R. Browning, T. S. Seward, C. J. Sigurdson, M. W. Miller, E. A. Hoover, and G. C. Telling. 2006. Prions in skeletal muscles of deer with chronic wasting disease. Science, 311(5764), 1117-1117.

Kramm, C., S. Pritzkow, A. Lyon, T. Nichols, R, Morales, and C. Soto. 2017. Detection of prions in blood of cervids at the asymptomatic stage of chronic wasting disease. Science Reports, 7(1), 1–8.

5 - Cervid Urine Products Related to the Introduction of Prions to the Environment

Best Management Practice for reducing the risk of CWD transmission and establishment of CWD through use of natural cervid urine-based products

• Eliminate the sale and use of natural cervid urine-based products. Banning urine-based products is the only practice that would completely reduce the risk of importing CWD via these products. This BMP would be most effective in those states and provinces that do not have documented cases of CWD. A comprehensive ban on sales and use would be the simplest and easiest regulation for hunters to understand and agencies to enforce. It is strongly recommended that agencies reach out to hunting groups prior to any ban to explain the risks associated with natural deer urine products. The restriction will likely be opposed by captive cervid operators and producers. Many archery and firearm hunters utilize scent lures as a hunting tool where it is legal and will likely oppose any rule change.

Potential alternatives if a complete ban is not an option:

- Permit the sales and use of synthetic scent products. Fully synthetic scent products
 would be a safe alternative relative to CWD risk. However, because there is no way to
 differentiate synthetic products from natural urine, there would a risk of natural urine
 being dispensed as a synthetic. Currently, labeling of urine scents is not uniform and it
 may be difficult to ascertain the purity of the product. This creates challenges for users
 and also for enforcement of urine restrictions.
- Permit only cervid urine products produced in-state/in-province/in-territory to reduce the risk of importing contaminated product from an unknown source.
 States/provinces permitting urine production should have rigorous regulation of live cervids importation and active CWD surveillance programs.
- Allow import of natural urine-based products from states and provinces without
 CWD detections. There is currently no agency oversight of the production, bottling,
 distribution, or sale of urine-based products or mechanisms providing quality
 assurance/quality control to ensure that these products are actually CWD-free. Similarly,
 there are no existing mechanisms where agencies could recall CWD-contaminated
 products once distributed. Therefore, this alternative is higher-risk than a complete ban.

Supporting Strategies and Evidence

Prions have been detected in saliva, feces, blood, antler velvet, and urine (Angers et al. 2006, Angers et al. 2009, Haley et al. 2011, Henderson et al. 2015, Mathiason et al. 2006, Plummer et

al. 2017). Infected deer may shed prions in their urine for months (or years) prior to developing clinical signs and may shed thousands of infectious doses of prion over the course of a shedding animal's life (Henderson et al. 2015).

Despite federal, state, and local laws, regulations and other measures intended to prevent the spread or reduce CWD prevalence, the disease continues to be identified in new areas, including in captive cervid facilities certified as "low risk" through the USDA Herd Certification Program (HCP) and the CFIA Voluntary Herd Certification Program (VHCP). More restrictive CWD regulations on the sales and use of potentially infected materials are needed to stop actions that could infect wild and captive cervid herds now and for future generations. Multiple states and provinces have already implemented bans on natural cervid urine products (e.g., Alaska, Arkansas, Arizona, New Mexico, Vermont, Virginia, Manitoba, Nova Scotia, Ontario, and Yukon Territory). The Northeast Association of Fish and Wildlife Agencies passed a resolution strongly encouraging all state and provincial fish and wildlife agencies to work diligently to ban the use of natural-based cervid urine products (Adopted Nov. 1, 2017 http://www.neafwa.org/uploads/2/0/9/4/20948254/deer_urine_2017.pdf).

Urine sold commercially is collected from captive cervid facilities. Extensive movement of animals between facilities, limited and delayed testing of animals, and shared equipment between breeder herds and shooting herds make captive cervids a high risk for CWD (Maddison et al. 2010). Nationally, CWD continues to be found in captive cervid facilities with 40 facilities testing positive since 2012 in 9 states. Of the CWD positive facilities, 12 were shooter facilities and 27 were breeder facilities; 18 of 27 had at least 5 years of monitoring (testing mortalities) and 15 of 27 were enrolled in the USDA HCP. Urine products are frequently batched/combined from multiple locations and distributed across the country via retail, internet, and catalog sales (Nark 2017). Urine production and sales is not regulated by any agency, nor are there any testing or marking requirements of urine products. The Archery Trade Association Deer Protection Program is modeled after the USDA HCP but has no regulatory authority to provide an adequate prevention and distribution of contaminated urine products.

CWD prions are excreted in higher concentrations in saliva and feces than in urine (Henderson et al. 2015, Plummer et al. 2017). Urine is often collected through a grate system, which allows mixing of saliva and feces with the urine prior to filtering (Spitznagel 2012). This mixing could increase the likelihood of CWD-infected urine with higher concentrations of prion entering the scent market. There is currently no rapid, cost effective test to determine if collected urine contains prions (John et al. 2013). Therefore, although the risk of CWD transmission by urine products or a single application of a urine product to a surface is relatively low compared to movement of live cervids or carcasses, regulation of this industry is lacking with no known no "safe" dose of prion; exposure to one prion may be enough to cause infection (Fryer and McLean 2011). Additionally, the repeated application of urine scents to a defined surface (same tree for instance) or in the same area over time by an archery or rifle hunter produces increased risk because the multiple applications may be increasing the loading or infective dose at the attraction

site by a susceptible ungulate. The environmental persistence of the applied prions could well serve as the point source of an infection outbreak.

Prions readily bind to soil minerals where they remain infectious (Johnson et al. 2006). If cervid urine containing prions is put on the landscape by deer hunters (e.g., in a scrape or other area used by cervids), prions may bind to soil and contaminate that location for years or decades. Models have demonstrated that risk of CWD transmission from the environment increases over time as prions accumulate (Almberg et al. 2011). Repeated applications of deer urine at the same place over time could potentially build a reservoir of prions, increasing the likelihood of transmission (Mathiason et al. 2009). Plants are capable of binding prions on leaves and taking up prions into their tissues; those prions remain infectious (Pritzkow et al. 2015) although the uptake or effect in wild deer is unknown. Cervids attracted to scent location could potentially ingest prions in plants or soil and become infected.

In addition to the risks associated with the product itself, cervid urine placed by humans serves as another unnatural attractant to artificially congregate animals. In areas where CWD is present, urine may facilitate disease transmission to healthy animals, much like supplemental feeding or baiting.

State agencies that have attempted to or have implemented bans on natural urine products have experienced variable levels of negative feedback from hunters. However, some surveys suggest that hunters may be open to restrictions on the use of these products. Nationally, 82% of hunters surveyed from the National Deer Alliance have used natural urine products in the past, but despite having a history with these products, 80% still supported a ban to prevent CWD introduction (n=516, Schuler, personal communication). Synthetic urine products represent over 20% of the current market so safer alternative product is available although testing and regulation of the product and industry does not currently exist.

Literature Cited and References

Almberg, E. S., P. C. Cross, C. J. Johnson, D. M. Heisey, and B. J. Richards. 2011. Modeling routes of CWD transmission: environmental prion persistence promotes deer population declines and extinction. http://dx.doi.org/10.1371/journal.pone.0019896

Angers, R. C., S. R. Browning, T. S. Seward, C. J. Sigurdson, M. W. Miller, E. A. Hoover, and G. C. Telling. 2006. Prions in skeletal muscles of deer with chronic wasting disease. Science 311:1117

Angers, R. C., T. S., Seward, D. Napier, M. Green, E. Hoover, T. Spraker, K. O'Rourke, A. Balachandran, and G.C. Telling. 2009. Chronic wasting disease prions in elk antler velvet. Emerging Infectious Diseases 15:696–703

- Fryer, H. R. and A. R. McLean. 2011. There is no safe dose of prions. Plos ONE 6: e23664. doi:10.1371/journal.pone.0023664
- Gough, K. C. and B. C. Maddison. 2010. Prion transmission. Prion 4:275–282.
- Haley, N. J., C. K. Mathiason, S. Carver, M. Zabel, G. C. Telling, and E. A. Hoover. 2011. Detection of CWD prions in salivary, urinary, and intestinal tissues of deer: Potential mechanisms of pathogenesis and prion shedding. Journal of Virology 85:6309–6318. doi:10.1128/JVI.0425–11.
- Henderson, D. M., N. D. Denkers, C. Hoover, N. Garbino, C. K. Mathiason, and E. A. Hoover. 2015. Longitudinal detection of prion shedding in saliva and urine by chronic wasting disease infected deer by real-time quaking-induced conversion. Journal of Virology 89:9338–9347. doi:10.1128/JVI.01118–15
- John, T. R., H. M. Schatzl, and S. Gilch. 2013. Early detection of chronic wasting disease prions in urine of pre-symptomatic deer by real-time quaking-induced conversion assay. Prion. doi.org/10.4161/pri.24430
- Johnson C. J., K. E. Phillips, P. T. Schramm, D. McKenzie, J. M. Aiken, and J. A. Pedersen. 2006. Prions Adhere to Soil Minerals and Remain Infectious. PLOS Pathogens 2(4): e32. doi.org/10.1371/journal.ppat.0020032.
- Maddison, B. C., C. A., Baker, L. A. Terry, S. J. Bellworthy, L. Thorne, H. C. Rees, and K. C. Gough. 2010. Environmental sources of scrapie prions. Journal of Virology 84:11560–11562.
- Mathiason, C. K., J. G. Powers, S. J. Dahmes, D. A. Osborn, K. V. Miller, R. J. Warren, G. L. Mason, S. A. Hays, J. Hayes-Klug, D. M. Seelig, M. A. Wild, L. L. Wolfe, T. R. Spraker, M. W. Miller, C. J. Sigurdson, G. C. Telling, and E. A. Hoover. 2006. Infectious prions in the saliva and blood of deer with chronic wasting disease. Science 314:133–136.
- Mathiason C. K., S. A. Hays, J. Powers, J. Hayes-Klug, J. Langenberg, J. Dahmes, S. J. Osborn, D. A. Miller, K. V. Warren, R. J. Mason, and E. A. Hoover. 2009. Infectious Prions in Pre-Clinical Deer and Transmission of Chronic Wasting Disease Solely by Environmental Exposure. PLoS ONE 4(6): e5916. doi:10.1371/journal.pone.0005916
- Miller M. W., E. S. Williams, N. T. Hobbs, and L. L Wolfe. 2004. Environmental sources of prion transmission in mule deer. Emerging Infectious Disease 10:1003–1006.
- Nark, J. 2017. Pennsylvania's golden harvest: deer urine. The Philadelphia Inquirer. October 12. http://www.philly.com/archive/jason_nark/pennsylvanias-golden-harvest-deer-urine-20171012.html

Nichols, T. A., J. W. Fisher, T. R. Spraker, Q. Kong, and K. C. VerCauteren. 2015. CWD prions remain infectious after passage through the digestive system of coyotes (*Canis latrans*). Prion 4:0. [Epub ahead of print]

Plummer, I. H., S. D. Wright, C. J. Johnson, J. A. Pedersen, and M. D. Samuel. 2017. Temporal patterns of chronic wasting disease prion excretion in three cervid species. Journal of General Virology 98:1932–1942.

Pritzkow, S., F. Moda, U. Khan, G. C. Telling, E. Hoover, and C. Soto. 2015. Grass plants bind, retain, uptake, and transport infectious prions. Cell Reports 11(8):1168–115, doi:10.1016;j.celrep.2015.04.036

Sabalow, R. 2014. Trophy deer industry linked to disease, costs taxpayers millions. Indy Star. March 27. https://www.indystar.com/story/news/investigations/2014/03/27/buck-fever-intro/6865031/

Shepstone Management Company. 2008. The economic impact of New York state deer and elk farms. 8pp. http://www.shepstone.net/NYdeer.pdf

Spitznagel, E. 2012. Odd jobs: deer urine farmer. Bloomberg. August 31. https://www.bloomberg.com/news/articles/2012-08-31/odd-jobs-deer-urine-farmer.

6 - Import of Reproductive Tissues/Products and Gametes

Best Management Practice for the importation of reproductive tissues:

- The importation of reproductive tissues (principally semen or embryos) should be banned in states, provinces, and territories. To date there have been no studies investigating the possibility of transmission of CWD in cervids via transfers of reproductive tissues/products or gametes. However, such transmission pathways have been studied in other transmissible spongiform encephalopathies (TSEs), including bovine spongiform encephalopathy (BSE) in cattle and scrapie in sheep and goats (Wrathall et al. 2008), and although the incidence of such transmission events is thought to be low, embryo transfer and artificial insemination from infected animals represents potential pathways of scrapie transmission in sheep (Wrathall et al. 2008; Rubenstein et al. 2012). Based on the numerous epidemiological similarities between scrapie and CWD, it is reasonable to infer a potential risk of CWD transmission via collection, movement and use of reproductive products. States and provinces should ban the importation of reproductive tissues until further scientific data on CWD transmission is available.
- As an alternative practice, state, provincial, and territorial wildlife agencies should do everything possible to reduce and prioritize risk if importation of reproductive tissues is considered.

The following precautions can reduce the likelihood of CWD transmission from imported reproductive tissues (Wrathall 1997, 2000). These precautions were designed to apply specifically to those who are engaged in the direct manipulation of reproductive tissues, which in many cases will not necessarily include state agency staff. These precautions are included here for the sake of completeness and for review and consideration by agencies who may wish to consider regulating or providing guidance regarding the importation of reproductive tissues, products, and gametes into their state/province/territory.

1) Avoid transport or importation of reproductive tissues, embryos, or gametes from high-risk areas or regions. Materials of animal origin for use in reproductive technologies should preferably come from areas or regions that can demonstrate an absence of TSEs (Wrathall 2000). Decisions regarding the sourcing and transportation of reproductive material should consider local veterinary infrastructure, status of disease surveillance systems, statistics on TSE occurrence, and whether control policies are being effectively applied in the exporting areas or regions. The reliability of veterinary certification programs is also critical, and if the health or traceability of any materials or their donors is in any doubt, the risks must be scored accordingly (Wrathall 2000).

- 2) Avoid the extraction and use of reproductive tissues, embryos, or gametes from clinically diseased animals. Wrathall (2000) notes that reproductive technologies such as embryo or gamete harvesting are unlikely to be used on clinically affected animals, except in cases where salvage of genetic materials is desired. In such cases, there is a small but non-negligible risk of disease transmission, particularly if surgical methods of harvesting are applied. If required, the best option according to Wrathall (2000) is to follow non-surgical means of tissue or gamete collection using single-use disposable equipment which is then incinerated after use.
- 3) Avoid use of high-risk tissues in reproductive technologies. Tissues at particularly high risk for TSE transmission include the pituitary (Kidd and Gray 1988), any cells of neurological origin, including neural stem cells (Chesebro et al. 1993; Windl et al. 1999), lymphoid tissues and associated cells, and surgical catgut (McDiarmid 1996). In such cases, materials should be derived from low-risk species or from synthetic, recombinant, or plant sources (Wrathall 2000).
- 4) Avoid contamination of reproductive materials at the time of collection. Instruments for collection should be of the disposable type, and care must be taken to prevent contact with high-risk tissues, including intestines, lymphoid tissues, and placentae (Wrathall 2000).
- 5) **Test materials to detect presence of infectivity.** Wrathall (2000) suggests testing of representative samples of source materials as well as aliquots of the final product(s) for the presence of TSE causative agencies.
- 6) **Decontaminate instruments.** The guidelines proposed for instrument decontamination by Wrathall (1997; 2000) are based on guidelines which were developed by the Advisory Committee on Dangerous Pathogens (1998) for the specific context of managing transmissible spongiform encephalopathies (TSEs) in humans.

Instruments for high-risk animals known or suspected to be clinically affected with TSE should be of a single-use type and destroyed by incineration following use.

The guidelines divide instruments into three categories:

Category 1 – Instruments for animals whose likely exposure to TSEs is zero or minimal. Conventional cleaning and sterilization procedures apply.

For clinically normal animals in regions where CWD is considered enzootic:

Category 2 – Instruments for animals with medium to high exposure risk (i.e. possibly incubating TSE) but without clinical signs. Instruments that contact the central nervous system or eye should be incinerated. Instruments that do not contact the CNS or eye can be re-used, provided they undergo specific TSE decontamination procedures (described in more detail below). Note that this category applies specifically to instruments used on clinically normal animals in countries or regions where the relevant TSEs are considered enzootic.

Category 3 – Instruments for high-risk animals known or suspected to be clinically affected with TSE. Instruments should be of a single-use type and destroyed by incineration following use.

For Category 2 instruments, Wrathell (2000) recommends following at least one of three published TSE decontamination procedures:

- Chemical disinfection with sodium hypochlorite (20,000 ppm for at least one hour) (recommended by Advisory Committee on Dangerous Pathogens 1998, Centers for Disease Control and Prevention 2009).
 - Ensure surface should remain wet for entire period, then rinsed well with water.
 Before chemical treatment, it is strongly recommended that gross contamination of surfaces be reduced because the presence of excess organic material will reduce the strength of the chemical solutions.
 - 20,000 ppm sodium hypochlorite equals a 2% solution. Most commercial household bleach contains 5.25% sodium hypochlorite, therefore, make a 1:2.5 dilution (1 part 5.25% bleach plus 1.5 parts water) to produce a 20,000 ppm solution. This ratio can also be stated as two parts 5.25% bleach to three parts water. Working solutions should be prepared daily.
 - CAUTION: Above solutions are corrosive and require suitable personal
 protective equipment and proper secondary containment. These strong corrosive
 solutions require careful disposal in accordance with local regulations.
- Autoclaving in a porous load steam sterilizer at 134–137°C for a single cycle of at least 18 minutes (or six cycles of three minutes each) (recommended by Advisory Committee on Dangerous Pathogens 1998).
- Immerse instruments in 1 N sodium hydroxide for one hour, clean, and autoclave at 134°C for one hour (recommended by World Health Organization 1997).

In addition to these older protocols, it should be noted that Environ LpH has been used effectively for over a decade for TSE decontamination (Race and Raymond 2004). Hypochlorous acid (HOCl) has also shown considerable promise as an anti-prion agent in laboratory trials and is much less toxic to human workers and less damaging to equipment (Hughson et al. 2016).

Literature Cited and References

Advisory Committee on Dangerous Pathogens – Spongiform Encephalopathy Advisory Committee. 1998. In: Transmissible Spongiform Encephalopathy Agents: Safe Working and the Prevention of Infection. The Stationary Office, PO Box 276, London SW8 5DT, 54 pp.

Centers for Disease Control and Prevention, National Institutes of Health and U.S. Department of Health and Human Services. 2009. *Biosafety in Microbiological and Biomedical laboratories*. HHS Publication No. (CDC) 21-1112: p.288.

Chesebro, B., K. Wehrly, B. Caughey, J. Nishio, D. Ernst, and R. Race. 1993. Foreign PrP expression and scrapie infection in tissue culture cell lines. Developments in Biology Standardization 80:131–140.

Hughson, A. G. et al. 2016. Inactivation of Prions and Amyloid Seeds with Hypochlorous Acid. PLoS Pathogens http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1005914.

McDiarmid, S. C. 1996. Scrapie: the risk of its introduction and effects on trade. Australian Veterinary Journal 73:161–164.Race, R. E., Raymond, G. J. 2004. Inactivation of Transmissible Spongiform Encephalopathy (Prion) Agents by Environ LpH. Journal of Virology 78(4):2164–2165.

Rubenstein, R., M. S. Bulgin, B. Chang, S. Sorensen-Melson, R. B. Petersen, and G. LaFauci. 2012. PrP^{Sc} detection and infectivity in semen from scrapie-infected sheep. Journal of General Virology 93:1375–1383.

Windl, O., H. Lorenz, C. Behrens, A. Romer, and H. A. Kretzschmar. 1999. Construction and characterization of murine neuroblastoma cell clones allowing inducible and high expression of the prion protein. Journal of General Virology 80:15–21.

World Health Organization. 1997. In: Report of a WHO Consultation on Medicinal and other Products in Relation to Human and Animal Transmissible Spongiform Encephalopathies. With the participation of the Office International des Epizooties (OIE), World Health Organization, Geneva, Switzerland, p. 17.

Wrathall, A. E. 1997. Risks of transmitting scrapie and bovine spongiform encephalopathy by semen and embryos. Revue Scientifique et Technique (International Office of Epizootics) 16(1):260–264.

Wrathall, A. E. 2000. Risks of transmission of spongiform encephalopathies by reproductive technologies in domesticated ruminants. Livestock Production Science 62:287–316.

Wrathall, A. E., G. R. Holyoak, M. Parsonson, and H. A. Simmons. 2008. Risks of transmitting ruminant spongiform encephalopathies (prion diseases) by semen and embryo transfer techniques. Theriogenology 70(5):725–745.

7 - Preventing Unnatural Concentrations of Cervids - Baiting and Feeding

Best Management Practice:

 To reduce the risk of CWD transmission and establishment of CWD through unnatural concentrations of cervids, states and provinces should eliminate the baiting and feeding of all wild cervids using regulatory mechanisms such as jurisdictional bans.

Alternative Management practices include:

- Where a jurisdictional ban is not possible, an alternative utilized by some agencies is
 to allow baiting and/or feeding of cervids in portions of CWD-positive states where
 the disease has not yet been detected. However, this practice may facilitate increasing
 the prevalence and distribution of CWD within the state due to the epidemiology of the
 disease, natural movements of cervids, and limitations associated with surveillance of
 free-ranging animals.
- In jurisdictions with no evidence of CWD, proactive strategies to decrease baiting and feeding will minimize future disease control challenges. These strategies may include outright bans as stated above, or aggressive education and outreach campaigns. Once baiting and feeding have been established and hunter attitudes are accepting of the practice, it may be difficult to reverse hunter attitudes even with increasing disease threat.
- States should provide protocols for alternative methodologies to traditional baited camera surveys for hunters and landowners who wish to survey deer populations on their properties.

Supporting Strategies and Evidence

From the perspective of control and management of infectious diseases, anything that aggregates animals will, in most circumstances, also increase the opportunity for disease transmission (Becker and Hall 2014). While natural aggregations of animals exist due to a variety of behavioral, seasonal, and resource factors, human-associated aggregations related to baiting and feeding can greatly increase the risk of disease transmission due to increased animal numbers and concentrations over extended time periods. This can lead to exposure to larger doses of infectious agents, multiple exposures, or exposures sustained over prolonged periods of time all resulting in greater probability of infection.

The provision of food items for cervids and other free-ranging wildlife by humans poses challenges on multiple levels: epidemiologic, ecologic, economic, and social (Brown and Cooper

2006; The Wildlife Society 2007). Baiting (placement of food by humans to aid hunter harvest), recreational feeding (placement of food by humans to aid in wildlife viewing for entertainment), and supplemental feeding (placement of food by humans to increase the nutrition available to wildlife) can all increase transmission of infectious diseases. This occurs by increasing both local densities of animals (and direct contacts between individuals) and environmental contamination with infectious agents (by indirect contacts with food, plants or soils) (Sorensen et al. 2014). Feeding and baiting may change social dynamics among animals and increase contacts between otherwise disparate individuals, groups, or species. Although baiting is far from risk-free, it typically occurs over a shorter period (coinciding with hunting seasons) compared to feeding operations, and may be less of a threat of disease transmission than feeding (Cosgrove et al. 2014). Evidence to date suggests that "restrictions on feeding quantity would not mitigate the potential for disease transmission" and that putative mitigating practices such as spreading feed or bait over a specified area, or restricting the kinds of food items that can be used, did not substantially reduce the potential risk for disease transmission (Palmer and Whipple 2006; Thompson et al. 2008). While proponents often claim that making bait available in areas with enzootic disease is necessary to maintain or increase hunter harvest, current evidence suggests the effect of baiting for increasing harvest is insignificant (Van Deelen et al 2003).

The argument to bait and feed wildlife is often presented by proponents for both economic and social reasons. Sales of wildlife bait and feed provides markets for surplus agricultural commodities considered unfit or unmarketable for human or livestock consumption. Although the economic value of such sales is still largely unquantified, experience in states where baiting and feeding are legal suggest it is substantial. Consequently, bans on baiting and feeding that might decrease sales are typically opposed by farmers and their advocacy organizations. Such groups often exert political pressure on decision makers responsible for wildlife management regulations, arguing bans will result in job losses and decreased economic opportunities in rural areas where hunting is a substantial source of income from tourism.

There is currently no evidence that baiting and feeding of free-ranging cervids can be conducted to mitigate increases in the opportunity for disease transmission. There is also no evidence the practice is likely to increase harvest sufficiently to overcome the negative effects of those increases by disease transmission (Rudolph et al. 2006). Any benefits of increased public support or agency credibility that might theoretically accrue from allowing hunters to use bait remain speculative, and potentially unproven. Research has shown that CWD is both contagious and self-sustaining (Miller et al. 1998; Miller and Williams 2004; Miller and Wild 2004; Miller et al. 2000). Baiting and feeding deer artificially concentrates deer, facilitating both animal-to-animal contact and exposure to potentially disease-contaminated sites (Garner 2001; Thompson et al. 2008; Mejía-Salazar et al. 2018). A consequence of increased contacts from baiting and feeding is an increased risk of transmission of infectious disease among deer (Thompson et al. 2008; Becker and Hall 2014; Ramsey et al. 2014; Sorensen et al. 2014). An international panel reviewing CWD management in Colorado emphasized that, "Regulations preventing... feeding

and baiting of cervids should be continued" (Peterson et al. 2002). In preventing, managing or controlling CWD, states should consider the socio-economic consequences of prohibitions on baiting and feeding.

Literature Cited and References

Becker, D. J. and R. J. Hall. 2014. Too much of a good thing: resource provisioning alters infectious disease dynamics in wildlife. Biology Letters. 10(7), http://dx.doi.org/10.1098/rsbl.2014.0309.

Brown, R. D. and S. M. Cooper. 2006. The nutritional, ecological, and ethical arguments against baiting and feeding white-tailed deer. Wildlife Society Bulletin. 34(2): p. 519–524.

Cosgrove, M. K., D. J. O'Brien, and D. S. L. Ramsey. 2014. Baiting and feeding revisited: exploring factors influencing transmission of bovine tuberculosis among deer and to cattle, in VI International M. bovis Conference. 2014: Cardiff, UK, 16–19 June.p. 17.

Garner, M. S. 2001. Movement patterns and behavior at winter feeding and fall baiting stations in a population of white-tailed deer infected with bovine tuberculosis in the northeastern Lower Peninsula of Michigan. Department of Fisheries and Wildlife, Michigan State University: East Lansing, Michigan. 270 p.

Mejía-Salazar M. F., C. L. Waldner, Y. T. Hwang, and T. K. Bollinger. 2018. Use of environmental sites by mule deer: a proxy for relative risk of chronic wasting disease exposure and transmission. Ecosphere. 9(1):e02055. DOI: 10.1002/ecs2.2055

Milner, J. M., F. M. Van Beest, K. T. Schmidt, R. K. Brook, and T. Storaas. 2014. To Feed or Not to Feed? Evidence of the Intended and Unintended Effects of Feeding Wild Ungulates. Journal of Wildlife Management. 78(8): p. 1322–1334.

Miller, M. W. and M. A. Wild. 2004. Epidemiology of chronic wasting disease in captive white-tailed and mule deer. Journal of Wildlife Diseases. 40(2): p. 320–327.

Miller, M. W., M. A. Wild, and E. S. Williams. 1998. Epidemiology of chronic wasting disease in captive Rocky Mountain elk. Journal of Wildlife Diseases. 34(3): p. 532–538.

Miller, M. W. and E. S. Williams. 2004. Chronic wasting disease of cervids. Current Topics in Microbiology and Immunology. 284:p. 193–214.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of Wildlife Diseases. 36(4): p. 676–690.

Palmer, M. V. and D. L. Whipple. 2006. Survival of Mycobacterium bovis on feedstuffs commonly used as supplemental feed for white-tailed deer (Odocoileus virginianus). Journal of Wildlife Diseases. 42(4): p. 853–858.

Peterson, M. J., M. D. Samuel, V. F. Nettles, G. Wobeser, and W. D. Hueston. 2002. Review of chronic wasting disease management policies and programs in Colorado. Colorado Wildlife Commission: Denver, CO, USA.

Ramsey, D. S. L., D. J. O'Brien, M. K. Cosgrove, B. A. Rudolph, A. B. Locher, and S. M. Schmitt. 2014. Forecasting eradication of bovine tuberculosis in Michigan white-tailed deer. Journal of Wildlife Management. 78(2): p. 240–254.

Rudolph, B. A. 2012. Enforcement, personal gains, and normative factors associated with hunter compliance and cooperation with Michigan white-tailed deer and bovine tuberculosis management interventions. Department of Fisheries and Wildlife, Michigan State University: East Lansing, MI, 137 p.

Rudolph, B. A., S. J. Riley, G. J. Hickling, B. J. Frawley, M. S. Garner, and S.R. Winterstein. 2006. Regulating hunter baiting for white-tailed deer in Michigan: Biological and social considerations. Wildlife Society Bulletin. 34(2): p. 314–321.

Sorensen, A., F. M. van Beest, and R. K. Brook. 2014. Impacts of wildlife baiting and supplemental feeding on infectious disease transmission risk: A synthesis of knowledge. Preventive Veterinary Medicine. 113(4): p. 356–363.

The Wildlife Society. 2007. Final TWS position statement: baiting and supplemental feeding of game wildlife species. Bethesda, Maryland: The Wildlife Society. 4 pp.

Thompson, A. K., M. D. Samuel, and T. R. Van Deelen. 2008. Alternative feeding strategies and potential disease transmission in Wisconsin white-tailed deer. Journal of Wildlife Management. 72(2): p. 416–421.

Van Deelen, T. R., B. Dhuey, K. R. McCaffery, and R. E. Rolley. 2006. Relative effects of baiting and supplemental antlerless seasons on Wisconsin's 2003 deer harvest. Wildlife Society Bulletin. 34(2): p. 322–328.

Section 2: SURVEILLANCE

8 - Validated CWD Testing for Cervids

Best Management Practices using validated tests in the surveillance and monitoring of CWD includes the following:

- For official CWD testing of cervids, use only State, Federal, and university laboratories that are part of the U. S. or Canadian National Animal Health Laboratory networks and are approved to conduct federally recognized CWD diagnostic testing (9 CFR 55.8 for U. S.).
- Currently available federally recognized CWD tests are immunohistochemistry
 (IHC), enzyme-linked immunosorbent assay (ELISA), and western blot. All suspect
 positive ELISA test and western blot results should be confirmed with IHC.
- Tissues to be tested for postmortem sampling are the medial retropharyngeal lymph nodes (MRPLN) and obex. For white-tailed and mule deer, the MRPLN is recommended, but in other cervid species such as elk and moose, both the obex and MRPLN should be tested.
- All cervid species should be considered potentially susceptible to CWD and tested accordingly.
- Antemortem testing is an active area of research and may be a useful tool for
 increasing surveillance in captive cervids. If utilized by a state/provincial agency, such
 tests should only be used as whole-herd screening tests or for sequential testing of
 individual animals or certain capture/recapture scenarios. These tests should not be
 considered an adequate single test of individual animals.
- States/provinces should provide expertise, samples, or resources to support research into the development and validation of new CWD diagnostic tests that may become available in the future.
- State/provincial agency training of personnel should include basic CWD knowledge, wet labs for hands-on instruction in sample collection, sample handling, packaging and disinfection.
- To limit the anthropomorphic spread of CWD, maintain sound biosecurity and carcass disposal protocols. Limit sample collection locations of harvested animals to as close to (or within) known endemic areas as possible.

Supporting Strategies and Evidence

Susceptible Cervid Species:

Cervid species known to be susceptible to CWD include North American elk or wapiti (Cervus canadensis), red deer (Cervus elaphus), mule deer (Odocoileus hemionus), white-tailed deer (Odocoileus virginianus), sika deer (Cervus nippon), moose (Alces alces), caribou or reindeer (Rangifer tarandus), and their hybrids. Reeve's muntjac (Muntiacus reevesi) have been shown to be susceptible by oral inoculation (Nalls et al. 2013). Experimental infection trials failed to infect fallow deer (Dama dama) with CWD by natural transmission routes, although they are susceptible by intercerebral inoculation (Rhyan et al. 2011). For the purpose of state/provincial CWD surveillance programs, all cervid species should be considered potentially susceptible to CWD and should be monitored accordingly.

CWD Testing:

Only state/provincial, federal, and university laboratories that are part of the respective federal National Animal Health Laboratory networks in the U. S. or Canada are approved to conduct federally recognized CWD diagnostic testing. This testing authority pertains to all cervids (Canada) and captive cervids throughout the U. S., but may also be applied to free-ranging cervids in some jurisdictions. The requirement to utilize federally-approved laboratories may depend on how captive and free-ranging cervids are defined within a jurisdiction, which state agencies hold regulatory authority, and whether interstate movements are involved. However, because NAHLN certification includes requirements for quality assurance and quality control, the use of a NAHLN lab is recommended here as a BMP.

Postmortem Testing:

Species variability:

• Tissues to be tested for postmortem sampling are the medial retropharyngeal lymph nodes (MRPLN) and obex. In mule deer and white-tailed deer, the MRPLN is the preferred diagnostic sample because data indicate CWD prions are detectable in the MRPLN before the obex (Miller and Williams 2002; Keane et al. 2008). Although MRPLN is an acceptable tissue for surveillance in wild elk (Hibler et al., 2003), it has been shown that prion deposition may be more variable in some species (e.g., moose, elk, reindeer), and may initially appear in the obex. Therefore, both MRPLN and obex should be tested (Spraker et al. 2004) in clinical suspects or in other circumstances as dictated by management or research goals. In Canada, MRPLN is the preferred tissue for testing moose but obex should also be collected.

Types of Tests:

Currently available federally recognized CWD tests for captive cervids are
immunohistochemistry (IHC), enzyme-linked immunosorbent assay (ELISA), and
Western blot. All suspect positive ELISA test and Western blot results should be
confirmed with IHC. Use of experimental amplification tests, such as protein misfolding
cyclic amplification (PMCA) and real-time quaking-induced conversion (RT-QuIC)
assays may improve sensitivity (Kurt et al. 2007; Henderson et al. 2015). In addition to

using federally recognized CWD tests, agencies may consider parallel testing with promising new or emerging diagnostic tools currently under development. Once validated, available, and federally approved, these tools could be rapidly implemented.

- IHC: Considered the "gold standard" test to which all other tests are compared.
 IHC requires formalin-fixed tissue and typically has a 5-10 day turn-around for results depending on the capacity of the diagnostic laboratory.
- ELISA: Considered a screening test and positive test results must be confirmed by IHC. Typically, the tests have a similar sensitivity to IHC but and will occasionally produce positive results that cannot be confirmed by IHC. Some researchers have found that some ELISA positive / IHC "Not Detected" animals will test positive under both tests upon retest. ELISA tests use fresh tissue and typically have a 1-3-day turn-around for results depending on the capacity of the diagnostic laboratory.

Antemortem Testing:

Antemortem testing is an active area of research and may be a useful tool for increasing surveillance in captive cervids. For instance, these tests may be useful in screening herds or for sequential testing of individual animals or certain capture/recapture scenarios, but should **not** be considered an adequate single test of individual animals for health certification purposes. Accordingly, for free-ranging cervids, antemortem CWD testing has limited utility but may be a useful research tool or used to meet specific management needs (Wolfe et al. 2007, Monello et al. 2013).

- Biopsied tissues used for antemortem testing include tonsil, recto-anal mucosa-associated lymphoid tissue (RAMALT) and MRPLN. Of these tissues, RAMALT biopsies have been intensively investigated due to the simple biopsy procedure, minimal equipment requirements, and no requirement for anesthesia (Keane et al. 2009). However, as for most antemortem diagnostic tests, testing tissues collected by biopsy will not identify all CWD infected cervids (Wolfe et al. 2007, Keane et al. 2009, Monello et al. 2013, Thomsen et al. 2012).
 - Immunohistochemistry of biopsies is still considered the gold standard test for antemortem testing, although USDA and CFIA does not consider antemortem testing an official test. It is highly recommended that IHC be used for tissue biopsies so that the number of diagnostic follicles can be determined.
 - As stated previously, use of experimental amplification tests, such as RT-QuIC assays may improve sensitivity (Henderson et al. 2015, Manne et al. 2017) and once validated and approved, may be available in the future.
 - o The number of lymphoid follicles in RAMALT appears to decrease with age and results can be affected by repeated sampling, so having an adequate number of follicles for a valid test (e.g., n≥5 for deer and ≥10 for elk) may be a limiting factor (Wolfe et al. 2007, Keane et al. 2009, Spraker et al. 2009a).
 - Rectal biopsy samples are less likely to identify animals in early stages of CWD (Wolfe et al. 2007, Keane et al. 2009, Monello et al. 2013).

- The PRNP genotype of deer and elk can impact antemortem diagnostic test sensitivity; therefore, the genotype should be determined concurrently when utilizing biopsies. For instance, test sensitivity is greatest in 96GG white-tailed deer and 132MM elk (Wolfe et al. 2007, Monello et al. 2013; Thomsen et al. 2012). Additional research is needed to better understand CWD progression through susceptible species of different genotypes and how this impacts diagnostic testing.
- Research groups are actively examining non-biopsy sample types, such as blood (Kramm et al. 2017), but agencies should seek guidance from state and federal veterinary diagnostic laboratories and the USDA or CFIA before adopting new test methods.

Sampling Protocols:

Sampling procedures and target tissue samples will vary depending on the species and circumstances. For postmortem testing, detailed sample collection procedures for obex and MRPLN in cervids are available through numerous state/provincial wildlife agency websites. Procedures for antemortem collection of tonsil and RAMALT in cervids have been described (Wolfe et al. 2002 and 2007, Keane et al. 2009, Spraker et al. 2009b; Geremia et al. 2015).

Training Personnel:

State/provincial agency training of personnel should include basic CWD knowledge, wet labs for hands-on instruction in sample collection, sample handling, packaging and disinfection. Collection videos and PowerPoint-type demos are available through numerous state wildlife agencies. Some jurisdictions have Certified/Authorized CWD Collector programs administered by their animal health agencies.

Training Websites:

<u>Kansas State Veterinary Diagnostic Lab</u> https://youtu.be/XdK6HWokfPQ?list=PLNjV05pK4JEWNg10K9yal6tdKSZc-87Je

Wyoming Game and Fish Department

https://youtu.be/-jpvxatk0gw

Oklahoma Department of Agriculture

https://www.youtube.com/watch?v=1XgNy1BfiH8

New York State Dept. of Environmental Conservation

https://www.youtube.com/watch?v=Owpv30ulOvk

Literature Cited and References

Geremia, C., J. A. Hoeting, L. L. Wolfe, N. L. Galloway, M. F. Antolin, T. R. Spraker, M. W. Miller, and N. T. Hobbs. 2015. Age and repeated biopsy influence antemortem PRC^{CWD} testing in mule deer (*Odocoileus hemionus*) in Colorado, USA. *J Wildl Dis*, 51(4): 801–810.

Henderson, D. M., N. D. Denkers, C. E. Hoover, N. Garbino, C. K. Mathiason, and E. A. Hoover. 2015. Longitudinal detection of prion shedding in saliva and urine by chronic wasting

- disease-infected deer by real-time quaking-induced conversion. J Vet Diagn Invest, 18(6): 553–557.
- Hibler, C. P., K. L. Wilson, T. R. Spraker, M. W. Miller, R. R. Zink, L. L. DeBuse, E. Andersen, D. Schweitzer, J. A. Kennedy, L. A. Baeten, J. F. Smeltzer, M. D. Salman, and B. E. Powers. 2003. Field validation and assessment of an enzyme-linked immunosorbent assay for detecting chronic wasting disease in mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), and Rocky Mountain elk (*Cervus elaphus nelsoni*). *J Vet Diagn Invest*, 15: 311–319.
- Keane, D. P., D. J. Barr, J. E. Keller, S. M. Hall, J. A. Langenberg, and P. N. Bochsler. 2008. Comparison of retropharyngeal lymph node and obex region of the brainstem in detection of chronic wasting disease in white-tailed deer (*Odocoileus virginianus*). *J Vet Diagn Invest*, 20(1):58–60.
- Keane, D., D. Barr, R. Osborn, J. Langenberg, K. O'Rourke, D. Schneider, and P. Bochsler. 2009. Validation and use of rectoanal mucosa-associated lymphoid tissue for immunohistochemical diagnosis of chronic wasting disease in white-tailed deer (*Odocoileus virginianus*). *J Clin Microbiol*, 47(5): 1412–1417.
- Kramm, C., S. Pritzkow, A. Lyon, T. Nichols, R. Morales, and C. Soto. 2017. Detection of prions in blood of cervids at the asymptomatic stage of chronic wasting disease. *Sci Rep*, 7(1):17241, doi:10.1038/s41598-017-17090-x
- Kurt, T.D., M.R. Perrott, C.J. Wilusz, J. Wilusz, S. Supattapone, G.C. Telling, and E.A. Hoover. 2007. Efficient *in vitro* amplification of chronic wasting disease PrPRES. *J Virol*, 81, 9605–9608.
- Miller, M. W., and E. S. Williams. 2002. Detection of PrP (CWD) in mule deer by immunohistochemistry of lymphoid tissues. *Vet Rec*, 151:610–612
- Monello, R. J., J. G. Powers, N. T. Hobbs, T. R. Spraker, K.I. O'Rourke, and M. A. Wild. 2013. Efficacy of antemortem rectal biopsies to diagnose and estimate prevalence of chronic wasting disease in free-ranging cow elk (*Cervus elaphus nelsoni*). *J Wildl Dis*, 49(2):270–278.
- Nalls A. V., E. McNulty, J. Powers, D. M. Seelig, C. Hoover, N. J. Haley, J. Hayes-Klug, K. Anderson, P. Stewart, W. Goldmann, E. A. Hoover, and C. K. Mathiason. 2013. Mother to offspring transmission of chronic wasting disease in Reeves' Muntjac Deer. *PLoS ONE* 8(8): e71844. https://doi.org/10.1371/journal.pone.0071844.
- Rhyan, J. C., M. W. Miller, T. R. Spraker, M. McCollum, P. Nol, L. L. Wolfe, T. R. Davis, L. Creekmore, and K. I. O'Rourke. 2011. Failure of fallow deer (*Dama dama*) to develop chronic wasting disease when exposed to a contaminated environment and infected mule deer (*Odocoileus hemionus*). *J Wildl Dis*, 47(3):739–744.

- Spraker, T. R., A Balachandran, D. Zhuang, and K. I. O'Rourke. 2004. Variable patterns of distribution of PrP (CWD) in the obex and cranial lymphoid tissues of Rocky Mountain elk (*Cervus elaphus nelsoni*) with subclinical chronic wasting disease. *Vet Rec*, 155(10):295–302.
- Spraker T. R., K. C. VerCauteren, T. Gidlewski, R. D. Munger, W. D. Walter, and A. Balachandran. 2009a. Impact of age and sex of Rocky Mountain elk (*Cervus elaphus nelsoni*) on follicle counts from rectal mucosal biopsies for preclinical detection of chronic wasting disease. *J Vet Diagn Invest*, 21(6): 868–870.
- Spraker T. R., K. C. VerCauteren, T. Gidlewski, D. A. Schneider, R. Munger, A. Balachandran, and K. I. O'Rourke. 2009b. Antemortem detection of PrP^{CWD} in preclinical, ranch-raised Rocky Mountain elk (*Cervus elaphus nelsoni*) by biopsy of the rectal mucosa. *J Vet Diagn Invest*, 21(1): 15–24
- Thomsen, B. V., D. A. Schneider, K. I. O'Rourke, T. Gidlewski, J. McLane, R. W. Allen, A. A. McIsaac, GB Mitchell, DP Keane, TR Spraker, and A Balachandran. 2012. Diagnostic accuracy of rectal mucosa biopsy testing for chronic wasting disease within white-tailed deer (*Odocoileus virginianus*) herds in North America: effects of age, sex, polymorphism at PRNP codon 96, and disease progression. *J Vet Diagn Invest*, 24(5):878–887.
- Wolfe, L. L., T. R. Spraker, L. Gonzalez, M. P. Dagleish, T. M. Sirochman, J. C. Brown, M. Jeffrey, and M. W. Miller. 2007. PrP^{CWD} in rectal lymphoid tissue of deer (*Odocoileus* spp.). *J Gen Virol*, 88:2078–2082.

9 - Surveillance Strategies in CWD-Negative States and Provinces or Populations

Best Management Practice for conducting surveillance in a CWD-negative state, province, or population

In states, provinces, and territories not known to have CWD, implement a weighted, statewide/province-wide/territory-wide risk-based surveillance strategy appropriate to the population. Walsh et al. (2012) compiled all pertinent resources at the time into a single document to guide resource agencies in the development and implementation of a weighted, risk-based surveillance strategy. This guidance document and other resources defined below should be reviewed and considered when developing a state or provincial surveillance strategy:

- Assessing relative risks and mapping spatial risks specific to a state/province or population
 can direct sampling effort both across and within sampling units. Surveillance strategies that
 leverage spatial risk factors may include:
 - Enhanced surveillance along state/provincial borders near known cases of CWD in freeranging or captive cervids.
 - More intensive sampling in free-ranging animals around captive cervid facilities and taxidermy studios that may not be disposing of wastes appropriately.
 - Enhanced surveillance in areas where carcasses are known to be dumped because of the
 potential for inclusion of out-of-state /province animal remains or infected vehicle-killed
 remains to seed the environment if contaminated.
 - Additional risk factors may be adopted as appropriate for individual states, provinces, areas, or populations. For example, states with a large population of citizens that hunt out-of-state in CWD enzootic areas should assess the relative risk of importing CWD in hunter-harvested carcasses or tissues.
 - An example of a weighted, risk-based surveillance plan is available for New York: http://www.dec.ny.gov/docs/wildlife_pdf/cwdsurplan13web.pdf
- Weighted or focused sampling based on appropriate demographic risk factors may increase
 the likelihood of detecting CWD at a low prevalence (Walsh 2012). Samples should be
 collected preferentially based on the highest risk factors. For example:
 - Whenever possible, collect and test (descending weights/relative risk):
 - All clinical suspects

- All captive/farm cervids dying of any cause, including known and unknown causes
- Vehicle-killed or any other non-hunting related mortality (e.g. predation) of cervids > 2 years of age. As an example, focusing on vehicle-killed adults collected along major migration routes (if present) may increase efficiency.
- o Planned surveillance activities around cervid harvest:
 - Adult male deer (>2 years) hunter harvest
 - Adults (>2 years) in general
- Any surveillance strategy developed should be adaptive and integrated with a response and management plan.
 - o New research or additional resources may require alteration of CWD surveillance plans.
 - Consider rapid implementation or co-implementation of new or emerging diagnostic tools as they are made available and approved.

Other considerations:

- Agencies are advised to work closely with an internal or external epidemiologist to determine the best approach for surveillance for CWD.
- If surveillance cannot use a weighted or statistically valid sampling strategy, states and provinces should establish a minimum sample size over the broadest possible region.
- Sampling efficiency can be increased by working with taxidermists, meat processors, landowners, and hunting associations.
 - Trained taxidermists have high success rates in collecting appropriate samples (e.g., retropharyngeal lymph nodes) and providing correct data to state/provincial agencies.
 - Payments, benefits, or other incentives provided to CWD sample collection cooperators may increase efficiency and data quality for sampling.
- Development of regional surveillance plans may reduce burdens on individual states and provinces and increase confidence in neighboring states' and provinces' surveillance.
- Consider regulatory actions to reduce or eliminate important risk factors when applicable (see appendix).

- Captive cervids should be included in any surveillance strategy, both as a risk factor for free-ranging cervid populations and as priority surveillance samples. All captive cervids should be sampled for CWD testing at time of death and surveillance of captive cervids should be considered an adjunct surveillance strategy.
- Collaboration with state/provincial/territorial food and agriculture agencies and other animal health agencies (animal control, veterinary medical boards, etc.) provides additional resources and is critical to successful surveillance and information sharing.
- Outreach and education to staff, other government agencies, hunters, and other public may be necessary to help overcome apathy or negative inertia for active surveillance.

The appendix to this chapter includes a sample chronic wasting disease risk assessment to facilitate the identification of important risk factors to analyze in developing surveillance strategies for CWD.

Supporting Strategies and Evidence

Active surveillance for chronic wasting disease should be a priority for all wildlife agencies. Recent detections in free-ranging ungulates in Norway (Benestad et al. 2016), range expansion in North America, and the challenge of effective control make CWD a significant concern to many wildlife managers. Once the disease is present, environmental contamination can play a large role in the spread and maintenance of the disease (Almberg et al. 2011); neither environmental decontamination nor eradication once the disease is established in a population are feasible at this time. These limitations combined with the recent and very preliminary research reports from Canada suggesting that *Cynomolgus* macaques may be susceptible to CWD (Czub et al. 2017), remind us that there is still much we do not understand about CWD and provide an important warning that caution should be employed.

For any state or provincial CWD management program to be effective, a robust and adaptable surveillance strategy must be in place to detect CWD as early as possible, when prevalence rates are low and seeding of the environment is minimal (Gross and Miller 2000, Joly et al. 2009, Walsh 2012). "Targeted" sampling of clinical suspects alone is unlikely to detect CWD at levels low enough for management strategies to be successful because disease prevalence is likely >1% once these animals are seen on the landscape (Miller et al. 2000). Similarly, testing only hunter-harvested cervids may not detect CWD until after it has been in a population for an extended time. Ideally, agencies will develop a state/province, area, population, or herd-specific active surveillance strategy that increases the likelihood of detecting CWD at the lowest prevalence possible given available resources. These strategies should be adaptive and incorporate known spatial and demographic risk factors into sampling efforts (Walsh and Miller 2010, Walsh 2012). Cooperation with agricultural agencies responsible for captive cervids is critical for timely information sharing and coordinated outbreak response.

Literature Cited and References

Almberg, E. S., P. C. Cross, C. J. Johnson, D. M. Heisey, and B. J. Richards. 2011. Modeling routes of transmission: Environmental prion persistence promotes deer population decline and extinction. PLoS ONE 6.

Benestad, S. L., G. Mitchell, M. Simmons, B. Ytrehus, and T. Vikøren. 2016. First case of chronic wasting disease in Europe in a Norwegian free-ranging reindeer. Veterinary Research 47:88. BioMed Central. http://veterinaryresearch.biomedcentral.com/articles/10.1186/s13567-016-0375-4.

Czub, Stefanie, Walter Schulz-Shaeffer, Christine Stahl-Hennig, Michael Beekes, Hermann M. Schaetz, and Dirk Motzkus. 2017. "First Evidence of Intracranial and Peroral Transmission of Chronic Wasting Disease (CWD) into Cynomolgus Macaques: A Work in Progress." In Deciphering Neurodegenerative Disorders. Edinburgh, Scotland.

Gross, J. E., and M. W. Miller. 2000. Chronic Wasting Disease in Mule Deer: Disease Dynamics and Control. Journal of Wildlife Management 65:205–215.

Joly, D. O., M. D. Samuel, J. A. Langenberg, R. E. Rolley, and D. P. Keane. 2009. Surveillance to detect chronic wasting disease in white-tailed deer in Wisconsin. Journal of wildlife diseases 45:989–997. http://www.jwildlifedis.org/doi/abs/10.7589/0090-3558-45.4.989.

Meyerett-reid, C., A. C. Wyckoff, T. Spraker, B. Pulford, H. Bender, and M. D. Zabel. 2017. De Novo Generation of a Unique Cervid Prion Strain Using Protein Misfolding Cyclic Amplification. mSphere 2:1–13. https://doi.org/10.1128/mSphere.00372-16.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of wildlife diseases 36:676–690.

Walsh, D. P., ed., 2012. Enhanced surveillance strategies for detecting and monitoring chronic wasting disease in free-ranging cervids: U.S. Geological Survey Open-File Report 42. http://pubs.usgs.gov/of/2012/1036/>.

Walsh, D. P., and M. W. Miller. 2010. A weighted surveillance approach for detecting chronic wasting disease foci. Journal of wildlife diseases 46:118–135.

APPENDIX: Chronic Wasting Disease Risk Assessment

What data are available? Use this checklist to help guide your state's/province assessment of risks related to CWD.

- State/province-wide cervid population/density estimates, including demographic data
- Previous CWD sampling data (sex, age, date, location, season of take)
 - o Ability to collect and test roadkill?
 - o Ability to collect and test clinical suspects?
 - o Ability to collect and test hunter harvested samples?
 - Do you have deer and elk check stations? If so, where? Are samples collected at these locations?
 - What samples are collected (obex, retropharyngeal lymph nodes, tonsils)? Who collects them? Are they trained?
 - What is your preferred level of confidence (95% or 99%) to detect a given level of prevalence (5%, 1%, or 0.1%)?
 - Financially, what range of sampling can you afford annually (2000–5000 of each susceptible species tested)?
 - · Known carcass dump sites?

Additional data: Taxidermists and Meat Processors:

- Physical location
- Verification of current operation. Date when staff visited this location
- On-site interview:
 - o Number of cervids processed annually
 - Number of cervids coming in from out-of-state/province
 - o Disposal method (landfill/dumpster, pit, compost, left on property, unknown, other). Are there regulations on disposal methods?
 - Live captive/farm cervids on premises (including wild deer rehabilitation).
 Are there regulations prohibiting ownership of live cervids by these businesses?

Captive/Farm Cervid Facilities:

- Physical location
- Herd status (CWD Certified or other). What are criteria for lowered designations?
- Species kept (white-tailed deer, elk, red deer, sika deer, etc.)
- Verification of current operation. If out-of-business, year known?
- Previous escapes at this location? Successful in recovering escapes?
- Imported cervids from out-of-state/province and if so, which states/provinces?
- What are the testing requirements to move deer intra-state/province?
- Past compliance issues
- Detailed on-site questions:
 - o Disposal method for carcasses (buried, left in place, pit, burned, unknown)
 - o Fence quality (low, medium, high)
 - Other businesses or activities involving cervids (taxidermy, rehabilitation, commercial transport, meat processing)
 - Primary business model: urine collection, shooting operation, breeding facility, antler velvet
 - o Routine veterinary care

Neighboring States/Provinces/Territories:

- Levels of surveillance (number of samples collected, strategy?)
- Estimates of how many hunters go out-of-state/province?

Section 3: MANAGEMENT

10 - Development of a CWD Management Plan

Best Management Practices for development of contents included in a CWD Management Plan

A CWD Management Plan is a valuable tool for organizing information about CWD response options within a particular state, province, or territory. The basic elements of a management plan should include:

Background Information

- Provide introductory and background material on the susceptible herds and cervid populations in your state/province/territory. Include:
 - o Information regarding management authority and legal issues
 - o Existing management tools and evidence for their efficacy
- Identify specific, measurable, attainable, relevant, and time-bound objectives of the CWD management plan
- Provide a summary of state/provincial history/status regarding CWD
- List state/provincial/ agency regulations already in place regarding CWD
- Explain how the management plan was created and who participated in development

Additional background material could include discussions of:

- · Biology, distribution of cervids and predicted population impacts related to CWD
- Existing management tools and evidence for their efficacy
- · CWD and human health
- History of CWD surveillance and planning in your state/province
- Alternative livestock operations or captive cervid facilities in your state/province
- Baiting and feeding issues
- · Scents and lures
- Carcass transport
- Rehabilitation/translocation
- Carcass disposal

Communication

- Identify objectives for your messages during surveillance, pre-detection, and response to detection
- Identify the target audience or audiences
- Develop speaking points for pre- and post-detection
- Identify communication methods to be used, staff member leading each effort, and timeline for final products
- Develop a phone tree that lists contact information and order for contacting those who
 need to be notified in the event of detection in a new area. Consider wildlife management
 agency personnel, state/provincial veterinarian or other agriculture/livestock officials,
 state/provincial public health officials, and others.
- Provide a set of frequently asked questions and answers on your website
- Develop an example press release

Surveillance

- Surveillance plan for areas where the disease has not yet been detected should prioritize samples according to risk and allow for statistically rigorous inferences to be made from the data.
- Sampling of symptomatic hunter-harvested, and vehicle-killed animals may provide a readily accessible and publicly acceptable avenue for surveillance. Note that testing of vehicle-killed animals during certain times of the year (i.e. shortly after fawning) or during periods of migration may result in a significant amount of low-risk samples and may not be an efficient surveillance strategy in some areas.
- Educating and then partnering with taxidermists and/or meat processors should be considered.
- Cervids exhibiting clinical signs of CWD symptomatic animals should be removed and tested. The likelihood of detecting CWD in an animal that appears sick is much greater than sampling asymptomatic or healthy-appearing animals.
- Weighted surveillance strategies (i.e., targeting segments of the population that are more likely to be infected with CWD; Walsh 2012) may be considered to improve efficiency in surveillance
- All samples must be georeferenced
- List estimated personnel/equipment needs and budget

Agencies are advised to work closely with an internal or external epidemiologist to determine the best approach for surveillance of CWD and to monitor CWD endemic populations as described in the following section.

CWD Management-Response to initial detection in an area

- Initiate a central coordinating group / body or other, similar Incident Command System Defining CWD prevalence and distribution within the Initial Response Area:
- Define an Initial Response Area
- Define initial sampling scheme
 - Special buck/bull management hunting, sharpshooter removal, etc.
 - Evaluate results of sampling
 - o Determine CWD prevalence and distribution within the Initial Response Area
 - If needed, consider additional sampling efforts (e.g. special hunts, or monitoring during another general hunting season) from hunter-harvested animals to obtain rigorous estimates of prevalence and distribution at appropriate scales
- Define a Transport Restriction Zone
- Determine CWD prevalence and distribution within the Initial Response Area
- Define potential conflicts and complications
- Consider immediate actions (e.g. implementing rule changes) to control CWD spread since success is more likely early in an outbreak
- Use prepared phone tree within communication plan to ensure all appropriate officials and stakeholders are notified
- Set up a public information campaign using previously drafted communication plan.
- Consider drafting additional regulations (e.g., recreational feeding/baiting ban, carcass movement restrictions)

Long-term Monitoring and Management

Some options for management are detailed in Western Association of Fish and Wildlife Agencies (WAFWA) Recommendations for Adaptive Management of Chronic Wasting Disease in the West (2017).

- Long-term management strategies and goals should be based on prevalence and distribution of CWD
- Develop a monitoring strategy to detect spatial spread of CWD and change in prevalence over time
- Specific herd management plans must be adaptive, and tailored to the circumstances of a population/area
- Develop a monitoring program to evaluate management efficacy
- Continue information and outreach program

Captive Cervids

- Improve participation in national/state/provincial/territorial CWD herd certification programs (USDA farmed cervid program website CWD) and compliance with USDA CWD Program Standards (USDA CWD program standards document). Canadian Food Inspection Agency (CFIA) CWD program information can be found at (http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/cwd/herd-certification/eng/1330187841589/1330187970925)
- Develop more comprehensive state/provincial CWD herd certification programs
- Important planning considerations should include:
 - Fencing design to prevent contact between captive and wild cervids (e.g., double fence, minimum 8 foot fence height for deer and 10 foot fence height for elk)
 - Sampling strategy to sample all susceptible animals based on age (>1 year of age)
 - o Mandatory, 100% disease surveillance on private shooting facilities
 - Slaughter surveillance, including the disposal of entrails, etc.
 - Sample collection and submission procedures of certified herds by a USDA or CFIA accredited veterinarian
 - Protocols for response plans if CWD is detected in a facility, including mandatory requirements for depopulation, quarantine, and decontamination
 - Mandatory whole-herd diagnostic testing (when a reliable live animal test becomes available)
 - o DNA comparison for verification of animal identity
 - Regular inspections by state/provincial/territorial and/or federal agencies and requirements for complete electronic herd inventories
 - In-state/province/territory animal movements tracking by permit
 - Electronic information logging and tracking system for all animals born or acquired to facilitate trace-forward or backward if needed
 - Permanent double-marking animal identification
 - o Regular and frequent reporting intervals for sharing testing results
 - o Herd owner enrollment and advancement
 - Changes to certification status following additions of animals or genetic material (germplasm) to a herd
 - o Clear statement of conditions which will result in loss of certification status
 - Changes to certification status following relocation of a herd
 - Consequences associated with cancellation of participation in the HCP
 - Quarantine and decontamination protocols
- In states and provinces where wildlife management agencies do not have authority over captive cervids, it is critical that the agency maintains strong collaboration with agencies that have jurisdiction. There must be a mutual understanding on management of captive cervid facilities, ingress/egress problems, disease testing, and other issues that warrant

cooperation. Consider including officials with authority over captive cervids during plan development, and during response to CWD detection in free-ranging wildlife. Cooperation with state agriculture and marketing officials is also important in states where the state fish and wildlife agency has sole management authority for captive cervids.

Supporting Strategies and Evidence

As CWD continues to be detected across North America, the benefit to wildlife management agencies of developing CWD management plans has become clear. In many cases, disease is already well-established by the time it's detected, so a prompt but methodical response is appropriate and critical when considering the effects on the resource, the state or provincial economy, and potential concerns raised by public health agencies. A well-developed and clearly defined plan will facilitate allocation of available resources in a manner most likely to meet defined objectives, allow a prompt response, and improve public perception when agencies are faced with management decisions in CWD affected areas.

A CWD management plan must be developed using the best available science. Plan developers should call upon the knowledge of colleagues in other agencies and universities with experience in CWD management. Scientists and researchers with expertise in prion disease can .contribute to the scientific aspects of development of a CWD management plan. Although much is still unknown about CWD management, there is a vast amount of pertinent literature that should be reviewed. A comprehensive list of peer-reviewed, published articles in included below to assist agencies in the development of CWD management plans.

Surveillance (looking for new foci or infections) and monitoring efforts (tracking trends, ideally in response to management) should be designed to allow for statistically rigorous inferences to be made from the data (e.g. Samuel et al. 2003, Walsh 2012). Appropriate selection of the sampling unit, or target population, is critical. For example, collection of a representative number of samples scattered over a large state/province is much less sensitive to disease detection than that same number of samples collected on a herd management unit or county basis. Selection of an overly large sampling unit can lead to misinterpretation of the area as being "CWD-free" when in fact adequate sampling was not conducted to detect disease.

Stakeholders have important input in the development of a successful CWD plan. Stakeholder support is critical to execution of surveillance and management actions and including representatives of relevant stakeholder groups during development of CWD plans will maintain transparency and ensure that points of contention are identified and addressed. Because herds or populations affected by CWD often span jurisdictional boundaries (state /provincial, federal,

tribal, international boundaries), open collaboration among such jurisdictions will further the implementation success of a CWD management plan.

And finally, communication is always a key part of any successful plan that involves an adaptive management strategy. It is critical that the wildlife management agency has a consistent and accurate message, and that the message effectively reaches constituents. Detailing communication strategies within the management plan will ensure that important details and constituents are not overlooked. In some cases, a communications plan between stakeholders will be developed separately to insure accurate information flow is unified and talking points to the public and media contains critical information delivered appropriately through either a single source or planned release.

Literature Cited and References

Samuel, M. D., D. O. Joly, M. A. Wild, S. D. Wright, D. L. Otis, R. W. Werge, and M. W. Miller. 2003. Surveillance Strategies for Detecting Chronic Wasting Disease in Free-Ranging Deer and Elk: Results of a CWD Surveillance Workshop. USGS-National Wildlife Health Center, Madison, Wisconsin, USA.

https://www.nwhc.usgs.gov/publications/fact_sheets/pdfs/cwd/CWD_Surveillance_Strategies.pd f.

Walsh, D. P., ed., 2012, Enhanced surveillance strategies for detecting and monitoring chronic wasting disease in free-ranging cervids: U.S. Geological Survey Open-File Report 2012–1036. USGS-National Wildlife Health Center, Madison, Wisconsin, USA. https://pubs.usgs.gov/of/2012/1036/pdf/ofr2012_1036.pdf.

Western Association of Fish and Wildlife Agencies. 2017. Recommendations for Adaptive Management of Chronic Wasting Disease in the West. WAFWA Wildlife Health Committee and Mule Deer Working Group. Edmonton, Alberta, Canada and Fort Collins, Colorado, USA. https://www.wafwa.org/Documents%20and%20Settings/37/Site%20Documents/Committees/Wildlife%20Health/docs/CWDAdaptiveManagementRecommendations_WAFWAfinal_approved01_0618.pdf.

11 - Managing CWD Prevalence

Best Management Practices for managing CWD prevalence in infected populations should include the following:

- Agencies are advised to work closely with an internal or external epidemiologist to determine the best approach to monitoring CWD endemic populations.
- Utilize harvest or other removal mechanisms to manage prevalence by: 1)
 targeting the portion of the population most likely to have CWD, 2) targeting
 animals in known CWD hotspots, 3) targeting timing of removal to most
 effectively remove infected animals, and 4) reduce cervid density in CWD
 positive areas with high density populations. Efforts to suppress CWD should
 focus on strategies that exploit or complement current management activities, for
 example, modeling and some field observations suggest that harvest could be used to
 control CWD.
- Reduce environmental contamination by reducing artificial cervid concentration sites. Management to reduce or eliminate repeated visitation by cervids at concentration points to reduce localized environmental contamination and transmission.
- Utilize a coordinated, adaptive management approach to provide for strategic application and evaluation of experimental CWD suppression strategies whereby the data gathered from these efforts would then be used to develop improved strategies.
- Develop and implement regulations to minimize the possibility of spreading CWD by controlling the transportation of carcasses and potentially infective carcass parts between hunt areas and across state boundaries. Through regulation, ensure the head and all portions of the spinal column are either left at the site of the kill or disposed of in an approved manner.

Supporting Strategies and Evidence

Note: The subject matter review and recommendations in this chapter were excerpted from the Western Association of Fish and Wildlife Agencies' "Recommendations on Adaptive Management of Chronic Wasting Disease in the West" (2017) https://www.wafwa.org/Documents%20and%20Settings/37/Site%20Documents/Co

mmittees/Wildlife%20Health/docs/CWDAdaptiveManagementRecommendations WAFWAfinal approved010618.pdf

As chronic wasting disease (CWD) continues to spread throughout free-ranging populations in North America and elsewhere, viable management strategies are needed. Once CWD has become established in a population (often well before it is detected), its eradication is not currently considered feasible. Regardless, opportunities remain for responsible management agencies to stabilize or suppress CWD outbreaks and thereby minimize impacts and potentially irreparable harm. Typical disease control tools such as vaccines, safe and practical agents to eliminate prions from the environment, and effective curative therapies remain unavailable for CWD. Consequently, to date, most of the attempts to manage CWD have focused on reducing population densities and eliminating areas of CWD foci through a combination of hunter harvest and agency culling (Blanchong et al. 2006, Conner et al. 2007, Pybus 2012, Mateus-Pinilla et al. 2013, Manjerovac et al. 2014). Many of these programs were prematurely terminated due to lack of early, measurable successes, high personnel/agency costs, and lack of public support. Unfortunately, the early termination of these programs precluded a more robust evaluation of the potential efficacy of longer-term management. This situation highlights the need for management strategies that include realistic goals that can be applied for extended time periods, and have sufficient public and stakeholder acceptance. Because eradication is not feasible in areas with established infections, management for CWD control will require a sustained, long-term commitment by wildlife managers and the public.

Harvest Management

Future efforts toward CWD suppression should focus on strategies that exploit or complement current management activities. For example, modeling and some field observations suggest that harvest could be used to control CWD (Wild et al. 2011, Jennelle et al. 2014, Geremia et al. 2015, Potapov et al. 2016, Al-Arydah et al. 2016). Male deer appear to have a higher likelihood of CWD infection than females (Miller et al. 2000, Grear et al. 2006, DeVivo et al. 2017). Focusing harvest of sufficient intensity on the segment of the population most likely to be infected could help reduce disease prevalence and subsequent transmission (e.g., Potapov et al. 2016). Exploiting potential biases in removal of infected animals via harvest (e.g., Conner et al. 2000) also could be used to enhance the efficacy of harvest as a control strategy (Wild et al. 2011). For example, targeting mature male deer via increased harvest pressure during or after the breeding season may selectively remove a higher proportion of infected individuals than harvest in early autumn (Conner et al. 2000). Such strategies would allow agencies to modify existing harvest management approaches to emphasize CWD suppression and thus should be relatively sustainable in the long-term with minimal additional personnel time or cost. Alternatively, multiple CWD management programs have targeted winter culling around known CWD infected animals because of spatial clustering of the disease on the landscape (e.g., Connor et al. 2007, Pybus 2012, Mateus-Pinilla et al. 2013). Data from these management attempts suggest effectiveness in limiting CWD (Pybus 2012, Mateus-Pinilla et al. 2013, Geremia et al. 2015).

Due to the poor success in implementing long-term agency culling programs (e.g., Conner et al. 2007, Pybus 2012), an alternative approach might be to use hunting seasons targeting specific winter ranges or disease foci.

Management of Environmental Contamination

Environmental accumulation of prions can contribute to transmission of CWD and may be a significant driver in population response (Almberg et al. 2011). Areas that promote artificial cervid "hotspots" such as salt/mineral licks and artificial feed sources (e.g., bait piles, backyard feeders, stored forage, grain bins) may serve as sources of prion concentration and transmission (Miller et al. 2004, Thompson et al. 2008, Lavelle et al. 2014, Mejía-Salazar et al. 2017). Risks associated with intentional winter feeding of cervids, either annually or episodically, also should be considered as these activities may exacerbate CWD transmission. Management to reduce or eliminate repeated visitation to spatial concentration points should reduce localized environmental contamination and transmission. Depending on jurisdiction, this approach could require undertaking regulatory and on-the-ground actions. This strategy likely would require significant start-up investments; however, once implemented it could be maintained in the long term at a lower cost.

Adaptive Management

Despite significant advances in our understanding of CWD over the past 40 years, there is still little published information on effective management (Miller and Fischer 2016, Uehlinger et al. 2016). While some of the aforementioned strategies have been modeled, field data on efficacy are limited or lacking. Nevertheless, wildlife managers are tasked with managing for healthy, sustainable free-ranging populations even in the absence of definitive CWD control strategies. It follows that a coordinated, adaptive management approach would provide a path forward for CWD management. Adaptive management would allow for strategic application and evaluation of experimental CWD suppression strategies whereby the data gathered would then be used to develop improved strategies. This approach is not to be confused with simple trial and error; rather it is a systematic, hypothesis-based and scientific approach to applied management (Walters 1986, Walters and Holling 1990, Williams 2009). Results are used not only in evaluating the hypothesis, but also to gather new data directing future management. Agencies looking to use an adaptive management approach must be prepared to invest resources into public involvement, communications, data collection, experimental design, and evaluation. Fully evaluating any individual management strategy would require multiple applications under a variety of intensities and field conditions. As a result, this would be most efficient under a collaborative approach with multiple jurisdictions working together to apply and evaluate management strategies. Each individual agency can elect to apply as many or as few strategies or replicates as appropriate in their jurisdiction, while still gathering valuable data to contribute to broader understanding of CWD control strategies. Due to significant regional differences in

habitat, susceptible species, and behavior, we believe such collaboration should be focused at a regional level.

Literature Cited and References

Al-Arydah, M., Croteau, M. C., Oraby, T., Smith, R. J., & Krewski, D. 2016. Applications of mathematical modeling in managing the spread of chronic wasting disease (CWD) in wild deer under alternative harvesting scenarios. Journal of Toxicology and Environmental Health, Part A, 79(16–17):690–699.

Almberg, E. S., P. C Cross, C. J. Johnson, D. M. Heisey, and B. J. Richards. 2011. Modeling routes of chronic wasting disease transmission: environmental prion persistence promotes deer population decline and extinction. PloS ONE, 6(5) e19896.

Blanchong, J. A., D. O. Joly, M. D. Samuel, J. A. Langenberg, R. E. Rolley, and J. F. Sausen. 2006. White-tailed deer harvest from the chronic wasting disease eradication zone in south-central Wisconsin. Wildlife Society Bulletin 34(3):725–731.

Conner, M. M., C. W. McCarty, and M. W. Miller. 2000. Detection of bias in harvest-based estimates of chronic wasting disease prevalence in mule deer. Journal of Wildlife Diseases 36:691–699.

Conner, M. M., M. W. Miller, M. R. Ebinger, and K. P. Burnham. 2007. A Meta-BACI Approach for Evaluating Management Intervention on Chronic Wasting Disease in Mule Deer. Ecological Applications 17(1), 140–153.

DeVivo, M. T. 2015. Chronic wasting disease ecology and epidemiology of mule deer in Wyoming. University of Wyoming.

Edmunds, D. R., M. J. Kauffman, B. A. Schumaker, F. G. Lindzey, W. E. Cook, T. J. Kreeger, T. and T. E. Cornish. 2016. Chronic Wasting Disease Drives Population Decline of White-tailed Deer. PLoS ONE 11(8), e0161127.

Galloway, N. L., R. J. Monello, D. Brimeyer, E. Cole, and N. T. Hobbs. 2017. Model Forecasting of the Impacts of Chronic Wasting Disease on the Jackson Elk Herd. https://www.researchgate.net/profile/Eric Cole4/publication/312435900 Model Forecasting of the Impacts of CWD on the Jackson Elk Herd/links/587d20c308aed3826af00c3b.pdf.

Geremia, C., M. W. Miller, J. A. Hoeting, M. F. Antolin, M. F., and N. T. Hobbs. 2015. Bayesian modeling of prion disease dynamics in mule deer using population monitoring and capture-recapture data. PloS ONE, 10(10), e0140687.

Grear, D. A., M. D. Samuel, J. A. Langenberg, and D. Keane. 2006. Demographic Patterns and Harvest Vulnerability of Chronic Wasting Disease Infected White-tailed Deer in Wisconsin. Journal of Wildlife Management 70: 546–553.

Green, R. H. 1979. Sampling design and statistical methods for environmental biologists. New York: John Wiley & Sons. Print.

Jennelle, C. S., V. Henaux, G. Wasserberg, B. Thiagarajan, R. E. Rolley, and M. D. Samuel. 2014. Transmission of chronic wasting disease in Wisconsin white-tailed deer: implications for disease spread and management. PloS ONE, 9(3), e91043.

Lavelle, M. J., G. E. Phillips, J. W. Fischer, P. W., Burke, N. W. Seward, R. S. Stahl, R. S., and K. C. VerCauteren. 2014. Mineral licks: motivational factors for visitation and accompanying disease risk at communal use sites of elk and deer. Environmental geochemistry and health 36(6), 1049–1061.

Manjerovic, M. B., M. L. Green, N. Mateus-Pinilla, N., and J. Novakofski. 2014. The importance of localized culling in stabilizing chronic wasting disease prevalence in white-tailed deer populations. Preventive veterinary medicine 113(1), 139–145.

Mateus-Pinilla, N., H. Y. Weng, M. O. Ruiz, M. O., P. Shelton, P., and J. Novakofski. 2013. Evaluation of a wild white-tailed deer population management program for controlling chronic wasting disease in Illinois, 2003–2008. Preventive Veterinary Medicine 110(3), 541–548.

Mejía-Salazar, M. F., C. Waldner, C., Y. T. Hwang, and T. K. Bollinger, T. K. 2017. Visitation to environmental sites by mule deer in a chronic wasting disease endemic area, dynamics among mule deer and how they visit various environmental areas: implications for chronic wasting disease transmission, 183. https://www.researchgate.net/profile/Maria Fernanda Mejia-Salazar/publication/320809224 Social dynamics among mule deer and how they visit vario us environmental areas implications for chronic wasting disease transmission/links/59fb65c d458515d07060f690/Social-dynamics-among-mule-deer-and-how-they-visit-various-environmental-areas-implications-for-chronic-wasting-disease-transmission.pdf#page=202.

Miller, M. W. and J. R. Fischer. 2016. The First Five (or More) Decades of Chronic Wasting Disease: Lessons for the Five Decades to Come. Transactions of the North American Wildlife and Natural Resources Conference 81: in press.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of Chronic Wasting Disease in Free-ranging Cervids in Colorado and Wyoming. Journal of Wildlife Diseases 38: 676–690.

Miller M. W, E. S. Williams, N. T. Hobbs, and L. L. Wolfe. 2004. Environmental sources of prion transmission in mule deer. Emerging Infectious Diseases 10:1003–1006.

Miller, M. W., H. M. Swanson, L. L. Wolfe, F. G. Quartarone, S. L. Huwer, C. H. Southwick, and P. M. Lukacs. 2008. Lions and Prions and Deer Demise. PLoS ONE 3(12), p.e4019

Monello, R. J., J. G. Powers, N. T. Hobbs, T. R. Spraker, M. K. Watry, and M. A. Wild. 2014. Survival and Population Growth of a Free-ranging Elk Population with a Long History of Exposure to Chronic Wasting Disease. The Journal of Wildlife Management 78(2): 214–223.

Potapov, A., E. Merrill, M. Pybus, M., and M. A. Lewis, M. A. 2016. Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. PloS one, 11(3):e0151039.

Pybus, M. J. 2012. CWD Program Review 2012. Alberta Sustainable Resource Development, Fish and Wildlife Division. Web 17 March 2016. http://aep.alberta.ca/fish-wildlife/wildlife-diseases/chronic-wastingdisease/documents/CWD-ProgramReview-May-2012.pdf

Smith, E. P. 2002. BACI design. Encyclopedia of environmetrics.

Thompson A. K., M. D. Samuel, and T. R. Van Deelen. 2008. Alternative feeding strategies and potential disease transmission in Wisconsin white-tailed deer. The Journal of Wildlife Management 72:416–421.

Uehlinger F.D., A. C. Johnston, T. K. Bollinger, and C. L. Waldner. 2016. Systematic review of management strategies to control chronic wasting disease in wild deer populations in North America. BMC Veterinary Research 12:173.

Walters, C. J. 1986. Adaptive Management of Renewable Resources. Blackburn Press, Caldwell, NJ.

Walters, C. J. and C. S. Holling. 1990. Large-scale management experiments and learning by doing. Ecology 71(6), 2060–2068.

Western Association of Fish and Wildlife Agencies. 2017. Recommendations for Adaptive Management of Chronic Wasting Disease in the West. WAFWA Wildlife Health Committee and Mule Deer Working Group. Edmonton, Canada and Fort Collins, USA.

Wild M.A., N. T. Hobbs, M. S. Graham, and M. W. Miller. 2011. The role of predation in disease control: a comparison of selective and nonselective removal on prion disease dynamics in deer. Journal of Wildlife Diseases 47: 78–93.

Williams, A. L., T. J. Kreeger, and B. A. Schumaker. 2014. Chronic Wasting Disease Model of Genetic Selection Favoring Prolonged Survival in Rocky Mountain Elk (*Cervus elaphus*). Ecosphere 5(5):60.

Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide. Available online at https://www2.usgs.gov/sdc/doc/DOI%20Adaptive%20Management TechGuide.pdf (accessed June 26, 2017).

12 - Monitoring of CWD Enzootic Populations

Best Management Practices to monitor CWD enzootic populations include the following:

- Define biologically relevant spatial units for data collection and evaluation.
- · Determine meaningful sample sizes for interpretation.
- · Identify surveillance goals to help guide sampling strategies over time.
- Work within existing management frameworks to maximize opportunities for sample collection and minimize additional time and cost to the agency.

Supporting Strategies and Evidence

Once chronic wasting disease (CWD) is detected in an area, surveillance goals designed to detect disease may shift to monitoring disease prevalence, bringing increased complexity in methods and analyses (Walsh et al, 2012). Any long-term CWD monitoring program must take into account the underlying management infrastructure of the agency as well as ultimate surveillance goals. Maintaining a CWD monitoring program over many decades can be challenging as agency focus and level of agency/public concern may shift over time. Effective monitoring can be conducted in multiple ways and should work within existing management frameworks to maximize opportunities for sample collection and minimize additional time and financial cost to the agency. Overall data goals must be considered and areas for monitoring will likely need to be prioritized to meet long-term needs.

It is important to consider broader questions related to goals of the agency monitoring program to help guide decisions on approach. Questions such as how the data will be used, what spatial scale to collect samples/analyze data, what sample sizes are needed, and what disease metrics will be measured are critical in guiding sampling strategies. In order to effectively utilize monitoring programs, agencies must take the time to identify biologically relevant spatial units and appropriate sample sizes to collect useful information. At a minimum, agencies should aim to estimate prevalence with statistically valid sample sizes in affected herd units at least every 5 years.

Monitoring for spatial and temporal changes in disease patterns can be particularly valuable when linked with research to understand the epidemiology of CWD. In these situations, monitoring programs must be closely linked with the objectives of the research program being conducted. Monitoring is also an important component of agency programs that are being conducted to manage CWD. Monitoring changes in disease patterns and impacts of disease on

target populations provides the primary source of information to assess the effect of management programs and is a crucial component of monitoring target population response to adaptive management approaches for CWD.

Primary Monitoring Methods

Live Animal Testing

Live animal sampling efforts are often conducted through research projects with directed questions to allow for more precise information on disease dynamics at a local scale. This generally represents more intensive monitoring strategies requiring significant resources and logistical considerations. This often involves live animal capture and sampling operations. The primary benefit of these intensive projects at a local scale is the finer resolution of data and more precise estimates of disease dynamics; however, the high cost in both time and resources of these types of programs generally lead to smaller-scale monitoring that may not always apply uniformly to a larger population. Live animal testing currently requires invasive procedures and extensive animal handling that are not efficient for large-scale surveillance efforts. Furthermore, limitations in accuracy of live animal diagnostics tests during early infection must be considered with any live animal testing program. Populations without any active harvest represent significant challenges for disease monitoring and live animal sampling may be the primary method available for monitoring disease in those areas.

Hunter Harvest

Hunter harvest sampling represents the most common approach to CWD monitoring by agencies. This allows for the most efficient use of existing resources and management frameworks. Although "targeted" or vehicle-killed surveillance may be beneficial for detection, they are likely of less value for disease monitoring in an infected population. Random sampling via hunter harvested animals is likely the most efficient passive sampling method for estimating prevalence or incidence in CWD enzootic populations (Samuel 2003). However, many areas may consider a combination of hunter harvested sampling as well as targeted and vehicle-killed surveillance to achieve disease monitoring in infected populations while also surveying for spread and new disease foci.

Disease Monitoring Goals

CWD monitoring of infected populations typically has one or more of the following 3 goals:

- 1) Assess the spatial distribution and/or estimate prevalence
- 2) Monitor changes in CWD over time or evaluate responses to management actions
- 3) Evaluate CWD as it relates to research projects

Monitoring Considerations

A variety of methods and sample designs are available for CWD monitoring. Each has positive and negative aspects; the program you design should meet the goals and resources for your situation. Your options will depend on management, monitoring goals, and resources required. Thus cost and resources may be a major factor in determining extent and type of monitoring strategy. The challenge is to decide which strategy will make the best use of that resource, given a specific goal.

Though elk, moose, mule deer, and white-tailed deer may occupy the same general area, data on CWD are best tracked separately for each species or target population, rather than considering all cervids as one target population. Existing information demonstrates that rates of infection vary among cervid species, possibly due to genetic susceptibility, different rates of disease transmission, and/or differing social behaviors. However, transmission of CWD is likely to occur among sympatric cervid populations. Finally, it is crucial to consider the size of the region and number of animals in relationship to the surveillance objectives for detecting CWD. Chronic wasting disease is not evenly distributed across the landscape and more likely is represented by clusters of diseased animals within the greater population (Miller and Conner 2005). Monitoring should occur at biologically relevant spatial scales in view of the highly clustered distribution of CWD in wild cervids (Ricci 2017).

Sampling Strategies

- 1) Annual Sampling: Perhaps the simplest concept is annual surveillance across an entire jurisdiction or regionally within the CWD enzootic area. While this strategy may be compelling, achieving long-term and effective surveillance with annual sampling in an enzootic area is difficult. Even with surveillance across an entire jurisdiction, consideration must be given to biologically relevant spatial scales. So if statewide surveillance is conducted, data must be still be collected at the level of a population or analysis unit to allow for interpretation. This approach to sampling is unlikely to consistently provide appropriate sample sizes to allow for interpretation at biologically relevant spatial scales, though it may be effective if the annual sampling is focused on a relatively small enzootic area. Regional surveillance should include a buffer zone outside of the known CWD enzootic area to monitor spread. While this approach has the benefit of consistent application and expectations for hunters and agency personnel, over time hunter, landowner, and agency fatigue will likely hinder the ability to consistently meet sample goals.
- 2) <u>Intermittent Sampling:</u> This option would allow for intermittent or pulse surveillance every 2-5 years. This would provide long-term monitoring of CWD in populations, but may not require sampling every year. For this strategy to be successful, achieving adequate sample sizes in the single year of sampling would be essential. Adequate license numbers and bag limits and compulsory sample submission can be used to ensure that target sample sizes are acquired in a single year's effort.

- 3) Rotating Sampling: In jurisdictions with a large CWD enzootic area, rotating surveillance with focus on a portion of the enzootic area and buffer zone, or simply a portion of the entire jurisdiction each year may allow for better monitoring of CWD over time with fewer resources than annual jurisdiction-wide surveillance. As above, adequate license numbers and bag limits and compulsory sample submission can be used to ensure that target sample sizes are acquired in a single year's effort.
- 4) Focused Sampling: In jurisdictions with a large CWD enzootic area, some agencies may consider choosing selected index populations for focused monitoring over time. This would be most effective in combination with another strategy. For example, an agency could consider intermittent jurisdiction-wide surveillance every 3 years, but conduct annual focused surveillance in selected populations of interest (e.g. where management actions are being applied, or where population impacts are suspected).
- 5) <u>Culling:</u> Culling is often used as a disease control strategy but it may also be used for monitoring, particularly in areas without hunter harvest. Disease monitoring through culling operations must account for method of removal and determine whether animals were targeted or randomly removed. For the purposes of baseline monitoring, higher levels of statistical inference are possible when it can be shown that animals are randomly removed, however, sampling of targeted removals may also provide valuable data, particularly when monitoring a targeted removal project over time. Targeted culling may be particularly beneficial for agencies looking to conduct an initial assessment of chronic wasting disease after a new detection.
- 6) Opportunistic: In areas with a long history of CWD and minimal resources or agency interest, opportunistic surveillance may be the only option. While this method may not provide the same levels of statistical inference as more structured sampling approaches, it can still provide useful data for general monitoring, particularly when data are pooled over multiple years. Ideally, CWD surveillance data would be pooled for no more than three years to minimize error associated with changes in prevalence over time. If appropriate sample sizes are achieved by this method of opportunistic sampling, reasonable interpretation of data may be considered. If data are severely limited, agencies could consider pooling up to five years of data to help identify areas for more robust evaluation. Agencies must interpret data with extreme caution when data are pooled over more than three years, but limited data may still help to identify areas for future focus of minimal sampling resources. In addition, the presence of opportunistic sampling programs may help to garner support for expanded work.

Metrics for Monitoring Disease Trends

A variety of metrics exist for measuring disease trends in populations. Each metric has its own strengths and weaknesses and agencies must consider the ultimate goals of their monitoring

program to determine which metric is most appropriate. In general, prevalence, incidence, and force of infection are the metrics most relevant to measure CWD infection intensity within a population over time. With all the metrics outlined, one must consider the potential for sampling bias. While hunter-harvested sampling may the most accessible and cost-effective method, there may still be some amount of bias (Conner et al. 2000). Similarly, live animal sampling may also introduce significant bias through unintentional selection of infected animals through capture. Just as infected animals may be more susceptible to hunter harvest, they may also be more susceptible to capture.

Prevalence

Prevalence is defined as the proportion of test-positive animals within a reference population sampled over a specified period of time. Prevalence is the easiest metric that can be used to track changes in CWD over time. This is a readily understood concept by agency personnel and the public and allows for effective communication of disease information. However, given the long course of CWD infection, prevalence also is the least sensitive or slowest to respond to changes in disease dynamics. While it is possible to look at prevalence trends over time, it may take multiple years or sampling cycles to truly determine changes in prevalence. Relying solely on prevalence estimates to track changes in disease over time is acceptable; however, effective communication and education on the length of time needed to measure changes are necessary. Agencies using prevalence as a primary disease tracking metric must be careful to not prematurely interpret prevalence data.

Considering the age and sex of the animals used for prevalence calculation is warranted. Prevalence should be tracked separately for males and females. Additionally, evaluating prevalence by age, may provide some additional information and tracking. Looking at changes in CWD infected fawn or yearling prevalence in populations with high CWD prevalence may provide useful tracking information. In some cases, this could be used as a crude measurement of incidence (see below).

Incidence

Incidence is defined as the number of new cases of disease in a population over a defined period of time. This metric provides the best information to track changes in rates of disease transmission, but it requires repeated live capture and sampling of individually marked animals, thus increasing costs and logistical complexities. This may be most useful for disease monitoring associated with research or in populations without active harvest where live animal sampling may be the only option.

CWD infected yearling or fawn prevalence in some cases could be used as a crude measurement of incidence. Because yearlings and fawns have been alive for less than 2 years, infected animals were likely infected within that time period (Walsh et al. 2012). This metric would be most effective in areas with a high CWD prevalence.

Force of Infection

Force of infection is the probability, over a short period of time, that an uninfected animal contracts an infection. This metric requires collection of detailed sex and age-specific prevalence data, but is more sensitive to changes in transmission rates than prevalence. Tracking trends in force of infection over time may allow for earlier evaluation of changes in transmission dynamics. This may be particularly useful when evaluating effects of management.

Sample Size

Any effective CWD monitoring program must consider sample size. State or provincial agency biometricians should be consulted to help identify appropriate sample sizes to achieve desired monitoring goals. Agencies should identify directed goals for monitoring to help with sample size calculations. Ask: Is the objective to achieve a coarse estimate of prevalence or to detect changes or trends over time? What level of statistical rigor are you looking for? What is the magnitude of change necessary to detect with confidence? All of these are important questions to consider when determining monitoring goals. Detecting small changes in CWD prevalence (<5%) with any confidence may require very high sample sizes. The Western Association of Fish and Wildlife Agencies 2017 Recommendations for Adaptive Management of Chronic Wasting Disease in the West provides a helpful example of simple sample size calculations for detecting various changes in prevalence over time. In many cases, identifying appropriate sample sizes will help to direct decisions on the most effective approach to surveillance in an area. If sample sizes for good prevalence estimates can be achieved in a single harvest season, then annual surveillance or intermittent surveillance may be effective. In some areas, lower cervid density or low harvest may require multiple years of surveillance to achieve reasonable sample sizes. When multiple years of surveillance are used to estimate prevalence, consideration of changes in prevalence over time must be included. Ideally, sampling should be conducted over no more than three years to minimize error associated with changes in prevalence over time. While sampling over multiple years is not ideal, the slow spread and rate of increase in prevalence associated with CWD allow for reasonable estimates over multi-year sampling efforts. As a general rule of thumb, sample sizes less than 100 samples over a three year period are likely unreliable for estimating prevalence in a given population.

Selection of Sampling Units or Scale

To obtain meaningful and statistically relevant samples from monitoring efforts, it is essential that a biologically relevant spatial scale is defined. This may equal a population unit, or possibly subdivisions of a population unit if biologically relevant subgroups can be identified. Due to the uneven distribution of CWD on the landscape and spatial clustering of disease that has been observed, spatial scale is an essential consideration regardless of the sampling strategy employed.

Note: Portions of the subject matter review and recommendations in this chapter were excerpted from the 2017 Western Association of Fish and Wildlife Agencies document and Walsh et al. 2012 document cited below.

Literature Cited and References

Conner, M. M., C. W. McCarty, C. W., and M. W. Miller. 2000. Detection of bias in harvest-based estimates of chronic wasting disease prevalence in mule deer. Journal of Wildlife Diseases 36(4):691–699.

Miller, M. W. and M. M. Conner. 2005. Epidemiology of chronic wasting disease in free-ranging mule deer: spatial, temporal, and demographic influences on observed prevalence patterns: Journal of Wildlife Diseases 41:275–290.

Ricci, A., A. Allende, D. Bolton, M. Chemaly, R. Davies, P. S. Fernández Escámez, and B. Nørrung, 2017. Chronic wasting disease (CWD) in cervids. EFSA Journal, *15*(1).

Samuel, M. D., D. O. Joly, M. A. Wild, S. D. Wright, D. L. Otis, R. W. Werge, and M. W. Miller. 2003. Surveillance strategies for detecting chronic wasting disease in free-ranging deer and elk: results of a CWD surveillance workshop. In *Chronic Wasting Disease Surveillance Workshop* (p. 43).

Walsh, D. P. (Ed.). 2012. Enhanced surveillance strategies for detecting and monitoring chronic wasting disease in free-ranging cervids. US Department of the Interior, US Geological Survey.

Western Association of Fish and Wildlife Agencies. 2017. Recommendations for Adaptive Management of Chronic Wasting Disease in the West. WAFWA Wildlife Health Committee and Mule Deer Working Group. Edmonton, Alberta, Canada and Fort Collins, Colorado, USA.

13 - Rehabilitation of Deer and other Cervids

Best Management Practice to reduce the risk of CWD transmission and establishment of CWD involving wildlife rehabilitation:

 Prohibit cervid rehabilitation activities in designated CWD management zones or in other geographic areas or within jurisdictional boundaries where CWD has been detected in wild or captive cervid populations.

Alternative Management practices include:

- In states, provinces or geographic areas where CWD is suspected but not yet reported, restrict rehabilitation activities to facilities that observe all recommended biosecurity protocols for the safe handling, disposal, and decontamination of prions and prion-infected tissues, materials, and equipment.
- An alternative practice that adds additional risk for states, provinces, or geographic areas is to allow cervid rehabilitation where CWD is suspected but not yet reported in wild cervids, or where detections have been reported in captive but not wild cervid herds. Facilities must observe all recommended biosecurity protocols for the safe handling, carcass disposal, and decontamination of prions and prion-infected tissues, materials, and equipment.
 - State agencies can increase oversight of wild deer rehabilitation by taking an active role in management and regulation of cervid rehabilitation facilities. States should identify which rehabilitators take in deer, use electronic reporting systems to track deer rehabilitation, and provide rehabilitators with specific measures to reduce or prevent disease at their facilities. Rehabilitation facilities should be inspected by state agency staff on a regular basis and, at a minimum, meet basic standards outlined by the International Wildlife Rehabilitation Council. Rehabilitators should be required to provide carcasses or samples from deceased cervids for diagnostic testing and report any cervids presented to them or reported by the public exhibiting clinical signs consistent with CWD (uncoordinated gait or stumbling, drooling, head tilt, emaciation). Deer rehabilitators must dispose of carcasses in an approved manner as per state laws and in CWD positive states carcass disposal should follow guidelines set forth in chapter 16 Carcass Disposal. Rehabilitators should be encouraged to keep adult deer separate from fawns at rehabilitation facilities. Fawns should not be overwintered except for those fawns that require continued rehabilitative care. Deer rehabilitators must maintain accurate records for all deer that are handled under the authority of their Wildlife Rehabilitator License including all deer transferred to another rehabilitator, euthanized, died or released to the wild.

Supporting Strategies and Evidence

Wildlife rehabilitation attempts to "provide professional care to sick, injured, and orphaned wild animals so ultimately they can be returned to their natural habitat" (National Wildlife Rehabilitators Association 2018). Such efforts often focus on "abandoned" or "picked up" fawns which would otherwise be euthanized or left in the field to die of natural causes such as starvation or predation (Beringer et al. 2004; Williams and Gregonis 2015). Some programs also attempt to foster new-born orphaned fawns with free-ranging doe-fawn groups. Rehabilitated orphaned fawns are often held 3–4 months prior to release in the late summer-early fall (Williams and Gregonis 2015).

Data from New York State (see Figure) indicate that wild deer (primarily fawns) are often moved long distances to a wildlife rehabilitator who will rehabilitate fawns. In some cases, the long distance transport of an "abandoned fawn" is facilitated by a misguided but well-meaning attempt by a private citizen to bring the fawn to a rehabilitator. In other cases, a fawn is brought to a rehabilitator who accepts the animal from the public, and then transfers the fawn to another rehabilitator who specializes in deer rehabilitation.



Figure: Movement patterns for white-tailed deer taken in by licensed wildlife rehabilitators in New York State in 2012. Most deer released were young-of-the-year (fawns). Several deer were

moved more than 40 miles to a rehabilitation facility. Release locations for deer were not available.

Although state fish and wildlife agencies have the authority to certify and license wildlife rehabilitators (National Wildlife Rehabilitators Association 2018), the facilities used by these rehabilitators vary greatly in complexity and sophistication, ranging from private in-home facilities to large, non-profit centers treating thousands of animals every year (Porter 1996; Schwarz 2010). Staff capabilities also vary from fairly rudimentary care and employee knowledge to highly trained staff and full-time veterinary care (Schwarz 2010).

Concerns about the ability of private rehabilitators to effectively contain and manage infectious wildlife diseases were raised over 20 years ago by Porter (1996). In particular, private rehabilitation facilities may lack effective control or containment structures and equipment as well as associated training and biosecurity procedures for minimizing disease transmission risk to other captive animals, wild animals, or humans (Porter 1996). Agency oversight of wildlife rehabilitators is generally not at a level that would certify or approve a facility for biosecurity or disease containment. Although there has been discussion of CWD and other prion diseases in the recent wildlife rehabilitation literature (e.g. Schwarz 2010), it is clear from the information presented in other chapters of this document that CWD and other prion diseases represent unique challenges for facilities of all sizes and types (rehabilitation, research, captive/farming, etc.) in terms of the uncontrolled environmental persistence of the infectious agent, the strict requirements for disposal of contaminated materials, and the difficulty of decontamination of exposed surfaces and equipment. Travis and Miller (2003) provide detailed guidance for handling, disposal, and decontamination procedures for zoos and other captive animal facilities that house CWD-susceptible animals. These procedures have been modified by USDA APHIS (2014) and contributors in this volume to conform to best available science and practices.

Vertical transmission of CWD from female deer to fawns has been documented experimentally in muntjac deer (*Muntiacus reevesi*; Nalls et al. 2013) and mule deer fawns showed rapid development of CWD when infected orally (Sigurdson et al. 1999). A large-scale survey of CWD prevalence in wild white-tail deer fawns in Wisconsin resulted in multiple detections (Chronic Wasting Disease Alliance 2003), indicating that either vertical and/or horizontal transmission of CWD to fawns is occurring in wild populations of this species. Removal of fawns from the wild in areas where CWD is known or likely to occur therefore creates a very real risk of prion contamination at rehabilitation facilities and indirect transmission to fawns, with attendant concerns about appropriate procedures for disposal and decontamination, while the release of infected (but asymptomatic) fawns has the potential to spread CWD to novel areas or populations. Due to the period required from first infection to observable prion in lymphatic tissue, there currently is no live animal test that could identify an infected fawn prior to release unless the animal was held an extended period of time. The currently-available antemortem tests are probably not viable tools for determining CWD status of rehabbed fawns because of the low test sensitivity and expense of testing due to the required anesthesia and surgery. Although

available antemortem tests can be used in screening herds, these tests should not be considered an adequate single test of individual animals for health certification purposes (see Chapter 8 – Validated CWD Testing for Wild Cervids).

In New York State, a ban on deer rehabilitation was implemented as part of the emergency regulations imposed in a 16 km-diameter CWD containment zone established in 2005 following multiple CWD detections in Oneida County (Evans et al. 2014). Managers determined that significant risks exist to wildlife health when CWD-infected animals are housed in facilities which do not provide adequate biosecurity measures for animals with prion diseases. It was recommended that deer rehabilitation be prohibited in CWD management zones and other management areas where CWD has been detected in wild cervid populations. States and provinces permitting rehabilitation activities where CWD is suspected but not yet detected in wild cervids, or where CWD has been confirmed in isolated and contained captive settings but not wild cervid populations, should closely follow the biosecurity procedures described by Travis and Miller (2003), as updated by USDA APHIS (2014) and the contributions in this volume.

A statewide ban on deer rehabilitation has been implemented more recently in response to CWD detections in the state of Arkansas (Jennifer Ballard, Arkansas Game and Fish Commission, pers. comm.). Prior to establishing this rule, a limited number of individuals in Arkansas accepted injured or "orphaned" deer for the purpose of rehabilitation. This practice was known to involve the movement of deer across county lines, from the county of origin to the county in which the licensed rehabilitator was located. With knowledge that deer from multiple counties are often housed in the same facility and moved across multiple counties with the potential to share pathogens, rehabilitation was considered a risk for the spread of CWD. In addition, rehabilitation is not an effective tool for enhancing white-tailed deer populations as survival of rehabilitated deer is extremely low.

The map above illustrates the value of implementing reporting requirements and data management systems that can be used to track wild deer in rehabilitative care. New York State's CWD Risk Minimization Plan specifically recommends that individual wild deer brought to rehabilitation be accurately recorded and tracked while in rehabilitative care in a manner that allows state agencies to perform trace-outs if CWD is confirmed in a wild deer that has been in the wildlife rehabilitation system.

Literature Cited and References

Beringer, J., P. Mabry, T. Meyer, M. Wallendorf, and W. R. Eddleman. 2004. Post-release survival of rehabilitated white-tailed deer fawns in Missouri. Wildlife Society Bulletin 32(3):732–738.

14 - Carcass Disposal

Best Management Practices for reducing the risk of CWD transmission and establishment of CWD through appropriate carcass disposal include the following:

- Incineration of carcasses in an Environmental Protection Agency-approved conventional incinerator, air curtain incinerator, or cement kiln. After incineration, ashes should be buried in an active, licensed landfill at a depth that meets local and state/provincial/territorial regulations to prevent scavenging or contamination of groundwater. Animal carcasses can be disposed of by incineration with a minimum secondary temperature of 1000°C (1832°F) (Taylor and Woodgate 2003). Incineration may not be a culturally acceptable practice for disposal by certain Indigenous groups.
- High-pressure alkaline hydrolysis of carcasses followed by burial of the treated material in an active, licensed landfill at a depth that meets local and state/provincial/territorial regulations. Alkaline hydrolysis using a pressurized vessel that exposes the carcass or tissues to 1 N NaOH or KOH heated to 150°C for a minimum of 3 hours (Taylor and Woodgate 2003, Richmond et al. 2003).
- Composting. Composting of livestock carcasses is an efficient method of disposal with proper management. While composting of carcasses does not reliably inactivate all prions, research does indicate that it can significantly reduce prion infectivity (Xu, 2013, 2014). Further research into optimizing methods of composting to inactivate prions is warranted, although basic precautions such as controlling run-off during the composting process and insuring that the composted material is not spread on the landscape would appear to be warranted. In areas where large volumes of carcasses must be disposed of, consideration of composting followed by a secondary disposal method such as incineration, landfill, or alkaline hydrolysis may provide a more viable method to reduce large carcass volume to allow for more efficient use of other disposal methods. This option would still require considerable time and attention to assure composting methods are managed appropriately.
- Centralized sites/methods for disposal of CWD-positive or high risk carcasses.
 Several states have established disposal sites for carcasses potentially contaminated with CWD. The agreement between the Utah Division of Wildlife Resources and the Utah Environmental Protection agency (available on request) is an excellent example of interagency cooperation on disposal. Each state or province should investigate the possibility of similar agreements and centralized disposal sites and methods (IAFWA, 2006).

Chronic Wasting Disease Alliance. 2003. Six white-tailed deer fawns test positive for CWD. Web page at: http://cwd-info.org/six-white-tailed-deer-fawns-test-positive-for-cwd/ (accessed 14 April, 2018).

Evans, T. S., K. L. Schuler, and W. D. Walter. 2014. Surveillance and monitoring of white-tailed deer for chronic wasting disease in the northeastern United States. Journal of Fish and Wildlife Management 5(2):387–393.

Nalls, A. V., E. McNulty, J. Powers, D. M. Seelig, C. Hoover, N. J. Haley, J. Hayes-Klug, K. Anderson, P. Stewart, W. Goldmann, E. A. Hoover, and C. K. Mathiason. 2013. Mother to offspring transmission of chronic wasting disease in Reeves' muntjac deer. PLOS One https://doi.org/10.1371/journal.pone.0071844

National Wildlife Rehabilitators Association. 2018. What is wildlife rehabilitation? Web page at: http://www.nwrawildlife.org/page/What Is WLRehab (accessed 14 April, 2018).

Porter, S. L. 1996. Dealing with infectious and parasitic diseases in safari parks, roadside menageries, exotic animal auctions and rehabilitation centres. Scientific and Technical Review of the Office International des Epizooties (Paris) 15(1):227–236.

Schwarz, N. A. 2010. Wildlife rehabilitation: Basic life support. Xlibris Corporation, www.xlibris.com. 214 pp.

Sigurdson, C. J., E. S. Williams, M. W. Miller, T. R. Spraker, K. I. O'Rourke, and E. A. Hoover. 1999. Oral transmission and early lymphoid tropism of chronic wasting disease PrP^{res} in mule deer fawns (*Odocoileus hemionus*). Journal of General Virology 80:2757–2764.

Travis, D., and M. Miller 2003. A short review of transmissible spongiform encephalopathies, and guidelines for managing risks associated with chronic wasting disease in captive cervids in zoos. Journal of Zoo and Wildlife Medicine 34(2):125–133.

United States Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS). 2014. Chronic Wasting Disease Program Standards. USDA APHIS Veterinary Services, Washington, D. C. 65 pp.

Williams, S. C., and M A. Gregonis. 2015. Survival and movement of rehabilitated white-tailed deer fawns in Connecticut. Wildlife Society Bulletin 39:664–669.

Approved Landfill. Properly licensed and operated landfills offer one of the most
economically feasible options for disposal of carcasses and parts, particularly in high
volumes. While disposal via landfill may not eliminate infectious prion, carcass parts
disposed of in a landfill would be inaccessible to cervids and may functionally contain
the CWD prion (Jacobson et al., 2009). It is important that carcasses are properly covered
after disposal in a landfill to prevent scavenging.

Supporting Strategies and Evidence

Destruction or inactivation of prions is difficult and few treatments have been documented as completely successful. In addition, there are currently no quality assurance or quality control methods to ensure successful prion inactivation. For that reason, we have provided a list of processes above reported to reduce the amount or activity of the infectious prion material.

Jurisdictions need to consider many factors related to carcass disposal. In areas with limited or no detection of CWD, multiple carcass disposal options may be considered. In regions with significant widespread CWD, jurisdictions must consider more factors than simple disposal of known positive carcasses. Consideration must be made of the high volume of vehicle-killed animals as well as hunter harvested carcasses or parts. Due to the high volume of carcasses that may need disposal in a jurisdiction, further investigation of appropriate disposal mechanisms is warranted. As many landfills begin to close or discontinue accepting carcasses, options for efficient disposal may become limited. Lack of access to landfills for disposal of large numbers of vehicle-killed animals or access for individual hunters for disposal may lead to inappropriate disposal of carcasses onto the landscape and facilitate disease transmission.

With all recommended methods, carcasses must be carefully transported between the collection location and treatment or burial sites to prevent the spread of potentially contaminated and infectious materials. Precautions should be taken to prevent ashes, blood, tissues, or feces from leaking from transport vehicles.

APHIS recommends first testing individual animals for prion protein by IHC or other official test and delaying disposal until test results are obtained. Subsequently, disposal options involving incineration, alkaline hydrolysis, or rendering with burial of the treated materials can be used for the positive animals, and simple carcass burial in a landfill or onsite may be used for the negative animals. This works well for animals being tested, but considering the large volume of harvested and road-killed animals that are never tested and may be disposed by hunters, assuring that viable options are available for disposal at minimal cost will be essential.

Literature Cited and References

Jacobson, K. H., S. Lee, D. McKenzie, C. H. Benson, and J. A. Pedersen. 2009. Transport of the pathogenic prion protein through landfill materials. *Environmental science & technology*, 43(6), 2022–2028.

International Association of Fish and Wildlife Agencies. 2006. Carcass transport and disposal working group, fish and wildlife health committee. Transport and Disposal of Hunter-killed Cervid Carcasses: Recommendations to Wildlife Agencies to Reduce Chronic Wasting Disease Risks. 7 pp.

Richmond, J. Y., R. H. Hill, R. S. Weyant. 2003. What's hot in animal biosafety? ILAR J, 44:20-7

Taylor D. M., and S. L. Woodgate. Rendering practices and inactivation of transmissible spongiform encephalopathy agents. Rev Sci Tech Off. Int Epiz. 2003; 22:297–310.

Xu, S., Reuter, T., Gilroyed, B. H., Mitchell, G. B., Price, L. M., Dudas, S. L. Braithwaite, C. Graham, S. Czub, J. J. Leonard, A. Balachandran, N. F. Neumann, M. Belosevic, and T. A. McAllister. (2014). Biodegradation of prions in compost. *Environmental science & technology*, 48(12), 6909–6918.

Xu, S., T. Reuter, B. H. Gilroyed, S. Dudas. C. Graham, N, F. Neumann, A. Balachandran, S. Czub, M. Belosevic, J. J. Leonard and T. A. McAllister. 2013. Biodegradation of specified risk material and fate of scrapie prions in compost. *Journal of Environmental Science and Health*, *Part A*, 48(1), 26–36.

15 - Recommended Decontamination and Disinfection Methods for Equipment

Best Management Practices / Guidelines for Disinfection of Materials exposed to Prions in field, laboratory and necropsy settings:

A. Field Settings

Use for field sampling procedures. Can also be shared with hunters:

Non-porous, surfaces (plastic or metal tables) and instruments used for collection of field samples (knives, forceps, scissors, jaw spreaders, saws)

- Current recommendations are to use a 2%, (20,000 ppm) solution of bleach as a disinfectant solution. See notes for preparation of Sodium hypochlorite (bleach) solution in section C. and section D. for product information.
- Instruments should be cleaned of organic material prior to disinfection using a detergent
 with activity against prions such as TergazymeTM and wiped with paper towel or rinsed
 with water (dispose of paper towels by incineration or in approved landfill) prior to
 disinfection.
- Disinfection requires 10 minutes of contact time with the 2% bleach solution. <u>Disposable</u> materials (e.g. plastic gloves, boot covers plastic aprons, Tyvek suits)
- Use disposable materials to prevent soiling of clothing. Dispose of these outer materials by bagging and incineration or in an approved landfill

Non-disposable porous material (clothing, rubber aprons, rubber boots)

- Clean off organic material with an enzymatic detergent such as Tergazyme TM.
- If the material can handle it, then wipe down with 20,000 ppm bleach
 - Avoid using leather gloves or boots as they are difficult to clean without being damaged. Wear boot covers
- Dedicate clothing /PPE to be used only in known enzootic areas. Do not transfer from the
 area unless it is stored in a container which is impermeable (heavy plastic tote) and
 labelled as prion infected.
 - When back from the field, all materials that are non-disposable should be re-cleaned and sterilized using the methods described below for use in the laboratory.

Personal Protection

- Bleach irritates mucous membranes, the skin and the respiratory system. It also reacts readily with other chemicals.
- Ensure the area is well ventilated when diluting or using bleach.

 Protective gear - gloves, lab coat, coveralls or apron, and eye protection are recommended.

Laboratory or Necropsy Room

Disposable Materials

• Bag and incinerate or put in an approved landfill.

Autoclave methods for non-disposable, heat tolerant materials (e.g. metal and glass instruments, laboratory surfaces, clothing and non-disposable PPE)

Clean using an enzymatic detergent with activity against prions such as Tergazyme™

Follow with disinfection with one of the following three methods below.

- Autoclave at 134° C for 18 minutes in a porous load sterilizer
- Autoclave at 132° C for 1 hour in a gravity displacement sterilizer
- Immerse in 20,000 ppm bleach (preferred) or 1 N caustic lye (alternative) at ambient temperature for 1 hour; rinse in water and subject to routine sterilization.
 - Additional acceptable methods for sterilization can be found in Rutala et al, 2010 and WHO, 2000.
- State Veterinary Diagnostic laboratories, Veterinary schools or local animal clinics usually have autoclaves.

Chemical methods for non-porous surfaces and heat sensitive instruments

Clean using an enzymatic detergent with activity against prions such as Tergazyme™

Follow with disinfection with one of the following three methods below.

Flood with 2N NaOH (caustic lye) or undiluted bleach; let stand for 1 hour; make sure surfaces remain wet; mop up and rinse with water.

Where surfaces cannot tolerate caustic lye or bleach:

- thorough cleaning with detergent will remove or dilute remaining infectivity
- additional benefit from autoclave at 121°C for 15 minutes
- · material should not be considered prion free
- Environ LpH se Phenolic disinfectant (Steris Life Sciences; EPA Reg. No. 1043–118) may be used on washable, hard, non-porous surfaces (such as floors, tables, equipment, and counters), or non-disposable instruments, or sharps, and sharp containers. This product is currently being used under FIFRA Section 18

exemptions in some states. Users should consult with the state/provincial environmental protection officer prior to use.

Sensitive or difficult to clean equipment (cameras, oscillating [Stryker saw]) or work surfaces

Protect covering with plastic (plastic bag) or plastic backed absorbent material (puppy pad). This Protective material must then be properly handled, and either incinerated or sent to an approved landfill.

C. Notes about Chemicals and Preparing Working Solutions, Personal Safety and Autoclaves

Preparation of stock solutions

Sodium hypochlorite (bleach)

- Comes in concentration of 5.25–8.25%. (CLOROX ® bleach is a 6% Sodium hypochlorite solution or 60,000 ppm).
- To make a 20,000 ppm (2%) solution, dilute 5.25 % bleach 1:1.5, bleach : water for these purposes a 1:1 dilution is fine with a resultant concentration of 25,000 ppm bleach.
- Factors that degrade the disinfecting power of bleach
 - Time (check expiration date on bottles)
 - o temperatures above and below 50-70 °F
 - o direct sunlight (use opaque bottles)
 - o water, especially hot water
 - o organic materials (blood, body bits, manure, dirt)
 - Make fresh bleach solution daily with cold water
- Some brands of bleach Austin's Elite Professional[®] and Austin A-1 Bleach [®]do not require rinsing after disinfection.

Sodium hydroxide (NaOH, soda or caustic lye)

- 1NaOH is a solution of 40 g NaOH in 1 liter of water.
- Factors that degrade 1N NAOH
 - o Absorbs CO2 from the air which decreases its disinfecting properties.
 - o 10 N NaOH solutions do not absorb CO2 and do not degrade
- 1N NaOH working solutions should be prepared fresh daily for each use either from solid NaOH pellets, or by dilution of 10 N NaOH stock solution (1 part 10 N NaOH plus 9 parts water).

Cautions regarding hazardous material



PERSONAL SAFETY

Bleach and caustic lye are corrosive and require suitable personal protective equipment and proper secondary containment. These strong corrosive solutions require careful disposal in accordance with local regulations.

Sodium hypochlorite (bleach)

Solutions continuously off gas chlorine and so must be kept tightly sealed and away from light. The amount of chlorine released during inactivation may be sufficient to create a potential respiratory hazard unless the process is carried out in a well-ventilated or isolated location.

Sodium hydroxide (Caustic lye)

Caustic but relatively slow acting at room temperature, and can be removed from skin or clothing by thorough rinsing with water. Hot lye is aggressively caustic, and should not be handled until cool.

Equipment Safety

Sodium hypochlorite (bleach)

Non-corrosive to glass or aluminum

If bleach is used to clean or soak an instrument, completely rinse from the surfaces before autoclaving.

Sodium hydroxide (Caustic Lye)

Generally does not corrode stainless steel. Some Stainless steel can be damaged (including some used for surgical instruments). Test a sample or consult with the manufacturer before decontaminating a large number of instruments.

Corrosive to glass and aluminum

Autoclaves

Gravity displacement autoclaves

Air is displaced by steam through a port in the bottom of the chamber. Gravity displacement autoclaves are designed for general decontamination and sterilization of solutions and instruments.

Porous load autoclaves

Air is exhausted by vacuum and replaced by steam. Porous load autoclaves are optimized for sterilization of clean instruments, gowns, drapes, toweling, and other dry materials required for surgery. They are not suitable for liquid sterilization.

D. Products Mentioned in Text

1) Tergazyme ™ enzyme detergent with prion killing activity

Alconox, Inc., 30 Glenn Street, Suite 309, White Plains, NY 10603 USA, Phone: 914-948-4040 www.alconox.com

https://alconox.com/resources/standarddocuments/tb/techbull_tergazyme.pdf https://www.alconox.com/lp/healthcare/healthcare-cleaning-prion.asp?gclid=CNPkz5L1-boCFYtQOgody3kAOA

2) Bleach (Sodium hypochlorite)

Some brands of bleach Austin's Elite Professional[®] and Austin A-1 Bleach [®]do not contain trace amounts of mercury and are safer for the waste water stream. These are 5.25%.

3) Environ LpH phenolic disinfectant

STERIS Corporation, 5960 Heisley Road, Mentor, OH 44060-1834, USA, 800-444-9009 www.sterislifesciences.com

https://www.sterislifesciences.com/Products/Surface-Disinfectants/Pharmaceutical-Disinfectants/Environ-LpH-se-Phenolic-Disinfectant

4) Soda or Caustic lye (Sodium hydroxide)

10 N NAOH solutions can be purchased from:

VWR (https://us.vwr.com/store/)

Sodium hydroxide 10 N in aqueous solution, Reagent Grade

https://us.vwr.com/store/catalog/product.jsp?catalog_number=97064-782

or Fischer Scientific

https://www.fishersci.com/shop/products/sodium-hydroxide-solution-10n-certified-fisher-chemical-3/p-214277#?keyword=sodium+hydroxide+solution

Pellets can also be purchased from Fischer Scientific

https://www.fishersci.com/us/en/catalog/search/products?keyword=sodium+hydroxide+%28pellets%2Fcertified+acs%29+fisher+chemical&nav=&typeAheadCat=mostPopular

Supporting Strategies and Evidence

Prion Resistance

The ability of the CWD prion to be transmitted horizontally and the length of time prions remain infectious in the environment may perpetuate epizootics (Johnson et al. 2006). Experimental

research has found that prions can bind to soil, remain infectious, and upon exposure to certain soil types (e.g., high percentage clay and pH >6.6) may even have enhanced persistence and infectivity (Johnson et al. 2007). While prions in live cervids and their excretions, carcasses, and contaminated environments pose the greatest concentration of prions, lab-based research has demonstrated that grass and plants can bind prions from exposure on the surface and uptake prion from contaminated soil. Hamsters that were fed the prion-contaminated plant samples developed prion disease (Pritzkow et al. 2015). The prion has also been detected in water that has undergone a simulated treatment process (Hinckley et al. 2008) and within environmental water samples from enzootic areas (Nichols et al. 2009) when tested using highly sensitive assays. Although the length of time that the prions can remain infective in the environment is unknown, it is likely years. One study found that animals that were grazed on a pasture where infected animals had been absent for two years were able to become infected and develop disease (Miller et al. 2004). Due to the stability of prions in the environment, the potential role of scavengers in facilitating transmission of prion to new areas has been discussed and investigated. Infective prions can be passed through the digestive tract of coyotes (Nichols et al. 2015) and crows (Fischer et al. 2013); however, the reduction in infective load after passage through the digestive tract, as observed in other species (Jeffrey et al. 2006), was not evaluated. While it has been suggested that crows could therefore play a role in translocating infectious prion to disease free areas, reduction in the overall pool of environmental infectivity through local dispersal and dilution could reduce the risk of transmission (Wild et al. 2011). A recent experimental study was able to infect swine through direct injections of CWD prion into the brain (intracerebrally) and by feeding CWD-positive material to pigs (Moore et al. 2017). Although the amount of detectable prion in the infected pigs appeared to be low, the authors indicate that "it may be possible for swine to serve as a reservoir for prion disease under natural conditions." This raises concerns regarding the potential for feral swine in enzootic areas to play a role in transmission of the disease to new areas.

Methods of disinfection/decontamination

Inactivation of Prions: Prions are resistant to conventional inactivation procedures including irradiation, boiling, dry heat, enzymes, and chemicals (formalin, betapropiolactone, alcohols). The safest and most unambiguous method for ensuring that there is no risk of residual infectivity on contaminated instruments and other materials is to discard and destroy them by incineration (Taylor and Woodgate 2003). Current recommendations for inactivation of prions on non-disposable materials are based on the use of Bleach (sodium hypochlorite, NaClO), soda or caustic lye (sodium hydroxide, NAOH) and the moist heat of autoclaving with the combination of heat and chemical being most effective (Rutala and Weber, 2010, Taylor and Woodgate 2003, WHO, 2000, and Hughson et al. 2016).

How equipment is handled prior to decontamination and disinfection may also affect the amount of prion destroyed. Dried prion-containing material was found to be more resistant to disinfection and certain disinfectants (e.g., glutaraldehyde, formaldehyde or ethanol) can fix or

dehydrate the proteins thus causing them to be more difficult to inactivate. Recommendations are to keep instruments moist or damp prior to the decontamination and disinfection by immersing them in water or a detergent with activity against prions or wrapping them in a wet cloth (Rutala and Weber, 2010, WHO 2000)

Literature Cited and References

Centers for Disease Control and Prevention, National Institutes of Health and U.S. Department of Health and Human Services. *Biosafety in Microbiological and Biomedical laboratories*. HHS Publication No. (CDC) 21-1112, 2009; 282–289.

https://www.cdc.gov/biosafety/publications/bmbl5/bmbl5 sect viii h.pdf

Beekes M., K. Lemmer, A. Thomzig, M. Joncic, K. Tintelnot and M. Mielke. 2010. Fast, broad-range disinfection of bacteria, fungi, viruses and prions. Journal of General Virology (2010), 91, 580–589. DOI 10.1099/vir.0.016337-0

Fischer J. W., G. E. Phillips, T. A. Nichols, and K. C. VerCauteren. 2013. Could avian scavengers translocate infectious prions to disease-free areas initiating new foci of chronic wasting disease? Prion 7:263–266.

Hinckley G. T., C. J. Johnson, K. H. Jacobson, C. Bartholomay, K. D. McMahon, D. McKenzie D, J. M. Aiken, and J. A. Pedersen. 2008. Persistence of pathogenic prion protein during simulated wastewater treatment processes. Environmental Science and Technology 42:5254–9.

Hughson, A. G. et al. 2016. Inactivation of Prions and Amyloid Seeds with Hypochlorous Acid. PLoS Pathogens http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1005914

Johnson C. J., K. E. Phillips, P. T. Schramm, D. McKenzie, J. M. Aiken, and J. A. Pedersen. 2006. Prions adhere to soil minerals and remain infectious. PLoS Pathogens; 2:32.

Johnson C. J., J. A. Pedersen, R. J. Chappell, D. McKenzie, and J. M. Aiken. 2007. Oral transmissibility of prion disease is enhanced by binding to soil particles. PLoS Pathogens, 3, e93.

Miller M, E. Williams, N. Hobbs, and L. Wolfe. 2004. Environmental sources of prion transmission in mule deer. Emerging Infectious Diseases10:1003–1006.

Moore S. J., M. H. West Greenlee, N. Kondru, S. Manne, J. D. Smith, R. A. Kunkle, A. Kanthasamy, and J. J. Greenlee. 2017. Experimental transmission of the chronic wasting disease agent to swine after oral or intracranial inoculation. Journal of Virology, 91:e00926-17.

Nichols, T. A., B. A. Pulford, A. C. Wyckoff, C. Meyerett, B. Michel, K. Gertig, K., E. A. Hoover, J. E. Jewell, G. C. Telling, and M. D. Zabel, M. D. 2009. Detection of protease-resistant cervid prion protein in water from a CWD-endemic area. Prion 3: 171–183.

Nichols T. A., J. W. Fischer, T. R. Spraker, Q. Kong, and K. C. VerCauteren. 2015. CWD prions remain infectious after passage through the digestive system of coyotes (*Canis latrans*). Prion 9:367–375.

Richmond, J. Y., R. H. Hill, R. S. Weyant, S. L. Nesby-O'Dell, and P. E. Vinson. 2003 What's hot in animal biosafety? ILAR 44(1): 20–27.

Rutala, W. A. and D. J., Weber. 2010. Guidelines for disinfection and sterilization of prion-contaminated medical instruments. Infection Control and Hospital Epidemiology 31(2):107–117.

Taylor D. M. and S. L. Woodgate. 2003. Rendering practices and inactivation of transmissible spongiform encephalopathy agents. Revue Scientifique et Technique-Office International des Epizooties 22:297–310.

The Carcass Transport and Disposal Working Group of the International Association of Fish and Wildlife Agencies (IAFWA) Fish and Wildlife Health Committee. International Association of Fish and Wildlife Agencies. 2006. Transport and Disposal of Hunter-killed Cervid Carcasses: Recommendations to Wildlife Agencies to Reduce Chronic Wasting Disease Risks. http://cwd-info.org/wp-content/uploads/2017/01/CarcassGuidelines.pdf

World Health Organization. [http://www.who.int/en/]. Geneva (Switzerland): The Organization; 2000. WHO Infection Control Guidelines for Transmissible Spongiform Encephalopathies. Report of a WHO Consultation, Geneva, Switzerland, 23–26 March 1999. Available from: http://www.who.int/csr/resources/publications/bse/WHO_CDS_CSR_APH_2000_3/en/.

Section 4: SUPPORTING ACTIVITIES

16 - Internal and Public Communications

Agencies use many different outlets and forms of communication to share information about CWD within the agency and with externally with hunters, stakeholders, community and other agency decision-makers, and the general public. Although this chapter focuses primarily on web and online communications, we recommend the development of an integrated communications strategy that incorporates multiple media sources (print, radio, television) as well as public meetings and other outreach activities. Agencies may also wish to develop a CWD Communications Plan which articulates strategies and approaches for public, internal, and partner communications.

Best Management Practices for Internal Communications

Internal communications are critical for CWD management and agencies should consider developing an internal CWD communications plan which should clearly identify the following:

- Authority and responsibility related to CWD surveillance and management operations.
- An internal communications structure to facilitate communication related to CWD between agency administrators and field-level employees.
- · Cohesive CWD talking points and messaging.
- How and where staff can access up-to-date information on CWD testing results in their state, surveillance and management actions, and current "hot topics."

Best Management Practices for Online Communication with the Public

An agency CWD website could include (but not be limited to) the following information:

- · General information about CWD:
 - History
 - Species affected
 - Pathogenesis
 - Clinical signs
 - o Distribution across the state/province, country, world
- Public health concerns:
 - CDC recommendations
 - Risk for livestock, domestic species
- Recommendations for hunters:
 - Hunt planning information (where applicable), including guidance for out-ofstate hunters
 - Location (units, counties) of CWD sampling areas (mandatory, voluntary)
 - Check station locations, if applicable
 - Options for submitting samples for CWD testing outside of sampling areas

- Relevant contact information, e.g. regional offices
- Hunting in CWD-positive areas:
 - Specific guidance for out-of-state hunters
 - Recognizing clinical signs and appropriate responses
 - Personal Protective Equipment
- o Post hunt processing:
 - ✓ Field dressing
 - ✓ Deboning or removal of spine and head for transport
 - ✓ Preparing for taxidermy
 - ✓ Disposal of parts
 - Movement of carcasses/parts across state lines for nonresident hunters
- o Movement of carcasses/parts/disposal recommendations
- o Reporting requirements
- o Use of natural deer urine products
- o Issues with feeding/baiting
- Current CWD surveillance and response activities
 - o Background on how surveillance is being conducted
 - Maps of CWD locations and prevalence
 - Include species, hunt area/unit, county, or other relevant units
 - Known data on infection rates and disease distribution
 - Testing over time; include positives/negatives
 - Identify locations where samples are collected (taxidermists, deer processors, dropoff or check stations)
 - o CWD response and management activities
 - o CWD research projects, if applicable
- Public reporting of sick or diseased animals:
 - Provide multiple methods for the public to report: Online forms, social media monitoring
 - o Provide relevant addresses and phone numbers
 - Provide information urging people not to approach or contact sick animals without appropriate PPE, to reduce risks of contamination
 - Provide guidance and circumstances for shooting a sick animal and for testing and disposal of the carcass
 - Consider providing links to licensed wildlife rehabilitators for reporting purposes only (we do not recommend rehabilitating deer in areas where CWD is enzootic)
 [please refer to chapter 15 on rehabilitation]
- Reiterate relevant regulations, including:
- Carcass movement regulations
- Wildlife feeding/baiting
- Wildlife rehabilitation (deer fawn and elk/moose calf)
- · Reporting requirements
- Use of urine scent lures and other biological attractants
- CWD test result reporting
 - o Provide for partners and hunters to submit samples and check test results

- Use a unique identifying sample number that is meaningful to diagnostic laboratory or state/provincial agency
- Mark by specific locations using standardized coordinate systems (e.g. UTM (Universal Transverse Mercator) or latitude/longitude)
- Educational materials
 - Fact sheets
 - Should be printable
 - Include information on transmission, species affected, distribution, etc.
 - Can be customized for specific groups (e.g. taxidermists, meat processors, wildlife rehabilitators, hunters, public)
 - Frequently asked questions (FAQs)
 - Other relevant websites
 - CWD Alliance: http://cwd-info.org/
 - Links to current research, especially significant review papers and findings relevant to CWD management in the state/province/territory
 - Other states and provinces

Supporting Strategies and Evidence

An effective communication strategy should increase the public's understanding of, support for, and participation in CWD surveillance and response programs, as well as provide the regulatory agency with a platform to distribute new information. A website can serve as an effective tool for this purpose and include the ability to provide up-to-date background information on CWD, current CWD status and distribution in the state/province and the country, current surveillance programs, relevant regulations, resources for hunters to get their animal tested, and provide timely CWD test results. The website could also be a portal for the public to ask questions, voice concerns, and communicate CWD test results. In rural or remote areas, electronic communication may not be the best method of communication with the target audience and alternative methods of communication (e.g. written documents, public meetings) should be considered.

Examples of CWD web pages:

State of Michigan: http://mi.gov/cwd

Pennsylvania Game Commission: http://www.pgc.pa.gov/Wildlife/Wildlife-RelatedDiseases/Pages/ChronicWastingDisease.aspx

Wyoming Game and Fish Department: https://wgfd.wyo.gov/Wildlife-in-Wyoming/More-Wildlife/Wildlife-Disease/Chronic-Wasting-Disease

Colorado Parks and Wildlife: http://cpw.state.co.us/cwd

New York State Department of Environmental Conservation: http://www.dec.ny.gov/animals/7191.html

Alberta Environment and Parks: http://aep.alberta.ca/fish-wildlife/wildlife-diseases/chronic-wasting-diseases/

17 - Human Dimensions

Best Management Practices involving human dimensions in implementing a CWD program include the following:

- Conduct social science surveys to inform management decisions. Many states and provinces are placing an increased emphasis on social science surveys. These surveys should be statistically robust and address knowledge, attitudes, perceptions, and support for CWD management programs. This is particularly important in areas with new infections where there is little to no state or provincial-specific information. Surveys should also explore hunter attitudes related to CWD including effort and success rates, and willingness to accept regulatory changes to manage CWD. Similar information should be collected from landowners, who are critical to a successful CWD management program. Landowner beliefs about CWD are generally lacking because the majority of the survey interest if focused on agency's primary constituency, its hunters. These surveys should also explore the potential economic and sociocultural effects of CWD using accepted social science methods.
- Develop a comprehensive external and internal communication plan. Develop a
 communication plan (perhaps as a subset of a larger CWD response plan) that provides the
 public with timely and accurate information about CWD in their state/province.
 Communication strategies should aim to improve public understanding of CWD and
 engage the hunters and non-hunters in managing the disease. Elements of a
 communications plan should:
 - a. Contain key messages about CWD
 - Include and use the best available science, preferably from the host state /province/territory
 - c. Frequently be updated
 - d. Ensure openness, honesty, and transparency
 - e. Use social media (e.g., Facebook, Twitter) to convey information to the widest range of age and cultural segments of the population
- Increase stakeholder engagement and outreach to the communities, hunters and
 private landowners. Agencies should foster community partnerships and work
 collaboratively to find support for CWD management. It is important that all affected
 groups be engaged in CWD management process. Outreach should be informed by research

(both biological and social) about CWD and its risks, and how the public feels about methods for management of the disease. Outreach to private landowners should explain the work of state fish and wildlife agencies and the importance of CWD control efforts. Brochures, fact sheets, and maps for public distribution can be an important tool.

Maintain a topically relevant and accurate website. State/provincial/territorial agency websites are often out-of-date and/or not updated frequently enough. Managers should strive to keep their website updated. The New York State Department of Environmental Conservation is an example of a well-maintained website, https://www.dec.ny.gov/animals/7191.html. Also see chapter 4 of this report.

Supporting Strategies and Evidence

The wildlife management environment functionally has three components – wildlife, habitats, and humans. It can broadly be stated that everything that does not directly involve wild animals or their habitats is about humans (Decker et al. 2012). The human component of the management environment falls within the field of study known as human dimensions, which can be defined as the application of the social sciences to natural resources management issues. Human dimensions research attempts to describe and understand human thought and behavior toward fish and wildlife management with a goal to improve management.

Human dimensions research is essential for understanding the potential impacts of CWD (Decker et al. 2006). While there is a growing body of literature devoted to understanding stakeholder perceptions, attitudes, and beliefs about CWD, the amount of published information is limited when compared with disease ecology studies. Most of those studies have been conducted in areas with longer-term CWD infections (e.g., Alberta, Colorado, Wyoming, Illinois, South Dakota, and Wisconsin). Research has also shown that hunters are concerned about CWD-related risk (Gigliotti 2004, Miller 2004). States, provinces, and territories should be concerned about the potential impacts of CWD in their cervids, as the disease may cause declines in hunter numbers (Vaske et al. 2004). Needham et al. (2004) postulated that upwards of two-thirds of hunters would quit participation in hunting if CWD was transmissible to humans. While research to date has not empirically demonstrated a human health risk, preliminary experimental studies suggest that risk cannot be completely ruled out. In fact, the U.S. and Canadian Centers for Disease Control and Prevention recommend testing of all cervids taken in areas known to have the disease, and to not consume meat from CWD-positive animals (see, CDC - CWD guidelines). This perception of risk has the potential to also impact trust in the wildlife agency, the agency's ability to effectively manage the disease (e.g., lack of support from hunters and landowners), and negatively impact local economies (Vaske and Lyon 2011). A top-down, authoritative solution that does not include stakeholders and social science research may ultimately harm and nullify a comprehensive response (Heberlein 2004, Holsman et al. 2010).

As an example, in 2002, when CWD was first discovered in Wisconsin, firearm deer license sales decreased 11%, which resulted in economic losses between \$53 million and \$79 million (Bishop 2004). Although hunter numbers rebounded slightly, most did not come back. Today, Wisconsin has eight percent fewer deer license sales than before CWD was discovered in Wisconsin deer. In addition, when public support for management actions is lacking and social/political factors influence decision-making, wildlife agencies run the risk of losing management momentum and their ability to slow disease spread. Indeed, Wisconsin DNR was compelled to take a 'passive' approach (Kroll et al. 2012, page 56) and has since seen prevalence substantially increase, especially in males (Jennelle et al. 2014). Without a thorough investment in human dimension research and planning, agencies will be poorly positioned to effectively respond to the challenges CWD brings.

"In any moment of decision, the best thing you can do is the right thing, the next best thing is the wrong thing, and the worst thing you can do is nothing."

- Theodore Roosevelt

Literature Cited and References

Bishop, R. C. 2004. The economic impacts of chronic wasting disease (CWD) in Wisconsin. Human Dimensions of Wildlife 9: 181–192.

Decker, D. J., S. J. Riley, and W. F. Siemer, (Eds.). 2012. *Human dimensions of wildlife management*. JHU Press.

Decker, D. J., M. A. Wild, S. J. Riley, W. F. Siemer, M. M. Miller, K. M. Leong, J. G. Powers, and J. C. Rhyan. 2006. Wildlife disease management: a manager's model. Human Dimensions of Wildlife 11: 151–158. doi:10.1080/10871200600669908.

Gigliotti L. 2004. Hunters' concerns about chronic wasting disease in South Dakota. Human Dimensions of Wildlife 9:233–235.

Holsman, R. H., J. Petchenik, and E. E. Cooney. 2010. CWD After "the fire": Six reasons why hunters resisted Wisconsin's eradication effort. Human Dimensions of Wildlife 15:180–193.

Jennelle, C. S., V. Henaux, G. Wasserberg, B. Thiagarajan, R. E. Rolley, and M. D. Samuel. 2014. Transmission of chronic wasting disease in Wisconsin white-tailed deer: implications for disease spread and management. PLoS One 9:e91043. https://doi.org/10.1371/journal.pone.0091043.

Kroll, J. C., D. C. Guynn, and G. L. Alt. 2012. Wisconsin Deer Trustee Report. https://dnr.wi.gov/topic/wildlifehabitat/documents/trusteereport.PDF.

Miller, C. A. 2004. Deer hunter participation and chronic wasting disease in Illinois: An assessment at time zero. Human Dimensions of Wildlife 9:237–239.

Needham, M. D., J. J. Vaske, and M. J. Manfredo. 2004. Hunters' behavior and acceptance of management actions related to chronic wasting disease in eight states. Human Dimensions of Wildlife 9:211–231.

Vaske, J. J., N. R. Timmons, J. Beaman, and J. Petchenik. 2004. Chronic wasting disease in Wisconsin: Hunter behavior, perceived risk, and agency trust. Human Dimensions of Wildlife 9:193–209.

Vaske, J. J. and K. M. Lyon. 2011. CWD prevalence, perceived human health risks, and state influences on deer hunting participation. Risk Analysis 31:488–496.

18 - Economic Impacts of Chronic Wasting Disease

Best Management Practices for mitigating economic impacts include:

- Support human dimensions, economics, and social science research that evaluates the impact of CWD prevalence on hunting practices and hunting-related expenditures.
- Support research into the economics of reducing the risk of CWD introduction into states and cost evaluations of early management responses.
- Identify means of comparing accounting costs across states for budget planning for surveillance and possible management tools.
- Seek additional federal and state/province revenue streams outside of license sales for CWD-related expenditures accrued by state fish and wildlife agencies (e.g. doe tag sales in CWD enzootic zones which directly support CWD management).

Supporting Strategies and Evidence

Although state and provincial fish and wildlife agencies support and contribute to citizen recreation in many ways, the majority of funding for most fish and wildlife agencies is derived from license sales or, in Canada, general government revenues. This funding supports the broader mission of the state fish and wildlife agencies, beyond just the management of single fish or wildlife species. From creating accessible wildlife areas to habitat improvement, and supporting hunter education programs to everyday office expenditures, license sales often form the backbone of many agency budgets. The sale of licenses for mule deer, white-tailed deer, and elk hunting accounts for the highest proportion of these funding dollars in many states. U.S. expenditures directly related to deer hunting account for nearly half of all hunting related expenditures and are estimated to range from about \$12 to \$18 billion dollars per year since 2001 (U.S. Fish & Wildlife Service 2011; U.S. Fish & Wildlife Service 2017). Across all economic sectors, the total annual economic contribution of deer hunting to the U.S. economy has approached \$40 billion, contributing as much as \$5.5 billion per year in state and federal tax revenue (Southwick Associates 2012). Comparable economic benefits are generated in Canada (Federal et al. 2014) and are at substantial risk as CWD continues to increase and spread in enzootic areas.

The effect of CWD on agency budgets and expenditures can be both direct and indirect. Direct effects include additional strains on budgets and staff time as states increase capacity for surveillance, monitoring, and management actions to combat CWD. While studies of the direct economic impacts of CWD to agencies are limited, early work in Wisconsin, as an example, suggests that CWD can reduce financial resources available to the agency while also

substantially increasing budget expenditures. Following the finding of CWD in Wisconsin, an initial 10% reduction in hunting license sales was attributed to that finding (Vaske et al. 2004). Since 2002, Wisconsin has spent just over \$48 million dollars for disease monitoring and to reduce the spread and prevalence of CWD. Some funding was provided through the U.S. Department of Agriculture's (USDA) CWD program, which no longer available to states. As CWD prevalence has increased within Wisconsin and funding was reduced, alternative funding measures were implemented including earmarking sales of doe tags purchased in CWD-affected counties for the agency's CWD budget. The direct and indirect impacts of CWD on wildlife agency resources and the broader impacts on state, provincial, and federal economies can be significant and difficult to offset.

Direct Impacts:

- 1. Increased expenditure on CWD surveillance, monitoring, and hunter service testing. Increased agency expenditures on CWD include direct testing as well as increases in staff time, travel, planning, logistical support, and communications. Identifying efficiencies in all aspects of CWD management is an important strategy for achieving management goals. In particular, efficiencies in sample collection and submission are important to reach sampling goals. Many wildlife agencies have implemented tools such as weighted surveillance to maximize detection ability when sample submissions are reduced due to reduced funding.
- 2. Cost of additional management tools. Whether hiring specialists to concentrate testing or reduce populations in CWD-affected areas or managing additional hunting opportunities, design and implementation of different management tools create additional expenditures for a program.

3. Reduced license sale revenue.

- a. Hunter reduction: As prevalence and distribution of CWD rises and approaches 50% within a local population of wild cervids, research indicates that approximately 42% of residents and 54% of non-residents would stop hunting deer or elk there (Needham et al. 2004). The loss of revenue from these license sales impacts all agency management activities, in addition to those related to CWD.
- b. Population reduction: With increasing infection rates, affected herds may decrease and not be able to sustain historical harvest rates (DeVivo et al. 2017, Edmunds et al. 2016)
- 4. Diversion of funds from other agency programs. In some instances, agencies may need to readjust budgets to provide more funds to CWD programs. This can directly impact other agency efforts.

Indirect Impacts:

- 1. Limit an agency's ability to manage a game species. Deer and other species are managed to maintain healthy populations at numbers sufficient to provide a harvest of a percentage of that population. Reduction in license sales or hunter harvest can directly impact the ability of the state to manage these populations at levels which are acceptable and sustainable from biological and societal perspectives.
- Decrease support for wildlife agencies. Restrictions and changes to traditional
 hunting practices can lead to loss of public support for fish and wildlife agencies.
 Long-term persistence of CWD in infected deer populations and the long-term
 viability of CWD prions in the environment pose additional challenges.
- 3. Constrain cultural traditions and the social and economic stability of communities dependent on hunting. As an example, in Wisconsin, hunter losses were estimated to amount to between \$53 million and \$79 million in 2002 and \$45 million to \$72 million in 2003 (Bishop 2004). While loss to the Wisconsin economy was estimated to be approximately \$5 million during that time frame, Bishop (2004) believed that losses in some rural areas may have been substantial, but data were not available to estimate these losses and may have been an outlier in comparison to other state's initial findings. Subsistence hunting is also difficult to quantify, but of significant importance to food security for rural and indigenous communities. The economic value of subsistence harvest from one herd of barren-ground caribou (Beverly and Qamanirjuaq Caribou Management Board 2008) in Northern Canada is estimated at over \$14 million. In some instances it is difficult to measure the additional spiritual, aesthetic, and social values of wildlife. Sociocultural practices related to hunting are incredibly important in many rural and Indigenous communities with existing challenges to overall physical and mental health. Any required shifts of those practices or loss of opportunities to hunt a species will have larger and longstanding impacts.

Literature Cited and References

Beverly and Qamanirjuaq Caribou Management Board. 2008. Economic Valuation and Sociocultural Perspectives. Estimated Harvest of the Beverly and Qamanirjuaq Caribou Herds.

Bishop, R. C. 2004. "The Economic Impacts of chronic wasting disease (CWD) in Wisconsin." Human Dimensions of Wildlife 9 (3):181–92. https://doi.org/10.1080/10871200490479963.

DeVivo, M. T., D. R. Edmunds, M. J. Kauffman, B. A. Schumaker, J. Binfet, T. J. Kreeger, B. J. Richards, H. M. Schätzl, T. E. Cornish. 2017. Endemic chronic wasting disease causes mule deer population decline in Wyoming. PLOS ONE.

Edmunds, D. R., M. J. Kauffman, B. A. Schumaker, F. G. Lindzey, W. E. Cook, T. J. Kreeger, R. G. Grogan, T. E. Cornish. 2016. Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PLOS ONE.

Federal, Provincial, and Territorial Governments of Canada. 2014. 2012 Canadian Nature Survey: Awareness, participation, and expenditures in nature-based recreation, conservation, and subsistence activities. Ottawa, ON: Canadian Councils of Resource Ministers. https://onlinelibrary.wiley.com/doi/full/10.1111/j.1744-7976.2011.01232.x

Monello, R. J., J. G. Powers, N. T. Hobbs, T. R. Spraker, M. K. Watry, and M. A. Wild. 2014. Survival and population growth of a free-ranging elk population with a long history of exposure to chronic wasting disease. Journal of Wildlife Management: 78 (2):214–223.

Needham, M. D., J. J. Vaske, and M. J. Manfredo. 2004. Hunters' behavior and acceptance of management actions related to chronic wasting disease in eight states. Human Dimensions of Wildlife 9:211-231.

Seidl, A. F. and S. R. Koontz. 2004. "Potential Economic Impacts of Chronic Wasting Disease in Colorado." Human Dimensions of Wildlife 9 (3):241–45. https://doi.org/10.1080/10871200490480042.

Southwick Associates. 2012. "Hunting in America: An Economic Force for Conservation." https://www.fs.fed.us/biology/resources/pubs/wildlife/HuntingEconomicImpacts-NSSF-Southwick.pdf.

U.S. Fish & Wildlife Service. 2011. "2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation; Addendum: Deer Hunting in the United States: Demographics and Trends." http://digitalmedia.fws.gov/cdm/ref/collection/document/id/2134.

U.S. Fish & Wildlife Service. 2017. "2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - National Overview." https://wsfrprograms.fws.gov/subpages/nationalsurvey/nat_survey2016.pdf

Vaske, J. J. N. R. Timmons, J. Beaman, J. Petchenik. 2004. Chronic wasting disease in Wisconsin: hunter behavior, perceived risk and agency trust. Human Dimensions of Wildlife 9:193-209.

19 - Optimizing the Contribution of Research to CWD Management

Significant advances have occurred in recent decades that expand our knowledge of prion diseases, specifically detection, transmission, and biology. Despite these advances, our attempts to identify effective management strategies remain elusive (Uehlinger et al. 2016). These knowledge gaps limit our ability to clearly foresee the biological, social, and political impacts of chronic wasting disease (CWD), and to take the most appropriate steps to mitigate negative consequences of the disease on conservation, animal, and potentially human health. Therefore, best management practices for agencies responding to CWD include consideration of opportunities to incorporate research into their work. Only through addressing knowledge gaps will efficacy and efficiency of management actions improve and risks of CWD be reduced in the future.

Research activities range from opportunistic collection of data to design of rigorous landscape scale evaluations of management interventions. At minimum, communication with CWD experts, researchers, and biometricians prior to initiating surveillance is recommended to identify important and opportunistic contributions that could be gained with minimal added cost or workload. For example, managers could collect data on sex, age, and harvest location of cervids sampled for surveillance, collect tissue samples for genetic analysis, develop and evaluate new diagnostic tests, or archive specimens for future needs. Similarly, with appropriate planning and communication, captive cervids can potentially serve as a ready source of data and samples to support CWD research needs.

Communication and collaboration across jurisdictional boundaries can be used to magnify the impact of data collection to a broader spatial and temporal scale. Such an approach has been proposed through a disease management venture to enhance understanding of bighorn sheep respiratory disease etiology and ecology. Likewise, a multistate research approach was used to investigate the emergence of snake fungal disease in multiple eastern and Midwestern states. The intent and premise is that coordination to implement standardized protocols for treatment application and data collection over multiple small scale evaluations are likely to provide more insight than could be gained from differing data collection methods and numerous varying treatments. Collaboration to identify paired treatment and control sites for application of cervid density management is an example of how this could be applied as a best management practice for CWD. Wood et al. (2017) reiterate the importance of using adaptive management and outline an approach for experimental application and evaluation of prospective CWD management strategies in the west. Agencies considering management intervention are encouraged to review these recommendations. The development of controlled study designs to evaluate management strategies also was identified as the greatest priority or need for southeastern states represented at a 2017 CWD Research Workshop hosted in Arkansas. A 2017 research coordination meeting

with several states in the upper Midwest has helped provide consistency between projects. Similar recommendations for a regional approach to research and management would be beneficial.

Collaboration can also be used to compare data over a broad geographic area to identify trends that may not otherwise be apparent. For example, a recent genetic analysis of elk from multiple locations in the Western U.S. identified selection of more resistant PRNP genotypes where CWD has occurred for a longer period (Monello et al, 2017). Publishing peer-reviewed research as well as sharing data are critical means of collaboration and exemplify best management practices. In addition to building our foundational knowledge, describing current conditions and trends, and documenting impacts, these shared data are useful in constructing and testing predictive models.

Despite the high cost and complexity, well designed studies that test experimental manipulations and disease dynamics over long time frames and wide spatial scales will be critical to informing effective management practices in the future. For example, Before-After-Control-Impact (BACI) design studies provide a rigorous evaluation of experimental manipulations. The BACI design uses matched control and treatment populations, collects required information prior to applying a treatment, and then monitors each population after the treatment application. Use of BACI design in CWD research has been limited to date (e.g., Conner et al. 2007) and none have been conducted over a sufficient time scale for complete evaluation. Best management practices dictate that commitment to resources are maintained for several years (i.e., at minimum 5 years) to fully evaluate effects of management interventions (WAFWA 2018); however, this can be challenging considering the prolonged disease course and extended epidemic curve associated with CWD.

In addition to biological research, research to understand the human dimensions (HD) of CWD (e.g., stakeholder attitudes, beliefs, and values) is critical to developing best management practices. Understanding the human component can have dramatic effects on the success, failure, and future of CWD management. Understanding how stakeholders' attitudes, social norms, and behavioral intent inform support for management actions is critical for programmatic success. For example, how stakeholders perceive the long-term positive benefits of CWD management including what management actions are, and are not, supported and, thereby, indicate which are most likely to succeed in their implementation may significantly influence hunter participation and tolerance of deer and elk population reduction strategies. In addition to characterizing current stakeholder perspectives, HD research can help identify the underlying values and informational sources that shape those perspectives. This can assist in developing informational messaging that reaches the public more efficiently, informs them more adequately, and, where necessary, begins the process of increasing support for science-based management approaches that have low initial acceptance. Conducting analytical assessments and retrospective analyses of HD experiences can serve as lessons learned (Vaske 2010). Just as evaluating the outcome of disease management efforts facilitates adaptive management, recurrent evaluation of stakeholder perspectives and communication strategies allows these efforts to be similarly responsive.

Management agencies, as well as producers of captive cervids, are well-poised to support critical research to close knowledge gaps and move toward successful management of CWD. Best management practices for CWD include incorporating research whenever possible and using available resources in the most effective manner. The *Plan for Assisting States, Federal Agencies, and Tribes in Managing Chronic Wasting Disease in Wild and Captive Cervids* (2002) identified four areas for CWD research focus. While a number of the knowledge gaps have been filled since the report was released, the topical areas remain relevant. A revision of those research goals and tasks could be considered when planning management and allocating resources. **These priority areas include:**

1. Prion detection and diagnostics.

Recent advances:

Research has led to significant advances in diagnostic testing (e.g., enzyme-linked immunosorbent assay (ELISA)), prion detection in some substrates (e.g., protein misfolding cyclic amplification (PMCA), Real-Time Quaking-Induced Conversion (RT-QuIC)), and antemortem diagnostics (tonsil and recto-anal mucosa—associated lymphoid tissues (RAMALT) biopsy).

Next steps:

Additional advances in CWD detection will likely follow on the coat-tails of other prion diseases. Of particular need are more sensitive tests for live animals, including a rapid throughput test for surveillance and to facilitate test-and-cull management, and the ability to reliably detect prions in environmental samples, such as soil, water, and urine.

2. Disease biology and pathogenesis.

Recent advances:

Research has led to significant advances in understanding routes of prion shedding, transmission, species susceptibility, and genetic contributions to susceptibility.

Next steps:

Apply these advances to continue modeling and understanding disease ecology, such as sources of new loci of infection and impacts of genetic resistance and selection. Filling knowledge gaps about strains of CWD and species barriers, particularly for humans, remain important needs. Identification of the relative contributions of the various disease transmission pathways towards the overall spread of CWD in wild and captive cervid populations has been identified as a research priority under legislation introduced by Representative Abraham (R-LA) in the U. S. House of Representatives in June, 2018 (H. R. 6272). Developing prophylactic or treatment

measures are needed, but realistically the development of such measures appears unlikely in the near term.

3. Management and Ecology of the Disease and the Host.

Recent advances:

Short term studies have been performed to fill some knowledge gaps on the role of cervid ecology on CWD transmission, identify the role of soil and plants in prion availability, and model disease dynamics and predict management effectiveness.

Next steps:

Significant needs remain in this area, particularly long-term, broad scale multi-jurisdictional studies to evaluate the effectiveness of management treatments such as density reduction and targeted removals. Identification of techniques to reduce infectious load in the environment would be beneficial for captive, and potentially, free-ranging cervids. A greater understanding is needed of the role of plant uptake (and other environmental sources) for CWD transmission, prion translocation, and exposure of humans, livestock, and other wildlife species to prions.

4. Human dimensions.

Recent advances:

Place-based inquiry on perceptions of CWD and impact on hunting and risk evaluations have been conducted on a limited scale.

Next steps:

Significant knowledge gaps remain that will influence managers' ability to successfully address CWD, particularly public attitudes on the need for management and acceptance of proposed management actions. Additional needs include understanding differences in attitudes and beliefs in different geographic locations, understanding concern about risk to human health, public acceptance of risk from CWD, including human assisted movement of cervids, and evaluating communication preferences between geographic regions, stakeholder groups, and other demographics.

Literature Cited and References

Chronic wasting disease Task Force. 2002. Plan for Assisting States, Federal Agencies, and Tribes in Managing Chronic wasting disease in Wild and Captive Cervids.

Conner, M. M., M. W. Miller, M. R. Ebinger, and K. P. Burnham. 2007. A Meta-BACI approach for evaluating management intervention on chronic wasting disease in mule deer. Ecological Applications 17: 140–153.

Monello, R. J., N. L. Galloway, J. G. Powers, S. A. Madsen-Bouterse, W. H. Edwards, M. E. Wood, K. I. O'Rourke, and M. A. Wild. 2017. Pathogen-mediated selection in free-ranging elk populations infected by chronic wasting disease. PNAS

Uehlinger, F. D., A. C. Johnson, T. K. Bollinger, and C. L. Waldner. 2016. Systematic review of management strategies to control chronic wasting disease in wild deer populations in North America. BMC Veterinary Research 12: 173–189.

Vaske, J. J. 2010. Lessons learned from human dimensions of chronic wasting disease research. Human Dimensions of Wildlife 15: 165–179.

Western Association of Fish and Wildlife Agency .2018. "Recommendations on Adaptive Management of Chronic Wasting Disease in the West"

https://www.wafwa.org/Documents%20and%20Settings/37/Site%20Documents/Committees/Wildlife%20Health/docs/CWDAdaptiveManagementRecommendations WAFWAfinal approved01/06/2018.pdf

Wood, M. E., M. J. Pybus, E. S. Almberg, K. Mehl, T. K. Bollinger, E. Merrill, M. Ball, and M. W. Miller. 2017 Recommendations for adaptive management of chronic wasting disease in the west.

20 - CWD and Cervid Regulations in North America

Best Management Practices for reducing the risk of CWD transmission and establishment of CWD through regulations and regulatory strategies

State, provincial, and territorial wildlife agencies should:

- Assume sole authority for management (versus joint authority) of CWD in confined
 herds and privately-owned cervid herds if possible. When litigation arises it is helpful to
 be able to present consistent statements of jurisdiction over time, whether through
 regulation or supplemented with the opinion of the state attorney general.
- Work closely with neighboring jurisdictions to coordinate and, where possible, harmonize management and regulatory responses to CWD;
- Review and evaluate their wildlife disease regulations and authorities on a regular, ongoing basis, in order to ensure sufficient management flexibility and regulatory authority to manage CWD in wild and/or captive cervid populations. Also review statutes pertaining to civil liability for damages caused to captive cervids, which may contain language designating or implying that captive cervids are domestic animals.

Enact regulations to:

- o Promote testing of harvested animals in CWD-enzootic areas;
- Mandate CWD testing for all cervids that die in private ownership/management or within a confined cervid operation;
- Ensure consistent enforcement of intrastate and interstate movement prohibitions, including seizures and penalties; and

Prohibit:

- Feeding/baiting of cervids
- Live importation of cervids into the state/province/territory except to regulated and licensed facilities
- Importation of intact cervid carcasses and cervid parts known to contain significant amounts of prions into the state/province/territory
- Movement of intact cervid carcasses and cervid parts known to contain significant amounts of prions from a CWD-enzootic area within a state/province/territory

Supporting Strategies and Evidence

CWD regulations vary widely between state, provincial, and territorial jurisdictions. While oversight of confined and privately-owned cervids falls solely on the agricultural or wildlife agencies in a few states and provinces, both agencies jointly manage privately-owned or confined cervids in the majority of states and provinces. Many states and provinces have restrictions prohibiting the importation of live cervids from another state or province where CWD is enzootic. However, some states ban importation (or ownership) of all live cervids. Even with the ever present and increasing threat of CWD, a few states and provinces have no ban or restriction in place, and allow free movement of live cervids across borders.

In states and provinces where privately-owned cervids are legal, regulatory language requires some level of postmortem CWD testing. These requirements and levels of enforcement vary greatly for each state and province. All states and provinces perform some level of CWD testing of wild cervids, again to varying degrees. Through this testing more than half of the states and three Canadian provinces have detected CWD in either privately-owned or wild cervids.

Baiting (for hunting) and feeding of wild cervids continues in many states and provinces. More states ban or restrict baiting rather than feeding, even though feeding extends the temporal scale that animals are congregating at unnatural food sites. Increased attention is being placed on the movement of cervid parts and carcasses across jurisdictional boundaries. Movement of potentially infected parts and carcasses increases the chance of CWD being introduced into new areas and more states, provinces, and territories are taking steps to reduce or ban these movements. Sound and consistent regulations and practices across all states, provinces, and territories would reduce confusion among stakeholders, especially those hunting in jurisdictions other than where they reside; reduce inadvertently moving CWD into new areas; and reduce the likelihood of disease transmission in areas where it currently exists.

Reference

The Chronic Wasting Disease Alliance maintains a current, up-to-date list of state and provincial regulations related to CWD. Link to clickable map or table of regulations by state, province, and territory: http://cwd-info.org/wp-content/uploads/2018/06/CWDRegstableState-Province_Spring18.pdf

21 - Relevant Case Law

Cases discussing regulatory authority over, categorization of, and ownership interests in captive cervids

Hill v. Missouri Department of Conservation, No. SC 96739 (Mo. Sup. Ct. 2018):

The Missouri Conservation Commission proposed new regulations of the captive cervid industry in an effort to eradicate CWD. These regulations banned the importation of cervids, and imposed stricter fencing, recordkeeping, and veterinary inspection requirements. Captive cervid owners/managers sued the Commission in state court to prevent the regulations from going into effect. The trial court ruled in favor of the cervid owners/managers. The state's appeal was then transferred to the Missouri Supreme Court.

The Commission argued that its authority under Article IV, §40(a) of the state constitution extends to captive cervids as "game" and "wildlife resources of the state." Cervid owners argued that the term "wildlife" does not include captive cervids, as it refers to animals that are both (1) "wild by nature" and (2) untamed and undomesticated. They further argued that "game" is a subset of that definition of "wildlife."

The Missouri Supreme Court rejected the cervid owners/managers' argument, finding that the terms "wildlife" and "game" include all animals wild by nature, regardless of whether they are domesticated. The cervid owners/managers' reading would define the Commission's authority on an "unworkable animal-by-animal basis" as against a "rational species-by-species basis." The text of article IV, §40(a) does not suggest the application of such an "animal-by-animal basis," and neither do historical interpretations of the text.

Cervid owners/managers also argued that privately owned cervids are not "resources of the state." The court rejected this argument as well, finding that "resources of the state" simply refers to wildlife within the state's geographical borders. Therefore, the Commission has the authority to regulate captive cervids as "game" and "wildlife resources of the state."

The Commission finally argued that the trial court erred in its determination that the proposed regulations violated the right to farm under Article I, §35 of the state constitution. This provision guarantees "the right of farmers and ranchers to engage in farming and ranching practices." Cervid owners/managers failed to show that they were engaged in such practices. Nothing in that provision suggested any intent to limit the Commission's regulatory authority for game and wildlife or for the captive cervid industry.

The Missouri Supreme Court reversed in favor of the Commission.

But see Oak Creek Whitetail Ranch, L.L.C. v. Lange, 326 S.W.3d 549 (Mo. Ct. App. 2010) (holding that a dog owner was liable for monetary damages when his dog killed 21 breeder deer; the deer were domestic animals per Mo. Rev. Stat. § 273.020 because they "[l]iv[ed] in or near the habitation of man; domesticated; tame; as, domestic animals");

and

Autumn Antlers Trophy Whitetail Lodge v. Armstrong, 2014 WL 10252003 (Minn. Dist. Ct. Aug. 18, 2014) (construing Minn. Stat. § 347.01—which makes dog owners liable for killing or wounding domestic animals—to potentially cover captive cervids as under the jurisdiction of the state department of agriculture, rather than its department of natural resources); 2015 WL 4945799 (June 24, 2015) (finding in favor of the deer facility and awarding damages).

<u>U.S. v. Wainwright</u>, 89 F.Supp. 3d 950 (S.D. Ohio 2015):

The federal government charged defendant Wainwright with several Lacey Act and Ohio criminal violations including operation of captive white-tailed deer hunting preserves without a license and interstate trafficking of white-tailed deer. Defendant moved to dismiss the charges.

The court held that white-tailed deer born and raised in captivity were "wild animals" within the meaning of the Lacey Act, 16 U.S.C. §§ 3371(a), 3372(a), which makes it a crime to import, export, transport, sell, receive, acquire, or purchase any fish or wildlife in violation of state law regardless of whether they are captive or free-ranging. The Ohio statutes at issue prohibit operation of a "wild animal hunting preserve" without a license, and define such preserves to include land where captive deer are released and hunted. Ohio Rev. Code §§ 1531.01, 1533.721.

The court also held that the Lacey Act's definition of "wild animal" was clear enough to provide defendant with fair warning that the Act covered white-tailed deer. § 3371(a) ("defining wildlife as "any wild animal, whether alive or dead, including without limitation any wild mammal...whether or not bred, hatched, or born in captivity, and includes any part, product, egg, or offspring thereof"). The court construed the Lacey Act to require consideration of whether a species, not a specimen, is wild (similar to the inquiry the Missouri Supreme Court would make in Hill three years later).

The district court ruled for the federal government.

See also U.S. v. Condict, No. CR-05-004-SPS, 2006 WL 1793235, at *3 (E.D. Ok. June 27, 2006) (also holding that wildlife under the Lacey Act includes farm-raised domesticated deer).

Peterson v. Smith, 03-17-00703-CV (Tex. Ct. App., 3d Dist.) [appeal pending]:

A deer-breeding facility sued for a declaration of ownership in breeder deer for which they possessed Texas breeding permits, and also sought to overturn comprehensive rules promulgated by the Texas Parks & Wildlife Department (TPWD) requiring breeder deer to undergo CWD testing in line with existing procedures for free-ranging deer.

Under Article XVI, § 59(a) of the Texas Constitution (the Conservation Amendment), natural resources are held as a "public right" to be preserved by legislation. The legislature accordingly proclaimed that "[a]ll wild animals...inside the borders of [the] state are the property of the people of this state." Tex. Parks & Wild. Code § 1.101(4) (defining "wild" as "normally liv[ing] in a state of nature and...not ordinarily domesticated"). Restriction of wild animals' movement does not affect their status as public property. § 1.103.

The district court rejected the breeders' claims on the bases of sovereign immunity, lack of redressable injury or deprivation of due process concerning his ability to transfer deer, and authority in TPWD to regulate their captive deer as publicly-owned wildlife under the Texas Constitution and Code.

The court ruled in favor of the Department.

<u>See also Anderton v. TPWD</u>, 605 F. App'x 339, 348 (5th Cir. 2015) (per curiam) (holding that Texas deer breeders "cannot claim a constitutionally protected property interest in [their herd of breeder deer]").

<u>Indiana Department of Natural Resources v. Whitetail Bluff, LLC</u>, 25 N.E.3d 218 (Ind. Ct. App. 2015):

After being advised by the Indiana Department of Natural Resources (IDNR) that state law did not prohibit operating an enclosed white-tailed deer hunting facility, plaintiff established such a facility and populated it with captive deer. Soon, IDNR notified the facility that the presence of captive deer resulted in its land no longer being eligible for forest classification and plaintiff owing back taxes. Captive deer operations in Indiana were also subject to regulation by the State's Board of Animal Health (BOAH), which required tagging of animals for its CWD certification program.

Indiana's Attorney General issued an opinion finding that IDNR's and BOAH's jurisdiction over captive deer was ambiguous, and soon the General Assembly passed legislation authorizing deer farming as an agricultural practice while precluding the hunting of "cervidae livestock". IDNR issued an emergency rule stating that obtaining a game breeder's license did not allow the hunting of animals maintained under that license—including fenced-in hunting. Plaintiff sued to overturn the rule and contested IDNR's jurisdiction over captive deer.

The Court construed Indiana Code § 14-22-1-1 ("All wild animals, except those that are...legally owned or being held in captivity under a license or permit as required by this article; or...otherwise excepted in this article; are the property of the people of Indiana...The department shall protect and properly manage the fish and wildlife resources of Indiana") to confer no authority on IDNR to protect and manage wild animals that are legally owned or held in captivity under a license or permit. This reading comported with case law construing a prior version of § 14-22-1-1 in favor of the facility and BOAH.

The Court also held that high-fence hunting is not prohibited under § 14-22-20.5-2. The court considered the ethics of high-fence hunting and the hazards of CWD but ultimately took negative notice of IDNR's change in position.

The court of appeals ruled against the Department.

22 - CWD and Public Health

Best Management Practices related to public health and CWD include the following:

- Wear protective gloves, wash hands, and disinfect field equipment. Anyone handling cervids (deer, elk, etc.) or cervid carcasses should take precautions to avoid exposure to disease agents with known (e.g. leptospirosis) or unknown (e.g. CWD) risk to humans. Recommendations from the Centers for Disease Control and Prevention (CDC) and state/provincial wildlife health agencies include wearing gloves, washing hands and instruments, disinfecting field equipment (see chapter in this volume on disinfection), and minimizing the handling of nervous tissue (brain and spinal cord).
- Avoid sawing through the bone and cutting through the brain and spinal cord. In CWD enzootic areas, to reduce exposure to CWD prions avoid sawing through the bone and cutting through the brain and spinal cord. Meat processors should process deer individually and clean and disinfect equipment between animals. States should consider developing regulations for meat processors who handle deer from out-of-state or from CWD enzootic zones.
- Do not consume meat from animals that appear sick or are found dead of unknown causes. The CDC and many wildlife agencies recommend that meat should not be consumed from animals that appear sick or are found dead of unknown causes. These animals should be reported to the respective state, provincial, or territorial wildlife agency. Tissues and organs with the potential for higher concentrations of CWD, including brain, spinal cord, spleen, tonsils, and lymph nodes, should be avoided and not consumed.
- Do not consume meat or other tissues from CWD-positive animals. The CDC recommends that cervids, especially from CWD-positive regions, be tested for CWD prior to consumption and that hunters and others should avoid consuming meat or other tissues from positive animals. However, it should be noted that assays used for prion detection are surveillance tools and do not constitute a food safety test. Meat/muscle tissue is not tested for CWD due to the low level of prion detectable in this tissue. Further, some animals in the early stages of infection may test negative due to the low level of prions present. To qualify this CDC recommendation it should be stated that transmission of CWD to humans through consumption of game meat has not been documented and no human has ever been diagnosed with CWD prion-related disease.

Supporting Strategies and Evidence

The popularity of hunting of cervids in North America and subsequent consumption of venison raises concerns regarding the possibility of transmission of chronic wasting disease (CWD) to humans. Some transmissible spongiform encephalopathies of animals, such as bovine spongiform encephalopathy (BSE), have been shown to be transmissible to humans (Aguzzi and Heikenwalder 2006); however, others, such as scrapie, do not appear to readily cross the species barrier. To date, the natural host range for CWD appears to be limited to cervids, and there have been no documented cases of CWD in humans. Nevertheless, preliminary unpublished results from one experimental study suggest a potential risk to humans, and the CDC currently recommends hunters test their harvested animals for CWD prior to consumption and that meat or other tissues from CWD-positive animals should not be consumed. These recommendations have not changed following publication of experimental studies that were unable to demonstrate transmission of CWD to macaques (Race et al. 2018).

Humans are susceptible to several prion diseases including Creutzfeldt-Jakob Disease (CJD), variant CJD (caused by the classical bovine spongiform encephalopathy [BSE] agent), fatal familial insomnia, kuru, and Gerstmann-Sträusler-Scheinker disease. Of these only kuru and BSE are known to be transmissible, and BSE is the only animal prion disease known with certainty to be infectious to humans. Other animal prion diseases, including scrapie in sheep and goats, have not been shown to be transmissible to humans despite centuries of exposure, although certain lines of experimental investigation suggest a low but non-zero zoonotic potential for classical scrapie strains

Chronic wasting disease causes natural disease in members of the Cervidae family and has been detected in free-ranging Rocky Mountain elk, mule deer, white-tailed deer, moose, and reindeer (Miller and Fischer 2016). Species from captive commercial collections in North America have included elk, mule deer, sika deer, and white-tailed deer (U. S. Geological Survey 2016). Cattle that have been co-grazed with CWD-infected cervids have not developed disease (Sigurdson 2008; Williams et al. 2018), and other, non-cervid species have not been found to develop disease except in controlled experiments.

Experimental studies have further elucidated the potential host range and expanded our knowledge regarding both molecular and physical barriers to transmission. Studies using intracerebral (directly into the brain) inoculation of CWD evaluate molecular barriers and demonstrate whether the normal prion protein of the host species is capable of misfolding to the abnormal CWD prion protein shape. Amino acid sequence of the host prion protein, most importantly the presence of asparagine at position 170 in humans (Kurt et al. 2009), is an important determinant of whether misfolding occurs when exposed to the CWD prion (reviewed by Kurt and Sigurdson 2016). These studies indicated that a wide range of species are theoretically susceptible to CWD infection although susceptibility does not necessarily follow taxonomic lines. While many species, including raccoons, macaques, and some rodents, appear

resistant to infection by intracerebral inoculation, exposure via this route has resulted in CWD infection in other rodents, fallow deer, mustelids, felids, non-human primates and ruminants, although with variable attack rates (Kurt and Sigurdson 2016).

Despite the development of infection following intracerebral inoculation, most species appear to have physical barriers that so far prevent infection following natural exposure. Experimental natural or oral exposure to CWD did not result in infection in fallow deer (Rhyan et al. 2011), mustelids, felids, non-cervid ruminants (Kurt and Sigurdson 2016; Williams et al. 2018), and macaques in two related studies (Race et al. 2009; 2018). Experimental infections simulating natural exposure have resulted in disease in several cervid species including elk (Hamir et al. 2006a), muntjac (Napier et al. 2009), reindeer (Mitchell et al. 2012), and red deer (Balachandran et al. 2010). Infection following oral exposure in non-cervids has been demonstrated only in swine (Moore et al., 2017), squirrel monkeys (Marsh et al. 2005), and macaque monkeys (S. Czub, personal communication).

Successful infection of primates via intracerebral inoculation and oral exposure, although inconsistent, raises concerns for the potential for human infection. Squirrel monkeys have become infected following intracerebral inoculation, and there is evidence squirrel monkeys fed CWD-positive material have developed disease (Marsh et al. 2005). Although Race et al. (2009; 2018) saw no evidence of transmission to cynomolgus macaques, preliminary results from another study indicated cynomolgus macaques fed CWD-positive meat were capable of developing disease that is clinically similar to prion disease (S. Czub, personal communication). This research has not passed peer-review or been published to date.

Chronic wasting disease is increasing in prevalence and geographic range. Therefore, the potential for human infection may be increasing as infective contact rates increase (Belay et al. 2004). The CWD prion has been found in venison (skeletal muscle) of CWD-infected deer (Angers et al. 2006), including those that are not yet showing clinical signs (Daus et al. 2011). However, a small number of studies have investigated humans known to consume CWD-positive meat and were unable to establish any links to human disease (Mawhinney et al. 2006, Anderson et al., 2007). Some molecular studies suggest that the human prion protein is refractory to misfolding when exposed to the CWD prion while others show varying degrees of susceptibility (Waddell et al. 2017). Nevertheless, prion diseases can have extremely long incubation periods and surveillance in humans is limited, and thus the possibility for CWD to cause disease in humans cannot be ruled out. Experimental studies using transgenic mice suggest that CWD disease properties may change after multiple passages through different animals (Telling 2011). Human disease risk may depend on the strain and emerging strains may have increased infection risk to humans (Barria et al. 2011, Daus and Beekes 2012, Herbst et al. 2017). A recent systematic review of information on the potential transmissibility of CWD to humans had the following conclusion:

"Future discovery of CWD transmission to humans cannot be entirely ruled out on the basis of current studies, particularly in light of possibly decades-long incubation periods for CWD prions in humans. It would be prudent to continue CWD research and epidemiologic surveillance, exercise caution when handling potentially contaminated material and explore CWD management opportunities." (Waddell et al 2017)

The potential impacts on public health in the more holistic sense (e.g. mental health and social well-being) of detection of CWD in wild cervids should not be ignored and should be explored further. Hunting of wild cervids is of high importance in terms of subsistence harvesting, particularly in rural and Indigenous communities, with high sociocultural importance to the health and wellbeing of members of those communities.

Literature Cited and References

Aguzzi, A. and M. Heikenwalder. 2006. Pathogenesis of prion diseases: current status and future outlook. Nature Reviews 4:765–775.

Anderson C. A., P. Bosque, C. M. Filley, D. B. Arciniegas, B. K. Kleinschmidt-DeMasters, W. J. Pape, and K. L. Tyler. 2007. Colorado surveillance program for chronic wasting disease transmission to humans. Lessons from 2 highly suspicious but negative cases. Archives of Neurology 64: 439–441.

Angers, R. C., S. R. Browning, T. S., Seward, C. J., Sigurdson, M. W Miller, E. A. Hoover, and G. C. Telling. 2006. Prions in skeletal muscles of deer with chronic wasting disease. Science 311: 1117.

Balachandran A., N. P. Harrington, A. Algire J, Soutyrine, T. R. Spraker, M. Jeffrey, L. González, and K. I. O'Rourke. 2010 Experimental oral transmission of chronic wasting disease to red deer (*Cervus elaphus*): early detection and late stage distribution of protease resistant prion protein. Canadian Veterinary Journal 51: 169–178.

Bartz J. C., R. F. Marsh, D. I. McKenzie, and J. M. Aiken. 1998. The host range of chronic wasting disease is altered on passage in ferrets. Virology 251, 297–301.

Belay, E. D., R. A. Maddox, E. S. Williams, M. W. Miller, P. Gambetti, and L. B. Schonberger, 2004. Chronic wasting disease and potential transmission to humans. Emerging Infectious Diseases 10: 977–984.

Browning S.R., G. L. Mason, T. Seward, M. Green, G. A. J. Eliason, C. Mathiason, M. W. Miller, E. S. Williams, E. Hoover, and G. C. Telling. 2004. Transmission of prions from mule deer and Elk with chronic wasting disease to transgenic mice expressing cervid PrP. Journal of Virology 78: 13345–13350.

- Di Bari M. A., R. Nonno, J. Castilla, C. D'Agostino, L. Pirisinu, G. Riccardi, M. Conte, J. Richt, R. Kunkle, J. Langeveld, G. Vaccari, and U. Agrimi. 2013. Chronic wasting disease in bank voles: characterisation of the shortest incubation time model for prion diseases. PLoS Pathogens 9: e1003219. doi: 10.1371/journal.ppat.1003219
- Daus M. L., J. Breyer, K. Wagenfuehr, W. M. Wemheuer, A. Thomzig, W. J. Schulz-Schaeffer, and M. Beekes. 2011. Presence and Seeding Activity of Pathological Prion Protein (PrP^{TSE}) in Skeletal Muscles of White-Tailed Deer Infected with Chronic Wasting Disease. PLoS ONE 6(4): e18345. https://doi.org/10.1371/journal.pone.0018345
- Hamir A. N., R. A. Kunkle, R. C. Cutlip, J. M. Miller, K. I. O'Rourke, E. S. Williams, M. W. Miller, M. J. Stack, M. J. Chaplin, and J. A. Richt. 2005. Experimental transmission of chronic wasting disease agent from mule deer to cattle by the intracerebral route. Journal of Veterinary Diagnostic Investigation 2005: 276–281.
- Hamir, A. N., Gidlewski, T., Spraker, T. R., Miller, J. M., Creekmore, L., Crocheck, M., Cline, T., O'Rourke, K. I. 2006a. Preliminary observations of genetic susceptibility of elk (*Cervus elaphus nelsoni*) to chronic wasting disease by experimental oral inoculation. *Journal of Veterinary Diagnostic Investigation*, 18: 110–114.
- Hamir A. N., R. A. Kunkle, R. C. Cutlip, J. M. Miller, E. S. Williams, and J. A. Richt. 2006b. Transmission of chronic wasting disease of mule deer to Suffolk sheep following intracerebral inoculation. Journal of Veterinary Diagnostic Investigation 18: 558–565.
- Heisey D.M., N. A. Mickelsen, J. R. Schneider, C. J. Johnson, C. J. Johnson, J. A. Langenberg, P. N. Bochsler, D. P. Keane, and D. J. Barr. 2010. Chronic wasting disease (CWD) susceptibility of several North American rodents that are sympatric with cervid CWD epidemics. Journal of Virology 84: 210–215.
- Herbst A., C. Velásquez, E. Triscott, J. M. Aiken, D. McKenzie. 2017. Chronic Wasting Disease Prion Strain Emergence and Host Range Expansion. Emerging Infectious Diseases 23: 1598-1600. https://dx.doi.org/10.3201/eid2309.161474
- Kurt T.D., Telling G.T., Zabel M.D., Hoover E.A. 2009. Trans-species amplification of PrPCWD and correlation with rigid loop 170N. Virology 387:235–43
- Kurt T.D. and C. J. Sigurdson. 2016. Cross-species transmission of CWD prions. Prion 10(1):83–91.
- Marsh R.F., A. E. Kincaid, R. A. Bessen, and J. C. Bartz. 2005. Interspecies transmission of chronic wasting disease prions to squirrel monkeys (*Saimiri sciureus*). Journal of Virology 79: 13794–13796.

Mathiason C.K., A. V. Nalls, D. M. Seelig, S. L. Kraft, K. Carnes, K. R. Anderson, J. Hayes-Klug, and E. A. Hoover EA. 2013. Susceptibility of domestic cats to chronic wasting disease. Journal of Virology 87, 1947–1956.

Mawhinney S., W. J. Pape, J. E. Forster, C. A. Anderson, P. Bosque, and M. W. Miller. 2006. Human prion disease and relative risk associated with chronic wasting disease. Emerging Infectious Diseases 12, 1527–1535.

Moore S. J., M. H. West Greenlee, N. Kondru, S. Manne, J. D. Smith, R. A. Kunkle, A. Kanthasamy, and J. J. Greenlee. 2017. Experimental transmission of the chronic wasting disease agent to swine after oral or intracranial inoculation. Journal of Virology 91:e00926-17

Napier D., M. Green, E. Hoover, T. Spraker, K. O'Rourke, A. Balachandran, and G. C. Telling. 2009. Chronic wasting disease prions in elk antler velvet. Emerging Infectious Diseases 15, 696–703.

Race B., K. Meade-White, K. Phillips, J. Striebel, R. Race R, and B. Chesebro. 2014. Disease agents in nonhuman primates. Emerging Infectious Diseases 20: 833–837.

Race B., K. D. Meade-White, M. W. Miller, K. D. Barbian, R. Rubenstein, G. LaFauci, L. Cervenakova, C. Favara, D. Gardner, D. Long, and M. Parnell. 2009. Susceptibilities of Nonhuman Primates to Chronic Wasting Disease. Emerging Infectious Diseases 15:1366–1376. doi:10.3201/eid1509.090253.

Race, B., K. Williams, C.D. Orrú, A.G. Hughson, L. Lubke, B. Chesebol. 2018. Lack of Transmission of Chronic Wasting Disease to Cynomolgus Macaques. Journal of Virology. Apr 25. pii: JVI.00550-18. doi: 10.1128/JVI.00550-18. [Epub ahead of print]

Rhyan, J. C., M. W. Miller, T. R. Spraker, M. McCollum, P. Nol, L. L. Wolfe, T. R. Davis, Creekmore, L., and K. I. O'Rourke. 2011. Failure of Fallow Deer (*Dama dama*) to develop chronic wasting disease when exposed to a contaminated environment and infected mule deer (*Odocoileus hemionus*). Journal of Wildlife Diseases 47: 739–744.

Sigurdson, C. J. 2008. A prior disease of cervids: Chronic wasting disease. Veterinary Research 39:41.

Waddell L., J. Greig, M. Mascarenhas, A. Otten, T. Corrin, and K. Hierlihy. 2018. Current evidence on the transmissibility of chronic wasting disease prions to humans—A systematic review. Transboundary and Emerging Diseases 65: 37–49.

Williams, E.S, D. O'Toole, M.W. Miller, T.J. Kreeger, and J.E. Jewell. 2018. Cattle (*Bos taurus*) Resist Chronic Wasting Disease Following Oral Inoculation Challenge or Ten Years' Natural Exposure in Contaminated Environments. Journal of Wildlife Diseases In-Press.

CONGRESS.GOV

S.4111 - Chronic Wasting Disease Research and Management Act of 2022

117th Congress (2021-2022) | Get alerts

Sponsor:

Sen. Hoeven, John [R-ND] (Introduced 04/28/2022)

Committees:

Senate - Agriculture, Nutrition, and Forestry

Latest Action: Senate - 04/28/2022 Read twice and referred to the Committee on Agriculture, Nutrition, and Forestry. (All Actions)

Tracker: 1

> Passed Senate

Passed House

To President

Became Law

Summary(0) Text(1) Actions(1) Titles(2) Amendments(0) Cosponsors(20) Committees(1) Related Bills(1)

There is one version of the bill.

Text available as: XML/HTML XML/HTML (new window) TXT PDF (241KB) €

Shown Here:

Introduced in Senate (04/28/2022)

117th CONGRESS

2D SESSION

S. 4111

To support research and State management efforts relating to chronic wasting disease, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 28, 2022

Mr. Hoeven (for himself, Mr. Heinrich, Mr. Tester, Mr. Daines, Ms. Klobuchar, Mr. Marshall, Ms. Smith, Mrs. HYDE-SMITH, and Mr. BOOKER) introduced the following bill; which was read twice and referred to the Committee on Agriculture, Nutrition, and Forestry

A BILL

To support research and State management efforts relating to chronic wasting disease, and for other

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

SECTION 1. SHORT TITLE.

This Act may be cited as the "Chronic Wasting Disease Research and Management Act of 2022".

SEC. 2. FINDINGS.

Congress finds that—

(1) chronic wasting disease, the fatal neurological disease found in cervids, is a fundamental threat to the health and vibrancy of deer, elk, and moose populations, and the increased occurrence of chronic wasting disease in regionally diverse locations necessitates an escalation in research, surveillance, monitoring, and management activities focused on containing and managing chronic wasting disease;

- (2) a focus on research into the transmission of, resistance to, diagnosis of, and epidemiology of chronic wasting disease is needed to inform future policies to combat chronic wasting disease and ensure the health of cervid populations;
- (3) because States and Indian Tribes have diverse policies for addressing chronic wasting disease, the Federal Government, in consultation with the Chronic Wasting Disease Task Force established under section 104 of America's Conservation Enhancement Act (16 U.S.C. 667h), should coordinate financial and technical support to States and Indian Tribes, State and Tribal departments of agriculture, State and Tribal wildlife agencies, institutions of higher education, and research centers conducting scientific research on chronic wasting disease;
- (4) pursuant to State and Federal law, States retain primacy and policymaking authority with regard to wildlife management;
- (5) under policies in effect on the date of enactment of this Act, chronic wasting disease remains a systemic threat to cervids; and
- (6) scientific advances that lead to the ability to stop transmission of chronic wasting disease are needed to ensure the long-term viability of cervids.

SEC. 3. CHRONIC WASTING DISEASE RESEARCH AND MANAGEMENT PROGRAM.

- (a) DEFINITIONS.—In this section:
 - (1) CERVID.—The term "cervid" means any species within the family Cervidae.
- (2) CHRONIC WASTING DISEASE.—The term "chronic wasting disease" means the animal disease afflicting cervid populations that—
 - (A) is a transmissible disease of the nervous system resulting in distinctive lesions in the brain; and
 - (B) belongs to the group of diseases known as transmissible spongiform encephalopathies, which includes scrapie, bovine spongiform encephalopathy, and Cruetzfeldt-Jakob disease.
 - (3) ELIGIBLE ENTITY.—The term "eligible entity" means—
 - (A) a State or Tribal department of agriculture;
 - (B) a State or Tribal wildlife agency;
 - (C) a Tribal research facility;
 - (D) an institution of higher education (as defined in section 101 of the Higher Education Act (20 U.S.C. 1001)); and
 - (E) a research center that conducts or is qualified to conduct scientific research on chronic wasting disease.
 - (4) SECRETARY.—The term "Secretary" means the Secretary of Agriculture.

(b) RESEARCH PROGRAM.—

(1) IN GENERAL.—Not later than 90 days after the date on which funds are made available to carry out this section, the Secretary shall establish a program (referred to in this subsection as the "program") under which the Secretary shall offer to enter into cooperative agreements, or other legal instruments authorized under section 10413(a)(4) of the Animal Health Protection Act (7 U.S.C. 8312(a)(4)), (referred to in this subsection as "covered agreements") with eligible

entities to conduct research on the transmission of, resistance to, and diagnosis of chronic wasting disease.

- (2) CRITERIA FOR SELECTION.—In entering into covered agreements under the program, the Secretary shall give priority to eligible entities that will conduct research on—
 - (A)_(i) methods and products—
 - (I) to effectively detect infectious chronic wasting disease prions in live cervids, cervid excreta, the environment, and inorganic surfaces; and
 - (II) to decontaminate those infectious prions; or
 - (ii) testing methods that significantly improve sensitivity and accelerate timelines for test results on nonlive cervids;
 - (B) the long-term suppression or eradication of chronic wasting disease;
 - (C) determination markers for genetic resistance to chronic wasting disease and strategies for using genetic resistance to combat the spread of chronic wasting disease;
 - (D) sustainable cervid harvest management practices—
 - (i) to reduce chronic wasting disease occurrence; and
 - (ii) to prevent or limit spatial spread of chronic wasting disease; or
 - (E) factors that contribute to local emergence of chronic wasting disease and increased prevalence and distribution of chronic wasting disease, including mechanisms of disease transmission and effective barriers to transmission.
- (3) AMOUNT OF AGREEMENT.—To the maximum extent practicable, a covered agreement entered into by the Secretary with an eligible entity under the program shall be for an amount that is not less than 2 percent and not more than 10 percent of the funds appropriated under subsection (h) for the applicable fiscal year.
- (4) ADMINISTRATIVE COSTS BY ELIGIBLE ENTITIES.—An eligible entity that enters into a covered agreement under the program shall use not more than 10 percent of the amount of the covered agreement for administrative costs.
- (c) Support For State Efforts To Manage And Control Chronic Wasting Disease.—
 - (1) IN GENERAL.—Not later than 90 days after the date on which funds are made available to carry out this section, the Secretary shall offer to enter into cooperative agreements, or other legal instruments authorized under section 10413(a)(4) of the Animal Health Protection Act (7 U.S.C. 8312(a)(4)), with eligible entities described in subparagraphs (A) and (B) of subsection (a) (3) to provide direct financial assistance to support the efforts of those eligible entities to develop and implement management strategies to address chronic wasting disease within the jurisdiction of the applicable State or Indian Tribe.
 - (2) APPLICATION.—An eligible entity described in paragraph (1) seeking direct financial assistance under this subsection shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.
 - (3) FUNDING PRIORITIES.—In providing direct financial assistance under paragraph (1), the Secretary shall give priority to eligible entities described in that paragraph that have, with respect to the applicable State or Indian Tribe of the eligible entity—
 - (A) a high incidence of chronic wasting disease;

- (B) shown the greatest financial commitment to managing, monitoring, surveying, and researching chronic wasting disease;
- (C) comprehensive policies and programs focused on chronic wasting disease management that have integrated the programs and policies of all involved agencies related to chronic wasting disease management;
- (D) the greatest risk of an initial occurrence of chronic wasting disease originating from surrounding areas; or
- (E) the greatest need for response to new outbreaks of chronic wasting disease occurring in—
 - (i) areas in which chronic wasting disease is already found; or
 - (ii) areas with first infections of chronic wasting disease, with the intent of containing chronic wasting disease in any new area of infection.
- (4) RAPID RESPONSE.—If a State or Indian Tribe detects, within the jurisdiction of the State or Indian Tribe, chronic wasting disease in a cervid population that was not previously infected, notwithstanding paragraphs (2) and (3), the Secretary may immediately provide direct financial assistance, in an amount to be determined by the Secretary, to support the efforts of the State or Indian Tribe, as applicable, to immediately control the spread of chronic wasting disease within that cervid population.
- (d) PUBLIC EDUCATION ON CHRONIC WASTING DISEASE.—The Secretary, in consultation with the eligible entities described in subparagraphs (A) and (B) of subsection (a)(3), organizations representing the farmed cervid industry, and organizations representing deer hunters, shall develop and maintain materials based on the latest scientific knowledge to educate the public on chronic wasting disease and techniques to help prevent the spread of chronic wasting disease.
- (e) Review Of Herd Certification Program Standards.—Not later than 18 months after the date of enactment of this Act, the Secretary shall publish a notice in the Federal Register soliciting public feedback on potential updates and improvements to standards under the chronic wasting disease herd certification program, with special consideration given to—
 - (1) minimizing or eliminating the interaction of captive and wild cervids:
 - (2) reviewing and updating indemnity practices, including the use of live testing, to ensure the timely and targeted removal of cervids with chronic wasting disease from the landscape; and
 - (3) increasing participation in the chronic wasting disease herd certification program.
- (f) RULE OF CONSTRUCTION.—Nothing in this section interferes with or otherwise affects the authority of the Federal Government, a State, or an Indian Tribe to manage wildlife and livestock on land within the respective jurisdiction, including managing, surveying, and monitoring the incidence of chronic wasting disease.
- (g) ADMINISTRATIVE COSTS.—Of the funds made available under subsection (h) for a fiscal year, the Secretary may use not more than 10 percent for administrative costs.
 - (h) AUTHORIZATION OF APPROPRIATIONS.—
 - (1) IN GENERAL.—There is authorized to be appropriated to the Secretary to carry out this section \$70,000,000 for each of fiscal years 2022 through 2028, to remain available until expended.
 - (2) ALLOCATION AMONG PROGRAMS.—Of the funds made available under paragraph (1), to the maximum extent practicable, the Secretary shall allocate an equal amount to carry out each of subsections (b) and (c).

MEMBERS OF THE ASSOCIATION OF FISH & WILDLIFE AGENCIES

Governmental Members

U.S. State and Territorial Fish and Wildlife Agencies

Alabama Division of Wildlife and Freshwater Fisheries

Alaska Department of Fish and Game

Arizona Game and Fish Department

Arkansas Game and Fish Commission

California Department of Fish and Wildlife

Colorado Division of Parks and Wildlife

Connecticut Bureau of Natural Resources

Delaware Division of Fish and Wildlife

Florida Fish and Wildlife Conservation Commission

Georgia Wildlife Resources Division

Hawaii Department of Land and Natural Resources

Idaho Department of Fish and Game

Illinois Department of Natural Resources

Indiana Division of Fish and Wildlife

Iowa Department of Natural Resources

Kansas Department of Wildlife and Parks

Kentucky Department of Fish and Wildlife Resources

Louisiana Department of Wildlife and Fisheries

Maine Department of Inland Fisheries & Wildlife

Maryland Wildlife and Heritage Service

Massachusetts Division of Fisheries & Wildlife

Michigan Department of Natural Resources

Minnesota Division of Fish and Wildlife

Mississippi Department of Wildlife, Fisheries and Parks

Missouri Department of Conservation

Montana Department of Fish, Wildlife & Parks

Nebraska Game and Parks Commission

Nevada Department of Wildlife

New Hampshire Fish and Game Department

New Jersey Division of Fish and Wildlife

New Mexico Game and Fish Department

New York Division of Fish and Wildlife

North Carolina Wildlife Resources Commission

North Dakota Game and Fish Department

Ohio Division of Wildlife

Oklahoma Department of Wildlife Conservation

Oregon Department of Fish and Wildlife

Pennsylvania Fish and Boat Commission

Pennsylvania Game Commission

Rhode Island Department of Environmental Management

South Carolina Department of Natural Resources

South Dakota Game, Fish and Parks Department

Tennessee Wildlife Resources Agency

Texas Parks and Wildlife Department

Utah Division of Wildlife Resources Vermont Department of Fish and Wildlife

Virginia Department of Wildlife Resources

Washington, DC Fisheries/Wildlife Division

Washington Department of Fish and Wildlife

West Virginia Division of Natural Resources

Wisconsin Department of Natural Resources

Wyoming Game and Fish Department

Contributing Members

American Bird Conservancy

American Clean Power Association (ACP)

American Fisheries Society

American Sportfishing Association

Archery Trade Association

BASS LLC

Backcountry Hunters & Anglers

Bat Conservation International

Boone & Crockett Club

Canadian Wildlife Federation

Delta Waterfowl Foundation

Ducks Unlimited Canada

Ducks Unlimited, Inc.

Fur Institute of Canada

Fur Takers of America, Inc.

Island Conservation

Jack H. Berryman Institute

Mule Deer Foundation

National Audubon Society

National Bowhunter Education Foundation

National Marine Manufacturers Association

National Rifle Association

National Shooting Sports Foundation, Inc.

National Trappers Association

National Wild Turkey Federation

National Wildlife Federation

NatureServe

The Nature Conservancy

North American Grouse Partnership

North Dakota Natural Resources Trust

Outdoors Tomorrow Foundation

The Peregrine Fund

Pheasants Forever

Pope and Young Club

PERC: The Property and Environment Research Center

Recreational Boating and Fishing Foundation

Renewable Energy Wildlife Institute

Resource Management Service, LLC

Rocky Mountain Elk Foundation

The Ruffed Grouse Society

Safari Club International

Theodore Roosevelt Conservation Partnership

The Wildlife Society

Wild Sheep Foundation

Wildlife Management Institute

U.S. Federal Members

Bureau of Land Management

National Oceanic and Atmospheric Administration - Fisheries Service

National Park Service

U.S. Department of Agriculture - APHIS/Veterinary Services

U.S. Department of Agriculture - APHIS/Wildlife Services

U.S. Department of Agriculture - Forest Service

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

U.S. Geological Survey

My kids and I have stopped Bowhunting since baiting has been banned. We spent all fall together since they were old enough to draw a bow back and effectively hold a group the size of a pie plate. Our time alone was priceless. Now there is no way for us to get the deer to come in and take an ethical kill shot at 20-30 yards. Kids have now lost interest and are out of high school. All the bows sit in their cases in the garage. This decision was reckless and a knee jerk reaction from other states and is not backed by science. We need to start electing our game and fish officials just as we do all who serve ND government. They are not serving the wants of the sportsmen and have screwed all of us out of a precious resource and opportunity. The deer all gather in the fields and stand and graze nose to nose mouth over where other mouths have been. There is no sense to the baiting ban.

To whom it may concern,

My name is Scott Stenshoel and for nearly 20 yrs I have been a guide for physically challenged hunters. There challenges ranged from limited mobility, very limited mobility, to blind. As a guide, I have a generous land owner who allows me to bring said hunter in once a year for a 2 and a half days to hunt. With the challenges the hunter has, baiting helps us in the organization to make their hunt successful. Please keep baiting legal.

HB 1151 – Support Testimony
Sixty-eighth Legislative Assembly of North Dakota

Andy Buntrock Menoken ND 1/19/23

Dear Committee Member -

I am writing in support of HB 1151 as it is currently proposed on 1/19/23 and I urge you to please move it forward without any modifications. Please let the people speak through a vote on the legislative floor.

Support for HB1151: My family and I feel strongly that this bill is needed to realign sportsmen with the hunting resource that has been gradually pulled away from them over the last decade, through the North Dakota Game and Fish's (NDG&F) gradually increasing restrictions on baiting.

Natural Immunity: According to Dr Christopher Seabury a professor at the College of Veterinary Medicine at Texas A&M and whom is a foremost expert in CWD genomic predictive research, there is a tendency for genomic resistance to CWD in deer that is nearly 30%. *In essence nearly 1/3 of the deer population may hold the genetic makeup to be resistant to CWD.* This phenomenon is also seen in areas of states where government agencies eradicated large groups of deer due to a CWD positive and found that a significant slice of nearly 30% of the deer were CWD negative. Dr Seabury is working closely with the USDA as well as the university, to continue this ground breaking work that is uncovering that mother nature is caring for her own and natural immunity is a real thing.

If Sheep Can Do It So Can Deer: Scrappies is a similar disease that is no longer prevalent in our sheep population due to the *coadaptation of host versus pathogen* over generations of sheep. CWD in deer was found as recent as 1960, so only about 60 generations of deer have been through this adaptation period. It takes time, but mother nature will figure this out, not mandates issued by agencies that have failed in other states and will reduce hunter opportunity and turn people away from the sport.

Previous Attempts On Baiting Bans: In the 2007 legislative session, the NDG&F proposed a ban on baiting through the legislator. This bill made it to a vote on the floor and was badly beaten. *Some legislators even admitted during session of getting more emails opposed to this particular bill to ban baiting, than any other bill proposed that year.* After that defeat, the NDG&F has slowly been restricting baiting where a positive CWD case is found or even in neighboring units.

Unnecessary Hysteria: The reaction to CWD is similar to other unnecessary and heavy mandates by the government that we have seen in recent years, which have been fed by media frenzy and federal dollars. *Recent infection of EHD has killed 80-90% of deer in some units.* The reaction to this by the NDG&F when asked, is that it is naturally occurring and just needs to run its course. I ask if the concern is about the herd, then why is a total EHD die off like that, brushed aside and CWD remains center stage? When the herd is dead its dead, regardless of cause. CWD is also a naturally occurring phenomenon, so one would think the two issues would be treated equally.

Thank you for your consideration in supporting this bill for the sportsmen and women of North Dakota and the generations of youth that we need to recruit into hunting.

I am in support of house bill 1151

Hi, my name is Lee Zimmerman. I am an avid sportsman, landowner, farmer, dairyman and outfitter. My wife Kristi and I have 4 children; Ethen, Mason, Bryson, and Emerson from ages 15 to 9. We reside in the Sandhills of Denbigh ND and have lived here for 27 years. Our agricultural land and surroundings are abundant with Deer, Moose, Turkeys and waterfowl. Over the years we have developed the land for agricultural purposes to feed our livestock and this has definitely played a huge role in the abundance of wildlife in the area.

I am writing today in support of HB 1151. The restrictions that the North Dakota Game and Fish have enforced on the use of hunting big game over bait in specified units to control the spread of chronic wasting disease is unjustified and counterproductive, let me explain why.

Hunting is and option as baiting should be, the choice to do so or not has adversely affected hunters who are disadvantaged whether this may be a youth, elderly, nonland owner or handicapped sportsman. Bait or no bait, deer are as social as humans, they travel the same corridors to and from feeding and bedding areas as do humans. Deer lick, groom, swap saliva amongst each other as do humans. Deer all stop on the trail where there is a low hanging branch and whether they have head gear or not they rub their face all over these "licking branches", this is for marking territory or just socializing with one another. You have all seen the kid in the shopping cart at Walmart that is digging in his nose, smiling at you and then rubs his hands all over the cart, and what about the kid that is licking the window while you wait in line at the Motor Vehicle Department, how is this any different. This is how these animals socialize, whether there is a bucket of feed on the ground or 20,000 tons of silage what is the difference? The deer commute on the same path to and from regardless if there is 5 together or 50 together, green grass, or 2 foot of snow they eventually end up at the same place. Not to mention water sources, I have watched hundreds of deer drink from the same pond and groom one another before or after by licking and smelling one another as a new animals arrive to water.

Boundaries-I live 3 miles from a unit where baiting is an option, in the wintertime our farm will more than double the normal number of deer, turkeys and small game. These animals travel 5-10 miles to a winter range, we definitely have been that! The deer and turkeys must not have received the memo that this is a restricted unit! We have large amounts of corn silage, grain corn, wheat mid pellets, screenings and alfalfa hay that is all in our feed yards. As a landowner I'm not complaining nor am I asking for someone to feed the wildlife for us, our quantities and supplies of feed are so spread out that you would need a high fenced area 1 mile by 1 mile to contain these ingredients on 2 separate locations, like I said, I'm not complaining, for years we have fed the wildlife away from our feed yards October through April to control the damage that occurs on our expensive commodities. We leave acres of standing crop not just as food plots for hunting but because we care for the wildlife also. This has helped keep the animals at large away from our feed areas and cattle pens along with predators that harm our livestock. We have learned that if we can spread the feed out and use multiple locations to feed, this keeps the animals less concentrated and more spread out, isn't this what we want to achieve? If you have 75 people that are doing this whether for viewing or hunting, feeding these animals in different areas but in the same unit, wouldn't this help keep the animals more spread out, I sure think so as we have seen a major concentration to our feed yards the past 2 years. Do you really believe that CWD just appeared these last few years, let's be real, this has been around for numerous years, the fact that they think baiting will lessen the spread is ridiculous. These are wild creatures that are adaptive to change. They will continue to congregate into herds of 50 or more, stay in herds of 5 or less but one thing is for

certain, the constant grooming, licking, smelling, saliva swapping with one another will never be stopped.

In closing, we will not prevent this whether there is baiting or no baiting. Agriculture, food plots, cropland, watering holes are all a necessity to keep our wildlife alive and thriving in the state of North Dakota. As landowners and sportsmen, we care about conservation and our rights. As a parent and avid hunter, I care about the next generation and our youth. Why should baiting be controlled in one area and not another, hell, why should this even be talked about. There is no better sight then watching a herd of deer pour out of the trees to feed in an alfalfa field for the evening, turkeys flying out of the roost to a fresh cut corn field as the sun comes out, or a big bull moose roaming the prairie in the fall looking for a mate. These are all examples of things that my family can witness on most given days where we live. I would like to thank you for taking the time to read this and would welcome any opportunity to further the discussion on this issue. Please vote "YES" on HB 1151.

Sincerely,

Lee Zimmerman

Towner, ND 58788

leez123@gmail.com

701-340-5968

I support 1151

As an avid hunter and sportsman, I do not feel that the very few CWD positive deer that have been found in a large testing pool warrant this much restriction. I feel it should be the hunter and landowners' choice to bait if they so choose. Government restriction should not determine how ND residents choose to legally harvest deer.

Macauley Haag

Center, ND

House Energy and Natural Resources:

I'm in support of HB 1151 to give landowners and hunters the right to continue baiting.

NDGF has done lots of good things for fish and wildlife over the years, but this is an overreach on their part in my opinion. As numerous others have stated, so I don't need to repeat them, there is minimal proof that CWD is the problem some people are stating. Feed lots, small towns in the winter, elevator grain piles are all places where deer congregate and feed, especially in the winter. These locations contain many times the deer populations that a bait pile during hunting season would produce.

I too volunteer with the Twist of Fate handicap hunt, as well as the Outdoor Adventure Foundation where baiting is critical to the success of the hunters. Without a well placed bait pile, the success rate would be slim to none given the limited range of motion and mobility of most of the hunters. A well placed bait pile also increases the odds of a killing shot, helping to reduce the chances of wounding and guessing on their shots.

Baiting is a touchy subject, and should be a personal choice of an individual. With the numbers of hunters being reduced each year, why give them more chances to not want to hunt? I would personally like to see the online posting for hunting eliminated instead since that is a larger deterrent to hunters in mine and others opinions, but it's not in this bill.

We don't need to be like the other states and apply their rules to our state. There are great hunting opportunities in ND that other states don't have, and let's leave it this way. I'm in support of HB 1151 as a hunter, sportsman and volunteer.

Bruce Lykken

My name is Robert Villarreal, I have been hunting since I was 14 years old, I'm also raising my children to be hunters. I have family and friends that travel here every year to hunt. I believe baiting should be legal and here's a couple reasons why.

- -Without feed plots or baiting allowed we are risking putting our hunting heritage and herds in jeopardy of overpopulation.
- -We are teaching our children and their children that they can just drive around and shoot whatever from the roads, there is no hard work in that. I want my children to learn to bait, learn what the animals like to eat, learn what they don't, learn their habits and their travel trajectories. Teach them how to sit in a stand and be patient, teach them that feeding our family and other families doesn't come easy.
- I do not want to drive around and shoot animals from the road when we see them run by. Every year I have new hunters that drive up and down our roads trying to scare anything and everything out of the trees for an easy kill. They shoot towards our farm, they shoot towards our livestock. We are posted up as tight as we can be but someone always tries to get by.
- -If we keep baiting and food plots illegal, we are likely to cause the herds to travel more, crossing highways more, crossing herds over herds, changing core territories. We are risking more travel for all herds to find food when it could just be at every farm, in every quarter, deer would travel less, less cross contamination from herds who carry diseases. You're not going to stop the deer from eating together.
- Please tell me what the difference is between the deer eating on the millions of acres of corn fields already, the alfalfa hay that farmers have to stack in their fields, the crab apples from the tree rows at farmsteads and if I were able to bring feed in or plant a food plot. All the same herds will be eating together. I have watched over the years as the deer in my area all return and every year we lose some and we gain new ones. It is never the same herds, why wouldn't we allow those who wish to feed, feed and make sure the herd that has claimed their land is healthy and not starving. They eat together no matter what, you're not going to stop that.
- -If I cannot buy seed or feed aren't you doing more damage to our already struggling economy? As mentioned before I have friends and family that travel here and buy out of state tags so they can enjoy a North Dakota hunt. If we can't feed and bait then we're wasting their time and money and we're just hoping something comes in, we're just hoping they can fill their tags.

By continuing to make baiting illegal, you are ultimately accepting that some will bait and feed illegally just as the poach and trespass and majority will follow the laws and we will continue to watch as thousands of deer get killed crossing highways, eat and ruin farmers crop and livelihood.

In closing I would hope that you will do your research and look at the statistics of other surrounding states who allow baiting and how it has helped their hunting heritage and how it does not cause more harm than good.

Thank you for your time and careful consideration.

Robert Villareal

Attn:

Rep. Todd Porter

Rep. Dick Anderson

Rep. Glenn Bosch

Rep. Jason Hagert

Rep. Pat Heinert

Rep. Jim Kasper

Rep. Andrew Marschall

Rep. Anna S. Novak

Rep. Jeremy Olson

Rep. Shannon Roers Jones

Rep. Matthew Ruby

Rep. Liz Conmy

Rep. Zachary Ista

RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support of the above referenced bill.

My name is Heather Hanson. I am not a hunter, so baiting doesn't affect me directly. Since 2009, my husband and I have volunteered for an organization called Twist of Fate. This organization provides individuals with physical limitations an opportunity to bow hunt. This hunt takes place once a year in September. About two weeks prior to the hunt, baiting takes place, to draw the whitetail deer onto the land. If anything, I feel the ND Fish and Game should make an exemption for people with physical challenges and organizations, like Twist of Fate. In this day in age, aren't we looking to be more inclusive and supportive of people with disabilities? Creating a law that "bans" baiting, will hurt our organization. Many feel they wouldn't be able to hunt due to physical limitations, but when they can harvest a deer during the Twist of Fate weekend, their eyes lighten up. I am not saying that a person with a physical challenge can only harvest a deer with baiting, I am saying it make it easier for the individual, due to their physical limitations. I feel our country is becoming all about laws, laws, laws. What we can do and what we can't do. I don't understand why there needs to be a law to ban baiting. If there is a ban on baiting. As mentioned earlier, I feel there should be an exemption or permit to allow organizations like Twist of Fate, to bait. It's one time per year! Not allowing our organization to bait, will affect many physically challenged hunters and actually make it more of a challenge to harvest a deer and enjoy the sport of hunting.

Sincerely,

Heather K Hanson January 19, 2023 Chairman Porter and Members of the Committee,

I am writing in opposition to HB 1151.

As a hunter and avid outdoorswomen, I consider myself fortunate to live in a State so rich in natural resources and abundant game populations. As a hunter, I also place my trust in the North American Model of Wildlife Conservation. This model is guided by seven principles, one of which is "science is the proper tool for the discharge of wildlife policy" and has been the backbone of wildlife conservation successes across North America, including the white-tailed deer. The North American Model of Wildlife Conservation and its seven guiding principles are so integral to successful management of wildlife populations that it is part of our state's hunter's education curriculum.

The mission of the North Dakota Game and Fish Department is to protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and nonconsumptive use. HB1151 undermines the North American Model of Wildlife Conservation and sets forth a practice within North Dakota that undercuts the ability of the North Dakota Game and Fish Department to deliver their mission to manage wildlife populations for future generations.

Decisions that bring about change, especially to long held traditions, are fraught with emotion. I ask that the committee set aside the emotions that will be on display, and trust in the best available information that is provided to you by subject experts. I ask for a DO NOT PASS of HB1151.

Thank you for your time and consideration,

Rachel Bush

Dear Committee,

I am writing testimony in favor of 1151. I'd like to start by saying that as a guide for Twist of Fate(a physically challenged archery hunt) that baiting deer is ESSENTIAL to our organization. Without baiting our hunters would have little to no chance at harvesting a deer.

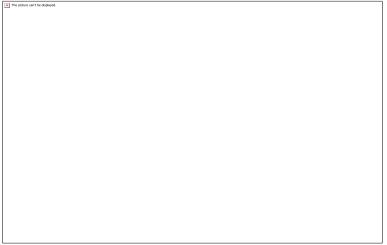
North Dakota has very little public land compared to neighboring states and even less trees and habitat. Which make it very difficult to hunt white tail deer with archery equipment without the use of baiting. I'd like to be able to take my daughter, neice, and nephew hunting and give them an actual chance at harvesting a deer to keep the hunting tradition alive in North Dakota.

• While I tend to want to leave these types of decisions up to the NDGF I feel that they have such a bias towards baiting and want it gone that they are using CWD as their way to get rid of it. I've attend their advisory board meetings and all they said the entire time was "we hope", "we feel", we think", "we are optimistic" that their baiting bans in certain units across the state are doing good. When in reality they really have no idea if it's actually working. CWD has been around since the 60s in Colorado. Guess what they still have a healthy deer population. Every state around North Dakota has had baiting bans for decades, and they all have more CWD cases than North Dakota. There is less than 1% of deer in North Dakota that have CWD according to the G&F's numbers. I know you will hear testimony that CWD is ALWAYS fatal to deer... the G&F also showed a statistic that it takes 2-4 years for the prion in CWD to kill a deer. The average life span of a whitetail deer is is 3.5 years!! The so called "science" that says baiting spreads CWD is a joke at best. If it really did, there wouldn't be any deer left in North Dakota. Thank you for your time. Please pass this bill.

Dear Members of the Natural Resource Committee,

I am writing to you regarding HB 1151. I support this legislation. I have read some of the testimony responses posted so far and the reoccurring stance in opposition is NDG&F not being able to do their job.

I think that this is a non-issue.



The NDG&F has biologists that have the best interests in mind for wildlife. But the NDG&F Administration only has politics and power in mind. NDG&F is using baiting and CWD to manipulate deer hunting in ND.

If baiting and CWD are such terrible things. Then NDG&F should have an issue with deer congregating in mass amounts during the winter months.

I run a cattle feedlot in McHenry County. During the winter months there are hundreds of deer eating on my feed supplies. I used to get upset that they were eating so much feed. But now I just accept it and know that they have to eat somewhere to survive.

NDG&F doesn't condone this practice. They only act if the rancher complains about the deer. If no complaint is filed, then the deer survive the winter and go back to their normal environment in the spring. Then the cycle starts all over again the next winter.

I'm sure my comments will get some people worked up. But this is my view and I apologize for nothing.

Thank you for your time.

Joseph Matehs

Regarding HB 1151

I am providing testimony in opposition to HB 1151. As a hunter for almost 60 years in North Dakota I am deeply concerned with this bill and the long term negative effects of this type of legislation to the North Dakota Game and Fish Department (ND G&F). This type of potential legislative over reach is dangerous to the function of the ND G&F and their ability to manage wildlife and wildlife diseases and threats. I believe North Dakota has an excellent Game and Fish Department with highly educated, experienced, and dedicated staff. Game and Fish personnel are professional biologists, veterinarians, and wildlife epidemiologists who are fully capable of making decisions and taking proactive actions to protect our wildlife resources in order to protect and enhance the great hunting and fishing heritage we enjoy in North Dakota.

I further believe that Chronic Wasting Disease (CWD) is an increasing and viable threat to our states deer, elk, and moose populations. CWD is expanding in both number of states and prevalence throughout the United States and is now in 30 states, 5 Canadian Provinces, Norway, and South Korea. CWD has been identified by wildlife managers, conservation groups, and researchers as one of the greatest threats to the future of deer and deer hunting and other large cervids such as elk and moose. As a landowner I am concerned with this disease and the effect it will have on wildlife which inhabit my land and all of North Dakota. This disease and the ability of ND G&F to manage this disease is so much bigger and more important than someones ability to bait deer. I am asking you to please allow the Game and Fish Department to manage wildlife and wildlife diseases. I am asking you to vote no on HB 1151 for the future of North Dakota wildlife and our treasured hunting heritage.

Thank you allowing me to testify on this important issue.

Sincerely,

James Sorum

In favor of HB1151 relating to deer baiting

I've been hunting for nearly 25 years. I've been fortunate to harvest a lot of deer over the course of that time, and truth be told a lot have been shot over a pile of corn. I would prefer to sit in a tree along a well-travelled trail along the river bottoms and wait them out, but both fortunately and unfortunately that isn't feasible anymore. My family's land is a chunk of pasture land that was purchased for hunting. We graze cattle on it in the summer and given the soil conditions and costs associated with it, the chance of making a food plot is slim to none for us. There's no rhyme or reason to where these cagey critters travel. Again, getting back to not having the time like I used to, I resort to setting out feed. It gives me the best opportunity to see something in the short amount of time I have.

Now, I have an 8-year-old who is way more passionate about hunting than I was at his age. Today, he even brought home a book about Bowhunting from the school library. Bowhunting of all things. I want him to be able to enjoy being outdoors and be able to see, experience, and hopefully soon have an opportunity to harvest an animal, and for our family, setting out feed is essential to the way we hunt. We hear so many times that we need to get young people involved. Why would we take opportunity away from them? Yes, there are more ways to get them involved or excited about hunting than just setting out a bucket of corn. Again, I don't judge anyone for doing it or not doing it. But this is how WE choose to do it on OUR PRIVATE PROPERTY!!! I personally don't think by doing this it makes anyone less of a hunter or outdoorsman. We still control our scent and play the wind and do all the other things everyone else does. We respect nature just the same as those who choose to hunt without bait. But this is how we choose because it's legal.

Plain and simple. If people want to bait deer on private property, they should be able to. Banning baiting for the sake of saving these animals from catching and spreading CWD isn't going to solve the problem. When the weather gets tough like it is this year, these deer herd up. 50-100 deer will eat from the same small bare hilltop in the middle of an ag field for the next 3 months, or they might sit on top of each other in a hay yard. There's no way a feed pile is going to make a difference or hurt them anymore or less than what's happening now.

If you haven't seen firsthand a kid's face light up with a grin from ear to ear when those critters walk in, I suggest you take the time to try and experience it. This was one of my favorite memories with my boy, and I don't think it would have happened without our chosen way of hunting, by baiting deer.

Jeremy W

HB 1151

House Energy and Natural Resources Committee,

I am writing in opposition of this bill (HB 1151). I have hunted deer over bait for many years, and find it to be a very effective method. The last few years I haven't been able to due to restrictions. Did I just give up and stop hunting? No, I found other ways to continue to hunt. Did I find my hunting experience less appealing without baiting? No. This bill, in my opinion, is an extremely slippery slope, and it is much bigger than just baiting.

The North Dakota Game and Fish is an agency of wildlife **professionals**, who are also North Dakotans who live, work, fish and hunt in North Dakota. Their mission is to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and nonconsumptive use." This bill limits their ability to do what might be(or might not be) necessary to sustain this public resource.

Now I do believe there is alot of science out there on both sides of the baiting/disease transmission topic. It's a daunting task to comb through it all and make sense of it all. But that is why we hire professionals to do this job. It's not always fun and it's certainly not always easy, but let them make the best decisions based on ALL the information out there. Should sportsmen/women be concerned about CWD? Absolutely. Should they be researching and questioning? Yes, that is what science is all about. I think there is a lot of evidence that shows baiting doesn't have a major effect on CWD transmission...

I am a middle school science teacher. Let's look at how much education has improved(or not improved) since legislators have intervened and required high stakes testing. I think most professional educators will agree that testing does not make the student, and the constant politics and legislative testing requirements is not what is best for educators, which is in turn not best for students. But here we are as teachers being told what is best for our students. Education in the United States is just one example of people not trusting the professionals.

Any time I have reached out to an NDGF employee about something they have been very good at explaining the reasoning, and I trust them in their professional judgment. Anytime we restrict the professionals who have extensive education and let the armchair biologist make decisions I think we are putting ourselves in a tough position. I mean all of us Monday morning quarterbacks could have made a better decision than Kirk Cousins when he threw it 3 yards on 4th and 8... right???

Instill trust in the professionals. This certainly doesn't mean they cannot be questioned, like I said earlier, science is always evolving due to questioning.

Thank you,

Matt Liebel

I am writing my testimony in opposition of HB 1151.

I have been a North Dakota resident my whole life and my family has lived in this state for 5 generations each one of them being hunters. I have grown to love the natural resources that we are so fortunate to have in this state. HB 1151 would have dramatic impact on our game and fish agency from making decisions and putting in place laws to better our natural resources. Growing up I wanted to be a biologist more than anything, I went to college at the University of North Dakota to obtain a wildlife biology degree to have an impact on the things that I care most about, the wildlife that call our state home. This bill would hinder and set a dangerous precedent going forward that the game and fish will not have lawful grounds to make other decisions and laws. Biological decisions should be made by professionals who have dedicated their whole lives to bettering resources and have the resources best interest at heart. The ban on baiting does not take away any opportunity from the public, the public still has every opportunity to hunt and take deer. The ban on baiting is a way to help slow the spread of Chronic Wasting Disease, if CWD gains a foothold in North Dakota this alone could take opportunity away from the sportsmen and women of North Dakota. I ask that you take into consideration, the consequences of this bill passing and CWD running rampant and unchecked through our deer herds.

Dear Committee Members,

I strongly OPPOSE House Bill No. 1151. While there is no specific research YET in North Dakota on the effects of baiting deer with respect to CWD transmission, we can look to other studies of laterally transmissible diseases for some insight. We know that these types of diseases can be transmitted from deer to deer in the same way the flu transmits in humans. If you put 20 people in a room with 1 person who tested positive for flu, and let them all eat from the same bowl, at least 1 healthy person will contract the flu. Some argue that it's different for CWD and will completely dismiss the idea of applying basic logic and knowledge of the behavior of laterally transmissible diseases to a disease as relatively unresearched as CWD. This argument is not driven by a desire to preserve a resource for the long run, but by a desire to preserve the opportunity to harvest a resource without restrictions. Encouraging large groups of deer to congregate around a single human replenishable food source, we are creating the perfect situation for higher transmission of CWD than what might occur had these deer been left to forrage on their own.

While there is not yet a way to completely eradicate the disease itself, decisions can be made that will keep the numbers of infected animals at a manageable level. These decisions should be made by the experts in the field itself, and passing this bill would remove them from the equation. The fish and wildlife professionals should have the ability to do what is neccessary to preserve the natural resource. That's their job. It's not the job of the average hunter, like me, to decide what is best for a species right now, or in the long run. Please DO NOT pass HB 1151.

Thank you for your consideration,

Kelly Hale Minot, ND

Dear Committee,

I am writing testimony in favor of 1151. Id like to start by saying that as a guide for Twist of Fate(a physically challenged archery hunt) that baiting deer is ESSENTIAL to our organization. Without baiting our hunters would have little to no chance at harvesting a deer.

North Dakota has very little public land compared to neighboring states and even less trees and habitat. Which make it very difficult to hunt white tail deer with archery equipment without the use of baiting. Id like to be able to take my daughter, neice, and nephew hunting and give them an actual chance at harvesting a deer to keep the hunting tradition alive in North Dakota.

While I tend to want to leave these types of decisions up to the NDGF I feel that they have such a bias towards baiting and want it gone that they are using CWD as their way to get rid of it. Ive attend their advisory board meetings and all they said the entire time was we hope, we feel, we think, we are optimistic that their baiting bans in certain units across the state are doing good. When in reality they really have no idea if its actually working. CWD has been around since the 60s in Colorado. Guess what they still have a healthy deer population. Every state around North Dakota has had baiting bans for decades, and they all have more CWD cases than North Dakota. There is less than 1% of deer in North Dakota that have CWD according to the G&Fs numbers. I know you will hear testimony that CWD is ALWAYS fatal to deer the G&F also showed a statistic that it takes 2-4 years for the prion in CWD to kill a deer. The average life span of a whitetail deer is is 3.5 years!! The so called science that says baiting spreads CWD is a joke at best. If it really did, there wouldnt be any deer left in North Dakota. Thank you for your time. Please pass this bill.

RE: HB 1151Dear Energy and Natural Resource Committee,I support HB 1151. I do not feel it is right to ban baiting in units where CWD has not been confirmed. If no positive deer are found in these units, then baiting deer would have no effect on spreading CWD in these locations. I understand this may not be the case in other units where CWD has been confirmed. Thanks for your strong consideration of supporting the interest of sportsmen and following the science. Jeremy Koepplin

In Oppostion to HB 1151

My name is Scott Rehak from Williston, ND. I have, in the past, felt strongly about many bills that have been introduced in Legislature in my 50 years as a sportsman in ND. This is the first time I've testified on any bill. This is why I feel so strongly against taking the best management practices for our deer herd out of the hands of the ND Game & Fish Department and put into the hands of elected officials. The NDGF Department have reviewed all the scientific data on CWD and implemented a plan to try and slow the spread of this fatal disease.

Having bow hunted for over 40 years and taken numerous whitetails, primarily with a recurve, I've never used baiting as a shortcut to fill a bow tag. In a time of instant gratification, baiting HAS become that short cut for many people who buy a bow tag. Whitetail deer archery tags are available till the very end of the bow season and over the counter for both residents AND non-residents. Baiting has become a get in, fill your tag, and get on to the next hunt.

In conclusion, I would urge a no vote on HB 1151 and leave the management of our wildlife in the hands of our NDGF Department, backed by scientific data and not emotion.

Cody Hilliard 280 102nd St NW Souris, ND 58783 (701) 460-7295

Good morning, Chairman Porter and members of the committee, thank you for taking my testimony into consideration today.

My name is Cody Hilliard, and I am a lifelong North Dakotan and avid bowhunter, rifle hunter, and hound hunter. I am in favor of HB 1151 in order to create and enact a new section of the North Dakota Century Code, relating to baiting deer for hunting, where baiting deer for lawful hunting cannot be prohibited.

The part of the proposed legislation I would like to speak to is the inclusion of language stating "...the department may not issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting." Much of the pushback from North Dakotans regarding this bill hinges on this limitation of control by the North Dakota Game & Fish Department. I feel the inclusion of this language is necessary for the successful implementation of wildlife conservation and practices reflective - not only of good science - but also the wishes and wisdom of the people of North Dakota. Specifically, I will discuss three specific actions that have caused people, like myself, to lose faith and trust in the North Dakota Game & Fish.

1. Lack of Transparency

As some on the committee may already know, the momentum generated behind HB 1151 has roots in the way in which the North Dakota Game & Fish leadership rolled out and enacted its late summer and early fall public meetings regarding Chronic Wasting Disease or CWD. I attended the meeting in Minot held on August 29th, 2022 and heard from several others that attended similar meetings throughout the state.

I was under the impression upon receiving a notice and invitation to attend this meeting that it was a true public meeting - not a one-sided conversation with strategies and protections in place to ensure that members of the public could not ask questions and were discouraged from engaging in conversations regarding CWD with one another to learn and share information. The complete and total lack of transparency was unnerving. It became clear that the experiences, collective wisdom, and wishes of the public were to be ignored.

2. Spread of Misinformation

As has been mentioned by many others supporting HB 1151, the North Dakota Game & Fish Department has succeeded in shifting their focus and allocation of resources to promote the notion that baiting is unethical and is the primary cause of CWD transmission across the state. This is categorically untrue; however, members of the general public would not and do not know this through the "Protect the Herd" stickers on government-issued vehicles and the misinformed and completely biased rhetoric that is spewed to youth and new hunters. One particular example of intentional misinformation took place on Monday evening in Bottineau at a Hunters Safety class, where a 20+-year instructor, allegedly (according to his own admission), the first *paid* Hunters Safety instructor in North Dakota, stated that baiting was an example of disrespecting fair chase and violating the ethics of hunting. He indicated to a room full of young and new hunters that baiting was banned in Bottineau's unit *NOT* because of anything-related to CWD but rather because of ethical issues. This is just one example of information being manipulated to fit the agenda of the North Dakota Game & Fish rather than the Department clearly presenting unbiased information to allow young hunters and new hunters to make their own decisions.

3. Lack of Accountability

Some in opposition have cited concerns that this bill may limit the power of a state department head. I believe this bill does the complete opposite: HB 1151 builds accountability into what is now an unaccountable department. This sets the precedent that decisions made and policies enacted by the department must be reflective of North Dakotans, with our emphasis on common sense, science, and good practice - not misinformation and lack of transparency.

Thank you. I will now stand for any questions.

Megan Langley 280 102nd St NW Souris, ND 58783 (701) 303-0840

Good morning, Chairman Porter and members of the committee, thank you for taking my testimony into consideration today. My name is Megan Langley. I am representing myself - not an organization - and I am testifying in support of HB 1151.

I am a lifelong North Dakotan. While hunting was a big part of my childhood, at the ripe old age of 35, I finally wrapped up my first full archery season, securing a nice 5 x 5 off my parents' land in 2F1 in September. I am lucky to have had a very successful first run, and I recognize that I had several tools at my disposal that many first-time archery hunters in our state don't have, including plentiful land along the Sheyenne River Valley, a partner with vast hunting expertise, and the ability to bait.

I spent an incredible amount of time from the spring of 2022 to the fall of 2022 getting ready for archery season. I acquired a bow and associated archery implements; spent time learning to shoot and estimate yardage; set up five tree stands and one tower stand; installed and monitored Tactacams; planned out and spent time hauling bait; and made a plan for which buck I wanted to shoot. The entire affair became something that not only I was incredibly engaged in and passionate about but also something that our entire family could participate in and enjoy - everyone from my 69- and 67-year-old dad and mom to our 4- and 6-year old kids. We all monitored the cameras - looking for that big shooter buck to arrive and document a pattern of behavior.

As all of you know, along with an investment of time came an investment of money. Based on receipts and a listing of debit card transactions, I am estimating that between equipment, clothing, bait, fuel, food, and taxidermy costs, I spent just north of \$8,000 to get myself set up this archery season for future seasons. Now, this year being my first year, I know my **hard** costs were especially high because of the capital expenses of a bow, tree stands, and cameras. I had some "catch up" to do. But my **potential annual** costs were not out of the ordinary in comparison to costs published by the North Dakota Game & Fish. According to the North Dakota Game & Fish Hunter & Angler Spending Report of 2017/2018, resident archery hunters spent, on average, approximately \$969.12 per season.

This equates to a primary spend per season by the total number of resident licensed hunters, which was 26,114 in 2017/2018, to \$25,307,600. *Please note, this is direct-spend, not secondary economic impact.*

Many on the committee may feel like this is an impressive number, and you're right. However, since baiting has been restricted across North Dakota, the amount of direct-spend by resident licensed archers is actually down 27.4% based on the economic reports published by Game & Fish. Based upon the same economic impact report from the Game & Fish, the average spend of resident licensed archers in North Dakota in 2011/2012 was \$1,335.54. If that average spend would have remained consistent from 2011/2012 to 2017/2018 with an assumed same or similar amount of licensed resident archers, the total direct-spend impact would have been \$34,876,292. **That is a difference of nearly \$10 million.**

While the decline in average spend per archer cannot be fully attributed to the restrictions on baiting across the state, one can assume a correlation. More recent numbers are not yet available, as it appears the Game & Fish only collects and publishes this data approximately every 5 years. Yet, if we assume a similar decline based on baiting restriction patterns of 27.4% and a similar amount of licensed resident archers, restrictions on baiting may bring the total direct-spend in North Dakota to \$18,373,317. A nearly \$17 million potential difference from pre-banning of baiting numbers.

Hunting is a cornerstone of North Dakota's culture, economy, and history. For many state agencies and private businesses, capitalizing on North Dakota's unique sense of place, anchored by its social fabric, is critical when recruiting and retaining workforce. Many of us here come from rural communities. We have shopped locally to ensure the long-term **viability** of our emergency service personnel through sales tax collections, continued **ability** of our friends and neighbors to be entrepreneurs in our small towns, and long-term **livability** within communities with a high quality of life. The Legislature has supported that through its emergency investments in small business owners during difficult economic conditions; currently considered investments in the tens of millions of dollars for childcare facilities and workforce recruitment and retention programs; and history of prioritizing the use of **all North Dakota's tools for long-term economic prosperity.**

Your support of HB 1151 will ensure that North Dakota's communities will reclaim access to one of its most often overlooked tools to grow communities, not just in terms of outdoor recreation, but in terms of their ability to invest in infrastructure, workforce recruitment and retention, and small business development.

Thank you. I will now stand for any questions.

Summary of Archery Figures in Testimony

Year	Units Banned	Reported Per Season Spend	Number of Licensed Resident Hunters	Total Annual Spend All Archers
2011/2012	1 of 38	\$1,335.54	26,114*	\$34,876,292
2017/2018	20 of 38	\$969.12	26,114	\$25,307,600
2024/2025**	38 of 38	\$703.58	26,114*	\$18,373,317

^{*}Because exact numbers for licensed resident hunters are not published or available, the known number of hunters for the year in which the data was collected was utilized for all estimates (26,114).

Firearm (Rifle) Deer Resident Hunter Numbers for Comparison

Year	Reported Per Season Spend	Number of Licensed Resident Hunters	Total Annual Spend All Rifle Hunters
2011/2012	\$643.04	40,904*	\$26,302,908
2017/2018	\$657.07	40,904	\$26,876,791

^{*}Because exact numbers for licensed resident hunters are not published or available, the known number of hunters for the year in which the data was collected was utilized for all estimates (40,904).

Report Referenced & Utilized for Figures: ND Game & Fish Hunter & Angler Spending Report (2017/2018)

^{**}Numbers for 2024/2025 are extrapolated based upon an assumption that baiting could be banned statewide, which could result in another 27.4% per archer decrease in reported per season spend.

RE: HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support for HB 1151.

I would like to first start out by explaining that I am not only for the support of baiting for myself but also for the future outdoors men and women of our great state. Not only has being able to bait allowed me to have more success in the field but it has also made for better and more enjoyable experiences. I understand that the true meaning of being an outdoorsman isn't just about the success of harvesting an animal but the part of harvesting an animal being an end goal is something we all strive for. I think when you look at the numbers and the statistics of how little baiting contributes to CWD you would be able to draw a simple solution that this obviously is not something that would help reach a common goal of preserving the heard.

I also believe that if there was to be a rule change of implementing no baiting throughout the state that you would see the addition of new hunters in our state decline as the success rate for hunters would greatly decrease and hunters would become bored or irritated of spending consecutive sits and many hours in the woods without potentially having success or even seeing deer.

I am all for preserving the wildlife in our state, but I don't believe that this bill supports that, and I believe it will cause more harm than good for our hunters in this state.

Sincerely,

Jordan Eggermont

In Favor of House Bill 1151 – Relating to baiting deer for hunting

Dear Committee Members:

As a landowner/rancher (since 1882) and an outfitter (since 2000) in North Dakota, I strongly disagree with the North Dakota Game and Fish controlling the public's access to bait for deer. We plant many food plots, have plenty of bait stations, and care for the wildlife as much as we can when mother nature doesn't cooperate. The management of the wildlife that roam across our property is a huge priority, which leads to plenty of opportunity for the sportsman because of the improved health we provide for them. We have increased the health of our deer herds over the last decade through management and baiting.

The bait stations we use typically would have a max of a dozen deer at any given time, but more than likely 2-3 is more normal. Without baiting for deer, we would not be able to get photos from our deer herd. Without these photos, we would not be able to target mature deer that need to be harvested. Without being able to target the right deer, many deer would get harvested prematurely and we would not have control over our deer herd. On the flip side, we would lose over 75% opportunity for these targeted deer and also lose interest from the sportsman from less excitement in the field. If we lose this excitement from sportsmen and younger hunters, the revenue coming into the game and fish would decrease. The deer would also not have the best living environment due to the decrease in funding, therefore have a lack of control on the herd.

I disagree that baiting influences CWD. Baiting is usually done in the summer/fall by sportsman when deer are more spread out. If there are only a handful coming into a baiting area, how do you control the wintering of deer herds. Our deer herds have wintered together of more than several hundred in a group without any bait every year. This is a natural thing for deer to group up in the winter around hay yards, shelterbelts, or crop fields in huge numbers. Shouldn't this be the bigger concern? This is a natural trait deer do in the winter is herd up. Why is there even a discussion about having a few deer together of bait when they naturally group together in extremely large numbers each season on their own?

Please consider joining landowners/sportsman and be in favor of HB 1151.

Sincerely,

Jeremy Doan

Black Leg Ranch/Rolling Plains Adventures

Chairman Porter and Committee members,

My name is Dave Brandt from rural Buchanan and I appreciate your consideration of few of the many reasons I oppose House Bill 1151.

First, proponents of this bill are claiming the NDGF lacks data proving that baiting increases the spread of CWD. While I believe this is as best misleading given the volume of compelling information collected across North America to date, even if I were to give on that particular point, I have to ask myself whatever happened to basic logic? As my Gramps use to say when I was a kid, David, sometimes you just need to use that muscle between your ears to figure things out. Logic dictates that the longer you expose animals to a laterally transmissible disease, the higher the probability is that they will get it. Yes, some deer congregate naturally at certain times of the year, but that is typically after hunting season and through the winter and that is something beyond our control, but lets just say it is about 4 months. Baiting unnaturally brings deer very close together and typically begins before hunting season and often runs through its end, lets just say another 3-4 months even knowing that many hunters bait year-round to retain animals. Couple this with the fact that not all deer yard up during winters but are drawn to bait artificially placed on the landscape and I fail to see how anyone can say with a straight face that baiting for hunting does not have the potential to increase the spread of disease. You are increasing their exposure to risk period and that matters to me! Which leads me to my second point.

Second, many hunters seem to think that any deer they see on the landscape equals a tag. Not true. Game and fish is mandated to manage the deer herd for all North Dakotans and that means only a portion of the deer can ever be removed. In other words they must maintain a baseline population number. Hunters work on the harvestable surplus of that population, as do coyotes, mountain lions, disease like EHD, natural death, weather, Fords, Chevys, Semi trucks, etc. Every deer or elk that dies from CWD is equal to one less tag in the long run since it comes off that surplus. Because of this, if or when the CWD infection rate becomes 30% like it is in some states, that equals 30% fewer tags issued to hunters.

Third, who should be responsible for making the decisions regarding how to best manage our wildlife resources? If you have not heard of the North American Model of Wildlife Conservation by now, I'm sure you will at some point in the discussion of this bill. Some people incorrectly believe it was something a bunch of overeducated dudes sat down and laid out to be used for the future. Actually it is a retrospective look at why North America's wildlife and natural resources are the envy of the rest of the world and why we have been able to enjoy and participate in those resources since their precipitous declines that occurred through the 1930's. It's authors looked at the reasons for those declines and what didn't work in other countries and also noted practices from places that did have success and borrowed those ideas as well. They derived 7 principals

believed to be responsible for our great success story that have been used to guide wildlife and natural resource management incredibly well for the last few decades. Among those principals is that science plays a key role in managing wildlife and that wildlife populations are sustained and scientifically managed by professionals in government agencies. The reason this is critical to the model is because there were times in the past and in other countries where this was not the case and the resources suffered notably. House Bill 1151 is 180 degrees opposite that principal. It seeks to circumvent the management authority of North Dakota's Game and Fish professionals and puts the wishes of a minority group above the welfare of all North Dakotan's deer.

I urge you to give House Bill 1151 a DO NOT PASS vote.

Thank you

This testimony is in support of HB 1151.

I am not in support of more restrictions for hunters.

I just looked at some of the testimonies like mine and a large number of the ones in opposition to this bill are out of state submitters. Please help keep ND interests alive.

The current policy of the NDG&F is to try and keep deer apart to slow the spread of chronic wasting disease. Typically, a bait pile is not bringing in large numbers of deer. It is often done to lure deer to a place that ensures a successful shot. For many hunters, this is the only way they are able to make it worth their time. Spot and stalk is simply not very successful.

This is a complex issue, but I believe that hunting over bait is not as much of a problem as the game and fish wants us to believe.

Kyle Nelson Lansford, ND

1/19/23

ND House Energy and Natural Resource Committee Members:

Thank you for the opportunity to submit this written testimony in support of HB 1151.

I am a lifelong ND resident hunter and I began going deer hunting on a regular basis 30 years ago with my dad when I was only 4 years old. He taught me woodsman ship, hunting skills, respect for the land, and respect for the animals that we love to pursue. I would argue that almost no one has as much respect and admiration for deer and deer hunting than I do. It is what I think about and prepare for all year.

This discussion on this bill will likely get heated as people on both sides of this issue feel that their hunting heritage and the way of life the grew up with is being threatened. Good arguments are going to be laid out on both sides of the issue.

The opposition is going to fight everything in the name of science. However, there have been plenty of studies on the other side of CWD that are simply ignored. Why is only one side of the CWD debate recognized by our Game and Fish? There has been no conclusive study saying that baiting bans actually slow the spread of this disease. However, what the NDGF is doing is not actually a baiting ban. It is a hunting over that bait ban. If these regulations are based on science, why is baiting still allowed? Why does feeding deer only become a problem when someone is trying to shoot a deer over it? Why does the NDGF still feed deer themselves to bait them away from hay yards? Why do they still plant small food plots to help concentrate deer in specific areas if they want to slow the spread? The answer is clear that this isn't about science. It is about a social or ethical preference our NDGF has against baiting. They are using science and CWD as vessel to ban what they feel is a morally wrong method of hunting.

Many on the opposition say this is an overreach by the Legislature. However, I see it as just the opposite. The overreach came from the NDGF first. This bill is to try and stand up against this overreach. Letting the Game and fish manage by social preference is a dangerous slope. Look what has happened in some states with hunting season losses because of social not biological management. In some areas, you are no longer allowed to hunt black bears, Grizzley Bears, or mountain lions because it is no longer accepted socially, not because there is a shortage of them. This could happen in our state too. Maybe not in the form of a species but in the form of equipment bans. The use of trail cameras could be next or maybe your favorite hunting rifle. They could also say it is no longer acceptable to use a rangefinder, scope or a high-powered long-range rifle. Maybe it is bowhunting they attack next? They could come after any method of take they want if the precedence is continued to be tolerated by sportsman. While I agree that wildlife management should be left up to the professionals, when the unelected professionals abuse their power, they need to be kept in check.

My support of this bill is also based on a loss of opportunity. I do not need bait to kill a deer and my success rate will not change no matter what direction this falls. This isn't about me. It is about certain groups of people that are less mobile or fortunate to have access to great land, a baiting ban will hit them the hardest. My elderly father, who can no longer hike the badlands chasing deer with his bow will suffer. Hunters with disabilities will suffer. Everyone wants to support Diversity, equity and inclusion. A baiting ban does the exact opposite. It makes the resource more available to able bodied people that have access to good land.

Of all the groups a baiting ban will hurt, Youth hunters are my biggest concern. We need to keep recruiting new hunters into the outdoors. Without them, we have no hunting future at all. Bait can enhance the hunter experience in the eyes of young kids. Seeing their eyes light up when they can watch a deer up close is one of my favorite things to watch. Keeping kids interested in the outdoors is crucial for the future of hunting. Bait can also aid in making their first hunting experience a positive one. It helps with a more controlled setting when trying to get a child their first deer. It can keep a deer calmer and still while they wait for a good shot angle. The kid will have less of a chance wounding a deer and having all the negative emotions that come with that as their first hunting memories.

Again, Thank you for your time and consideration. I hope all of you hear both sides of the argument and decide on a best path forward. I urge you to support HB1151.

Jacob Wheeling

This testimony is in support of HB 1151.

I am not in support of more restrictions for hunters.

I just looked at some of the testimonies like mine and a large number of the ones in opposition to this bill are out of state submitters. Please help keep ND interests alive.

The current policy of the NDG&F is to try and keep deer apart to slow the spread of chronic wasting disease. Typically, a bait pile is not bringing in large numbers of deer. It is often done to lure deer to a place that ensures a successful shot. For many hunters, this is the only way they are able to make it worth their time. Spot and stalk is simply not very successful.

This is a complex issue, but I believe that hunting over bait is not as much of a problem as the game and fish wants us to believe.

Kyle Nelson Lansford, ND



Contact:
Matt Perdue, Lobbyist
mperdue@ndfu.org | 701.641.3303

Testimony of Matt Perdue North Dakota Farmers Union Before the House Energy and Natural Resources Committee January 20, 2023

Chairman Porter and members of the committee,

Thank you for the opportunity to testify in support of House Bill No. 1151. My name is Matt Perdue, and I am testifying on behalf of North Dakota Farmer Union's (NDFU) members.

NDFU supports HB 1151, which prohibits rules or policies that restrict landowners' ability to use baiting for lawful hunting. During our most recent annual convention, NDFU's members approved new policy that opposes the North Dakota Game and Fish "restricting baiting as a response to Chronic Wasting Disease (CWD)." Our members approved this policy due to skepticism around the effectiveness of baiting restrictions in slowing the spread of CWD. Without stronger evidence of baiting restrictions' effectiveness, our members do not believe a ban on baiting is the right response to CWD.

Thank you for your consideration. We respectfully request a "Do Pass" recommendation on HB 1151.



TESTIMONY OF JOHN BRADLEY NORTH DAKOTA WILDLIFE FEDERATION HOUSE BILL 1151 HOUSE ENERGY AND NATURAL RESOURCE COMMITTEE JANUARY 20, 2023

Chairman Porter and members of the House Energy and Natural Resource Committee:

For the record, I am John Bradley, Executive Director of the North Dakota Wildlife Federation (NDWF). I'm here today representing our 1,500 members in 15 affiliated wildlife and sportsmen's clubs across North Dakota that make up the North Dakota Wildlife Federation.

NDWF opposes HB 1151. This is not simply my opinion - this is an organization that is built on our grassroots. Our members and affiliate bring ideas forward through a delegate and resolution process, and just like you are elected to represent your districts, they represent their clubs and their members throughout the state. Earlier this month they supported via our resolution process that, and I quote:

"Therefore, be it resolved that the North Dakota Wildlife Federation supports the North Dakota Game and Fish Chronic Wasting Disease and Surveillance Plan 2023 – 2027 and the proposed actions and strategies to manage and restrict the spread of Chronic Wasting Disease."

HB 1151 would severely undermine the North Dakota Game and Fish Department's (NDG&F) authority and ability to manage deer and deer hunting with the best-available science. Specifically, the bill removes the authority from NDG&F to issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting. The one-line bill, and the removal of management authority from NDG&F, is a direct attempt to undermine chronic wasting disease (CWD) management efforts in the state and would have a detrimental impact on managing other diseases as well.

The practice of baiting and its role in deer management has grown in terms of controversy and complexity in the last decade. The NDWF acknowledges the available scientific data surrounding this issue is incomplete, science often is. Science is a theory backed by data, experiments, and tested repeatedly. Our deer managers are working hard to implement methods and tactics to mitigate the spread of diseases, including CWD. The science tells us that artificial baiting increases unnatural, man-made density around a single food source and therefore increases the potential for direct and indirect contact among individuals. We understand that natural congregation occurs in our deer herds, but we shouldn't remove what we as humans can

control from our management toolbox. When it comes to CWD, we are buying our future selves time to figure this disease out and discover new ways to reduce and hopefully eliminate CWD from the landscape. Outside of CWD, there are 11 other deer diseases that are thought to be spread by direct contact, including bovine tuberculosis (TB), some of these diseases, left unchecked, can severely impact our livestock producers as well.

The Association of Fish and Wildlife Agencies (AFWA) sites that unnatural concentration of cervids facilitates CWD transmission and establishment if CWD prions are present. AFWA, (which is made up from every state game and fish agency, as well as the National Rifle association, National Shooting Sports Foundation, Boone and Crockett Club, Rocky Mountain Elk Foundation, Mule Deer Foundation, National Wildlife Federation, Wild Sheep Foundation) lists the prohibition of baiting or feeding wild deer as a best management practice for the prevention of CWD introduction and establishment. Imagine removing a ratchet from a mechanic's toolbox, and still expecting them to be able to fix your vehicle. HB 1151 intentionally removes this management practice (tool) from the authority of NDG&F.

Furthermore, this bill would also have a negative impact on hunting opportunities for sportsmen and women. Healthy wildlife populations are essential to the sustainability of hunting opportunities, and the spread of diseases such as CWD and TB can have a significant impact on these opportunities. By limiting the ability of the department to protect wildlife populations from disease, HB 1151 would also limit the opportunities for deer hunting in the long run.

Wildlife management decisions, and especially disease management decisions, should remain in the hands of professional wildlife managers – not lawmakers. HB 1151 would result in a massive setback for disease and deer management in North Dakota. We urge a Do Not Pass on HB 1151.

Dear committee, My name is Jeff Jacob, I am writing testimony today, to tell you that I am in favor of house bill 1151. But before I start my testimony, there is one item I would like to bring up and get it out of the way right away. Whether you are for the bill, or against!!! is a big word called ETHICS!!!! Should you hear any testimony that has ethics involved, it should be removed. And not considered. None of use have had the chance to walk in each others shoes and everybody has there own limitations . So we can leave this out of it.

I am a North Dakota native and have been hunting and fishing in this state my whole life. At first I hunted everything from from birds, waterfowl, big game and predators. The last 30 years I have found myself mainly Bowhunting white tailed deer in the state. I spend from early summer to winter in the deer woods and enjoy every second I have with them in their environment. One of the biggest rewards I enjoy is the planting of the food plots, and watching them grow, other part is the reward of all the wildlife you attract. For the purpose of watching or hunting. But if you put supplemental food on the ground you can watch, but you can't hunt. Everybody doesn't the same opportunities as the next person does, but they love the sport just the same. Doesn't it make since if you place supplemental food in a location, to attract a few deer to hunt that you are dispersing the heard. Those deer wouldn't be there in the first place. We all know deer are social animals, there is nothing we can do about that. There is no science that says the supplemental feeding of deer is what is spreading CWD. The states with the highest rate of CWD haven't allowed baiting for 2 decades. But yet the rate of positives keeps growing. Hunting still has to to be the best management tool we have, for controlling numbers and disease. But the only management of CWD is the removal of baiting or supplemental feeding, that's all we have come up with the MILLIONS that have been spent on this disease. Note as this bill is being heard we have had a rough winter for the deer in this state, with beards reaching in the hundreds, in several places in nd. But putting out some supplemental for the deer and wildlife is hurting them. Are we not breaking up the heard, for less nose to nose contact. Please vote in favor of bill 1151.

Jeff Jacob Minot N.D.

Dear committee, My name is Jeff Jacob, I am writing testimony today, to tell you that I am in favor of house bill 1151. But before I start my testimony, there is one item I would like to bring up and get it out of the way right away. Whether you are for the bill, or against!!! is a big word called ETHICS!!!! Should you hear any testimony that has ethics involved, it should be removed. And not considered. None of use have had the chance to walk in each others shoes and everybody has there own limitations. So we can leave this out of it.

I am a North Dakota native and have been hunting and fishing in this state my whole life. At first I hunted everything from from birds, waterfowl, big game and predators. The last 30 years I have found myself mainly Bowhunting white tailed deer in the state. I spend from early summer to winter in the deer woods and enjoy every second I have with them in their environment. One of the biggest rewards I enjoy is the planting of the food plots, and watching them grow, other part is the reward of all the wildlife you attract. For the purpose of watching or hunting. But if you put supplemental food on the ground you can watch, but you can't hunt. Everybody doesn't the same opportunities as the next person does, but they love the sport just the same. Doesn't it make since if you place supplemental food in a location, to attract a few deer to hunt that you are dispersing the heard. Those deer wouldn't be there in the first place. We all know deer are social animals, there is nothing we can do about that. There is no science that says the supplemental feeding of deer is what is spreading CWD. The states with the highest rate of CWD haven't allowed baiting for 2 decades. But yet the rate of positives keeps growing. Hunting still has to to be the best management tool we have, for controlling numbers and disease. But the only management of CWD is the removal of baiting or supplemental feeding, that's all we have come up with the MILLIONS that have been spent on this disease. Note as this bill is being heard we have had a rough winter for the deer in this state, with beards reaching in the hundreds, in several places in nd. But putting out some supplemental for the deer and wildlife is hurting them. Are we not breaking up the heard, for less nose to nose contact. Please vote in favor of bill 1151.

Jeff Jacob Minot N.D.

HB 1151 Testimony

I have been hunting in ND for 30 plus years and we have been through many shifts in hunting deer. I enjoy the sport of bow hunting and rifle hunting of deer. I think the ND Game and Fish do a wonderful job protecting our resource. I oppose any bill that strips them of power to regulate or protect our deer herd.

Those people who are upset with baiting, have lost no hunting privileges, they still are able to chase deer. Times and tools change, many states are making cellular trail cameras illegal.

ND Game and Fish is tasked with protecting our wildlife. If we take away this tool, what will be next? No limits on pheasants, how inconvenient for hunters. Maybe everyone should get an elk tag every year.

This bill is not good for North Dakota

Brad Hoffarth Minot ND.

#14748

Members of the House Energy and Natural Resources Committee,

Please vote no on HB 1151. This bill sets a unacceptable precedent, tying the NDGF Department's hands from using science to manage wildlife, particularly cervids in ND. The NDGF uses proven science to manage wildlife and their habitats. The ND legislature should not pass any laws that restrict the use of science to manage wildlife.

I urge a No Vote on HB 1151.

David Dewald

Bismarck, North Dakota



House Energy and Natural Resources Committee Testimony on HB 1151

North Dakota Game and Fish Department Casey Anderson, Wildlife Division Chief January 20, 2023

Chairman Porter and members of the House Energy and Natural Resources Committee, my name is Casey Anderson, Wildlife Division Chief for the North Dakota Game and Fish Department (Department). I am testifying today in opposition of HB 1151.

I would like to start out by reading you an excerpt. "Hunting, trapping, and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people and managed by law and regulation for the public good." section 27 of article XI of the North Dakota Constitution. The North Dakota Game and Fish Department is entrusted with the responsibility of making sure that happens using the best available science and management for present and future generations. The Governor through proclamation and the Legislature through century code enact those laws and regulations. This bill seeks to eliminate the Department, through Govenor's Proclamation, from restricting the use of baiting for deer hunting. The legislation removes one of the Department's tools, to maintain healthy deer herds for the benefit of all North Dakotans, when faced with trying to manage any transmissible disease.

As written this bill would also remove a tool from the Departments toolbox not just on private land but also on its public Wildlife Management Areas (WMAs). The Department banned baiting on its WMAs in 2006 for many reasons. It habituates deer to unnatural feed sources and patterns, creates conflicts between hunters on public land, has the potential to spread noxious weed seed and facilitate the spread of disease and parasites.

In the spring of 2009 Senator Olafson introduced a bill, SB2351, that the Department supported, to ban baiting and feeding of big game state-wide in response to concerns over Bovine Tuberculosis (TB) in the deer herd in NW Minnesota. He was concerned about TBs potential impacts on the livestock industry if it were to get into wild deer or elk in ND. The Department had peer reviewed research to support his bill and the same concerns for multiple diseases including Chronic Wasting Disease (CWD) which hadn't been detected in ND. The bill was not passed with the thinking that it was a more proactive approach than ND was ready for, and the Department should only use a baiting restriction as a reactive approach when a disease, where baiting increases the chance for spread, became known in the state. The first positive detection of CWD was confirmed in the fall of 2009 in deer hunting unit 3F2 followed by efforts to keep

the disease to a minimum. Those efforts include banning baiting, changing harvest management, and managing carcass movement.

The Department is greatly concerned about CWD because of its long-term effects on herd health. CWD is a prion disease that affects deer, moose, and elk. It is spread from animal to animal by ingestion of infectious prions directly between animals or deposited in the environment through urine, feces, saliva, and carcass parts of infected animals. Once it's contracted it is always fatal. There is no proven landscape level treatment or treatment for individual animals. Over time with high prevalence rates it has been shown to affect herd age structure and even population size. When CWD is found in a unit the goal is to maintain as low of a prevalence as possible, prevent movement of the disease to other areas and maintain or reduce deer densities to decrease the chance of disease spreading between animals or by animals forced to seek resources elsewhere. For a disease that spreads like CWD the number of times and the amount of time a healthy animal is in contact with a positive animal or its bodily fluids the more likely the disease is to transfer to that healthy animal. The persistence of this disease in the environment tells us time is of the essences and we cannot regain time.

To reduce the risk of CWD spread the Department has been implementing a ban on baiting as a method of take for hunting to reduce the number of times and duration of these times that deer spend in close contact as CWD is detected. The ban is implemented in the CWD positive unit as well as any unit within 25 miles of the positive detection. As CWD has been confirmed in more areas, units have been added to the baiting restrictions (currently 20 of 38 deer gun units).

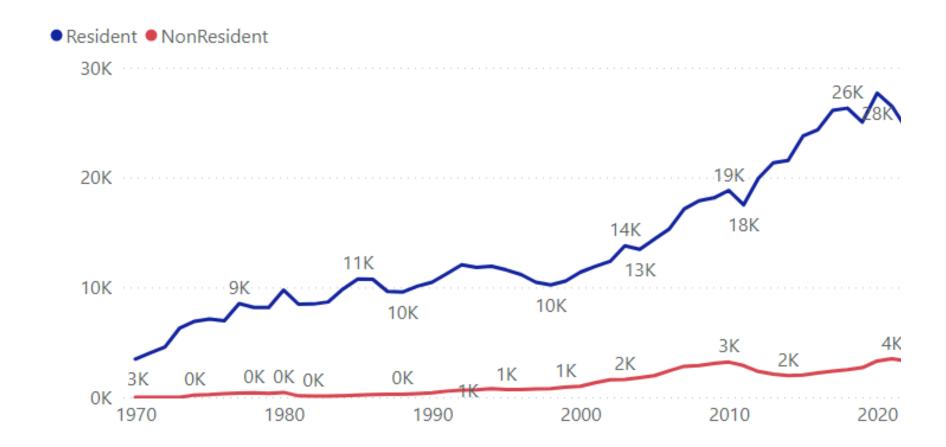
Baiting is a method of take used by some hunters and many have concerns that the loss of the ability to bait will have detrimental impacts on recruitment and retention of hunters. The Department's data shows that that has not occurred. Archery license sales have seen a steady increase and have gone from 21,218 in 2009 to 27,696 in 2022 (exhibit 1). The trend for youth is the same with youth archery licenses going from 580 in 2009 to 1,739 in 2022. Youth deer gun licenses have also consistently increased from 3,516 in 2009 to 6,345 in 2022 (exhibit 2). Lastly, deer gun season applications for the first deer gun season lottery have maintained stable with a yearly average of 72,698 applicants since 2009. In 2022 73,654 applicants applied for a deer gun license in the first lottery (exhibit 3).

Ever since the Department's first CWD management plan in 2002 the Department has been discussing the issue of baiting, feeding, and CWD with the public and landowners. In 2021 a survey was done by an independent consulting firm (Human Dimensions of Natural Resources (HDNR) Consulting) titled "Chronic Wasting Disease Survey of North Dakota Hunters". Some results of the survey are 79% of those surveyed trust the NDGFD to follow the best available science in managing CWD. 74% of North Dakota deer hunters perceive a baiting restriction to be slightly to very effective in managing CWD and only 11% consider NDGFDs current approach to managing CWD to be too aggressive (Disease Transmission Flyer). This issue is a tough one and the Department is deeply concerned for the future of deer, elk, moose, and the opportunities

they provide to the public. The Department and the Legislature have a responsibility to maintain the public resource of wildlife for all citizens to enjoy now and into the future.

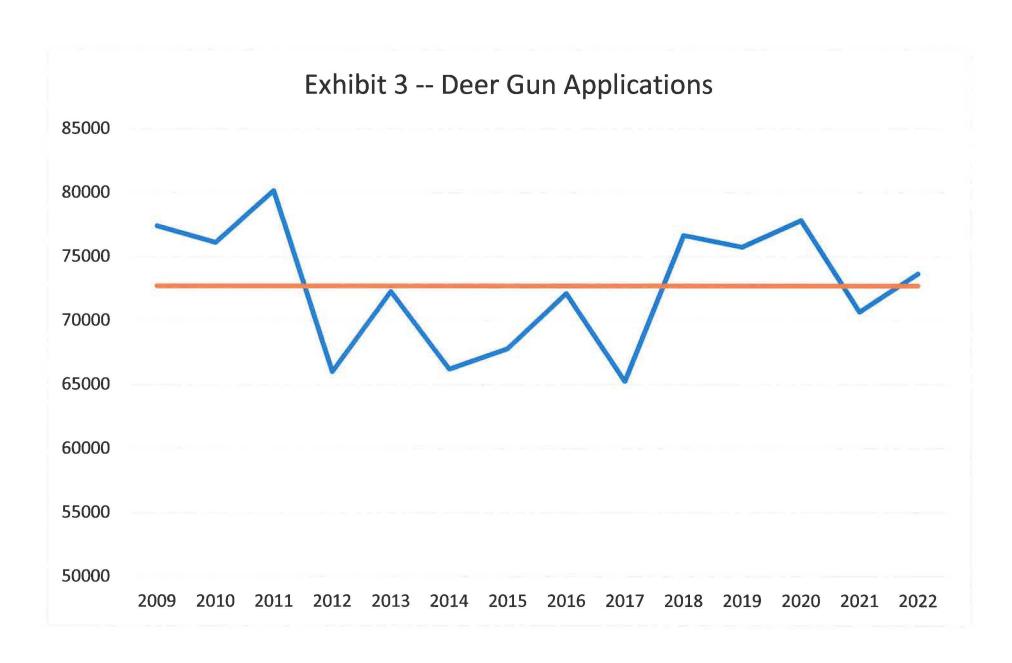
Before I turn the microphone over to Dr. Charlie Bahnson to take a deeper look into the disease of CWD and the risks of baiting, I would ask that as work is done on this bill the "public good", as stated in our State Constitution, is the beneficiary of the outcome.

North Dakota Deer Bow Licenses Issued



North Dakota Youth Deer Licenses Issued







DISEASE TRANSMISSION

RISKS WITH BAITING

¹Chronic wasting disease is caused by a prion and is always fatal. It spreads through direct contact with infected animals, contact with contaminated bodily fluids from infected deer, and contact with contaminated environments. Thus, practices promoting these events increase the risk of disease transmission.

79%

² Trust NDGF to follow the best available science in managing CWD.

/

74%

ND deer hunters perceive a baiting restriction to be slightly to very effective in managing CWD.

² Consider NDGF's approach to managing CWD to be too aggressive.

³ In Saskatchewan, where baiting and feeding is widespread and was never regulated, infection rates in mule deer have risen from approximately 3% to 70% in 15 years in core areas. This is the fastest increase documented in freeranging cervids. CWD has been detected in North Dakota unit 3F2 since 2009 but infection rates in mule deer are approximately 5% as of 2022.



⁴ Research has shown that food plots do not present the disease concerns that bait piles represent, even within areas with bovine TB.



When deer are artificially congregated under captive settings, CWD spreads more rapidly and to substantially higher rates than documented in wild populations.

⁶ Bovine tuberculosis (TB) is spread through similar mechanisms as CWD, making it a useful model for understanding CWD. Baiting and feeding has demonstrably been shown to facilitate increased transmission of TB in deer. Baiting and feeding enabled the TB outbreak in Michigan to persist and spread. Infection rates decreased after restrictions were applied. These continue to be a pivotal component of reducing the spread of this disease within deer and limiting the economic impact to the cattle industry.

- ⁷ Baiting was associated with higher deer concentration and extensive face-to-face contacts which increases the frequency and intensity of direct and indirect contacts among deer.
- Baiting breaks down the natural spatial segregation of maternal family groups, resulting in increased contact of unrelated animals that typically don't associate.
- Deer preferentially and more intensively visited artificial feed sources such as grain piles compared to natural browse sites, rubs, salt licks, and waterholes. At these artificial sources, they had more contacts with the environment resulting in higher potential exposure.

* Numbers associated with citations on back.







SELECTED SCIENTIFIC REFERENCES

- ¹ Miller MW, Williams ES, Hobbs T, Wolfe LL. 2004. Environmental sources of prion transmission in mule deer. Emerging Infections Diseases 10:1003-1006.
- ¹ Mathiason et al. 2009. Infectious prions in pre-clinical deer and transmission of Chronic Wasting Disease solely by environmental exposure. PlosOne 4:e5916.
- ¹ Association of Fish and Wildlife Agencies (AFWA) 2018. AFWA Best Management Practices for Surveillance, Management and Control of Chronic Wasting Disease. AFWA, Washington, D. C. 111 pp.
- ² Vaske J, Miller C. 2021. Chronic Wasting Disease Survey of North Dakota Hunters. HDNR Consulting, LLC.
- ³ Saskatchewan Ministry of Environment. 2021-2022 Chronic Wasting Disease Surveillance Program Results. https://publications.saskatchewan.ca/api/v1/products/115232/formats/130286/download
- ³ North Dakota Game and Fish 2022 CWD Surveillance Results
- ⁴ Courtney, S.E., D.M. Williams, D.R. Etter and S.A. Christensen. 2022. Risky business: Deer behavior and chronic wasting disease. 70th Annual International Wildlife Disease Association Conference, July 23-29.
- ⁵ Keane DP, Barr DJ, Bochsler PN, Hall M, Gidlewski T, O'rourke KI, Spraker TR, Samuel MD. 2008. Chronic wasting disease in a Wisconsin white-tailed deer farm. J Vet Diagn Invest 20:698-703.
- ⁶ Cosgrove MK, O'Brien DJ, Ramsey DSL. 2018. Baiting and feeding revisited: modeling factors influencing transmission of tuberculosis among deer and to cattle. Front. Vet. Sci. 5:306.
- ⁶ O'Brien et al. 2002. Epidemiology of Mycobacterium bovis in free-ranging white-tailed deer, Michigan, USA, 1995-2000. Preventive Veterinary Medicine 54:47-63
- ⁶ Miller et al. 2003. Evaluation of the influence of supplemental feeding of white-tailed deer (Odocoileus virginianus) on the prevalence of bovine tuberculosis in the Michigan wild deer population. Journal of Wildlife Diseases 39:84-95.
- ⁷ Garner MS. 2001. Movement patterns and behavior at winter feeding and fall baiting stations in a population of white-tailed deer infected with bovine tuberculosis in the northeastern lower peninsula of Michigan. Dissertation, Michigan State University, East Lansing, USA.
- ⁷ Thompson AK, Samuel MD, Van Deelen TR. 2008. Alternative feeding strategies and potential disease transmission in Wisconsin white-tailed deer. The Journal of Wildlife Management 72:416-421.
- ⁸ Blanchong JA, Scribner KT, Epperson BK, Winterstein SR. 2006. Changes in artificial feeding regulations impact white-tailed deer fine-scale spatial genetic structure. The Journal of Wildlife Management 70:1037-1043.
- ⁹ Mejia-Salazar MF, Waldner CL, Hwang YT, Bollinger TK. 2018. Use of environmental sites by mule deer: a proxy for relative risk of chronic wasting disease exposure and transmission. Ecosphere 9:1-18.

Testimony on HB 1151

Honorable members of the House Committee on Energy and Natural Resourses.

On behalf of the Kongslie Ranch location South of Towner, N.D. We support House Bill 1151.

I am Lynn Kongslie 68yrs old , I have ranched all my life as my Dad, Grandfather and Great grandfather did they homestead here in 1878. My son and his family are taking over his childern are the sixth generation.

I just want to touch on this one subject. We have about 3ft. of snow on the on ground and the deer are yarding up in our feed yards about 400 hundred deer are eating in the silage, hay and feed piles they are practically on top of each other. Now if there is a concern of CWD in a bait pile which will be about only 5 to 15 deer. Can we imagine whats going on where we feed, with 400 or more deer, if it is spreads this way.

What so difficult to believe is we are being told as a land owner is we can't take a 5 gallon bucket of feed or bait and put on the land that was paid for by hard work, sweat, death, and tears is unbelievable, you think to youself how can this be happening.



House Energy and Natural Resources Committee Testimony on HB 1151

North Dakota Game and Fish Department Dr. Charlie Bahnson, Wildlife Veterinarian January 20, 2023

Chairman Porter and members of the House Energy and Natural Resources Committee, my name is Dr. Charlie Bahnson and I have served as Wildlife Veterinarian for North Dakota Game and Fish. In addition to being a veterinarian, I'm also a trained scientist, having received a PhD from the University of Georgia. I've done disease work for wildlife management agencies across the United States. I sit on multiple regional and national wildlife health working groups and have coauthored numerous peer-reviewed scientific research papers. But beyond that, and perhaps most importantly, I have roots here. I grew up in South Dakota. I married into a family that is spread across this state. My kids were born here. Like everyone else in this room, I too am an avid hunter. My desire to share that with my kids is a major reason that I go to work every day. And, like everyone else in this room, I'd like nothing more than to never have to talk about CWD again. But my training in science and medicine prevents me from doing so.

Casey shared some of the history of CWD in North Dakota and hunter statistics. I'll dive a bit more into the disease itself, along with how we try to manage it.

So what is known about CWD? We know that CWD is a real disease and it's a real threat. It's shed in bodily fluids and is transmitted directly between animals, or indirectly through contaminated surfaces. Under captive settings, all research animals infected with CWD eventually developing fatal neurologic disease. Out on the landscape infected animals are more vulnerable to other causes of mortality but will succumb to the terminal stages of the disease if they live long enough. In free-ranging animals, the likelihood of surviving for one year is cut nearly in half, and virtually no animals survive past two years.

We also know that infection rate or "prevalence" matters. You can imagine that one out of a hundred is pretty easy to write off. However, as infection rates climb- as a larger portion of your herd consists of these sick animals - the impact becomes larger, to a point where you can no longer ignore it. That means finding sick deer. That means producing fewer mature animals to hunt. This new cause of mortality will cut into the "harvestable surplus" meaning fewer licenses if we're trying to maintain population levels. In the most extreme situations, that cause of mortality can outpace the herd's ability to compensate, meaning population declines. The tipping point at which these things will happen will vary. In some western herds, declines were documented at as low as 30% infection rates.

Also challenging is how CWD prevalence grows. Drought, harsh winters, or other diseases like EHD tend to be cyclical – you have bad years followed by good years and population rebound.

In contrast, CWD starts small and slowly builds over years, eventually becoming a continuous pressure on the population. For reasons we can discuss later, it's probably not feasible to *lower* prevalence. Rather your first goal is to prevent the disease. Your second goal is to maintain as low of a prevalence as possible. Ultimately, you get one shot. When infection rates reach an exponential phase, the outlook is pretty grim. Therefore, it is critical to reduce transmission to the furthest extent possible especially early. CWD is currently rare in North Dakota. It's easy to dismiss. We want to keep it that way.

Now if you'll indulge me in a thought experiment. Let's assume CWD is a good thing and you wanted to spread it as fast as possible. How would you go about doing it? You'd want to open up the gates to carcass movement from out of state and encourage leaving them all over the landscape. We'd want to stockpile deer in areas to much higher densities. You'd also want to somehow get deer to exchange bodily fluids – to encourage lots of contacts between as many animals as possible; to get deer to consume feed and dirt contaminated with bodily fluids. Essentially, you'd want to start putting out bait piles. The more, the bigger, the longer, the better.

There have been a lot of claims about science and how evidence-based decisions are made. If I try to drive 150 mph from here to Fargo in a blizzard, I'm likely to get in an accident. There is no study documenting that, but we can make a strong inference based on our understanding of driving at high speeds or traveling in winter conditions. By that same token, we have several hundred research papers that shape our understanding of CWD and guide how best to address it.

We know how CWD is transmitted, and we know that baiting promotes those behaviors. Numerous studies have documented that it alters natural behavior, it breaks down social structure, it brings lots of unrelated animals into close proximity. It promotes direct and indirect contact. Studies have shown that baiting and feeding play large roles in the transmission of other diseases, including brucellosis and bovine tuberculosis. This large body of research allows us to strongly infer that baiting poses considerable risk to CWD transmission.

We do not have a randomized clinical trial like you would for a new drug. It's considerably more complicated than that when we're talking about free-ranging wildlife on varying landscapes. Frankly, as a trained scientist, I don't know how you'd set that up ethically or feasibly. I know that it'd take many millions of dollars and 15 to 20 years. It'd be great if that study someday happened. It'd be great to have research clearly demonstrating that baiting doesn't contribute to transmission risk. I'd gladly reconsider our management approach. But until then, we have to follow the clear direction the evidence points us towards and there is robust science that does that.

In the packet provided, you'll find a fact sheet summarizing baiting, as well as our 2023 Management Plan. What I want to point out is that both of those cite peer-reviewed scientific research. You'll also see a list of over 250 references. None of these stand completely on their own, but rather, they build on each other. Each adds a small piece to our collective understanding of CWD. These represent ideas, observations, questions, or theories, that have been tested, scrutinized, proven, or in some cases disproven in a systematic way. This is how we understand a phenomenon. This is the science.

Baiting restrictions are one of only a handful of very blunt tools we have to combat CWD. We make no claims that it will stop the disease in its tracks. We know that deer are social animals that yard up for portions of the year. There is some natural transmission that we have no control over. This winter is bad. But it didn't start in August and run through the archery season. And we don't have one like this every year. That is all to say that we can't use the existence of this risk to justify increasing it- by congregating animals more intensely and for a much larger portion of the year.

As a lifelong hunter, I can understand why some folks are upset. If baiting has been a part of how you hunt for years, it's hard to imagine hunting without it. Nobody likes the idea of more hunting regulations, but they are in place to protect the resource. Imagine another scenario. Imagine you shoot a nice buck and as you walk up to it, you realize it's skin and bones. Imagine your kid or grandkid shoots his first deer and a week later you get a phone call and have to decide if you throw away that infected meat or feed it to your family. Those scenarios have already begun to happen in North Dakota. We don't want them to become common. This conversation around CWD is not fun. It'd be much easier in the short term to ignore it. But it'd be irresponsible of the Department to do so. We have to face reality. Our hunting heritage depends on a healthy deer herd. When we pass it along to the next generation, I hope we can look them in the eye and tell them we did everything we could to protect it.



Chronic Wasting Disease References

- Abdelaziz DH et al. 2018. Recombinant prion protein vaccination of transgenic elk PrP mice and reindeer overcomes self-tolerance and protects mice against chronic wasting disease. Journal of Biological Chemistry 293:19812-19822.
- Ableman A et al. 2019. Partnering with Taxidermists for Improved Chronic Wasting Disease Surveillance. Animals 9:1113.
- Almberg ES et al. 2011. Modeling Routes of Chronic Wasting Disease Transmission: Environmental Prion Persistence Promotes Deer Population Decline and Extinction. PlosOne 6(5):e19896.
- Anderson JD et al. 2002. Development of Microsatellite DNA Markers for the Automated Genetic Characterization of White-Tailed Deer Populations. Journal of Wildlife Management 66(1):67-74.
- Angers RC et al. 2006. Prions in Skeletal Muscles of Deer with Chronic Wasting Disease. Science 311:1117.
- Angers RC et al. 2009. Chronic Wasting Disease Prions in Elk Antler Velvet. Emerging Infectious Diseases 15(5):696-703.
- Argue CK et al. 2007. Epidemiology of an outbreak of chronic wasting disease of elk farms in Saskatchewan. Canadian Veterinary Journal 48:1241-1248.
- Atarashi R et al. 2011. Real-time quaking-induced conversion: a highly sensitive assay for prion detection. Prion 5(3):150-153.
- Baeten LA et al. 2007. A Natural Case of Chronic Wasting Disease in a Free-ranging Moose (*Alces alces shirasi*). Journal of Wildlife Management 43(2):309-314.
- Barria MA et al. 2011. Generation of a New Form of Human PrP Sc in Vitro by Interspecies Transmission from Cervid Prions. Journal of Biological Chemistry 286:7490-7495.
- Barria MA et al. 2014. Molecular Barriers to Zoonotic Transmission of Prions. Emerging Infectious Diseases 20(1):88-97.
- Barria MA et al. 2018. Susceptibility of Human Prion Protein to Conversion by Chronic Wasting Disease Prions. Emerging Infectious Diseases 24(8):1482-1489.
- Base U et al. 2012. Gene expression alterations in Rocky Mountain elk infected with chronic wasting disease. Prion 6(3):282-301.
- Basu U et al. 2012. Functional Genomics Approach for Identification of Molecular Processes Underlying Neurodegenerative Disorders in Prion Diseases. Current Genomics 13(5):369-378.
- Baszler TV et al. 2006. Comparison of two automated immunohistochemical procedures for the diagnosis of scrapie in domestic sheep and chronic wasting disease in North American white-tailed deer (*Odocoileus virginianus*) and mule deer (*Odocoileus hemionus*). Journal of Veterinary Diagnostic Investigation 18:147-155.
- Belay ED et al. 2001. Creutzfeldt-Jakob Disease in Unusually Young Patients Who Consumed Venison. Arch Neurol 58:1673-1678.
- Belay ED et al. 2004. Chronic Wasting Disease and Potential Transmission to Humans. Emerging Infectious Diseases 10(6):977-984.
- Belsare A et al. 2020. Size matters: Sample size assessments for chronic wasting disease surveillance using an agent-based modeling framework. MethodsX 7:100953.
- Belsare AV et al. 2020. OvCWD: An agent-based modeling framework for informing chronic wasting disease management in white-tailed deer populations. Ecological Solutions and Evidence 1:e10217.
- Berberidou C et al. 2014. Homogenous photocatalytic decontamination of prion infected stainless steel and titanium surfaces. Prion 7(6):488-495.
- Berge ACB et al. 2009. Methods and microbial risks associated with composting of animal carcasses in the United States. Journal of the American Veterinary Medical Association 234(1):47-56.
- Béringue V et al. 2008. Prion agent diversity and species barrier. Veterinary Research 39:47.
- Bessen RA et al. 2011. Transmission of Chronic Wasting Disease Identifies a Prion Strand Causing Cachexia and Heart Infection in Hamsters. PlosOne 6(12):e28026.



- Bian J et al. 2014. Quinacrine promotes replication and conformational mutation of chronic wasting disease prions. The Proceedings of the National Academy of Sciences 111(16):6028-6033.
- Blanchong JA et al. 2006. Changes in artificial feeding regulations impact white-tailed deer fine-scale spatial genetic structure. The Journal of Wildlife Management 70:1037-1043.
- Blanchong JA et al. 2012. Effects of Chronic Wasting Disease on Reproduction and Fawn Harvest Vulnerability in Wisconsin White-Tailed Deer. Journal of Wildlife Diseases 48(2):361-370.
- Botsios S et al. 2015. Rapid chemical decontamination of infectious CJD and scrapie particles parallels treatments known to disrupt microbes and biofilms. Virulence 6(8):787-801.
- Brandell EE et al. 2022. Examination of the interaction between age-specific predation and chronic disease in the Greater Yellowstone Ecosystem. Journal of Applied Ecology 91:1373-1384.
- Bravo-Risi F et al. 2021. Detection of CWD prions in naturally infected white-tailed deer fetuses and gestational tissues by PMCA. Scientific Reports 11:18385.
- Brown P et al. 2004. Infectivity Studies of Both Ash and Air Emissions from Simulated Incineration of Scrapie-Contaminated Tissues. Environmental Science & Technology 38(22):6155-6160.
- Browning SR et al. 2004. Transmission of Prions from Mule Deer and Elk with Chronic Wasting Disease to Transgenic Mice Expressing Cervid PrP. Journal of Virology 78(23):13345-13350.
- Bruederle CE et al. 2008. Prion Infected Meat-and-Bone Meal Is Still Infectious after Biodiesel Production. PlosOne 3(8):e2969.
- Buchholz MJ et al. 2021. Characterization of the prion protein gene in axis deer (Axis axis) and implications for susceptibility to chronic wasting disease. Prion 15(1):44-52.
- Chesney AR et al. 2016. Peroxymonosulfate Rapidly Inactivates the Disease-Associated Prion Protein. Environmental Science & Technology 50:7095-7105.
- Christensen SA et al. 2020. The role of drought as a determinant of hemorrhagic disease in the eastern United States. Global Change Biology 00:1-10.
- Conner MM et al. 2004. Movement Patterns and Spatial Epidemiology of a Prion Disease in Mule Deer Population Units. Ecological Applications 14(6):1870-1881.
- Conner MM et al. 2021. The Relationship Between Harvest Management and Chronic Wasting Disease Prevalence Trends in Western Mule Deer (Odocoileus hemionus) Herds. Journal of Wildlife Diseases 57(4):831-843.
- Cook JD et al. 2022. An expert-elicited approach to inform proactive risk assessments for chronic wasting disease in white-tailed deer. Conservation Science and Practice e12678.
- Cooper SK et al. 2019. Detection of CWD in cervids by RT-QuIC assay of third eyelids. PlosOne 14(8):e0221654.
- Cortez LM et al. 2013. Implications of prion polymorphisms. Prion 7(4):276-279.
- Cosgrove MK et al. 2018. Baiting and feeding revisited: modeling factors influencing transmission of tuberculosis among deer and to cattle. Frontier of Veterinary Science 5:306
- Cullingham CI et al. 2011. Broad and fine-scale genetic analysis of white-tailed deer populations: estimating the relative risk of chronic wasting disease spread. Evolutionary Applications 4(1):116-131.
- Cullingham CI et al. 2011. Multiscale population genetic analysis of mule deer (*Odocoileus hemionus*) in western Canada sheds new light on the spread of chronic wasting disease. Canadian Journal of Zoology 89:134-147.
- Cullingham CI et al. 2020. Predicting the spread-risk potential of chronic wasting disease to sympatric ungulate species. Prion 14(1):56-66.



- Dagleish MP et al. 2008. Experimental transmission of bovine spongiform encephalopathy to European red deer (*Cervus elaphus*). BCM Veterinary Research 4:17.
- Daus ML et al. 2011. Presence and Seeding Activity of Pathological Prion Protein (PrP^{TSE}) in Skeletal Muscles of White-Tailed Deer Infected with Chronic Wasting Disease. PlosOne 6(4):e18345.
- Daus ML et al. 2012. Chronic wasting disease: fingerprinting the culprit in risk assessments. Prion 6(1):17-22.
- Denkers ND et al. 2013. Aerosol Transmission of Chronic Wasting Disease in White-Tailed Deer. Journal of Virology 87(3):1890-1892.
- Denkers ND et al. 2020. Very low oral exposure to prions of brain or saliva origin can transmit chronic wasting disease. PlosOne 15(8):e0237410.
- DeVivo MT et al. 2017. Endemic chronic wasting disease causes mule deer population decline in Wyoming. PlosOne 12(10):e0186512.
- Di Bari MA et al. 2013. Chronic Wasting Disease in Bank Voles: Characterization of the Shortest Incubation Time Model for Prion Diseases. PlosPathogens 9(3):e1003219.
- Dorak SJ et al. 2017. Clay content and pH: soil characteristic associations with the persistent presence of chronic wasting disease in northern Illinois. Scientific Reports 7:18062.
- Dulberger J et al. 2010. Estimating Chronic Wasting Disease Effects on Mule Deer Recruitment and Population Growth. Journal of Wildlife Diseases 46(4):1086-1095.
- Edgeworth JA et al. 2011. A standardized comparison of commercially available prion decontamination reagents using the Standard Steel-Binding Assay. Journal of General Virology 92:718-726.
- Edmunds DR et al. 2016. Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PlosOne 11(8):e0161127.
- Edmunds DR et al. 2018. Chronic Wasting Disease Influences Activity and Behavior in White-Tailed Deer. The Journal of Wildlife Management 82(1):138-154.
- EFSA Panel on Biological Hazards (BIOHAZ) et al. 2018. Scientific opinion on chronic wasting disease (II). European Food Safety Authority Journal 16(1):5132.
- Elder AM et al. 2013. In Vitro Detection of prionemia in TSE-Infected Cervids and Hamsters. PlosOne 8(11):e80203.
- Erickson D et al. 2019. The Effect of Chronic Wasting Disease on Resident Deer Hunting Permit Demand in Wisconsin. Animals 9:1096.
- Ernest HB et al. 2010. Molecular genealogy tools for white-tailed deer with chronic wasting disease. The Canadian Journal of Veterinary Research 74:153-156.
- Escobar LE et al. 2019. The ecology of chronic wasting disease in wildlife. Biological Reviews 000-000.
- Fameli AF et al. 2022. Variability in prion protein genotypes by spatial unit to inform susceptibility to chronic wasting disease. Prion 16(1):254-
- Ferreira NC et al. 2021. Detection of chronic wasting disease in mule and white-tailed deer by RT-QuIC analysis of outer ear. Scientific Reports 11:7702.
- Fichet F et al. 2004. Novel methods for disinfection of prion-contaminated medical devices. Lancet 364:521-526.
- Foley AM et al. 2016. Modeled Impacts of Chronic Wasting Disease on White-Tailed Deer in a Semi-Arid Environment. PlosOne 11(10):e0163592.
- Fox KA et al. 2006. Patterns of PrP^{CWD} accumulation during the course of chronic wasting disease infection in orally inoculated mule deer (*Odocoileus hemionus*). Journal of General Virology 87:3451-3461.
- Genovesi S et al. 2007. Direct Detection of Soil-Bound Prions. PlosOne 10:e1069.



- Georgsson G et al. 2006. Infectious agent of sheep scrapie may persist in the environment for at least 16 years. Journal of General Virology 87:3737-3740.
- Giachin G et al. 2014. Prion Protein Interaction with Soil Humic Substances: Environmental Implications. PlosOne 9(6):e100016.
- Goñi F et al. 2014. Mucosal immunization with an attenuated *Salmonella* vaccine partially protects white-tailed deer from chronic wasting disease. Vaccine 33(5):726-733.
- Gordon PMN et al. 2009. Disease-specific motifs can be identified in circulating nucleic acids from life elk and cattle infected with transmissible spongiform encephalopathies. Nucleic Acids Research 37(2):550-556.
- Gough KC et al. 2015. Circulation of prions within dust on a scrapie affected farm. Veterinary Research 46:40.
- Grear DA et al. 2010. Influence of genetic relatedness and spatial proximity on chronic wasting disease infection amount female white-tailed deer. Journal of Applied Ecology 47:532-540.
- Great DA et al. 2006. Demographic Patterns and Harvest Vulnerability of Chronic Wasting Disease Infected White-Tailed Deer in Wisconsin. The Journal of Wildlife Management 70(2):549-553.
- Greenlee JJ et al. 2011. White-tailed deer are susceptible to the agent of sheep scrapie by intracerebral inoculation. Veterinary Research 42:107.
- Greenlee JJ et al. 2012. Susceptibility of cattle to the agent of chronic wasting disease from elk after intracranial inoculation. Journal of Veterinary Diagnostic Investigation 24(6):1087-1093.
- Gross JE et al. 2001. Chronic Wasting Disease in Mule Deer: Disease Dynamics and Control. Journal of Wildlife Management 65(2):205-215.
- Haley NJ et al. 2009. Detection of CWD Prions in Urine and Saliva of Deer by Transgenic Mouse Bioassay. PlosOne 4(3):e4848.
- Haley NJ et al. 2009. Detection of Sub-Clinical CWD Infection in Conventional Test-Negative Deer Long after Oral Exposure to Urine and Feces from CWD+ Deer. PlosOne 4(11):e7990.
- Haley NJ et al. 2011. Detection of Chronic Wasting Disease Prions in Salivary, Urinary, and Intestinal Tissue of Deer: Potential Mechanisms of Prion Shedding and Transmission. Journal of Virology 85(13):6309-6318.
- Haley NJ et al. 2012. Sensitivity of protein misfolding cyclic amplification versus immunohistochemistry in ante-mortem detection of chronic wasting disease. Journal of General Virology 93:1141-1150.
- Haley NJ et al. 2013. Prion-Seeding Activity in Cerebrospinal Fluid of Deer with Chronic Wasting Disease. PlosOne 8(11):e81488.
- Haley NJ et al. 2014. Chronic Wasting Disease of Cervids: Current Knowledge and Future Perspectives. Annual Review of Animal Bioscience 3:8.1-8.21.
- Haley NJ et al. 2017. Estimating chronic wasting disease susceptibility in cervids using real-time quaking-induced conversion. Journal of General Virology 98:2882-2892.
- Haley NJ et al. 2020. Management of chronic wasting disease in ranched elk: conclusions from a longitudinal three-year study. Prion 14(1):76-87.
- Hamir AN et al. 2008. Experimental Transmission of Chronic Wasting Disease (CWD) of Elk (*Cervus elaphus nelsoni*), White-tailed Deer (*Odocoileus virginianus*), and Mule Deer (*Odocoileus hemionus*) to White-tailed Deer by Intracerebral Route. Veterinary Pathology 45:297-306.
- Hamir AN et al. 2011. Experimental transmission of chronic wasting disease (CWD) from elk and white-tailed deer to fallow deer by intracerebral route: Final report. The Canadian Journal of Veterinary Research 75:152-156.
- Hanley BJ et al. 2022. Informing Surveillance through the Characterization of Outbreak Potential of Chronic Wasting Disease in White-Tailed Deer. Ecological Modelling 471:110054



- Harrington RD et al. 2008. A species barrier limits transmission of chronic wasting disease to mink (*Mustela vison*). Journal of General Virology 89(4):1086-1096.
- Heisey DM et al. 2014. Using Auxiliary Information to Improve Wildlife Disease Surveillance When Infected Animals Are Not Detected: A Bayesian Approach. PlosOne 9(3):e89843.
- Henderson DM et al. 2013. Rapid Antemortem Detection of CWD Prions in Deer Saliva. PlosOne 8(9):e74377.
- Henderson DM et al. 2015. Longitudinal Detection of Prion Shedding in Saliva and Urine by Chronic Wasting Disease-Infected Deer by Real-Time Quaking-Induced Conversion. Journal of Virology 89(18):9338-9347.
- Hibler CP et al. 2003. Field validation and assessment of an enzyme-linked immunosorbent assay for detecting chronic wasting disease in mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), and Rocky Mountain Elk (*Cervus elaphus nelson*. Journal of Veterinary Diagnostic Investigation 15:311-319.
- Holsman RH et al. 2010. CWD After "the Fire": Six Reasons Why Hunters Resisted Wisconsin's Eradication Effort. Human Dimensions of Wildlife 15:180-193.
- Hoover CE et al. 2017. Pathways of Prion Spread during Early Chronic Wasting Disease in Deer. Journal of Virology 91(10):e00077-17.
- Hughson AG et al. 2016. Inactivation of Prions and Amyloid Seeds with Hypochlorous Acid. PlosPathogens 12(9):e1005914.
- Jacobson KH et al. 2009. Transport of the Pathogenic Prion Protein through Landfill Materials. Environmental Science & Technology 43(6):2022-2028.
- Jacobson KH et al. 2010. Transport of the Pathogenic Prion Protein through Soils. Journal of Environmental Quality 39(4):1145-1152.
- Janousek WM et al. 2021. Human activities and weather drive contact rates of wintering elk. Journal of Applied Ecology 58:667-676.
- Jennelle CS et al. 2014. Transmission of Chronic Wasting Disease in Wisconsin White-Tailed Deer: Implications for Disease Spread and Management. PlosOne 9(3):e91043.
- Jennelle CS et al. 2018. Applying a Bayesian weighted surveillance approach to detect chronic wasting disease in white-tailed deer. Journal of Applied Ecology 55:2944-2953.
- Jennelle CS et al. 2022. Movement of white-tailed deer in contrasting landscapes influences management of chronic wasting disease. Journal of Wildlife Management e22306.
- Jeong HJ et al. 2012. Development of monoclonal antibodies against the abnormal prion protein isoform (PrPres) associated with chronic wasting disease (CWD). Journal of Veterinary Science 13(4):429-432.
- Jewell JE et al. 2006. Prion protein in cardiac muscle of elk (*Cervus elaphus nelsoni*) and white-tailed deer (*Odocoileus virginianus*) infected with chronic wasting disease. Journal of General Virology 87:3443-3450.
- John TR et al. 2013. Early detection of chronic wasting disease prions in urine of pre-symptomatic deer by real-time quaking-induced conversion assay. Prion 7(3):253-258.
- Johnson CJ et al. 2007. Oral Transmissibility of Prion Disease Is Enhanced by Binding to Soil Particles. PlosPathogens 3(7):e93.
- Johnson CJ et al. 2011. Prion Protein Polymorphisms Affect Chronic Wasting Disease Progression. PlosOne 6(3):e17450.
- Johnson CJ et al. 2012. Highly Efficient Amplification of Chronic Wasting Disease Agent by Protein Misfolding Cyclic Amplification with Beads (PMCAb). PlosOne 7(4):e35383.
- Johnson JT et al. 2021. Effects of Bait on Male White-Tailed Deer Resource Selection. Animals 11:2334.
- Kahn S et al. 2004. Chronic wasting disease in Canada: Part 1. Canadian Veterinary Journal 45:397-404.
- Keane DP et al. 2008. Chronic wasting disease in Wisconsin white-tailed deer farm. Journal of Veterinary Diagnostic Investigation 20:698-703.
- Keane DP et al. 2008. Comparison of retropharyngeal lymph node and obex region of the brainstem in detection of chronic wasting disease in white-tailed deer (*Odocoileus virginianus*). Journal of Veterinary Diagnostic Investigation 20:58-60.



- Ketz AC et al. 2022. Pathogen-mediated selection and management implications for white-tailed deer exposed to chronic wasting disease. Journal of Applied Ecology 00:1-15.
- Kim HJ et al. 2012. Establishment of a Cell Line Persistently Infected with Chronic Wasting Disease Prions. The Journal of Veterinary Medical Science 74(10):1377-1380.
- Kong Q et al. 2005. Chronic Wasting Disease of Elk: Transmissibility to Humans Examined by Transgenic Mouse Models. The Journal of Neuroscience 25(35):7944-7949.
- Konold T et al. 2015. Objects in contact with classical scrapie sheep act as a reservoir for scrapie transmission. Frontiers in Veterinary Science 2:32
- Kramm C et al. 2019. *In Vitro* detection of Chronic Wasting Disease (CWD) prions in semen and reproductive tissues of white tailed deer bucks (*Odocoileus virginianus*). PlosOne 14(12):e0226560.
- Kreeger TJ et al. 2006. Oral Transmission of Chronic Wasting Disease in Captive Shira's Moose. Journal of Wildlife Diseases 42(3):640-645.
- Krumm CE et al. 2005. Relative Vulnerability of Chronic Wasting Disease Infected Mule Deer to Vehicle Collisions. Journal of Wildlife Diseases 41(3):503-511.
- Krumm CE et al. 2010. Mountain lions prey selectively on prion-infected mule deer. Biology Letters 6:209-211.
- Kurt TD et al. 2014. Prion Transmission Prevented by Modifying the β2-α2 Loop Structure of Host PrP^c. The Journal of Neuroscience 34(3):1022-1027.
- Kurt TD et al. 2015. Human prion protein sequence elements impede cross-species chronic wasting disease transmission. The Journal of Clinical Investigation 125(4):1485-1496.
- Kyle LM et al. 2013. Introducing a Rigid Loop Structuce from Deer into Mouse Prion Protein Increases Its Propensity for Misfolding *In Vitro*. PlosOne 8(6):e66715.
- LaCava MEF et al. 2021. Spatio-temporal analyses reveal infectious disease-driven selection in a free-ranging ungulate. Royal Society Open Science 8:210802.
- Lacroux C et al. 2014. Preclinical Detection of Varian CJD and BSE Prions in Blood. PlosPathogens 10(6):e1004202.
- LaFauci G et al. 2006. Passage of chronic wasting disease prion into transgenic mice expression Rocky Mountain elk (*Cervus elaphus nelson*) PrP^c. Journal of General Virology 87:3773-3780.
- Lee J et al. 2013. Prion Diseases as Transmissible Zoonotic Diseases. Osong Public Health and Research Perspectives 4(1):57-66.
- Lee YH et al. 2013. Experimental Chronic Wasting Disease in Wild Type VM Mice. The Journal of Veterinary Medical Science 75(8):1107-1110.
- Lee YH et al. 2013. Strain Characterization of the Korean CWD Cases in 2001 and 2004. The Journal of Veterinary Medical Science 75(1):95-98.
- Li M et al. 2021. RT-QuIC detection of CWD prion seeding activity in white-tailed deer muscle tissues. Scientific Reports 11:16759.
- Luers L et al. 2013. Seeded Fibrillation as Molecular Basis of the Species Barrier in Human Prion Diseases. PlosOne 8(8):e72623.
- Ma X et al. 2007. Adsorption of Pathogenic Prion Protein to Quartz Sand. Environmental Science & Technology 20(20):40.
- Magle SB et al. 2013. Evaluating Spatial Overlap and Relatedness of White-tailed Deer in a Chronic Wasting Disease Management Zone. PlosOne 8(2):e56568.
- Manjerovic MB et al. 2014. The importance of localized culling in stabilizing chronic wasting disease prevalence in white-tailed deer populations. Preventive Veterinary Medicine 113:139-145.
- Marsh RF et al. 2005. Interspecies Transmission of Chronic Wasting Disease Prions to Squirrel Monkeys (*Saimiri sciureus*). Journal of Virology 79(21):13794-13796.
- Mateus-Pinilla N et al. 2013. Evaluation of a wild white-tailed deer population management program for controlling chronic wasting disease in Illinois, 2003-2008. Preventive Veterinary Medicine 110:541-548.
- Mathiason CK et al. 2006. Infectious Prions in the Saliva and Blood of Deer with Chronic Wasting Disease. Science 314:133-136.
- Mathiason CK et al. 2009. Infectious Prions in Pre-Clinical Deer and Transmission of Chronic Wasting Disease Solely by Environmental Exposure. PlosOne 4(6):e5916.



- Mathiason CK et al. 2013. Susceptibility of Domestic Cats to Chronic Wasting Disease. Journal of Virology 87(4):1947-1956.
- Mathiason CK. 2022. Large animal models for chronic wasting disease. Cell and Tissue Research https://doi.org/10.1007/s00441-022-03590-4.
- Matsumoto T et al. 2012. Association mapping of genetic risk factors for chronic wasting disease in wild deer. Evolutionary Applications 6:340-
- Mawdsley JR. 2020. Phylogenetic Patterns Suggest Broad Susceptibility to Chronic Wasting Disease Across Cervidae. Wildlife Society Bulletin 1-4:wsb.1059.
- McDonnell G et al. 2005. Cleaning investigations to reduce the risk of prion contamination on manufacturing surfaces and materials. European Journal of Parenteral & Pharmaceutical Sciences 10(3):67-72.
- McNulty E et al. 2019. Comparison of conventional, amplification and bio-assay detection methods for a chronic wasting disease inoculum pool. PlosOne 14(5):e0216621.
- Mejia-Salazar MF. 2018. Use of environmental sites by mule deer: a proxy for relative risk of chronic wasting disease exposure and transmission. Ecosphere 9:1-18.
- Michel B et al. 2012. Genetic Depletion of Complement Receptors CD21/35 Prevents Terminal Prion Disease in a Mouse Model of Chronic Wasting Disease. The Journal of Immunology 189:4520-4527.
- Miller MW et al. 1998. Epidemiology of Chronic Wasting Disease In Captive Rocky Mountain Elk. Journal of Wildlife Diseases 34(3):532-538.
- Miller MW et al. 2000. Epizootiology of Chronic Wasting Disease in Free-Ranging Cervids in Colorado and Wyoming. Journal of Wildlife Diseases 36(4):676-690.
- Miller MW et al. 2003. Horizontal prion transmission in mule deer. Nature 425:35.
- Miller MW et al. 2004. Environmental Sources of Prion Transmission in Mule Deer. Emerging Infectious Diseases 10(6):1003-1006.
- Miller MW et al. 2004. Epidemiology of Chronic Wasting Disease in Captive White-Tailed and Mule Deer. Journal of Wildlife Diseases 40(2):320-327.
- Miller MW et al. 2005. Epidemiology of Chronic Wasting Disease in Free-Ranging Mule Deer: Spatial, Temporal, and Demographic Influences on Observed Prevalence Patterns. Journal of Wildlife Diseases 41(2):275-290.
- Miller MW et al. 2008. Lions and Prions and Deer Demise. PlosOne 3(12):e4019.
- Miller MW et al. 2012. Survival Patterns in White-tailed and Mule Deer after Oral Inoculation with a Standardized, Conspecific Prion Dose. Journal of Wildlife Diseases 48(2):526-529.
- Miller MW et al. 2016. The First Five (or More) Decades of Chronic Wasting Disease: Lessons for the Five Decades to Come. Transactions of the North American Wildlife and Natural Resources Conference 81: in press.
- Miller MW et al. 2020. Hunting Pressure Modulates Prion Infection Risk in Mule Deer Herds. Journal of Wildlife Diseases 56(4):000-000.
- Miller MW et al. 2021. Inferring Chronic Wasting Disease Incidence from Prevalence Data. Journal of Wildlife Diseases 57(3):000-000.
- Miller WL et al. 2020. Assessment of spatial genetic structure to identify populations at risk for infection of an emerging epizootic disease. Ecology and Evolution 00:1-14.
- Miller WL et al. 2020. Can genetic assignment tests provide insight on the influence of captive egression on the epizootiology of chronic wasting disease?. Evolutionary Applications 13:715-726.
- Monello RJ et al. 2013. Efficacy of Antemortem Rectal Biopsies to Diagnose and Estimate Prevalence of Chronic Wasting Disease in Free-Ranging Cow Elk (*Cervus elaphus nelsoni*). Journal of Wildlife Diseases 49(2):270-278.



- Monello RJ et al. 2014. Survival and Population Growth of a Free-Ranging Elk Population With a Long History of Exposure to Chronic Wasting Disease. The Journal of Wildlife Management 78(2):214-223.
- Moore SJ et al. 2017. Experimental Transmission of the Chronic Wasting Disease Agent to Swine after Oral or Intracranial Inoculation. Journal of Virology 91(19):e00926-17.
- Morawski AR et al. 2013. *In Vitro* prion protein conversion suggests risk of bighorn sheep (*Ovis canadensis*) to transmissible spongiform encephalopathies. BCM Veterinary Research 9:157.
- Motes CM et al. 2008. Assessing the presence of BSE and scrapie in slaughterhouse wastewater. Journal of Applied Microbiology 105(5):1649-1657.
- Murayama Y et al. 2007. Urinary excretion and blood levels of prions in scrapie-infected hamsters. Journal of General Virology 88:2890-2898.
- Mysterud A et al. 2019. A review of chronic wasting disease in North America with implications for Europea European Journal of Wildlife Research 65:26.
- Mysterud A et al. 2020. Hunting strategies to increase detection of chronic wasting disease in cervids. Nature Communications 11:4392.
- Nalls AV et al. 2013. Mother to Offspring Transmission of Chronic Wasting Disease in Reeves' Muntjac Deer. PlosOne 8(8):e71844.
- Nalls AV et al. 2021. Detection of Chronic Wasting Disease Prions in Fetal Tissues of Free-Ranging White-Tailed Deer. Viruses 13:2430.
- Nemani SK et al. 2020. Exposure Risk of Chronic Wasting Disease in Humans. Viruses 12:1454.
- Nichols TA et al. 2009. Detection of protease-resistant cervid prion protein in water from a CWD-endemic area. Prion 3(3):171-183.
- Nichols TA et al. 2012. Detection of prion protein in the cerebrospinal fluid of elk (*Cervus canadensis nelsoni*) with chronic wasting disease using protein misfolding cyclic amplification. Journal of Veterinary Diagnostic Investigation 24(4):746-749.
- Nichols TA et al. 2013. Intranasal Inoculation of White-Tailed Deer (*Odocoileus virginianus*) with Lyophilized Chronic Wasting Disease Prion Particulate Complexed to Montmorillonite Clay. PlosOne 8(5):e62455.
- Nicholson EM et al. 2011. PrPsc detection in formalin-fixed paraffin-embedded tissue by ELISA. BMC Research Notes 4:432.
- Nobert BR et al. 2016. Landscape connectivity predicts chronic wasting disease risk in Canada. Journal of Applied Ecology 53:1450-1459.
- Novakofski J et al. 2005. Prion biology relevant to bovine spongiform encephalopathy. American Society of Animal Science 83:1455-1476.
- O'Brien et al. 2002. Epidemiology of Mycobacterium bovis in free-ranging white-tailed deer, Michigan, USA, 1995-2000. Preventive Veterinary Medicine 54:47-63.
- O'Rourke KI et al. 2003. Abundant PrPCWD in tonsil from mule deer with preclinical chronic wasting disease. Journal of Veterinary Diagnostic Investigation 15:320-323.
- Otero A et al. 2021. Chronic wasting disease: a cervid prion infection looming to spillover. Veterinary Research 52:115.
- Perrott MR et al. 2012. Evidence for distinct chronic wasting disease (CWD) strains in experimental CWD in ferrets. Journal of General Virology 93:212-221.
- Pilon JL et al. 2013. Immunization with a Synthetic Pepride Vaccine Fails to Protect Mule Deer (*Odocoileus hemionus*) from Chronic Wasting Disease. Journal of Wildlife Diseases 49(3):694-698.
- Pirisinu L et al. 2018. Novel Type of Chronic Wasting Disease Detected in Moose (*Alces alces*), Norway. Emerging Infectious Diseases 24(12):2210-2218.
- Plummer IH et al. 2017. Temporal patterns of chronic wasting disease prion excretion in three cervid species. Journal of General Virology 98:1932-1942



- Plummer IH et al. 2018. Mineral licks as environmental reservoirs of chronic wasting disease prions. PlosOne 13(5):e0196745.
- Potapov A et al. 2012. Wildlife disease elimination and density dependence. Proceedings of The Royal Society B 279:3139-3145.
- Potapov A et al. 2016. Chronic Wasting Disease: Transmission Mechanisms and the Possibility of Harvest Management. PlosOne 11(3):e0151039.
- Pulford B et al. 2012. Detection of PrP^{CWD} In Feces From Naturally Exposed Rocky Mountain Elk (*Cervus elaphus nelsoni*) Using Protein Misfolding Cyclic Amplification. Journal of Wildlife Diseases 48(2):425-434.
- Pushie MJ et al. 2011. An NMR Metabolomics Study of Elk Inoculated with Chronic Wasting Disease. Journal of Toxicology and Environmental Health, Part A 74(22-24):1476-1492.
- Race B et al. 2009. Prion Infectivity in Fat of Deer with Chronic Wasting Disease. Journal of Virology 83(18):9608-9610.
- Race B et al. 2009. Susceptibilities of Nonhuman Primates to Chronic Wasting Disease. Emerging Infectious Diseases 15(9):1366-1376.
- Race B et al. 2011. *In Vivo* Comparison of Chronic Wasting Disease Infectivity from Deer with Variation at Prion Protein Residue 96[▽]. Journal of Virology 85(17):9235-9238.
- Race BL et al. 2007. Levels of Abnormal Prion Protein in Deer and Elk with Chronic Wasting Disease. Emerging Infectious Diseases 13(6):824-830.
- Rhyan JC et al. 2011. Failure of Fallow Deer (*Dama dama*) to Develop Chronic Wasting Disesae When Exposed to a Contaminated Environment and Infected Mule Deer (*Odocoileus hemionus*). Journal of Wildlife Diseases 47(3):739-744.
- Rivera NA et al. 2019. Chronic Wasting Disease In Cervids: Prevalence, Impact And Management Strategies. Veterinary Medicine: Research and Reports 10:123-139.
- Robinson SJ et al. 2012. The role of genetics in chronic wasting disease of North American cervids. Prion 6(2):153-162.
- Rogers KG et al. 2011. Diversity and Distribution of White-Tailed Deer mtDNA Lineages in Chronic Wasting Disease (CWD) Outbreak Areas in Southern Wisconsin, USA. Journal of Toxicology and Environmental Health, Part A 74(22-24):1521-1535.
- Rubenstein R et al. 2011. Prion Disease Detection, PMCA Kinetics, and IgG in Urine from Sheep Naturally/Experimentally Infected with Scrapie and Deer with Preclinical/Clinical Chronic Wasting Disease. Journal of Virology 85(17):9031-9038.
- Ruiz MA et al. 2013. Influence of landscape factors and management decisions on spatial and temporal patterns of the transmission of chronic wasting disease in white-tailed deer. Geospatial Health 8(1):215-227.
- Safar JG et al. 2008. Transmission and detection of prions in feces. Journal of Infectious Disease 198(1):81-89.
- Salazar MFM et al. 2016. Infectious Disease and Grouping Patterns in Mule Deer. PlosOne 11(3):e0150830.
- Salazar MFM et al. 2017. Mule deer spatial association patterns and potential implications for transmission of an epizootic disease. PlosOne 12(4):e0175385.
- Salazar MFM et al. 2018. Use of environmental sites by mule deer: a proxy for relative risk of chronic wasting disease exposure and transmission. Ecosphere 9(1):e02055.
- Samuel MD et al. 2016. Chronic wasting disease in white-tailed deer: infection, mortality, and implications for heterogeneous transmission. Ecology 97(11):3195-3205.
- Sandberg MK et al. 2010. Chronic wasting disease prions are not transmissible to transgenic mice overexpressing human prion protein. Journal of General Virology 91:2651-2657.
- Sargeant GA et al. 2011. Implications of chronic wasting disease, cougar predation, and reduced recruitment for elk management. Journal of Wildlife Management 75(1):171-177.



- Sargeant GA et al. 2021. Spatial network clustering reveals elk population structure and local variation in prevalence of chronic wasting disease. Ecosphere 12(12):1-16.
- Saunders SE et al. 2008. Prions in the Environment. Prion 2(4):162-169.
- Saunders SE et al. 2009. Prion Protein Adsorption to Soil in a Competitive Matrix is Slow and Reduced. Environmental Science Technology 43(14):5242-5248.
- Saunders SE et al. 2010. Enzymatic Digestion of Chronic Wasting disease Prions Bound to Soil. Environmental Science Technology 44(11):4129-4135.
- Saunders SE et al. 2011. An Enzymatic Treatment of Soil-Bound Prions Effectively Inhibits Replication. Applied and Environmental Microbiology 77(13):4313-4317.
- Saunders SE et al. 2011. Effects of Solution Chemistry and Aging Time on Prion Protein Adsorption and Replication of Soil-Bound Prions. PLoS ONE 6(4):e18752.
- Saunders SE et al. 2011. Replication Efficiency of Soil-Bound Prions Varies with Soil Type. Journal of Virology 85(11):5476-5482.
- Saunders SE et al. 2012. Resistance of soil-bound prions to rumen digestion. PLoS ONE 7(8):e44051.
- Schauber EM et al. 2015. Social Affiliation and Contact Patterns Among White-Tailed Deer in Disparate Landscapes: Implication for Disease Transmission. Journal of Mammalogy 96(1):16-28
- Schroeder SA et al. 2021. Cognitive and Behavioral Coping in Response to Wildlife Disease: The Case of Hunters and Chronic Wasting Disease. Human Dimensions of Wildlife 27(3):251-272.
- Schuler KL et al. 2005. Tonsillar Biopsy Test for Chronic Wasting Disease: Two Sampling Approaches in Mule Deer and White-Tailed Deer. Journal of Wildlife Diseases 41(4):820-824.
- Schwabenlander MD et al. 2013. A Case of Chronic Wasting Disease in a Captive Red Deer (Cervus elaphus). Journal of Veterinary Diagnostic Investigation 25(5):573-576.
- Schwabenlander MD et al. 2022. Comparison of Chronic Wasting Disease Detection Methods and Procedures: Implications for Free-Ranging White-Tailed Deer (Odocoileus virginianus) Surveillance and Management. Journal of Wildlife Diseases 58(1):50-62.
- Seabury CM et al. 2020. Accurate Genomic Predictions for Chronic Wasting Disease in U.S. White-Tailed Deer. G3 10(4):1433-1441.
- Seelig DM et al. 2011. Chronic Wasting Disease Prion Trafficking via the Autonomic Nervous System. Immunopathology and Infectious Diseases 179(3):1319-1328.
- Seidel B et al. 2007. Scrapie Agent (Strain 263K) Can Transmit Disease via the Oral Route after Persistence in Soil over Years. PLos ONE 2(5):e435.
- Siemer WF et al. 2021. Hunter Beliefs and Behaviors Related to Chronic Wasting Disease in 2021: Findings from a Baseline Study. Center for Conservation Social Sciences Publication. Series 21-2. Department of Natural Resources, College of Agriculture and Life Science, Cornell University, Ithaca, NY. 54pp.
- Sigurdson CJ et al. 1999. Oral Transmission and Early Lymphoid Tropism of Chronic Wasting Disease PrPres in Mule Deer Fawns. Journal of General Virology 80:2757-2764.
- Sigurdson CJ. 2008. A Prion Disease of Cervids: Chronic Wasting Disease. Veterinary Research 39(4):41.
- Smith CB et al. 2011. Fate of Prions in Soil: A Review. Journal of Environmental Quality 40(2):449-461.
- Smolko P et al. 2021. Spatio-temporal Changes in Chronic Wasting Disease Risk in Wild Deer During 14 Year of Surveillance in Alberta, Canada. Preventative Veterinary Medicine 197:105512.
- Sohn H et al. 2020. Experimental Oral Transmission of Chronic Wasting Disease to Sika Deer (Cervus nippon). Prion 14(1):271-277.



- Sornesen A et al. 2014. Impacts of Wildlife Baiting and Supplemental Feeding on Infectious Disease Transmission Risk: A Synthesis of Knowledge. Preventive Veterinary Medicine 113:356-363.
- Spraker TR et al. 1997. Spongiform Encephalopathy in Free-Ranging Mule Deer (Odocoileus Hemionus), White-Tailed Deer (Odocoileus virginianus) and Rocky Mountain Elk (Cervus elaphus nelsoni) in Northcentral Colorado. Journal of Wildlife Diseases 33(1):1-6.
- Spraker TR et al. 2006. Detection of PrPCWD in Postmortem Rectal Lymphoid Tissues in Rocky Mountain Elk (Cervus elaphus nelsoni) Infected with Chronic Wasting Disease. Journal of Veterinary Diagnostic Investigation 18:553-557.
- Spraker TR. 2009. Antemortem Detection of PrPCWD in Preclinical, Ranch-Raised Rocky Mountain Elk (Cervus elaphus nelson) by Biopsy of the Rectal Mucosa. Journal of Veterinary Diagnostic Investigation 21:15-24.
- Stack MJ et al. 2004. The First Canadian Indigenous Case of Bovine Spongiform Encephalopathy (BSE) has Molecular Characteristics for Prion Protein that are Similar to those of BSE in the United Kingdom but Differ from those of Chronic Wasting Disease in Captive Elk and Deer. Canadian Veterinary Journal 45:825-830.
- Stevens DJ et al. 2009. Early Onset Prion Disease from Octarepeat Expansion Correlates with Copper Binding Properties. PLoS Pathogens 5(4):e1000390.
- Wagenfuhr K and Beekes M. 2012. Harnessing prions as Test Agents for the Development of Broad-Range Disinfectants. Prion 6(1):1-6.
- Walsh DP and Miller MW. 2010. A Weighted Surveillance Approach for Detecting Chronic Wasting Disease Foci. Journal of Wildlife Diseases 46(1):118-135.
- Walsh DP et al. 2012. Enhanced Surveillance Strategies for Detecting and Monitoring Chronic Wasting Disease in Free-Ranging Cervids. U. S. Geological Survey Open File Report 2012-1036. 42p.
- Walter DW et al. 2011. Soil Clay Content Underlies Prion Infection Odds. Nature Communications 2:200.
- Wasserberg G et al. 2009. Host Culling as an Adaptive Management Tool for Chronic Wasting Disease in White-Tailed Deer: A Modeling Study. Journal of Applied Ecology 46:457-466.
- Watts JC et al. 2006. The Expanding Universe of Prion Diseases. PLoS Pathogens 2(3):e26.
- White SN et al. 2010. Association Analysis of PRNP Gene Region with Chronic Wasting Disease in Rocky Mountain Elk. BioMed Central Research Notes 3:314.
- Wild MA et al. 2002. Preclinical diagnosis of chronic wasting disease in captive mule deer (Odocoileus hemionus) and white-tailed deer (Odocoileus virginianus) using tonsillar biopsy. Journal of General Virology 83:2629-2634.
- Wild MA et al. 2011. The role of predation in disease control: A comparison of selective and nonselective removal on prion disease dynamics in deer. Journal of Wildlife Diseases 47(1):78-93.
- Williams ES et al. 1980. Chronic wasting disease of captive mule deer: A spongiform encephalopathy. Journal of Wildlife Diseases 16(1):89-98.
- Williams ES et al. 2018. Cattle (Bos taurus) resist chronic wasting disease following oral inoculation challenge or ten years' natural exposure in contaminated environments. Journal of Wildlife Diseases 54(3):460-470.
- Williams ES. 2005. Review Article: Chronic Wasting Disease. Veterinary Pathology 42:530-549.
- Williams K et al. 2019. Inactivation of chronic wasting disease prions using sodium hypochlorite. PLoS ONE 14(10):e223659.
- Wilson R et al. 2012. Chronic wasting disease and atypical forms of bovine spongiform encephalopathy and scrapie are not transmissible to mice expressing wild-type levels of human prion protein. Journal of General Virology 93:1624-1629.
- Wisniewski T et al. 2012. Could immunomodulation be used to prevent prion diseases? Expert Review of Anti-infective Therapy 10(3):307-317.
- Wolfe LL et al. 2004. Feasibility of "test-and-cull" for managing chronic wasting disease in urban mule deer. Wildlife Society Bulletin 32(2):500-505.



Wolfe LL et al. 2007. PrPCWD in rectal lymphoid tissue of deer (Odocoileus spp.). Journal of General Virology 88:2078-2082.

- Wolfe LL et al. 2014. "Atypical" chronic wasting disease in PRNP Genotype 225FF mule deer. Journal of Wildlife Diseases 50(3):660-665.
- Wolfe LL et al. 2018. Evaluation of a test and cull strategy for reducing prevalence of chronic wasting disease in mule deer (Odocoileus hemionus). Journal of Wildlife Diseases 54(3):511-519.
- Wolfe LL et al. 2020. Effect of oral copper supplementation of susceptibility in white-tailed deer (Odocoileus virginianus) to chronic wasting disease. Journal of Wildlife Diseases 56(3):568-575.
- Wolfe LL et. al. 2012. Assessment of prospective preventive therapies for chronic wasting disease in mule deer. Journal of Wildlife Diseases 48(2)530-533.
- Wood ME et al. 2018. Accelerated onset of chronic wasting disease in elk (Cervus canadensis) vaccinated with a PrPSC -specific vaccine and housed in a prion contaminated environment. Vaccine 36:7737-7743.
- Xie Z et al. 2006. Chronic Wasting Disease of Elk and Deer and Creutzfeldt-Jakob Disease. The Journal of Biological Chemistry 281(7):4199-4206.
- Xie Z et al. 2006. Chronic wasting disease of elk and deer and Creutzfeldt-Jakob disease. Journal of Biological Chemistry 281(7):4199-4206.
- Xu J et al. 2022. Spreading speed of chronic wasting disease across deer groups with overlapping home ranges. Journal of Theoretical Biology 547:111135.



North Dakota House of Representatives

STATE CAPITOL 600 EAST BOULEVARD BISMARCK, ND 58505-0360



COMMITTEES:

Education Transportation

Representative Dori Hauck

District 36 2461 81st Avenue SW Hebron, ND 58638-9510 dorihauck@ndlegis.gov

Mr. Chair and Members of the Committee.

Dori Hauck, Representative for District 36 and I am here today on behalf of District 36 as well as myself, a private landowner, in opposition to HB1151.

I am a landowner and come from a hunting family. My family is still a hunting family. My niece, nephew, dad, brother-inlaw and friends from Texas and Louisiana come every fall. My friends from the Fargo area come every spring. When some outdoor enthusiasts began the archery and trap shooting at the school in Richardton-Taylor, I helped get those programs promoted within the school and the community. Every opportunity each of us can take to spend more time away from devices is a great opportunity!

Over the past 45 years, I have listened to the stories of the great hunters – my dad and his friends – and some of those stories I have heard so many times I can recite them word for word. There is not one story from one of these hunters that starts out with "I was stalking a bait pile". This bill is removing the SPORT from the sport of hunting. You win some and you lose some.

I've taken some time to visit with a variety of hunters and landowners regarding this proposed legislation.

The current language of this bill does not set any parameters leading me to believe the bill authorizes 365 days a year to bait. Let me suggest a possible outcome. As a landowner, I will bait as early as possible drawing the majority of the deer and pheasants to my land because certainly we all know that is the purpose – training animals where the easiest meal is. As a landowner, I have private property rights and the right to keep hunters off of my property. So, I will bait the wildlife and prevent youth and adults from hunting.

I was reminded by the hunters I visited with that we have conservation efforts available via the Conservation Reserve Program, Private Land Open To Sportsmen and food plots which could be considered at baiting. These efforts encourage the wildlife of all shapes and sizes to remain wild while providing a more native type of food source. These options let wildlife to be wild giving many more individuals the opportunity to participate in the SPORT of hunting. This is the sport of hunting as I know it.

Ranchers have experienced what happens when a concentration of deer begin congregating and standing on stacked hay. This hay is then fed to beef cattle which increases the odds there will be aborted calves. Concentrating wildlife promotes the chance of spreading disease.

Each of us is a steward of the land. As a landowner, I am a temporary steward of the land in my care as it will not be mine forever. At no time do I own any of the wildlife. They are not my deer or my pheasants even though I see them every day. Young hunters might be disappointed if they don't fill their tag on the first trip. In the true spirit of hunting, this is something we all need to learn is perfectly acceptable and use that miss to hone skills as a hunter and become a GOOD SPORTSMAN over time. The misses make great stories and the success so much more meaningful.

I encourage you to support the SPORT of hunting and vote No on this proposed legislation, HB1151.

Dori Hauck

(218) 790.1345

TESTIMONY of MIKE McENROE HB 1151 HOUSE ENERGY and NATURAL RESOURCES COMMITTEE

Chairman Porter and members of the House Energy and Natural Resources Committee:

For the record, my name is Mike McEnroe of Fargo, ND. Thank you for the opportunity to provide testimony on HB1151.

I am testifying as one who has hunted in North Dakota since 1961, had a career as a professional wildlife biologist and land manager, and spent 29 years as a Hunter Education instructor. I have hunted deer and big game in North Dakota since 1975.

I am opposed to HB 1151 and to the idea that the bill would prevent or prohibit the North Dakota Game and Fish Department from responsibly and scientifically managing our wildlife resources and North Dakotan's hunting opportunities.

You have heard that there is no science or are no facts to support the Department's baiting ban to reduce the transmission of Chronic Wasting Disease (CWD). This is totally and completely false! Please take a look at the Department's 2023 CWD Management and Surveillance Plan. There are 37 scientific, peer-reviewed reports on CWD studies and research conducted across the United States and Canada since the 1970s. The results of these studies overwhelmingly draws the conclusions that "to reduce the risk of CWD transmission and establishment through the unnatural concentration of cervids (deer), states should eliminate baiting and feeding of all wild cervids (deer)." This is the science and the considered opinion and position of some 23 states including Montana, South Dakota, and Minnesota that adjoin North Dakota.

You have heard that baiting is necessary or advisable to ensure our youth hunters are successful and continue as hunters and wildlife enthusiasts.

The ban on baiting is NOT about recruiting and retaining our youth hunters. It is about protecting and managing our deer herd so that those youth hunters will have deer to hunt 20 years from now.

Hunters and sportsmen/women for over 100 years have supported restrictions or regulations designed to limit personal choices and techniques in favor of protecting our wildlife resources. We have outlawed baiting for waterfowl hunting, live decoys, placed limits on cartridge or shell capacities on our firearms, restricted certain gauges or calibers from being used for hunting, set hunting seasons that protect wildlife during the breeding season and during the winter, prohibited night shooting and the use of spotlights. All these restrictions prevented someone's personal choices in preference of the benefit to the wildlife resource and to sportsmen overall.

Protecting our deer and big game populations from CWD transmission is another conservation practice that real sportsmen should support.

I urge you to support the Game and Fish Department's CWD Plan and give HB 1151 a DO NOT Pass vote.

Thank you.

Mike McEnroe, Fargo

23.0021.02001 Title. Prepared by the Legislative Council staff for Representative Thomas January 19, 2023

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1151

Page 1, line 8, after "hunting" insert "on private lands" Renumber accordingly

AFWA Technical Report on Best Management Practices for Prevention, Surveillance, and Management of Chronic Wasting Disease

Association of Fish and Wildlife Agencies, Washington. D. C.



AFWA Technical Report on Best Management Practices for Prevention, Surveillance, and Management of Chronic Wasting Disease

Association of Fish and Wildlife Agencies, Washington, D. C.

Report Editors: Colin Gillin, Oregon Department of Fish and Wildlife and Jonathan Mawdsley, Association of Fish and Wildlife Agencies

Editorial Review Team: Colin Gillin, Lou Cornicelli, Mark Drew, John Fischer, Jonathan Mawdsley, Kelly Straka, Margaret Wild, Rachel Boswell

Contributors and Reviewers:

Jen Ballard, Arkansas Game and Fish Commission

Lou Cornicelli, Minnesota Division of Fish and Wildlife

Melinda Cosgrove, Michigan Department of Natural Resources

Mark Cunningham, Florida Fish and Wildlife Conservation Commission

Bob Dittmar, Texas Parks and Wildlife Department

Mark Drew, Idaho Department of Fish and Game

Hank Edwards, Wyoming Game and Fish Department

Heather Fenton, Northwest Territories Department of Environment and Natural Resources

John Fischer, Southeastern Cooperative Wildlife Disease Study

Colin Gillin, Oregon Department of Fish and Wildlife

Daniel Grove, North Dakota Game and Fish Department

Anne Justice-Allen, Arizona Game and Fish Department

Megan Kirchgessner, Virginia Department of Game and Inland Fisheries

Lane Kisonak, Association of Fish and Wildlife Agencies

Wayne Laroche, Pennsylvania Game Commission

Mitch Lockwood, Texas Parks and Wildlife Department

Lindsey Long, Wisconsin Department of Natural Resources

Jonathan Mawdsley, Association of Fish and Wildlife Agencies

Brandon Munk, California Department of Fish and Wildlife

Daniel O'Brien, Michigan Department of Natural Resources

Maria Palamar, North Carolina Wildlife Resources Commission

Margo Pybus, Alberta Fish and Wildlife

Jennifer Ramsey, Montana Department of Fish, Wildlife & Parks

Annette Roug, Utah Division of Wildlife Resources

Mark Gregory Ruder, Southeastern Cooperative Wildlife Disease Study

Krysten Schuler, Cornell University College of Veterinary Medicine

Kelly Straka, Michigan Department of Natural Resources

Margaret Wild, National Park Service

Peregrine Wolff, Nevada Department of Wildlife

Mary Wood, Wyoming Game and Fish Department

Citation: Gillin, Colin M., and Mawdsley, Jonathan R. (eds.). 2018. AFWA Technical Report on Best Management Practices for Surveillance, Management and Control of Chronic Wasting Disease. Association of Fish and Wildlife Agencies, Washington, D. C. 111 pp.

Contents

AFWA Best Management Practices for Prevention, Surveillance, and Management of Chro Disease (CWD)	
1 - Introduction	
2 - Background	
Section 1: PREVENTION of CWD Introduction and Establishment	
3 - Movement of Live Cervids	
4 - Movement of Hunter-Harvested Cervid Carcasses and Tissues	
5 - Cervid Urine Products Related to the Introduction of Prions to the Environment	
6 - Import of Reproductive Tissues/Products and Gametes	
7 - Preventing Unnatural Concentrations of Cervids – Baiting and Feeding	
Section 2: SURVEILLANCE	
8 - Validated CWD Testing for Cervids	37
9 - Surveillance Strategies in CWD-Negative States and Provinces or Populations	
Section 3: MANAGEMENT	
10 - Development of a CWD Management Plan	
11 - Managing CWD Prevalence	
12 - Monitoring of CWD Enzootic Populations	
13 - Rehabilitation of Deer and other Cervids	
14 - Carcass Disposal	
15 - Recommended Decontamination and Disinfection Methods for Equipment	
Section 4: SUPPORTING ACTIVITIES	
16 – Internal and Public Communications	84
17 – Human Dimensions	
18 - Economic Impacts of Chronic Wasting Disease	
19 - Optimizing the Contribution of Research to CWD Management	
20 - CWD and Cervid Regulations in North America	
21 – Relevant Case Law	
22 - CWD and Public Health	

1 - Introduction

Chronic wasting disease (CWD; Williams and Young 1980), is considered the most important disease threatening North American cervids. A fatal, transmissible, and degenerative disease of deer, elk, moose, and other species of the family Cervidae, CWD affects all native North American cervid species. The persistent, infective, environmental contamination caused by the causative agent means that state and provincial wildlife management agencies have relatively few options to mitigate the effects of this disease.

The intended audience of this document is the leadership of the United States and Canadian state, federal, provincial, and territorial fish and wildlife agencies, including directors, program administrators, and managers who make management and policy decisions for wildlife populations within their authorities and jurisdictions. The goal of this document is to provide directors, administrators and managers with an account of current tools and recommendations available so they can craft and implement their own suite of management practices to help in the fight against CWD on a state or provincial scale.

In the March 2017, the Association of Fish and Wildlife Agencies (AFWA) charged the AFWA Fish and Wildlife Health Committee with developing a set of concise best management practices (BMPs) for prevention, surveillance, and management of CWD. This guidance document represents contributions from more than 30 wildlife health specialists, veterinarians, biologists and agency leaders who are actively managing CWD across North America. The document is built on the best peer reviewed science and field-tested methods that can inform decisions regarding the prevention or management of CWD. The format provides AFWA Directors with topical summaries accompanied by best practices or guidance based on science, along with appropriate literature cited or other resources. Where appropriate, the document also provides agencies with options or alternatives, including those that may not feasible or practical for all jurisdictions or under every scenario. However, the authors approached this task with the objective of presenting the BMPs to exclude detect, and/or manage CWD within their jurisdictions. Because our knowledge of this disease continues to evolve, these BMPs are meant to be a dynamic, living document that can be updated when new information is available. It should also be noted that these BMPs are scientific guidance documents and cannot by themselves affect or alter any state's laws regarding public ownership of wildlife.

2 - Background

Chronic wasting disease (CWD) became well known to wildlife managers well after it appeared in North American free-ranging deer and elk populations in the early 1980s (Spraker et al. 1997, Miller and Kahn 1999, Miller et al. 2000). CWD is a transmissible spongiform encephalopathy (TSE) or "prion" disease affecting species in the family Cervidae. In North America, CWD has been documented in wild populations of deer (Odocoileus spp.), elk (Cervus elaphus.), and moose (Alces alces). The disease was first diagnosed in captive deer and elk at wildlife research facilities in Colorado and Wyoming (Williams and Young 1980, 1982). Scientists diagnosed CWD as a TSE through histopathological evaluation of brains from affected mule deer (O. hemionus) and elk showing clinical signs of neurological disease and physiological wasting (Williams and Young 1980, 1982). It has not been possible to determine, retrospectively, if CWD first occurred in captive or free-ranging animals (Williams and Young 1992, Williams et al. 2002), although modeling suggests that CWD likely was present in wild populations prior to its identification in captive facilities since the early 1960s, if not earlier (Miller et al. 2000). Additionally, the theoretical possibility exists of more than one introduction of CWD into wild cervids. Presumably, if CWD originated from scrapie, as has been hypothesized by Miller et al. 2000, then there could have been more than one instance of transfer to wild cervids (Miller and Fischer 2016). Captive elk exported from Saskatchewan to South Korea marked the first detection of the disease outside of North America (Williams et al. 2002). Recently, two forms of apparent CWD have also been discovered in reindeer (Rangifer tarandus) and moose in Norway (Benestad et al. 2016) and in Finland, but these cases have not been linked to North America.

CWD continues to spread across North America, likely through movement of infectious animals or materials, either naturally in migrating /dispersing wild populations, or through anthropogenic movement of infectious live animals, carcasses, or other materials. Over the past 50 years, CWD has been detected in captive and/or wild cervids in 25 states and three provinces (CWD Alliance http://www.cwd-info.org/ or USGS:

(https://www.nwhc.usgs.gov/disease information/chronic wasting disease/; Dube et al. 2006).

The effects of CWD on populations of the affected species are significant in some areas. Research and predictions via simulated modeling have indicated that CWD is likely additive to white-tailed deer population mortality and could impact populations, particularly at higher prevalence (Edmunds et al. 2016), to the extent that hunter opportunity would also be impacted (Foley et al. 2016). Mule deer research also showed populations declines with a CWD prevalence >20% versus stable populations without CWD present (DeVivo et al. 2017). Recently published research on CWD and elk also concluded that mortality from CWD can exceed that of natural deaths (Galloway et al. 2017), reduce survival of adult females, and decrease population growth of elk herds (Monello et al. 2014). The disease is invariably fatal in infected animals. Williams (2005) found in mule deer that the pathogen has early widespread distribution of

specific protease-resistant disease-associated prion protein (PrP^{cwd}) in lymphoid tissues, and only later is PrP^{cwd} evident in central nervous system (CNS) and peripheral tissues. The pathogen ultimately causes normal prions in neurological tissue of the CNS to convert to the abnormal PrP^{ewd}. These abnormal prions accumulate in the brain (and other tissues), and eventually cause neurological disease, emaciation, and death. A long incubation period (16-18 months to 5 years or longer for some genotypes of deer and elk) between acquiring the infection and showing clinical signs makes managing CWD extremely challenging. The maximal incubation period is unknown; however, CWD prions are shed from an infected animal into the environment during this extended incubation period, meaning that non-clinical animals may be infectious before signs appear (Tamgüney et al. 2009). Some genotypes, currently believed to be rare in wild populations, may exhibit varying incubation periods; however, no genotype is fully resistant. These individuals may have prolonged incubation periods and therefore shed prions into the environment longer than the more common genotypes. The rarity of these genotypes in wild populations raises questions about their genetic fitness. Currently, CWD infection is fatal to all North American deer, elk, and moose challenged experimentally, in captive settings, or in freeranging populations (Williams et al. 2014).

A prion is a 'proteinaceous particle' consisting only of protein, with no nucleic acid genome (DeArmond and Bouzamondo 2002, Prusiner 2004). The abnormal prions are similar to normal prions found in the membranes of normal cells, but the PrP^{cwd} has an altered shape, or conformation. Distorted PrP^{cwd} can bind to normal prions and cause alteration in their conformation, producing a reaction that begins the disease process and generates new infectious material. Other pathogens like bacteria and viruses have nucleic acids that allows them to reproduce but also makes them susceptible to ultraviolet light and disinfectants. Misfolded prions are resistant to many common disinfectants, heat, sunlight, and freezing, as well as many of the other methods used to kill conventional pathogens (Travis and Miller 2003). They have been shown to persist in the environment for years, potentially decades, and remain infectious to susceptible animals. Research conducted since the discovery of CWD in the 1980s suggests that CWD probably is transmitted by direct contact between infected and susceptible animals and indirectly via consumption or exposure to materials contaminated with prions shed in the urine, saliva, feces (Mathiason et al. 2009), or from decomposed carcasses of infected animals (Miller et al. 2004).

Researchers also have shown that CWD prions are able to bind to montmorillonite, a type of clay in soil, suggesting that some soils and soil minerals may facilitate CWD infectivity (Johnson et al. 2006). Although the maximum length of time that prions can remain infective in the soil is unknown; if CWD is similar to other TSEs such as scrapie then environmental prions may be infectious years to decades. Related research also has shown certain plants can assimilate and uptake small, nearly undetectable levels of the CWD prion from contaminated substrate, suggesting a potential route for susceptible animals to ingest the pathogen from contaminated habitats (Rasmussen 2014). The prolonged incubation period, persistent shedding by clinically

normal animals, along with environmental contamination and persistence of CWD prions, make the disease difficult to detect early and manage before it spreads. Depopulation of an entire wild or captive herd may not eradicate the disease because of untreatable and widespread persistence of infectious CWD prions in a highly contaminated environment. Subsequent reintroduction of susceptible animals can and likely will result in new infections.

No vaccine, treatment, or medical cure for CWD currently exists. Although live animal tests have been used in research applications, in captive cervid operations as a whole-herd test, and for some interstate publicly owned, free-ranging interstate cervid translocations, no practical or validated live animal test for individual animals is available. The tests that are available are for detection of disease in cervids and should not be regarded as food safety tests. The minimum infectious dose of CWD prions is unknown, so determination of the level or degree of infectivity is unknown. Species in the family Cervidae appear to be the only animals naturally infected with CWD, although infection in other species outside this family has been demonstrated with varying success in experimental inoculation studies. Researchers at the National Institutes of Health were unable to demonstrate transmission to non-human primate test subjects (Race et al. 2009; 2018). However, unpublished work from a Canadian and German research team indicates apparent of CWD transmission to macaques via several inoculation methods including consumption of meat from infected, clinically normal deer (Czub et al. 2017). Apparent transmission of bovine spongiform encephalopathy to humans indicates that the species barrier may not completely protect humans from animal-borne prion diseases (Belay et al. 2004). To date, no human CWD infections have been reported, although humans undoubtedly consume CWD-infected animals. Public health authorities recommend that animals that test positive for CWD should not be consumed, nor should any animal that appears unhealthy.

Movement of infected live animals is considered one of the greatest risks for spreading CWD to new locations (Williams et al. 2002; Joly et al. 2003; Travis and Miller 2003; Belay et al. 2004). Movements of wild animals via migrations or dispersal have been implicated in the spread of CWD (Miller et al. 2000; Conner and Miller 2004; Miller and Williams 2004; Miller et al. 2006; Potapov et al. 2016) including probable transmissions from New Mexico to Texas, West Virginia to Virginia, Wisconsin to Iowa, and from Saskatchewan to Alberta. CWD also has been spread via human-facilitated live captive cervid movements including 1) the spread of CWD to 38 captive elk herds in Saskatchewan that received elk directly or indirectly from a single infected herd (Argue et al. 2007) that apparently imported infected elk from South Dakota, and 2) the spread of CWD to captive elk herds in Colorado and one in Kansas when elk from a single infected facility in Colorado were shipped to 19 states and more than 40 other captive facilities within Colorado (unpublished SCWDS Briefs April 2002, Vol.18, No. 1). CWD -infected elk were shipped from Canada to South Korea in 2001 (Sohn et al. 2002) causing major international animal import trade concerns from the resulting epidemiological investigation. The disease reoccurred in a captive elk in the affected Korean area in 2004 and has since occurred in additional cervid case in 2005 and 2010 (Lee et al. 2013), resulting in the closure of that nation to

international trade of captive elk. However, documented movement of live animals cannot explain all new CWD detections.

To control movement of the disease in the captive cervid industry within the United States, the USDA-APHIS's National Herd Certification Program (HCP) was fully implemented in 2012 (Code of Federal Regulations: 9 CFR Part 55 https://www.law.cornell.edu/cfr/text/9/part-55) to regulate interstate shipment of live cervids. Participation in the HCP is voluntarily; however, only animals from HCP-certified herds may be shipped interstate. Prior to implementation of this federal program, individual states regulated the movement of captive cervids. The national HCP certifies herds in approved state CWD programs as being at low risk for having CWD after five years of disease-free monitoring. However, there is no "CWD-free" certification of captive cervid herds. Individual states may implement regulations more stringent than the national HCP and their regulations preempt the Federal requirements with one exception: states must allow transit of captive cervids through the state, even if they do not allow captive cervid operations within the state.

From 2002–2012, federal funding was available to states for surveillance, monitoring, and management of CWD in wild and captive cervids and to the captive cervid industry for indemnity payments to owners/managers if their herds became infected and required depopulation. Since 2012, no funding for state surveillance, monitoring, or management of CWD in wild deer has been available and the economic burden has fallen solely on the states. House Bill 4454 (Chronic Wasting Disease Management Act) was introduced in the 115th Congress (2017–2018) to provide funding "To support State, provincial, and tribal efforts to develop and implement management strategies to address chronic wasting disease among deer, elk, and moose populations, to support applied research regarding the causes of chronic wasting disease and methods to control the further spread of the disease, and for other purposes".

The U.S. federal HCP has not prevented the continued spread of CWD or eliminated CWD in captive herds enrolled in the program. Since implementation of the HCP in 2012, CWD has been detected in additional captive cervid herds, including HCP-certified herds. Intra- and interstate movement of animals from HCP-certified herds later found to be infected is well documented and has resulted in infection of linked herds within the same state as well as at one Wisconsin herd that received an infected deer from a certified Pennsylvania herd. According to information provided by officials in affected states, all certified herds had been monitored for more than the five years required by the HCP before CWD was detected. Similar situations have been documented in Saskatchewan. Until there is a highly-sensitive antemortem test for CWD, live animal movements remain a significant risk for the spread of the disease. Evidence for long-term persistence of prion proteins in the environment, combined with the long incubation periods observed in many prion diseases, suggests that the current five-year monitoring period may be inadequate. Regulators need to be aware that HCP (U.S.) and VHCP (Canada) may create a false sense of security among the public and industry that CWD cannot be spread through movement of live animals from certified herds. The fact CWD continues to be detected in HCP-certified

captive herds after more than five years of monitoring suggests the certification program may not be as effective as desired.

The management of CWD in captive cervid operations in Canada is a joint responsibility of captive cervid producers, provinces/territories, and the federal government. Chronic Wasting Disease is a "reportable disease" under the Health of Animals Act and all suspected cases must be reported immediately to the Canadian Food Inspection Agency (CFIA). The CFIA implemented a national CWD eradication policy in 2000 and in 2002 adopted national standards for a Voluntary Herd Certification Program (VHCP) similar to that in the U.S. In recent years, the CFIA determined that eradication of CWD was not achievable and revised the national policy including the VHCP and biosafety standards applied to captive cervids in the national program (Canadian Food Inspection Agency (CFIA) CWD program information: http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/cwd/herd-certification/eng/1330187841589/1330187970925.)

Canada applies appropriate standards regarding international trade in captive cervids to meet U.S., European, and other countries' import criteria. Similarly, high standards are required to bring live cervids or their products into Canada. More restrictive import criteria are applied by most provinces and territories. Within Canada, surveillance of CWD in captive and wild cervids is conducted under the authority of individual provinces and territories.

Extensive, repeated, and complex animal movements within the captive cervid industry can make epidemiological investigations challenging, and many trace forward cases are lost to follow up if animals are shipped to nonparticipating facilities such as shooting enclosures. Additionally, captive cervids often are regulated by state or provincial agricultural agencies; thus, wildlife managers may not have ready access to captive cervid records. Consequently, epidemiological investigations may be difficult to conduct and will depend on a high level of coordination and cooperation between agencies.

Escapes of animals from captive cervid facilities are common and poses a serious threat of CWD exposure of uninfected wild cervid populations. An audit in Wisconsin in 2003 found that 432 deer that escaped between 2000 and 2002 never were recovered. Many of the escapes occurred because a gate was left open. In 2002 in Wisconsin, an escaped captive deer was killed outside the fence and tested positive for CWD six months after it had escaped from a facility known to be affected by CWD. This occurred again in 2015 when two animals from an affected Wisconsin facility tested positive for CWD months after their escape and miles from the affected facility. The escape of infected captive cervids leads to contamination of the surrounding environment and an increased risk of exposure for the free-ranging cervids around the captive facility. Similarly, exposure of captive cervids likely occurs from free-ranging animals entering captive facilities through compromised fencing, through fenceline contact (Vercauteren et al. 2007, Miller and Fischer 2016), or from environmental contamination occurring prior to facility establishment.

There is evidence that increased hunting pressure to sustain long-term population reduction of wild cervids in disease hotspots may be effective for CWD control. Further modeling efforts suggest that optimizing harvest to target portions of the population most likely to be infected may be effective in limiting CWD (Potapov et al. 2016; Jennelle et al. 2014). In studies conducted in Illinois and Wisconsin, sustained culling by sharpshooters was the only management action that appeared to control CWD (Uehlinger et al. 2016). It is possible that this strategy may eliminate CWD in a focal area with few infected animals. However, in regions, states, or provinces where the disease is established, this strategy would require extensive funding and other resources (Bishop 2010), and may have differing levels of success in reducing prevalence. Ultimately, very few CWD management strategies have been implemented and measured (Uehlinger et al. 2016), highlighting the need for new experimental applications and evaluation of CWD management strategies.

Potential costs and impacts of CWD to states and provinces include detection and management activities, reduced hunter participation, loss of public support for agency missions, and loss of license fees and excise tax revenues that fund wildlife conservation. Without effective education and outreach efforts, hunters can feel alienated and mistrustful of agency management decisions. The human dimensions challenges associated with CWD cannot be overemphasized. In many areas, particularly in rural and Indigenous communities, wild cervid meat is an important source of protein and any threat to wildlife populations threatens food security in these areas. Additional steps (e.g. mandatory check stations, waiting for a test result prior to consumption, and disposal of positive carcasses) may threaten a traditional way of life that has tremendous economic and sociocultural value. Many North American cervid populations are facing declines (e.g. caribou, moose, and mule deer) and the introduction of CWD into such herds could threaten the sustainability of the populations and indigenous rights to hunt.

Additional costs can include indemnity payments to owners/managers of affected captive herds, clean-up funds, surveillance and monitoring, contracted sharpshooters, testing laboratories, personnel for sample collection, and loss of other indirect expenditures (meals, lodging, transportation, etc.) by consumptive and non-consumptive users of the wildlife resource.

Prevention and management of CWD in free-ranging cervid populations is fiscally prudent and forward thinking as an investment by state and provincial agencies. History has shown (*Brucella* in elk and bison, bovine tuberculosis in deer, etc.) that prevention is the key to avoiding long-term population health and economic impacts caused by chronic transmissible diseases in wildlife. Science ultimately may reveal how to effectively manage CWD in free-ranging wildlife but, to date, no demonstrated agency action has been shown to eliminate CWD after it has become established in the wild (although the rapid response in New York seems to have eliminated an early spillover from a captive deer herd). The continued spread of CWD across the landscape has raised concerns about long-term viability of affected wild cervid populations among wildlife managers and the citizens who hunt, photograph, and appreciate wild deer, elk, and moose.

The following topical chapters define best practices supported by strategies of current science and experience-based knowledge with citations to relevant scientific literature.

(Portions of this background material were excerpted from Gillin, C. M. and J. R. Fischer. 2018. State management of wildlife disease, Chapter 12 *in* State Wildlife Management and Conservation, ed. T. J Ryder. John Hopkins University Press. 238 pp.)

Literature Cited and References

Argue, C. K., C. Ribble, V. W. Lees, J. McLane, and A. Balachandran. 2007. Epidemiology of an outbreak of chronic wasting disease on elk farms in Saskatchewan. Canadian Veterinary Journal 48(12):1241–1248.

Belay, E. D., R. A. Maddox, E. S. Williams, M. W. Miller, P. Gambetti, and L. B. Schonberger. 2004. Chronic wasting disease and potential transmission to humans. Emerging Infections Diseases 10(6):977–984.

Benestad, S. L., G. Mitchell, M. Simmons, B. Ytrehus, and T. Vikøren. 2016. First case of chronic wasting disease in Europe in a Norwegian free-ranging reindeer. Veterinary Research 47: 88.

Bishop R. C. 2010. The Economic Impacts of Chronic Wasting Disease (CWD) in Wisconsin, Human Dimensions of Wildlife, 9:3, 181–192, DOI: 10.1080/10871200490479963

Conner, M. M., and M. W. Miller. 2004. Movement patterns and spatial epidemiology of a prion disease in mule deer population units. Ecological Applications 14(6): 1870–1881.

Czub, Stefanie, W. Schulz-Shaeffer, C. Stahl-Hennig, Michael Beekes, H. M. Schaetz, and Dirk Motzkus. 2017. "First Evidence of Intracranial and Peroral Transmission of Chronic Wasting Disease (CWD) into Cynomolgus Macaques: A Work in Progress." In Deciphering Neurodegenerative Disorders. Edinburgh, Scotland.

DeArmond, S. J. and E. Bouzamondo 2002. Fundamentals of prion biology and diseases. Toxicology, 181, pp.9-16.

DeVivo M. T., D. R. Edmunds, M. J. Kauffman, B. A. Schumaker, J. Binfet, T. J. Kreeger, B. J. Richards, H. M. Schatzl, and T. E. Cornish. (2017) Endemic chronic wasting disease causes mule deer population decline in Wyoming. PLoS ONE 12(10): e0186512. https://doi.org/10.1371/journal.pone.0186512

Dubé, C., K. G. Mehren, I. K. Barker, B. L. Peart, and A. Balachandran. 2006. Retrospective investigation of chronic wasting disease of cervids at the Toronto Zoo, 1973–2003. The Canadian Veterinary Journal, 47(12), 1185.

- Edmunds D. R., M. J. Kauffman, B. A. Schumaker, F. G. Lindzey, W. E. Cook, T. J. Kreeger, R. G. Googan, and T. E. Cornish. (2016) Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PLoS ONE 11(8): e0161127. https://doi.org/10.1371/journal.pone.0161127
- Foley A. M., D. G. Hewitt, C. A. DeYoung, R. W. DeYoung, and M. J. Schnupp. 2016. Modeled Impacts of Chronic Wasting Disease on White-Tailed Deer in a Semi-Arid Environment. PLoS ONE 11(10): e0163592
- Galloway, N. L., R. J. Monello, D. Brimeyer, E. Cole, and N. T. Hobbs. 2017. Model forcasting of the impacts of chronic wasting disease on the Jackson Hole elk herd. National Elk Refuge Final Report. National Park Service. 32 Pp.
- Gillin, C. M. and J. R. Fischer. 2018. State management of wildlife disease, Chapter 12 in State Wildlife Management and Conservation, ed. T. J Ryder. John Hopkins University Press. 238 pp.
- Johnson, C. J., K. E. Phillips, P. T. Schramm, D. McKenzie J. M. Aiken, and J. A. Pedersen. 2006. Prions Adhere to Soil Minerals and Remain Infectious. PLoS Pathog 2(4): e32. doi:10.1371/journal.ppat.0020032
- Joly, D. O., C. A. Ribic, L. A. Langenberg, K. Beheler, C. A. Batha, B. J. Dhuey, R. E. Rolley, G. Bartlelt, T. R. Van Deelen, and M. D. Samuel. 2003. Chronic wasting disease in free-ranging Wisconsin white-tailed deer. Emerging Infectious Diseases 9(5):599–601.
- Lee, Y., H. Sohn, M. Kim, H. Kim, K. Park, W. Lee, E. Yun, D. Tark, Y. Cho, I. Cho, and A. Balachandran. 2013. Experimental Chronic Wasting Disease in Wild Type VM Mice. J. Vet. Med. Sci. 75(8): 1107–1110.
- Mathiason, C. K., S. A. Hays, J. Powers, J. Hayes-Klug, J. Langenberg, and S. J. Dahmes. 2009. Infectious Prions in Pre-Clinical Deer and Transmission of Chronic Wasting Disease Solely by Environmental Exposure. PLoS ONE 4(6): e5916. doi:10.1371/journal.pone.0005916
- Miller, M. W. and R. Kahn. 1999. Chronic wasting disease in Colorado deer and elk: recommendations for statewide monitoring and experimental management planning. Colorado Division of Wildlife, Denver, USA.
- Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T.J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of Wildlife Diseases 36:676–690.
- Miller, M. W. and E. S. Williams. 2004. Chronic wasting disease of cervids. Pp. 193–214 in D. A. Harris (ed.). Mad cow disease and related spongiform encephalopathies. Springer-Verlag, Berlin and Heidelberg. 249 pp.
- Miller, M. W., N. T. Hobbs, and S. J. Tavener. 2006. Dynamics of prion disease transmission in mule deer. Ecological Applications 16(6):2208–2214.

- Miller, M. W., and J. R. Fischer. 2016. The first five (or more) decades of chronic wasting disease: lessons for the five decades to come. *Transactions of the 81st North American Wildlife and Natural Resources Conference*.
- Monello, R., J. Powers, N. T. Hobbs, T. Spraker, M. Watry, and M. Wild. 2014. Survival and Population Growth of a Free-Ranging Elk Population with a Long History of Exposure to Chronic Wasting Disease. Journal of Wildlife Management. 78. 214-223. 10.1002/jwmg.665.
- Potapov, A., E. Merrill, M. Pybus, and M. A. Lewis. 2016. Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. PLOS One: https://doi.org/10.1371/journal.pone.0151039
- Prusiner, S. B. 2004. Prion biology and disease. Cold Spring Harbor Laboratory Press. ISBN: 0879696931, 1050 pp.
- Race B., K. D. Meade-White, M. W. Miller, K. D. Barbian, R. Rubenstein, G. LaFauci, L. Cervenakova, C. Favara, D. Gardner, D. Long, and M. Parnell. 2009. Susceptibilities of Nonhuman Primates to Chronic Wasting Disease. Emerging Infectious Diseases 15:1366–1376. doi:10.3201/eid1509.090253.
- Race, B., K. Williams, C.D. Orrú, A.G. Hughson, L. Lubke, B. Chesebol. 2018. Lack of Transmission of Chronic Wasting Disease to Cynomolgus Macaques. Journal of Virology. Apr 25. pii: JVI.00550–18. doi: 10.1128/JVI.00550–18. [Epub ahead of print]
- Rasmussen, J., B. H. Gilroyed, T. Reuter, S. Dudas, N. F. Neumann, A. Balachandran, N. N. V. Kav, C. Graham, S. Czub, and T. A. McAllister. 2014. Can plants serve as a vector for prions causing chronic wasting disease? Prion Vol. 8, Iss. 1.
- Sohn H. J., J. H. Kim, K. S. Choi, J. J. Nah, Y. S. Joo, Y. H. Jean, S. W. Ahn, O. K. Kim, D. Y. Kim, A. Balachandran. 2002. A case of chronic wasting disease in an elk imported to Korea from Canada. J Vet Med Sci 64:855–858, 2002
- Spraker, T. R., M. W. Miller, E. S. Williams, D. M. Getzy, W. J. Adrian, G. G. Schoonveld, and P. A. Merz. 1997. Spongiform encephalopathy in free-ranging mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*) and Rocky Mountain elk (*Cervus elaphus nelsoni*) in northcentral Colorado. Journal of Wildlife Diseases 33:1–6.
- Tamgüney, G., M. W. Miller, L. L. Wolfe, T. M. Sirochman, D. V. Glidden, C. Palmer, A. Lemus, S. J. DeArmond, and S. B. Prusiner. 2009. Asymptomatic deer excrete infectious prions in faeces. Nature 461, 529–532.
- Travis, D. and M. W. Miller. 2003. A short review of transmissible spongiform encephalopathies, and guidelines for managing risks associated with chronic wasting disease in captive cervids in zoos Journal of Zoo and Wildlife Medicine 34:125–133.

Uehlinger F. D., A. C. Johnston, T. K. Bollinger, and C. L. Waldner. 2016. Systematic review of management strategies to control chronic wasting disease in wild deer populations in North America. BMC Veterinary Research 12:173.

Vercauteren, K. C., M. L. LaVelle, N. W. Seward, J. W. Fischer, G. E. Phillips. 2007. Fence-line contact between wild and farmed cervids in Colorado: potential for disease transmission. J. Wildl. Manage. 71 (5):1594–1602.

Williams, E. S. 2005. Chronic wasting disease. Vet. Pathol. 42:530-549.

Williams, E. S., and S. Young. 1980. Chronic wasting disease of captive mule deer: a spongiform encephalopathy. Journal of Wildlife Diseases 16:89–98.

Williams, E. S., and S. Young. 1992. Spongiform encephalopathies in Cervidae. Revue Scientifique et Technique (International Office of Epizootics) 11:551–567.

Williams, E. S., M. W. Miller, T. J. Kreeger, R. H. Kahn, and E. T. Thorne. 2002. Chronic wasting disease of deer and elk: a review with recommendations for management. Journal of Wildlife Management 551–563.

Williams, A. L., T. J. Kreeger, and B. A. Schumaker. 2014. Chronic wasting disease model of genetic selection favoring prolonged survival in Rocky Mountain elk (*Cervus elaphus*). Ecosphere 5(5):60. http://dx.doi.org/10.1890/ES14–00013.1

Section 1: PREVENTION of CWD Introduction and Establishment

3 - Movement of Live Cervids

Best Management Practice to reduce the risk of CWD transmission and establishment of CWD through the movement of live cervids:

• To eliminate the risk of anthropogenic movements of CWD in potentially infected live animals, states, provinces and tribes should prohibit the movement of live cervids including interstate/interprovincial translocations by the captive cervid industry and animal movements undertaken by wildlife management agencies to promote conservation. Similar to the previous chapter, this regulated import action is most effective when employed by states and provinces that do not have CWD documented in their state. However, from a regulation efficiency perspective, a ban across all states and provinces would largely eliminate new cases occurring other than via natural migrations.

Alternative Management practices include:

- Importation ban on all live cervids from CWD-positive states and provinces where CWD has been detected in either captive or free-ranging cervid populations. This restriction increases the risk of importing CWD, as CWD-infected animals may migrate from infected states/provinces/areas to adjacent or distant CWD negative areas and subsequently could be moved unknowingly. Also, animals infected in the early stages of the disease may not test positive in antemortem or postmortem diagnostic testing. As stated in previous chapters, certified low-risk herds have consistently been involved in the movement of CWD to new areas. USDA certified low risk captive herds should be rigorously evaluated prior to importation of animals. States/provinces should evaluate the level of risk for importation of CWD they are willing to accept given the shortcomings of the USDA CWD Program Standards, limitations in diagnostic testing of recently infected animals, unknown environmental contamination challenges, and recent repeated relocation of CWD from certified low risk herds.
 - Oue to the increase in positive CWD cases in certified captive herds as part of the federal herd certification program, states and provinces should evaluate their importation policies and standards (i.e. consider a minimum of 10 years or more for facilities to be CWD free, require importing state/province to have tested all (100%) deceased animals ever residing in a certified facility including slaughter animals and animals sold to shooting facilities, review importing state's /province's import records over time, etc.).

- Restrict interstate/interprovincial movement of live cervids from states, provinces, territories, or tribal lands to those animals from herds that have had annual CWD testing of the herd for at least 5 years (with a statistical confidence of 95% to find the disease at an occurrence of 1% in the translocated herd) including antemortem testing of entire captive herds and all free-ranging animals being translocated. It must be noted that this practice provides increased risk from the identified best management practice for moving the pathogen in live animals due to 1) unknown emigration/immigration movements of free-ranging animals into and out of the herd at any point in time; and 2) captive cervid undocumented/illegal transfers, complex and frequent farm-to-farm movements of potentially infected animals, fenceline contact with infected wild animals, infection from environmental contamination; and 3) infected animals which are in the early stages of the disease will not be detected in antemortem testing.
- Prohibit intrastate, intra-provincial, intra-territorial, and intra-tribal movement of live cervids from CWD enzootic areas. Similar to the identified best management practice, prohibiting movements of live cervids within the jurisdictional boundaries will reduce the risk of CWD transmission and establishment of CWD through the movement of live cervids. This movement restriction will be most effective when applied directly to CWD enzootic areas/states/provinces.

Supporting Strategies and Evidence

The anthropogenic movement of live cervids is widely considered to be one of the greatest risk factors in spreading chronic wasting disease (CWD) to new areas (Williams et al. 2002; Joly et al. 2003; Travis and Miller 2003; Belay et al. 2004). Natural movements of wild cervids contribute to the spread of the disease (Miller et al. 2000; Conner and Miller 2004; Miller and Williams 2004; Miller et al. 2006; Potapov et al. 2016), and anthropogenic movements of captive and wild animals have the potential to both increase the rate at which the disease is spread and also facilitate introductions of the disease into novel geographic areas (Williams et al. 2002; Belay et al. 2004). Transfer of live animals between captive cervid facilities has been implicated in the introduction of CWD from North America to captive elk facilities in South Korea (Sohn et al. 2002; Williams et al. 2002) and has also been widely implicated in the spread of CWD among captive deer and elk facilities within North America (Williams and Young 1982; Williams et al. 2002; Williams and Miller 2002; Miller and Williams 2004; Belay et al. 2004; Kahn et al. 2004; Sigurdson and Aguzzi 2007). Despite ten years of the USDA APHIS Herd Certification Program, CWD-positive animals are still being detected among certified "low-risk" captive herds. Circumstantial evidence suggests that anthropogenic movements of CWD-infected captive cervids may also have been responsible for the introduction of CWD into naïve wild cervid populations in Canada and the United States, including populations in Saskatchewan (Miller and

Williams 2004), Nebraska (Williams et al. 2002), South Dakota (Miller and Williams 2004), and Wisconsin (Joly et al. 2003).

Guidelines and practices for movement of live cervids have been articulated for zoos and similar institutions by Travis and Miller (2003) and for captive facilities by USDA (2014). However, information gained over the last 50 years by scientists indicating an apparent 100% mortality rate among infected animals, a long incubation period for CWD leading to infected, asymptomatic animals shedding prions into the environment through the early course of the disease, a high likelihood of direct or indirect transmission of CWD from infected animals to other captive and/or wild cervids, and the possibility of long-term prion contamination of natural habitats, holding pens, and facilities occupied by CWD-positive animals (Williams et al. 2002; Travis and Miller 2003; Miller and Williams 2004; Belay et al. 2004; Mathiason et al. 2009), managers and regulators are left with making high-stakes, risk-based decisions when allowing or facilitating the movement of cervids. Additionally, given current limitations in surveillance strategies, budgets, staff capacity, and diagnostic tools, the management option providing the most effective elimination of risk for spreading or acquiring CWD from anthropogenic movements of live animals is simply not to move live cervids.

Federal and State/Province Legal Requirements

Federal legal requirements exist for interstate or interprovincial movement of live captive cervids and wildlife agencies should be familiar with the respective requirements of USDA or CFIA. Individual states and provinces may impose additional regulations on transport of live captive cervids. Transport of game meat and other products derived from captive cervids for purposes of interstate commerce are regulated by the Food and Drug Administration (in U. S.) or by individual provinces (Canada). Similarly, transport of carcasses and other parts derived from hunter-harvested wild cervids, which may contribute to the risk of spread of CWD, are regulated by appropriate state or provincial agencies. In the U. S., Violations of state laws governing transport of cervids may be prosecuted under the federal Lacey Act.

Literature Cited and References

Belay, E. D., R. A. Maddox, E. S. Williams, M. W. Miller, M. W., P. Gambetti, and L. B. Schonberger. 2004. Chronic wasting disease and potential transmission to humans. Emerging Infections Diseases 10(6):977–984.

Conner, M. M. and M. W. Miller. 2004. Movement patterns and spatial epidemiology of a prion disease in mule deer population units. Ecological Applications 14(6): 1870–1881.

Joly, D. O., C. A. Ribic, J. A. Langenberg, K. Beheler, K., C. A. Batha, B. J. Dhuey, B. J., R. E. Rolley, G. Bartlelt, T. R. Van Deelen, and M. D. Samuel. 2003. Chronic wasting disease in free-ranging Wisconsin white-tailed deer. Emerging Infectious Diseases 9(5):599–601.

Kahn, S., C. Dube, L. Bates, A. Baluchandran. 2004. Chronic Wasting Disease in Canada: Part 1. Canadian Veterinary Journal 45(5):397–404.

Mathiason, C. K., S. A. Hays, J. Powers, J. Hayes-Klug, J. Langenberg, S. J. Dahmes, D. A. Osborn, K. V. Miller, R. J. Warren, G. L. Mason, and E. A. Hoover. 2009. Infectious Prions in Pre-Clinical Deer and Transmission of Chronic Wasting Disease Solely by Environmental Exposure. PLOS One: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0005916

Miller, M. W. and E. S. Williams. 2004. Chronic wasting disease of cervids. Pp. 193–214 in D. A. Harris (ed.) Mad cow disease and related spongiform encephalopathies. Springer-Verlag, Berlin and Heidelberg. 249 pp.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, amd E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of Wildlife Diseases 36(4):676–690.

Miller, M. W., N. T. Hobbs, and S. J. Tavener. 2006. Dynamics of prion disease transmission in mule deer. Ecological Applications 16(6):2208–2214.

Potapov, A., E. Merrill, M. Pybus, and M. A. Lewis. 2016. Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. PLOS One: https://doi.org/10.1371/journal.pone.0151039

Sigurdson, C. J. and A. Aguzzi. 2007. Review: Chronic wasting disease. <u>Biochimica et Biophysica Acta (BBA)</u> - Molecular Basis of Disease 1772:610–618.

Sohn, H. J., J. H. Kim, K. S. Choi, J. J. Nah, Y. A, Joo, Y. H., Jean, S. W. Ahn, O. K. Kim, D. Y. Kim, and D. Y., Balachandran, A. 2002. A case of chronic wasting disease in an elk imported to Korea from Canada. Journal of Veterinary Medical Science 64:855–858.

Travis, D. and M. Miller. 2003. A short review of transmissible spongiform encephalopathies, and guidelines for managing risks associated with chronic wasting disease in captive cervids in zoos. Journal of Zoo and Wildlife Medicine 34(2):125–133.

United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA APHIS VS). 2014. Chronic Wasting Disease (CWD) Program Standards. USDA APHIS, Washington, D. C. 66 pp.

Williams, E. S., M. W. Miller, T. J. Kreeger, R. H., Kahn, and E. T. and Thorne. 2002. Chronic wasting disease of deer and elk: A review with recommendations for management. Journal of Wildlife Management 66(3):551–563.

Williams, E. S. and M. W. Miller. 2002. Chronic wasting disease in deer and elk in North America. Scientific and Technical Review of the Office International des Epizooties (Paris) 21(2):305–316.

Williams, E. S. and S. Young. 1982. Spongiform encephalopathy of Rocky Mountain elk. Journal of Wildlife Diseases 18(4):465–471.

4 - Movement of Hunter-Harvested Cervid Carcasses and Tissues¹

Best Management Practice for reducing the risk of CWD transmission and establishment of CWD via movement of hunter-harvested cervid carcasses and tissues:

• Prohibit the importation of intact cervid carcasses (e.g. carcasses with spinal column and brain tissue) from all states and provinces. This restriction would allow cut/wrapped meat, deboned meat, cleaned skulls or skull cap with no brain material, shed antlers, hides, canine teeth, and finished taxidermy mounts to be imported from a hunter-harvested cervid. Restricting the interstate/province movement of all potentially infective neural tissue from CWD infected states and provinces, and states and provinces with unknown or no known detection of CWD, will greatly reduce the risk of moving CWD between states and provinces. An interstate/province import ban on high risk carcass parts originating from captive or shooter facilities from all states and provinces regardless of CWD status would reduce risk of importing CWD contaminated tissues into a state/province. Agencies would need to provide a program for hunters to report that their meat is from a CWD positive animal and provide directions or a means for destroying the meat or other materials from that animal.

The following list describes several additional and alternative scientifically grounded management practices for reducing or eliminating risk of disease transmission. Implementation of any of these practices will depend on a range of factors in each state, including acceptability of the proposed practice to hunters, decision-makers and the general public.

- Allow importation of quartered carcasses with no central nervous system tissue (spinal
 column or brain tissue), in addition to the permitted items above. This restriction would
 provide additional flexibility for hunters but would increase risk of importation of CWD
 from carcass part disposal issues associated with waste bone from quartered animal parts.
- Prohibit the intrastate/intraprovincial movement of intact cervid carcasses from CWD-infected areas. This restriction would allow only cut/wrapped meat, deboned meat, cleaned skulls or skull cap, shed antlers, hides, canine teeth, and finished taxidermy mounts to be moved outside known CWD-infected areas. Restricting the intrastate/intraprovincial movement of potentially infective neural tissue from a CWD area to a new CWD-free environment, will limit short and cumulatively more significant movements of the prion across the landscape. Agencies would need to provide a program for hunters to report when their meat is from a CWD positive animal and provide directions for destroying the meat or other materials from that animal.

Adapted from MAFWA resolution supporting restriction of the importation of hunter-harvested cervid carcasses

- Implement an import ban on all parts, including meat and antlers, from CWD-positive states/provinces/territories. This alternative will restrict movement of all carcass parts and reduce the risk of moving prions from known CWD positive areas to uninfected environments. An interstate/province/territory import ban on carcasses including high risk carcass parts originating from captive or shooter facilities from CWD positive states and provinces would reduce risk of importing CWD contaminated tissues into a state/province/territory.
- Prohibit importation of intact cervid carcasses from the states and provinces where CWD has been detected in captive or free-ranging cervid populations. This restriction would allow cut/wrapped meat, deboned meat, cleaned skulls or skull cap, shed antlers, hides, canine teeth, and finished taxidermy mounts to be imported from a hunter-harvested cervid from a CWD positive state. However, with this practice, challenges exist for agencies because of the dynamic nature of CWD discoveries (both wild and domestic) involving the potential undetected movement of CWD to new areas and the non-uniform sampling effort by which states and provinces conduct surveillance. Many states currently employ this practice however, it does present more risk than a more comprehensive prohibition, leaving states with decisions on how much risk they are willing to accept. Agencies would need to provide a program for hunters to report that their meat is from a CWD positive animal and provide directions or a means for destroying the meat or other materials from that animal.
- blanket import ban on harvested cervids inclusive of meat and antlers, from all areas, regardless of CWD status. This alternative would provide the greatest reduction in the risk of importation of CWD. However, its implementation has the greatest economic and political impacts to states/provinces impact to states/provinces, along with reduced hunter opportunity by restricting or eliminating non-resident hunting. While this is an option, it would likely is considered be viewed as the least acceptable alternative, given the consequences. A blanket import ban would simplify import regulation of carcasses for agencies and enforcement purposes. However, the regulation will be unpopular with the state's hunting public who enjoy hunting in other states and particularly those hunters who hunt as nonresidents in non-CWD areas. In addition, such restrictions would significantly impact states, provinces, and territories economically, due to direct economic losses from a decrease in non-resident license sales and indirect expenditures (e.g., hotels, fuel, and groceries). An interstate/interprovincial carcass import ban on carcasses originating from captive or shooter facilities would also reduce risk for importing CWD contaminated tissues from these sources.

In addition, states and provinces should consider adopting the following regulations and policies:

- Provide educational material (online videos) for hunters on how to field-dress and debone carcasses and prepare skull caps or taxidermy mounts to ensure they are in compliance with CWD regulations.
- Require all meat be processed in the state where the animal was harvested, especially when hunting in CWD-enzootic states. Regulations may be required to ensure that local butchers do not process animals from out-of-state.
- Ensure consistent enforcement of regulations with carcass seizures and penalties for violations.
- Provide information about CWD-positive counties, state, provinces, and countries on wildlife
 agency websites that are updated regularly.
- · Provide web resources showing how and where a hunter can have their animal tested.
- Provide a web resource that has a better user interface to display such as, <u>Cervid carcass</u>
 <u>regulations by state Michigan DNR where hunters can search by their destination</u>
 <u>state/province and their residence state/province to ensure they are in compliance.</u>
 - All states, provinces, and territories should provide a notification protocol for CWD-positive animals harvested by a non-resident hunter. This would include direct notification to the state/provincial agency of a nonresident hunter and the hunter. This procedure allows for contact between the home state/provincial agency and the hunter to determine 1) if the carcass was legally imported and 2) if the carcass, parts, or game meat can be recovered for proper disposal by incineration or digestion.
- States and provinces positive for CWD should notify all non-resident hunters at time of license purchase or thereafter, that they likely are prohibited from importing carcass parts or entire carcasses to their home states and provinces. In some jurisdictions this may not be feasible.

Additional Considerations

- States and provinces that may restrict importation of carcasses or parts should consider
 allowing through passage of appropriately cut/wrapped meat, quarters with no part of the
 brain or spinal column attached, deboned meat, cleaned skulls or skull cap from CWD
 positive states/provinces.
- State /province/territory could consider allowing importation of whole cervid carcasses, provided the carcass is accompanied by a 'not detected' CWD test. This may be difficult to implement, due to the turn-around time required for CWD testing.
- Current regulations by state, <u>Cervid carcass regulations by state Michigan DNR</u>

Supporting Strategies and Evidence

States, provinces, and territories should develop carcass transportation recommendations and regulations that are uniform and consistent in order to, 1) stop movement of prions across the landscape, 2) simplify carcass importation laws to reduce confusion to hunters, and 3) minimize inconsistencies with regulations from other states and provinces. CWD has been found at varied, albeit reduced levels in meat and other tissues (Angers et al. 2006, Kramm et al. 2017).

Movement of infected cervid carcasses is one of the known risks for introducing CWD prions to new areas. Individual state/provincial/territorial wildlife agencies retain authority for regulation of carcass movement from hunter-harvested North American wild cervids, both intra- and interstate or province. However, regulations vary across states, provinces, and territories, ranging from complete import bans on whole carcasses from any state or province to a ban on importation from known CWD-affected areas (either entire states or identified zones/areas within states and provinces), while others lack any carcass movement restrictions. Several states/provinces restrict the importation of high risk parts such as brain material and spinal columns.

Management strategies and management units/areas of wild cervids varies among states and provinces. Depending on the size of the state, hunting population, harvest numbers, distribution of animals challenges the ability of state/provincial/territorial wildlife agencies to comprehensively test wild cervids for CWD and is often dependent on such factors as current CWD status, agency staffing, budgets, and political influences. Without detailed and current information provided by agency websites, it may be difficult for a nonresident hunter to determine if he/she is in a CWD-affected zone and the import restrictions that apply from their home state/province/territory. The information required for a hunter to remain compliant with CWD regulations, coupled with the increased geographic distribution and prevalence of CWD across North America, requires a more consistent and precautionary approach to cervid carcass movements.

Literature Cited and References

Angers, R. C., S. R. Browning, T. S. Seward, C. J. Sigurdson, M. W. Miller, E. A. Hoover, and G. C. Telling. 2006. Prions in skeletal muscles of deer with chronic wasting disease. Science, 311(5764), 1117-1117.

Kramm, C., S. Pritzkow, A. Lyon, T. Nichols, R, Morales, and C. Soto. 2017. Detection of prions in blood of cervids at the asymptomatic stage of chronic wasting disease. Science Reports, 7(1), 1–8.

5 - Cervid Urine Products Related to the Introduction of Prions to the Environment

Best Management Practice for reducing the risk of CWD transmission and establishment of CWD through use of natural cervid urine-based products

• Eliminate the sale and use of natural cervid urine-based products. Banning urine-based products is the only practice that would completely reduce the risk of importing CWD via these products. This BMP would be most effective in those states and provinces that do not have documented cases of CWD. A comprehensive ban on sales and use would be the simplest and easiest regulation for hunters to understand and agencies to enforce. It is strongly recommended that agencies reach out to hunting groups prior to any ban to explain the risks associated with natural deer urine products. The restriction will likely be opposed by captive cervid operators and producers. Many archery and firearm hunters utilize scent lures as a hunting tool where it is legal and will likely oppose any rule change.

Potential alternatives if a complete ban is not an option:

- Permit the sales and use of synthetic scent products. Fully synthetic scent products
 would be a safe alternative relative to CWD risk. However, because there is no way to
 differentiate synthetic products from natural urine, there would a risk of natural urine
 being dispensed as a synthetic. Currently, labeling of urine scents is not uniform and it
 may be difficult to ascertain the purity of the product. This creates challenges for users
 and also for enforcement of urine restrictions.
- Permit only cervid urine products produced in-state/in-province/in-territory to reduce the risk of importing contaminated product from an unknown source.
 States/provinces permitting urine production should have rigorous regulation of live cervids importation and active CWD surveillance programs.
- Allow import of natural urine-based products from states and provinces without
 CWD detections. There is currently no agency oversight of the production, bottling,
 distribution, or sale of urine-based products or mechanisms providing quality
 assurance/quality control to ensure that these products are actually CWD-free. Similarly,
 there are no existing mechanisms where agencies could recall CWD-contaminated
 products once distributed. Therefore, this alternative is higher-risk than a complete ban.

Supporting Strategies and Evidence

Prions have been detected in saliva, feces, blood, antler velvet, and urine (Angers et al. 2006, Angers et al. 2009, Haley et al. 2011, Henderson et al. 2015, Mathiason et al. 2006, Plummer et

al. 2017). Infected deer may shed prions in their urine for months (or years) prior to developing clinical signs and may shed thousands of infectious doses of prion over the course of a shedding animal's life (Henderson et al. 2015).

Despite federal, state, and local laws, regulations and other measures intended to prevent the spread or reduce CWD prevalence, the disease continues to be identified in new areas, including in captive cervid facilities certified as "low risk" through the USDA Herd Certification Program (HCP) and the CFIA Voluntary Herd Certification Program (VHCP). More restrictive CWD regulations on the sales and use of potentially infected materials are needed to stop actions that could infect wild and captive cervid herds now and for future generations. Multiple states and provinces have already implemented bans on natural cervid urine products (e.g., Alaska, Arkansas, Arizona, New Mexico, Vermont, Virginia, Manitoba, Nova Scotia, Ontario, and Yukon Territory). The Northeast Association of Fish and Wildlife Agencies passed a resolution strongly encouraging all state and provincial fish and wildlife agencies to work diligently to ban the use of natural-based cervid urine products (Adopted Nov. 1, 2017 http://www.neafwa.org/uploads/2/0/9/4/20948254/deer_urine_2017.pdf).

Urine sold commercially is collected from captive cervid facilities. Extensive movement of animals between facilities, limited and delayed testing of animals, and shared equipment between breeder herds and shooting herds make captive cervids a high risk for CWD (Maddison et al. 2010). Nationally, CWD continues to be found in captive cervid facilities with 40 facilities testing positive since 2012 in 9 states. Of the CWD positive facilities, 12 were shooter facilities and 27 were breeder facilities; 18 of 27 had at least 5 years of monitoring (testing mortalities) and 15 of 27 were enrolled in the USDA HCP. Urine products are frequently batched/combined from multiple locations and distributed across the country via retail, internet, and catalog sales (Nark 2017). Urine production and sales is not regulated by any agency, nor are there any testing or marking requirements of urine products. The Archery Trade Association Deer Protection Program is modeled after the USDA HCP but has no regulatory authority to provide an adequate prevention and distribution of contaminated urine products.

CWD prions are excreted in higher concentrations in saliva and feces than in urine (Henderson et al. 2015, Plummer et al. 2017). Urine is often collected through a grate system, which allows mixing of saliva and feces with the urine prior to filtering (Spitznagel 2012). This mixing could increase the likelihood of CWD-infected urine with higher concentrations of prion entering the scent market. There is currently no rapid, cost effective test to determine if collected urine contains prions (John et al. 2013). Therefore, although the risk of CWD transmission by urine products or a single application of a urine product to a surface is relatively low compared to movement of live cervids or carcasses, regulation of this industry is lacking with no known no "safe" dose of prion; exposure to one prion may be enough to cause infection (Fryer and McLean 2011). Additionally, the repeated application of urine scents to a defined surface (same tree for instance) or in the same area over time by an archery or rifle hunter produces increased risk because the multiple applications may be increasing the loading or infective dose at the attraction

site by a susceptible ungulate. The environmental persistence of the applied prions could well serve as the point source of an infection outbreak.

Prions readily bind to soil minerals where they remain infectious (Johnson et al. 2006). If cervid urine containing prions is put on the landscape by deer hunters (e.g., in a scrape or other area used by cervids), prions may bind to soil and contaminate that location for years or decades. Models have demonstrated that risk of CWD transmission from the environment increases over time as prions accumulate (Almberg et al. 2011). Repeated applications of deer urine at the same place over time could potentially build a reservoir of prions, increasing the likelihood of transmission (Mathiason et al. 2009). Plants are capable of binding prions on leaves and taking up prions into their tissues; those prions remain infectious (Pritzkow et al. 2015) although the uptake or effect in wild deer is unknown. Cervids attracted to scent location could potentially ingest prions in plants or soil and become infected.

In addition to the risks associated with the product itself, cervid urine placed by humans serves as another unnatural attractant to artificially congregate animals. In areas where CWD is present, urine may facilitate disease transmission to healthy animals, much like supplemental feeding or baiting.

State agencies that have attempted to or have implemented bans on natural urine products have experienced variable levels of negative feedback from hunters. However, some surveys suggest that hunters may be open to restrictions on the use of these products. Nationally, 82% of hunters surveyed from the National Deer Alliance have used natural urine products in the past, but despite having a history with these products, 80% still supported a ban to prevent CWD introduction (n=516, Schuler, personal communication). Synthetic urine products represent over 20% of the current market so safer alternative product is available although testing and regulation of the product and industry does not currently exist.

Literature Cited and References

Almberg, E. S., P. C. Cross, C. J. Johnson, D. M. Heisey, and B. J. Richards. 2011. Modeling routes of CWD transmission: environmental prion persistence promotes deer population declines and extinction. http://dx.doi.org/10.1371/journal.pone.0019896

Angers, R. C., S. R. Browning, T. S. Seward, C. J. Sigurdson, M. W. Miller, E. A. Hoover, and G. C. Telling. 2006. Prions in skeletal muscles of deer with chronic wasting disease. Science 311:1117

Angers, R. C., T. S., Seward, D. Napier, M. Green, E. Hoover, T. Spraker, K. O'Rourke, A. Balachandran, and G.C. Telling. 2009. Chronic wasting disease prions in elk antler velvet. Emerging Infectious Diseases 15:696–703

- Fryer, H. R. and A. R. McLean. 2011. There is no safe dose of prions. Plos ONE 6: e23664. doi:10.1371/journal.pone.0023664
- Gough, K. C. and B. C. Maddison. 2010. Prion transmission. Prion 4:275–282.
- Haley, N. J., C. K. Mathiason, S. Carver, M. Zabel, G. C. Telling, and E. A. Hoover. 2011. Detection of CWD prions in salivary, urinary, and intestinal tissues of deer: Potential mechanisms of pathogenesis and prion shedding. Journal of Virology 85:6309–6318. doi:10.1128/JVI.0425–11.
- Henderson, D. M., N. D. Denkers, C. Hoover, N. Garbino, C. K. Mathiason, and E. A. Hoover. 2015. Longitudinal detection of prion shedding in saliva and urine by chronic wasting disease infected deer by real-time quaking-induced conversion. Journal of Virology 89:9338–9347. doi:10.1128/JVI.01118–15
- John, T. R., H. M. Schatzl, and S. Gilch. 2013. Early detection of chronic wasting disease prions in urine of pre-symptomatic deer by real-time quaking-induced conversion assay. Prion. doi.org/10.4161/pri.24430
- Johnson C. J., K. E. Phillips, P. T. Schramm, D. McKenzie, J. M. Aiken, and J. A. Pedersen. 2006. Prions Adhere to Soil Minerals and Remain Infectious. PLOS Pathogens 2(4): e32. doi.org/10.1371/journal.ppat.0020032.
- Maddison, B. C., C. A., Baker, L. A. Terry, S. J. Bellworthy, L. Thorne, H. C. Rees, and K. C. Gough. 2010. Environmental sources of scrapie prions. Journal of Virology 84:11560–11562.
- Mathiason, C. K., J. G. Powers, S. J. Dahmes, D. A. Osborn, K. V. Miller, R. J. Warren, G. L. Mason, S. A. Hays, J. Hayes-Klug, D. M. Seelig, M. A. Wild, L. L. Wolfe, T. R. Spraker, M. W. Miller, C. J. Sigurdson, G. C. Telling, and E. A. Hoover. 2006. Infectious prions in the saliva and blood of deer with chronic wasting disease. Science 314:133–136.
- Mathiason C. K., S. A. Hays, J. Powers, J. Hayes-Klug, J. Langenberg, J. Dahmes, S. J. Osborn, D. A. Miller, K. V. Warren, R. J. Mason, and E. A. Hoover. 2009. Infectious Prions in Pre-Clinical Deer and Transmission of Chronic Wasting Disease Solely by Environmental Exposure. PLoS ONE 4(6): e5916. doi:10.1371/journal.pone.0005916
- Miller M. W., E. S. Williams, N. T. Hobbs, and L. L Wolfe. 2004. Environmental sources of prion transmission in mule deer. Emerging Infectious Disease 10:1003–1006.
- Nark, J. 2017. Pennsylvania's golden harvest: deer urine. The Philadelphia Inquirer. October 12. http://www.philly.com/archive/jason_nark/pennsylvanias-golden-harvest-deer-urine-20171012.html

Nichols, T. A., J. W. Fisher, T. R. Spraker, Q. Kong, and K. C. VerCauteren. 2015. CWD prions remain infectious after passage through the digestive system of coyotes (*Canis latrans*). Prion 4:0. [Epub ahead of print]

Plummer, I. H., S. D. Wright, C. J. Johnson, J. A. Pedersen, and M. D. Samuel. 2017. Temporal patterns of chronic wasting disease prion excretion in three cervid species. Journal of General Virology 98:1932–1942.

Pritzkow, S., F. Moda, U. Khan, G. C. Telling, E. Hoover, and C. Soto. 2015. Grass plants bind, retain, uptake, and transport infectious prions. Cell Reports 11(8):1168–115, doi:10.1016;j.celrep.2015.04.036

Sabalow, R. 2014. Trophy deer industry linked to disease, costs taxpayers millions. Indy Star. March 27. https://www.indystar.com/story/news/investigations/2014/03/27/buck-fever-intro/6865031/

Shepstone Management Company. 2008. The economic impact of New York state deer and elk farms. 8pp. http://www.shepstone.net/NYdeer.pdf

Spitznagel, E. 2012. Odd jobs: deer urine farmer. Bloomberg. August 31. https://www.bloomberg.com/news/articles/2012-08-31/odd-jobs-deer-urine-farmer.

6 - Import of Reproductive Tissues/Products and Gametes

Best Management Practice for the importation of reproductive tissues:

- The importation of reproductive tissues (principally semen or embryos) should be banned in states, provinces, and territories. To date there have been no studies investigating the possibility of transmission of CWD in cervids via transfers of reproductive tissues/products or gametes. However, such transmission pathways have been studied in other transmissible spongiform encephalopathies (TSEs), including bovine spongiform encephalopathy (BSE) in cattle and scrapie in sheep and goats (Wrathall et al. 2008), and although the incidence of such transmission events is thought to be low, embryo transfer and artificial insemination from infected animals represents potential pathways of scrapie transmission in sheep (Wrathall et al. 2008; Rubenstein et al. 2012). Based on the numerous epidemiological similarities between scrapie and CWD, it is reasonable to infer a potential risk of CWD transmission via collection, movement and use of reproductive products. States and provinces should ban the importation of reproductive tissues until further scientific data on CWD transmission is available.
- As an alternative practice, state, provincial, and territorial wildlife agencies should do everything possible to reduce and prioritize risk if importation of reproductive tissues is considered.

The following precautions can reduce the likelihood of CWD transmission from imported reproductive tissues (Wrathall 1997, 2000). These precautions were designed to apply specifically to those who are engaged in the direct manipulation of reproductive tissues, which in many cases will not necessarily include state agency staff. These precautions are included here for the sake of completeness and for review and consideration by agencies who may wish to consider regulating or providing guidance regarding the importation of reproductive tissues, products, and gametes into their state/province/territory.

1) Avoid transport or importation of reproductive tissues, embryos, or gametes from high-risk areas or regions. Materials of animal origin for use in reproductive technologies should preferably come from areas or regions that can demonstrate an absence of TSEs (Wrathall 2000). Decisions regarding the sourcing and transportation of reproductive material should consider local veterinary infrastructure, status of disease surveillance systems, statistics on TSE occurrence, and whether control policies are being effectively applied in the exporting areas or regions. The reliability of veterinary certification programs is also critical, and if the health or traceability of any materials or their donors is in any doubt, the risks must be scored accordingly (Wrathall 2000).

- 2) Avoid the extraction and use of reproductive tissues, embryos, or gametes from clinically diseased animals. Wrathall (2000) notes that reproductive technologies such as embryo or gamete harvesting are unlikely to be used on clinically affected animals, except in cases where salvage of genetic materials is desired. In such cases, there is a small but non-negligible risk of disease transmission, particularly if surgical methods of harvesting are applied. If required, the best option according to Wrathall (2000) is to follow non-surgical means of tissue or gamete collection using single-use disposable equipment which is then incinerated after use.
- 3) Avoid use of high-risk tissues in reproductive technologies. Tissues at particularly high risk for TSE transmission include the pituitary (Kidd and Gray 1988), any cells of neurological origin, including neural stem cells (Chesebro et al. 1993; Windl et al. 1999), lymphoid tissues and associated cells, and surgical catgut (McDiarmid 1996). In such cases, materials should be derived from low-risk species or from synthetic, recombinant, or plant sources (Wrathall 2000).
- 4) Avoid contamination of reproductive materials at the time of collection. Instruments for collection should be of the disposable type, and care must be taken to prevent contact with high-risk tissues, including intestines, lymphoid tissues, and placentae (Wrathall 2000).
- 5) **Test materials to detect presence of infectivity.** Wrathall (2000) suggests testing of representative samples of source materials as well as aliquots of the final product(s) for the presence of TSE causative agencies.
- 6) **Decontaminate instruments.** The guidelines proposed for instrument decontamination by Wrathall (1997; 2000) are based on guidelines which were developed by the Advisory Committee on Dangerous Pathogens (1998) for the specific context of managing transmissible spongiform encephalopathies (TSEs) in humans.

Instruments for high-risk animals known or suspected to be clinically affected with TSE should be of a single-use type and destroyed by incineration following use.

The guidelines divide instruments into three categories:

Category 1 – Instruments for animals whose likely exposure to TSEs is zero or minimal. Conventional cleaning and sterilization procedures apply.

For clinically normal animals in regions where CWD is considered enzootic:

Category 2 – Instruments for animals with medium to high exposure risk (i.e. possibly incubating TSE) but without clinical signs. Instruments that contact the central nervous system or eye should be incinerated. Instruments that do not contact the CNS or eye can be re-used, provided they undergo specific TSE decontamination procedures (described in more detail below). Note that this category applies specifically to instruments used on clinically normal animals in countries or regions where the relevant TSEs are considered enzootic.

Category 3 – Instruments for high-risk animals known or suspected to be clinically affected with TSE. Instruments should be of a single-use type and destroyed by incineration following use.

For Category 2 instruments, Wrathell (2000) recommends following at least one of three published TSE decontamination procedures:

- Chemical disinfection with sodium hypochlorite (20,000 ppm for at least one hour) (recommended by Advisory Committee on Dangerous Pathogens 1998, Centers for Disease Control and Prevention 2009).
 - Ensure surface should remain wet for entire period, then rinsed well with water.
 Before chemical treatment, it is strongly recommended that gross contamination of surfaces be reduced because the presence of excess organic material will reduce the strength of the chemical solutions.
 - 20,000 ppm sodium hypochlorite equals a 2% solution. Most commercial household bleach contains 5.25% sodium hypochlorite, therefore, make a 1:2.5 dilution (1 part 5.25% bleach plus 1.5 parts water) to produce a 20,000 ppm solution. This ratio can also be stated as two parts 5.25% bleach to three parts water. Working solutions should be prepared daily.
 - CAUTION: Above solutions are corrosive and require suitable personal
 protective equipment and proper secondary containment. These strong corrosive
 solutions require careful disposal in accordance with local regulations.
- Autoclaving in a porous load steam sterilizer at 134–137°C for a single cycle of at least 18 minutes (or six cycles of three minutes each) (recommended by Advisory Committee on Dangerous Pathogens 1998).
- Immerse instruments in 1 N sodium hydroxide for one hour, clean, and autoclave at 134°C for one hour (recommended by World Health Organization 1997).

In addition to these older protocols, it should be noted that Environ LpH has been used effectively for over a decade for TSE decontamination (Race and Raymond 2004). Hypochlorous acid (HOCl) has also shown considerable promise as an anti-prion agent in laboratory trials and is much less toxic to human workers and less damaging to equipment (Hughson et al. 2016).

Literature Cited and References

Advisory Committee on Dangerous Pathogens – Spongiform Encephalopathy Advisory Committee. 1998. In: Transmissible Spongiform Encephalopathy Agents: Safe Working and the Prevention of Infection. The Stationary Office, PO Box 276, London SW8 5DT, 54 pp.

Centers for Disease Control and Prevention, National Institutes of Health and U.S. Department of Health and Human Services. 2009. *Biosafety in Microbiological and Biomedical laboratories*. HHS Publication No. (CDC) 21-1112: p.288.

Chesebro, B., K. Wehrly, B. Caughey, J. Nishio, D. Ernst, and R. Race. 1993. Foreign PrP expression and scrapie infection in tissue culture cell lines. Developments in Biology Standardization 80:131–140.

Hughson, A. G. et al. 2016. Inactivation of Prions and Amyloid Seeds with Hypochlorous Acid. PLoS Pathogens http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1005914.

McDiarmid, S. C. 1996. Scrapie: the risk of its introduction and effects on trade. Australian Veterinary Journal 73:161–164.Race, R. E., Raymond, G. J. 2004. Inactivation of Transmissible Spongiform Encephalopathy (Prion) Agents by Environ LpH. Journal of Virology 78(4):2164–2165.

Rubenstein, R., M. S. Bulgin, B. Chang, S. Sorensen-Melson, R. B. Petersen, and G. LaFauci. 2012. PrP^{Sc} detection and infectivity in semen from scrapie-infected sheep. Journal of General Virology 93:1375–1383.

Windl, O., H. Lorenz, C. Behrens, A. Romer, and H. A. Kretzschmar. 1999. Construction and characterization of murine neuroblastoma cell clones allowing inducible and high expression of the prion protein. Journal of General Virology 80:15–21.

World Health Organization. 1997. In: Report of a WHO Consultation on Medicinal and other Products in Relation to Human and Animal Transmissible Spongiform Encephalopathies. With the participation of the Office International des Epizooties (OIE), World Health Organization, Geneva, Switzerland, p. 17.

Wrathall, A. E. 1997. Risks of transmitting scrapie and bovine spongiform encephalopathy by semen and embryos. Revue Scientifique et Technique (International Office of Epizootics) 16(1):260–264.

Wrathall, A. E. 2000. Risks of transmission of spongiform encephalopathies by reproductive technologies in domesticated ruminants. Livestock Production Science 62:287–316.

Wrathall, A. E., G. R. Holyoak, M. Parsonson, and H. A. Simmons. 2008. Risks of transmitting ruminant spongiform encephalopathies (prion diseases) by semen and embryo transfer techniques. Theriogenology 70(5):725–745.

7 - Preventing Unnatural Concentrations of Cervids - Baiting and Feeding

Best Management Practice:

 To reduce the risk of CWD transmission and establishment of CWD through unnatural concentrations of cervids, states and provinces should eliminate the baiting and feeding of all wild cervids using regulatory mechanisms such as jurisdictional bans.

Alternative Management practices include:

- Where a jurisdictional ban is not possible, an alternative utilized by some agencies is
 to allow baiting and/or feeding of cervids in portions of CWD-positive states where
 the disease has not yet been detected. However, this practice may facilitate increasing
 the prevalence and distribution of CWD within the state due to the epidemiology of the
 disease, natural movements of cervids, and limitations associated with surveillance of
 free-ranging animals.
- In jurisdictions with no evidence of CWD, proactive strategies to decrease baiting and feeding will minimize future disease control challenges. These strategies may include outright bans as stated above, or aggressive education and outreach campaigns. Once baiting and feeding have been established and hunter attitudes are accepting of the practice, it may be difficult to reverse hunter attitudes even with increasing disease threat.
- States should provide protocols for alternative methodologies to traditional baited camera surveys for hunters and landowners who wish to survey deer populations on their properties.

Supporting Strategies and Evidence

From the perspective of control and management of infectious diseases, anything that aggregates animals will, in most circumstances, also increase the opportunity for disease transmission (Becker and Hall 2014). While natural aggregations of animals exist due to a variety of behavioral, seasonal, and resource factors, human-associated aggregations related to baiting and feeding can greatly increase the risk of disease transmission due to increased animal numbers and concentrations over extended time periods. This can lead to exposure to larger doses of infectious agents, multiple exposures, or exposures sustained over prolonged periods of time all resulting in greater probability of infection.

The provision of food items for cervids and other free-ranging wildlife by humans poses challenges on multiple levels: epidemiologic, ecologic, economic, and social (Brown and Cooper

2006; The Wildlife Society 2007). Baiting (placement of food by humans to aid hunter harvest), recreational feeding (placement of food by humans to aid in wildlife viewing for entertainment), and supplemental feeding (placement of food by humans to increase the nutrition available to wildlife) can all increase transmission of infectious diseases. This occurs by increasing both local densities of animals (and direct contacts between individuals) and environmental contamination with infectious agents (by indirect contacts with food, plants or soils) (Sorensen et al. 2014). Feeding and baiting may change social dynamics among animals and increase contacts between otherwise disparate individuals, groups, or species. Although baiting is far from risk-free, it typically occurs over a shorter period (coinciding with hunting seasons) compared to feeding operations, and may be less of a threat of disease transmission than feeding (Cosgrove et al. 2014). Evidence to date suggests that "restrictions on feeding quantity would not mitigate the potential for disease transmission" and that putative mitigating practices such as spreading feed or bait over a specified area, or restricting the kinds of food items that can be used, did not substantially reduce the potential risk for disease transmission (Palmer and Whipple 2006; Thompson et al. 2008). While proponents often claim that making bait available in areas with enzootic disease is necessary to maintain or increase hunter harvest, current evidence suggests the effect of baiting for increasing harvest is insignificant (Van Deelen et al 2003).

The argument to bait and feed wildlife is often presented by proponents for both economic and social reasons. Sales of wildlife bait and feed provides markets for surplus agricultural commodities considered unfit or unmarketable for human or livestock consumption. Although the economic value of such sales is still largely unquantified, experience in states where baiting and feeding are legal suggest it is substantial. Consequently, bans on baiting and feeding that might decrease sales are typically opposed by farmers and their advocacy organizations. Such groups often exert political pressure on decision makers responsible for wildlife management regulations, arguing bans will result in job losses and decreased economic opportunities in rural areas where hunting is a substantial source of income from tourism.

There is currently no evidence that baiting and feeding of free-ranging cervids can be conducted to mitigate increases in the opportunity for disease transmission. There is also no evidence the practice is likely to increase harvest sufficiently to overcome the negative effects of those increases by disease transmission (Rudolph et al. 2006). Any benefits of increased public support or agency credibility that might theoretically accrue from allowing hunters to use bait remain speculative, and potentially unproven. Research has shown that CWD is both contagious and self-sustaining (Miller et al. 1998; Miller and Williams 2004; Miller and Wild 2004; Miller et al. 2000). Baiting and feeding deer artificially concentrates deer, facilitating both animal-to-animal contact and exposure to potentially disease-contaminated sites (Garner 2001; Thompson et al. 2008; Mejía-Salazar et al. 2018). A consequence of increased contacts from baiting and feeding is an increased risk of transmission of infectious disease among deer (Thompson et al. 2008; Becker and Hall 2014; Ramsey et al. 2014; Sorensen et al. 2014). An international panel reviewing CWD management in Colorado emphasized that, "Regulations preventing... feeding

and baiting of cervids should be continued" (Peterson et al. 2002). In preventing, managing or controlling CWD, states should consider the socio-economic consequences of prohibitions on baiting and feeding.

Literature Cited and References

Becker, D. J. and R. J. Hall. 2014. Too much of a good thing: resource provisioning alters infectious disease dynamics in wildlife. Biology Letters. 10(7), http://dx.doi.org/10.1098/rsbl.2014.0309.

Brown, R. D. and S. M. Cooper. 2006. The nutritional, ecological, and ethical arguments against baiting and feeding white-tailed deer. Wildlife Society Bulletin. 34(2): p. 519–524.

Cosgrove, M. K., D. J. O'Brien, and D. S. L. Ramsey. 2014. Baiting and feeding revisited: exploring factors influencing transmission of bovine tuberculosis among deer and to cattle, in VI International M. bovis Conference. 2014: Cardiff, UK, 16–19 June.p. 17.

Garner, M. S. 2001. Movement patterns and behavior at winter feeding and fall baiting stations in a population of white-tailed deer infected with bovine tuberculosis in the northeastern Lower Peninsula of Michigan. Department of Fisheries and Wildlife, Michigan State University: East Lansing, Michigan. 270 p.

Mejía-Salazar M. F., C. L. Waldner, Y. T. Hwang, and T. K. Bollinger. 2018. Use of environmental sites by mule deer: a proxy for relative risk of chronic wasting disease exposure and transmission. Ecosphere. 9(1):e02055. DOI: 10.1002/ecs2.2055

Milner, J. M., F. M. Van Beest, K. T. Schmidt, R. K. Brook, and T. Storaas. 2014. To Feed or Not to Feed? Evidence of the Intended and Unintended Effects of Feeding Wild Ungulates. Journal of Wildlife Management. 78(8): p. 1322–1334.

Miller, M. W. and M. A. Wild. 2004. Epidemiology of chronic wasting disease in captive white-tailed and mule deer. Journal of Wildlife Diseases. 40(2): p. 320–327.

Miller, M. W., M. A. Wild, and E. S. Williams. 1998. Epidemiology of chronic wasting disease in captive Rocky Mountain elk. Journal of Wildlife Diseases. 34(3): p. 532–538.

Miller, M. W. and E. S. Williams. 2004. Chronic wasting disease of cervids. Current Topics in Microbiology and Immunology. 284:p. 193–214.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of Wildlife Diseases. 36(4): p. 676–690.

Palmer, M. V. and D. L. Whipple. 2006. Survival of Mycobacterium bovis on feedstuffs commonly used as supplemental feed for white-tailed deer (Odocoileus virginianus). Journal of Wildlife Diseases. 42(4): p. 853–858.

Peterson, M. J., M. D. Samuel, V. F. Nettles, G. Wobeser, and W. D. Hueston. 2002. Review of chronic wasting disease management policies and programs in Colorado. Colorado Wildlife Commission: Denver, CO, USA.

Ramsey, D. S. L., D. J. O'Brien, M. K. Cosgrove, B. A. Rudolph, A. B. Locher, and S. M. Schmitt. 2014. Forecasting eradication of bovine tuberculosis in Michigan white-tailed deer. Journal of Wildlife Management. 78(2): p. 240–254.

Rudolph, B. A. 2012. Enforcement, personal gains, and normative factors associated with hunter compliance and cooperation with Michigan white-tailed deer and bovine tuberculosis management interventions. Department of Fisheries and Wildlife, Michigan State University: East Lansing, MI, 137 p.

Rudolph, B. A., S. J. Riley, G. J. Hickling, B. J. Frawley, M. S. Garner, and S.R. Winterstein. 2006. Regulating hunter baiting for white-tailed deer in Michigan: Biological and social considerations. Wildlife Society Bulletin. 34(2): p. 314–321.

Sorensen, A., F. M. van Beest, and R. K. Brook. 2014. Impacts of wildlife baiting and supplemental feeding on infectious disease transmission risk: A synthesis of knowledge. Preventive Veterinary Medicine. 113(4): p. 356–363.

The Wildlife Society. 2007. Final TWS position statement: baiting and supplemental feeding of game wildlife species. Bethesda, Maryland: The Wildlife Society. 4 pp.

Thompson, A. K., M. D. Samuel, and T. R. Van Deelen. 2008. Alternative feeding strategies and potential disease transmission in Wisconsin white-tailed deer. Journal of Wildlife Management. 72(2): p. 416–421.

Van Deelen, T. R., B. Dhuey, K. R. McCaffery, and R. E. Rolley. 2006. Relative effects of baiting and supplemental antlerless seasons on Wisconsin's 2003 deer harvest. Wildlife Society Bulletin. 34(2): p. 322–328.

Section 2: SURVEILLANCE

8 - Validated CWD Testing for Cervids

Best Management Practices using validated tests in the surveillance and monitoring of CWD includes the following:

- For official CWD testing of cervids, use only State, Federal, and university laboratories that are part of the U. S. or Canadian National Animal Health Laboratory networks and are approved to conduct federally recognized CWD diagnostic testing (9 CFR 55.8 for U. S.).
- Currently available federally recognized CWD tests are immunohistochemistry (IHC), enzyme-linked immunosorbent assay (ELISA), and western blot. All suspect positive ELISA test and western blot results should be confirmed with IHC.
- Tissues to be tested for postmortem sampling are the medial retropharyngeal lymph nodes (MRPLN) and obex. For white-tailed and mule deer, the MRPLN is recommended, but in other cervid species such as elk and moose, both the obex and MRPLN should be tested.
- All cervid species should be considered potentially susceptible to CWD and tested accordingly.
- Antemortem testing is an active area of research and may be a useful tool for
 increasing surveillance in captive cervids. If utilized by a state/provincial agency, such
 tests should only be used as whole-herd screening tests or for sequential testing of
 individual animals or certain capture/recapture scenarios. These tests should not be
 considered an adequate single test of individual animals.
- States/provinces should provide expertise, samples, or resources to support research into the development and validation of new CWD diagnostic tests that may become available in the future.
- State/provincial agency training of personnel should include basic CWD knowledge, wet labs for hands-on instruction in sample collection, sample handling, packaging and disinfection.
- To limit the anthropomorphic spread of CWD, maintain sound biosecurity and carcass disposal protocols. Limit sample collection locations of harvested animals to as close to (or within) known endemic areas as possible.

Supporting Strategies and Evidence

Susceptible Cervid Species:

Cervid species known to be susceptible to CWD include North American elk or wapiti (Cervus canadensis), red deer (Cervus elaphus), mule deer (Odocoileus hemionus), white-tailed deer (Odocoileus virginianus), sika deer (Cervus nippon), moose (Alces alces), caribou or reindeer (Rangifer tarandus), and their hybrids. Reeve's muntjac (Muntiacus reevesi) have been shown to be susceptible by oral inoculation (Nalls et al. 2013). Experimental infection trials failed to infect fallow deer (Dama dama) with CWD by natural transmission routes, although they are susceptible by intercerebral inoculation (Rhyan et al. 2011). For the purpose of state/provincial CWD surveillance programs, all cervid species should be considered potentially susceptible to CWD and should be monitored accordingly.

CWD Testing:

Only state/provincial, federal, and university laboratories that are part of the respective federal National Animal Health Laboratory networks in the U. S. or Canada are approved to conduct federally recognized CWD diagnostic testing. This testing authority pertains to all cervids (Canada) and captive cervids throughout the U. S., but may also be applied to free-ranging cervids in some jurisdictions. The requirement to utilize federally-approved laboratories may depend on how captive and free-ranging cervids are defined within a jurisdiction, which state agencies hold regulatory authority, and whether interstate movements are involved. However, because NAHLN certification includes requirements for quality assurance and quality control, the use of a NAHLN lab is recommended here as a BMP.

Postmortem Testing:

Species variability:

• Tissues to be tested for postmortem sampling are the medial retropharyngeal lymph nodes (MRPLN) and obex. In mule deer and white-tailed deer, the MRPLN is the preferred diagnostic sample because data indicate CWD prions are detectable in the MRPLN before the obex (Miller and Williams 2002; Keane et al. 2008). Although MRPLN is an acceptable tissue for surveillance in wild elk (Hibler et al., 2003), it has been shown that prion deposition may be more variable in some species (e.g., moose, elk, reindeer), and may initially appear in the obex. Therefore, both MRPLN and obex should be tested (Spraker et al. 2004) in clinical suspects or in other circumstances as dictated by management or research goals. In Canada, MRPLN is the preferred tissue for testing moose but obex should also be collected.

Types of Tests:

Currently available federally recognized CWD tests for captive cervids are
immunohistochemistry (IHC), enzyme-linked immunosorbent assay (ELISA), and
Western blot. All suspect positive ELISA test and Western blot results should be
confirmed with IHC. Use of experimental amplification tests, such as protein misfolding
cyclic amplification (PMCA) and real-time quaking-induced conversion (RT-QuIC)
assays may improve sensitivity (Kurt et al. 2007; Henderson et al. 2015). In addition to

using federally recognized CWD tests, agencies may consider parallel testing with promising new or emerging diagnostic tools currently under development. Once validated, available, and federally approved, these tools could be rapidly implemented.

- IHC: Considered the "gold standard" test to which all other tests are compared.
 IHC requires formalin-fixed tissue and typically has a 5-10 day turn-around for results depending on the capacity of the diagnostic laboratory.
- ELISA: Considered a screening test and positive test results must be confirmed by IHC. Typically, the tests have a similar sensitivity to IHC but and will occasionally produce positive results that cannot be confirmed by IHC. Some researchers have found that some ELISA positive / IHC "Not Detected" animals will test positive under both tests upon retest. ELISA tests use fresh tissue and typically have a 1-3-day turn-around for results depending on the capacity of the diagnostic laboratory.

Antemortem Testing:

Antemortem testing is an active area of research and may be a useful tool for increasing surveillance in captive cervids. For instance, these tests may be useful in screening herds or for sequential testing of individual animals or certain capture/recapture scenarios, but should **not** be considered an adequate single test of individual animals for health certification purposes. Accordingly, for free-ranging cervids, antemortem CWD testing has limited utility but may be a useful research tool or used to meet specific management needs (Wolfe et al. 2007, Monello et al. 2013).

- Biopsied tissues used for antemortem testing include tonsil, recto-anal mucosa-associated lymphoid tissue (RAMALT) and MRPLN. Of these tissues, RAMALT biopsies have been intensively investigated due to the simple biopsy procedure, minimal equipment requirements, and no requirement for anesthesia (Keane et al. 2009). However, as for most antemortem diagnostic tests, testing tissues collected by biopsy will not identify all CWD infected cervids (Wolfe et al. 2007, Keane et al. 2009, Monello et al. 2013, Thomsen et al. 2012).
 - Immunohistochemistry of biopsies is still considered the gold standard test for antemortem testing, although USDA and CFIA does not consider antemortem testing an official test. It is highly recommended that IHC be used for tissue biopsies so that the number of diagnostic follicles can be determined.
 - As stated previously, use of experimental amplification tests, such as RT-QuIC assays may improve sensitivity (Henderson et al. 2015, Manne et al. 2017) and once validated and approved, may be available in the future.
 - o The number of lymphoid follicles in RAMALT appears to decrease with age and results can be affected by repeated sampling, so having an adequate number of follicles for a valid test (e.g., n≥5 for deer and ≥10 for elk) may be a limiting factor (Wolfe et al. 2007, Keane et al. 2009, Spraker et al. 2009a).
 - Rectal biopsy samples are less likely to identify animals in early stages of CWD (Wolfe et al. 2007, Keane et al. 2009, Monello et al. 2013).

- The PRNP genotype of deer and elk can impact antemortem diagnostic test sensitivity; therefore, the genotype should be determined concurrently when utilizing biopsies. For instance, test sensitivity is greatest in 96GG white-tailed deer and 132MM elk (Wolfe et al. 2007, Monello et al. 2013; Thomsen et al. 2012). Additional research is needed to better understand CWD progression through susceptible species of different genotypes and how this impacts diagnostic testing.
- Research groups are actively examining non-biopsy sample types, such as blood (Kramm et al. 2017), but agencies should seek guidance from state and federal veterinary diagnostic laboratories and the USDA or CFIA before adopting new test methods.

Sampling Protocols:

Sampling procedures and target tissue samples will vary depending on the species and circumstances. For postmortem testing, detailed sample collection procedures for obex and MRPLN in cervids are available through numerous state/provincial wildlife agency websites. Procedures for antemortem collection of tonsil and RAMALT in cervids have been described (Wolfe et al. 2002 and 2007, Keane et al. 2009, Spraker et al. 2009b; Geremia et al. 2015).

Training Personnel:

State/provincial agency training of personnel should include basic CWD knowledge, wet labs for hands-on instruction in sample collection, sample handling, packaging and disinfection. Collection videos and PowerPoint-type demos are available through numerous state wildlife agencies. Some jurisdictions have Certified/Authorized CWD Collector programs administered by their animal health agencies.

Training Websites:

<u>Kansas State Veterinary Diagnostic Lab</u> https://youtu.be/XdK6HWokfPQ?list=PLNjV05pK4JEWNg10K9yal6tdKSZc-87Je

Wyoming Game and Fish Department

https://youtu.be/-jpvxatk0gw

Oklahoma Department of Agriculture

https://www.youtube.com/watch?v=1XgNy1BfiH8

New York State Dept. of Environmental Conservation

https://www.youtube.com/watch?v=Owpv30ulOvk

Literature Cited and References

Geremia, C., J. A. Hoeting, L. L. Wolfe, N. L. Galloway, M. F. Antolin, T. R. Spraker, M. W. Miller, and N. T. Hobbs. 2015. Age and repeated biopsy influence antemortem PRC^{CWD} testing in mule deer (*Odocoileus hemionus*) in Colorado, USA. *J Wildl Dis*, 51(4): 801–810.

Henderson, D. M., N. D. Denkers, C. E. Hoover, N. Garbino, C. K. Mathiason, and E. A. Hoover. 2015. Longitudinal detection of prion shedding in saliva and urine by chronic wasting

- disease-infected deer by real-time quaking-induced conversion. J Vet Diagn Invest, 18(6): 553–557.
- Hibler, C. P., K. L. Wilson, T. R. Spraker, M. W. Miller, R. R. Zink, L. L. DeBuse, E. Andersen, D. Schweitzer, J. A. Kennedy, L. A. Baeten, J. F. Smeltzer, M. D. Salman, and B. E. Powers. 2003. Field validation and assessment of an enzyme-linked immunosorbent assay for detecting chronic wasting disease in mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), and Rocky Mountain elk (*Cervus elaphus nelsoni*). *J Vet Diagn Invest*, 15: 311–319.
- Keane, D. P., D. J. Barr, J. E. Keller, S. M. Hall, J. A. Langenberg, and P. N. Bochsler. 2008. Comparison of retropharyngeal lymph node and obex region of the brainstem in detection of chronic wasting disease in white-tailed deer (*Odocoileus virginianus*). *J Vet Diagn Invest*, 20(1):58–60.
- Keane, D., D. Barr, R. Osborn, J. Langenberg, K. O'Rourke, D. Schneider, and P. Bochsler. 2009. Validation and use of rectoanal mucosa-associated lymphoid tissue for immunohistochemical diagnosis of chronic wasting disease in white-tailed deer (*Odocoileus virginianus*). *J Clin Microbiol*, 47(5): 1412–1417.
- Kramm, C., S. Pritzkow, A. Lyon, T. Nichols, R. Morales, and C. Soto. 2017. Detection of prions in blood of cervids at the asymptomatic stage of chronic wasting disease. *Sci Rep*, 7(1):17241, doi:10.1038/s41598-017-17090-x
- Kurt, T.D., M.R. Perrott, C.J. Wilusz, J. Wilusz, S. Supattapone, G.C. Telling, and E.A. Hoover. 2007. Efficient *in vitro* amplification of chronic wasting disease PrPRES. *J Virol*, 81, 9605–9608.
- Miller, M. W., and E. S. Williams. 2002. Detection of PrP (CWD) in mule deer by immunohistochemistry of lymphoid tissues. *Vet Rec*, 151:610–612
- Monello, R. J., J. G. Powers, N. T. Hobbs, T. R. Spraker, K.I. O'Rourke, and M. A. Wild. 2013. Efficacy of antemortem rectal biopsies to diagnose and estimate prevalence of chronic wasting disease in free-ranging cow elk (*Cervus elaphus nelsoni*). *J Wildl Dis*, 49(2):270–278.
- Nalls A. V., E. McNulty, J. Powers, D. M. Seelig, C. Hoover, N. J. Haley, J. Hayes-Klug, K. Anderson, P. Stewart, W. Goldmann, E. A. Hoover, and C. K. Mathiason. 2013. Mother to offspring transmission of chronic wasting disease in Reeves' Muntjac Deer. *PLoS ONE* 8(8): e71844. https://doi.org/10.1371/journal.pone.0071844.
- Rhyan, J. C., M. W. Miller, T. R. Spraker, M. McCollum, P. Nol, L. L. Wolfe, T. R. Davis, L. Creekmore, and K. I. O'Rourke. 2011. Failure of fallow deer (*Dama dama*) to develop chronic wasting disease when exposed to a contaminated environment and infected mule deer (*Odocoileus hemionus*). *J Wildl Dis*, 47(3):739–744.

- Spraker, T. R., A Balachandran, D. Zhuang, and K. I. O'Rourke. 2004. Variable patterns of distribution of PrP (CWD) in the obex and cranial lymphoid tissues of Rocky Mountain elk (*Cervus elaphus nelsoni*) with subclinical chronic wasting disease. *Vet Rec*, 155(10):295–302.
- Spraker T. R., K. C. VerCauteren, T. Gidlewski, R. D. Munger, W. D. Walter, and A. Balachandran. 2009a. Impact of age and sex of Rocky Mountain elk (*Cervus elaphus nelsoni*) on follicle counts from rectal mucosal biopsies for preclinical detection of chronic wasting disease. *J Vet Diagn Invest*, 21(6): 868–870.
- Spraker T. R., K. C. VerCauteren, T. Gidlewski, D. A. Schneider, R. Munger, A. Balachandran, and K. I. O'Rourke. 2009b. Antemortem detection of PrP^{CWD} in preclinical, ranch-raised Rocky Mountain elk (*Cervus elaphus nelsoni*) by biopsy of the rectal mucosa. *J Vet Diagn Invest*, 21(1): 15–24
- Thomsen, B. V., D. A. Schneider, K. I. O'Rourke, T. Gidlewski, J. McLane, R. W. Allen, A. A. McIsaac, GB Mitchell, DP Keane, TR Spraker, and A Balachandran. 2012. Diagnostic accuracy of rectal mucosa biopsy testing for chronic wasting disease within white-tailed deer (*Odocoileus virginianus*) herds in North America: effects of age, sex, polymorphism at PRNP codon 96, and disease progression. *J Vet Diagn Invest*, 24(5):878–887.
- Wolfe, L. L., T. R. Spraker, L. Gonzalez, M. P. Dagleish, T. M. Sirochman, J. C. Brown, M. Jeffrey, and M. W. Miller. 2007. PrP^{CWD} in rectal lymphoid tissue of deer (*Odocoileus* spp.). *J Gen Virol*, 88:2078–2082.

9 - Surveillance Strategies in CWD-Negative States and Provinces or Populations

Best Management Practice for conducting surveillance in a CWD-negative state, province, or population

In states, provinces, and territories not known to have CWD, implement a weighted, statewide/province-wide/territory-wide risk-based surveillance strategy appropriate to the population. Walsh et al. (2012) compiled all pertinent resources at the time into a single document to guide resource agencies in the development and implementation of a weighted, risk-based surveillance strategy. This guidance document and other resources defined below should be reviewed and considered when developing a state or provincial surveillance strategy:

- Assessing relative risks and mapping spatial risks specific to a state/province or population
 can direct sampling effort both across and within sampling units. Surveillance strategies that
 leverage spatial risk factors may include:
 - Enhanced surveillance along state/provincial borders near known cases of CWD in freeranging or captive cervids.
 - More intensive sampling in free-ranging animals around captive cervid facilities and taxidermy studios that may not be disposing of wastes appropriately.
 - Enhanced surveillance in areas where carcasses are known to be dumped because of the
 potential for inclusion of out-of-state /province animal remains or infected vehicle-killed
 remains to seed the environment if contaminated.
 - Additional risk factors may be adopted as appropriate for individual states, provinces, areas, or populations. For example, states with a large population of citizens that hunt out-of-state in CWD enzootic areas should assess the relative risk of importing CWD in hunter-harvested carcasses or tissues.
 - An example of a weighted, risk-based surveillance plan is available for New York: http://www.dec.ny.gov/docs/wildlife_pdf/cwdsurplan13web.pdf
- Weighted or focused sampling based on appropriate demographic risk factors may increase
 the likelihood of detecting CWD at a low prevalence (Walsh 2012). Samples should be
 collected preferentially based on the highest risk factors. For example:
 - Whenever possible, collect and test (descending weights/relative risk):
 - All clinical suspects

- All captive/farm cervids dying of any cause, including known and unknown causes
- Vehicle-killed or any other non-hunting related mortality (e.g. predation) of cervids > 2 years of age. As an example, focusing on vehicle-killed adults collected along major migration routes (if present) may increase efficiency.
- o Planned surveillance activities around cervid harvest:
 - Adult male deer (>2 years) hunter harvest
 - Adults (>2 years) in general
- Any surveillance strategy developed should be adaptive and integrated with a response and management plan.
 - o New research or additional resources may require alteration of CWD surveillance plans.
 - Consider rapid implementation or co-implementation of new or emerging diagnostic tools as they are made available and approved.

Other considerations:

- Agencies are advised to work closely with an internal or external epidemiologist to determine the best approach for surveillance for CWD.
- If surveillance cannot use a weighted or statistically valid sampling strategy, states and provinces should establish a minimum sample size over the broadest possible region.
- Sampling efficiency can be increased by working with taxidermists, meat processors, landowners, and hunting associations.
 - Trained taxidermists have high success rates in collecting appropriate samples (e.g., retropharyngeal lymph nodes) and providing correct data to state/provincial agencies.
 - Payments, benefits, or other incentives provided to CWD sample collection cooperators may increase efficiency and data quality for sampling.
- Development of regional surveillance plans may reduce burdens on individual states and provinces and increase confidence in neighboring states' and provinces' surveillance.
- Consider regulatory actions to reduce or eliminate important risk factors when applicable (see appendix).

- Captive cervids should be included in any surveillance strategy, both as a risk factor for free-ranging cervid populations and as priority surveillance samples. All captive cervids should be sampled for CWD testing at time of death and surveillance of captive cervids should be considered an adjunct surveillance strategy.
- Collaboration with state/provincial/territorial food and agriculture agencies and other animal health agencies (animal control, veterinary medical boards, etc.) provides additional resources and is critical to successful surveillance and information sharing.
- Outreach and education to staff, other government agencies, hunters, and other public may be necessary to help overcome apathy or negative inertia for active surveillance.

The appendix to this chapter includes a sample chronic wasting disease risk assessment to facilitate the identification of important risk factors to analyze in developing surveillance strategies for CWD.

Supporting Strategies and Evidence

Active surveillance for chronic wasting disease should be a priority for all wildlife agencies. Recent detections in free-ranging ungulates in Norway (Benestad et al. 2016), range expansion in North America, and the challenge of effective control make CWD a significant concern to many wildlife managers. Once the disease is present, environmental contamination can play a large role in the spread and maintenance of the disease (Almberg et al. 2011); neither environmental decontamination nor eradication once the disease is established in a population are feasible at this time. These limitations combined with the recent and very preliminary research reports from Canada suggesting that *Cynomolgus* macaques may be susceptible to CWD (Czub et al. 2017), remind us that there is still much we do not understand about CWD and provide an important warning that caution should be employed.

For any state or provincial CWD management program to be effective, a robust and adaptable surveillance strategy must be in place to detect CWD as early as possible, when prevalence rates are low and seeding of the environment is minimal (Gross and Miller 2000, Joly et al. 2009, Walsh 2012). "Targeted" sampling of clinical suspects alone is unlikely to detect CWD at levels low enough for management strategies to be successful because disease prevalence is likely >1% once these animals are seen on the landscape (Miller et al. 2000). Similarly, testing only hunter-harvested cervids may not detect CWD until after it has been in a population for an extended time. Ideally, agencies will develop a state/province, area, population, or herd-specific active surveillance strategy that increases the likelihood of detecting CWD at the lowest prevalence possible given available resources. These strategies should be adaptive and incorporate known spatial and demographic risk factors into sampling efforts (Walsh and Miller 2010, Walsh 2012). Cooperation with agricultural agencies responsible for captive cervids is critical for timely information sharing and coordinated outbreak response.

Literature Cited and References

Almberg, E. S., P. C. Cross, C. J. Johnson, D. M. Heisey, and B. J. Richards. 2011. Modeling routes of transmission: Environmental prion persistence promotes deer population decline and extinction. PLoS ONE 6.

Benestad, S. L., G. Mitchell, M. Simmons, B. Ytrehus, and T. Vikøren. 2016. First case of chronic wasting disease in Europe in a Norwegian free-ranging reindeer. Veterinary Research 47:88. BioMed Central. http://veterinaryresearch.biomedcentral.com/articles/10.1186/s13567-016-0375-4.

Czub, Stefanie, Walter Schulz-Shaeffer, Christine Stahl-Hennig, Michael Beekes, Hermann M. Schaetz, and Dirk Motzkus. 2017. "First Evidence of Intracranial and Peroral Transmission of Chronic Wasting Disease (CWD) into Cynomolgus Macaques: A Work in Progress." In Deciphering Neurodegenerative Disorders. Edinburgh, Scotland.

Gross, J. E., and M. W. Miller. 2000. Chronic Wasting Disease in Mule Deer: Disease Dynamics and Control. Journal of Wildlife Management 65:205–215.

Joly, D. O., M. D. Samuel, J. A. Langenberg, R. E. Rolley, and D. P. Keane. 2009. Surveillance to detect chronic wasting disease in white-tailed deer in Wisconsin. Journal of wildlife diseases 45:989–997. http://www.jwildlifedis.org/doi/abs/10.7589/0090-3558-45.4.989.

Meyerett-reid, C., A. C. Wyckoff, T. Spraker, B. Pulford, H. Bender, and M. D. Zabel. 2017. De Novo Generation of a Unique Cervid Prion Strain Using Protein Misfolding Cyclic Amplification. mSphere 2:1–13. https://doi.org/10.1128/mSphere.00372-16.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of chronic wasting disease in free-ranging cervids in Colorado and Wyoming. Journal of wildlife diseases 36:676–690.

Walsh, D. P., ed., 2012. Enhanced surveillance strategies for detecting and monitoring chronic wasting disease in free-ranging cervids: U.S. Geological Survey Open-File Report 42. http://pubs.usgs.gov/of/2012/1036/>.

Walsh, D. P., and M. W. Miller. 2010. A weighted surveillance approach for detecting chronic wasting disease foci. Journal of wildlife diseases 46:118–135.

APPENDIX: Chronic Wasting Disease Risk Assessment

What data are available? Use this checklist to help guide your state's/province assessment of risks related to CWD.

- State/province-wide cervid population/density estimates, including demographic data
- Previous CWD sampling data (sex, age, date, location, season of take)
 - o Ability to collect and test roadkill?
 - o Ability to collect and test clinical suspects?
 - o Ability to collect and test hunter harvested samples?
 - Do you have deer and elk check stations? If so, where? Are samples collected at these locations?
 - What samples are collected (obex, retropharyngeal lymph nodes, tonsils)? Who collects them? Are they trained?
 - What is your preferred level of confidence (95% or 99%) to detect a given level of prevalence (5%, 1%, or 0.1%)?
 - Financially, what range of sampling can you afford annually (2000–5000 of each susceptible species tested)?
 - · Known carcass dump sites?

Additional data: Taxidermists and Meat Processors:

- Physical location
- Verification of current operation. Date when staff visited this location
- On-site interview:
 - o Number of cervids processed annually
 - Number of cervids coming in from out-of-state/province
 - o Disposal method (landfill/dumpster, pit, compost, left on property, unknown, other). Are there regulations on disposal methods?
 - Live captive/farm cervids on premises (including wild deer rehabilitation).
 Are there regulations prohibiting ownership of live cervids by these businesses?

Captive/Farm Cervid Facilities:

- Physical location
- · Herd status (CWD Certified or other). What are criteria for lowered designations?
- Species kept (white-tailed deer, elk, red deer, sika deer, etc.)
- Verification of current operation. If out-of-business, year known?
- Previous escapes at this location? Successful in recovering escapes?
- Imported cervids from out-of-state/province and if so, which states/provinces?
- What are the testing requirements to move deer intra-state/province?
- Past compliance issues
- Detailed on-site questions:
 - o Disposal method for carcasses (buried, left in place, pit, burned, unknown)
 - o Fence quality (low, medium, high)
 - Other businesses or activities involving cervids (taxidermy, rehabilitation, commercial transport, meat processing)
 - Primary business model: urine collection, shooting operation, breeding facility, antler velvet
 - o Routine veterinary care

Neighboring States/Provinces/Territories:

- Levels of surveillance (number of samples collected, strategy?)
- Estimates of how many hunters go out-of-state/province?

Section 3: MANAGEMENT

10 - Development of a CWD Management Plan

Best Management Practices for development of contents included in a CWD Management Plan

A CWD Management Plan is a valuable tool for organizing information about CWD response options within a particular state, province, or territory. The basic elements of a management plan should include:

Background Information

- Provide introductory and background material on the susceptible herds and cervid populations in your state/province/territory. Include:
 - o Information regarding management authority and legal issues
 - o Existing management tools and evidence for their efficacy
- Identify specific, measurable, attainable, relevant, and time-bound objectives of the CWD management plan
- Provide a summary of state/provincial history/status regarding CWD
- List state/provincial/ agency regulations already in place regarding CWD
- Explain how the management plan was created and who participated in development

Additional background material could include discussions of:

- · Biology, distribution of cervids and predicted population impacts related to CWD
- Existing management tools and evidence for their efficacy
- · CWD and human health
- History of CWD surveillance and planning in your state/province
- Alternative livestock operations or captive cervid facilities in your state/province
- Baiting and feeding issues
- · Scents and lures
- Carcass transport
- Rehabilitation/translocation
- Carcass disposal

Communication

- Identify objectives for your messages during surveillance, pre-detection, and response to detection
- Identify the target audience or audiences
- Develop speaking points for pre- and post-detection
- Identify communication methods to be used, staff member leading each effort, and timeline for final products
- Develop a phone tree that lists contact information and order for contacting those who
 need to be notified in the event of detection in a new area. Consider wildlife management
 agency personnel, state/provincial veterinarian or other agriculture/livestock officials,
 state/provincial public health officials, and others.
- Provide a set of frequently asked questions and answers on your website
- Develop an example press release

Surveillance

- Surveillance plan for areas where the disease has not yet been detected should prioritize samples according to risk and allow for statistically rigorous inferences to be made from the data.
- Sampling of symptomatic hunter-harvested, and vehicle-killed animals may provide a readily accessible and publicly acceptable avenue for surveillance. Note that testing of vehicle-killed animals during certain times of the year (i.e. shortly after fawning) or during periods of migration may result in a significant amount of low-risk samples and may not be an efficient surveillance strategy in some areas.
- Educating and then partnering with taxidermists and/or meat processors should be considered.
- Cervids exhibiting clinical signs of CWD symptomatic animals should be removed and tested. The likelihood of detecting CWD in an animal that appears sick is much greater than sampling asymptomatic or healthy-appearing animals.
- Weighted surveillance strategies (i.e., targeting segments of the population that are more likely to be infected with CWD; Walsh 2012) may be considered to improve efficiency in surveillance
- All samples must be georeferenced
- List estimated personnel/equipment needs and budget

Agencies are advised to work closely with an internal or external epidemiologist to determine the best approach for surveillance of CWD and to monitor CWD endemic populations as described in the following section.

CWD Management-Response to initial detection in an area

- Initiate a central coordinating group / body or other, similar Incident Command System Defining CWD prevalence and distribution within the Initial Response Area:
- Define an Initial Response Area
- Define initial sampling scheme
 - Special buck/bull management hunting, sharpshooter removal, etc.
 - Evaluate results of sampling
 - o Determine CWD prevalence and distribution within the Initial Response Area
 - If needed, consider additional sampling efforts (e.g. special hunts, or monitoring during another general hunting season) from hunter-harvested animals to obtain rigorous estimates of prevalence and distribution at appropriate scales
- Define a Transport Restriction Zone
- Determine CWD prevalence and distribution within the Initial Response Area
- Define potential conflicts and complications
- Consider immediate actions (e.g. implementing rule changes) to control CWD spread since success is more likely early in an outbreak
- Use prepared phone tree within communication plan to ensure all appropriate officials and stakeholders are notified
- Set up a public information campaign using previously drafted communication plan.
- Consider drafting additional regulations (e.g., recreational feeding/baiting ban, carcass movement restrictions)

Long-term Monitoring and Management

Some options for management are detailed in Western Association of Fish and Wildlife Agencies (WAFWA) Recommendations for Adaptive Management of Chronic Wasting Disease in the West (2017).

- Long-term management strategies and goals should be based on prevalence and distribution of CWD
- Develop a monitoring strategy to detect spatial spread of CWD and change in prevalence over time
- Specific herd management plans must be adaptive, and tailored to the circumstances of a population/area
- Develop a monitoring program to evaluate management efficacy
- Continue information and outreach program

Captive Cervids

- Improve participation in national/state/provincial/territorial CWD herd certification programs (USDA farmed cervid program website CWD) and compliance with USDA CWD Program Standards (USDA CWD program standards document). Canadian Food Inspection Agency (CFIA) CWD program information can be found at (http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/cwd/herd-certification/eng/1330187841589/1330187970925)
- Develop more comprehensive state/provincial CWD herd certification programs
- Important planning considerations should include:
 - Fencing design to prevent contact between captive and wild cervids (e.g., double fence, minimum 8 foot fence height for deer and 10 foot fence height for elk)
 - Sampling strategy to sample all susceptible animals based on age (>1 year of age)
 - o Mandatory, 100% disease surveillance on private shooting facilities
 - Slaughter surveillance, including the disposal of entrails, etc.
 - Sample collection and submission procedures of certified herds by a USDA or CFIA accredited veterinarian
 - Protocols for response plans if CWD is detected in a facility, including mandatory requirements for depopulation, quarantine, and decontamination
 - Mandatory whole-herd diagnostic testing (when a reliable live animal test becomes available)
 - o DNA comparison for verification of animal identity
 - Regular inspections by state/provincial/territorial and/or federal agencies and requirements for complete electronic herd inventories
 - In-state/province/territory animal movements tracking by permit
 - Electronic information logging and tracking system for all animals born or acquired to facilitate trace-forward or backward if needed
 - Permanent double-marking animal identification
 - o Regular and frequent reporting intervals for sharing testing results
 - o Herd owner enrollment and advancement
 - Changes to certification status following additions of animals or genetic material (germplasm) to a herd
 - o Clear statement of conditions which will result in loss of certification status
 - Changes to certification status following relocation of a herd
 - Consequences associated with cancellation of participation in the HCP
 - Quarantine and decontamination protocols
- In states and provinces where wildlife management agencies do not have authority over captive cervids, it is critical that the agency maintains strong collaboration with agencies that have jurisdiction. There must be a mutual understanding on management of captive cervid facilities, ingress/egress problems, disease testing, and other issues that warrant

cooperation. Consider including officials with authority over captive cervids during plan development, and during response to CWD detection in free-ranging wildlife. Cooperation with state agriculture and marketing officials is also important in states where the state fish and wildlife agency has sole management authority for captive cervids.

Supporting Strategies and Evidence

As CWD continues to be detected across North America, the benefit to wildlife management agencies of developing CWD management plans has become clear. In many cases, disease is already well-established by the time it's detected, so a prompt but methodical response is appropriate and critical when considering the effects on the resource, the state or provincial economy, and potential concerns raised by public health agencies. A well-developed and clearly defined plan will facilitate allocation of available resources in a manner most likely to meet defined objectives, allow a prompt response, and improve public perception when agencies are faced with management decisions in CWD affected areas.

A CWD management plan must be developed using the best available science. Plan developers should call upon the knowledge of colleagues in other agencies and universities with experience in CWD management. Scientists and researchers with expertise in prion disease can .contribute to the scientific aspects of development of a CWD management plan. Although much is still unknown about CWD management, there is a vast amount of pertinent literature that should be reviewed. A comprehensive list of peer-reviewed, published articles in included below to assist agencies in the development of CWD management plans.

Surveillance (looking for new foci or infections) and monitoring efforts (tracking trends, ideally in response to management) should be designed to allow for statistically rigorous inferences to be made from the data (e.g. Samuel et al. 2003, Walsh 2012). Appropriate selection of the sampling unit, or target population, is critical. For example, collection of a representative number of samples scattered over a large state/province is much less sensitive to disease detection than that same number of samples collected on a herd management unit or county basis. Selection of an overly large sampling unit can lead to misinterpretation of the area as being "CWD-free" when in fact adequate sampling was not conducted to detect disease.

Stakeholders have important input in the development of a successful CWD plan. Stakeholder support is critical to execution of surveillance and management actions and including representatives of relevant stakeholder groups during development of CWD plans will maintain transparency and ensure that points of contention are identified and addressed. Because herds or populations affected by CWD often span jurisdictional boundaries (state /provincial, federal,

tribal, international boundaries), open collaboration among such jurisdictions will further the implementation success of a CWD management plan.

And finally, communication is always a key part of any successful plan that involves an adaptive management strategy. It is critical that the wildlife management agency has a consistent and accurate message, and that the message effectively reaches constituents. Detailing communication strategies within the management plan will ensure that important details and constituents are not overlooked. In some cases, a communications plan between stakeholders will be developed separately to insure accurate information flow is unified and talking points to the public and media contains critical information delivered appropriately through either a single source or planned release.

Literature Cited and References

Samuel, M. D., D. O. Joly, M. A. Wild, S. D. Wright, D. L. Otis, R. W. Werge, and M. W. Miller. 2003. Surveillance Strategies for Detecting Chronic Wasting Disease in Free-Ranging Deer and Elk: Results of a CWD Surveillance Workshop. USGS-National Wildlife Health Center, Madison, Wisconsin, USA.

https://www.nwhc.usgs.gov/publications/fact_sheets/pdfs/cwd/CWD_Surveillance_Strategies.pd f.

Walsh, D. P., ed., 2012, Enhanced surveillance strategies for detecting and monitoring chronic wasting disease in free-ranging cervids: U.S. Geological Survey Open-File Report 2012–1036. USGS-National Wildlife Health Center, Madison, Wisconsin, USA. https://pubs.usgs.gov/of/2012/1036/pdf/ofr2012_1036.pdf.

Western Association of Fish and Wildlife Agencies. 2017. Recommendations for Adaptive Management of Chronic Wasting Disease in the West. WAFWA Wildlife Health Committee and Mule Deer Working Group. Edmonton, Alberta, Canada and Fort Collins, Colorado, USA. https://www.wafwa.org/Documents%20and%20Settings/37/Site%20Documents/Committees/Wildlife%20Health/docs/CWDAdaptiveManagementRecommendations_WAFWAfinal_approved01_0618.pdf.

11 - Managing CWD Prevalence

Best Management Practices for managing CWD prevalence in infected populations should include the following:

- Agencies are advised to work closely with an internal or external epidemiologist to determine the best approach to monitoring CWD endemic populations.
- Utilize harvest or other removal mechanisms to manage prevalence by: 1)
 targeting the portion of the population most likely to have CWD, 2) targeting
 animals in known CWD hotspots, 3) targeting timing of removal to most
 effectively remove infected animals, and 4) reduce cervid density in CWD
 positive areas with high density populations. Efforts to suppress CWD should
 focus on strategies that exploit or complement current management activities, for
 example, modeling and some field observations suggest that harvest could be used to
 control CWD.
- Reduce environmental contamination by reducing artificial cervid concentration sites. Management to reduce or eliminate repeated visitation by cervids at concentration points to reduce localized environmental contamination and transmission.
- Utilize a coordinated, adaptive management approach to provide for strategic application and evaluation of experimental CWD suppression strategies whereby the data gathered from these efforts would then be used to develop improved strategies.
- Develop and implement regulations to minimize the possibility of spreading CWD by controlling the transportation of carcasses and potentially infective carcass parts between hunt areas and across state boundaries. Through regulation, ensure the head and all portions of the spinal column are either left at the site of the kill or disposed of in an approved manner.

Supporting Strategies and Evidence

Note: The subject matter review and recommendations in this chapter were excerpted from the Western Association of Fish and Wildlife Agencies' "Recommendations on Adaptive Management of Chronic Wasting Disease in the West" (2017) https://www.wafwa.org/Documents%20and%20Settings/37/Site%20Documents/Co

mmittees/Wildlife%20Health/docs/CWDAdaptiveManagementRecommendations WAFWAfinal approved010618.pdf

As chronic wasting disease (CWD) continues to spread throughout free-ranging populations in North America and elsewhere, viable management strategies are needed. Once CWD has become established in a population (often well before it is detected), its eradication is not currently considered feasible. Regardless, opportunities remain for responsible management agencies to stabilize or suppress CWD outbreaks and thereby minimize impacts and potentially irreparable harm. Typical disease control tools such as vaccines, safe and practical agents to eliminate prions from the environment, and effective curative therapies remain unavailable for CWD. Consequently, to date, most of the attempts to manage CWD have focused on reducing population densities and eliminating areas of CWD foci through a combination of hunter harvest and agency culling (Blanchong et al. 2006, Conner et al. 2007, Pybus 2012, Mateus-Pinilla et al. 2013, Manjerovac et al. 2014). Many of these programs were prematurely terminated due to lack of early, measurable successes, high personnel/agency costs, and lack of public support. Unfortunately, the early termination of these programs precluded a more robust evaluation of the potential efficacy of longer-term management. This situation highlights the need for management strategies that include realistic goals that can be applied for extended time periods, and have sufficient public and stakeholder acceptance. Because eradication is not feasible in areas with established infections, management for CWD control will require a sustained, long-term commitment by wildlife managers and the public.

Harvest Management

Future efforts toward CWD suppression should focus on strategies that exploit or complement current management activities. For example, modeling and some field observations suggest that harvest could be used to control CWD (Wild et al. 2011, Jennelle et al. 2014, Geremia et al. 2015, Potapov et al. 2016, Al-Arydah et al. 2016). Male deer appear to have a higher likelihood of CWD infection than females (Miller et al. 2000, Grear et al. 2006, DeVivo et al. 2017). Focusing harvest of sufficient intensity on the segment of the population most likely to be infected could help reduce disease prevalence and subsequent transmission (e.g., Potapov et al. 2016). Exploiting potential biases in removal of infected animals via harvest (e.g., Conner et al. 2000) also could be used to enhance the efficacy of harvest as a control strategy (Wild et al. 2011). For example, targeting mature male deer via increased harvest pressure during or after the breeding season may selectively remove a higher proportion of infected individuals than harvest in early autumn (Conner et al. 2000). Such strategies would allow agencies to modify existing harvest management approaches to emphasize CWD suppression and thus should be relatively sustainable in the long-term with minimal additional personnel time or cost. Alternatively, multiple CWD management programs have targeted winter culling around known CWD infected animals because of spatial clustering of the disease on the landscape (e.g., Connor et al. 2007, Pybus 2012, Mateus-Pinilla et al. 2013). Data from these management attempts suggest effectiveness in limiting CWD (Pybus 2012, Mateus-Pinilla et al. 2013, Geremia et al. 2015).

Due to the poor success in implementing long-term agency culling programs (e.g., Conner et al. 2007, Pybus 2012), an alternative approach might be to use hunting seasons targeting specific winter ranges or disease foci.

Management of Environmental Contamination

Environmental accumulation of prions can contribute to transmission of CWD and may be a significant driver in population response (Almberg et al. 2011). Areas that promote artificial cervid "hotspots" such as salt/mineral licks and artificial feed sources (e.g., bait piles, backyard feeders, stored forage, grain bins) may serve as sources of prion concentration and transmission (Miller et al. 2004, Thompson et al. 2008, Lavelle et al. 2014, Mejía-Salazar et al. 2017). Risks associated with intentional winter feeding of cervids, either annually or episodically, also should be considered as these activities may exacerbate CWD transmission. Management to reduce or eliminate repeated visitation to spatial concentration points should reduce localized environmental contamination and transmission. Depending on jurisdiction, this approach could require undertaking regulatory and on-the-ground actions. This strategy likely would require significant start-up investments; however, once implemented it could be maintained in the long term at a lower cost.

Adaptive Management

Despite significant advances in our understanding of CWD over the past 40 years, there is still little published information on effective management (Miller and Fischer 2016, Uehlinger et al. 2016). While some of the aforementioned strategies have been modeled, field data on efficacy are limited or lacking. Nevertheless, wildlife managers are tasked with managing for healthy, sustainable free-ranging populations even in the absence of definitive CWD control strategies. It follows that a coordinated, adaptive management approach would provide a path forward for CWD management. Adaptive management would allow for strategic application and evaluation of experimental CWD suppression strategies whereby the data gathered would then be used to develop improved strategies. This approach is not to be confused with simple trial and error; rather it is a systematic, hypothesis-based and scientific approach to applied management (Walters 1986, Walters and Holling 1990, Williams 2009). Results are used not only in evaluating the hypothesis, but also to gather new data directing future management. Agencies looking to use an adaptive management approach must be prepared to invest resources into public involvement, communications, data collection, experimental design, and evaluation. Fully evaluating any individual management strategy would require multiple applications under a variety of intensities and field conditions. As a result, this would be most efficient under a collaborative approach with multiple jurisdictions working together to apply and evaluate management strategies. Each individual agency can elect to apply as many or as few strategies or replicates as appropriate in their jurisdiction, while still gathering valuable data to contribute to broader understanding of CWD control strategies. Due to significant regional differences in

habitat, susceptible species, and behavior, we believe such collaboration should be focused at a regional level.

Literature Cited and References

Al-Arydah, M., Croteau, M. C., Oraby, T., Smith, R. J., & Krewski, D. 2016. Applications of mathematical modeling in managing the spread of chronic wasting disease (CWD) in wild deer under alternative harvesting scenarios. Journal of Toxicology and Environmental Health, Part A, 79(16–17):690–699.

Almberg, E. S., P. C Cross, C. J. Johnson, D. M. Heisey, and B. J. Richards. 2011. Modeling routes of chronic wasting disease transmission: environmental prion persistence promotes deer population decline and extinction. PloS ONE, 6(5) e19896.

Blanchong, J. A., D. O. Joly, M. D. Samuel, J. A. Langenberg, R. E. Rolley, and J. F. Sausen. 2006. White-tailed deer harvest from the chronic wasting disease eradication zone in south-central Wisconsin. Wildlife Society Bulletin 34(3):725–731.

Conner, M. M., C. W. McCarty, and M. W. Miller. 2000. Detection of bias in harvest-based estimates of chronic wasting disease prevalence in mule deer. Journal of Wildlife Diseases 36:691–699.

Conner, M. M., M. W. Miller, M. R. Ebinger, and K. P. Burnham. 2007. A Meta-BACI Approach for Evaluating Management Intervention on Chronic Wasting Disease in Mule Deer. Ecological Applications 17(1), 140–153.

DeVivo, M. T. 2015. Chronic wasting disease ecology and epidemiology of mule deer in Wyoming. University of Wyoming.

Edmunds, D. R., M. J. Kauffman, B. A. Schumaker, F. G. Lindzey, W. E. Cook, T. J. Kreeger, T. and T. E. Cornish. 2016. Chronic Wasting Disease Drives Population Decline of White-tailed Deer. PLoS ONE 11(8), e0161127.

Galloway, N. L., R. J. Monello, D. Brimeyer, E. Cole, and N. T. Hobbs. 2017. Model Forecasting of the Impacts of Chronic Wasting Disease on the Jackson Elk Herd. https://www.researchgate.net/profile/Eric Cole4/publication/312435900 Model Forecasting of the Impacts of CWD on the Jackson Elk Herd/links/587d20c308aed3826af00c3b.pdf.

Geremia, C., M. W. Miller, J. A. Hoeting, M. F. Antolin, M. F., and N. T. Hobbs. 2015. Bayesian modeling of prion disease dynamics in mule deer using population monitoring and capture-recapture data. PloS ONE, 10(10), e0140687.

Grear, D. A., M. D. Samuel, J. A. Langenberg, and D. Keane. 2006. Demographic Patterns and Harvest Vulnerability of Chronic Wasting Disease Infected White-tailed Deer in Wisconsin. Journal of Wildlife Management 70: 546–553.

Green, R. H. 1979. Sampling design and statistical methods for environmental biologists. New York: John Wiley & Sons. Print.

Jennelle, C. S., V. Henaux, G. Wasserberg, B. Thiagarajan, R. E. Rolley, and M. D. Samuel. 2014. Transmission of chronic wasting disease in Wisconsin white-tailed deer: implications for disease spread and management. PloS ONE, 9(3), e91043.

Lavelle, M. J., G. E. Phillips, J. W. Fischer, P. W., Burke, N. W. Seward, R. S. Stahl, R. S., and K. C. VerCauteren. 2014. Mineral licks: motivational factors for visitation and accompanying disease risk at communal use sites of elk and deer. Environmental geochemistry and health 36(6), 1049–1061.

Manjerovic, M. B., M. L. Green, N. Mateus-Pinilla, N., and J. Novakofski. 2014. The importance of localized culling in stabilizing chronic wasting disease prevalence in white-tailed deer populations. Preventive veterinary medicine 113(1), 139–145.

Mateus-Pinilla, N., H. Y. Weng, M. O. Ruiz, M. O., P. Shelton, P., and J. Novakofski. 2013. Evaluation of a wild white-tailed deer population management program for controlling chronic wasting disease in Illinois, 2003–2008. Preventive Veterinary Medicine 110(3), 541–548.

Mejía-Salazar, M. F., C. Waldner, C., Y. T. Hwang, and T. K. Bollinger, T. K. 2017. Visitation to environmental sites by mule deer in a chronic wasting disease endemic area, dynamics among mule deer and how they visit various environmental areas: implications for chronic wasting disease transmission, 183. https://www.researchgate.net/profile/Maria Fernanda Mejia-Salazar/publication/320809224 Social dynamics among mule deer and how they visit vario us environmental areas implications for chronic wasting disease transmission/links/59fb65c d458515d07060f690/Social-dynamics-among-mule-deer-and-how-they-visit-various-environmental-areas-implications-for-chronic-wasting-disease-transmission.pdf#page=202.

Miller, M. W. and J. R. Fischer. 2016. The First Five (or More) Decades of Chronic Wasting Disease: Lessons for the Five Decades to Come. Transactions of the North American Wildlife and Natural Resources Conference 81: in press.

Miller, M. W., E. S. Williams, C. W. McCarty, T. R. Spraker, T. J. Kreeger, C. T. Larsen, and E. T. Thorne. 2000. Epizootiology of Chronic Wasting Disease in Free-ranging Cervids in Colorado and Wyoming. Journal of Wildlife Diseases 38: 676–690.

Miller M. W, E. S. Williams, N. T. Hobbs, and L. L. Wolfe. 2004. Environmental sources of prion transmission in mule deer. Emerging Infectious Diseases 10:1003–1006.

Miller, M. W., H. M. Swanson, L. L. Wolfe, F. G. Quartarone, S. L. Huwer, C. H. Southwick, and P. M. Lukacs. 2008. Lions and Prions and Deer Demise. PLoS ONE 3(12), p.e4019

Monello, R. J., J. G. Powers, N. T. Hobbs, T. R. Spraker, M. K. Watry, and M. A. Wild. 2014. Survival and Population Growth of a Free-ranging Elk Population with a Long History of Exposure to Chronic Wasting Disease. The Journal of Wildlife Management 78(2): 214–223.

Potapov, A., E. Merrill, M. Pybus, M., and M. A. Lewis, M. A. 2016. Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. PloS one, 11(3):e0151039.

Pybus, M. J. 2012. CWD Program Review 2012. Alberta Sustainable Resource Development, Fish and Wildlife Division. Web 17 March 2016. http://aep.alberta.ca/fish-wildlife/wildlife-diseases/chronic-wastingdisease/documents/CWD-ProgramReview-May-2012.pdf

Smith, E. P. 2002. BACI design. Encyclopedia of environmetrics.

Thompson A. K., M. D. Samuel, and T. R. Van Deelen. 2008. Alternative feeding strategies and potential disease transmission in Wisconsin white-tailed deer. The Journal of Wildlife Management 72:416–421.

Uehlinger F.D., A. C. Johnston, T. K. Bollinger, and C. L. Waldner. 2016. Systematic review of management strategies to control chronic wasting disease in wild deer populations in North America. BMC Veterinary Research 12:173.

Walters, C. J. 1986. Adaptive Management of Renewable Resources. Blackburn Press, Caldwell, NJ.

Walters, C. J. and C. S. Holling. 1990. Large-scale management experiments and learning by doing. Ecology 71(6), 2060–2068.

Western Association of Fish and Wildlife Agencies. 2017. Recommendations for Adaptive Management of Chronic Wasting Disease in the West. WAFWA Wildlife Health Committee and Mule Deer Working Group. Edmonton, Canada and Fort Collins, USA.

Wild M.A., N. T. Hobbs, M. S. Graham, and M. W. Miller. 2011. The role of predation in disease control: a comparison of selective and nonselective removal on prion disease dynamics in deer. Journal of Wildlife Diseases 47: 78–93.

Williams, A. L., T. J. Kreeger, and B. A. Schumaker. 2014. Chronic Wasting Disease Model of Genetic Selection Favoring Prolonged Survival in Rocky Mountain Elk (*Cervus elaphus*). Ecosphere 5(5):60.

Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide. Available online at https://www2.usgs.gov/sdc/doc/DOI%20Adaptive%20Management TechGuide.pdf (accessed June 26, 2017).

12 - Monitoring of CWD Enzootic Populations

Best Management Practices to monitor CWD enzootic populations include the following:

- Define biologically relevant spatial units for data collection and evaluation.
- · Determine meaningful sample sizes for interpretation.
- · Identify surveillance goals to help guide sampling strategies over time.
- Work within existing management frameworks to maximize opportunities for sample collection and minimize additional time and cost to the agency.

Supporting Strategies and Evidence

Once chronic wasting disease (CWD) is detected in an area, surveillance goals designed to detect disease may shift to monitoring disease prevalence, bringing increased complexity in methods and analyses (Walsh et al, 2012). Any long-term CWD monitoring program must take into account the underlying management infrastructure of the agency as well as ultimate surveillance goals. Maintaining a CWD monitoring program over many decades can be challenging as agency focus and level of agency/public concern may shift over time. Effective monitoring can be conducted in multiple ways and should work within existing management frameworks to maximize opportunities for sample collection and minimize additional time and financial cost to the agency. Overall data goals must be considered and areas for monitoring will likely need to be prioritized to meet long-term needs.

It is important to consider broader questions related to goals of the agency monitoring program to help guide decisions on approach. Questions such as how the data will be used, what spatial scale to collect samples/analyze data, what sample sizes are needed, and what disease metrics will be measured are critical in guiding sampling strategies. In order to effectively utilize monitoring programs, agencies must take the time to identify biologically relevant spatial units and appropriate sample sizes to collect useful information. At a minimum, agencies should aim to estimate prevalence with statistically valid sample sizes in affected herd units at least every 5 years.

Monitoring for spatial and temporal changes in disease patterns can be particularly valuable when linked with research to understand the epidemiology of CWD. In these situations, monitoring programs must be closely linked with the objectives of the research program being conducted. Monitoring is also an important component of agency programs that are being conducted to manage CWD. Monitoring changes in disease patterns and impacts of disease on

target populations provides the primary source of information to assess the effect of management programs and is a crucial component of monitoring target population response to adaptive management approaches for CWD.

Primary Monitoring Methods

Live Animal Testing

Live animal sampling efforts are often conducted through research projects with directed questions to allow for more precise information on disease dynamics at a local scale. This generally represents more intensive monitoring strategies requiring significant resources and logistical considerations. This often involves live animal capture and sampling operations. The primary benefit of these intensive projects at a local scale is the finer resolution of data and more precise estimates of disease dynamics; however, the high cost in both time and resources of these types of programs generally lead to smaller-scale monitoring that may not always apply uniformly to a larger population. Live animal testing currently requires invasive procedures and extensive animal handling that are not efficient for large-scale surveillance efforts. Furthermore, limitations in accuracy of live animal diagnostics tests during early infection must be considered with any live animal testing program. Populations without any active harvest represent significant challenges for disease monitoring and live animal sampling may be the primary method available for monitoring disease in those areas.

Hunter Harvest

Hunter harvest sampling represents the most common approach to CWD monitoring by agencies. This allows for the most efficient use of existing resources and management frameworks. Although "targeted" or vehicle-killed surveillance may be beneficial for detection, they are likely of less value for disease monitoring in an infected population. Random sampling via hunter harvested animals is likely the most efficient passive sampling method for estimating prevalence or incidence in CWD enzootic populations (Samuel 2003). However, many areas may consider a combination of hunter harvested sampling as well as targeted and vehicle-killed surveillance to achieve disease monitoring in infected populations while also surveying for spread and new disease foci.

Disease Monitoring Goals

CWD monitoring of infected populations typically has one or more of the following 3 goals:

- 1) Assess the spatial distribution and/or estimate prevalence
- 2) Monitor changes in CWD over time or evaluate responses to management actions
- 3) Evaluate CWD as it relates to research projects

Monitoring Considerations

A variety of methods and sample designs are available for CWD monitoring. Each has positive and negative aspects; the program you design should meet the goals and resources for your situation. Your options will depend on management, monitoring goals, and resources required. Thus cost and resources may be a major factor in determining extent and type of monitoring strategy. The challenge is to decide which strategy will make the best use of that resource, given a specific goal.

Though elk, moose, mule deer, and white-tailed deer may occupy the same general area, data on CWD are best tracked separately for each species or target population, rather than considering all cervids as one target population. Existing information demonstrates that rates of infection vary among cervid species, possibly due to genetic susceptibility, different rates of disease transmission, and/or differing social behaviors. However, transmission of CWD is likely to occur among sympatric cervid populations. Finally, it is crucial to consider the size of the region and number of animals in relationship to the surveillance objectives for detecting CWD. Chronic wasting disease is not evenly distributed across the landscape and more likely is represented by clusters of diseased animals within the greater population (Miller and Conner 2005). Monitoring should occur at biologically relevant spatial scales in view of the highly clustered distribution of CWD in wild cervids (Ricci 2017).

Sampling Strategies

- 1) Annual Sampling: Perhaps the simplest concept is annual surveillance across an entire jurisdiction or regionally within the CWD enzootic area. While this strategy may be compelling, achieving long-term and effective surveillance with annual sampling in an enzootic area is difficult. Even with surveillance across an entire jurisdiction, consideration must be given to biologically relevant spatial scales. So if statewide surveillance is conducted, data must be still be collected at the level of a population or analysis unit to allow for interpretation. This approach to sampling is unlikely to consistently provide appropriate sample sizes to allow for interpretation at biologically relevant spatial scales, though it may be effective if the annual sampling is focused on a relatively small enzootic area. Regional surveillance should include a buffer zone outside of the known CWD enzootic area to monitor spread. While this approach has the benefit of consistent application and expectations for hunters and agency personnel, over time hunter, landowner, and agency fatigue will likely hinder the ability to consistently meet sample goals.
- 2) <u>Intermittent Sampling:</u> This option would allow for intermittent or pulse surveillance every 2-5 years. This would provide long-term monitoring of CWD in populations, but may not require sampling every year. For this strategy to be successful, achieving adequate sample sizes in the single year of sampling would be essential. Adequate license numbers and bag limits and compulsory sample submission can be used to ensure that target sample sizes are acquired in a single year's effort.

- 3) Rotating Sampling: In jurisdictions with a large CWD enzootic area, rotating surveillance with focus on a portion of the enzootic area and buffer zone, or simply a portion of the entire jurisdiction each year may allow for better monitoring of CWD over time with fewer resources than annual jurisdiction-wide surveillance. As above, adequate license numbers and bag limits and compulsory sample submission can be used to ensure that target sample sizes are acquired in a single year's effort.
- 4) Focused Sampling: In jurisdictions with a large CWD enzootic area, some agencies may consider choosing selected index populations for focused monitoring over time. This would be most effective in combination with another strategy. For example, an agency could consider intermittent jurisdiction-wide surveillance every 3 years, but conduct annual focused surveillance in selected populations of interest (e.g. where management actions are being applied, or where population impacts are suspected).
- 5) <u>Culling:</u> Culling is often used as a disease control strategy but it may also be used for monitoring, particularly in areas without hunter harvest. Disease monitoring through culling operations must account for method of removal and determine whether animals were targeted or randomly removed. For the purposes of baseline monitoring, higher levels of statistical inference are possible when it can be shown that animals are randomly removed, however, sampling of targeted removals may also provide valuable data, particularly when monitoring a targeted removal project over time. Targeted culling may be particularly beneficial for agencies looking to conduct an initial assessment of chronic wasting disease after a new detection.
- 6) Opportunistic: In areas with a long history of CWD and minimal resources or agency interest, opportunistic surveillance may be the only option. While this method may not provide the same levels of statistical inference as more structured sampling approaches, it can still provide useful data for general monitoring, particularly when data are pooled over multiple years. Ideally, CWD surveillance data would be pooled for no more than three years to minimize error associated with changes in prevalence over time. If appropriate sample sizes are achieved by this method of opportunistic sampling, reasonable interpretation of data may be considered. If data are severely limited, agencies could consider pooling up to five years of data to help identify areas for more robust evaluation. Agencies must interpret data with extreme caution when data are pooled over more than three years, but limited data may still help to identify areas for future focus of minimal sampling resources. In addition, the presence of opportunistic sampling programs may help to garner support for expanded work.

Metrics for Monitoring Disease Trends

A variety of metrics exist for measuring disease trends in populations. Each metric has its own strengths and weaknesses and agencies must consider the ultimate goals of their monitoring

program to determine which metric is most appropriate. In general, prevalence, incidence, and force of infection are the metrics most relevant to measure CWD infection intensity within a population over time. With all the metrics outlined, one must consider the potential for sampling bias. While hunter-harvested sampling may the most accessible and cost-effective method, there may still be some amount of bias (Conner et al. 2000). Similarly, live animal sampling may also introduce significant bias through unintentional selection of infected animals through capture. Just as infected animals may be more susceptible to hunter harvest, they may also be more susceptible to capture.

Prevalence

Prevalence is defined as the proportion of test-positive animals within a reference population sampled over a specified period of time. Prevalence is the easiest metric that can be used to track changes in CWD over time. This is a readily understood concept by agency personnel and the public and allows for effective communication of disease information. However, given the long course of CWD infection, prevalence also is the least sensitive or slowest to respond to changes in disease dynamics. While it is possible to look at prevalence trends over time, it may take multiple years or sampling cycles to truly determine changes in prevalence. Relying solely on prevalence estimates to track changes in disease over time is acceptable; however, effective communication and education on the length of time needed to measure changes are necessary. Agencies using prevalence as a primary disease tracking metric must be careful to not prematurely interpret prevalence data.

Considering the age and sex of the animals used for prevalence calculation is warranted. Prevalence should be tracked separately for males and females. Additionally, evaluating prevalence by age, may provide some additional information and tracking. Looking at changes in CWD infected fawn or yearling prevalence in populations with high CWD prevalence may provide useful tracking information. In some cases, this could be used as a crude measurement of incidence (see below).

Incidence

Incidence is defined as the number of new cases of disease in a population over a defined period of time. This metric provides the best information to track changes in rates of disease transmission, but it requires repeated live capture and sampling of individually marked animals, thus increasing costs and logistical complexities. This may be most useful for disease monitoring associated with research or in populations without active harvest where live animal sampling may be the only option.

CWD infected yearling or fawn prevalence in some cases could be used as a crude measurement of incidence. Because yearlings and fawns have been alive for less than 2 years, infected animals were likely infected within that time period (Walsh et al. 2012). This metric would be most effective in areas with a high CWD prevalence.

Force of Infection

Force of infection is the probability, over a short period of time, that an uninfected animal contracts an infection. This metric requires collection of detailed sex and age-specific prevalence data, but is more sensitive to changes in transmission rates than prevalence. Tracking trends in force of infection over time may allow for earlier evaluation of changes in transmission dynamics. This may be particularly useful when evaluating effects of management.

Sample Size

Any effective CWD monitoring program must consider sample size. State or provincial agency biometricians should be consulted to help identify appropriate sample sizes to achieve desired monitoring goals. Agencies should identify directed goals for monitoring to help with sample size calculations. Ask: Is the objective to achieve a coarse estimate of prevalence or to detect changes or trends over time? What level of statistical rigor are you looking for? What is the magnitude of change necessary to detect with confidence? All of these are important questions to consider when determining monitoring goals. Detecting small changes in CWD prevalence (<5%) with any confidence may require very high sample sizes. The Western Association of Fish and Wildlife Agencies 2017 Recommendations for Adaptive Management of Chronic Wasting Disease in the West provides a helpful example of simple sample size calculations for detecting various changes in prevalence over time. In many cases, identifying appropriate sample sizes will help to direct decisions on the most effective approach to surveillance in an area. If sample sizes for good prevalence estimates can be achieved in a single harvest season, then annual surveillance or intermittent surveillance may be effective. In some areas, lower cervid density or low harvest may require multiple years of surveillance to achieve reasonable sample sizes. When multiple years of surveillance are used to estimate prevalence, consideration of changes in prevalence over time must be included. Ideally, sampling should be conducted over no more than three years to minimize error associated with changes in prevalence over time. While sampling over multiple years is not ideal, the slow spread and rate of increase in prevalence associated with CWD allow for reasonable estimates over multi-year sampling efforts. As a general rule of thumb, sample sizes less than 100 samples over a three year period are likely unreliable for estimating prevalence in a given population.

Selection of Sampling Units or Scale

To obtain meaningful and statistically relevant samples from monitoring efforts, it is essential that a biologically relevant spatial scale is defined. This may equal a population unit, or possibly subdivisions of a population unit if biologically relevant subgroups can be identified. Due to the uneven distribution of CWD on the landscape and spatial clustering of disease that has been observed, spatial scale is an essential consideration regardless of the sampling strategy employed.

Note: Portions of the subject matter review and recommendations in this chapter were excerpted from the 2017 Western Association of Fish and Wildlife Agencies document and Walsh et al. 2012 document cited below.

Literature Cited and References

Conner, M. M., C. W. McCarty, C. W., and M. W. Miller. 2000. Detection of bias in harvest-based estimates of chronic wasting disease prevalence in mule deer. Journal of Wildlife Diseases 36(4):691–699.

Miller, M. W. and M. M. Conner. 2005. Epidemiology of chronic wasting disease in free-ranging mule deer: spatial, temporal, and demographic influences on observed prevalence patterns: Journal of Wildlife Diseases 41:275–290.

Ricci, A., A. Allende, D. Bolton, M. Chemaly, R. Davies, P. S. Fernández Escámez, and B. Nørrung, 2017. Chronic wasting disease (CWD) in cervids. EFSA Journal, *15*(1).

Samuel, M. D., D. O. Joly, M. A. Wild, S. D. Wright, D. L. Otis, R. W. Werge, and M. W. Miller. 2003. Surveillance strategies for detecting chronic wasting disease in free-ranging deer and elk: results of a CWD surveillance workshop. In *Chronic Wasting Disease Surveillance Workshop* (p. 43).

Walsh, D. P. (Ed.). 2012. Enhanced surveillance strategies for detecting and monitoring chronic wasting disease in free-ranging cervids. US Department of the Interior, US Geological Survey.

Western Association of Fish and Wildlife Agencies. 2017. Recommendations for Adaptive Management of Chronic Wasting Disease in the West. WAFWA Wildlife Health Committee and Mule Deer Working Group. Edmonton, Alberta, Canada and Fort Collins, Colorado, USA.

13 - Rehabilitation of Deer and other Cervids

Best Management Practice to reduce the risk of CWD transmission and establishment of CWD involving wildlife rehabilitation:

 Prohibit cervid rehabilitation activities in designated CWD management zones or in other geographic areas or within jurisdictional boundaries where CWD has been detected in wild or captive cervid populations.

Alternative Management practices include:

- In states, provinces or geographic areas where CWD is suspected but not yet reported, restrict rehabilitation activities to facilities that observe all recommended biosecurity protocols for the safe handling, disposal, and decontamination of prions and prion-infected tissues, materials, and equipment.
- An alternative practice that adds additional risk for states, provinces, or geographic areas is to allow cervid rehabilitation where CWD is suspected but not yet reported in wild cervids, or where detections have been reported in captive but not wild cervid herds. Facilities must observe all recommended biosecurity protocols for the safe handling, carcass disposal, and decontamination of prions and prion-infected tissues, materials, and equipment.
 - State agencies can increase oversight of wild deer rehabilitation by taking an active role in management and regulation of cervid rehabilitation facilities. States should identify which rehabilitators take in deer, use electronic reporting systems to track deer rehabilitation, and provide rehabilitators with specific measures to reduce or prevent disease at their facilities. Rehabilitation facilities should be inspected by state agency staff on a regular basis and, at a minimum, meet basic standards outlined by the International Wildlife Rehabilitation Council. Rehabilitators should be required to provide carcasses or samples from deceased cervids for diagnostic testing and report any cervids presented to them or reported by the public exhibiting clinical signs consistent with CWD (uncoordinated gait or stumbling, drooling, head tilt, emaciation). Deer rehabilitators must dispose of carcasses in an approved manner as per state laws and in CWD positive states carcass disposal should follow guidelines set forth in chapter 16 Carcass Disposal. Rehabilitators should be encouraged to keep adult deer separate from fawns at rehabilitation facilities. Fawns should not be overwintered except for those fawns that require continued rehabilitative care. Deer rehabilitators must maintain accurate records for all deer that are handled under the authority of their Wildlife Rehabilitator License including all deer transferred to another rehabilitator, euthanized, died or released to the wild.

Supporting Strategies and Evidence

Wildlife rehabilitation attempts to "provide professional care to sick, injured, and orphaned wild animals so ultimately they can be returned to their natural habitat" (National Wildlife Rehabilitators Association 2018). Such efforts often focus on "abandoned" or "picked up" fawns which would otherwise be euthanized or left in the field to die of natural causes such as starvation or predation (Beringer et al. 2004; Williams and Gregonis 2015). Some programs also attempt to foster new-born orphaned fawns with free-ranging doe-fawn groups. Rehabilitated orphaned fawns are often held 3–4 months prior to release in the late summer-early fall (Williams and Gregonis 2015).

Data from New York State (see Figure) indicate that wild deer (primarily fawns) are often moved long distances to a wildlife rehabilitator who will rehabilitate fawns. In some cases, the long distance transport of an "abandoned fawn" is facilitated by a misguided but well-meaning attempt by a private citizen to bring the fawn to a rehabilitator. In other cases, a fawn is brought to a rehabilitator who accepts the animal from the public, and then transfers the fawn to another rehabilitator who specializes in deer rehabilitation.



Figure: Movement patterns for white-tailed deer taken in by licensed wildlife rehabilitators in New York State in 2012. Most deer released were young-of-the-year (fawns). Several deer were

moved more than 40 miles to a rehabilitation facility. Release locations for deer were not available.

Although state fish and wildlife agencies have the authority to certify and license wildlife rehabilitators (National Wildlife Rehabilitators Association 2018), the facilities used by these rehabilitators vary greatly in complexity and sophistication, ranging from private in-home facilities to large, non-profit centers treating thousands of animals every year (Porter 1996; Schwarz 2010). Staff capabilities also vary from fairly rudimentary care and employee knowledge to highly trained staff and full-time veterinary care (Schwarz 2010).

Concerns about the ability of private rehabilitators to effectively contain and manage infectious wildlife diseases were raised over 20 years ago by Porter (1996). In particular, private rehabilitation facilities may lack effective control or containment structures and equipment as well as associated training and biosecurity procedures for minimizing disease transmission risk to other captive animals, wild animals, or humans (Porter 1996). Agency oversight of wildlife rehabilitators is generally not at a level that would certify or approve a facility for biosecurity or disease containment. Although there has been discussion of CWD and other prion diseases in the recent wildlife rehabilitation literature (e.g. Schwarz 2010), it is clear from the information presented in other chapters of this document that CWD and other prion diseases represent unique challenges for facilities of all sizes and types (rehabilitation, research, captive/farming, etc.) in terms of the uncontrolled environmental persistence of the infectious agent, the strict requirements for disposal of contaminated materials, and the difficulty of decontamination of exposed surfaces and equipment. Travis and Miller (2003) provide detailed guidance for handling, disposal, and decontamination procedures for zoos and other captive animal facilities that house CWD-susceptible animals. These procedures have been modified by USDA APHIS (2014) and contributors in this volume to conform to best available science and practices.

Vertical transmission of CWD from female deer to fawns has been documented experimentally in muntjac deer (*Muntiacus reevesi*; Nalls et al. 2013) and mule deer fawns showed rapid development of CWD when infected orally (Sigurdson et al. 1999). A large-scale survey of CWD prevalence in wild white-tail deer fawns in Wisconsin resulted in multiple detections (Chronic Wasting Disease Alliance 2003), indicating that either vertical and/or horizontal transmission of CWD to fawns is occurring in wild populations of this species. Removal of fawns from the wild in areas where CWD is known or likely to occur therefore creates a very real risk of prion contamination at rehabilitation facilities and indirect transmission to fawns, with attendant concerns about appropriate procedures for disposal and decontamination, while the release of infected (but asymptomatic) fawns has the potential to spread CWD to novel areas or populations. Due to the period required from first infection to observable prion in lymphatic tissue, there currently is no live animal test that could identify an infected fawn prior to release unless the animal was held an extended period of time. The currently-available antemortem tests are probably not viable tools for determining CWD status of rehabbed fawns because of the low test sensitivity and expense of testing due to the required anesthesia and surgery. Although

available antemortem tests can be used in screening herds, these tests should not be considered an adequate single test of individual animals for health certification purposes (see Chapter 8 – Validated CWD Testing for Wild Cervids).

In New York State, a ban on deer rehabilitation was implemented as part of the emergency regulations imposed in a 16 km-diameter CWD containment zone established in 2005 following multiple CWD detections in Oneida County (Evans et al. 2014). Managers determined that significant risks exist to wildlife health when CWD-infected animals are housed in facilities which do not provide adequate biosecurity measures for animals with prion diseases. It was recommended that deer rehabilitation be prohibited in CWD management zones and other management areas where CWD has been detected in wild cervid populations. States and provinces permitting rehabilitation activities where CWD is suspected but not yet detected in wild cervids, or where CWD has been confirmed in isolated and contained captive settings but not wild cervid populations, should closely follow the biosecurity procedures described by Travis and Miller (2003), as updated by USDA APHIS (2014) and the contributions in this volume.

A statewide ban on deer rehabilitation has been implemented more recently in response to CWD detections in the state of Arkansas (Jennifer Ballard, Arkansas Game and Fish Commission, pers. comm.). Prior to establishing this rule, a limited number of individuals in Arkansas accepted injured or "orphaned" deer for the purpose of rehabilitation. This practice was known to involve the movement of deer across county lines, from the county of origin to the county in which the licensed rehabilitator was located. With knowledge that deer from multiple counties are often housed in the same facility and moved across multiple counties with the potential to share pathogens, rehabilitation was considered a risk for the spread of CWD. In addition, rehabilitation is not an effective tool for enhancing white-tailed deer populations as survival of rehabilitated deer is extremely low.

The map above illustrates the value of implementing reporting requirements and data management systems that can be used to track wild deer in rehabilitative care. New York State's CWD Risk Minimization Plan specifically recommends that individual wild deer brought to rehabilitation be accurately recorded and tracked while in rehabilitative care in a manner that allows state agencies to perform trace-outs if CWD is confirmed in a wild deer that has been in the wildlife rehabilitation system.

Literature Cited and References

Beringer, J., P. Mabry, T. Meyer, M. Wallendorf, and W. R. Eddleman. 2004. Post-release survival of rehabilitated white-tailed deer fawns in Missouri. Wildlife Society Bulletin 32(3):732–738.

14 - Carcass Disposal

Best Management Practices for reducing the risk of CWD transmission and establishment of CWD through appropriate carcass disposal include the following:

- Incineration of carcasses in an Environmental Protection Agency-approved conventional incinerator, air curtain incinerator, or cement kiln. After incineration, ashes should be buried in an active, licensed landfill at a depth that meets local and state/provincial/territorial regulations to prevent scavenging or contamination of groundwater. Animal carcasses can be disposed of by incineration with a minimum secondary temperature of 1000°C (1832°F) (Taylor and Woodgate 2003). Incineration may not be a culturally acceptable practice for disposal by certain Indigenous groups.
- High-pressure alkaline hydrolysis of carcasses followed by burial of the treated material in an active, licensed landfill at a depth that meets local and state/provincial/territorial regulations. Alkaline hydrolysis using a pressurized vessel that exposes the carcass or tissues to 1 N NaOH or KOH heated to 150°C for a minimum of 3 hours (Taylor and Woodgate 2003, Richmond et al. 2003).
- Composting. Composting of livestock carcasses is an efficient method of disposal with proper management. While composting of carcasses does not reliably inactivate all prions, research does indicate that it can significantly reduce prion infectivity (Xu, 2013, 2014). Further research into optimizing methods of composting to inactivate prions is warranted, although basic precautions such as controlling run-off during the composting process and insuring that the composted material is not spread on the landscape would appear to be warranted. In areas where large volumes of carcasses must be disposed of, consideration of composting followed by a secondary disposal method such as incineration, landfill, or alkaline hydrolysis may provide a more viable method to reduce large carcass volume to allow for more efficient use of other disposal methods. This option would still require considerable time and attention to assure composting methods are managed appropriately.
- Centralized sites/methods for disposal of CWD-positive or high risk carcasses.
 Several states have established disposal sites for carcasses potentially contaminated with CWD. The agreement between the Utah Division of Wildlife Resources and the Utah Environmental Protection agency (available on request) is an excellent example of interagency cooperation on disposal. Each state or province should investigate the possibility of similar agreements and centralized disposal sites and methods (IAFWA, 2006).

Chronic Wasting Disease Alliance. 2003. Six white-tailed deer fawns test positive for CWD. Web page at: http://cwd-info.org/six-white-tailed-deer-fawns-test-positive-for-cwd/ (accessed 14 April, 2018).

Evans, T. S., K. L. Schuler, and W. D. Walter. 2014. Surveillance and monitoring of white-tailed deer for chronic wasting disease in the northeastern United States. Journal of Fish and Wildlife Management 5(2):387–393.

Nalls, A. V., E. McNulty, J. Powers, D. M. Seelig, C. Hoover, N. J. Haley, J. Hayes-Klug, K. Anderson, P. Stewart, W. Goldmann, E. A. Hoover, and C. K. Mathiason. 2013. Mother to offspring transmission of chronic wasting disease in Reeves' muntjac deer. PLOS One https://doi.org/10.1371/journal.pone.0071844

National Wildlife Rehabilitators Association. 2018. What is wildlife rehabilitation? Web page at: http://www.nwrawildlife.org/page/What Is WLRehab (accessed 14 April, 2018).

Porter, S. L. 1996. Dealing with infectious and parasitic diseases in safari parks, roadside menageries, exotic animal auctions and rehabilitation centres. Scientific and Technical Review of the Office International des Epizooties (Paris) 15(1):227–236.

Schwarz, N. A. 2010. Wildlife rehabilitation: Basic life support. Xlibris Corporation, www.xlibris.com. 214 pp.

Sigurdson, C. J., E. S. Williams, M. W. Miller, T. R. Spraker, K. I. O'Rourke, and E. A. Hoover. 1999. Oral transmission and early lymphoid tropism of chronic wasting disease PrP^{res} in mule deer fawns (*Odocoileus hemionus*). Journal of General Virology 80:2757–2764.

Travis, D., and M. Miller 2003. A short review of transmissible spongiform encephalopathies, and guidelines for managing risks associated with chronic wasting disease in captive cervids in zoos. Journal of Zoo and Wildlife Medicine 34(2):125–133.

United States Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS). 2014. Chronic Wasting Disease Program Standards. USDA APHIS Veterinary Services, Washington, D. C. 65 pp.

Williams, S. C., and M A. Gregonis. 2015. Survival and movement of rehabilitated white-tailed deer fawns in Connecticut. Wildlife Society Bulletin 39:664–669.

Approved Landfill. Properly licensed and operated landfills offer one of the most
economically feasible options for disposal of carcasses and parts, particularly in high
volumes. While disposal via landfill may not eliminate infectious prion, carcass parts
disposed of in a landfill would be inaccessible to cervids and may functionally contain
the CWD prion (Jacobson et al., 2009). It is important that carcasses are properly covered
after disposal in a landfill to prevent scavenging.

Supporting Strategies and Evidence

Destruction or inactivation of prions is difficult and few treatments have been documented as completely successful. In addition, there are currently no quality assurance or quality control methods to ensure successful prion inactivation. For that reason, we have provided a list of processes above reported to reduce the amount or activity of the infectious prion material.

Jurisdictions need to consider many factors related to carcass disposal. In areas with limited or no detection of CWD, multiple carcass disposal options may be considered. In regions with significant widespread CWD, jurisdictions must consider more factors than simple disposal of known positive carcasses. Consideration must be made of the high volume of vehicle-killed animals as well as hunter harvested carcasses or parts. Due to the high volume of carcasses that may need disposal in a jurisdiction, further investigation of appropriate disposal mechanisms is warranted. As many landfills begin to close or discontinue accepting carcasses, options for efficient disposal may become limited. Lack of access to landfills for disposal of large numbers of vehicle-killed animals or access for individual hunters for disposal may lead to inappropriate disposal of carcasses onto the landscape and facilitate disease transmission.

With all recommended methods, carcasses must be carefully transported between the collection location and treatment or burial sites to prevent the spread of potentially contaminated and infectious materials. Precautions should be taken to prevent ashes, blood, tissues, or feces from leaking from transport vehicles.

APHIS recommends first testing individual animals for prion protein by IHC or other official test and delaying disposal until test results are obtained. Subsequently, disposal options involving incineration, alkaline hydrolysis, or rendering with burial of the treated materials can be used for the positive animals, and simple carcass burial in a landfill or onsite may be used for the negative animals. This works well for animals being tested, but considering the large volume of harvested and road-killed animals that are never tested and may be disposed by hunters, assuring that viable options are available for disposal at minimal cost will be essential.

Literature Cited and References

Jacobson, K. H., S. Lee, D. McKenzie, C. H. Benson, and J. A. Pedersen. 2009. Transport of the pathogenic prion protein through landfill materials. *Environmental science & technology*, 43(6), 2022–2028.

International Association of Fish and Wildlife Agencies. 2006. Carcass transport and disposal working group, fish and wildlife health committee. Transport and Disposal of Hunter-killed Cervid Carcasses: Recommendations to Wildlife Agencies to Reduce Chronic Wasting Disease Risks. 7 pp.

Richmond, J. Y., R. H. Hill, R. S. Weyant. 2003. What's hot in animal biosafety? ILAR J, 44:20-7

Taylor D. M., and S. L. Woodgate. Rendering practices and inactivation of transmissible spongiform encephalopathy agents. Rev Sci Tech Off. Int Epiz. 2003; 22:297–310.

Xu, S., Reuter, T., Gilroyed, B. H., Mitchell, G. B., Price, L. M., Dudas, S. L. Braithwaite, C. Graham, S. Czub, J. J. Leonard, A. Balachandran, N. F. Neumann, M. Belosevic, and T. A. McAllister. (2014). Biodegradation of prions in compost. *Environmental science & technology*, 48(12), 6909–6918.

Xu, S., T. Reuter, B. H. Gilroyed, S. Dudas. C. Graham, N, F. Neumann, A. Balachandran, S. Czub, M. Belosevic, J. J. Leonard and T. A. McAllister. 2013. Biodegradation of specified risk material and fate of scrapie prions in compost. *Journal of Environmental Science and Health*, *Part A*, 48(1), 26–36.

15 - Recommended Decontamination and Disinfection Methods for Equipment

Best Management Practices / Guidelines for Disinfection of Materials exposed to Prions in field, laboratory and necropsy settings:

A. Field Settings

Use for field sampling procedures. Can also be shared with hunters:

Non-porous, surfaces (plastic or metal tables) and instruments used for collection of field samples (knives, forceps, scissors, jaw spreaders, saws)

- Current recommendations are to use a 2%, (20,000 ppm) solution of bleach as a disinfectant solution. See notes for preparation of Sodium hypochlorite (bleach) solution in section C. and section D. for product information.
- Instruments should be cleaned of organic material prior to disinfection using a detergent
 with activity against prions such as TergazymeTM and wiped with paper towel or rinsed
 with water (dispose of paper towels by incineration or in approved landfill) prior to
 disinfection.
- Disinfection requires 10 minutes of contact time with the 2% bleach solution. <u>Disposable</u> materials (e.g. plastic gloves, boot covers plastic aprons, Tyvek suits)
- Use disposable materials to prevent soiling of clothing. Dispose of these outer materials by bagging and incineration or in an approved landfill

Non-disposable porous material (clothing, rubber aprons, rubber boots)

- Clean off organic material with an enzymatic detergent such as Tergazyme TM.
- If the material can handle it, then wipe down with 20,000 ppm bleach
 - Avoid using leather gloves or boots as they are difficult to clean without being damaged. Wear boot covers
- Dedicate clothing /PPE to be used only in known enzootic areas. Do not transfer from the
 area unless it is stored in a container which is impermeable (heavy plastic tote) and
 labelled as prion infected.
 - When back from the field, all materials that are non-disposable should be re-cleaned and sterilized using the methods described below for use in the laboratory.

Personal Protection

- Bleach irritates mucous membranes, the skin and the respiratory system. It also reacts readily with other chemicals.
- Ensure the area is well ventilated when diluting or using bleach.

 Protective gear - gloves, lab coat, coveralls or apron, and eye protection are recommended.

Laboratory or Necropsy Room

Disposable Materials

• Bag and incinerate or put in an approved landfill.

Autoclave methods for non-disposable, heat tolerant materials (e.g. metal and glass instruments, laboratory surfaces, clothing and non-disposable PPE)

Clean using an enzymatic detergent with activity against prions such as Tergazyme™

Follow with disinfection with one of the following three methods below.

- Autoclave at 134° C for 18 minutes in a porous load sterilizer
- Autoclave at 132° C for 1 hour in a gravity displacement sterilizer
- Immerse in 20,000 ppm bleach (preferred) or 1 N caustic lye (alternative) at ambient temperature for 1 hour; rinse in water and subject to routine sterilization.
 - Additional acceptable methods for sterilization can be found in Rutala et al, 2010 and WHO, 2000.
- State Veterinary Diagnostic laboratories, Veterinary schools or local animal clinics usually have autoclaves.

Chemical methods for non-porous surfaces and heat sensitive instruments

Clean using an enzymatic detergent with activity against prions such as Tergazyme™

Follow with disinfection with one of the following three methods below.

Flood with 2N NaOH (caustic lye) or undiluted bleach; let stand for 1 hour; make sure surfaces remain wet; mop up and rinse with water.

Where surfaces cannot tolerate caustic lye or bleach:

- thorough cleaning with detergent will remove or dilute remaining infectivity
- additional benefit from autoclave at 121°C for 15 minutes
- · material should not be considered prion free
- Environ LpH se Phenolic disinfectant (Steris Life Sciences; EPA Reg. No. 1043–118) may be used on washable, hard, non-porous surfaces (such as floors, tables, equipment, and counters), or non-disposable instruments, or sharps, and sharp containers. This product is currently being used under FIFRA Section 18

exemptions in some states. Users should consult with the state/provincial environmental protection officer prior to use.

Sensitive or difficult to clean equipment (cameras, oscillating [Stryker saw]) or work surfaces

Protect covering with plastic (plastic bag) or plastic backed absorbent material (puppy pad). This Protective material must then be properly handled, and either incinerated or sent to an approved landfill.

C. Notes about Chemicals and Preparing Working Solutions, Personal Safety and Autoclaves

Preparation of stock solutions

Sodium hypochlorite (bleach)

- Comes in concentration of 5.25–8.25%. (CLOROX ® bleach is a 6% Sodium hypochlorite solution or 60,000 ppm).
- To make a 20,000 ppm (2%) solution, dilute 5.25 % bleach 1:1.5, bleach : water for these purposes a 1:1 dilution is fine with a resultant concentration of 25,000 ppm bleach.
- Factors that degrade the disinfecting power of bleach
 - Time (check expiration date on bottles)
 - o temperatures above and below 50-70 °F
 - o direct sunlight (use opaque bottles)
 - o water, especially hot water
 - o organic materials (blood, body bits, manure, dirt)
 - Make fresh bleach solution daily with cold water
- Some brands of bleach Austin's Elite Professional[®] and Austin A-1 Bleach [®]do not require rinsing after disinfection.

Sodium hydroxide (NaOH, soda or caustic lye)

- 1NaOH is a solution of 40 g NaOH in 1 liter of water.
- Factors that degrade 1N NAOH
 - o Absorbs CO2 from the air which decreases its disinfecting properties.
 - o 10 N NaOH solutions do not absorb CO2 and do not degrade
- 1N NaOH working solutions should be prepared fresh daily for each use either from solid NaOH pellets, or by dilution of 10 N NaOH stock solution (1 part 10 N NaOH plus 9 parts water).

Cautions regarding hazardous material



PERSONAL SAFETY

Bleach and caustic lye are corrosive and require suitable personal protective equipment and proper secondary containment. These strong corrosive solutions require careful disposal in accordance with local regulations.

Sodium hypochlorite (bleach)

Solutions continuously off gas chlorine and so must be kept tightly sealed and away from light. The amount of chlorine released during inactivation may be sufficient to create a potential respiratory hazard unless the process is carried out in a well-ventilated or isolated location.

Sodium hydroxide (Caustic lye)

Caustic but relatively slow acting at room temperature, and can be removed from skin or clothing by thorough rinsing with water. Hot lye is aggressively caustic, and should not be handled until cool.

Equipment Safety

Sodium hypochlorite (bleach)

Non-corrosive to glass or aluminum

If bleach is used to clean or soak an instrument, completely rinse from the surfaces before autoclaving.

Sodium hydroxide (Caustic Lye)

Generally does not corrode stainless steel. Some Stainless steel can be damaged (including some used for surgical instruments). Test a sample or consult with the manufacturer before decontaminating a large number of instruments.

Corrosive to glass and aluminum

Autoclaves

Gravity displacement autoclaves

Air is displaced by steam through a port in the bottom of the chamber. Gravity displacement autoclaves are designed for general decontamination and sterilization of solutions and instruments.

Porous load autoclaves

Air is exhausted by vacuum and replaced by steam. Porous load autoclaves are optimized for sterilization of clean instruments, gowns, drapes, toweling, and other dry materials required for surgery. They are not suitable for liquid sterilization.

D. Products Mentioned in Text

1) Tergazyme ™ enzyme detergent with prion killing activity

Alconox, Inc., 30 Glenn Street, Suite 309, White Plains, NY 10603 USA, Phone: 914-948-4040 www.alconox.com

https://alconox.com/resources/standarddocuments/tb/techbull_tergazyme.pdf https://www.alconox.com/lp/healthcare/healthcare-cleaning-prion.asp?gclid=CNPkz5L1-boCFYtQOgody3kAOA

2) Bleach (Sodium hypochlorite)

Some brands of bleach Austin's Elite Professional[®] and Austin A-1 Bleach [®]do not contain trace amounts of mercury and are safer for the waste water stream. These are 5.25%.

3) Environ LpH phenolic disinfectant

STERIS Corporation, 5960 Heisley Road, Mentor, OH 44060-1834, USA, 800-444-9009 www.sterislifesciences.com

https://www.sterislifesciences.com/Products/Surface-Disinfectants/Pharmaceutical-Disinfectants/Environ-LpH-se-Phenolic-Disinfectant

4) Soda or Caustic lye (Sodium hydroxide)

10 N NAOH solutions can be purchased from:

VWR (https://us.vwr.com/store/)

Sodium hydroxide 10 N in aqueous solution, Reagent Grade

https://us.vwr.com/store/catalog/product.jsp?catalog_number=97064-782

or Fischer Scientific

https://www.fishersci.com/shop/products/sodium-hydroxide-solution-10n-certified-fisher-chemical-3/p-214277#?keyword=sodium+hydroxide+solution

Pellets can also be purchased from Fischer Scientific

https://www.fishersci.com/us/en/catalog/search/products?keyword=sodium+hydroxide+%28pellets%2Fcertified+acs%29+fisher+chemical&nav=&typeAheadCat=mostPopular

Supporting Strategies and Evidence

Prion Resistance

The ability of the CWD prion to be transmitted horizontally and the length of time prions remain infectious in the environment may perpetuate epizootics (Johnson et al. 2006). Experimental

research has found that prions can bind to soil, remain infectious, and upon exposure to certain soil types (e.g., high percentage clay and pH >6.6) may even have enhanced persistence and infectivity (Johnson et al. 2007). While prions in live cervids and their excretions, carcasses, and contaminated environments pose the greatest concentration of prions, lab-based research has demonstrated that grass and plants can bind prions from exposure on the surface and uptake prion from contaminated soil. Hamsters that were fed the prion-contaminated plant samples developed prion disease (Pritzkow et al. 2015). The prion has also been detected in water that has undergone a simulated treatment process (Hinckley et al. 2008) and within environmental water samples from enzootic areas (Nichols et al. 2009) when tested using highly sensitive assays. Although the length of time that the prions can remain infective in the environment is unknown, it is likely years. One study found that animals that were grazed on a pasture where infected animals had been absent for two years were able to become infected and develop disease (Miller et al. 2004). Due to the stability of prions in the environment, the potential role of scavengers in facilitating transmission of prion to new areas has been discussed and investigated. Infective prions can be passed through the digestive tract of coyotes (Nichols et al. 2015) and crows (Fischer et al. 2013); however, the reduction in infective load after passage through the digestive tract, as observed in other species (Jeffrey et al. 2006), was not evaluated. While it has been suggested that crows could therefore play a role in translocating infectious prion to disease free areas, reduction in the overall pool of environmental infectivity through local dispersal and dilution could reduce the risk of transmission (Wild et al. 2011). A recent experimental study was able to infect swine through direct injections of CWD prion into the brain (intracerebrally) and by feeding CWD-positive material to pigs (Moore et al. 2017). Although the amount of detectable prion in the infected pigs appeared to be low, the authors indicate that "it may be possible for swine to serve as a reservoir for prion disease under natural conditions." This raises concerns regarding the potential for feral swine in enzootic areas to play a role in transmission of the disease to new areas.

Methods of disinfection/decontamination

Inactivation of Prions: Prions are resistant to conventional inactivation procedures including irradiation, boiling, dry heat, enzymes, and chemicals (formalin, betapropiolactone, alcohols). The safest and most unambiguous method for ensuring that there is no risk of residual infectivity on contaminated instruments and other materials is to discard and destroy them by incineration (Taylor and Woodgate 2003). Current recommendations for inactivation of prions on non-disposable materials are based on the use of Bleach (sodium hypochlorite, NaClO), soda or caustic lye (sodium hydroxide, NAOH) and the moist heat of autoclaving with the combination of heat and chemical being most effective (Rutala and Weber, 2010, Taylor and Woodgate 2003, WHO, 2000, and Hughson et al. 2016).

How equipment is handled prior to decontamination and disinfection may also affect the amount of prion destroyed. Dried prion-containing material was found to be more resistant to disinfection and certain disinfectants (e.g., glutaraldehyde, formaldehyde or ethanol) can fix or

dehydrate the proteins thus causing them to be more difficult to inactivate. Recommendations are to keep instruments moist or damp prior to the decontamination and disinfection by immersing them in water or a detergent with activity against prions or wrapping them in a wet cloth (Rutala and Weber, 2010, WHO 2000)

Literature Cited and References

Centers for Disease Control and Prevention, National Institutes of Health and U.S. Department of Health and Human Services. *Biosafety in Microbiological and Biomedical laboratories*. HHS Publication No. (CDC) 21-1112, 2009; 282–289.

https://www.cdc.gov/biosafety/publications/bmbl5/bmbl5 sect viii h.pdf

Beekes M., K. Lemmer, A. Thomzig, M. Joncic, K. Tintelnot and M. Mielke. 2010. Fast, broad-range disinfection of bacteria, fungi, viruses and prions. Journal of General Virology (2010), 91, 580–589. DOI 10.1099/vir.0.016337-0

Fischer J. W., G. E. Phillips, T. A. Nichols, and K. C. VerCauteren. 2013. Could avian scavengers translocate infectious prions to disease-free areas initiating new foci of chronic wasting disease? Prion 7:263–266.

Hinckley G. T., C. J. Johnson, K. H. Jacobson, C. Bartholomay, K. D. McMahon, D. McKenzie D, J. M. Aiken, and J. A. Pedersen. 2008. Persistence of pathogenic prion protein during simulated wastewater treatment processes. Environmental Science and Technology 42:5254–9.

Hughson, A. G. et al. 2016. Inactivation of Prions and Amyloid Seeds with Hypochlorous Acid. PLoS Pathogens http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1005914

Johnson C. J., K. E. Phillips, P. T. Schramm, D. McKenzie, J. M. Aiken, and J. A. Pedersen. 2006. Prions adhere to soil minerals and remain infectious. PLoS Pathogens; 2:32.

Johnson C. J., J. A. Pedersen, R. J. Chappell, D. McKenzie, and J. M. Aiken. 2007. Oral transmissibility of prion disease is enhanced by binding to soil particles. PLoS Pathogens, 3, e93.

Miller M, E. Williams, N. Hobbs, and L. Wolfe. 2004. Environmental sources of prion transmission in mule deer. Emerging Infectious Diseases10:1003–1006.

Moore S. J., M. H. West Greenlee, N. Kondru, S. Manne, J. D. Smith, R. A. Kunkle, A. Kanthasamy, and J. J. Greenlee. 2017. Experimental transmission of the chronic wasting disease agent to swine after oral or intracranial inoculation. Journal of Virology, 91:e00926-17.

Nichols, T. A., B. A. Pulford, A. C. Wyckoff, C. Meyerett, B. Michel, K. Gertig, K., E. A. Hoover, J. E. Jewell, G. C. Telling, and M. D. Zabel, M. D. 2009. Detection of protease-resistant cervid prion protein in water from a CWD-endemic area. Prion 3: 171–183.

Nichols T. A., J. W. Fischer, T. R. Spraker, Q. Kong, and K. C. VerCauteren. 2015. CWD prions remain infectious after passage through the digestive system of coyotes (*Canis latrans*). Prion 9:367–375.

Richmond, J. Y., R. H. Hill, R. S. Weyant, S. L. Nesby-O'Dell, and P. E. Vinson. 2003 What's hot in animal biosafety? ILAR 44(1): 20–27.

Rutala, W. A. and D. J., Weber. 2010. Guidelines for disinfection and sterilization of prion-contaminated medical instruments. Infection Control and Hospital Epidemiology 31(2):107–117.

Taylor D. M. and S. L. Woodgate. 2003. Rendering practices and inactivation of transmissible spongiform encephalopathy agents. Revue Scientifique et Technique-Office International des Epizooties 22:297–310.

The Carcass Transport and Disposal Working Group of the International Association of Fish and Wildlife Agencies (IAFWA) Fish and Wildlife Health Committee. International Association of Fish and Wildlife Agencies. 2006. Transport and Disposal of Hunter-killed Cervid Carcasses: Recommendations to Wildlife Agencies to Reduce Chronic Wasting Disease Risks. http://cwd-info.org/wp-content/uploads/2017/01/CarcassGuidelines.pdf

World Health Organization. [http://www.who.int/en/]. Geneva (Switzerland): The Organization; 2000. WHO Infection Control Guidelines for Transmissible Spongiform Encephalopathies. Report of a WHO Consultation, Geneva, Switzerland, 23–26 March 1999. Available from: http://www.who.int/csr/resources/publications/bse/WHO_CDS_CSR_APH_2000_3/en/.

Section 4: SUPPORTING ACTIVITIES

16 - Internal and Public Communications

Agencies use many different outlets and forms of communication to share information about CWD within the agency and with externally with hunters, stakeholders, community and other agency decision-makers, and the general public. Although this chapter focuses primarily on web and online communications, we recommend the development of an integrated communications strategy that incorporates multiple media sources (print, radio, television) as well as public meetings and other outreach activities. Agencies may also wish to develop a CWD Communications Plan which articulates strategies and approaches for public, internal, and partner communications.

Best Management Practices for Internal Communications

Internal communications are critical for CWD management and agencies should consider developing an internal CWD communications plan which should clearly identify the following:

- Authority and responsibility related to CWD surveillance and management operations.
- An internal communications structure to facilitate communication related to CWD between agency administrators and field-level employees.
- · Cohesive CWD talking points and messaging.
- How and where staff can access up-to-date information on CWD testing results in their state, surveillance and management actions, and current "hot topics."

Best Management Practices for Online Communication with the Public

An agency CWD website could include (but not be limited to) the following information:

- · General information about CWD:
 - History
 - Species affected
 - Pathogenesis
 - Clinical signs
 - o Distribution across the state/province, country, world
- Public health concerns:
 - CDC recommendations
 - Risk for livestock, domestic species
- Recommendations for hunters:
 - Hunt planning information (where applicable), including guidance for out-ofstate hunters
 - Location (units, counties) of CWD sampling areas (mandatory, voluntary)
 - Check station locations, if applicable
 - Options for submitting samples for CWD testing outside of sampling areas

- Relevant contact information, e.g. regional offices
- Hunting in CWD-positive areas:
 - Specific guidance for out-of-state hunters
 - Recognizing clinical signs and appropriate responses
 - Personal Protective Equipment
- o Post hunt processing:
 - ✓ Field dressing
 - ✓ Deboning or removal of spine and head for transport
 - ✓ Preparing for taxidermy
 - ✓ Disposal of parts
 - Movement of carcasses/parts across state lines for nonresident hunters
- o Movement of carcasses/parts/disposal recommendations
- o Reporting requirements
- o Use of natural deer urine products
- o Issues with feeding/baiting
- Current CWD surveillance and response activities
 - o Background on how surveillance is being conducted
 - Maps of CWD locations and prevalence
 - Include species, hunt area/unit, county, or other relevant units
 - Known data on infection rates and disease distribution
 - Testing over time; include positives/negatives
 - Identify locations where samples are collected (taxidermists, deer processors, dropoff or check stations)
 - o CWD response and management activities
 - o CWD research projects, if applicable
- Public reporting of sick or diseased animals:
 - Provide multiple methods for the public to report: Online forms, social media monitoring
 - o Provide relevant addresses and phone numbers
 - Provide information urging people not to approach or contact sick animals without appropriate PPE, to reduce risks of contamination
 - Provide guidance and circumstances for shooting a sick animal and for testing and disposal of the carcass
 - Consider providing links to licensed wildlife rehabilitators for reporting purposes only (we do not recommend rehabilitating deer in areas where CWD is enzootic)
 [please refer to chapter 15 on rehabilitation]
- Reiterate relevant regulations, including:
- Carcass movement regulations
- Wildlife feeding/baiting
- Wildlife rehabilitation (deer fawn and elk/moose calf)
- · Reporting requirements
- Use of urine scent lures and other biological attractants
- CWD test result reporting
 - o Provide for partners and hunters to submit samples and check test results

- Use a unique identifying sample number that is meaningful to diagnostic laboratory or state/provincial agency
- Mark by specific locations using standardized coordinate systems (e.g. UTM (Universal Transverse Mercator) or latitude/longitude)
- Educational materials
 - Fact sheets
 - Should be printable
 - Include information on transmission, species affected, distribution, etc.
 - Can be customized for specific groups (e.g. taxidermists, meat processors, wildlife rehabilitators, hunters, public)
 - Frequently asked questions (FAQs)
 - Other relevant websites
 - CWD Alliance: http://cwd-info.org/
 - Links to current research, especially significant review papers and findings relevant to CWD management in the state/province/territory
 - Other states and provinces

Supporting Strategies and Evidence

An effective communication strategy should increase the public's understanding of, support for, and participation in CWD surveillance and response programs, as well as provide the regulatory agency with a platform to distribute new information. A website can serve as an effective tool for this purpose and include the ability to provide up-to-date background information on CWD, current CWD status and distribution in the state/province and the country, current surveillance programs, relevant regulations, resources for hunters to get their animal tested, and provide timely CWD test results. The website could also be a portal for the public to ask questions, voice concerns, and communicate CWD test results. In rural or remote areas, electronic communication may not be the best method of communication with the target audience and alternative methods of communication (e.g. written documents, public meetings) should be considered.

Examples of CWD web pages:

State of Michigan: http://mi.gov/cwd

Pennsylvania Game Commission: http://www.pgc.pa.gov/Wildlife/Wildlife-RelatedDiseases/Pages/ChronicWastingDisease.aspx

Wyoming Game and Fish Department: https://wgfd.wyo.gov/Wildlife-in-Wyoming/More-Wildlife/Wildlife-Disease/Chronic-Wasting-Disease

Colorado Parks and Wildlife: http://cpw.state.co.us/cwd

New York State Department of Environmental Conservation: http://www.dec.ny.gov/animals/7191.html

Alberta Environment and Parks: http://aep.alberta.ca/fish-wildlife/wildlife-diseases/chronic-wasting-diseases/

17 - Human Dimensions

Best Management Practices involving human dimensions in implementing a CWD program include the following:

- Conduct social science surveys to inform management decisions. Many states and provinces are placing an increased emphasis on social science surveys. These surveys should be statistically robust and address knowledge, attitudes, perceptions, and support for CWD management programs. This is particularly important in areas with new infections where there is little to no state or provincial-specific information. Surveys should also explore hunter attitudes related to CWD including effort and success rates, and willingness to accept regulatory changes to manage CWD. Similar information should be collected from landowners, who are critical to a successful CWD management program. Landowner beliefs about CWD are generally lacking because the majority of the survey interest if focused on agency's primary constituency, its hunters. These surveys should also explore the potential economic and sociocultural effects of CWD using accepted social science methods.
- Develop a comprehensive external and internal communication plan. Develop a
 communication plan (perhaps as a subset of a larger CWD response plan) that provides the
 public with timely and accurate information about CWD in their state/province.
 Communication strategies should aim to improve public understanding of CWD and
 engage the hunters and non-hunters in managing the disease. Elements of a
 communications plan should:
 - a. Contain key messages about CWD
 - Include and use the best available science, preferably from the host state /province/territory
 - c. Frequently be updated
 - d. Ensure openness, honesty, and transparency
 - e. Use social media (e.g., Facebook, Twitter) to convey information to the widest range of age and cultural segments of the population
- Increase stakeholder engagement and outreach to the communities, hunters and
 private landowners. Agencies should foster community partnerships and work
 collaboratively to find support for CWD management. It is important that all affected
 groups be engaged in CWD management process. Outreach should be informed by research

(both biological and social) about CWD and its risks, and how the public feels about methods for management of the disease. Outreach to private landowners should explain the work of state fish and wildlife agencies and the importance of CWD control efforts. Brochures, fact sheets, and maps for public distribution can be an important tool.

Maintain a topically relevant and accurate website. State/provincial/territorial agency websites are often out-of-date and/or not updated frequently enough. Managers should strive to keep their website updated. The New York State Department of Environmental Conservation is an example of a well-maintained website, https://www.dec.ny.gov/animals/7191.html. Also see chapter 4 of this report.

Supporting Strategies and Evidence

The wildlife management environment functionally has three components – wildlife, habitats, and humans. It can broadly be stated that everything that does not directly involve wild animals or their habitats is about humans (Decker et al. 2012). The human component of the management environment falls within the field of study known as human dimensions, which can be defined as the application of the social sciences to natural resources management issues. Human dimensions research attempts to describe and understand human thought and behavior toward fish and wildlife management with a goal to improve management.

Human dimensions research is essential for understanding the potential impacts of CWD (Decker et al. 2006). While there is a growing body of literature devoted to understanding stakeholder perceptions, attitudes, and beliefs about CWD, the amount of published information is limited when compared with disease ecology studies. Most of those studies have been conducted in areas with longer-term CWD infections (e.g., Alberta, Colorado, Wyoming, Illinois, South Dakota, and Wisconsin). Research has also shown that hunters are concerned about CWD-related risk (Gigliotti 2004, Miller 2004). States, provinces, and territories should be concerned about the potential impacts of CWD in their cervids, as the disease may cause declines in hunter numbers (Vaske et al. 2004). Needham et al. (2004) postulated that upwards of two-thirds of hunters would quit participation in hunting if CWD was transmissible to humans. While research to date has not empirically demonstrated a human health risk, preliminary experimental studies suggest that risk cannot be completely ruled out. In fact, the U.S. and Canadian Centers for Disease Control and Prevention recommend testing of all cervids taken in areas known to have the disease, and to not consume meat from CWD-positive animals (see, CDC - CWD guidelines). This perception of risk has the potential to also impact trust in the wildlife agency, the agency's ability to effectively manage the disease (e.g., lack of support from hunters and landowners), and negatively impact local economies (Vaske and Lyon 2011). A top-down, authoritative solution that does not include stakeholders and social science research may ultimately harm and nullify a comprehensive response (Heberlein 2004, Holsman et al. 2010).

As an example, in 2002, when CWD was first discovered in Wisconsin, firearm deer license sales decreased 11%, which resulted in economic losses between \$53 million and \$79 million (Bishop 2004). Although hunter numbers rebounded slightly, most did not come back. Today, Wisconsin has eight percent fewer deer license sales than before CWD was discovered in Wisconsin deer. In addition, when public support for management actions is lacking and social/political factors influence decision-making, wildlife agencies run the risk of losing management momentum and their ability to slow disease spread. Indeed, Wisconsin DNR was compelled to take a 'passive' approach (Kroll et al. 2012, page 56) and has since seen prevalence substantially increase, especially in males (Jennelle et al. 2014). Without a thorough investment in human dimension research and planning, agencies will be poorly positioned to effectively respond to the challenges CWD brings.

"In any moment of decision, the best thing you can do is the right thing, the next best thing is the wrong thing, and the worst thing you can do is nothing."

- Theodore Roosevelt

Literature Cited and References

Bishop, R. C. 2004. The economic impacts of chronic wasting disease (CWD) in Wisconsin. Human Dimensions of Wildlife 9: 181–192.

Decker, D. J., S. J. Riley, and W. F. Siemer, (Eds.). 2012. *Human dimensions of wildlife management*. JHU Press.

Decker, D. J., M. A. Wild, S. J. Riley, W. F. Siemer, M. M. Miller, K. M. Leong, J. G. Powers, and J. C. Rhyan. 2006. Wildlife disease management: a manager's model. Human Dimensions of Wildlife 11: 151–158. doi:10.1080/10871200600669908.

Gigliotti L. 2004. Hunters' concerns about chronic wasting disease in South Dakota. Human Dimensions of Wildlife 9:233–235.

Holsman, R. H., J. Petchenik, and E. E. Cooney. 2010. CWD After "the fire": Six reasons why hunters resisted Wisconsin's eradication effort. Human Dimensions of Wildlife 15:180–193.

Jennelle, C. S., V. Henaux, G. Wasserberg, B. Thiagarajan, R. E. Rolley, and M. D. Samuel. 2014. Transmission of chronic wasting disease in Wisconsin white-tailed deer: implications for disease spread and management. PLoS One 9:e91043. https://doi.org/10.1371/journal.pone.0091043.

Kroll, J. C., D. C. Guynn, and G. L. Alt. 2012. Wisconsin Deer Trustee Report. https://dnr.wi.gov/topic/wildlifehabitat/documents/trusteereport.PDF.

Miller, C. A. 2004. Deer hunter participation and chronic wasting disease in Illinois: An assessment at time zero. Human Dimensions of Wildlife 9:237–239.

Needham, M. D., J. J. Vaske, and M. J. Manfredo. 2004. Hunters' behavior and acceptance of management actions related to chronic wasting disease in eight states. Human Dimensions of Wildlife 9:211–231.

Vaske, J. J., N. R. Timmons, J. Beaman, and J. Petchenik. 2004. Chronic wasting disease in Wisconsin: Hunter behavior, perceived risk, and agency trust. Human Dimensions of Wildlife 9:193–209.

Vaske, J. J. and K. M. Lyon. 2011. CWD prevalence, perceived human health risks, and state influences on deer hunting participation. Risk Analysis 31:488–496.

18 - Economic Impacts of Chronic Wasting Disease

Best Management Practices for mitigating economic impacts include:

- Support human dimensions, economics, and social science research that evaluates the impact of CWD prevalence on hunting practices and hunting-related expenditures.
- Support research into the economics of reducing the risk of CWD introduction into states and cost evaluations of early management responses.
- Identify means of comparing accounting costs across states for budget planning for surveillance and possible management tools.
- Seek additional federal and state/province revenue streams outside of license sales for CWD-related expenditures accrued by state fish and wildlife agencies (e.g. doe tag sales in CWD enzootic zones which directly support CWD management).

Supporting Strategies and Evidence

Although state and provincial fish and wildlife agencies support and contribute to citizen recreation in many ways, the majority of funding for most fish and wildlife agencies is derived from license sales or, in Canada, general government revenues. This funding supports the broader mission of the state fish and wildlife agencies, beyond just the management of single fish or wildlife species. From creating accessible wildlife areas to habitat improvement, and supporting hunter education programs to everyday office expenditures, license sales often form the backbone of many agency budgets. The sale of licenses for mule deer, white-tailed deer, and elk hunting accounts for the highest proportion of these funding dollars in many states. U.S. expenditures directly related to deer hunting account for nearly half of all hunting related expenditures and are estimated to range from about \$12 to \$18 billion dollars per year since 2001 (U.S. Fish & Wildlife Service 2011; U.S. Fish & Wildlife Service 2017). Across all economic sectors, the total annual economic contribution of deer hunting to the U.S. economy has approached \$40 billion, contributing as much as \$5.5 billion per year in state and federal tax revenue (Southwick Associates 2012). Comparable economic benefits are generated in Canada (Federal et al. 2014) and are at substantial risk as CWD continues to increase and spread in enzootic areas.

The effect of CWD on agency budgets and expenditures can be both direct and indirect. Direct effects include additional strains on budgets and staff time as states increase capacity for surveillance, monitoring, and management actions to combat CWD. While studies of the direct economic impacts of CWD to agencies are limited, early work in Wisconsin, as an example, suggests that CWD can reduce financial resources available to the agency while also

substantially increasing budget expenditures. Following the finding of CWD in Wisconsin, an initial 10% reduction in hunting license sales was attributed to that finding (Vaske et al. 2004). Since 2002, Wisconsin has spent just over \$48 million dollars for disease monitoring and to reduce the spread and prevalence of CWD. Some funding was provided through the U.S. Department of Agriculture's (USDA) CWD program, which no longer available to states. As CWD prevalence has increased within Wisconsin and funding was reduced, alternative funding measures were implemented including earmarking sales of doe tags purchased in CWD-affected counties for the agency's CWD budget. The direct and indirect impacts of CWD on wildlife agency resources and the broader impacts on state, provincial, and federal economies can be significant and difficult to offset.

Direct Impacts:

- 1. Increased expenditure on CWD surveillance, monitoring, and hunter service testing. Increased agency expenditures on CWD include direct testing as well as increases in staff time, travel, planning, logistical support, and communications. Identifying efficiencies in all aspects of CWD management is an important strategy for achieving management goals. In particular, efficiencies in sample collection and submission are important to reach sampling goals. Many wildlife agencies have implemented tools such as weighted surveillance to maximize detection ability when sample submissions are reduced due to reduced funding.
- 2. Cost of additional management tools. Whether hiring specialists to concentrate testing or reduce populations in CWD-affected areas or managing additional hunting opportunities, design and implementation of different management tools create additional expenditures for a program.

3. Reduced license sale revenue.

- a. Hunter reduction: As prevalence and distribution of CWD rises and approaches 50% within a local population of wild cervids, research indicates that approximately 42% of residents and 54% of non-residents would stop hunting deer or elk there (Needham et al. 2004). The loss of revenue from these license sales impacts all agency management activities, in addition to those related to CWD.
- b. Population reduction: With increasing infection rates, affected herds may decrease and not be able to sustain historical harvest rates (DeVivo et al. 2017, Edmunds et al. 2016)
- 4. Diversion of funds from other agency programs. In some instances, agencies may need to readjust budgets to provide more funds to CWD programs. This can directly impact other agency efforts.

Indirect Impacts:

- 1. Limit an agency's ability to manage a game species. Deer and other species are managed to maintain healthy populations at numbers sufficient to provide a harvest of a percentage of that population. Reduction in license sales or hunter harvest can directly impact the ability of the state to manage these populations at levels which are acceptable and sustainable from biological and societal perspectives.
- Decrease support for wildlife agencies. Restrictions and changes to traditional
 hunting practices can lead to loss of public support for fish and wildlife agencies.
 Long-term persistence of CWD in infected deer populations and the long-term
 viability of CWD prions in the environment pose additional challenges.
- 3. Constrain cultural traditions and the social and economic stability of communities dependent on hunting. As an example, in Wisconsin, hunter losses were estimated to amount to between \$53 million and \$79 million in 2002 and \$45 million to \$72 million in 2003 (Bishop 2004). While loss to the Wisconsin economy was estimated to be approximately \$5 million during that time frame, Bishop (2004) believed that losses in some rural areas may have been substantial, but data were not available to estimate these losses and may have been an outlier in comparison to other state's initial findings. Subsistence hunting is also difficult to quantify, but of significant importance to food security for rural and indigenous communities. The economic value of subsistence harvest from one herd of barren-ground caribou (Beverly and Qamanirjuaq Caribou Management Board 2008) in Northern Canada is estimated at over \$14 million. In some instances it is difficult to measure the additional spiritual, aesthetic, and social values of wildlife. Sociocultural practices related to hunting are incredibly important in many rural and Indigenous communities with existing challenges to overall physical and mental health. Any required shifts of those practices or loss of opportunities to hunt a species will have larger and longstanding impacts.

Literature Cited and References

Beverly and Qamanirjuaq Caribou Management Board. 2008. Economic Valuation and Sociocultural Perspectives. Estimated Harvest of the Beverly and Qamanirjuaq Caribou Herds.

Bishop, R. C. 2004. "The Economic Impacts of chronic wasting disease (CWD) in Wisconsin." Human Dimensions of Wildlife 9 (3):181–92. https://doi.org/10.1080/10871200490479963.

DeVivo, M. T., D. R. Edmunds, M. J. Kauffman, B. A. Schumaker, J. Binfet, T. J. Kreeger, B. J. Richards, H. M. Schätzl, T. E. Cornish. 2017. Endemic chronic wasting disease causes mule deer population decline in Wyoming. PLOS ONE.

Edmunds, D. R., M. J. Kauffman, B. A. Schumaker, F. G. Lindzey, W. E. Cook, T. J. Kreeger, R. G. Grogan, T. E. Cornish. 2016. Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PLOS ONE.

Federal, Provincial, and Territorial Governments of Canada. 2014. 2012 Canadian Nature Survey: Awareness, participation, and expenditures in nature-based recreation, conservation, and subsistence activities. Ottawa, ON: Canadian Councils of Resource Ministers. https://onlinelibrary.wiley.com/doi/full/10.1111/j.1744-7976.2011.01232.x

Monello, R. J., J. G. Powers, N. T. Hobbs, T. R. Spraker, M. K. Watry, and M. A. Wild. 2014. Survival and population growth of a free-ranging elk population with a long history of exposure to chronic wasting disease. Journal of Wildlife Management: 78 (2):214–223.

Needham, M. D., J. J. Vaske, and M. J. Manfredo. 2004. Hunters' behavior and acceptance of management actions related to chronic wasting disease in eight states. Human Dimensions of Wildlife 9:211-231.

Seidl, A. F. and S. R. Koontz. 2004. "Potential Economic Impacts of Chronic Wasting Disease in Colorado." Human Dimensions of Wildlife 9 (3):241–45. https://doi.org/10.1080/10871200490480042.

Southwick Associates. 2012. "Hunting in America: An Economic Force for Conservation." https://www.fs.fed.us/biology/resources/pubs/wildlife/HuntingEconomicImpacts-NSSF-Southwick.pdf.

U.S. Fish & Wildlife Service. 2011. "2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation; Addendum: Deer Hunting in the United States: Demographics and Trends." http://digitalmedia.fws.gov/cdm/ref/collection/document/id/2134.

U.S. Fish & Wildlife Service. 2017. "2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - National Overview." https://wsfrprograms.fws.gov/subpages/nationalsurvey/nat_survey2016.pdf

Vaske, J. J. N. R. Timmons, J. Beaman, J. Petchenik. 2004. Chronic wasting disease in Wisconsin: hunter behavior, perceived risk and agency trust. Human Dimensions of Wildlife 9:193-209.

19 - Optimizing the Contribution of Research to CWD Management

Significant advances have occurred in recent decades that expand our knowledge of prion diseases, specifically detection, transmission, and biology. Despite these advances, our attempts to identify effective management strategies remain elusive (Uehlinger et al. 2016). These knowledge gaps limit our ability to clearly foresee the biological, social, and political impacts of chronic wasting disease (CWD), and to take the most appropriate steps to mitigate negative consequences of the disease on conservation, animal, and potentially human health. Therefore, best management practices for agencies responding to CWD include consideration of opportunities to incorporate research into their work. Only through addressing knowledge gaps will efficacy and efficiency of management actions improve and risks of CWD be reduced in the future.

Research activities range from opportunistic collection of data to design of rigorous landscape scale evaluations of management interventions. At minimum, communication with CWD experts, researchers, and biometricians prior to initiating surveillance is recommended to identify important and opportunistic contributions that could be gained with minimal added cost or workload. For example, managers could collect data on sex, age, and harvest location of cervids sampled for surveillance, collect tissue samples for genetic analysis, develop and evaluate new diagnostic tests, or archive specimens for future needs. Similarly, with appropriate planning and communication, captive cervids can potentially serve as a ready source of data and samples to support CWD research needs.

Communication and collaboration across jurisdictional boundaries can be used to magnify the impact of data collection to a broader spatial and temporal scale. Such an approach has been proposed through a disease management venture to enhance understanding of bighorn sheep respiratory disease etiology and ecology. Likewise, a multistate research approach was used to investigate the emergence of snake fungal disease in multiple eastern and Midwestern states. The intent and premise is that coordination to implement standardized protocols for treatment application and data collection over multiple small scale evaluations are likely to provide more insight than could be gained from differing data collection methods and numerous varying treatments. Collaboration to identify paired treatment and control sites for application of cervid density management is an example of how this could be applied as a best management practice for CWD. Wood et al. (2017) reiterate the importance of using adaptive management and outline an approach for experimental application and evaluation of prospective CWD management strategies in the west. Agencies considering management intervention are encouraged to review these recommendations. The development of controlled study designs to evaluate management strategies also was identified as the greatest priority or need for southeastern states represented at a 2017 CWD Research Workshop hosted in Arkansas. A 2017 research coordination meeting

with several states in the upper Midwest has helped provide consistency between projects. Similar recommendations for a regional approach to research and management would be beneficial.

Collaboration can also be used to compare data over a broad geographic area to identify trends that may not otherwise be apparent. For example, a recent genetic analysis of elk from multiple locations in the Western U.S. identified selection of more resistant PRNP genotypes where CWD has occurred for a longer period (Monello et al, 2017). Publishing peer-reviewed research as well as sharing data are critical means of collaboration and exemplify best management practices. In addition to building our foundational knowledge, describing current conditions and trends, and documenting impacts, these shared data are useful in constructing and testing predictive models.

Despite the high cost and complexity, well designed studies that test experimental manipulations and disease dynamics over long time frames and wide spatial scales will be critical to informing effective management practices in the future. For example, Before-After-Control-Impact (BACI) design studies provide a rigorous evaluation of experimental manipulations. The BACI design uses matched control and treatment populations, collects required information prior to applying a treatment, and then monitors each population after the treatment application. Use of BACI design in CWD research has been limited to date (e.g., Conner et al. 2007) and none have been conducted over a sufficient time scale for complete evaluation. Best management practices dictate that commitment to resources are maintained for several years (i.e., at minimum 5 years) to fully evaluate effects of management interventions (WAFWA 2018); however, this can be challenging considering the prolonged disease course and extended epidemic curve associated with CWD.

In addition to biological research, research to understand the human dimensions (HD) of CWD (e.g., stakeholder attitudes, beliefs, and values) is critical to developing best management practices. Understanding the human component can have dramatic effects on the success, failure, and future of CWD management. Understanding how stakeholders' attitudes, social norms, and behavioral intent inform support for management actions is critical for programmatic success. For example, how stakeholders perceive the long-term positive benefits of CWD management including what management actions are, and are not, supported and, thereby, indicate which are most likely to succeed in their implementation may significantly influence hunter participation and tolerance of deer and elk population reduction strategies. In addition to characterizing current stakeholder perspectives, HD research can help identify the underlying values and informational sources that shape those perspectives. This can assist in developing informational messaging that reaches the public more efficiently, informs them more adequately, and, where necessary, begins the process of increasing support for science-based management approaches that have low initial acceptance. Conducting analytical assessments and retrospective analyses of HD experiences can serve as lessons learned (Vaske 2010). Just as evaluating the outcome of disease management efforts facilitates adaptive management, recurrent evaluation of stakeholder perspectives and communication strategies allows these efforts to be similarly responsive.

Management agencies, as well as producers of captive cervids, are well-poised to support critical research to close knowledge gaps and move toward successful management of CWD. Best management practices for CWD include incorporating research whenever possible and using available resources in the most effective manner. The *Plan for Assisting States, Federal Agencies, and Tribes in Managing Chronic Wasting Disease in Wild and Captive Cervids* (2002) identified four areas for CWD research focus. While a number of the knowledge gaps have been filled since the report was released, the topical areas remain relevant. A revision of those research goals and tasks could be considered when planning management and allocating resources. **These priority areas include:**

1. Prion detection and diagnostics.

Recent advances:

Research has led to significant advances in diagnostic testing (e.g., enzyme-linked immunosorbent assay (ELISA)), prion detection in some substrates (e.g., protein misfolding cyclic amplification (PMCA), Real-Time Quaking-Induced Conversion (RT-QuIC)), and antemortem diagnostics (tonsil and recto-anal mucosa—associated lymphoid tissues (RAMALT) biopsy).

Next steps:

Additional advances in CWD detection will likely follow on the coat-tails of other prion diseases. Of particular need are more sensitive tests for live animals, including a rapid throughput test for surveillance and to facilitate test-and-cull management, and the ability to reliably detect prions in environmental samples, such as soil, water, and urine.

2. Disease biology and pathogenesis.

Recent advances:

Research has led to significant advances in understanding routes of prion shedding, transmission, species susceptibility, and genetic contributions to susceptibility.

Next steps:

Apply these advances to continue modeling and understanding disease ecology, such as sources of new loci of infection and impacts of genetic resistance and selection. Filling knowledge gaps about strains of CWD and species barriers, particularly for humans, remain important needs. Identification of the relative contributions of the various disease transmission pathways towards the overall spread of CWD in wild and captive cervid populations has been identified as a research priority under legislation introduced by Representative Abraham (R-LA) in the U. S. House of Representatives in June, 2018 (H. R. 6272). Developing prophylactic or treatment

measures are needed, but realistically the development of such measures appears unlikely in the near term.

3. Management and Ecology of the Disease and the Host.

Recent advances:

Short term studies have been performed to fill some knowledge gaps on the role of cervid ecology on CWD transmission, identify the role of soil and plants in prion availability, and model disease dynamics and predict management effectiveness.

Next steps:

Significant needs remain in this area, particularly long-term, broad scale multi-jurisdictional studies to evaluate the effectiveness of management treatments such as density reduction and targeted removals. Identification of techniques to reduce infectious load in the environment would be beneficial for captive, and potentially, free-ranging cervids. A greater understanding is needed of the role of plant uptake (and other environmental sources) for CWD transmission, prion translocation, and exposure of humans, livestock, and other wildlife species to prions.

4. Human dimensions.

Recent advances:

Place-based inquiry on perceptions of CWD and impact on hunting and risk evaluations have been conducted on a limited scale.

Next steps:

Significant knowledge gaps remain that will influence managers' ability to successfully address CWD, particularly public attitudes on the need for management and acceptance of proposed management actions. Additional needs include understanding differences in attitudes and beliefs in different geographic locations, understanding concern about risk to human health, public acceptance of risk from CWD, including human assisted movement of cervids, and evaluating communication preferences between geographic regions, stakeholder groups, and other demographics.

Literature Cited and References

Chronic wasting disease Task Force. 2002. Plan for Assisting States, Federal Agencies, and Tribes in Managing Chronic wasting disease in Wild and Captive Cervids.

Conner, M. M., M. W. Miller, M. R. Ebinger, and K. P. Burnham. 2007. A Meta-BACI approach for evaluating management intervention on chronic wasting disease in mule deer. Ecological Applications 17: 140–153.

Monello, R. J., N. L. Galloway, J. G. Powers, S. A. Madsen-Bouterse, W. H. Edwards, M. E. Wood, K. I. O'Rourke, and M. A. Wild. 2017. Pathogen-mediated selection in free-ranging elk populations infected by chronic wasting disease. PNAS

Uehlinger, F. D., A. C. Johnson, T. K. Bollinger, and C. L. Waldner. 2016. Systematic review of management strategies to control chronic wasting disease in wild deer populations in North America. BMC Veterinary Research 12: 173–189.

Vaske, J. J. 2010. Lessons learned from human dimensions of chronic wasting disease research. Human Dimensions of Wildlife 15: 165–179.

Western Association of Fish and Wildlife Agency .2018. "Recommendations on Adaptive Management of Chronic Wasting Disease in the West"

https://www.wafwa.org/Documents%20and%20Settings/37/Site%20Documents/Committees/Wildlife%20Health/docs/CWDAdaptiveManagementRecommendations WAFWAfinal approved01/06/2018.pdf

Wood, M. E., M. J. Pybus, E. S. Almberg, K. Mehl, T. K. Bollinger, E. Merrill, M. Ball, and M. W. Miller. 2017 Recommendations for adaptive management of chronic wasting disease in the west.

20 - CWD and Cervid Regulations in North America

Best Management Practices for reducing the risk of CWD transmission and establishment of CWD through regulations and regulatory strategies

State, provincial, and territorial wildlife agencies should:

- Assume sole authority for management (versus joint authority) of CWD in confined
 herds and privately-owned cervid herds if possible. When litigation arises it is helpful to
 be able to present consistent statements of jurisdiction over time, whether through
 regulation or supplemented with the opinion of the state attorney general.
- Work closely with neighboring jurisdictions to coordinate and, where possible, harmonize management and regulatory responses to CWD;
- Review and evaluate their wildlife disease regulations and authorities on a regular, ongoing basis, in order to ensure sufficient management flexibility and regulatory authority to manage CWD in wild and/or captive cervid populations. Also review statutes pertaining to civil liability for damages caused to captive cervids, which may contain language designating or implying that captive cervids are domestic animals.

Enact regulations to:

- o Promote testing of harvested animals in CWD-enzootic areas;
- Mandate CWD testing for all cervids that die in private ownership/management or within a confined cervid operation;
- Ensure consistent enforcement of intrastate and interstate movement prohibitions, including seizures and penalties; and

Prohibit:

- Feeding/baiting of cervids
- Live importation of cervids into the state/province/territory except to regulated and licensed facilities
- Importation of intact cervid carcasses and cervid parts known to contain significant amounts of prions into the state/province/territory
- Movement of intact cervid carcasses and cervid parts known to contain significant amounts of prions from a CWD-enzootic area within a state/province/territory

Supporting Strategies and Evidence

CWD regulations vary widely between state, provincial, and territorial jurisdictions. While oversight of confined and privately-owned cervids falls solely on the agricultural or wildlife agencies in a few states and provinces, both agencies jointly manage privately-owned or confined cervids in the majority of states and provinces. Many states and provinces have restrictions prohibiting the importation of live cervids from another state or province where CWD is enzootic. However, some states ban importation (or ownership) of all live cervids. Even with the ever present and increasing threat of CWD, a few states and provinces have no ban or restriction in place, and allow free movement of live cervids across borders.

In states and provinces where privately-owned cervids are legal, regulatory language requires some level of postmortem CWD testing. These requirements and levels of enforcement vary greatly for each state and province. All states and provinces perform some level of CWD testing of wild cervids, again to varying degrees. Through this testing more than half of the states and three Canadian provinces have detected CWD in either privately-owned or wild cervids.

Baiting (for hunting) and feeding of wild cervids continues in many states and provinces. More states ban or restrict baiting rather than feeding, even though feeding extends the temporal scale that animals are congregating at unnatural food sites. Increased attention is being placed on the movement of cervid parts and carcasses across jurisdictional boundaries. Movement of potentially infected parts and carcasses increases the chance of CWD being introduced into new areas and more states, provinces, and territories are taking steps to reduce or ban these movements. Sound and consistent regulations and practices across all states, provinces, and territories would reduce confusion among stakeholders, especially those hunting in jurisdictions other than where they reside; reduce inadvertently moving CWD into new areas; and reduce the likelihood of disease transmission in areas where it currently exists.

Reference

The Chronic Wasting Disease Alliance maintains a current, up-to-date list of state and provincial regulations related to CWD. Link to clickable map or table of regulations by state, province, and territory: http://cwd-info.org/wp-content/uploads/2018/06/CWDRegstableState-Province_Spring18.pdf

21 - Relevant Case Law

Cases discussing regulatory authority over, categorization of, and ownership interests in captive cervids

Hill v. Missouri Department of Conservation, No. SC 96739 (Mo. Sup. Ct. 2018):

The Missouri Conservation Commission proposed new regulations of the captive cervid industry in an effort to eradicate CWD. These regulations banned the importation of cervids, and imposed stricter fencing, recordkeeping, and veterinary inspection requirements. Captive cervid owners/managers sued the Commission in state court to prevent the regulations from going into effect. The trial court ruled in favor of the cervid owners/managers. The state's appeal was then transferred to the Missouri Supreme Court.

The Commission argued that its authority under Article IV, §40(a) of the state constitution extends to captive cervids as "game" and "wildlife resources of the state." Cervid owners argued that the term "wildlife" does not include captive cervids, as it refers to animals that are both (1) "wild by nature" and (2) untamed and undomesticated. They further argued that "game" is a subset of that definition of "wildlife."

The Missouri Supreme Court rejected the cervid owners/managers' argument, finding that the terms "wildlife" and "game" include all animals wild by nature, regardless of whether they are domesticated. The cervid owners/managers' reading would define the Commission's authority on an "unworkable animal-by-animal basis" as against a "rational species-by-species basis." The text of article IV, §40(a) does not suggest the application of such an "animal-by-animal basis," and neither do historical interpretations of the text.

Cervid owners/managers also argued that privately owned cervids are not "resources of the state." The court rejected this argument as well, finding that "resources of the state" simply refers to wildlife within the state's geographical borders. Therefore, the Commission has the authority to regulate captive cervids as "game" and "wildlife resources of the state."

The Commission finally argued that the trial court erred in its determination that the proposed regulations violated the right to farm under Article I, §35 of the state constitution. This provision guarantees "the right of farmers and ranchers to engage in farming and ranching practices." Cervid owners/managers failed to show that they were engaged in such practices. Nothing in that provision suggested any intent to limit the Commission's regulatory authority for game and wildlife or for the captive cervid industry.

The Missouri Supreme Court reversed in favor of the Commission.

But see Oak Creek Whitetail Ranch, L.L.C. v. Lange, 326 S.W.3d 549 (Mo. Ct. App. 2010) (holding that a dog owner was liable for monetary damages when his dog killed 21 breeder deer; the deer were domestic animals per Mo. Rev. Stat. § 273.020 because they "[l]iv[ed] in or near the habitation of man; domesticated; tame; as, domestic animals");

and

Autumn Antlers Trophy Whitetail Lodge v. Armstrong, 2014 WL 10252003 (Minn. Dist. Ct. Aug. 18, 2014) (construing Minn. Stat. § 347.01—which makes dog owners liable for killing or wounding domestic animals—to potentially cover captive cervids as under the jurisdiction of the state department of agriculture, rather than its department of natural resources); 2015 WL 4945799 (June 24, 2015) (finding in favor of the deer facility and awarding damages).

<u>U.S. v. Wainwright</u>, 89 F.Supp. 3d 950 (S.D. Ohio 2015):

The federal government charged defendant Wainwright with several Lacey Act and Ohio criminal violations including operation of captive white-tailed deer hunting preserves without a license and interstate trafficking of white-tailed deer. Defendant moved to dismiss the charges.

The court held that white-tailed deer born and raised in captivity were "wild animals" within the meaning of the Lacey Act, 16 U.S.C. §§ 3371(a), 3372(a), which makes it a crime to import, export, transport, sell, receive, acquire, or purchase any fish or wildlife in violation of state law regardless of whether they are captive or free-ranging. The Ohio statutes at issue prohibit operation of a "wild animal hunting preserve" without a license, and define such preserves to include land where captive deer are released and hunted. Ohio Rev. Code §§ 1531.01, 1533.721.

The court also held that the Lacey Act's definition of "wild animal" was clear enough to provide defendant with fair warning that the Act covered white-tailed deer. § 3371(a) ("defining wildlife as "any wild animal, whether alive or dead, including without limitation any wild mammal...whether or not bred, hatched, or born in captivity, and includes any part, product, egg, or offspring thereof"). The court construed the Lacey Act to require consideration of whether a species, not a specimen, is wild (similar to the inquiry the Missouri Supreme Court would make in Hill three years later).

The district court ruled for the federal government.

See also U.S. v. Condict, No. CR-05-004-SPS, 2006 WL 1793235, at *3 (E.D. Ok. June 27, 2006) (also holding that wildlife under the Lacey Act includes farm-raised domesticated deer).

Peterson v. Smith, 03-17-00703-CV (Tex. Ct. App., 3d Dist.) [appeal pending]:

A deer-breeding facility sued for a declaration of ownership in breeder deer for which they possessed Texas breeding permits, and also sought to overturn comprehensive rules promulgated by the Texas Parks & Wildlife Department (TPWD) requiring breeder deer to undergo CWD testing in line with existing procedures for free-ranging deer.

Under Article XVI, § 59(a) of the Texas Constitution (the Conservation Amendment), natural resources are held as a "public right" to be preserved by legislation. The legislature accordingly proclaimed that "[a]ll wild animals...inside the borders of [the] state are the property of the people of this state." Tex. Parks & Wild. Code § 1.101(4) (defining "wild" as "normally liv[ing] in a state of nature and...not ordinarily domesticated"). Restriction of wild animals' movement does not affect their status as public property. § 1.103.

The district court rejected the breeders' claims on the bases of sovereign immunity, lack of redressable injury or deprivation of due process concerning his ability to transfer deer, and authority in TPWD to regulate their captive deer as publicly-owned wildlife under the Texas Constitution and Code.

The court ruled in favor of the Department.

<u>See also Anderton v. TPWD</u>, 605 F. App'x 339, 348 (5th Cir. 2015) (per curiam) (holding that Texas deer breeders "cannot claim a constitutionally protected property interest in [their herd of breeder deer]").

<u>Indiana Department of Natural Resources v. Whitetail Bluff, LLC</u>, 25 N.E.3d 218 (Ind. Ct. App. 2015):

After being advised by the Indiana Department of Natural Resources (IDNR) that state law did not prohibit operating an enclosed white-tailed deer hunting facility, plaintiff established such a facility and populated it with captive deer. Soon, IDNR notified the facility that the presence of captive deer resulted in its land no longer being eligible for forest classification and plaintiff owing back taxes. Captive deer operations in Indiana were also subject to regulation by the State's Board of Animal Health (BOAH), which required tagging of animals for its CWD certification program.

Indiana's Attorney General issued an opinion finding that IDNR's and BOAH's jurisdiction over captive deer was ambiguous, and soon the General Assembly passed legislation authorizing deer farming as an agricultural practice while precluding the hunting of "cervidae livestock". IDNR issued an emergency rule stating that obtaining a game breeder's license did not allow the hunting of animals maintained under that license—including fenced-in hunting. Plaintiff sued to overturn the rule and contested IDNR's jurisdiction over captive deer.

The Court construed Indiana Code § 14-22-1-1 ("All wild animals, except those that are...legally owned or being held in captivity under a license or permit as required by this article; or...otherwise excepted in this article; are the property of the people of Indiana...The department shall protect and properly manage the fish and wildlife resources of Indiana") to confer no authority on IDNR to protect and manage wild animals that are legally owned or held in captivity under a license or permit. This reading comported with case law construing a prior version of § 14-22-1-1 in favor of the facility and BOAH.

The Court also held that high-fence hunting is not prohibited under § 14-22-20.5-2. The court considered the ethics of high-fence hunting and the hazards of CWD but ultimately took negative notice of IDNR's change in position.

The court of appeals ruled against the Department.

22 - CWD and Public Health

Best Management Practices related to public health and CWD include the following:

- Wear protective gloves, wash hands, and disinfect field equipment. Anyone handling cervids (deer, elk, etc.) or cervid carcasses should take precautions to avoid exposure to disease agents with known (e.g. leptospirosis) or unknown (e.g. CWD) risk to humans. Recommendations from the Centers for Disease Control and Prevention (CDC) and state/provincial wildlife health agencies include wearing gloves, washing hands and instruments, disinfecting field equipment (see chapter in this volume on disinfection), and minimizing the handling of nervous tissue (brain and spinal cord).
- Avoid sawing through the bone and cutting through the brain and spinal cord. In CWD enzootic areas, to reduce exposure to CWD prions avoid sawing through the bone and cutting through the brain and spinal cord. Meat processors should process deer individually and clean and disinfect equipment between animals. States should consider developing regulations for meat processors who handle deer from out-of-state or from CWD enzootic zones.
- Do not consume meat from animals that appear sick or are found dead of unknown causes. The CDC and many wildlife agencies recommend that meat should not be consumed from animals that appear sick or are found dead of unknown causes. These animals should be reported to the respective state, provincial, or territorial wildlife agency. Tissues and organs with the potential for higher concentrations of CWD, including brain, spinal cord, spleen, tonsils, and lymph nodes, should be avoided and not consumed.
- Do not consume meat or other tissues from CWD-positive animals. The CDC recommends that cervids, especially from CWD-positive regions, be tested for CWD prior to consumption and that hunters and others should avoid consuming meat or other tissues from positive animals. However, it should be noted that assays used for prion detection are surveillance tools and do not constitute a food safety test. Meat/muscle tissue is not tested for CWD due to the low level of prion detectable in this tissue. Further, some animals in the early stages of infection may test negative due to the low level of prions present. To qualify this CDC recommendation it should be stated that transmission of CWD to humans through consumption of game meat has not been documented and no human has ever been diagnosed with CWD prion-related disease.

Supporting Strategies and Evidence

The popularity of hunting of cervids in North America and subsequent consumption of venison raises concerns regarding the possibility of transmission of chronic wasting disease (CWD) to humans. Some transmissible spongiform encephalopathies of animals, such as bovine spongiform encephalopathy (BSE), have been shown to be transmissible to humans (Aguzzi and Heikenwalder 2006); however, others, such as scrapie, do not appear to readily cross the species barrier. To date, the natural host range for CWD appears to be limited to cervids, and there have been no documented cases of CWD in humans. Nevertheless, preliminary unpublished results from one experimental study suggest a potential risk to humans, and the CDC currently recommends hunters test their harvested animals for CWD prior to consumption and that meat or other tissues from CWD-positive animals should not be consumed. These recommendations have not changed following publication of experimental studies that were unable to demonstrate transmission of CWD to macaques (Race et al. 2018).

Humans are susceptible to several prion diseases including Creutzfeldt-Jakob Disease (CJD), variant CJD (caused by the classical bovine spongiform encephalopathy [BSE] agent), fatal familial insomnia, kuru, and Gerstmann-Sträusler-Scheinker disease. Of these only kuru and BSE are known to be transmissible, and BSE is the only animal prion disease known with certainty to be infectious to humans. Other animal prion diseases, including scrapie in sheep and goats, have not been shown to be transmissible to humans despite centuries of exposure, although certain lines of experimental investigation suggest a low but non-zero zoonotic potential for classical scrapie strains

Chronic wasting disease causes natural disease in members of the Cervidae family and has been detected in free-ranging Rocky Mountain elk, mule deer, white-tailed deer, moose, and reindeer (Miller and Fischer 2016). Species from captive commercial collections in North America have included elk, mule deer, sika deer, and white-tailed deer (U. S. Geological Survey 2016). Cattle that have been co-grazed with CWD-infected cervids have not developed disease (Sigurdson 2008; Williams et al. 2018), and other, non-cervid species have not been found to develop disease except in controlled experiments.

Experimental studies have further elucidated the potential host range and expanded our knowledge regarding both molecular and physical barriers to transmission. Studies using intracerebral (directly into the brain) inoculation of CWD evaluate molecular barriers and demonstrate whether the normal prion protein of the host species is capable of misfolding to the abnormal CWD prion protein shape. Amino acid sequence of the host prion protein, most importantly the presence of asparagine at position 170 in humans (Kurt et al. 2009), is an important determinant of whether misfolding occurs when exposed to the CWD prion (reviewed by Kurt and Sigurdson 2016). These studies indicated that a wide range of species are theoretically susceptible to CWD infection although susceptibility does not necessarily follow taxonomic lines. While many species, including raccoons, macaques, and some rodents, appear

resistant to infection by intracerebral inoculation, exposure via this route has resulted in CWD infection in other rodents, fallow deer, mustelids, felids, non-human primates and ruminants, although with variable attack rates (Kurt and Sigurdson 2016).

Despite the development of infection following intracerebral inoculation, most species appear to have physical barriers that so far prevent infection following natural exposure. Experimental natural or oral exposure to CWD did not result in infection in fallow deer (Rhyan et al. 2011), mustelids, felids, non-cervid ruminants (Kurt and Sigurdson 2016; Williams et al. 2018), and macaques in two related studies (Race et al. 2009; 2018). Experimental infections simulating natural exposure have resulted in disease in several cervid species including elk (Hamir et al. 2006a), muntjac (Napier et al. 2009), reindeer (Mitchell et al. 2012), and red deer (Balachandran et al. 2010). Infection following oral exposure in non-cervids has been demonstrated only in swine (Moore et al., 2017), squirrel monkeys (Marsh et al. 2005), and macaque monkeys (S. Czub, personal communication).

Successful infection of primates via intracerebral inoculation and oral exposure, although inconsistent, raises concerns for the potential for human infection. Squirrel monkeys have become infected following intracerebral inoculation, and there is evidence squirrel monkeys fed CWD-positive material have developed disease (Marsh et al. 2005). Although Race et al. (2009; 2018) saw no evidence of transmission to cynomolgus macaques, preliminary results from another study indicated cynomolgus macaques fed CWD-positive meat were capable of developing disease that is clinically similar to prion disease (S. Czub, personal communication). This research has not passed peer-review or been published to date.

Chronic wasting disease is increasing in prevalence and geographic range. Therefore, the potential for human infection may be increasing as infective contact rates increase (Belay et al. 2004). The CWD prion has been found in venison (skeletal muscle) of CWD-infected deer (Angers et al. 2006), including those that are not yet showing clinical signs (Daus et al. 2011). However, a small number of studies have investigated humans known to consume CWD-positive meat and were unable to establish any links to human disease (Mawhinney et al. 2006, Anderson et al., 2007). Some molecular studies suggest that the human prion protein is refractory to misfolding when exposed to the CWD prion while others show varying degrees of susceptibility (Waddell et al. 2017). Nevertheless, prion diseases can have extremely long incubation periods and surveillance in humans is limited, and thus the possibility for CWD to cause disease in humans cannot be ruled out. Experimental studies using transgenic mice suggest that CWD disease properties may change after multiple passages through different animals (Telling 2011). Human disease risk may depend on the strain and emerging strains may have increased infection risk to humans (Barria et al. 2011, Daus and Beekes 2012, Herbst et al. 2017). A recent systematic review of information on the potential transmissibility of CWD to humans had the following conclusion:

"Future discovery of CWD transmission to humans cannot be entirely ruled out on the basis of current studies, particularly in light of possibly decades-long incubation periods for CWD prions in humans. It would be prudent to continue CWD research and epidemiologic surveillance, exercise caution when handling potentially contaminated material and explore CWD management opportunities." (Waddell et al 2017)

The potential impacts on public health in the more holistic sense (e.g. mental health and social well-being) of detection of CWD in wild cervids should not be ignored and should be explored further. Hunting of wild cervids is of high importance in terms of subsistence harvesting, particularly in rural and Indigenous communities, with high sociocultural importance to the health and wellbeing of members of those communities.

Literature Cited and References

Aguzzi, A. and M. Heikenwalder. 2006. Pathogenesis of prion diseases: current status and future outlook. Nature Reviews 4:765–775.

Anderson C. A., P. Bosque, C. M. Filley, D. B. Arciniegas, B. K. Kleinschmidt-DeMasters, W. J. Pape, and K. L. Tyler. 2007. Colorado surveillance program for chronic wasting disease transmission to humans. Lessons from 2 highly suspicious but negative cases. Archives of Neurology 64: 439–441.

Angers, R. C., S. R. Browning, T. S., Seward, C. J., Sigurdson, M. W Miller, E. A. Hoover, and G. C. Telling. 2006. Prions in skeletal muscles of deer with chronic wasting disease. Science 311: 1117.

Balachandran A., N. P. Harrington, A. Algire J, Soutyrine, T. R. Spraker, M. Jeffrey, L. González, and K. I. O'Rourke. 2010 Experimental oral transmission of chronic wasting disease to red deer (*Cervus elaphus*): early detection and late stage distribution of protease resistant prion protein. Canadian Veterinary Journal 51: 169–178.

Bartz J. C., R. F. Marsh, D. I. McKenzie, and J. M. Aiken. 1998. The host range of chronic wasting disease is altered on passage in ferrets. Virology 251, 297–301.

Belay, E. D., R. A. Maddox, E. S. Williams, M. W. Miller, P. Gambetti, and L. B. Schonberger, 2004. Chronic wasting disease and potential transmission to humans. Emerging Infectious Diseases 10: 977–984.

Browning S.R., G. L. Mason, T. Seward, M. Green, G. A. J. Eliason, C. Mathiason, M. W. Miller, E. S. Williams, E. Hoover, and G. C. Telling. 2004. Transmission of prions from mule deer and Elk with chronic wasting disease to transgenic mice expressing cervid PrP. Journal of Virology 78: 13345–13350.

- Di Bari M. A., R. Nonno, J. Castilla, C. D'Agostino, L. Pirisinu, G. Riccardi, M. Conte, J. Richt, R. Kunkle, J. Langeveld, G. Vaccari, and U. Agrimi. 2013. Chronic wasting disease in bank voles: characterisation of the shortest incubation time model for prion diseases. PLoS Pathogens 9: e1003219. doi: 10.1371/journal.ppat.1003219
- Daus M. L., J. Breyer, K. Wagenfuehr, W. M. Wemheuer, A. Thomzig, W. J. Schulz-Schaeffer, and M. Beekes. 2011. Presence and Seeding Activity of Pathological Prion Protein (PrP^{TSE}) in Skeletal Muscles of White-Tailed Deer Infected with Chronic Wasting Disease. PLoS ONE 6(4): e18345. https://doi.org/10.1371/journal.pone.0018345
- Hamir A. N., R. A. Kunkle, R. C. Cutlip, J. M. Miller, K. I. O'Rourke, E. S. Williams, M. W. Miller, M. J. Stack, M. J. Chaplin, and J. A. Richt. 2005. Experimental transmission of chronic wasting disease agent from mule deer to cattle by the intracerebral route. Journal of Veterinary Diagnostic Investigation 2005: 276–281.
- Hamir, A. N., Gidlewski, T., Spraker, T. R., Miller, J. M., Creekmore, L., Crocheck, M., Cline, T., O'Rourke, K. I. 2006a. Preliminary observations of genetic susceptibility of elk (*Cervus elaphus nelsoni*) to chronic wasting disease by experimental oral inoculation. *Journal of Veterinary Diagnostic Investigation*, 18: 110–114.
- Hamir A. N., R. A. Kunkle, R. C. Cutlip, J. M. Miller, E. S. Williams, and J. A. Richt. 2006b. Transmission of chronic wasting disease of mule deer to Suffolk sheep following intracerebral inoculation. Journal of Veterinary Diagnostic Investigation 18: 558–565.
- Heisey D.M., N. A. Mickelsen, J. R. Schneider, C. J. Johnson, C. J. Johnson, J. A. Langenberg, P. N. Bochsler, D. P. Keane, and D. J. Barr. 2010. Chronic wasting disease (CWD) susceptibility of several North American rodents that are sympatric with cervid CWD epidemics. Journal of Virology 84: 210–215.
- Herbst A., C. Velásquez, E. Triscott, J. M. Aiken, D. McKenzie. 2017. Chronic Wasting Disease Prion Strain Emergence and Host Range Expansion. Emerging Infectious Diseases 23: 1598-1600. https://dx.doi.org/10.3201/eid2309.161474
- Kurt T.D., Telling G.T., Zabel M.D., Hoover E.A. 2009. Trans-species amplification of PrPCWD and correlation with rigid loop 170N. Virology 387:235–43
- Kurt T.D. and C. J. Sigurdson. 2016. Cross-species transmission of CWD prions. Prion 10(1):83–91.
- Marsh R.F., A. E. Kincaid, R. A. Bessen, and J. C. Bartz. 2005. Interspecies transmission of chronic wasting disease prions to squirrel monkeys (*Saimiri sciureus*). Journal of Virology 79: 13794–13796.

Mathiason C.K., A. V. Nalls, D. M. Seelig, S. L. Kraft, K. Carnes, K. R. Anderson, J. Hayes-Klug, and E. A. Hoover EA. 2013. Susceptibility of domestic cats to chronic wasting disease. Journal of Virology 87, 1947–1956.

Mawhinney S., W. J. Pape, J. E. Forster, C. A. Anderson, P. Bosque, and M. W. Miller. 2006. Human prion disease and relative risk associated with chronic wasting disease. Emerging Infectious Diseases 12, 1527–1535.

Moore S. J., M. H. West Greenlee, N. Kondru, S. Manne, J. D. Smith, R. A. Kunkle, A. Kanthasamy, and J. J. Greenlee. 2017. Experimental transmission of the chronic wasting disease agent to swine after oral or intracranial inoculation. Journal of Virology 91:e00926-17

Napier D., M. Green, E. Hoover, T. Spraker, K. O'Rourke, A. Balachandran, and G. C. Telling. 2009. Chronic wasting disease prions in elk antler velvet. Emerging Infectious Diseases 15, 696–703.

Race B., K. Meade-White, K. Phillips, J. Striebel, R. Race R, and B. Chesebro. 2014. Disease agents in nonhuman primates. Emerging Infectious Diseases 20: 833–837.

Race B., K. D. Meade-White, M. W. Miller, K. D. Barbian, R. Rubenstein, G. LaFauci, L. Cervenakova, C. Favara, D. Gardner, D. Long, and M. Parnell. 2009. Susceptibilities of Nonhuman Primates to Chronic Wasting Disease. Emerging Infectious Diseases 15:1366–1376. doi:10.3201/eid1509.090253.

Race, B., K. Williams, C.D. Orrú, A.G. Hughson, L. Lubke, B. Chesebol. 2018. Lack of Transmission of Chronic Wasting Disease to Cynomolgus Macaques. Journal of Virology. Apr 25. pii: JVI.00550-18. doi: 10.1128/JVI.00550-18. [Epub ahead of print]

Rhyan, J. C., M. W. Miller, T. R. Spraker, M. McCollum, P. Nol, L. L. Wolfe, T. R. Davis, Creekmore, L., and K. I. O'Rourke. 2011. Failure of Fallow Deer (*Dama dama*) to develop chronic wasting disease when exposed to a contaminated environment and infected mule deer (*Odocoileus hemionus*). Journal of Wildlife Diseases 47: 739–744.

Sigurdson, C. J. 2008. A prion disease of cervids: Chronic wasting disease. Veterinary Research 39:41.

Waddell L., J. Greig, M. Mascarenhas, A. Otten, T. Corrin, and K. Hierlihy. 2018. Current evidence on the transmissibility of chronic wasting disease prions to humans—A systematic review. Transboundary and Emerging Diseases 65: 37–49.

Williams, E.S, D. O'Toole, M.W. Miller, T.J. Kreeger, and J.E. Jewell. 2018. Cattle (*Bos taurus*) Resist Chronic Wasting Disease Following Oral Inoculation Challenge or Ten Years' Natural Exposure in Contaminated Environments. Journal of Wildlife Diseases In-Press.

CONGRESS.GOV

S.4111 - Chronic Wasting Disease Research and Management Act of 2022

117th Congress (2021-2022) | Get alerts

Sponsor:

Sen. Hoeven, John [R-ND] (Introduced 04/28/2022)

Committees:

Senate - Agriculture, Nutrition, and Forestry

Latest Action: Senate - 04/28/2022 Read twice and referred to the Committee on Agriculture, Nutrition, and Forestry. (All Actions)

Tracker: 1

> Passed Senate

Passed House

To President

Became Law

Summary(0) Text(1) Actions(1) Titles(2) Amendments(0) Cosponsors(20) Committees(1) Related Bills(1)

There is one version of the bill.

Text available as: XML/HTML XML/HTML (new window) TXT PDF (241KB) €

Shown Here:

Introduced in Senate (04/28/2022)

117th CONGRESS

2D SESSION

S. 4111

To support research and State management efforts relating to chronic wasting disease, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 28, 2022

Mr. Hoeven (for himself, Mr. Heinrich, Mr. Tester, Mr. Daines, Ms. Klobuchar, Mr. Marshall, Ms. Smith, Mrs. HYDE-SMITH, and Mr. BOOKER) introduced the following bill; which was read twice and referred to the Committee on Agriculture, Nutrition, and Forestry

A BILL

To support research and State management efforts relating to chronic wasting disease, and for other

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

SECTION 1. SHORT TITLE.

This Act may be cited as the "Chronic Wasting Disease Research and Management Act of 2022".

SEC. 2. FINDINGS.

Congress finds that-

(1) chronic wasting disease, the fatal neurological disease found in cervids, is a fundamental threat to the health and vibrancy of deer, elk, and moose populations, and the increased occurrence of chronic wasting disease in regionally diverse locations necessitates an escalation in research, surveillance, monitoring, and management activities focused on containing and managing chronic wasting disease;

- (2) a focus on research into the transmission of, resistance to, diagnosis of, and epidemiology of chronic wasting disease is needed to inform future policies to combat chronic wasting disease and ensure the health of cervid populations;
- (3) because States and Indian Tribes have diverse policies for addressing chronic wasting disease, the Federal Government, in consultation with the Chronic Wasting Disease Task Force established under section 104 of America's Conservation Enhancement Act (16 U.S.C. 667h), should coordinate financial and technical support to States and Indian Tribes, State and Tribal departments of agriculture, State and Tribal wildlife agencies, institutions of higher education, and research centers conducting scientific research on chronic wasting disease;
- (4) pursuant to State and Federal law, States retain primacy and policymaking authority with regard to wildlife management;
- (5) under policies in effect on the date of enactment of this Act, chronic wasting disease remains a systemic threat to cervids; and
- (6) scientific advances that lead to the ability to stop transmission of chronic wasting disease are needed to ensure the long-term viability of cervids.

SEC. 3. CHRONIC WASTING DISEASE RESEARCH AND MANAGEMENT PROGRAM.

- (a) DEFINITIONS.—In this section:
 - (1) CERVID.—The term "cervid" means any species within the family Cervidae.
- (2) CHRONIC WASTING DISEASE.—The term "chronic wasting disease" means the animal disease afflicting cervid populations that—
 - (A) is a transmissible disease of the nervous system resulting in distinctive lesions in the brain; and
 - (B) belongs to the group of diseases known as transmissible spongiform encephalopathies, which includes scrapie, bovine spongiform encephalopathy, and Cruetzfeldt-Jakob disease.
 - (3) ELIGIBLE ENTITY.—The term "eligible entity" means—
 - (A) a State or Tribal department of agriculture;
 - (B) a State or Tribal wildlife agency;
 - (C) a Tribal research facility;
 - (D) an institution of higher education (as defined in section 101 of the Higher Education Act (20 U.S.C. 1001)); and
 - (E) a research center that conducts or is qualified to conduct scientific research on chronic wasting disease.
 - (4) SECRETARY.—The term "Secretary" means the Secretary of Agriculture.

(b) RESEARCH PROGRAM.—

(1) IN GENERAL.—Not later than 90 days after the date on which funds are made available to carry out this section, the Secretary shall establish a program (referred to in this subsection as the "program") under which the Secretary shall offer to enter into cooperative agreements, or other legal instruments authorized under section 10413(a)(4) of the Animal Health Protection Act (7 U.S.C. 8312(a)(4)), (referred to in this subsection as "covered agreements") with eligible

entities to conduct research on the transmission of, resistance to, and diagnosis of chronic wasting disease.

- (2) CRITERIA FOR SELECTION.—In entering into covered agreements under the program, the Secretary shall give priority to eligible entities that will conduct research on—
 - (A)_(i) methods and products—
 - (I) to effectively detect infectious chronic wasting disease prions in live cervids, cervid excreta, the environment, and inorganic surfaces; and
 - (II) to decontaminate those infectious prions; or
 - (ii) testing methods that significantly improve sensitivity and accelerate timelines for test results on nonlive cervids;
 - (B) the long-term suppression or eradication of chronic wasting disease;
 - (C) determination markers for genetic resistance to chronic wasting disease and strategies for using genetic resistance to combat the spread of chronic wasting disease;
 - (D) sustainable cervid harvest management practices—
 - (i) to reduce chronic wasting disease occurrence; and
 - (ii) to prevent or limit spatial spread of chronic wasting disease; or
 - (E) factors that contribute to local emergence of chronic wasting disease and increased prevalence and distribution of chronic wasting disease, including mechanisms of disease transmission and effective barriers to transmission.
- (3) AMOUNT OF AGREEMENT.—To the maximum extent practicable, a covered agreement entered into by the Secretary with an eligible entity under the program shall be for an amount that is not less than 2 percent and not more than 10 percent of the funds appropriated under subsection (h) for the applicable fiscal year.
- (4) ADMINISTRATIVE COSTS BY ELIGIBLE ENTITIES.—An eligible entity that enters into a covered agreement under the program shall use not more than 10 percent of the amount of the covered agreement for administrative costs.
- (c) Support For State Efforts To Manage And Control Chronic Wasting Disease.—
 - (1) IN GENERAL.—Not later than 90 days after the date on which funds are made available to carry out this section, the Secretary shall offer to enter into cooperative agreements, or other legal instruments authorized under section 10413(a)(4) of the Animal Health Protection Act (7 U.S.C. 8312(a)(4)), with eligible entities described in subparagraphs (A) and (B) of subsection (a) (3) to provide direct financial assistance to support the efforts of those eligible entities to develop and implement management strategies to address chronic wasting disease within the jurisdiction of the applicable State or Indian Tribe.
 - (2) APPLICATION.—An eligible entity described in paragraph (1) seeking direct financial assistance under this subsection shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.
 - (3) FUNDING PRIORITIES.—In providing direct financial assistance under paragraph (1), the Secretary shall give priority to eligible entities described in that paragraph that have, with respect to the applicable State or Indian Tribe of the eligible entity—
 - (A) a high incidence of chronic wasting disease;

- (B) shown the greatest financial commitment to managing, monitoring, surveying, and researching chronic wasting disease;
- (C) comprehensive policies and programs focused on chronic wasting disease management that have integrated the programs and policies of all involved agencies related to chronic wasting disease management;
- (D) the greatest risk of an initial occurrence of chronic wasting disease originating from surrounding areas; or
- (E) the greatest need for response to new outbreaks of chronic wasting disease occurring in—
 - (i) areas in which chronic wasting disease is already found; or
 - (ii) areas with first infections of chronic wasting disease, with the intent of containing chronic wasting disease in any new area of infection.
- (4) RAPID RESPONSE.—If a State or Indian Tribe detects, within the jurisdiction of the State or Indian Tribe, chronic wasting disease in a cervid population that was not previously infected, notwithstanding paragraphs (2) and (3), the Secretary may immediately provide direct financial assistance, in an amount to be determined by the Secretary, to support the efforts of the State or Indian Tribe, as applicable, to immediately control the spread of chronic wasting disease within that cervid population.
- (d) PUBLIC EDUCATION ON CHRONIC WASTING DISEASE.—The Secretary, in consultation with the eligible entities described in subparagraphs (A) and (B) of subsection (a)(3), organizations representing the farmed cervid industry, and organizations representing deer hunters, shall develop and maintain materials based on the latest scientific knowledge to educate the public on chronic wasting disease and techniques to help prevent the spread of chronic wasting disease.
- (e) Review Of Herd Certification Program Standards.—Not later than 18 months after the date of enactment of this Act, the Secretary shall publish a notice in the Federal Register soliciting public feedback on potential updates and improvements to standards under the chronic wasting disease herd certification program, with special consideration given to—
 - (1) minimizing or eliminating the interaction of captive and wild cervids:
 - (2) reviewing and updating indemnity practices, including the use of live testing, to ensure the timely and targeted removal of cervids with chronic wasting disease from the landscape; and
 - (3) increasing participation in the chronic wasting disease herd certification program.
- (f) RULE OF CONSTRUCTION.—Nothing in this section interferes with or otherwise affects the authority of the Federal Government, a State, or an Indian Tribe to manage wildlife and livestock on land within the respective jurisdiction, including managing, surveying, and monitoring the incidence of chronic wasting disease.
- (g) ADMINISTRATIVE COSTS.—Of the funds made available under subsection (h) for a fiscal year, the Secretary may use not more than 10 percent for administrative costs.
 - (h) AUTHORIZATION OF APPROPRIATIONS.—
 - (1) IN GENERAL.—There is authorized to be appropriated to the Secretary to carry out this section \$70,000,000 for each of fiscal years 2022 through 2028, to remain available until expended.
 - (2) ALLOCATION AMONG PROGRAMS.—Of the funds made available under paragraph (1), to the maximum extent practicable, the Secretary shall allocate an equal amount to carry out each of subsections (b) and (c).

MEMBERS OF THE ASSOCIATION OF FISH & WILDLIFE AGENCIES

Governmental Members

U.S. State and Territorial Fish and Wildlife Agencies

Alabama Division of Wildlife and Freshwater Fisheries

Alaska Department of Fish and Game

Arizona Game and Fish Department

Arkansas Game and Fish Commission

California Department of Fish and Wildlife

Colorado Division of Parks and Wildlife

Connecticut Bureau of Natural Resources

Delaware Division of Fish and Wildlife

Florida Fish and Wildlife Conservation Commission

Georgia Wildlife Resources Division

Hawaii Department of Land and Natural Resources

Idaho Department of Fish and Game

Illinois Department of Natural Resources

Indiana Division of Fish and Wildlife

Iowa Department of Natural Resources

Kansas Department of Wildlife and Parks

Kentucky Department of Fish and Wildlife Resources

Louisiana Department of Wildlife and Fisheries

Maine Department of Inland Fisheries & Wildlife

Maryland Wildlife and Heritage Service

Massachusetts Division of Fisheries & Wildlife

Michigan Department of Natural Resources

Minnesota Division of Fish and Wildlife

Mississippi Department of Wildlife, Fisheries and Parks

Missouri Department of Conservation

Montana Department of Fish, Wildlife & Parks

Nebraska Game and Parks Commission

Nevada Department of Wildlife

New Hampshire Fish and Game Department

New Jersey Division of Fish and Wildlife

New Mexico Game and Fish Department

New York Division of Fish and Wildlife

North Carolina Wildlife Resources Commission

North Dakota Game and Fish Department

Ohio Division of Wildlife

Oklahoma Department of Wildlife Conservation

Oregon Department of Fish and Wildlife

Pennsylvania Fish and Boat Commission

Pennsylvania Game Commission

Rhode Island Department of Environmental Management

South Carolina Department of Natural Resources

South Dakota Game, Fish and Parks Department

Tennessee Wildlife Resources Agency

Texas Parks and Wildlife Department

Utah Division of Wildlife Resources Vermont Department of Fish and Wildlife

Virginia Department of Wildlife Resources

Washington, DC Fisheries/Wildlife Division

Washington Department of Fish and Wildlife

West Virginia Division of Natural Resources

Wisconsin Department of Natural Resources

Wyoming Game and Fish Department

Contributing Members

American Bird Conservancy

American Clean Power Association (ACP)

American Fisheries Society

American Sportfishing Association

Archery Trade Association

BASS LLC

Backcountry Hunters & Anglers

Bat Conservation International

Boone & Crockett Club

Canadian Wildlife Federation

Delta Waterfowl Foundation

Ducks Unlimited Canada

Ducks Unlimited, Inc.

Fur Institute of Canada

Fur Takers of America, Inc.

Island Conservation

Jack H. Berryman Institute

Mule Deer Foundation

National Audubon Society

National Bowhunter Education Foundation

National Marine Manufacturers Association

National Rifle Association

National Shooting Sports Foundation, Inc.

National Trappers Association

National Wild Turkey Federation

National Wildlife Federation

NatureServe

The Nature Conservancy

North American Grouse Partnership

North Dakota Natural Resources Trust

Outdoors Tomorrow Foundation

The Peregrine Fund

Pheasants Forever

Pope and Young Club

PERC: The Property and Environment Research Center

Recreational Boating and Fishing Foundation

Renewable Energy Wildlife Institute

Resource Management Service, LLC

Rocky Mountain Elk Foundation

The Ruffed Grouse Society Safari Club International

Theodore Roosevelt Conservation Partnership

The Wildlife Society

Wild Sheep Foundation

Wildlife Management Institute

U.S. Federal Members

Bureau of Land Management

National Oceanic and Atmospheric Administration - Fisheries Service

National Park Service

U.S. Department of Agriculture - APHIS/Veterinary Services

U.S. Department of Agriculture - APHIS/Wildlife Services

U.S. Department of Agriculture - Forest Service

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

U.S. Geological Survey

Ladies and Gentlemen,

It has been brought to my attention that there has been some discussion about who should be making decisions about baiting. I would like to humbly offer my opinion as a born and raised North Dakotan who grew up hunting and fishing. I shot my first deer at the age of 14 in western North Dakota, and every year since then (for the last 26 years) I've hunted exclusively on one 80 acre piece of land just west of where my family lives in eastern North Dakota. I grew up eating wild game, and venison is the primary source of protein in my diet. It always has been.

We know that Chronic Wasting Disease (CWD) is a real threat. We also know that while it is extremely contagious, it can take over a year before any symptoms of the disease develop in an infected animal. And finally, we know that CWD is spread between animals directly through bodily fluids and indirectly through contamination of soil, food, and water sources. So now think about this: an infected deer can look and feel healthy despite being infected. This deer walks up to a bait pile and congregates with 10, 20, 50 deer at or near that bait pile. Now every single one of those deer has been exposed to the disease! And not only that, any other deer, elk, or moose that pass through that area may be exposed as well since the virus can linger in the environment for an extended period of time.

Additionally, if a hunter kills an animal with CWD, they will not be able to eat the meat. If they get one deer tag to feed their family and they shoot a deer that tests positive for CWD, that means they go an entire year without meat in the freezer. Add that to the fact that it's taking 5, 6, 7 years to draw a tag...who would bother hunting if it's already that tough to get a tag and then when they finally draw one and fill it, they can't eat the meat. I can't think of anything more discouraging. So then if the purpose of baiting is to encourage young hunters, it seems to me that this this would do the exact opposite.

I truly believe that the best way to manage this threat is to defer to the experts, in this case the North Dakota Game and Fish Department. They have access to the most up to date research and evidence-based best practices. It is literally their job to ensure that North Dakota continues to be a place where wild animals roam and hunters have an opportunity to feed themselves and their families.

I am a proud North Dakotan. My family and I care about the animals that live here. This land and these animals give us life. It is our responsibility to do our part and care for them too.

Thank you,

Noelle Solseng

Ladies and Gentlemen, good morning.

My name is Joe Solseng, from rural Grand Forks County. I am a hunter, land owner and, above all, I love our state of North Dakota.

I am here because I am concerned about this bill (HB1151) that would strip the power of the NDG&F Dept. in regulating deer hunting over bait; thereby putting our deer, elk and moose populations in jeopardy.

We have an advancing problem, not only in North Dakota, but throughout the US, where Chronic Wasting Disease (CWD) is spreading through our cervid herds. This disease spreads through close contact of these animals and their bodily fluids and feces. Whatever we do (all of us, not only hunters) to artificially concentrate these animals increases the risk of CWD spread. Someone must be the leader in research and damage control. This is one of the fundamental purposes of the Game and Fish Department. The decisions this department makes are evidence based and have the best interests of both the animals and the people of North Dakota in mind.

As for this disease, it is always fatal, and at this point incurable. All precautions must be taken to insure that our cervid herds stay in the best of health. Feeding and baiting, then, must be managed and eliminated as progression advances.

Last week I had a bad cold and I made the decision to stay home and heal up a bit. No hockey, no church. Heck, my wife didn't even want to be across the table when I ate meals. But I'll be okay. But what about those infected deer? First of all, they may not show any symptoms of illness and certainly don't have the mental capacity to stay separated even if they did. Unfortunately, they are spreading the disease and won't be okay in a week, a month or ever. Their future is certain death. Let's think about what could happen with no regulatory authority:

- 1. Eventual large scale deer die-offs. This includes elk and moose.
- 2. Inedible meat from infected animals, or until after testing on noninfected animals.
- 3. Loss of larger, more mature, animals as disease progresses.
- 4. Possible disease morphs to affect domestic livestock, or even humans.

I feel strongly that the North Dakota Game and Fish Department is exactly who should be making decisions regarding baiting for the state of North Dakota.

They are the experts in the field.

Thank you.

Joe Solseng

Monroe, Beverley

From: Rocky Kath <rocky_kath@yahoo.com>
Sent: Sunday, January 22, 2023 11:25 AM

To: Monroe, Beverley **Subject:** Re: HB 1151 Testimony

thanks.here it is:

I am writing in regards to baiting deer for hunting. I am paralyzed from the neck down. The last two years, I was successful getting a deer. Yes, I have used bait. They have to be standing for a while for me to be able to try to line up the shot. This gives me time to line up my shooting mechanism, which is battery operated and I use my mouth and chin to direct and is kind of time consuming. So I am in favor of baiting deer to be able to supply my home with venison all year long. Without the ability to bait, my harvest rates would be almost nonexistent.

On Friday, January 20, 2023 at 01:32:46 PM CST, Monroe, Beverley <a href="mailto:smoother-based-sector-based-

The file you uploaded for your testimony was corrupted. If you could email it to me, I would be able to upload it so that it may be viewed.

Please email with any questions.

House Energy and Natural Resources Committee

hnat@ndlegis.gov

H.B. # 1151 - 2023

Mr. Chairman and members of the House National Resources Committee. My name is Larry Schneider, I reside in Bismarck. I own and rent 1400 acres of hunting land in Deer Unit #1, also known as the Turtle Mountains. My land is dedicated solely for wildlife production. I don't allow any livestock on my property. To the best of my knowledge Chronic Wasting Disease has not spread to our area. The main reason our whitetail deer herds stay healthy and continue to grow in population is due to habitat and the feeding programs that have been implementing since 1976. Prior to 1976, there were very few whitetail deer in our area. As you are aware, the North Dakota Game and Fish Department banned the feeding program in 2022, which is a huge mistake in my opinion. Because of the harsh winter conditions this year, I believe we will lose at least 50 percent of our deer herd due to the lack of an adequate food supply.

As a landowner who has hunted every deer season since 1956, (65 years) I ask that you approve this bill. In closing, I would like to ask the committee if we are having such a problem with deer dying from this disease, why does the Game and Fish Department keep increasing the amount of deer licenses issued each year. For example, in 2016 there were 49,000 licenses issued and in 2021 there were 72,000 licenses issued.

Thank you, Mr. Chairman and Committee Members, if there are any questions, I will be happy to try to answer them.

Testimony on HB 1151

Honorable members of the House Committee on Energy and Natural Resourses.

On behalf of the Kongslie Ranch location South of Towner, N.D. We support House Bill 1151.

I am Lynn Kongslie 68yrs old , I have ranched all my life as my Dad, Grandfather and Great grandfather did they homestead here in 1878. My son and his family are taking over his childern are the sixth generation.

I just want to touch on this one subject. We have about 3ft. of snow on the on ground and the deer are yarding up in our feed yards about 400 hundred deer are eating in the silage, hay and feed piles they are practically on top of each other. Now if there is a concern of CWD in a bait pile which will be about only 5 to 15 deer. Can we imagine whats going on where we feed, with 400 or more deer, if it is spreads this way.

What so difficult to believe is we are being told as a land owner is we can't take a 5 gallon bucket of feed or bait and put on the land that was paid for by hard work, sweat, death, and tears is unbelievable, you think to youself how can this be happening.

Bill 1151:

In 1998 I purchased a small acreage and began a food plot. Since then, I have expanded plots to other areas, planted habit along with putting up feeders that are not only used by Whitetail but Elk, Moose, Pheasants, rabbits, grouse and other wildlife. My main reason for feeding deer is not to bait deer for the harvest.

I have read and listen to the various cons and pros to baiting and feel that the pros far outweigh the cons and therefore do support this bill and look for its passage.

I feel no one, including game and fish understands enough about CWD to push no baiting as a relief from this disease which results in all the positives that comes from feeding deer including other wildlife either by planting plots and/or feeders (baiting) being ban.

Please take the time to understand the whole story and not base your decision on ethics or a guess about CWD.

Thank you.

23.0021.02003 Title. Prepared by the Legislative Council staff for Representative D. Anderson February 7, 2023

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1151

- Page 1, line 2, replace "deer for hunting" with "big game animals, supplemental feed attractants, and chronic wasting disease"
- Page 1, line 6, replace "deer" with "big game animals"
- Page 1, line 6, replace "not prohibited" with "- Chronic wasting disease task force"
- Page 1, after line 6, insert:

"1."

- Page 1, line 8, replace "deer for lawful hunting" with "big game animals for lawful hunting.

 Except as provided in subsection 3, a person may not provide
 supplemental feed attractants to big game animals for any purpose,
 including hunting, from January first to August twenty-fourth. For purposes
 of this section, "supplemental feed attractants" include grain, seed,
 minerals, salt, fruit, vegetables, nuts, hay, and any naturally derived scent
 or lure including urine, or natural or manufactured food.
 - 2. The quantity of supplemental feed attractants provided to big game animals which may be provided from August twenty-fifth through December thirty-first may not exceed fifty gallons [189.27 liters] and may not be placed within one hundred fifty feet [45.72 meters] of any property line.
 - 3. A person is not subject to criminal liability under this section if the person is engaged in:
 - a. Normal agricultural practices.
 - b. The normal feeding of livestock.
 - c. The cultivation of lawns, gardens, or wildlife food plots or orchard.
 - <u>d.</u> The practice of wildlife management activities conducted by or under the direction of the game and fish department.
 - e. The feeding of wildlife in an elevated bird feeder within one hundred feet [30.48 meters] of an occupied residence.
 - <u>f.</u> The feeding of wildlife in a manner that excludes access to deer, elk, or moose.
 - The department shall establish a chronic wasting disease task force to address chronic wasting disease. The membership of the task force must include the state veterinarian and members of the senate and the house of representatives from standing committees addressing energy and natural resources. The task force shall provide the director and governor recommendations for rules and regulations based on the best available information to minimize the impact of chronic wasting disease on North Dakota's deer, elk, and moose"

23.0021.02005

Sixty-eighth Legislative Assembly of North Dakota

HOUSE BILL NO. 1151

Introduced by

Representatives Thomas, Cory, Grueneich, Heinert, D. Ruby, M. Ruby, Tveit Senators Elkin, Hogue, Meyer, Patten, Vedaa

- 1 A BILL for an Act to create and enact a new section to chapter 20.1-05 of the North Dakota
- 2 Century Code, relating to baiting deer for hunting big game animals and supplemental feed
- 3 <u>attractants</u>.

4 BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

5 SECTION 1. A new section to chapter 20.1-05 of the North Dakota Century Code is created 6 and enacted as follows: 7 Baiting deerbig game animals for hunting not prohibited. The department may not issue rules or adopt a policy or practice prohibiting the baiting 8 9 of deerbig game animals for lawful hunting on private property. A person may not provide supplemental feed attractants for the purpose of baiting and hunting big game 10 11 animals except during the period from August twenty-fifth to January seventh. For 12 purposes of this section, "supplemental feed attractants" include grain, seed, minerals, 13 salt, fruit, vegetables, nuts, hay, and any naturally derived scent or lure, including 14 urine, or natural or manufactured food. The quantity of supplemental feed attractants provided to big game animals which 15 16 may be provided from August twenty-fifth through January seventh may not: 17 Exceed fifty gallons [189.27 liters]; and Be placed within one hundred fifty feet [45.72 meters] of any property line, unless 18 19 permitted by the adjacent landowner. 20 A person is not subject to criminal liability under this section if the person is engaged 21 in: 22 Normal agricultural practices. 23 b. The normal feeding of livestock. 24 The cultivation of lawns, gardens, or wildlife food plots or orchards.

Sixty-eighth Legislative Assembly

1	d.	The practice of wildlife management activities conducted by or under the
2		direction of the game and fish department.
3	e.	The feeding of wildlife in an elevated bird feeder within one hundred feet
4		[30.48 meters] of an occupied residence.
5	f.	The feeding of wildlife in a manner that excludes access to deer, elk, or moose.

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1151

- Page 1, line 2, replace "deer for hunting" with "big game animals and supplemental feed attractants"
- Page 1, line 6, replace "deer" with "big game animals"
- Page 1, line 6, remove "not prohibited"
- Page 1, after line 6 insert

"1."

- Page 1, line 8 replace "deer" with "big game animals"
- Page 1, line 8, after "hunting" insert "on private property. A person may not provide supplemental feed attractants for the purpose of baiting and hunting big game animals except during the period from August twenty-fifth to January seventh. For purposes of this section, "supplemental feed attractants" include grain, seed, minerals, salt, fruit, vegetables, nuts, hay, and any naturally derived scent or lure, including urine, or natural or manufactured food.
 - 2. The quantity of supplemental feed attractants provided to big game animals which may be provided from August twenty-fifth through January seventh may not:
 - a. Exceed fifty gallons [189.27 liters]; and
 - b. Be placed within one hundred fifty feet [45.72 meters] of any property line, unless permitted by the adjacent landowner.
 - 3. A person is not subject to criminal liability under this section if the person is engaged in:
 - Normal agricultural practices.
 - b. The normal feeding of livestock.
 - c. The cultivation of lawns, gardens, or wildlife food plots or orchards.
 - d. The practice of wildlife management activities conducted by or under the direction of the game and fish department.
 - e. The feeding of wildlife in an elevated bird feeder within one hundred feet [30.48 meters] of an occupied residence.
 - f. The feeding of wildlife in a manner that excludes access to deer, elk, or moose."

Renumber accordingly

23.0021.02002 Title.

Prepared by the Legislative Council staff for Representative D. Anderson February 2, 2023

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1151

- Page 1, line 2, replace "deer for hunting" with "big game animals, supplemental feed attractants, and chronic wasting disease"
- Page 1, line 6, replace "deer" with "big game animals"
- Page 1, line 6, replace "not prohibited" with "- Chronic wasting disease task force"
- Page 1, after line 6, insert:

"1."

- Page 1, line 8, replace "deer for lawful hunting" with "big game animals for lawful hunting.

 Except as provided in subsection 3, a person may not provide supplemental feed attractants to big game animals for any purpose, including hunting, from April fifteenth to November thirtieth. For purposes of this section, "supplemental feed attractants" include grain, seed, minerals, salt, fruit, vegetables, nuts, hay, and any naturally derived scent or lure including urine, or natural or manufactured food.
 - 2. The quantity of supplemental feed attractants provided to big game animals which may be provided from December first through April fourteenth may not exceed fifty gallons [189.27 liters] and may not be placed within two hundred feet [60.96 meters] of any property line.
 - 3. A person is not subject to criminal liability under this section if the person is engaged in:
 - a. Normal agricultural practices.
 - <u>b.</u> The normal feeding of livestock.
 - c. The cultivation of lawns, gardens, or wildlife food plots or orchard.
 - d. The practice of wildlife management activities conducted by or under the direction of the game and fish department.
 - e. The feeding of wildlife in an elevated bird feeder within one hundred feet [30.48 meters] of an occupied residence.
 - f. The feeding of wildlife in a manner that excludes access to deer, elk, or moose.
 - 4. The department shall establish a chronic wasting disease task force to address chronic wasting disease. The membership of the task force must include the state veterinarian and members of the senate and the house of representatives from standing committees addressing energy and natural resources. The task force shall provide the director and governor recommendations for rules and regulations based on the best available information to minimize the impact of chronic wasting disease on North Dakota's deer, elk, and moose"

Dear North Dakota Legislators,

I am in opposition to HB 1151. As a North Dakota Resident and outdoorsman, I think the ND Game and Fish department should retain the responsibility of determining if baiting should be allowed in the hunting of certain species or geographic zones within North Dakota based on disease concerns, etc. Baiting can congregate deer and other animals which can spread disease (CWD, etc.) through closer, more direct contact. This department already manages wildlife across the state and they are the experts when it comes to actively managing wildlife populations. There are many instances across the country where captive deer herds transmit CWD and other diseases to other deer due to close proximity and poorly fenced enclosures.

If we pass this bill, the North Dakota Game and Fish Department will essentially loose a "tool" from their toolbox regarding the management of disease outbreaks in wildlife populations. The people who work for the NDGF department are the experts when it comes to wildlife management, and I believe we should treat them as such.

Best Regards,

Andrew Lindmeier

Members of the Energy and Natural Resources Committee,

I am writing to express my support for HB1151.

My position on baiting is neutral, and I believe it should be a hunters choice on whether they want to utilize this method of hunting.

My concern with the ban on baiting is that the science just doesnt add up. In the 10+ years of CWD testing in the state, there have been zero deer that have been found dead where CWD has been determined to be the actual cause of death. The deer that have tested positive have either been hunter killed, or found dead, but the cause of death was unknown.

In 2020 and 2021, EHD ravaged hunting units in the Western part of the state, including the deer unit where my family farm is located, 3F2. The deer population in areas was reduced to a mere fragment of what it was before the disease hit, yet ND Game and Fish issued more deer tags for the 2022 season in the name of population decreases for CWD. The department failed the hunters in the state by doing this in my opinion. For the first time in my 38 years of rifle and archery hunting, our family did not fill one deer tag this past season.

The current baiting restrictions are only imposed on hunters, but anyone can bait or feed deer for any other reason-365 days a year. It just doesnt make sense to me.

Sincerely,

Jason Zins

To the House Energy and Natural Resources Committee,

As a North Dakota hunter, I believe strongly in ensuring hunting privileges are available to current and future generations. I believe science should be the underpinning of wildlife policy. To this end, I oppose HB1151 as it is a direct attempt to circumvent the ability of wildlife professionals to manage our North Dakota deer herd, based on the best available science. The best scientific evidence to-date shows "Although important gaps in the scientific literature exist, current information is sufficient to conclude that providing food to wildlife through supplemental feeding or baiting can negatively impact species health and represents a non-natural arena for disease transmission and preservation." Here is the research article where the authors make this statement:

https://doi.org/10.1016/j.prevetmed.2013.11.010

We are in the early years of CWD in North Dakota but the time to act is now. We can slow the spread of CWD and keep it at manageable levels so that it doesn't negatively impact our hunting opportunities. Let's not follow in the footsteps of other states that ignored the urgency of CWD and ultimately suffered the consequences.

Sincerely, Alex Rischette

Greetings,

Theodore Roosevelt, a resident of your state, rancher and conservationist cherished this state, especially the Bad Lands, that for the most part, remain as pristine as in Roosevelt's day. As the birth place of conservation for Roosevelt's interest it is only fitting that this great state should embrace the vision of care for it's natural resources.

Today, the debate is over hunting over "food plots" and the spread of CWD as a result. As a life long naturalist and firm believer in conservation I would pray you hear my observation.

As a border neighbor, I was employed in "Respiratory Care" providing good people with oxygen to help them maintain a quality of life, while living in their home.. One of my patients, a more mature fellow, desperately wanted to hunt at least one more time with his family before his health deterred any further.

Against my better judgement I agreed to bring a humongous oxygen tank out to his home. With the help of his son, we struggled to place the tank along a tree belt, so his father could lean against the tree and possibly score in his hunting pursuit.

Ed, didn't get a shot off. He did however get a wonderful memory hunting along side his boys one last time. "Relationships" that is what it is about.

Certainly, I cursed myself at the time, however the reward for my efforts: "PRICELESS". Beautiful memories for Ed, his family and selfishly myself.

Now following the CWD issue in a number of states, it seems we are all chasing the same rabbit without much success. Maybe, just maybe, we should be listening to the many private citizen conservationists, in the various states and take into consideration what they are doing to help control the spread. Counting died carcasses doesn't cure the problem, it only makes you aware of the problem.

However, today you are discussing whether the good people of North Dakota can hunt over "Baited Plots". I beg you to consider Ed's story and his family memories. There is a "better way" rather than an "easy way" to this situation.

May the peace of Christ be with you in this decision...

Rich Hallstrom

To Energy and Natural Resource Committee

RE: HB 1151 (in support of)

What happens when the government for the people take away all baiting practices whether it is fishbaiting, trap baiting, deer baiting, squirrel baiting or bird baiting. My point is down the line it's just another attack on meat eaters.

All outdoorsmen know that there is nothing meaner than Mother Nature at times. I have seen it in all wild creatures.

I read the testimony in favor of this bill and they all have said to let the experts handle this. We as humans just went through and may not have finished with one of the worst pandemics ever. All the money, scare tactics, shots, masks didn't seem to help and we as humans still show up by the thousands in one spot and we are the most intelligent species.

I'm no expert on this, but after 60 plus years, I'm confident that this bill does hold water and I am for it.

My family and I like using bait. Maybe we don't always hunt or fish using it but it is a tool for a successful day.

Therefore, I encourage you to vote yes on this House Bill 1151.

William T Nissen, Minot ND

House Bill 1151

I am writing in opposition to House Bill 1151. As amended, this bill is essentially the same as the original version and is not allowing the North Dakota Game and Fish Department(NDGF) to carry out their duties. Setting the precedence of managing wildlife via legislation is a dangerous route to go regardless of how anyone feels about Chronic Wasting Disease(CWD). All one needs to do is look at states like Colorado, Washington, California, Florida, etc where wildlife management has been hamstrung by metropolitan areas. It is conceivable that Fargo, West Fargo, and Grand Forks residents could voice strong opposition to existing policy and begin to influence policy. We need to let the wildlife professionals manage wildlife, just as we leave the tax professionals to deal with taxation and fiscal issues.

Baiting unnaturally congregates deer and exposes deer that may not have otherwise come into contact with an infectious deer. If we want to avoid unnatural congregation of deer, we need to discuss wildlife habitat. Of course natural herding of deer during severe winters is unavoidable, but it may be minimized by increasing wildlife habitat.

Those who says this bill is about protecting youth hunting and hunting heritage is being deceptive to you and themselves. If those in support of this bill truly cared about protecting the strong hunting heritage in North Dakota, they would not support this bill and limit NDGF's management of a fatal disease. Left unmanaged, CWD has the likelihood to have population-level impacts in our lifetime.

Russell Senske

Energy and Natural Resources Committee,

Please Oppose HB 1151.

We entrust the North Dakota Game and Fish Department to manage our wildlife and habitat in this State. Why would you allow a law to pass that prohibits their ability to manage this limited resource?

I have lived in North Dakota for 24 years. When I first came here fresh out of college for work, I had no intension to stay. However, I fell in love with this states wildlife, and landscape. I could have much better paying jobs and career advancements in other parts of the country, but I chose to stay in North Dakota because of the hunting and fishing opportunities it provided. In those 24 years I've watch habitat acres decline exponentially due to agriculture expansion and oil development. As such, wildlife numbers have also declined. Deer are forced to seek shelter and food resources (especially in the winter) on ever smaller parcels of habitat. In 2009, another threat to our wildlife resource was discovered – Chronic Wasting Disease. Fast forward 13 years, and the disease has rabidly expanded across the state. If you allow this bill to pass you will be responsible for outlawing a management tool wildlife professionals have shown is a simple and financially responsible.

As I read the testimony of those in favor of this bill, I see anecdotal stories and selfish reasons why baiting is a necessity to their hunting experience. CWD is proven to be 100% deadly. CWD is proven to have no cure. So, what happens when another 10-13 years pass and CWD is allowed to continue its exponential spread? Pathology research on a wide variety of diseases has proven that most diseases manifest and mutate as they are allowed to spread from one host to the next. Do you really want to be the person that votes for a law that strips or wildlife experts from using a simple and financially responsible management tool? Do you really want to approve of a bill that could facilitate the destruction of our deer, moose and elk populations?

There are numerous, and ongoing, research projects that have proven unequivocally that baiting contributes to the spread of disease in wildlife populations. There is also research that has demonstrated that there are indirect impacts to other species. The University of Mississippi Deer Lab recently posted research results demonstrating that not only does supplemental feeding of deer concentrate animals and promote the transmission of disease, but they also discovered increased exposure to aflatoxins, gastrointestinal parasites, and ticks. Aflatoxin contamination is a toxic mold that was found in supplemental feed after only 8 days of weather exposure. It was found in 100% of bait piles (and feeders) after only 10 days of weather exposure during the months of July - November. Deer were not the only animals impacted. Non-target animals that fed on the bait piles, such as pheasant, turkey, and many non-game birds were found ill or deceased after consuming contaminated feed. You can read more by going to "The effects of year-round supplemental feeding of white-tailed deer" by Miranda Hsiang-Ning Jacobson Huang (msstate.edu)

Please appose HB 1151.

Thank you,

Kerry Whipp

My name is Dylan Jacobsen. I am in favor of bill 1151. As a ND farmer and hunter I think its very important to be able to continue to be able to bait for deer on private land. Without baiting it is very hard to get and keep our youth and disadvantaged hunters interested in the sport of hunting. It helps create opportunities that would otherwise be almost nonexistent. Baiting does not guarantee anything but it is a helpful tool. I know that the NDGF is concerned about CWD but unfortunately it is already here and here to stay. I do not believe baiting will contribute more to the spread of CWD. As I look around at our local deer herds this year, my observations are that the deer are very grouped up and congregated this year to their most available food sources, many of which happen to be cattle yards which have an abundance of hay and other feed for cattle. The deer will do this every year regardless of baiting restrictions. I dont believe NDGF should have the authority to tell private land owners that they cannot bait deer. If they are worried about deer congregating on feed, they should incentivize landowners to leave standing crop, food plots on multiple sections of land whereas to keep the deer more spread out. Giving incentives to landowners rather than restrictions would be a much more proactive way to try to combat this problem.

HB 1151

Senate Energy and Natural Resources Committee,

I am writing in opposition of this bill (HB 1151). I have hunted deer over bait for many years, and find it to be a very effective method. The last few years I haven't been able to due to restrictions. Did I just give up and stop hunting? No, I found other ways to continue to hunt. Did I find my hunting experience less appealing without baiting? No. This bill, in my opinion, is an extremely slippery slope, and it is much bigger than just baiting.

The North Dakota Game and Fish is an agency of wildlife **professionals**, who are also North Dakotans who live, work, fish and hunt in North Dakota. Their mission is to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and nonconsumptive use." This bill limits their ability to do what might be(or might not be) necessary to sustain this public resource.

Now I do believe there is alot of science out there on both sides of the baiting/disease transmission topic. It's a daunting task to comb through it all and make sense of it all. But that is why we hire professionals to do this job. It's not always fun and it's certainly not always easy, but let them make the best decisions based on ALL the information out there. Should sportsmen/women be concerned about CWD? Absolutely. Should they be researching and questioning? Yes, that is what science is all about. I think there is a lot of evidence that shows baiting doesn't have a major effect on CWD transmission...

I am a middle school science teacher. Let's look at how much education has improved(or not improved) since legislators have intervened and required high stakes testing. I think most professional educators will agree that testing does not make the student, and the constant politics and legislative testing requirements is not what is best for educators, which is in turn not best for students. But here we are as teachers being told what is best for our students. Education in the United States is just one example of people not trusting the professionals.

Any time I have reached out to an NDGF employee about something they have been very good at explaining the reasoning, and I trust them in their professional judgment. Anytime we restrict the professionals who have extensive education and let the armchair biologist make decisions I think we are putting ourselves in a tough position.

Instill trust in the professionals. This certainly doesn't mean they cannot be questioned, like I said earlier, science is always evolving due to questioning.

Thank you,

Matt Liebel

Tielel

RE: Opposition to HB 1151

The North Dakota Bowhunters Association (NDBA) has the following comments on House Bill 1151 that seeks to prevent any agency from banning baiting for the lawful hunting of deer. That would include preventing the North Dakota Game and Fish Department (NDGF) from implementing science-based restrictions designed to help reduce the spread of Chronic Wasting Disease (CWD) in North Dakota ungulates, including deer and elk, in and near units where CWD has been found.

CWD is an infectious and always fatal disease spread by deer which have the disease. CWD has continued to expand across the nation and North Dakota. There are still many unknowns with CWD, but like all infectious diseases, putting distance between animals with the disease and those without it, helps reduce the spread of the disease. (This is why we don't sit next to people who are sniffling and coughing, because we know it helps reduce the chance of us catching a common cold. If it would kill us, we would move as far away as possible.) When CWD is identified in a Deer hunting Unit, banning baiting is one of the tools used in the NDGF strategic plan of trying to reduce the spread of CWD, by putting distance between animals.

NDBA does not have a stance on the ethics of baiting as our members are diverse and some engage in lawful baiting, and some do not. We all want to see the deer herd managed in the way most beneficial to the resource. If the deer herd is significantly reduced by disease or mismanagement, it would have a significant impact on our members to hunt deer in this state. Every Spring and Fall, the North Dakota Game and Fish Department holds Advisory board meetings, at multiple locations across the state, to allow open public input. In addition, the NDGF professionals are always open to listen to comments and input on decisions affecting management of our game populations. After considering such input, the NDGF department attempts to apply the science and best management practices to their stated mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

NDBA has seen loss of hunting opportunity, including outright hunting bans, in many other states when game management is left up to their popularly elected officials influenced by well-funded outside sources. NDBA believes that game management decisions are best left to professional, science-based game and fish departments like the NDGF Department, after considering public input. For the above reasons the North Dakota Bowhunters Association (NDBA) Opposes House Bill 1151.



Board of Directors North Dakota Bowhunters Association . I believe, however, that the amendments should not have been added.

I am in support of house bill 1151

Dear Energy and Natural Resource Commitee,

This letter is to express my support for HB 1151.

Thank you for taking the time to read my testimony in support of bill 1151.

I just wanted to take a moment to express my opinion and support for being able to bait big game for the purpose of hunting in North Dakota. I am an avid hunter and outdoorsman, I have 4 children that enjoy the outdoors as much as myself. When baiting restrictions were put into place in my area of northern ND a few years back, my children started to lose their interest in bowhunting. They were accustomed to going out and sitting in the blind or stand and seeing a wide variety of wildlife coming into the small 5-10 gallon bait pile that I would place out for the purpose of hunting. The squirrels, pheasants, rabbits, and numerous other types of wildlife would provide entertainment and help sustain interest in the outdoors for my kids as they wait for a deer to possibly come in. Unfortunately, now I have 2 children that have very little interest in bowhunting as it is boring to them without the wildlife activity that they were used to seeing at the bait pile. We all know we live in a world of expected instant gratification as anything our young hunters need to know is at the touch of a button. Hunting over bait provided this need our youth desired. If we do not assist in keeping our youth interested in hunting and enjoying the outdoors, what does the future of hunting look like? If we lose our future generations of hunters, the issues our game and fish will need to address and mitigate will trump the current unproven CWD risk that the banning of baiting is attempting to resolve 10 times.

Building our youth hunters interest in North Dakota's outdoors and hunting heritage along with increasing the odds of a clean/ethical shot at harvesting big game are just a couple benefits that hunting over bait provide. In my honest opinion, just these few benefits greatly outweigh the unproven science and the "possibility" that banning hunting big game over bait in North Dakota will slow the spread of CWD. CWD has been around for 100's of years. Our deer herd will continue to flourish and thrive for 100's more even with a bucket of corn on the ground.

CWD is real and it is in our deer herd. My personal opinion is that it has always been in our herd. We started a small scale testing program in the 1990's. We have since increased the amount of deer tested, the more you test, the more you will find. Still to this day in North Dakota, there is only 1 deer that possibly can be labeled with the cause of death associated with CWD. I understand and realize our G&F cannot just sit on their hands and hope that the CWD disease does not become a real concern in ND. This is why the sampling and testing program needs to continue and data needs to continue to be compiled and analyzed. The G&F needs funding to research and assist in developing a cure for CWD. This cure could be administered in the form of a type of bait or deer attractant. Banning baiting of big game for the purpose of hunting will do absolutly nothing to slow or prevent the spread of CWD. I strongly the support this bill for giving the ND hunters this right back and for the ND G&F to look outside the box and put some real effort into finding solutions and preventive measures that will actually make a difference in the spread of CWD IF solutions or preventiive measures are ever needed.

Thank you for your time.

Sincerely,

Jeremy Handeland 701-334-6043 Hello this is Willy Fielhaber from Minot and the Vice Chair of D38 in Minot. I'm a hunter with no private land to hunt on and I support HB1151. Thanks.

Dear Energy and Natural Resource Committee

This letter is to express my support for HB 1151.

I have been an outdoorsman my whole life. Some of my fondest memories are hunting with my family and friends. This bait ban seems like a total government over reach to me. We have had "follow the Science" jammed down our throats for the past two years. I don't see the science. In the past 20 years 40,000 healthy harvested deer tested, 70 positives, 69 hunters harvested and 1 found dead rule cwd, that's less then 1%. Deer are social animals that naturally herd. Bait or no bait when it's 20 below in ND the deer are herded up. I don't understand why it's alright for animal watchers and photographers to feed deer but a hunter can't put out a bait pile. The people that are being hurt the most by the bait ban are the youth and handicap hunters. For these reasons I support HB 1151.

Members of the Senate Energy and Natural Resources Committee,

Please vote <u>no</u> on HB 1151. This bill sets an unacceptable precedent by tying the hands of the NDGF Department from using science to manage wildlife. The NDGF uses proven science to manage wildlife and their habitats. The ND legislature should not pass any laws that restrict the use of science to manage wildlife.

I urge a No Vote on HB 1151.

Dan Ackerman

913 27th St SE

Mandan, ND

Hello this Matthew Ellingson from the Glenburn area. I am contacting you in support of bill 1151. You know this is my first time reaching out in support of a bill that means so much to me. I have 4 children under the age of five and my oldest two kids love to go bow hunting with dad. It brings me so much joy and happiness to be able to take my kids out to do something we can enjoy together and bond over. We have several different stand that we can hunt from which can always be fun. We hunt of food plots due to the recent banning of baiting in our area now. Which is ok but makes it a lot less fun for the kids due to lack of activity in the food plot as the year goes on. So my point is if we could continue to have food for the deer. They would keep coming to the stands. Which would make it a lot more fun for the kids. That is why I support bill 1151 is so that we can help build interest in the future generations on fun hunt at a time.

Sincerely Matthew Ellingson Reference HB 1151; I strongly urge you to vote this bill down. I believe it is a bad bill because it takes game management out of the hands of the game and fish department. Game and Fish is there to do what is best for our wildlife and those of us who persue them. Again as an avid outdoorsman, I strongly urge you to vote HB 1151 down. Thank you. Jerry Weeks

Senators of the Energy and Natural Resources Committee,

- 1967 Everyone is aware Chronic Wasting Disease was first discovered in a deer pen. The Fort Collins Foothills Wildlife Research Facility was doing nutritional studies on mule deer. The deer began to waste away and die. They depopulated the survivors and limed the pens. Lime doesn't kill a prion. They re-stocked the pens with more mule deer and they began to waste away. So they took some to a zoo in Denver and released the rest into the wild.
- 1975 A wasting syndrome was observed at a Toronto Canada Zoo in mule deer they had received from the Denver Zoo.
- 1979 Recognized in mule deer at Wyoming Sybille Wildlife Research Facility. Of the 66 mule deer, 57 contracted the disease and died. No data on the remaining 9.
- 1981 Detected in wild elk in Colorado.
- 1985 Detected in mule deer and elk Wyoming and Colorado.
- 1996 Detected in farmed elk in Saskatchewan.
- 1997 Detected in farmed elk in South Dakota.
- 1998 Detected in farmed elk in Montana. Sourced from the farm in South Dakota. They were depopulated using incinerators to burn them at \$8000 a piece.
- 2002 Detected in Wind Cave National Park South Dakota. Even with CWD present, the elk population continues to grow above carrying capacity every year so the Park Service opens the gates and they haze them out with helicopters. From an endemic area!!
- 2002 Detected in Wisconsin.
- 2003 In the State of the Union Address, George W. Bush pledged \$50 million to fight CWD.
- 2004 Wisconsin embarked on a plan to eradicate all deer off the landscape in a 287 square mile zone using hunters and sharpshooters.
- 2012 Eight years later, 172,000 deer had been removed from the Wisconsin eradication zone at a cost of \$32 million dollars. Governor Scott Walker empaneled a committee to

evaluate the control and prevention strategies including population reduction, feeding bans of wildlife, baiting of deer, importation of carcasses, bans on importation of trophies, restrictions on taxidermists and bans on urine based scents. The committee concluded, "none of this had been effective." The eradication zone created a vacuum and deer from surrounding areas simply moved in.

- 2012 George W. Bush's \$50 million dollar appropriation was gone. The surveillance and monitoring program failed.
- 2017 Researchers in Colorado and Wyoming are now comparing genomes from cervids living in heavily infected areas to those cervids living in no CWD found areas. Cervids living in heavily infected areas are moving away from CWD susceptible genetic genome markers. After 50 years of CWD pressure, Wyoming, Colorado deer and elk are exhibiting some resistance and living to old age. It remains unknown if this will allow elk and deer to mitigate population impacts of CWD or achieve herd immunity.
- 2022 The CWD Research and Management Act. \$70 million. Thirty-five million to research per year multiplied by six years. Research can accelerate the process of genetic genome selection.

As the years of "data" on the "devastation" of CWD and the monies that have been allocated are highlighted, there is a pattern developing. Crises crises crisis, more and more federal money is needed to restrict and eradicate. Now we have THE PEOPLE catching on and standing up because it is THEIR money that is feeding this bureaucracy. Let's revisit Wind Cave National Park in South Dakota. It was known to have CWD back in 2002. It has a seven foot high woven wire fence around it. The herd grows every year. This disease does not preclude reproduction. Every year Custer State Park next door does a Bison roundup and then sell the excess. Wind Cave does not sell excess elk, they open the gates and chase them out with helicopters, "every year." Biologists, ecologists and wildlife managers know that.

- > Please support HB 1151
- > Dwight Grosz

Hazen North Dakota

Hello. I am writing to express my support for bill HB1151. I am a lifelong North Dakota resident and hunter. Some of my best memories growing up were sitting in a ground blind or tree stand waiting for deer to pass through. Up close encounters with the deer are thrilling and bow hunting has been in my blood since I was a child. I'd dump a 50 pound bag of corn and it allowed me to see numerous animals on every trip to the woods.

I am a father of 5 kids. I would love for all of my children to also become bow hunters and experience that excitement. My oldest daughter is 11 and just able to start bow hunting. Currently the game and fish have prohibited hunting over bait in my hunting unit due to fears of CWD. As an average hunter, without owning private lands or the means to put in food plots, taking my daughter into the woods to shoot a deer with her bow is now extremely difficult. It is hard to gain new youth bow hunters with the thought of endless hours on stand without getting those up close encounters with the deer. I would appreciate it if you could support the bill to eliminate the power of the NDGF to unilaterally prohibit baiting for lawful hunting.

Thank you for your time,

Scott Mortensen

(701) 629-1696 New Town, ND Members of the Energy and Natural Resources Committee,

As a hunter and resident of North Dakota I support HB1151. I have been baiting and hunting on my property north of Fargo for 15 years. I use trail cameras at my feeder and along the edge of the farmers field. I see more deer herding in the field due to accidental spillage of corn and soy beans than I have at my spinning corn feeder. I had a co-worker last fall that was having a tough time filling his bow tag. He had a friend that had corn piled on the ground because it didn't all fit in his bins. He was able to harvest a doe in December. That was legal because it a natural farming practice.

I don't like that CWD is near zone 2B and potentially killing deer but banning hunters from baiting will not control the spread of CWD due to the agriculture practices in our area of the country. I also know many farmers that feed deer during hard winters what is preventing those practices from happening. I do not want to see North Dakota turn in to another Minnesota where they have a baiting ban on the entire state. I see it going in that direction unless this bill is passed. I have seen and heard the opposition that by passing this bill it will prevent the game and fish from managing the deer population. It will be very difficult to prevent deer from naturally herding or moving to food sources due to the agricultural and ranching practices in North Dakota. Please support HB1151.

Thank you for your time.

Chris Mack

IN SUPPORT OF HB 1151

Hello, my name is Levi Nelson and I am from rural Solen, ND where we raise cattle and horses. I also have a passion for hunting and the rural outdoors. At the time that I started hunting, it was not legal to hunt over bait due to (chronic wasting disease) CWD being present. However, during that time, it was permissible to feed deer. During the last few years, I have participated in and helped film episodes for Ultimate Outdoor Adventures TV. The organizers of this show include a group of hunters who understand how important it is to respect the rules. While working with them, I have learned many things in regards to deer management and have adopted many of the same morals and values.

While it would have been legal to feed deer that come onto our ranch, I avoided feeding during the months of September through January so that I was not accused or prosecuted for hunting over said bait or trails leading to it. My behavior had nothing to do with the ethics of "baiting", but everything to do with the law. If it was up to me, I would consistently supplement the deer, just as we do with livestock because North Dakota winters can be difficult. Deer, like livestock, are dealing with the weather while trying to grow offspring and maintain their own body condition. Crop aftermath is a common source of feed but today's equipment cleans up far more grain than ever, leaving less food for our wildlife.

Agricultural stewards are expected to provide their livestock with the necessary nutrition in the months and weeks leading to birth. While this nutrition can be met through the use of forages, supplementation may need to be considered in years when forage quality is limited. As a producer, we would never make livestock fend for themselves and go without the proper diet prior to giving birth. If we consider CWD research and compare it to what we see year after year, what has a higher mortality rate? CWD or winter deaths?

Next, I would like you to consider the ethics of hunting over feed versus other hunting practices. For example, the utensils we use to harvest deer have become more efficient year after year. Blinds and stands have become better built and people are developing more lethal strategies all the time. With many hunting practices in play, I find it hypocritical that hunting over feed is unethical. To point a finger at one technique and say that it is not hunting is ridiculous, especially when done on private land where any other legal hunting style is accepted.

I have never claimed that CWD does not exist nor have I stated that it is not a potential hazard to deer herds in this region. However, CWD has not impacted the numbers of deer in North Dakota. If that were true, unit 3F2 would be devasted by the effects of CWD. Unit 3F2 is where CWD was first found in 2009. In the years since, the deer numbers have soared. For example, 2,950 rifle deer tags were given out in 3F2 during 2018. In 2022, after a devastating bout with epizootic hemorrhagic disease (EHD), they gave out a whopping 4,250 tags in the same unit. If this prion was a pandemic, as they say, one would think we would have far different results.

If you have any questions or concerns, feel free to contact me at 701-391-6127. I would be more than happy to visit with you about my personal experience regarding this matter. I thank you for your time in reading my testimony and I ask you please vote yes on HB 1151.

My name is Wayne Haag, and I've been an avid outdoorsman in North Dakota for the last 40 years. I've only recently (past 10 years) utilized bait to harvest deer. For most of my life I was a deer gun hunter exclusively, but as my son got older and grew to cherish the outdoors as much as I have, his interest in bow hunting has brought on a new interest for me as well. Together we have been bow hunting for last 10 years and have been using bait to do so. When my son was young and for me just starting out, it gave us an opportunity to be able to get close to deer and take and ethical shot at a know yard that we practiced at.

Deer are natural herd animals... between spending time in bachelor groups in the summer, or congregated in the winter or using the same food plot or scrape as other deer, they have contact with a number of other deer year around, and the data that has been released does not back that a baiting restriction has helped slow the spread.

For these reasons I Support HB 1151.

Sincerely,

Wayne Haag

Center, ND

In regards to bill HB 1151 $\,$. I feel that we will lose a lot people from the outdoors. We are taking away opportunity from the young kids and the handicapped $\,$. We need to give everyone a fair chance to enjoy what the outdoors has to offer. And get as much interest from the younger generation as we can. So I 100 % support bill HB 1151. Thanks for your time Troy Cooper.

Hello, my name is John Arman. I am a lifelong resident of ND. I am the owner of Ultimate Outdoor Adventures TV, a Bismarck school teacher, and a Ranch owner. I am also a certified Bow-hunters education teacher and run a Bow-hunting camp here in Bismarck called "Raised at Full Draw" I am fortunate that this baiting bill will not affect me either way or my ability to hunt. Being a landowner, I have the ability to put in food plots and manage the deer on my property. I am not opposed to baiting or for it. I believe it is up to the individual hunter to decide if this is what he/she wants. My main concern and why I support this bill is because of the lack of science behind the Game and Fish's decisions. I understand that CWD is real, it has been on the land scape since the 60s. I know it is spreading and there are some concerns. However, if you look at the true data and break it down there is absolutely no evidence that CWD is being spread by baiting. I have visited with the Game and Fish several times and have asked them to show me the periodic review or data that shows CWD is spread by baiting and there is none. We have found one deer in over 20 years in ND that was dying or dead from CWD. The rest of the positive cases were killed by hunters and a few by cars. I am all for the Game and Fish to continue looking for cures and testing but without the numbers/data I do not understand how they can take opportunities or a style of hunting away from the average hunter. As a landowner or non-hunter, I can feed deer all day every day without any problems. Now as soon as I become a hunter, I get punished. If CWD was truly this deadly always fatal disease, why would this be allowed. There are too many ifs and butts and not enough science to make these baiting bans and that is why I support HB1151. Thank you for your time and service to our state. John Arman

TESTIMONY OF JEREMY DUCKWITZ HB 1151 SENATE ENERGY and NATURAL RESOURCE COMMITTEE

Chairman Patten and members of the Senate Energy and Natural Resource Committee:

For the record, my name is Jeremy Duckwitz of Moffit, ND. Thank you for the opportunity to provide testimony on HB 1151.

I am submitting this testimony in OPPOSITION of HB 1151.

I do have a stance on ethics. The future of hunting is at stake when we choose to tweak the emphasis from fair chase, to the kill. Baiting of deer is not sport hunting, instead, reduces the act to just shooting. Just like the end goal of life should not be to get it over quickly, it should, instead, focus on the experience and quality of life. What will the future hunters experience when reducing hunting to the raising and butchering of wild meat collected from a trough? Then why not allow pheasants to be shot with a rifle? It allows a quick, clean kill, as many baiting proponents argue. Hence, when would unethical behavior seize, all for the sake of property rights? Because we are ethical citizens that trust the judgment of those with the most experience, the ND Game and Fish Department.

While every voice shall be heard, allow the network of wildlife professionals to conduct their work on behalf of the public. If wildlife professionals state that the banning of baiting deer is the most effective means of combating CWD, and is supported by scores of professional reference, then their stance should not be overridden. Doing so, would only jeopardize future wildlife management and state to our children, we chose not to make the best decision available and necessary.

Thank you for serving our ND citizens, especially during the difficult distraction this winter has created. I urge you to support the ND Game and Fish Department's CWD Plan and give HB 1151 a DO NOT PASS vote.

Thank you.

Jeremy Duckwitz, Moffit

Testimony of Al Sapa in Opposition to SB1151

The N. D, Game and Fish Department is the mandated wildlife management agency for the State. The Legislature should not interfere with the Departments professional management of the State deer herd. If approved, SB 1151 will negatively impact deer and deer hunting in the state. Please vote NO!

Can of worms.

By voting yes on this bill we are potentially stripping power from a state agency whose only mission is to protect our wildlife. By passing this bill will open the door to question all Game and Fish regulations. Maybe the limit on walleye and pheasants is bogus and people should be able to harvest what they want. Maybe, hunting out of a vehicle should be revisited, why can't we just chase down our wildlife. You created a state agency to protect our Natural Resources, let them!

I understand that people are upset that baiting is illegal in areas and not legal in other areas. Maybe making baiting illegal state wide would level the playing field.

HB1151- In support

I, Tony Manifold, am in support of HB 1151.

For many years, I have wondered of the hyprocrisy of the law behind the restriction of baiting deer and the lies behind it. "In the name of protecting deer" was pushed but, control of private citizens, on private property, seems to be the real motive behind it.

So, it is perffectly legal and ok, to bait deer year round (which congregates deer) as long as you don't hunt over such bait?

So, it is only once that you are hunting you have to worry about CWD spreading then?

Also, people hunting over bait are the ones being called "those who don't care about spreading CWD". The powers that be, are the ones pushing this message all while planting large food plots on the land that they countrol for the sole purpose of that crop which is never to be harvested and all the deer will come to once it is winter time (congregate).

To me, this is nothing more than control filled with the likes of "bleed heart" propaganda lies that are used to push the narritive behind it.

Thank you for your time.

Tony Manifold

Dear Energy and Natural Resource Committee:

This letter is to express my support for HB1151.

My name is Karson Backer, and I currently live in Dickinson, ND. I know a multitude of friends, family, and coworkers who are avid hunters, and this bill will greatly affect the way they hunt, or if they are able to hunt at all. Although my days of going out hunting are behind me, this bill has gained my support. Hunting game has led my family to become closer over the years, not only through the stories shared around the table, but also through providing meat for our personal intake. Annual butchering sessions have become somewhat of a holiday in our family. I currently live with my fiancé, my brother lives with his girlfriend, and my parents live together. The meat from my family's hunting supports three households, and the decision of this bill may decide whether we can continue to live off the land. Please take this testimony into account when deciding. This bill will be affecting more than those who are avid hunters.

Have a blessed day

Karson Backer

Dear Energy and Natural Resource Committee:

This letter is to express my support for HB1151.

My name is Sarah Dobitz, and I currently live in Dickinson, ND. I know a multitude of friends, family, and coworkers who are avid hunters, and this bill will greatly affect the way they hunt, or if they are able to hunt at all. Although I have never considered myself a big hunter, this bill has gained my support. Hunting game has led my fiancé's family to become closer over the years, not only through the stories shared around the table, but also through providing meat for their, and now our, personal intake. I have joined the annual butchering sessions that have become so special to his family. I currently live with my fiancé while my parents and younger siblings live very close by. The meat from my fiancé family's hunting supports both of our households, and the decision of this bill may decide whether we can continue to live off the land. Please take this testimony into account when deciding. This bill will be affecting more than those who are avid hunters.

Thank you for your time,

Sarah Dobitz

Chairman Patten and Members of the Senate Energy and Natural Resource Committee,

My name is Russell Wahl, and I would like you to oppose HB 1151. In my lifetime (83 years), I have watched wildlife go from almost non-existent to flourishing in North Dakota. All North Dakotans have benefited from the work of the North Dakota Game and Fish to bring wildlife back. We have an enormous wealth of hunting opportunity thanks to the work of the Game and Fish.

It is an understatement to say that it would be silly to abandon the department's wildlife professionals and their work over the last 90 years in favor of a small demographic of hunters who want to shoot deer over a corn pile. That very idea is silly.

Future generations rely on current generations to treat our natural resources wisely, so that they may enjoy the same traditions I have enjoyed throughout my life. My grandchildren and great grandchildren are owed that much. It is our duty to ensure we do everything we can to hand off our deer herd in the best shape possible to future generations.

Please oppose HB 1151

Russell Wahl Bismarck, ND To whom it may concern,

I am writing in regard to HB1151 and my support of it.

As a deer hunter for 38 years, I am concerned that my rights as an outdoors person and landowner are being infringed upon for no just reason. It also seems the ND Game and Fish (NDG&F) is doing a major overreach in the banning of baiting/feeding for deer due to Chronic Wasting Disease when there is little to no evidence to support such moves. The scientific research or proof that supports CWD being 100% fatal in deer, and/or that baiting/feeding helps to spread CWD is non-existent. So, the NDG&F, in an attempt to stop the supposed spread to CWD, is allowing attractant/bait to be put out for the purpose of taking pictures of deer with a camera in bait banned units, but it's not allowed to harvest a deer with a weapon using that same attractant in bait banned units. That makes no sense and has nothing to do with the supposed "spread" of CWD. Instead, it sounds like someone is trying to tell us how we should hunt.

There has been 20 years of CWD testing in ND, involving 40,000 deer. Of those 40,000 deer, 70 tested positive, 69 of which were hunter harvested and killed by a bullet or broadhead. The other positive case was a deer found dead by Game and Fish and they chalked it up to CWD because the stomach was empty. That is less than 1% positive rate and no proof that CWD kills deer because all but one of the positive cases were brought in by hunters, the other because it had an empty stomach (starvation?). The subject of whether CWD even exists is still in question, but the debate that no deer have been proven to actually die from CWD in ND isn't. IF the hysteria over CWD and how easily it is spread is true, why is it only found in 1-4 deer out of 1,000? It's because many of the "facts" about CWD and how or why it is spread are questionable.

The NDG&F uses the Association of Fish and Wildlife Agencies Technical Report out of Washington, DC to come up with their CWD management plans. I invite you to read it over. In that report, 30 different words that leave doubt are used over and over as there doesn't seem to be much concrete, scientific, or factual about it. Here are a few examples: the word "can" was used 12 times, the word "likely" was used 10 times, the word "may" was used 46 times, the words "may be" were used 18 times. Yet over \$100,00,000 has been spent nationwide on testing and other CWD "issues". That money would be much better spent in other areas of deer health than chasing CWD. Alas, state agencies and money go hand in hand, unfortunately a lot of times common sense and what the people of the state want don't factor into it. OK, aside from the lack of science and facts that prove CWD is 100% fatal to deer, or the fact that NDG&F allows bait to be put out for pictures, but not for hunting, and the contradicting rules they have in place in bait ban units. The other argument

that has been presented when it comes to baiting/feeding is "ethics". If there was ever a slippery slope on someone telling another person what is right or wrong when it comes to hunting, this is it. Bottom line, if you want to hunt over bait, do it. If you don't want to, don't. Nobody can tell me what is right or wrong based on their thoughts or beliefs. Both of my kids shot their first archery deer with the help of bait. My son was 9, and my daughter was 16, BOTH had the most amazing experience because of it! The odds of a well-placed and lethal shot are exponentially higher with the help of bait, than without. What is unethical about that? Instead, is it better and more ethical to be slinging arrows and bullets as deer pass by, not knowing the exact yardage, unable to get them to stop, wounding them with low percentage shots, etc.? This argument is similar to rifle hunters looking down on muzzleloader hunters, who look down on compound bow hunters, who look down on recurve hunters, and vice versa because they feel the way others hunt is unethical. Hunt how you want! Both of my kids are hooked on hunting now because of their first few experiences they had in the deer stand and the success they had with the help of bait. I could say the same for the older generation of hunters that I know who physically aren't able to walk far into the woods, climb trees, or quickly be ready for a shot opportunity as a deer approaches. Hunting over bait, where things can happen a little slower, or a little more often, has brought them many great experiences and has kept them afield for years longer. For me, as I've gotten older, it's more about the management of the deer herd in the area I hunt. It's easier for me to pick out the mature and older deer as I can study them for longer periods of time, and simply watching the interaction of deer gives me great pleasure. Right now, in unit 2B where I do the majority of my hunting, I'd normally be supplemental feeding the deer to help them get through the harsh winter. Instead, due to the confusion of baiting/feeding, and the fact a CWD positive deer was shot by a hunter last year 27 miles away in Minnesota, the deer in my area are digging and pawing through 3' of snow to try to find a small morsel of food. The inevitable winter die off of even a handful of deer due to starvation is still way more than CWD has ever been proven to kill. Finally, there are dozens of extremely knowledgeable people that have degrees and a lifetime of experience in testing and observing whitetail deer that do not believe in, or support, the CWD hysteria. If you are going to listen to just one of them, I would encourage you to see what Dr. James Kroll (aka Dr. Deer) has to say about it. He is substantially more qualified, in my opinion, than anyone in Washington, DC or the North Dakota Game and Fish in regard to CWD.

Even though several agencies, departments, and associations within the state of ND have been saying they rely on the "science", and "science

based" research, etc. to support CWD and the banning of using bait, the fact is CWD has yet to be proven fatal to deer even though it's been around for decades. Again, not one deer has been proven to die from CWD, and the banning of baiting is uncalled for and unsupported. Please PASS HB1151.

Thank you for your time. John Lien

Dear Energy and Natural Resource committee,

This letter is to express my support for HB 1151

I am in favor of HB 1151 because if the game and fish bans baiting I feel like we will see a significant decline in the younger generation getting into deer hunting if not allowed to use bait. A bait pile is used to help make a clean ethical shot so the animal doesn't have to suffer. Also I dont think there is any science out there to suggest that a baiting ban will reduce cwd just look at other states that have banned baiting for decades and they are still finding cases at a record number but yet still seem to have a healthy deer herd. And lastly go for a drive around the country side in any winter especially this winter

and you will find hundreds of deer herded up together so is banning a bait pile that 10 to 20 deer come into really going to do anything when there is hundreds of deer eating out of the same hay piles and silage piles.

Thank you for taking time to read this and please vote YES on HB 1151

Sincerely
Trent Schatz

Dear committee members,

As an avid outdoorsman and life long hunter I am writing to show support for HB 1151.

Please vote YES on HB 1151

Thank You Derek Belle

I am in favor of HB 1151 for the following reasons. As a landowner I feel its not ok for the Game and Fish to rule that we cannot bait especially if its on my own property. On a winter like the one we are experiencing either way I am feeding the deer/wildlife weather its in my pastures or in my yard where I keep the feed for my livestock. And its not only on winters like the current one it's every year that I get deer that accumulate to my ranch and they help themselves to my corn silage piles, alfalfa bales(or any bales) and to my grain piles used to feed my calves. One thing that helps is spreading feed out away from the yard to keep them out in the open in smaller groups. I dont believe there is an issue with disease as far as I can see because ever winter for a number of years these deer are grouping up at my ranch and the numbers do not decrease.

I also do not see an issue with hunting over bait. It helps get our youth more involved in hunting and also allows for a better shot opportunity. As long as we are lawfully hunting there shouldn't be a reason we cannot bait.

Thank you for reading this and please vote YES on HB 1151

Andrew Lemer

Dear members of the committee,

As an avid outdoorsman, life-long hunter and father to 2 young kids i am writing to show support for HB 1151.

I encourage you please vote yes on HB 1151

Thank you

Josh Johnston

Dear committee members,

As an avid outdoorsman, life long hunter, and landowner I am writing to show support for HB 1151.

Please vote YES on HB 1151

Thank You Brad Schatz I am a yes vote on HB 1151.

I believe baiting is a good a good thing for the wildlife and I feel it gets more people involved in hunting especially our youth and female hunters. I also think baiting is beneficial to the wildlife as it gives them some extra feed sources.

I live on a ranch and therefore we keep adequate feed sources on hand for our livestock such as alfalfa hay, corn silage, different types of processed grains, and also various types of grass/forage hay. When fall/winter comes we always see lots of deer coming to our ranch and finding these feed sources in large numbers. That being said I believe if we are allowing baiting it will help keep these deer more spread out in smaller groups instead of all gathering in one area in a large group. So from what I'm seeing if

baiting is banned these deer will be in larger groups where ever they can find these feed sources which I feel is worse than keeping them spread out.

Please vote yes on HB 1151. Thank you

Kendra J. Dallmann

HB1151

To whom it may concern,

My name is Ryan and I was fortunate enough to live it in the great state of North Dakota for 5 years. After my wife and I were married for a couple years we decided to move back to where she was raised in hopes of us raising our children there. During the years we lived there you could most times find me outdoors. Fishing, hunting, checking trail cameras etc. I had never hunted archery before living in North Dakota and do to draw status of rifle deer tags I found a bow and made it a new hobby. A good friend and I would frequently stock up our bait piles, clear sd cards, replace batteries and eagerly wait for what might show up in the coming days. Having bait sites is crucial in evaluating genetics, age class, and cull prospects if you want to preserve the future of hunting. And even though I no longer live in the state of North Dakota I still buy a deer tag every year in hopes of harvesting an animal with my bow. Im not sure how many ethical quick kills have been made with archery tackle in the wide open plains of North Dakota on a whitetail but my guess, not very many. And thats is if you have an opportunities at all. Baiting has allowed me to come back to hunt, have opportunities to harvest an animal, and make sure it is the age appropriate animal to harvest to ensure future generations the same opportunity. My youngest son was born in North Dakota and he frequently talks about going back to where he was born to hunt. It may not be for a few more years as he is only 8 but I assure you his dream of harvesting a North Dakota whitetail with his bow are difficult enough. If baiting is no longer allowed Im sure this dream might never come true.

Thank you, Ryan Stevie

Please vote no on HB1151. This bill will tie the hands of the NDGF. They have developed a CWD management plan that is well thought out, reasonable, and based on science. Let the managers manage. Over time, CWD will have a negative impact on deer numbers and hunting licenses. Do not take management out of the hands of the NDGF Dept. Please vote NO.

Hello

Chad Miller here from Glen Ullin ND.

I am writing to let you know that I hope you support HB1151. It really does affect the way we hunt in our area. The ban on baiting that the game and fish decided to put on us last year in the name of cwd had no basis. EHD "blue tongue" is the real killer of deer, it basically wiped out our herd in the Glen Ullin area. This ban made no sense, I can't put out a bucket of apples or corn to bring in a hand full of deer for 2 weeks. Yet if I am a land owner I can plant a couple acres of corn and not harvest it and bring in dozens of deer from all over the area that lay on top of each other through the winter and that's just fine. Our G&F supports these food/bait plots and even has a new program this year to help land owners pay for theirs..why is this?? Why do they want to congregate all the deer into a couple of acres all winter if CWD is such a threat? I am disabled, I have to use a crossbow mounted on a tripod. It would be almost impossible for me to lug that setup all over the place trying to stalk deer. We also get allot of kids into hunting this way, it offers a clean ethical shot at a standing target. I don't know a single landowner in my area that supports the Game and fish's ban on baiting, making them a criminal on their own property. I have no problem limiting the amount to 50 gallons either, that's fine. All you need to do is look at all the other states that have spent millions trying to get rid of cwd and have failed. If baiting was the problem Texas would be overrun with CWD and they aren't. And they bait a thousand times more than we do here in ND

Please support HB 1151. Have the game and fish start dealing with EHD, it has wiped out 90% of the deer in our area after back to back years of it. CWD didn't kill them EHD blue tongue did!

Thank you Chad Miller Glen Ullin I wanted to reach out to you and share my reasons on why we should support the passing of HB1151. My main reason for writing to you today is because I have a 15 year old daughter with Cerebral Palsy that loves to hunt. She uses a wheelchair because she can't walk and has very limited use of her left hand. She uses a crossbow and a tripod to archery hunt. With the baiting ban her chances of getting a deer to stand in front of her, find it in the scope and have it stand still long enough to get a shot has become nearly impossible. We don't have the means to plant food plots (which congregate a lot more deer but are LEGAL) to get deer in front of her. Spot and stalk isn't an option for her and hunting deer on a trail is extremely hard to get everything to come together and make the shot. At the very least there should be a rule to allow baiting for disabled hunters. Because lets be honest, the baiting ban is an ETHICS issue to the ones pushing it, NOT a disease issue!

NDGF has been pushing a baiting ban in the name of CWD for years. This couldn't be any further from the truth though. Aside from the ethics arguments another reason for the baiting ban is to lower the archery success so there can be more rifle tags sold, therefore increasing their financial situation. NDGF banned baiting in Morton county years ago to start out. For the years after they did this the NDGF continued to do diversion feeding programs where I hunted (Melvin Fisher's). They would dump bushels of oats and move oats bales a couple hundred yards away from his hay yard to keep the deer out of his bales. The following year they went to him and asked if they could trap turkeys in his bales for relocation. They made a horseshoe shape out of his round bales, backed a trailer loaded with oats and dumped it in his hay yard. This brought in the turkeys to be trapped but also brought herds of deer to congregate and winter in and on his bales the rest of the year... If they were so worried about CWD, why would they do this? You can drive by sunflower and corn fields during winter months and see hundreds of deer "yarded up" once hunting season is over. Dumping a bucket of corn to get a deer to stop long enough to get a shot is not causing a disease epidemic. There is a lot more I could write on this debate but I will keep it short. THANK YOU for considering voting HB1151 through.

I attached a few pictures of my daughter's only successful hunt. Which came over less than a bushel of spread out corn.

Jamie Eckroth (701)400-4253







Dear committee members,

As an outdoor enthusiasts and a hunter since the time I could walk i would please ask that you vote yes on HB 1151 and recommend and do pass on this bill.

Thanks for your time, Travis Johnston As a rancher with over a few hundred deer wintering in my yard id ask you to pass HB 1151. It would help keep the deer spread out and in smaller numbers if more people would put out feed and bales for the deer. From my oberservations a bait pile that only attracts 15 to 20 deer will only help to keep the deer from congregating and it would also help save my feed supply if there was a food source away from my hay/feed yard. Please vote yes and pass HB1151.

I would like to express my support for HB 1151 as a landowner and an outdoorsman. Please reccomend a do pass pass.

I, Kayla Wollschlager, am writing this letter in support of HB 1151. As someone who has just recently joined the world of hunting I can tell you that that idea of going out into the open and trying to spot and stock a deer is not an ideal way to hunt for myself personally and for the inexperienced hunter is quite daunting. Not only would it greatly decrease the likelihood of actually harvesting an animal, it greatly increases the chances of planting a bad shot on an animal with possibility of no recovery. Secondly, as a mom, the amount of time that I have available to hunt can be greatly limited. Being able to hunt over bait is most likely the only way that I will have any opportunities to even see and or get a shot at an animal. That being said, as my children grow and are introduced to bow hunting, the controlled environment of a deer blind is far more inviting than going on endless mile hikes with a complete unknown of even seeing an animal, let alone getting a shot at one. For these reasons I am in support of HB 1151

Kayla Wollschlager

I, Derrik Sonsalla, am in support of HB1151. I think it will help keep youth involved in hunting. Baiting helped me when I first started hunting and has made me a better hunter to this day. I have bow hunted for 30 years and have baited for most of those years until the unit I hunt got baiting shut down because of CWD. Units by me didn't get shut down but I know the deer in my unit also travel to those units where people can bait, so the law really does not make sense. So again, I am in support of HB 1151.

Derrik Sonsalla

Senate Committee

Please Vote yes!!!

In favor of "House Bill 1151"

As submitted in a prior testimony there are many factors in the reasoning for your support.

- 1. Youth hunting is greatly affected by not being able to use bait. It puts them in a more controlled hunting experience where they are less likely to make poor shots and also at closer ranges.
- 2. Disabled hunters are not able to access hunting areas like other hunters and this many times is their only option.
- 3. Older hunters who can not walk like they used and can give up on hunting as they don't have ability to access game.
- 4. Landowners with small tracks of property or hunters with small tracks are no longer able to attract deer to them and thus they must go to public land.
- 5. Public land pressure greatly increases
- 6. This has nothing to do with Ethics. Just because one hunter likes to hunt a certain way doesn't make it better than the other.

Items to consider.

Game and fish say it's all about CWD but as you can see what they are doing doesn't seem to agree with that.

- 1. Still do interceptive feeding of deer
- 2. Only illegal to hunt over feed. Its legal to feed as much as you want as long as you don't hunt it.
- 3. Only testing dead deer heads provided by hunters for CWD with no actual plan on to help solve problem.
- 4. Dismissing the research done on CWD and the ways to help control the disease.
- 5. "0 "deer have ever died in ND from CWD that's right 0. Only deer that were sampled after being shot were shown to be living with CWD. Yet thousands and thousands of deer died in the last 3 years in ND from EHD and all the Game and Fish can say is "Oh well, It's Nature"???

Thank you again Please Vote yes!!!!

Brent Wollschlager

Dear Legislation,

I am writing to you in support of HB 1151.

We must do everything we can to get the deer to come to us. If you are not able bodied, you can't get to the best places to hunt.

A person can feed big game and bait for turkeys. There are already herds of deer every winter in North Dakota.

Support of HB 1151 is for the betterment of sportsman and women in North Dakota. Especially young hunters and the elderly.

I appreciate your time in reading this support.

Mul Botto

Thank you,

Edward Thyedt

Senate Energy and Human Resource Committee

RE: HB 1151 --- In Favor

I am Jon Pieper of Gillett, Wisconsin and the Operations Manager at Apple Creek Whitetails. I have been at Apple Cree Whitetails since 2010. I take care of 3,000-4,000 deer on the ranch and he have been doing research on CWD, which in my opinion, isn't as bad as everyone makes it out to be.

We are one of the largest breeding whitetail ranches in the United States. When we came down with CWD on our property, the state wanted to shut us down and we didn't go for that. We didn't stand for that. We wanted to fix CWD, we didn't want to just kill the deer. Let the state of Wisconsin spend the money how they want, we aren't killing our deer.

We are required to report to the state the number of deer that have CWD detections and there is a document that has been distributed to North Dakota Legislators showing this information, yet, without explantation. This reporting is by county and there are two deer farms in our county and when a deer is tested, and has a positive CWD detection, it is documented. As I will explain, we test every deer that is taken at our farm and we have 200-300 hunts per year as well as our research deer.

We started a study with Humic Acid in 2017. Humic Acid is the only substance on the planet that will kill CWD prions on contact. It is a very affordable substance that currently, runs about 40 cents per pound. When it is mined, it looks like charcoal and basically contains all the good materials that mother nature planned and supplied, then man started using chemicals to control mother nature.

People drive their cars and the exhaust, and other things, are applied to the ground. It kills the stuff that actually would kill CWD, and now the good stuff is gone. Round-Up kills the stuff that kills CWD naturally in the ground. Everything that man has done is wrecking the ground and along with it, the stuff that naturally kills the CWD prions.

Humic Acid helps with the growing of food plots at a rate of 250 pounds per acre. It is a natural fertilizer and a ground conditioning substance. When use it as a fertilizer, we notice drastic changes to food plots, even during dry times. When added to the feed, we note within a few months, improved coats and healthier deer.

If you take CWD prions and place them in bleach water for a week, it will still infect the deer. Take CWD prions with water, and a humic acid mixture, and every one of the prions will be dead within 20 minutes. We take this information and use the humic acid in the deer feed at a rate of 30 pounds per ton, and as a fertilizer in the ground. Humic Acid stops the progression of CWD in the deer's body.

We have done genome studies and alleles through DNA. There are CWD resistant deer out there in the wild. We found it on our ranches and we are breeding and making efforts to make all the deer on our ranch, CWD resistant.

We have proof that Genome Resistance is working. We have a ranch that is working with us, that follows the same protocols and substances. They took a section of their hunting ranch, which was getting CWD positives of 60-70%. They cleared out the area, put in the proper resistant deer and in a totally contaminated area of CWD, left them for 2 years. As of now, every deer is still CWD negative.

The genome study we are working on is proving to be 100% successful.

The state of Wisconsin has now opened up a grant for deer ranchers to have their deer tested for genomes and resistance. The ranchers are starting to breed everything to resistant deer. Hopefully, this will lead to being able to collar, destroy the pedicles of the bucks, and to get them into the wild to breed the resistance. All to speed up Mother Nature.

The state of Wisconsin has failed to prove to me that any deer in the state, or any deer in the country, has died of CWD. Deer can live to be 7-8-9 years old with CWD in their body, which to me, 90% of deer harvested in the country are 2-3-4 years old, at maximum. If a deer can live to be 9 years old, even with CWD, it is not really an issue.

I personally would like to see baiting allowed. I think baiting is fine and to add humic acid to the supplemental feed, to help the health for the deer, which would be unbelievably better. It makes food plots grow better and it kills the CWD prions in the ground. It is the only substance that will kill it naturally, besides burning the prions to 6,000 degrees.

When CWD, in 1996, came about in Madison, Wisconsin, the state tried to kill off every deer in a 50-mile radius. There are natural resistance in the wild but when the states go to killing off deer because of CWD, you are taking the resistant ones too.

Mother Nature will fix CWD. Humic acid and genomes will help speed it up.

CWD is not the big issue. It is not affecting the herds. I think there should be more concentration on EHD because that is an issue.

Basically, the entire United States says that if a deer in the wild, walking in circles, drooling, looking sick, then it must have CWD because that is the final statges. I found one animal like that on our property. I videoed the animal, shot it and tested it. It was negative and died of ecoli infection and pneumonia.

No one knows for sure and that is the point I am getting to--deer will live with CWD.

CWD is just not as big as problem as they say it is.

They say whitetail deer will not grow antlers if they are positive with CWD. We had a 3 year old buck that was positive. The next summer, I ended up cutting his antlers off because they were too big and he couldn't carry them around.

They say CWD positive deer will not have fawns. The does that are in our quarantine pens are having fawns like a "regular" deer would.

It does not affect the meat. I have to test every animal that is shot and I have tested over 6,000 deer. Hunters come on our property, shoot deer and take the meat home with them. The bones stay on the property. I call the hunter to tell them how their deer tested. Over 1,000 times, I have made the call and the hunter says they have already eaten the meat. No one has ever gotten sick from CWD.

The state can't prove a death by CWD.

Fawns are not being born with CWD. They are getting it from the infected ground.

CWD doesn't affect the deer like people are saying. We have studies to prove it and studies that say we can fix it-- we just have to let the state, let us fix it.

Our research deer are tested at 3 and 4 years old and 80% of the deer that are positive, live to be 9-10 years old before they die on their own.

They did not die of CWD--they died of old age.

When our ranch became positive, the next fall we took 239 captured deer out of our hunting area and did a rectal CWD test, which is not recognized by the state of Wisconsin, so we brought in Texas A & M which does recognize the test as legitimate. We found 19 positive deer.

The state of Wisconsin wanted us to kill all the deer that were CWD positive and we refused because we wanted to do research and we can't do it without positive animals. The state wanted us to prove that the CWD rectal test was true so, we shot and tested the lymph of both the positive and negative deer. They wanted us to continue and we refused to keep killing our deer to prove them our rectal testing is accurate.

Our ranch has worked with Texas A & M, state of Michigan, University of Iowa- Ames, Sacramento, CA, and 7 other deer farms. The owner of Apple Creek Whitetails has spent \$1.5 million of his money because we feel so strongly about this path.

We have to do the 5-year protocol before we can formally release declarations on all of the studies and information yet, we are living proof that deer are living to the ages of 7-8-9 with CWD. Positive deer are having 16-17 fawn. CWD resistant genes are out there and are being bred. The progression of CWD is being stopped.

CWD is just not as big as a problem as they say it is.

I am providing testimony in opposition to HB 1151. As a hunter of more than 50 years in North Dakota I am deeply concerned with this bill and the long term negative effects of this type of legislation to the North Dakota Game and Fish Department (ND G&F). This type of potential legislative over reach is dangerous to the function of the ND G&F and their ability to manage wildlife and wildlife diseases and threats. I believe North Dakota has an excellent Game and Fish Department with highly educated, experienced, and dedicated staff. Game and Fish personnel are professional biologists, veterinarians, and wildlife epidemiologists who are fully capable of making decisions and taking proactive actions to protect our wildlife resources in order to protect and enhance the great hunting and fishing heritage we enjoy in North Dakota.

In addition I am a landowner in North Dakota with over 1000 acres of agriculture land which has excellent wildlife habitat. We have developed this habitat over many years of tree plantings, upland habitat development, all which required hard physical labor. I value the wildlife on my land and do not want CWD to spread and infect the deer which we love having on the landscape and enjoy hunting.

I further believe that Chronic Wasting Disease (CWD) is an increasing and viable threat to our states deer, elk, and moose populations. CWD is expanding in both number of states and prevalence throughout the United States and is now in 30 states, 5 Canadian Provinces, Norway, and South Korea. CWD has been identified by wildlife managers, conservation groups, and researchers as one of the greatest threats to the future of deer and deer hunting and other large cervids such as elk and moose. This disease and the ability of ND G&F to manage this disease is so much bigger and more important than someones ability to bait deer.

I am asking you to please allow the Game and Fish Department to manage wildlife and wildlife diseases. I am asking you to vote no on HB 1151 for the future of North Dakota wildlife and our treasured hunting heritage.

Thank you allowing me to testify on this important issue.

Respectfully,

Jack Sorum

I am a lifelong hunter and outdoorsman. I spend a lot of time in the field taking others hunting, working on habitat projects and planting food plots. The last 4 years I have been one of the coordinators for hunts with Prairie Grit Adaptive Sports in Minot. We work to provide hunting opportunities for people with disabilities. I am writing you because the current NDG&F rules on baiting have adversely affected our program. I have always supported the NDG&F as much as possible but their logic and rules on baiting do not seem logical to me and do not seem to be based in science.

The NDG&F position is that the rules on baiting are designed to reduce the spread of Chronic Wasting Disease (CWD). The theory is that baiting brings deer into close proximity to one another which will expedite the spread of CWD. I do not believe that this theory is supported by science and logic under the current baiting restrictions.

Does banning baiting for deer hunting by individuals, on private land, increase the amount of close contact in whitetail deer:

- The law specifically bans baiting on private property for the purpose of hunting big game. It is still legal to:
 - Put out feed for hunting turkeys. Deer and turkeys eat many of the same things so deer are eating this feed.
 - o Put out feed for the purpose of photography or watching wildlife, including big game.
 - Put out feed just for the purpose of feeding wildlife.
- Deer in North Dakota naturally group up in the winter so our deer herd will come into close proximity regardless of baiting.
 - I fed deer at my house before it was banned in my unit. I estimate that 20-30 deer used the feeder at my house for 3-4 months during the fall archery season. There is a feedlot 1.2 miles from my house. In the winter months there will be 100-200 deer feeding and bedding in the silage and haystacks. The 20-30 deer that may have come into close proximity at my house are part of a much larger herd that will spend 2-3 months in close proximity at this feedlot. This seems to make the effect of my feeder at promoting the spread of CWD mostly insignificant.
 - I can't feed deer at my house for the purpose of hunting big game because it will spread disease, but my neighbor, 1/4 mile away, can feed deer and other wildlife for viewing. Once again this seems to make the effect of my feeder at promoting the spread of CWD mostly insignificant.
 - Deer are naturally social animals, particularly during the fall breeding season. They mark their territory by making scrapes on the ground and using a "licking branch" above the scrape. A licking branch is a low hanging limb that deer rub their faces on to leave their scent. On one evening this fall I sat in a blind overlooking a food plot that had a scrape and licking branch. Over a time span of approximately 2 hours, I watched 8 deer feed through the plot, 3 young bucks, 1 doe with 1 fawn and 1 doe with 2 fawns. Of these 8 deer 6 used the licking branch. The 2 that didn't use the licking branch were fawns that were later groomed by their mothers who had. The potential of disease spread would be approximately 100%. These 8 deer are most likely spending the winter at the feed lot.
- NDG&F permits what is called intercept or preemptive feeding. This is done in cases where livestock feed supplies, silage and hay, are being damaged by wildlife. In these cases, feed is placed away from the farmyard, usually on travel routes that wildlife use to get to the farmyard. This is done to reduce the amount of wildlife damage to livestock feed supplies. At Advisory Meetings the NDG&F was asked if this practice would be stopped to reduce wildlife coming into close proximity of one another, thus increasing the spread of CWD. The response from NDG&F was that the practice would continue because they believe these animals would come into contact with one another anyway. This is the same argument that we have stated to them repeatedly.

Small amounts of feed for hunting is not going to create more contact for wildlife because they are most likely going to come into contact anyway.

The rules that NDG&F have implemented to ban baiting in certain units do not affect everyone fairly/equally:

- In those areas where a banned unit borders a non-banned unit situations are created where one hunter can bait and another can not. If your neighbor across the road is permitted to put out feed but you are not, then you are at a major disadvantage.
- There are areas where there is a high percentage of success when hunting without bait. Those properties that have wooded areas, river or creek bottoms and coulees with good cover are some great areas to hunt. Those areas are not plentiful in North Dakota and are highly sought-after hunting locations. Getting permission to hunt those locations is difficult. Those hunters that can't get permission to hunt on prime property are left to trying to hunt on open cropland, pastures, CRP and sloughs. Without bait the probability of success in these areas is small.
- Planting food plots is permitted and a great way to bring more wildlife into your hunting area. This is not a practice that is available to most hunters. Planting food plots requires owning property or having access to property that the landowner will allow the planting of food plots. It also requires owning or borrowing the equipment needed to prepare, plant and take care of the crop. Successful food plots also require a commitment of time and money that makes it unrealistic for most hunters.
- The restrictions on baiting have caused more hunters to use public hunting areas like refuges, national grasslands and other wildlife management areas. This has caused increased hunting pressure in these areas for wildlife. It has also caused more issues between hunters in the field.
- While banning baiting can affect all hunters it disproportionality affects those that are disabled, older hunters and younger hunters.
 - O Hunting for disabled hunters presents physical challenges. Hunting blinds usually have to be established in advance to make sure that conditions will allow access. In most cases getting to the areas with heavy cover that are preferred for hunting is not an option. Disabled hunters usually do not get to choose the best location for their hunt. They must choose the best location that can be made accessible. Chances for success at these locations can be very limited without the use of bait. "We can't go to the deer. We have to get them to come to us."
 - O Hunters that are confined to a wheelchair are less mobile in the blind as well. Moving a wheelchair from one shooting window to another without spooking deer is a challenge. For this reason, most disabled setups are designed with one primary shooting window. If the deer don't come within range of that window then success is unlikely.
 - Mobility can also be an issue for older hunters. As we age the ability to hike long distances or over rough terrain decreases. For those hunters an established hunting blind with feed placed nearby may be the only option for a successful hunt.
 - Mobility can also be an issue for those that are trying to get kids involved in hunting. Small children would struggle with hiking long distances or over rough terrain.
 - For those trying to get kids involved in hunting the key is keeping their interest. Most kids are going to lose interest quickly if they are not seeing wildlife. Placing feed nearby increases the odds of seeing deer and other game. It creates a great learning situation when wildlife can be observed and discussed.

Thank you for taking time to read this. I would welcome the opportunity to visit with you personally if you have questions about any of the issues that I have addressed. Please vote "Yes" on HB 1151.

Sincerely,

D.J. Randolph 4562 Valley Road Velva, ND 58790 snoop@srt.com 701-720-2134 To whom it may concern,

I, Taylor Ells, am in full support of HB1151. This will negatively affect the future of hunting.

3-14-2023

Senate Energy and Natural Resources Committee

Please vote No on HB 1151. This bill is foolish. The ability to manage wildlife diseases needs to stay with the Game and Fish Department. Chronic Wasting Disease threatens our deer hunting traditions in North Dakota and it should be in the interest of every hunter to do what we can to slow down the spread of this disease. People who hunt over bait do not take priority over the well-being of the deer herd. It doesn't matter if they are a landowner, handicapped, youth, or adult, the resource comes first. Over half the states in the country have banned baiting for big game, all have handicapped programs and youth seasons. Shooting a deer over a corn pile is not more important than the health and sustainability of the entire deer herd.

The North Dakota constitution says that hunting will be managed by law and regulation for the public good. The current regulations that ban baiting where CWD is present are clearly in the best interest of the deer herd and the public good. This bill is selfish and short sighted.

Please do not pass HB 1151.

Chet Wahl

Hazen, ND

I support 1151

As an avid hunter and sportsman, I do not feel that the very few CWD positive deer that have been found in a large testing pool warrant this much restriction. I feel it should be the hunter and landowners' choice to bait if they so choose. Government restriction should not determine how ND residents choose to legally harvest deer.

Macauley Haag

Center, ND

North Dakota National Resources Committee, I am an avid lifelong hunter and sportsman in the state of North Dakota and I am writing this testimony in support of the HB-1151.

To: North Dakota Senate Energy & Natural Resources Committee

Re: HB1151

Dear Committee Members,

My name is Jay Gotta of Bismarck. I respectfully submit my testimony in support of HB1151, the North Dakota Deer Baiting bill.

I have followed this bill with keen interest as it has progressed through the legislative process. I have read and listened to opinions from individuals on both sides of the bill, as well as the testimony of our Game & Fish Department. After reflecting on everything stated about the cons of the bill, I conclude that opponents want us to "trust the science" and "leave game management to the experts."

Chronic Wasting Disease has been known since the 1960's. According to the CDC, after more than 50 years, the best that science can tell us is that scientists "believe" that CWD can be transferred from animal to animal through direct contact. I am opposed to a state agency eliminating hunter rights based upon belief.

Our department concedes that a ban on baiting will only slow the spread of CWD at best. In exchange for potentially slowing the spread of CWD, the department has dictated that sportsmen give up their hunting right to pursue a harvest in a manner they enjoy.

I do not believe that a state agency should have the authority to eliminate our hunting rights. Only our elected leaders accountable to its citizens have the authority to alter our basic rights. I urge your support of HB1151 and protect our hunting rights.

Damaged Science

EHD outbreak summer 2021. The stench of death came in waves as I walked my property which led to me contacting the North Dakota Game and Fish in an attempt to assist with "engagement from stewards of the land."

EHD was slaughtering yet attention was all about CWD.

We made calls to North Dakota Game and Fish in May 2022, messages left and no return call. May 20, 2022, a certified letter with formal questions, was then sent to Mr. Williams, Director and Mr. Peterson, Deputy Director, in an attempt to get responses to our questions. A response letter was returned June 6, 2022, from Mr. Bahnson, DVM.

The questions that were posed included:

statistics for CWD cases, testing methods, lineage to CWD research being utilized by NDGF, nutrition programs, and funding of research.

It was the **statistics** portion of the responses that got my attention along with **research** and **nutrition** on CWD.

After reviewing the responses to my questions, I then requested to be on the CWD task force that is working on the revised plan. I later found out that the timing of this task force was due to federal Bill HR-5608 which became SB-4111 (\$420 million) in which the USDA would appropriate grant funds based on Best Management Practices which is the AFWA. Therefore, the NDGF must use the AFWA, which is federally funded, to receive monies.

SB-4111 is centered on research and management that states: the more positive cases, the more money received, new outbreak areas, more funds allotted, stronger management plan, more money given.

See the circle appearing?

(https://www.congress.gov/bill/117th-congress/house-bill/5608/text)

Obviously, I was denied a position on the North Dakota CWD task force due to, "the task force is made up of Department employees to research into other states plans.."

Inter-department task force, huh. The circle tightens. The second part of the NDGF answer made more sense when I had asked if they had conducted North Dakota CWD research and the answer was, "No".

Statistics:

No where in any of the NDGF publications, are the CWD statistics available for the public in simple terms.

Testing for CWD, in North Dakota, began in 2002.

First detection in 2009.

Baiting restriction implemented in detected unit in 2010 (unit 3F2)

40,000 deer have been tested and the majority are deer that hunters harvested so certainly, they were healthy harvested deer.

70 deer have tested positive (over 20 years).

1 deer was found dead in a row of trees (reported) and tested positive. It was deemed death by CWD because it had an empty stomach therefore, speculation cause of death.

Because of this one speculated death by CWD in 2019, the NDGF, USFW and wildlife groups, swooped into Williston, ND and slaughtered 50 deer to test and all were negative for CWD. The meat was then discarded.

20 years of testing 40,000 deer tested 70 positive tests 0 confirmed Death by CWD 50 deer slaughtered by Agencies

While attending three of the 2022 CWD meetings (Fargo, Dickinson, Minot), not once did the NDGF say the number 70 positives yet were quite diligent to mention numbers out of Wyoming and Colorado.

Side note: at these meetings, attendees were instructed to not speak during the presentation yet would be allowed at the conclusion, to approach NDGF personnel individually, with questions. Why can't questions be posed to the entire group at a public meeting? Is this why there were 15 NDGF personnel at the Fargo meeting with only 40 public in attendance? 28 in attendance at Dickinson and 10 NDGF and Minot had 13 NDGF with 36 attendees. (page 87 in the AFWA states that agencies should ensure openness, honesty, and transparency)

Why is the NDGF abandoning unit 3F2 after pounding that area for over 10 years and now focusing on the northeast region? Could it be a "new outbreak area" which has trails back to SB-4111?

Research:

By now it is clear that the NDGF have **no** personal research projects that pertain to North Dakota and rely fully on the use of the AFWA document.

Association of Fish and Wildlife Agencies, Washington D.C. (AFWA).

Put together in 2017 yet most of the pieces are from early 2000s. As indicated, the entire nation uses this Government document: (link and statement is from NDGF site) 'This is a common sense approach, backed by robust science and used by wildlife management agencies across the country"

111 page document complied by 30 federally funded entities and full of opinions.

I can strongly state this by looking at the <u>162</u> times words such as: apparent, appears, believed, can, can be, could, could be, could potentially, have been shown, have the potential, implicated, indicates, likely, likelihood, may, may not, might, most, most likely, possibly, potentially, probably, reasonable to infer, suggests, suggesting, typically, unlikely and widely considered, appear.

These are words of opinion, not science.

Since the NDGF are bound to the AFWA document, it does make methods of decision making for the ND herds and people a bit clearer. Although the AFWA is a bit more translucent than clear, due to being outdated, full of opinions, and solely federally funded of ideas of prevention, surveillance and management represented.

For instance, questioning if a deer can live with CWD and for how long:

Page 6 Paragraph 1 AFWA

A long incubation period (16-18 months to 5 years or longer for some genotypes of deer and elk) between acquiring the infection and showing clinical signs.

(2014)

Mr. Bahnson NDGF DVM, "Deer die with 12-22 months of acquiring CWD and it is always fatal" (Fargo CWD, 8/2022)

Yet current research states:

CWD incubation period is 17 months to over 4 years, which is long enough that most animals die from hunters, predators, or cars before they get to the point of lameness caused by CWD. https://anilogics.com/stop-the-cwd-madness/ (2017)

2023, live, privately funded research states this:

Deer are living to 9 years old with CWD and die of old age. (2023, ACW)

NDGF seem to look at the document and pick which "management" practice would best be tolerated by North Dakota. (page 3)

When I requested the lineage to the direct peer-reviewed research that lead to the management practice of restricting baiting, I was given a link to 420 studies. I then asked for the specific study that the NDGF felt was the heavy weight to their decision to place a baiting restriction, a response was not received.

There is no published scientific data regarding the risks of CWD transmission associated with supplemental feed (http://www.americancervidalliance.org)

Then I looked into the avenue of genotypes to manage CWD.

Page 4 paragraph 1 (AFWA 2014)

Some genotypes, currently believed to be rare in wild populations, may exhibit varying incubation periods; however, no genotype is fully resistant.

Mr. Bahnson, NDGF DVM *Your Talk Radio* 10/19/2022. CWD Genetic Work. "I don't put a lot of faith in genetic evolution as a way to address the disease" (9:30)

"Not a super useful tool" (10:20)

"No faith in a long term solution" (10:35)

"There is value in looking at it but I wouldn't hang my hat in that exclusively." (13:03)

Current research:

"Genome Resistance is working. We have a ranch that is working with us, that follows the same protocols and substances. They took a section of their hunting ranch, which was getting CWD positives of 60-70%. They cleared out the area, put in the proper resistant deer and in a totally contaminated area of CWD, left them for 2 years. As of now, every deer is still CWD negative. The genome study we are working on is proving to be 100% successful." (ACW, 2023)

Again, there is a huge resistance, by the NDGF to go beyond the AFWA no matter what. Yes, we attempted to share our findings with the NDGF and were shut down time and time.

I have come to the conclusion after hundreds of hours of personal research by which most is driven and funded by private funds and non-federal entities, that the AFWA is ineffective:

A review of the literature based on recent data, rather than predictive models, clearly shows that any past combination of quarantines, containment zones, surveillance zones, depopulation, elective harvest, increased harvest limits, supplemental feeding bans, baiting bans, bans on the importation of live cervid species, bans on the importation, of carcasses, bans on the importation of trophies, and bans on urine based lures, *have not* been effective in preventing, controlling, or eradicating CWD in any State. (page 4)

These programs have cost in excess of \$100,000,000 of public funding and the killing of thousands of deer without any measurable positive results. (www.americancervidalliance.org)

Nutrition:

My final question to the NDGF was if they have researched, studies or implemented any nutrition programs that relate to CWD. The answer: The Department has not.

CWD is a <u>prion disease</u> so that seemed to be the key word to start searching as to how this disease works.

In my conversation with Dr Larsen, Assistant professor in the Department of Veterinary and Biomedical Science, University of Minnesota, and MINPRO, he explained that prions are like a Slinky and at the end are hooks that carry copper and various body tissues. The prion goes to the liver and picks up copper. When copper is low, or manganese is high, the manganese gets stuck in the hooks and causes the hooks to bend with each ends folding in (misfolded prion). These hooks will stick to normal prions and knock off the copper ions off. The manganese will now replace the copper as it duplicates and the process starts over as misfolded prions. These hooks latch together and form chains with hooks sticking out which tears holes in the brain, that are the *trademark of CWD*.

Therefore, a copper deficiency is a major issue with the formation of CWD

Additional hours of conversation with private entities in Texas exposed that there are over 25 years of private funded research topics that prove that inadequate nutrition is a catalyst for CWD, and proper minerals have been proven to stop CWD.

The House Energy and Natural Resource Committee was able to hear testimony from one of the largest deer farms in the United States that realized these same mineral deficiency facts and have been performing live researching with Humic Acid to provide nutrition to the soil and deer. The success has been noted and they are stopping the progression of CWD in deer and destroying the CWD prion in the ground. They and developing herds that are 100% CWD genome resistant. They are in the midst of the required 5-year research stint and will soon be publishing their findings. Again, another private funded project.

The current Management choices for the NDGF is: restrict the hunter when they are about to pull the trigger to harvest a deer that is standing over supplemental feed, carcass moving restriction and more testing. What do any of these restrictions do FOR the herds of North Dakota?

The hypocrisy of the baiting restriction, entirely because of CWD spread, is mind blowing:

Currently, one can place supplemental feeding anywhere, any amount, any way and any time they want yet, in the restricted units (9 have CWD detections and 20 have been restricted because they are within 25 miles) you cannot HUNT OVER the feed. So, for the split second that you pull the trigger to harvest a deer, it is illegal to have feed out for the deer, all in the name of spreading CWD?

How about we supplement FOR the deer of North Dakota?

How about we actually look at the research that is outside of the tunnel vision of the National Agencies and see that <u>nutrition</u> and <u>genome</u> avenues are working?

I have to wonder, if there was a grant for the Wildlife Agencies to distribute or encourage nutrients, would that change the narrative? My gut and research says, yes.

CWD is not devastating the deer herds of North Dakota. It is not going to. Deer are not born with CWD, they get it from the landscape and we obviously have some soils inadequacies and there is an answer- humic acid and minerals (copper). Harsh winters, predators, depleted terrain, car accidents, and EHD take far more of the ND deer population than CWD has and ever will.

Test to your hearts content, NDGF. You will find positives because the deficiencies are out there on the terrain yet the deer are not dying from CWD.

There is not one confirmed DEATH BY CWD in the nation.

Even the NDGF can agree with me on this. It is time to do what the motto of the NDGF says and 'protect the herds" and the methods would be way more successful if they would work WITH the people of North Dakota instead of in-sighting restrictions TO the sportsman of North Dakota.

The sportsmen are the greatest stewards of the land and they are NOT seeing what the NDGF are telling us we should see in regard to CWD.

How about North Dakota be the state that is about NUTRITION and IMMUNITY for the herds.

In SUPPORT of HB1151

Testimony of Hanna Edens in Opposition to HB 1151

Members of the Senate Energy and Natural Resources Committee,

I urge you to please **Vote NO on HB 1151.** This bill, if passed, would tie the hands of the N.D. Game and Fish Department; made up of trusted wildlife professionals using the best available knowledge and scientific research to manage North Dakota's wildlife populations. Legislators should not be passing laws that would restrict science based management of wildlife in North Dakota. Keep in mind that impacts not readily seen in the short term can have major consequences in the long term. As an outdoorswoman and hunter, I value North Dakota's wildlife resources and hope that future generations will also get to enjoy the experiences I have had here in North Dakota.

This is why I urge you to please Vote NO on HB 1151.

Thank you for allowing me to testify on this important issue,

Hanna Edens

Senate Energy and Natural Resource Committee:

RE: IN SUPPORT of HB 1151

They say...

deer die in 12-22 months of contracting CWD

They say...

baiting is the reason is spreads in North Dakota

They say...

nutrition has nothing to do with CWD

They say...

any research or findings outside of the Federally funded and written AFWA document, is not "science".

20 years of CWD detections in North Dakota and nothing beneficial has been done for the herds.

North Dakota has NO studies or research based on North Dakota herds, soils, or terrain.

Zero funds have been spent on nutiriton for the herds of North Dakota.

Testing healthy harvested deer and restricting the sportsman is the North Dakota Management Plan for CWD. The word "management" is a docile action and is irresponsible when there are **proven** plans that enrich the health of deer, which inturn, reduces CWD.

Private research says...

deer are living to 9 years with CWD and there is **no** confirmed "death by CWD" in the nation.

Private research says...

there is not one peer-reviewed document that states baiting spreads CWD and that supplemental feeding would in fact, benefit the deer with supplying minerals and nutirents that man has destroyed from the land.

Private research says...

there are **CWD resistant deer** in the wild and genomes are being bred and **genome** work is successful

Private research says...

nutrition with **humic acid** kills the CWD prion in the soil and when fed, stops the progression of CWD.

Private research says...

25 years of published research shows that organic **copper** and **zinc** with **manganese**, keeps the prion from misfolding and CWD at bay. This connection was discovered in the 1970s and has since been successful.

Respectfully, Dusty Backer

In support of HB1151

I am a resident of Beulah, ND. I have hunting property in Oliver County (45 minute drive). The terrain of my hunting property consists if rolling hills and cat tails. My property is a passing through for the deer and baiting provides me opportunity.

I work 12 hour shifts and this delays me of being able to scout or hunt by spot and stalk for deer. With a "possible" 1 CWD death, this does not warrant restrictions when it comes to baiting. Not only as a hunter, but landowner, I should have the choice to place supplmental feed during hunting season as well as harsh times.

Energy and Natural Resource Committee, PLEASE pass HB1151

Brenden Sweeney

. I believe, however, that the amendments should not have been added.

I am in support of house bill 1151

Dear Honorable Senators:

I respectfully ask you to vote "No" on HB 1151, the Baiting Bill

I are concerned about the spread of Chronic Wasting Disease (CWD), a fatal disease to our deer, elk, and moose herds. During the House Energy and Natural Resource Committee hearing on HB 1151, we found some of the testimony provided was misleading. We are troubled that a few individuals have twisted the issues around CWD and baiting to meet their own personal interests rather than sound wildlife management.

The North Dakota Game and Fish Department (NDGFD) is the agency entrusted to manage the State's wildlife. Biologists and staff at the NDGFD have spent decades collaborating with some thirty other state, federal, and provincial agencies to develop the best management strategies for dealing with CWD. Please continue to put your trust in the NDGFD, the agency best suited to deal with the issues and management of CWD. Biological facts cannot be finessed; to attempt to do so will lead to irreversible and costly errors.

Sincerely,

Sherry Niesar 909 West Ave. B Bismarck, ND 58501

sniesar@outlook.com

To: Senate Energy and Natural Resources Committee & all members voting on this bill

RE: HB-1151

Date: 3/14/2023

Dear Members:

I'll try not to be long-winded, and I won't dazzle you with scientific words and mumbo-jumbo like some "professionals" have. What I will say is that in the <u>56 years</u> since CWD was <u>first identified</u> in Colorado, and if it is a disease that could or would or will in fact decimate entire statewide populations of deer, elk, moose, etc..., I would sure hope the most knowledgeable and brilliant scientists and game biologists and veterinarians in these states with infections, much less across this entire country, would surely have developed a better plan of attack than "banning baiting" to deal with the problem by now. I'm sure 56 years ago this disease wasn't mysteriously released from a lab in Wuhan China to kill all our beloved game animals. My point is that CWD was identified 56 years ago, but how long has CWD been around before it was identified? Is it possible that it's been around for as long as the animals it affects? Yet, there's still deer, elk, moose and caribou around and in huntable populations! Maybe I'm missing something, but I really find it impossible to believe CWD dropped out of the sky in 1967!

I was a resident of the great state of North Dakota for 23 years and still have ties to the state. I hunted and fished like most of you all do and I loved every minute of it. I did bait both deer and walleyes with sometimes better success than others and passed on a love for the outdoors to my son who is now an adult and continues to live and hunt in ND when he has the time to do so. What I learned in my 23 years of being a resident and outdoorsman in North Dakota is that much more than half of the voting aged population of people in the state are just chock full of common sense, and the huge majority of outdoorsman there are even more sensible and would never intentionally cut off their noses to spite their faces. Meaning, if we believed we were jeopardizing the future of the game animals we love to hunt, this bill would never even have been written because it would have no support. However, when the people I know from good old North Dakota see something that looks like dog poop and smells like dog poop, you can bet its dog poop! And that's the essence of the Game and Fish's ban on baiting, for only hunting, when everyone can see just how hypocritical it is that there's food plots, sileage piles, yarding by the hundreds during a winter like this one, feeding to feed but not to hunt, etc...

Vote "YES" For this bill and go back to the way things were. Don't take power from one government entity only to place it with another. Make life simple on yourselves by slightly modifying the current bill to show a date range of "August 1st to the last day of archery season" and redact any language regarding quantity or volume of bait. It sounds like a compromise that will cause major headaches and who's going to police it?

Sincerely, Dan Owens

23.0021.03000

FIRST ENGROSSMENT

Sixty-eighth Legislative Assembly of North Dakota

ENGROSSED HOUSE BILL NO. 1151

Introduced by

Representatives Thomas, Cory, Grueneich, Heinert, D. Ruby, M. Ruby, Tveit Senators Elkin, Hogue, Meyer, Patten, Vedaa

- 1 A BILL for an Act to create and enact a new section to chapter 20.1-05 of the North Dakota
- 2 Century Code, relating to baiting big game animals and supplemental feed attractants.

3 BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new section to chapter 20.1-05 of the North Dakota Century Code is created and enacted as follows:

Baiting big game animals for hunting.

- 1. The department may not issue rules or adopt a policy or practice prohibiting the baiting ofbig game animals for lawful hunting private property. A person may not provide supplemental feed attractants for the purpose of baiting and hunting big game animals except during the period from August first to the last day of archery season. For purposes of this section, "supplemental feed attractants" include grain, seed, minerals, salt, fruit, vegetables, nuts, hay, and any naturally derived scent or lure, including urine, or natural or manufactured food.
- 2. The supplemental feed attractants provided to big game animals which may be provided from August first through the last day of archery season may not:
- <u>a.</u>
- Be placed within one hundred fifty feet [45.72meters] of any property line, unless permitted by the adjacent landowner with written permission.
- 19 3. A person is not subject to criminal liability under this section if the person is engaged
- 20 in:

6

7

8

9

10

11

12

13

14

15

16

- 21 <u>a. Normal agricultural practices.</u>
- b. The normal feeding of livestock.
- 23 <u>c. The cultivation of lawns, gardens, or wildlife food plots or orchards.</u>

Sixty-eighth Legislative Assembly

d. The practice of wildlife management activities conducted by or under the
 direction of the game and fish department.
 e. The feeding of wildlife in an elevated bird feeder within one hundred feet
 [30.48 meters] of an occupied residence.

My name is Cole Thompson from Sheridan County. I am asking you to **Vote YES** on HB 1151.

March 14, 2023

Tucker Lutter North Dakota State University Fargo, ND 58105

Hello,

My name is Tucker Lutter and I am a graduate student in Natural Resources Management at North Dakota State University. I oppose HB 1151 because it would allow the baiting of deer in North Dakota. Given the current issues with Chronic Wasting Disease, I oppose this bill because it will concentrate animals and bring them in close proximity with one another which may cause the disease to spread more easily. Please vote no on HB 1151.

Thank you,

Tucker Lutter

Senate Energy and Natural Resource Committee:

RE: In Support of HB-1151

I'm asking you to support HB 1151 for the good of the landowner rights. I hunt along with my son's & grandkids. Right now many deer are bunched up in big groups & if CWD is such a deadly disease, why isn't it spreading now. I'm not sure why any Government Agency can use CWD as a tool against me baiting deer so my grandsons & & granddaughters can have an opportunity to fill their tags. So as a hunter & landowner, I hope you support HB 1151.

Thank You
David Berger
2531 37th Ave SW
Center, ND. 58530
dberger@westriv.com
Oliver County

I am in favor of hb1151. As a young hunter just starting in bow hunting this is a valuable tool for ethical and humane hunting.

Testimony on HB 1151 March 14, 2023

Greetings Legislators,

I respectfully request that you vote against HB 1151. I believe support for the bill is partially based on a conclusion that the North Dakota Game and Fish Department biologists responsible for minimizing the impact of Chronic Wasting Disease (CWD) are wrong. The proponents of HB 1151 have not proven that they are right, but have only demonstrated that they are unwilling to take a somewhat cautious, conservative approach to reducing the disease. The somewhat cautious approach of the ND Game & Fish Department does not infringe on their rights to hunt deer; it merely restricts one of the many tools that hunters employ to make deer hunting very easy.

HB 1151 poses a danger to an important wildlife resource in North Dakota. If or when CWD gets worse in North Dakota with HB 1151 enacted, it is unlikely that an emergency session of the legislature would be called to correct the mistake. If that does happen, it will be because it is too late.

I believe the biggest reason for some hunters supporting HB 1151 is selfishness; they want the easiest possible way to kill a deer. Current rules or laws already allow sufficient accommodations for persons with disabilities. With all the tools that deer hunters are allowed to use nowadays, (binoculars, spotting scopes, distance-compensating rifle scopes, noise suppressors, scent blocker, scent attractants, audible calls, bipods, precision bow sights, arrow releases, tree stands, tower blinds, ground blinds, etc.), it is absurd to claim that deer hunters would be seriously hampered by not being allowed to use bait.

In the case of CWD, it is clearly wisest to vote against HB 1151, and let the conscientious North Dakota Game and Fish Department professionals do their job. The demand for deer tags has exceeded the supply for many years, and there is no reason to expect that trend to improve. Please do not make an undesirable situation worse by weakening disease suppression efforts.

Respectfully submitted,

/S/

Mark A. Anderson 3121 Barracuda DR Bismarck, ND 58503

Testimony on HB 1151

Honorable members of the House Committee on Energy and Natural Resourses.

On behalf of the Kongslie Ranch location South of Towner, N.D. We support House Bill 1151.

I am Lynn Kongslie 68yrs old , I have ranched all my life as my Dad, Grandfather and Great grandfather did they homestead here in 1878. My son and his family are taking over his childern are the sixth generation.

I just want to touch on this one subject. We have about 3ft. of snow on the on ground and the deer are yarding up in our feed yards about 400 hundred deer are eating in the silage, hay and feed piles they are practically on top of each other. Now if there is a concern of CWD in a bait pile which will be about only 5 to 15 deer. Can we imagine whats going on where we feed, with 400 or more deer, if it is spreads this way.

What so difficult to believe is we are being told as a land owner is we can't take a 5 gallon bucket of feed or bait and put on the land that was paid for by hard work, sweat, death, and tears is unbelievable, you think to youself how can this be happening.

Adam Miller Bismarck, ND

Opposition to HB1151

Hello. My name is Adam Miller and I am submitting testimony in opposition to HB1151 and to ask for a 'do not pass' recommendation.

I feel that the actual question here is not if baiting is correct or incorrect but rather if we should hamstring one of our agencies from using one of the few tools they have to combat wildlife diseases. While CWD is the current topic, there is no guarantee that there won't be additional diseases in the future where baiting ban may be needed, even temporarily. I ask that you do not remove the tools that trained wildlife experts need to manage our big game herds. The desire to remove the NDGF's authority to do this is driven from emotion, not science. That's a poor way to manage our wildlife. Please advise a 'do not pass' on HB1151. Thank you for your time.

Please heed the testimony of the experts ignore the vocal minority. Let the experts do their job. Do not pass this bill.

RE. HB 1151

Members of the committee I am asking you for a do pass on house bill 1151.

This is a disease that is now pushing 40 years old and yet we still maintain a great deer herd in North Dakota. Nobody is taking away from the fact that it is still a disease. The question you might ask yourself is what has the game and fish department done with 20 years of testing and obviously restrictions?

A new press release dated March 13, 2023 from the game and fish department confirms 24 cases found in the state last year. Of those 24 cases 23 were mule deer 22 of which were hunter harvested one was killed by a vehicle And the remaining one was a white tail. Mule deer are not an animal that generally tends to go to a bait pile anyway so explain the science to me again?

So with 20 years of testing and starting to place restrictions on, how has the game and fish department moved forward in a positive direction to combat this? The answer would be zero. The science is not there to fit their narrative so now were hoping to divide sportsman on an ethics issue? My point being in 20 years, we shouldve been able to gain ground in some shape or form, but that has not seemed to happen. Are you going to wait for the doctor to give you a 20 year prognosis or are you going to find another doctor?

This very subject was brought up to the North Dakota legislature in 2007 and 2009 in which the legislature spoke. The only avenue that the game and fish department had left was to be able to control means of take. This is not about science anymore or being open minded. This is about power. Private land owners rights are at stake. 90% of the state is privately owned. With that being said, I know quite a few large landowners that let people hunt but the gates will be closed because theyre tired of the overreach and the adverse effect to that is way more people on public land which is 10% of the state.

The other question I have is why is it that private entities that are self funded finding results and our game and fish department is not? What is our taxpayer money being used for? They continue to go off of other peoples information and what they say goes! In which believe me a lot of the research on that side tends to be an agenda driven! Follow the money follow the funding thats all thats going on at this point.

Believe me, Ive looked at this from both sides, and this is not an agenda driven issue for myself. If I believed that there was something that was going to decimate the deer herd in North Dakota Id be all on board for it. In this case I believe there is nothing. This is an ethics issue that got

turned into a disease issue, plain and simple.

In closing, I would love to see your support for House bill 1151.

Matt SEYKORA Bottineau Nd

Feel free to call with any questions comments or concerns 701-389-8429

Written testimony in support of HB 1151 Dear Energy and Natural Resource Committee, I am writing to you today to show my support for HB 1151 which would make it illegal to ban baiting for the purposes of hunting (on private land).

Dear Energy and Natural Resource Committee,

Thank you for your time and consideration in hearing the general public input on a serious matter here in North Dakota.

I have been an avid outdoorsman my entire life, thus it was somewhat natural to pursue a degree in Biological Sciences from North Dakota State University, along with graduate studies at Northwestern. I have been following the CWD discussion closely over the last 10 years, when it became more mainstream in states to our east. I understand that this is a hot topic all around, and I do see both sides of this argument, but I hold my support in favor of HB 1151, due to my in depth Biology background, but more for common sense regarding this topic.

Until recently, my wife and I owned land along the Little Knife River, just west of Hebron. This area provides some of the best deer habitat in that county. 7 years ago we decided to start planting food plots and habitat for the wildlife. Over the years the food plots started getting larger; the final year of food plots was around 10 acres. During the fall and winter months, it was common to see 60-70 deer on our food plots in the evenings. During the cold spells, it was not uncommon for us to winter 100-125 deer every single evening. Simply put, the deer congregate, for survival, where there is food. Currently food plots are considered legal in North Dakota, but a 5 gallon bucket of corn or supplement feed is not, in the current banned units. I can say without hesitation, that food plots have congregated 10x more deer, than any 5 gallon bucket of corn that I have put on the ground. If there is concern about CWD and how it is spread, the game and fish is going down a very slippery road. The idea of stopping CWD in the game and fish's eyes, is to stop the congregation of deer from passing saliva to one another. There lies a huge problem. Deer naturally will congregate in the winters here in ND, and it doesn't matter if it's over a bucket of corn, cut corn field, standing beans or cut beans, the deer will congregate where they can survive, and they will always be in touch/contact with one another.

Following the science has been a huge topic from both sides of this argument. There is multiple sources to support both sides of the argument, but I think we need to look at these other states from a common sense standpoint. Some of these states have had baiting bans in place for many, many years, but CWD has not stopped or declined in many areas. Less than 1% of the deer tested in ND have tested positive for CWD. 40,000 deer tested showed positive results in 70 or so total deer. These were hunter harvested deer, not deer found deceased from "CWD" and then tested. This number alone should send shockwaves if we are "following the science". I think we all know we have heard that saying before, which focuses on my next point. Private land ownership.

While the game and fish talks about having great relationships with private landowners, these relationships are becoming more and more strained over the years, whether they want to admit it or not. Having the game and fish tell private land owners what they can, or cannot put on their own property will only heighten this strain. What is going to happen is we will go down another road of "Lock Out" that we saw the past couple years regarding private property ownership and access of those

properties. North Dakotans are getting very tired of being told of what they can, or cannot do in their own homes, or on their own lands.

My intent is not to rip apart our game and fish department. I am thankful for many of the things that they do to try to help our wildlife, however, in recent years, there has been a severe mismanagement of deer tags. For many in central and western ND, we saw the devastating effects of EHD on our whitetail population. For many units, there should have been no whitetail tags given out, but yet, there still was. The population was decimated in areas, yet, still tags were given out. The voices of ranchers and farmers telling the game and fish about these dire times fell on deaf ears. Only until a second year in a row of EHD, did the game and fish significantly drop tag numbers, but only in some units. While this is an entirely different topic, it does follow in with the bait ban discussion. Why are we not spending more time and funds focusing on how to ensure herd health, when we've lost estimated 100X-200X more deer to EHD death, than to that of CWD death? These are questions that need answers, but taking away more private landowner rights, is never going to fix the current issue at hand. For reference, on our old property in Hebron, and our neighbor's property to the west of us in Hebron, we found 100 dead deer in one season. This is on less than 300 acres of total property with the Little Knife River meandering through most of it. If we are following the science, we need to concentrate our efforts on EHD compared to that of CWD, because only one of those is the real threat to our deer herd in North Dakota.

I would like to sincerely thank you for your time reading this. I hope that you will continue to fight for us private landowners and hunters in North Dakota.

Senate Energy and Natural Resource Committee:

In support of HB 1151

There should be no restrictions on baiting when hunting private land. Deer herd up naturally with bait piles or not, Being able to bait gives better opportunity for most. Having upcoming hunters in my family, it is nice to be able to take them out and have a better chance of seeing animals and keep them interested.

Ben Duben

March 14, 2023

To the Senate Natural Resources Committee

Mr. Chairman, Members of the Committee:

My name is Wade Williamson and I live in Mountrail County. I am a retired farmer/rancher, and now my primary goal is habitat development and wildlife conservation.

I fully support HB 1151 and ask your support because of the following reasons:

- 1. I do not condone the North Dakota Game & Fish Department's policy of letting wildlife starve... Especially since farming, ranching, oil production, urban sprawl, etc., has depleted wildlife habitat and food sources.
- 2. Just like in people, healthy wildlife are better at not contracting diseases than poorly nourished animals.
 - 3. Chronic Wasting Disease (CWD) is not always fatal, especially in healthy animals.
 - 4. Deer are gregarious animals and have always congregated and will continue to do so.
- 5. At present, the protocols of wildlife agencies of banning baiting, banning of feeding of wildlife, shooting of herds, banning of transport of hunted animals, etc., has not been effective in stopping the spread of CWD.
- 6. There are a lot of federal funds associated with monitoring and surveillance of CWD, that I feel is a driving force of our North Dakota Game & Fish Department! I really wish that this money was designated for research and cure, because monitoring and surveillance does very little good, but instead it creates hysteria.
- 7. If a cure for CWD is found, the only way to implement it will be through feeding of wildlife.
- 8. One of the amendments that would stop the feeding of wildlife would be detrimental to our pheasant population along with other non-game species.
- 9. A bill similar to this, that would stop the feeding of wildlife was before the legislature approximately four sessions ago and was defeated. The North Dakota Game & Fish Department was in support of that bill. I truly feel that the North Dakota Game & Fish Department has tried to use CWD as an excuse to ban baiting and feeding of wildlife, through a piecemeal approach by the director's proclamation.

If you have any questions for me please call my cell phone. The number is 701-898-0054. Thank you for your consideration. Please vote yes on original HB 1151.

RE: HB 1151

Dear Energy and Natural Resources Committee and Representatives,

I am submitting this letter in support of HB 1151. Prior to writing this letter I read some of the other letters, it is clear the studies that have been performed do not support the idea that baiting is the cause of cwd. I am a ND resident, but I also own land in MN which bans baiting of any kind yet continues to have cwd. If stopping baiting would cease the spread, why does MN still have it? The only logical conclusion is that banning baiting doesn't stop the spread, but simply makes the appearance of doing something even if it isn't effective.

I agree with all the others who referenced that deer feeding in a food plot have a much higher chance to come in contact with another deer then a bait pile as from what I have watched since 2013 when I bought the land, a single deer doesn't just eat the whole plant, they eat part of it and move on while another deer will come up and finish the plant. And on that same thought, deer spend much less time at a bait pile then in a food plot as the bait pile is only created to gain their attention for a short period of time while on their way to a natural food source. Deer in a food plot spend much more time as that is the natural food they are looking for.

I have been a bow hunter for about 20 years now. I am absolutely convinced that using a bait pile allows the hunter to make more ethical shots, creating the most humane kill possible as the animal is in a more predictable spot versus just trying to shoot one as it happens to walk by. I also don't believe that bait piles are the cause of cwd as the deer regularly visit what is called a licking stick. A place where both male and female deer visit to rub a hanging stick with their mouth to let each other know who has been there. This is used every year during the rut. If bait piles are supposed to cause cwd, why do deer naturally go to this licking stick? You would have to imagine that if transferring saliva from one to another is a cause of cwd, would they have been made to use a licking stick? Wouldn't they naturally be drawn to a better method of communicating with one another? Animals aren't made to engage in an act that will kill themselves.

Lastly, while not related to cwd, but an effect of banning baiting is that you loose hunters. For some, that 5 gallon bucket of corn is the difference between success and failure. Why the argument can be made that the hunter should become better, putting out that inexpensive pile of bait vs creating a food plot is most likely the difference between a person hunting and not hunting. Most people can afford that bag of corn, most can't afford the land, the equipment, the seed, the fuel or the time to create food plots. I know this first hand owning land in MN. I am fortunate to be able to afford planting food plots, but I don't have kids. If you want to continue to have hunters harvest the needed amount of deer each year to maintain healthy numbers in the herd, don't do something that will counteract that.

Thank you for your time....

Jim Steen

1/16/23

I am in support of HB1151. Please vote yes in favor of this bill! I really don't feel that the ND Game and Fish should be telling people what they can and can't do on their own property. I usually winter over 100 deer at my farm with no help given by the Game and Fish. In doing so I also don't ask for any reimbursement for the hay or feed that the deer eat. If I want to hunt over bait on private property, I should be able to do that without the Game and Fish telling me I can't.

Brandon Reiser

RE: Support of Bill HB 1151

Lisa Thorp

921 75th St. NE

Willow City, ND 58384

I am in favor of this bill. I am a private landowner. We live in a heavily wooded area with a high deer population. We are ranchers, so we have our hay supply stored around the farm. Most winters we have hundreds of deer that congregate around our hay. If CWD is so dangerous, why aren't we seeing this spread through the deer and affecting the population? It is hard to understand why using a small amount of bait that would draw a handful of deer is more of a problem than when deer naturally congregate by the hundreds.

I am also in a family of hunters. Our children were able to learn about deer, watching them over bait. It is much more engaging for the younger hunters to watch deer come in to bait, so they are more likely to get enjoyment out of the sport. Our grandchildren will soon be of hunting age, and we would like to encourage the sport. Also, as we age, hunting over bait will help us to enjoy the sport longer.

I urge you to vote in favor of this bill.

Sincerely,

Lisa Thorp

3/14/2023

Chairman Senator Patten and all members of the Energy and Natural Resources Committee,

My name is Chris Jorde and I am a 4th generation business owner, farmer/rancher, and landowner from Towner (District 6). I am testifying in favor of HB 1151.

My farm/ranch consists of mainly sandy soils that makes it very challenging to grow crops in years where limited precipitation is available, such as in last year's drought (2021). I mention this to start out because growing food plots are also almost impossible in dry years also. The crops I grow are Alfalfa, Corn, Oats, Soybeans, and cover crops; with a majority of my acres being in Alfalfa production to accommodate the sandy soils that I practice conservation on. Obviously with these crops grown bring a very large deer herd to my farm/ranch for those reasons every year! Like any other farm/ranch management, managing the deer herd that frequents my property is just part of the job. Most of my pasture land that consists of poplar trees and native grasses is within a very large block of mostly privately owned land similar to my own. This chunk of land is approximately 3 miles by 5 miles (approximately 9,600 acres) with no major roads within. Within this land is a very large deer herd (400-500) which has excellent cover and habitat, however does not have any agricultural crops within that only start on the outside borders on 2 sides. The other special feature about this chunk of land is that over time all of the farmsteads/ranch headquarters have been developed on the borders. Over the last few years, 2 large feedlots have been developed also in close proximity.

In the year 2000, I purchased a quarter of land from my grandfather with the intent of wintering my livestock on this land because of the excellent cover available on the border like others had done. Now I knew that with the large amount of deer in the area that I would have to do some major research and work to make both deer and livestock thrive in the environment. My grandparents had received a habitat award for this land in the 1980's from the Game & Fish department so I knew that keeping deer out of the feed that I planned to have there would be a challenge. Working with Game & Fish like most landowners do, we came up with a plan to erect a deer proof hay yard to try to mitigate any problems with feedstuffs. I took this process one step further, an old rancher once told me "Feed the best and they will stay out of the rest." So this is what I did from past experience seeing Game & Fish manage livestock feed problems thru their intercept feed program. So every fall, I would keep back 10-15 large 2nd, 3rd, & occasionally 4th cutting alfalfa bales to feed the deer periodically throughout the winter months. Feeding these bales in the best deer habitat I had within this large chunk of land proved to be the best thing to do as very seldom would I ever or other landowners have deer coming close to their winter hay supplies because they finally received quality feed in their prime habitat and were content staying there. Solving land management issues with a common sense approach goes a very long way! With the effectiveness of this practice, in 2008 I also started feeding high quality feeds and minerals to this deer herd year round all over my farm/ranch and actually was able to spread this large herd into smaller herds that would prove to be a valuable tool to help aid in disease control. This was a large benefit to all the hunters that had access and adjacent landowners in the area because the deer were everywhere!

Then in 2010, I started an Ag-Tourism business that promoted people coming to my farm/ranch and experiencing what we had to offer on 7-day stays on a working farm/ranch with abundant amounts of wildlife to experience. I went as far as going to hunting/outdoor shows in other states to promote my place as well as the state of North Dakota. Working with ND Tourism, offers were made to carry tourism

literature promoting ND in exchange for booth reimbursement at these shows. Now what I was doing was not unheard of because many other farmers/ranchers were doing the same thing to supplement their operations in "leaner" times also as North Dakota tourism promoters as well.

So when my area (3A4) lost the ability to hunt over feed that we had been doing many years in 2021, many producers lost valuable incomes and revenue that was being brought to the state of North Dakota thru tourism dollars and were not being spent in our communities. Most producers in my area were only bringing in ½ to 1/3 of what typically came before the rules changed; that is a major revenue loss to the state of North Dakota thru tourism! Many people love to experience hunting in North Dakota because of our large deer numbers and the ability to hunt open areas of land over feed that they may not be able to do in other places.

I know that most people say that management decisions should only be left to Game & Fish professionals with Biology degrees, but what about all the Farmers/Ranchers, Landowners, and Sportsmen who hold degrees in Farm/Ranch Management, Animal Science, Economics, or even Biology or Wildlife Management? These professionals also know what they are talking about too! Livestock producers know that most disease problems are usually feed related. I don't know very many producers that don't take their jobs seriously because in all reality, sick animals don't make you money and only cost you! So that is why landowners and producers want to have the ability to manage their property the way that they see fit! All landowners know that there has to be a balance between livestock and wildlife for all to strive on their private lands. With more than 90% of the state privately owned, you would think that the people who own the land and are driving part of the state's economy should be in control of their own property! As far as any possible disease outbreaks that could happen in the future, I believe that the North Dakota Board of Animal Health has the ability to control the ability and Game & Fish should not.

Now with the hunting over feed ban in place, more producers are having more trouble controlling the deer populations in their feed supplies with the fear of breaking the law if they feed and hunt over it while the Game & Fish can still "intercept feed" and not spread disease. The 2 large feedlots in the area now are having deer depredation problems that are causing them new problems that seemed to be under control for so many years before. Being able to hunt over food is a very effective and valuable tool that needs to be available for producers to continue to use to properly manage the deer herds on their property!

In closing, land & wildlife management should be done by the owners of the property since most land in our state is privately owned. Landowner, Game & Fish, & Sportsmen relations all need to developed in the future for success!

For these reasons I ask that you support HB 1151 and allow this valuable tool to be used again to aid in controlling the wildlife population on privately owned lands in North Dakota!

Thank You for your time and the jobs you do!

Respectfully,

Chris Jorde – Heart J Ranch

701-240-8696

chrisjorde@hotmail.com

Dear Energy and Natural Resource Committee,

This letter is my way of expressing the reasons why I support bill 1151

I am a 16 year old hunter who has experienced the effects of baiting and no baiting. In my first couple years of bow hunting over bait, I would see some kind of wildlife on each sit and would come into range for a better chance of a closer ethical shot. During the change where there was no baiting allowed, I would go multiple sits without seeing anything and if I did see deer often times they wouldn't be within 50 yards. As a youth hunter it would be very easy to walk away from hunting. When I do go out for a sit I have to schedule around sports and other activities. When we had baiting, I could go out and would see wildlife activity within bow range and I could go out when my schedule allowed me. With no baiting, hunting requires a longer period of time to hopefully get lucky and have deer comes within range. For a youth hunter it can be hard to justify going out and sitting for hours knowing that there is a good chance that you won't have anything come close to you. No baiting does not help youth feel more involved in the outdoors and not many youth hunters have the chance to get close to wildlife and feel like they are connected to it. When I shot my first doe when I was 11, she was 20 yards on a bait pile and I dropped her. I instantly fell in love with hunting. Now I have seen how the effects of no baiting on new hunters through my siblings who are younger than me. They don't get any close shots and do not bow hunt because of that. When they hunt with a rifle they take far shots and often times miss. To me every missed shot gives you more of a reason to give up. When you are not an experienced marksman with longer shots, this can be very challenging and at this point hunting seems like more of a game rather than being close and seeing the animals every movement and then harvesting them. I have friends my own age who have completely quit hunting because of how challenging it now is with no baiting. I support this bill because if you don't get youth involved with hunting people will miss out on a great outdoor experience that teaches you a lot about life.

Sincerely,

Luke Jorde

Towner, ND

1/17/2023

I am in support of HB1151. I work with disabled hunters and also with seniors who hunt that are limited in how they can hunt deer. My son in law for example is paralyzed from the chest down. Baiting offers them an outdoor hunting experience that equals them to a non challenged person.

As far as baiting and CWD goes I don't believe it will make a difference outlawing it. Deer are a herd animal. Even without baiting they still congregate in farm yards, bird feeders, around grain bins, and in standing row crops. Especially in winter.

I'm in favor of baiting and I hope you get the support needed to bring it back statewide.

Kerry Beechie

House Energy and Natural Resource Committee:

I am Tim Peterson of the Fargo, ND region and more specifically, the Sheyenne Valley. Over the past 20 years, my family has accumulated 13,000 acres that we own or manage. We cover an area of 70 miles by 40 miles.

Upon following the progress of HB 1151, I thought it was time to voice up at complete atrocity this simple Bill has become. Although our region is not currently in the Baiting Restricted units, it is quite apparent that the push of CWD fear is getting stronger, along the available federal funds that are up for grabs, as well as with the desire to have a statewide baiting ban.

Supplemental feeding for the wildlife, and specifically the deer, is enormous on our land. We spend thousands of dollars and hundreds of hours each year for the health of the herds. Screenings from crops are used to make a specialized blend of 30% sunflower heart, 30% sunflowers and 30% corn. This custom mixture is 8-26% protein. We are often asked how we afford this? Well, when you spend every day with the wildlife and watch them from birth to 8-9 years old, you make the time, and the money, to take care of them. It is a lot of work but it is what we love to do.

Our parents have given us a life in which we are able to be with the herds in our area and we feel the need to take care of this blessing and nature. There are 5-6,000 deer on our land from season to season. We put in 20-30 acres of food plots along with feeding them 33 of our 3rd cutting large round bales of hay so far this winter. For those of you who aren't familiar with hay quality, the third cutting is the most abundant with nutrition.

We know the deer on our land. If a deer disappears, I know that I will either find the dead head or a neighbor will know where it is. We know deer. We live the deer and our land.

CWD is not killing our deer. EHD kills deer. Starvation kills deer. As stated, we have 5-6,000 deer on our land and we know their habits, routines and routes. Every deer in our wooded areas would be dead if what the North Dakota Game and Fish says is happening were true. They congregate and lick all of the time. Deer are not dying. We have deer that I have been following that are 8-9 years old and they are in our feed every day. Having feed available lessens their winter stress, provides nourishment and therefore makes for healthier deer.

What is testing healthy harvested deer doing for the deer of North Dakota? Supplemental feeding, shelter and water is what is important to sustaining our herds.

I am extremely frustrated with the misinformation that is being spread to the people. The motto for the Game and Fish is, "Stop the Spread". I agree, "Stop the Spread of the Misinformation" about CWD.

Organization such as the North Dakota Bowhunters no longer get my membership or support when they choose to "represent" me and do it without my personal representation. I am appalled at their choice to make a statement opposing this Bill without input from members.

Our land is a wildlife paradise and we enjoy sharing with family and the community. We let 5-10 youth hunters each season harvest deer. We don't place any restrictions on their hunt. This past season, 7 doe and 2 bucks were taken with a 100% successful shot rate. Fifty percent of the youth hunters are girls that are 14-15 years old. It is fun to see them get away from the sport for a few years and upon college time, they return with their Dad's to visit our place and rekindle the sport. We are noticing that if kids get a chance to partake in hunting by the time they are 15 years old, they tend to stick with it or come back a few years later.

My father has developed health conditions that won't allow him to walk for long distances therefore, the supplemental feed/bait allows him to enjoy hunting. We have people out that have previously spoken against the act of baiting and when they sit in a blind, with their kids, they have a change of opinion when they see the excitement, dedication and talent that it takes to make a clean shot at a deer out of a blind. It is one thing to get in with the deer and quite another to make a quality shot. They are now realizing that it is about time with family and the memories and relationship that matter way more than the perceived ethics of a bait pile. There are years that I do not harvest a deer. The time with my kids and family is way more important and if you take the right to feed the deer away from me, this time and tradition is lost forever.

HB 1151 is a black and white Bill and if you want to tell me what I can and can't do and can and can't feed on my land, I find that absolutely disgusting and disrespectful. It is asking for the ability to bait when I want to hunt. That is it.

Only an agency can work this hard against the people.

The Amendments on this Bill need to disappear. CWD is not what the Game and Fish are telling everyone. It is not killing the deer like they say. Even the reported numbers prove this. Supplemental feeding for the deer, and wildlife, is needed. They are healthier and have a better chance of survival in the harsh months. Baiting is not spreading anything other than nourishment and less stress. These amendments will kill more deer than CWD ever will. Also, if these amendments were about CWD, wouldn't the Game and Fish have stated they were "needed" with the initial baiting restrictions?

The set back of 150' is absolutely absurd and has nothing to do with CWD and sounds like a personal agenda that should not be forced on the people of North Dakota.

Having a supplement limit is ridiculous. The amount set is what the deer on our land can eat in a few hours. What about the rest of the year? Which leads to the calendar limit amendment. 3 months of supplemental feeding is not going to work. Some of the harshest months are January to April. Again, telling us when, how much and what I can or can't do on MY land?

We love the land and deer in eastern North Dakota and look forward to putting in the time each day to care about their survival. It is a lot of work but it is who we are.

I encourage you to delete this amendments to HB1151 and leave it the original version and pass it on the House.

Sincerely,

Tim Peterson Fargo, ND

Dear Energy and Natural Resource Committee,

I am writing this letter in support for HB1151. My name is Steve Portenga and I am nonresident bow hunter and own my second home here in North Dakota. I have been coming here to hunt since 2016. In the time that I have spent here my observation is in direct conflict with the ban of baiting. I have spent many hours studying the deer and their patterns. What I have concluded is that it doesn't take baiting to make deer congregate. It's a in their nature. That makes the ban on baiting unproductive. If for one second, I thought that a ban on baiting would curb the spread of CWD and save the deer population I would be all for it, but that doesn't seem to be the case, if there is even a case to be had.

I have countless video and pictures of deer on my property congregating without the enticement of baiting. The only science I know is what I can see with my own eyes and I'm sure most can too.

Furthermore, why is it okay to allow deer to feed in food plots in the winter but baiting is not allowed.

This makes absolutely no sense. So, this makes me wonder why the ban on baiting?

Deer Energy and Natural Resource Committee

This letter is to express my support for HB 1151

My name is Chandler Jacob and I am a avid outdoorsman from Minot, ND. I began hunting with my father when I was 4-5 years old. When I was 7 years old I harvested my first deer with archery equipment which happened to be over food. Having the ability to supplemental feed allowed me to first, have a bunch of action but most importantly allowed for a controlled shot which Is very important for a young hunter. Ever since that day I have been obsessed with archery hunting. Having the ability to go out as a young kid and see a few deer and be successful made me want to keep hunting. I fear opportunity for young kids, and the awesome people of prairie grit are at an extreme disadvantage with the baiting ban. Using supplemental feeding is a great way to get young kids in the outdoors and experience success which is the way I was introduced to archery hunting whitetails as a young kid.

Since the ban my father and I have started using food plots to hunt deer. The plots consist of different grains and a few types of greens that the deer love in the early season. That food attracts deer the same exact way a food pile does. Heck if you have the ability to plant one big enough it often attracts more deer. This is where I struggle with the ban, why can I plant food but not put some out on the ground. They both are used in the same way. If I were to drive east of Minot I could find a corn field with over 200 deer in it. It feels as if each year we are stripped of more and more rights. Deer naturally are social animals from the moment they are born.

In my opinion from simply spending countless years in the outdoors and specifically hunting whitetails the science simply does not add up. In my 20 plus years of hunting I have yet to find a dead deer or see one showing symptoms of CWD. The science does not show that baiting increases the chance of CWD. If that was the case, you would be finding more ill deer and we just don't see it. I feel if a certain group wants to use feed they should be allowed to do so. If another group does not, then that's your choice. I do not think hunters should be criticizing and picking and choosing how one group does or doesn't hunt, we are all hunters. I believe most people who oppose baiting are not against it due to science, but because they simply don't like baiting. A few years back baiting was in the legislation and The game and fish tried to ban it. The people of ND spoke, and it never passed. Now years later they are using CWD as a way ban it and claiming the science backs it up, When you get into the numbers it does not add up.

Sincerely, Chandler Jacob

<html><head></head><body</p>
style="word-wrap: break-word; -webkit-nbsp-mode: space; line-break: after-white-space;"><div>Members of the Legislature, </div><div>
</div><div>
</div><div>In reference to Bill 1151 I am supporting this bill as I believe the North Dakota Game and Fish Dept overstepped their authority by not allowing hunting over bait.

br></div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div><div>
div>
div><div>
div><div>
div><div>
div><div>
div>
div><div>
div><div>
div><div>
div><div>
div><div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div>
div
div>
div>
div>
div>
div
div>
div<

HB 1151

Dear Energy and Natural Resource Committee,

This letter is to express my support for HB 1151. There are several simple reasons baiting on private land should be legal in North Dakota.

- A ban on baiting creates 2 classes of citizens. Hunters and Non-hunters. If "Joe" enjoys feeding the deer on his property but doesn't hunt. Game and Fish can't do anything because he is not hunting over the bait he is just feeding wildlife. However, if Joe decides to shoot a deer over the same bait pile that some how promotes the spread of CWD. That makes zero sense.
- 2. Wisconsin has a state wide ban on hunting over bait and they have no measurable results that say it has slowed CWD.
- 3. Deer in North Dakota naturally herd up in the winter months. Game and Fish under the crusade of slowing CWD keep going after baiting because it's a place where deer come in close quarters with each other. Deer right now are herded un in the 100's right now in farm yards, elevator sites and feed lots looking for food in close quarters with each other. Does this not spread CWD? Why is it only a problem if it hunted over?

Until the Game and Fish can pin point bait piles are the problem, they should be legal. We just went through "2 weeks to slow the spread" and we couldn't slow it down. Do you really think you can slow CWD in a wild animal? Highly unlikely. Pass this bill.

Sincerely,
Lance Straabe
Hope ND

03/13/2023

Written testimony in support of HB 1151

Dear Senate Energy and Natural Resource Committee members,

I am writing to you today to show my support for HB 1151 which would not allow the department to issue rules or adopt a policy or practice prohibiting the baiting of big game animals for lawful hunting (on private land).

This bill has been heavily debated on the House side during several committee meetings and excellent testimony has been provided as to why we should allow baiting for hunting purposes within the state of North Dakota, especially units that have previously been banned by the North Dakota Game and Fish.

Our current Game and Fish administration takes the position that anytime a unit has been identified to have a positive case of Chronic Wasting Disease, it is is then activated for CWD management protocols including; herd reduction practices to maintain lower deer population densities, limited mobility and transportation of harvested deer carcasses, restrictions on hunting over bait as well as other "potentially" mitigating practices. Please keep in mind I said "potentially" as you will see that these are not scientifically backed or proven to be beneficial. Not only are CWD protocols implemented in the unit in which the positive case was identified, but also in any bordering unit within 25 miles of any positive case. This means units that do not have a single positive case are also subject to the CWD protocols our "professionals" impose for CWD positive areas.

Our Game and Fish office is part of the Association of Fish and Wildlife Agencies (AFWA), which is an entity in which all 50 state's Division of Wildlife Management and Authority offices (Game and Fish offices) have jumped aboard and adhere to its prescribed management tactics. This "scientific" document was created in 2017 and implemented in 2018 and lays out parameters and guidance protocols for "Best CWD Management Practices". Unfortunately, this document is not so "scientific". It does cite several peer reviewed studies, but cherry picks data from documents as far back as 2005, with limited recent studies being cited within the paper. Only a few studies from 2015 included, most being well over a decade old from the time of the writing of the document itself.

The AFWA document is quite lengthy and is written much like an opinion piece, 111 pages in all, but most of it contains sources, cited as footnotes, with very little context actually written to provide direction given its overall size. The "best practices for baiting and feeding" segment contains only two pages of context and includes just as many in footnotes pointing to sources. What is most concerning is the AFWA document was assembled by ONLY thirty people including biologists, veterinarians AND agency leaders but is the current backbone for all CWD management practices across the United States. This would be similar to all of our state Department of Transportation Agencies accepting and adhering to climate change protocols,

policy and regulations put in place by only a handful of hand picked "experts", all of which aren't even actual scientists themselves, but administrators of departments. Certainly, leaving our climate concerns up to only a handful of people among a vast field of experts is not in the best interest of our economy, our future and our planet, and neither should the future of hunting and managing/utilizing our wildlife resources be left to the opinions of only thirty people.

In this "scientific" document, you will find words like; "May", "Could be", "Likely", "Potentially", "Generally", "Probably", "Appears", etc.

In fact, words that indicate no conclusive science occur over 160 times within the piece. This is also the same document that directs and calls for the complete cull/eradication of an infected locale of deer by method of sharpshooters. Theoretically, this is in effort to stop the spread and transfer of the disease by reducing animal contact, however we have come to understand that the CWD prion can live indefinitely on the landscape, so any deer repopulating the infected area can easily be exposed to contaminated soil and become infected again and again according to the information the "accepted" research would want us to believe. This management practice has proven to be absolutely worthless for mitigating the spread of disease, as we have still observed CWD expansion after mass culling, but yet it is touted as a "best management practice" within the document.

A couple of years ago, I questioned one of the NDGF big game biologists about CWD and a Cervids (deer) ability to develop generational resistance (evolution) to the prion, he literally stated that he believed that the process of evolution does not apply in this context relating to this disease, but could not back up that statement with any reason or point to any specific source. (It is currently known that some deer possess a CWD resistant gene. Sheep scrapie is also a transmissible spongiform encephalopathy (TSE, which is similar to a CWD prion in nature but affecting sheep, and its presence has been greatly reduced and almost eliminated due to genetic research and through promotion of generational resistance.)

In 2019 our Game and Fish tested a deer that had been found deceased and was pronounced CWD positive near the Williston area. They performed a mass cull on a sizeable herd in the general area where the deer was found, (although the CWD positive deer's actual method of mortality had not been identified) and they wiped out a group of 52 deer in order to extract post mortem brain tissue samples for CWD "surveillance and monitoring" purposes. Not a single one of the deer shot for this testing was processed or even stored (to hopefully feed the hungry upon negative results) while awaiting the test results. All of the results came back negative and all of the meat from the massacred resource was deposited into the landfill, even though it was perfectly fine for consumption. This falls under the definition of Wanton Waste, but since our Game and Fish did it as a targeted management practice, it is considered science and falls within the "best management practice" which they considered "justified" to help identify a potential disease threat. In reality, this practice and the way the Game and Fish mishandled and abused the resource was and is an absolute disgrace.

The Theory Of Evolution and how it pertains to Natural Selection is biology 101, something our "professionals" should subscribe to. This is a widely accepted theory and is the primary theory taught in biology. An animal's best chance of survival is by developing generational resistance to any biological threat; but exterminating animals, especially those that may be CWD positive and pass on resistant traits to their offspring only prolongs the issue of CWD remaining on our landscape and poses a possible long term effect on cervids.

The AFWA document also states that eliminating the feeding or baiting of deer is also a "best management practice", but interestingly enough it cannot cite or provide a specific source or study that proves this is a prolific or even miniscule source of transmissibility. In fact, currently no study can prove that this is a viable means of transmission at all. It is argued that by common sense, artificial congregation in theory will increase the odds of transmission, but the Game and Fish cannot back up this assumption with any sort of science. It is simply conjecture but evidently that is evidence enough to instill a baiting ban according to the NDGF. Several states that have implemented baiting bans for over a decade realize significant growth of CWD cases despite the protocol being imposed. So is baiting really the detrimental issue concerning the spread of this disease?

In the end of 2022, the US Congress passed a spending package which earmarks \$70 Million annually for the next seven years, dedicated to the issue of trying to find a solution to combat CWD. Half of this funding is dedicated to research, while the other half is set aside for mitigation strategies, such as testing. Our Game and Fish will be looking to receive these funds from the testing side, as they partake in very little research, and only within the past year have they participated jointly in a research study when it comes to CWD.

Funds spent towards the monitoring of CWD so far within the state have been spent on truck decals which convey: "protect the herd" and also toward test collection sites, advertising and testing materials themselves. Millions of dollars will be spent on "monitoring and surveillance" in the upcoming years, only to identify the spread of the disease, but sadly those funds won't be contributed towards developing a vaccine or cure. Our Game and Fish will have their hand out when it comes to federal funding and will be pushing to advance their monitoring of CWD...but the question should be asked; how does that benefit us? We already know that CWD is present on the landscape, that it is spreading, and that it is here to stay for the time being. How does it help us or help solve the issue that our Game and Fish agency wants to spend millions of dollars "monitoring", only to observe that the disease is already doing what we historically know it is capable of? Why spend the millions on vehicle stickers and tests that literally accomplish nothing? If this is such a scourge, shouldn't most, if all available funding be allocated toward developing a potential vaccine or cure? Monitoring and testing accomplishes nothing in the management of this disease, it will only tell you if it is present...and then what? There is no treatment, no cure, just wasted dollars and implementation of more restrictions and protocols that have proven to be ineffective, as evidenced by data from other states who have had CWD prevalence for years and their AFWA directed protocols have done nothing to stop or even slow the spread of the disease.

This bill was brought forward unfortunately because of our Game and Fish Department's unwillingness to listen and work with sportsmen, but it's also very much about the department's allegiance to the AFWA document and the prospect of the funding it could bring to the agency. Furthermore, this issue predates the AFWA document and goes back to 2009 and earlier regarding the department's stance on baiting when they publicly called for a bait ban based on ethical reasons. When the citizens of North Dakota rejected the Game and Fish's multiple attempts to remove this vital tool, the department then seized a back door opportunity (that the AFWA document afforded) them to slowly restrict baiting one unit at a time. When the progression of CWD was not moving fast enough in the state, the new protocol was to then include bordering units within a 25 mile range of a CWD positive case to help expedite the no baiting ideology. Sadly, the management of this state is left up to the personal ideals and beliefs of a few policy makers within the department who are touted as the "professionals", although they cannot back up their stance with scientific facts, and only have the AFWA document, a loosely constructed opinion piece, to back their beliefs on. Also keep in mind that being a member of AFWA and implementing its protocols only helps to advocate for the awarding of federal dollars to the NDGF department through the latest CWD Research and Management Act.

In 2001 there was a big push on the CWD rhetoric. An article was published that presented a model that said at the current rate of transmission and how deadly this disease is, North America could be devoid of deer by 2030. Currently, many states who have CWD prevalence are experiencing abundant and flourishing deer herds. Other states that have CWD prevalence and tout low population densities, like parts of Saskatchewan, Montana and Colorado would like to attribute lower populations due to the disease, when truthfully, it is the game management agencies issuing excessive tags to decrease deer populations that have contributed to lower herd numbers, buy not from actual CWD deaths. This is also part of the AFWA strategy, to decrease deer populations to low densities in order to help limit the spread of the disease. In other words, the disease isn't killing the deer, it's the management strategies that are. In states with high CWD prevalence, like Wyoming and Wisconsin, emaciated and drooling "zombie" deer are not wandering around the landscape and tipping over by the hundreds like the deer herds did here in the last EHD or "Blue Tongue" outbreak. In fact, EHD (Epizootic Hemorrhagic Disease wiped out more deer in one single year than CWD could ever hope to in 100 years. This is where I would like to quote a friend: "If CWD is so fatal, then where are all the dead and dying deer?"

Regarding the House amendments, I do not support them as written. Especially page 1, subsection 1; line item 8-13 and subsection 3; line item 19-23 and page 2, line item 1-4. This terminology is redundant and allows the Game and Fish to challenge the language of the bill in a court of law by issuing a citation to anybody "feeding" wildlife after these dates. The specific dates pertaining to baiting are not needed as it is already illegal to hunt deer after a designated hunting season which is already set and printed in a proclamation developed by the Game and Fish. It would be beneficial to use language that allows baiting to be "concurrent with any deer hunting season as defined by the NDGF". As written, North Dakotans could potentially be charged with a criminal offense for providing feed after the dates stated in the current version of

the bill. This is very damaging to deer herds as feeding in the middle of harsh winters is detrimental to a cervid's survival and remaining healthy to help fight off disease.

As an example, Utah subscribes heavily to AFWA's CWD management protocols in regards to feeding and baiting of wildlife. Currently Utah is experiencing such a harsh winter, that they have implemented emergency feeding protocols, utilizing farmers and ranchers and the public, to provide feed for deer and elk because they are in jeopardy of losing entire herds due to the extreme snow cover which is causing widespread starvation. In a state that heavily pushes the CWD rhetoric, even the wildlife management department has thrown the ideology of "artificial congregation spreads disease" out of the window in order to save their already dwindling herds. If this isn't the definition of hypocrisy, I don't know what is.

In regards to the setback amendment Page 1; Subsection 2, line 17-18, although I believe this bill is not about a landowner rights issue, some of that may be arguable due to the amendments added, and creating a set back can negatively impact many hunters in the state who hunt on smaller tracts of land. I am located in a rural subdivision on the outskirts of Minot's city limits and have lots of deer frequent our three acre lot. Due to the language, my family and many others in this situation across the state might not be able to bowhunt deer on our own lots due to how our property lines are drawn. Without the permission of the adjacent landowner, hundreds if not thousands of hunters may not be able to hunt their small tracts of land even though they are suitable and provide opportunity for harvesting deer if the neighboring landowner does not grant permission. This is an infringement on my land ownership rights by allowing another neighbor to dictate what I could previously legally do on my lot, but might now not be able to, due to the set back amendment added to this bill (this only applies in units where baiting is currently still legal). Simply put, while the passage of this bill would give a tool back to the hunters of North Dakota, it could potentially limit many hunters who only have access to smaller tracts of land with not so "neighborly" neighbors.

I hope you read through this testimony and understand this issue isn't about landowner rights, it isn't about having the ability to harvest a deer easier, or even about ethics. This is about combatting control. While NDGF is utilizing CWD hysteria for both financial benefits and simultaneously accomplishing their goal to eliminate baiting due to their ethical stance, hunters are unjustly being stripped of a tool that is extremely beneficial on our prairie landscape to help hunters of all kinds effectively and efficiently harvest deer. This bill is also about protecting our rights from being taken away without just cause or in this case, a lack of scientific proof. Please support this bill and vote yes on HB 1151.

Thank you for your time and consideration.

Matt Williamson

Matt Willi

Minot, ND

As a mother and grandmother that has raised her kids and gotten to see her grandkids be outdoors and enjoy hunting I fear a baiting ban would really hurt the ability to keep my grandchildren interested in hunting. So with that I ask you will vote yes on HB1151 to give them the ability to have a good ethical shot opportunity and see all sort of wildlife birds, squirrels, etc. to keep them interested while sitting in the stand.

Thank you Shirley Schatz Dear Ladies and Gentlemen of the Senate,

I am writing you today in opposition of HB 1151, as a lifelong hunter, outdoorsman and conservationist.

I have volunteered thousands of hours and dollars over the course of my 34 years. I am a Life Member of North Dakota Bowhunter's Association, Rocky Mountain Elk Foundation, National Rifle Association, Missouri Basin Bowmen, American Bear Foundation and annual member of the Pope and Young Club, Wild Sheep Foundation, Compton's Traditional Archery Club, Professional Bowhunter's Society, and others.

To put it briefly, my life revolves around hunting with my wife and family, while supporting the wild lands and critters that I hold so dear. While we can never satisfy everyone, I strive to do what is best for our PUBLIC wildlife resource, and for the majority of outdoor enthusiasts, now and in the future. Having taken my first deer with a bow at age 8, I have never found it necessary to bait a big game animal. Sometimes successful hunts don't conclude with a harvest. That said, we have amazing hunting opportunities in North Dakota, and I find it irresponsible to risk our wildlife simply because some individuals cannot be bothered to put in the time and effort to learn the woodsmanship and hunting skills that baiting substitutes for.

Many of the opinions that you are bound to digest will simply portray this bill as a "my rights" issue. I remind you that hunting is not a right, it is a privilege that countless hunters and conservationists have earned for not only us, but future generations. If this was just a private property issue, could the same not also be said for things like bag limits and legal hunting hours? Another defense often used is the youth, and how they can't be presented with opportunities without bait. I counter that if more of the mentors teaching them had the skills to hunt without bait, that the kids would benefit much more from learning said skills.

A debate often thrown around is "Where is the science?". It is quite available; however, science is rarely dealt with in absolutes. Science is nearly always a theory, backed up by probabilities and statistics. That is why no one can promise something when it comes to methods of preventing the spread of a given disease. If the G&F has this scientifically-proven method removed from their quiver, chances are that remaining tools will have to be reinforced.

In 25+ years of attending ND G&F Advisory Board meetings, I could probably count on one hand how many I missed in my region. Over that time, I have had the pleasure of getting to know many of our fine Department employees. I will be the first to tell you that our G&F staff are passionate and regularly go far above and beyond. I have hunted in many other states, and would not hesitate to say that we have the best Department I've ever encountered.

I encourage you to allow the fantastic professionals at the ND G&F to do what they have always done, and protect our PUBLIC resource for folks of North Dakota, not only today, but into the future. Please vote NO on House Bill 1151.

Sincerely,

Nevin Jenner - Williston, 701-570-0250

Hello members of the committee,

As an 84 year old and rancher of over 65 years im asking that you please take my testimony into consideration. I have had deer herded up in my feed supplies since I started ranching and I've seen over 500 deer in my hay yards at a time on hard winters and no less then 150 on normal winters. The one thing that I have seen that as helped keep the herds in smaller numbers is when hunters have kept feed out in the pastures away from my feed supply. So I ask that you please encourage more people to put out supplemental feed year around instead of taking that opportunity away. And also from what I've observed I would say the deer herd looks healthier and more sets of twins when hunters are supplementing with feed year around.

Also I've seen lots of feed put on my land with the purpose of hunting over and maybe 15 deer at most come into it. So I leave you with the question is banning baiting going to slow the spread when this winter i have 500+ deer in my hay yard? And please don't take the opportunity away from my kids getting my grandkids interested in deer hunting.

Thanks for reading George Lemer

Dear Committee Members,

As an avid outdoorsman and hunter, I am writing in favor of HB1151. Hunting is our family tradition and we enjoy the time we spend in the outdoors together. Please support HB 1151.

Thank you, Jeremy Wittenberg I do not believe that the bait ban is effective or necessary. The proposed culling will also have a negative effect on natural selection and should not be conducted.

Thank you,

Randy St. Germain

March 15, 2023

To the Senate Energy and Natural Resources Committee:

Hello, my name is Kory Richardson. I currently reside in rural Ward County. I am providing written testimony <u>in opposition to</u> **HB 1151**, relating to baiting big game animals and supplemental feed attractants. Please allow professional biologists with the ND Game & Fish Department, using the best science available, make decisions regarding management of the State's deer herd. This issue is not about youth or disabled hunting opportunities, private property rights, or unproven treatments and prevention measures. If decisions are made based on opinion and emotion, instead of sound science, it will create a greater risk to the long-term health of our deer herd. As a lifelong resident and hunter this is an issue that is very important to me. Thank you for your consideration.

Respectfully,

Kory Richardson Donnybrook, ND I am writing in opposition to HB1151. To me, this isn't a baiting issue. It's an issue about allowing the Game and Fish to do their job. We should not be managing wildlife at the ballot box. We should leave that to the Game and Fish. Please vote NO on HB1151 and let the Game and Fish manage our wildlife.

Vince Gray Bismarck, ND January 17, 2023

Jodie Provost 3986 – 117th Ave. SE Valley City, ND 58072

Dear House Energy and Natural Resources Committee,

Please oppose HB 1151. Baiting of deer is not necessary to harvest them and it concentrates deer, greatly increasing the chance of disease transmission such as Chronic Wasting Disease (CWD). To keep a healthy and sustained deer population, deer should remain wild in their behavior and not artificially concentrated through baiting (or feeding).

CWD is a great threat to our state's cervid populations and the collateral damage from it spreading and becoming more prevalent is great. This damage includes a lower deer population, less recreation opportunity, fewer people hunting due to less deer and concern over diseased deer, less license fee revenue, a drain on staff and budget from spending more time on the issue, and increased chance it spreads to elk, moose, and mule deer, further exasperating the damage done.

Let's manage our public resource of wildlife smart, help ourselves out in the long term and do the right thing now - do not allow baiting (or feeding) of deer.

Thank you,
Jodie Provost
218-838-3553

The North Dakota constitution states in article XI, Section 27, "Hunting, trapping, and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people and managed by law and regulation for the public good." HB 1151 seeks to handcuff the ability of the wildlife professionals at the North Dakota Game and Fish to do their job. That job, according to state law, is managing the wildlife resource on behalf of the public, for current and future generations. The legislature should not be overruling biological decisions made by a network of professional and experienced biologists and veterinarians who specialize in North Dakota wildlife.

The hunting practices of one user group do not outweigh what is beneficial for the entire public resource. This bill is not in the best interest of the deer held in public trust, or the public, who are beneficiaries of that trust.

H.B. 1151 is in direct violation of the North Dakota constitution, North Dakota state law, the mission of the North Dakota Game and Fish, the North American Model of Wildlife Conservation, and a breach of the public trust doctrine that all wild deer in North Dakota belong to.

Do Not Pass H.B. 1151.

Please stand with me and the North Dakota Chapter of Backcountry Hunters & Anglers in defending North Dakota's public deer resource.

Dear Committee Members,

Hi, I am a woman who enjoys the outdoors and hunting with my family. We enjoy getting together for hunting and its something we look forward to every year. Please support HB1151.

Thank you, Melissa Wittenberg Senate Natural Resources Committee members on HB 1151

My name is Gabe Thompson from Antler ND the 4th in a 6th generation farm and ranching operation and a former instructor in our churches youth archery program Bethel Crossed Bows where we introduce 40 plus kids a year to the sport of archery and bow hunting for 18 years now

As a rancher I understand very well the issue of animal disease and as the former chair of the Animal Health Committee for the ND Stockmans Assoc am well versed in the prion diseases of which CWD is one. And while real, just as "Mad Cow" was used by orgs with alterior motives to further an agenda to end eating beef, CWD is being used as well to push an agenda also

As said yes CWD is real but the facts and science are being used to push the ethical issue hunters and the G&F have with baiting which eventually the discussion ALWAYS turns to in forums and G&F advisory meetings. In my opinion what is not "ethical" is to tell a young kid that just shot their first deer, a 70 something year old neighbor lady that shot her last deer, or a handicapped person taking a nice buck or even a healthy young man wanting to position a deer for a clean shot at a known yardage to prevent wounding an animal (all of which we have had done on our ranch all with no fee) that using a tool such as bait is not hunting and they are not hunters for doing sowhich our G&F director stood by and let happen at the last live streamed advisory meeting the NDGF held pitting one group of hunters against another.

The numbers

Only 1 deer in 13 years of aggressive testing has been found dead in the wild with CWD only 1 (not an epidemic)

The majority of limited numbers of positives the last two years have came from a unit baiting has been banned in for 13 years

The NDGF killed 50 plus deer in one area searching for CWD0 positives (all the meat was disposed of)

CWD like the prion disease Scrappies in sheep has been around for decades ... it is only now being found because it is being actively tested for

As a rancher we ALWAYS have deer yarded up in our ranch yard, this year it is roughly 400(the year before CWD was first found because of mismanagement of the population it was 650) and this occurs for 5 months or longer

Common sense tells us THAT along with the natural interaction of a highly social animal is what is and will continue to spread CWD and the tools of baiting or food plots (both of which the G&F science says increases risk) plays a very minimal if any role

Ask why the G&F bans hunting over bait but not food plots or feeding of deer year round (they actually pay you to plant food plots) when BOTH are meant to attract congregate and hold deer to an area (food plots for much longer periods and far greater numbers of deer ... we have 400 in a 7 acre plot of corn as we speak) and the G&F science says the CWD prion can live forever in the soils food plots are repeatedly planted on and on the leaves of the plants in the food plot the deer repeatedly browse day after day for months

Ethics and jealousy of rifle only hunters seeing archery hunters posting pictures of large bucks they harvested prior to rifle season on social media is what is driving this narrative ... when pressed the G&F admits it .. so the tool of baiting over a small pile of corn (20 yards /archery) is being banned but hunting over a food plot (200 yards/rifle) is not

The NDG&F even includes a portion of their online hunter safety class regarding ethics of hunting where it is specifically mentions hunting over bait as unethical driving home what the ban on hunting over bait but not food plots is all about

Please support common sense allowing hunters to manage population and keep opportunities for ALL hunters regardless of what tools they use to hunt, with a do pass on HB 1151

Thank you

To whom it may concern:

I am writing to oppose HB 1151. Although I live in Montana now, I spent several years hunting in North Dakota and continue to enjoy that passtime in your wonderful state. As a wildlife/conservation professional with nearly two decades of experience (and six years of formal education in wildlife management), I believe we need to allow the North Dakota Game and Fish Department to make decisions regarding the management of wildlife rather than listening to "loud voices" in a voting minority. Perhaps you are familiar with Colorado's wolf reintroduction ballot initiative where uneducated voters have forced the state game department to commit resources to "bring back" an animal that had already returned to the state on its own. Trust trained professionals to act in the best interest of both the resource and their constituents rather than whoever keeps tugging on your ear. Thank you for the opportunity to comment and for considering my testimony.

Mason

HB1151:

To whom it may concern:

Energy and Natural Resource Committee,

This Letter is being written to show my support of HB1151

I believe the North Dakota Game and Fish department does not have our best interests at hand. Almost every decision they make is based off of projected revenue. This year they still gave out whitetail deer tags in 3b2, 3d2, 3b3, 4a, ect. In these units there were almost no whitetails to be found in these units but they couldn't not get their revenue from licenses!

As a hunter and a landowner, I do not care weather or not we can bait. I care more about the fact that the NDGF thinking they have the ability to impose rules to private landowners is acceptable, but yet they have such good relations with all these said landowners. Private lands are exactly as they sound. Private for the owner of the land to decide what takes place on their land. If the NDGF wants to ban baiting they should go through legislation and ban the entire state not just a unit at a time.

That being said they're ban on baiting that keeps being imposed on us hunters and a landowners alike makes no sense. They're reasoning behind the baiting ban has no value or factual evidence that it will help "stop the spread of CWD." This winter is a perfect example of it as well. There's only so many food sources available to the deer and they all gather together around those couple of food sources' IE: haystacks, cornfield hill tops, ect. On top of the evidence the NDGF is providing, they are breaking their own rules on the ban of baiting by placing a ranchers hay bail in the middle of a pasture for the deer to congregate to prevent the deer from eating directly on that said ranchers haystacks.

The NDGF claims a deer with CWD only has a lifespan of 3.5 years. In our state with the section line rules and amount of rifle tags given out year in and year out the deer don't even make it to an average life of 3.5 years old to begin with!

I am in favor of HB1151 and have plenty more to ramble on about if you would like to hear more you can reach me at the number below.

Tanner Dolbec 701-880-8471 **Andrew Dusek**

HB1151 testimonial

In Support of HB1151

I am writing in support of HB1151 as I see supplemental feeding during the ND big game hunting season as a very necessary tool in regard to not only the heritage of hunting in our great state but as a very important tool on the way many sportsmen manage big game herds.

We've seen a great loss of habitat over the years negatively affecting our big game herds and the interest in the upcoming future of our hunting heritage and I firmly believe restricting feeding during the season will only cause more damage to our beloved sport and way of life. CWD has been the main reason why our game and fish has decided to implement restrictions on feeding which I believe their current policy of an overall ban of feeding practices in units with infected animals is not in compliance with the views and private land rights of many outdoorsman and herd managers.

Just recently state wide CWD test results were released and we have once again seen very few infected animals test positive in units in which feeding restrictions have already been in place for years which proves their method of banning feeding during the hunting season has proven to be a failure. They have suggested things such as food plots are a safer alternative but not everyone has the ability or funds to practice this option and there is really no difference in animal contact if i.e. five deer eat off one growing corn cob verse the same five eating it out of feeder.

I believe hunters, land, and herd managers on private land should be able to practice as they see fit. Big game animals by nature are contact animals and the restriction of feeding during the hunting season will do nothing to stop the spread of any disease amongst herds. I feel as if not being allowed to feed during the hunting season will only hurt herds more. Hunting is my life, it's how I feed my family lean rich protein, the benefits of supplemental feeding to maintain a healthy herd far outweigh any negative outcome that is being pressed upon us by the game and fish department in their relentless pandemonium that we are on this "verge" of a major epidemic, its simply not true.

Test results of CWD have proven to be so low and so sporadic, there's really no way a simple practice such as supplemental feeding could ever be the cause, if anything it's the solution as most people using feed are ensuring that their herd has the necessary nutrition to survive our harsh inclement climate during and after the season. In conclusion, I am in support of HB1151, because I do not believe our self-funded game and fish department should be able to make such bans and restrictions as to how we practice hunting and herd management on North Dakota Private lands, its overreach at its purest.

I am in support of bill 1151 limiting the NDGF authority to control baiting in North Dakota. I feel the NDGF is cherry picking science to fit the narrative they want. I feel the NDGF thinks it is unethical to hunt over bait and they are using CWD to get rid of it. There is plenty of "Science" out there going against what they are doing in ND. Is there CWD sure but it is not the huge issue the NDGF is making it out to be! We lose more deer to EHD every year than we ever will to CWD. I feel this is governmental overreach and loss of rights/freedoms. If the NDGF is allowed to continue their goal of closing the whole state to hunting over bait than you will lose hunters and hunters do a lot for the wildlife.

RE: HB 1151

This letter is to express my support of the above referenced bill. I have been a quadriplegic since 1994. I started hunting again in 1998 using a crossbow and shooting from my electric wheelchair. In order to get wild game, mostly deer in a shooting distance I have used the method of baiting. Which usually consists of a couple buckets of corn. Using bait while hunting not only gets the deer closer, it makes them stand still in front of me for a clean kill shot.

There were only a couple years I was not able to fill my bow tag with the use of baiting. I know I am not alone for people with a handicap who depend on this style of hunting to fill their tag and fill their freezer. I know myself and my family depend on the meat that I harvest over bait every year. If there was to be a ban on baiting, I know many deer would not be taken and many meals would not be enjoyed.

Thank you for your time and listening to why I support HB 1151. Sincerely, Clint Lindemann.

3/15/2023

Mr. Chairman & Members of the Natural Resources Committee:

I am a hunter, fisherman and landowner. I am in support of this bill for a number of reasons that include:

- 1. In my opinion the North Dakota Game & Fish Department is using CWD as a "reason" or "excuse" to ban baiting. I do not feel they have the deer or the sportsman's best interest in mind.
- 2. We cannot stop deer from "grouping up" whether we bait or feed or we do not. It is what they do.
- 3. The North Dakota Game & Fish tends to be reactive rather than proactive in their procedure. They have been "analyzing" CWD for decades, even killing off herds of deer with no success in curbing it. There is some research happening on finding a cure for the disease but our Game & Fish is not interested in that.
- 4. The primary reason I support this bill is that I feel the North Dakota Game & Fish Department's desire to ban baiting is infringing on landowner's rights. We know we do not "own" the wildlife that resides on our land but if we see animals that cannot get to food because of harsh winters we should be able to feed them, rather than let them starve.

Thank you for your consideration. Please vote yes on HB 1151.

Sincerely,

Cindy Williamson

Senate Energy and Natural Resource Committee:

In support of HB1151

Baiting is important to me because getting close encounters with wildlife with my kids and keeping them interested in hunting, is important to me. Plus, I have a short window between work and family to hunt so it gives a better success rate by using bait to bring in deer.

Taking older members of my family, who can no longer hike, and giving them a quality hunt is important to me. Likewise, baiting allows me to take a more ethical shot at the deer while reducing my chances of wounding the animal.

Thomas Hanna

Chairman Patten and members of the Senate Energy and Natural Resource Committee:

I am submitting this testimony in OPPOSITION of HB 1151.

My name is Bridger Duckwitz of Moffit, ND. Thank you for representing ND. I will be praying for you and keeping you in my thoughts. I will be taking a course called TeenPact and learning about the Senate, House, how bills work, and more at the end of March.

I am writing a letter about House Bill 1151 relating to big game animals and supplemental attractant. I personally stand firmly against this bill. I, as a 15-year-old kid, have hunted and harvested deer for many years and have never baited. To others and myself, baiting takes away from the experience, the challenge, and the hunt itself.

While the US military is highly experienced in the art of war and the House of Representatives, Senate, and Government are very skilled with helping run the state, North Dakota Game and Fish are professionals at managing the wildlife and their habitat. We need to trust their judgment and skillful insight.

Thank you for taking the time to read this letter and again for your acts of service to this state. Please give HB 1151 a DO NOT PASS vote.

Sincerely,

Bridger Duckwitz

To whom it may concern,

I am a landowner. I have the right to place supplemental feed out anytime, anywhere and any amount on my land.

This fall we had camera's up and it made me sad that the deer could not find food. I cannot imagine what they have gone through this winter finding food.

I STRONGLY support HB 1151.

Lenyce Simmons

RE: HB 1151

Dear Energy and Natural Resources Committee,

This letter is to express my support for HB 1151.

I have grown up hunting and it is my way of life. I look forward to each season enjoying my time in the outdoors, but more importantly I enjoy sharing it with as many people as I can. I love to watch my children and the others that I introduce to the sport get excited when a deer comes close. They get an experience that few others can relate to. Baiting has become a useful tool for us as an archery family. It isn't our only tool, but it does provide some chance for new hunters to have an opportunity at a deer. We are in constant competition with electronics, and I feel that we need to do everything we can to keep the new hunters' attention and continue our hunting heritage. That's why I please ask that you vote yes on HB 1151. Please preserve landowner rights and our outdoor way of life.

Trent Kinzell

Minot, ND

Hi, my name is Lee Zimmerman. I am an avid sportsman, landowner, farmer, dairyman and outfitter. My wife Kristi and I have 4 children; Ethen, Mason, Bryson, and Emerson from ages 15 to 9. We reside in the Sandhills of Denbigh ND and have lived here for 27 years. Our agricultural land and surroundings are abundant with Deer, Moose, Turkeys and waterfowl. Over the years we have developed the land for agricultural purposes to feed our livestock and this has definitely played a huge role in the abundance of wildlife in the area.

I am writing today in support of HB 1151. The restrictions that the North Dakota Game and Fish have enforced on the use of hunting big game over bait in specified units to control the spread of chronic wasting disease is unjustified and counterproductive, let me explain why.

Hunting is and option as baiting should be, the choice to do so or not has adversely affected hunters who are disadvantaged whether this may be a youth, elderly, nonland owner or handicapped sportsman. Bait or no bait, deer are as social as humans, they travel the same corridors to and from feeding and bedding areas as do humans. Deer lick, groom, swap saliva amongst each other as do humans. Deer all stop on the trail where there is a low hanging branch and whether they have head gear or not they rub their face all over these "licking branches", this is for marking territory or just socializing with one another. You have all seen the kid in the shopping cart at Walmart that is digging in his nose, smiling at you and then rubs his hands all over the cart, and what about the kid that is licking the window while you wait in line at the Motor Vehicle Department, how is this any different. This is how these animals socialize, whether there is a bucket of feed on the ground or 20,000 tons of silage what is the difference? The deer commute on the same path to and from regardless if there is 5 together or 50 together, green grass, or 2 foot of snow they eventually end up at the same place. Not to mention water sources, I have watched hundreds of deer drink from the same pond and groom one another before or after by licking and smelling one another as a new animals arrive to water.

Boundaries-I live 3 miles from a unit where baiting is an option, in the wintertime our farm will more than double the normal number of deer, turkeys and small game. These animals travel 5-10 miles to a winter range, we definitely have been that! The deer and turkeys must not have received the memo that this is a restricted unit! We have large amounts of corn silage, grain corn, wheat mid pellets, screenings and alfalfa hay that is all in our feed yards. As a landowner I'm not complaining nor am I asking for someone to feed the wildlife for us, our quantities and supplies of feed are so spread out that you would need a high fenced area 1 mile by 1 mile to contain these ingredients on 2 separate locations, like I said, I'm not complaining, for years we have fed the wildlife away from our feed yards October through April to control the damage that occurs on our expensive commodities. We leave acres of standing crop not just as food plots for hunting but because we care for the wildlife also. This has helped keep the animals at large away from our feed areas and cattle pens along with predators that harm our livestock. We have learned that if we can spread the feed out and use multiple locations to feed, this keeps the animals less concentrated and more spread out, isn't this what we want to achieve? If you have 75 people that are doing this whether for viewing or hunting, feeding these animals in different areas but in the same unit, wouldn't this help keep the animals more spread out, I sure think so as we have seen a major concentration to our feed yards the past 2 years. Do you really believe that CWD just appeared these last few years, let's be real, this has been around for numerous years, the fact that they think baiting will lessen the spread is ridiculous. These are wild creatures that are adaptive to change. They will continue to congregate into herds of 50 or more, stay in herds of 5 or less but one thing is for

certain, the constant grooming, licking, smelling, saliva swapping with one another will never be stopped.

In closing, we will not prevent this whether there is baiting or no baiting. Agriculture, food plots, cropland, watering holes are all a necessity to keep our wildlife alive and thriving in the state of North Dakota. As landowners and sportsmen, we care about conservation and our rights. As a parent and avid hunter, I care about the next generation and our youth. Why should baiting be controlled in one area and not another, hell, why should this even be talked about. There is no better sight then watching a herd of deer pour out of the trees to feed in an alfalfa field for the evening, turkeys flying out of the roost to a fresh cut corn field as the sun comes out, or a big bull moose roaming the prairie in the fall looking for a mate. These are all examples of things that my family can witness on most given days where we live. I would like to thank you for taking the time to read this and would welcome any opportunity to further the discussion on this issue. Please vote "YES" on HB 1151.

Sincerely,

Lee Zimmerman

Towner, ND 58788

leez123@gmail.com

701-340-5968

In support of HB1151, My name is Kristi Zimmerman and I support this bill!

I am in full support of Bill HB 1151 in favor of keeping hunting rights. Hunters are losing their rights due to a disease that has been around for over 20 years and has very few confirmed deaths due to this (CWD) disease.

By not supporting this bill many people who love to hunt, but are restricted in their time are not going to be able to enjoy this great sport. Kids, veterans, older individuals, and people who just do not have time to go out and work the fields and pastures for their hunt will not be able to hunt anymoe.

If this right is taken away from hunters, what right is next?

Again I am in full support of Bill HB 1151

Peter Dobitz Dickinson, ND

2023 HB 1151 Testimony

Authored by: Tim Sandstrom

Dear Committee:

I've edited my original House committee testimony a bit and extended it with a photo for reference.

I support HB 1151's intent to retain a hunter's ability to hunt over food sources. In my original testimony I opened the door for compromise where I asked in support of HB 1151 the North Dakota Game and Fish (NDGF) retain reasonable ability to limit how wildlife is "baited" for the purpose of hunting.

I understand the NDGF's concerns with chronic wasting disease (CWD). I share them. The approach has continued to be a debate among many in this nation's game and fish departments, landowners and hunters. To this date, there is no right answer from what I can gather.

So to me it goes to perception.

The passionate perceive by feeding birds, deer or other wildlife they are providing for them. We can debate that topic another time! But no NDGF rules nor the legislated law prohibit people from feeding wildlife.

Then there are those that perceive hunting deer or other game over "bait" as unethical. I'm not going to argue against the compromises that have been amended to the original version of the bill. But I am going to comment that by the compromises agreed upon between opponent and proponent the NDGF's intent (or those persuading) the banning of baiting was never solely based on disease. In fact, I'd argue it is an elevated means to legislate ethics. Why must I inject that opinion you may ask? It's because we must separate emotion from reality.

It cannot be debated deer congregate "naturally" at all times of the year. CWD isn't just about congregation but it's often the main talking point of those against baiting or those for baiting. So let's agree...

- Bachelor herds of bucks travel late spring and summer months together.
- Does with fawns travel together for most of the year.
- In the fall to winter months deer congregate in the 10s to 100s (i.e., rut, cold weather).

I found this series of quotes provided by the Fargo InForum interesting where Wildlife Division Director Casey Anderson stated, "Disease is spread by urine, saliva and feces," Anderson said. "It's more likely to be spread when they're pulled together in times of year when they normally aren't."

I'm not the biologist here so this is my perception and translation. Mr. Anderson is stating "hunting over bait" is a means to pull deer together. I can concede to a point, but many things/circumstances pull deer together as I noted above. However, when baited deer are said to be more prone to CWD infection versus "naturally" congregated I struggle to accept. Let us go back to the definition of bait or "supplemental feeding" as the bill describes. A bait "pile" is more prone to CWD transmission than a bait (food) plot, a hay yard, abandoned bales, other food sources or a water supply?

Here's a real-world example available to anyone's eyes just outside Minot as you read this:

On my way home I drive by four alfalfa bales. Three remain in an alfalfa field assumed abandoned (never loaded onto a trailer and hauled to a hay yard). The other bale sits upright in my neighbor's yard for the purpose of feeding wildlife. Remember where I mentioned emotion versus reality in my opening remarks?

Every night the past several months there's been multiple deer at each (up to 20 at a time) exposed to urine, saliva and feces.

Again, per the above NDGF perception we are told CWD spread is not as likely for the abandoned bales or the do-gooder feeding wildlife. But if my neighbor instead had a bait pile we've now entered the realm of disease transfer being elevated to "it's more likely."

I simply cannot support that perception and do not support the NDGF's decision to differentiate on the hunter utilizing a bait pile versus a bait plot or natural food or water source.

Figure 1 below is a photo of the abandoned bales outside the city limits of Minot taken just last night. They have been there since the baler dropped them in July. Circling back to the compromises amended into HB 1151 the hunter has agreed he or she will restrict themselves from supplementally baiting deer from August 25th through January 7th each year. Additionally, the hunter will ensure they reduce their supplemental feed amount to 50 gallons or less and set back any "bait" 150 feet from another's property line if do not have written permission otherwise.

I'm not trying to be difficult; the opponents and proponents worked a resolution they agree on. It's just hard to comprehend why I can build a structure within 20 feet of my neighbor's property line without asking permission. Or understanding the difference why I can plant a foot plot up to my neighbor's property line and hunt deer without permission. Or how I could hunt the alfalfa bales in Figure 1 which are dangerously close to 150 feet of my neighbor's property line. The list can go on. But that's the slippery slope of legislating and/or regulating ethics...

I just hope the deer in Figure 1 realize that's a no CWD zone! Maybe if masks worked, we could invent some for deer!

Regardless, please support a do-pass for HB 1151.





Source for photo in Figure 1 – By Tim Sandstrom taken with his phone.

Source for Casey Anderson Quotes - Fargo Inforum: Bill would stop officials from banning deer baiting in North Dakota

I AM a lANDOWNER IN ND AND Support 1151



Attn: Senate Committee on Energy & Natural Resources

Re: House Bill 1151 – Deer Baiting

Date: March 15, 2023

Position: Oppose

Honorable Members of the Senate Committee on Energy & Natural Resources,

I write to you today on behalf of the Congressional Sportsmen's Foundation in opposition of House Bill 1151, a bill that would strip the North Dakota Game and Fish Department of its ability to promulgate hunting rules. Specifically, the bill would bar the department from adopting any policy that prohibits the baiting of deer for hunting. In North Dakota, the Game and Fish Department (GFD) is the authority best-equipped to make science-based wildlife management decisions and should accordingly retain the ability to promulgate rules pertaining to hunting and wildlife generally. To ensure that the GFD may continue to manage North Dakota's wildlife resource through science-based principles, I respectfully urge the honorable members of this committee to oppose HB 1151.

Founded in 1989, the Congressional Sportsmen's Foundation (CSF) is the informed authority across outdoor issues and serves as the primary conduit for influencing public policy. Working with the Congressional Sportsmen's Caucus (CSC), the Governors Sportsmen's Caucus (GSC), and the National Assembly of Sportsmen's Caucuses (NASC), CSF gives a voice to hunters, anglers, recreational shooters, and trappers on Capitol Hill and throughout state capitols advocating on vital outdoor issues that are the backbone of our nation's conservation legacy.

Wildlife management decisions in North Dakota should be science-based, and the Game and Fish Department is unequivocally the best-equipped entity in the state to make those decisions. The GFD is comprised of capable wildlife biologists that understand the ever-evolving threats to wildlife species and can use this extensive knowledge to make timely adjustments through administrative action. It is imperative that the North Dakota Game and Fish Department, the agency specifically established by this legislature to protect the storied fish and wildlife resources of North Dakota, does not have their decision-making authority legislated away. I respectfully urge the honorable members of this committee to oppose the passage of House Bill 1151, thereby retaining the Game and Fish Department's authority to practice sound science-based wildlife management. I thank you for the opportunity to provide comment on this bill and welcome any questions that you may have.

Sincerely,

Robert Matthews

Robert & Matthey

Senior Coordinator, Upper Midwestern States Congressional Sportsmen's Foundation

the second special second second

rmatthews@congressionalsportsmen.org | 517-210-2890

Chairman Patten and members of the Senate Energy and Natural Resources committee:

I am writing in **Opposition to HB 1151** and ask that you vote **Do Not Pass**.

My name is Robert Newman. I am writing as a private citizen, but I am a wildlife biologist and ecologist on the faculty at the University of North Dakota with experience conducting research on wildlife disease.

I am also the President of the North Dakota Chapter of The Wildlife Society. You all will have received an email from our lobbyist today (3/15/2023). Please read it. Read especially the rebuttal of the claims people supporting the bill are making. None of the claimed mitigating factors are accurate. CWD is already in the state and spread would be devastating and long-lasting. The risk is very real! And it is not the only disease risk faced by deer.

The bill will create a very dangerous situation for deer populations in the state. I know there is a lot of support for the bill, with a range of reasons given. I also know that NDGF strongly opposes the bill. Everybody's opinion matters, but here's the thing some of those opinions are based purely on personal beliefs and desires, whereas others are aware of the huge risk the state would certainly be taking, if the bill passes, based on the science of disease transmission.

Here is why I side with those opposing the bill:

We are risking the future of deer populations and of hunting opportunities in the entire state if this bill passes. Deer move around, you cannot isolate the increased risk of disease transmission resulting from unnatural congregation. NDGF is a well-respected agency staffed by knowledgeable and experienced professionals. ND is fortunate to be one of the states that has the wisdom to have a state wildlife veterinarian on staff, and an excellent one at that! Please listen to his testimony. If you disregard the expertise of NDGF, the responsibility for the fate of deer and related wildlife (elk, 2 species of deer, moose) is on the legislature. Why bother even having a state agency with real pros if you do not take advantage of it?

This is not a personal matter, nor should it be a political one, unless you don't care about the future of wildlife in the state. Given the importance that hunting and wildlife viewing has in the state both because of heritage and economic impact, I don't think you would willingly put future opportunities in jeopardy. That only leaves one choice:

I urge you to vote Do Not Pass on this ill-considered bill.

Respectfully, Robert Newman, Ph.D.

Dear Committee Members,

My name is Jeff Jacob from Minot ND. I am a life long sportsman of this state for the last 42 years. I eat sleep and breath bowhunting. Most of life sporting life in ND has been in the deer woods of ND. Spending countless hours and money on the sport I cherish. Which is Deer hunting.

I have been feeding wildlife for the past 20 years in ND. This includes food plots, placing corn or feed, along with minerals. I love being in the woods and seeing all the wildlife that benefits from this. From songbirds, to Turkeys, Squirrels and every other critter that lives in the woods. With today's laws, I continue to feed. But when it comes time to hunt it's not legal. Only my plots can be hunted. The deer herd up more in my plots than they do on the supplemental feed stations. Deer are social animals; they spend their whole lives close to each other. They swap body fluids from the day they are born to the last breath they take. It has been shown in our state and others that the feeding of wildlife has not slowed down the spread of CWD. States with the longest ban on feeding wildlife, have the highest rate.

Please Vote YES on bill 1151.

For the last 20 years we have been hearing about CWD. Testing has been done in the state for the same amount of time, with over 40,000 animals tested with 96 positives. Which 95 of them were healthy hunter harvest deer. 75 percent of these animals were Mule Deer. Mule deer very seldom will touch a bait pile of supplemental feed. This is less than 1 percent of the total animals tested. Our state continues to monitor CWD though the testing of animals!!! Why can't we start spending our money on RESEARCH. We know that CWD is present, Lets take that money and research it!!! As a state we are no closer to finding a solution, then we were 20 years ago. Private companies have spent millions of their own money on research to find a solution. As a state we should also do the same.

As time passes in the state of ND, it's getting tougher for the hunter to find a place to hunt. Some people do have access to rich land full of game. Most do not!!!! The feeding of deer gives the everyday hunter, a chance. He has a small property that somebody let him hunt, and with placing feed, it gives him a chance to see a deer, that normally wouldn't be there.

In the last 2 years I have gotten involved with an organization called Prairie Grit. They give less fortunate individuals a chance to do the sporting events of there dreams. There's a group of kids that love to hunt. **BUT** they can't go hunting like you are I can. They take them deer, and turkey hunting in ND. They take them antelope hunting in Wyoming. In the last year I have gotten involved with taking them to Manitoba to hunt black bear. All these hunts have one thing in common. They are controlled hunts!! We get the animals to come to them. Pretty tough to move through the land scape pushing a wheelchair. Please don't take this away from these kids. To see their face when they are successful is something you will never forget.

Inclosing I would like to say! In no way should ethics be brought into this. Nobody has walked in the same shoes. Everybody has their own limitations and beliefs. Thanks for reading my testimony. I hope you vote **YES** to Bill 1151.

Jeff Jacob

616 18th st SW

Minot ND 58701

My name is Wes Simmons From Minot ND, I am writing in support of HB1151. There is no evidence that banning baiting has any effect on cwd. If banning baiting helps at all why can people still feed for any reason other than hunting? I feel these rules intentional or not are meant hurt sportsmen and women, to be frank is seems more political than anything. Deer feed together and in the same spots without baiting as they are heard animals so banning baiting will not make a difference and again there is no evidence that is will. As a sportsman a hunter and conservationist I write this in support of HB11511.

Please pass HB1151, sincerely Wes Simmons

16 January 2023

Greetings,

I am writing in regards to HB 1151. I believe the ND Game and Fish has implemented a ban with the though "we just need to do something". We really do not know if banning baiting for hunting would stop the spread of CWD.

I can tell you that without this tool, recruitment of young hunters and women will be much more difficult. The ability to take my kids out at a young age (8 years old) to sit in a blind and hunt deer would be nearly impossible. Just seeing the wildlife that visit that small pile of corn or apples is a wonder in its itself. The memories made with my children in the blind are absolutely some of the best times of my life.

Thanks for your time.

Chad Clapper

Senate Energy and Natural Resource Committee

RE: HB1151--In support

I am in support of HB1151. If one wants to bait during hunting season, they should be able to. If one does not want to bait, then don't.

Mikayla Obrigewitch

RE: Requesting your opposition to HB 1151

My name is Steve Goroski and I want to express my opposition to HB 1151 and the intended actions of this bill. I am a lifelong sportsman of North Dakota and value the opportunities which hunting, and fishing allow in ND. My passion for the outdoors has allowed me to work with the ND Game & Fish on many issues the past 40 years.

North Dakota House Bill 1151 would severely undermine the North Dakota Game and Fish Department's (NDGF) authority and ability to manage deer and deer hunting with the best-available science. Specifically, the bill removes the authority from NDGF to issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting. The bill, and the removal of management authority from NDGF, is a direct attempt to undermine chronic wasting disease (CWD) management efforts in the state.

The North Dakota Game and Fish Department recently reported 24 deer from the 2022 hunting season tested positive. Single positive deer were also found in four new units – 3A3, 3E1, 3F1 and 4F – where the disease had not been previously detected. The department is encouraged the number of cases was on par with results from the 2021 hunting season when 26 cases were found. This stable trend is a good thing and supports the current management approach being used by the Game & Fish department.

Any time there are 2 sides to an issue, it is very hard for a governing board to come up with something which satisfies everybody. We need to advocate for the long-term health of the resource the NDGF is trying to protect for future generations of hunters in this state. HB 1151, and the removal of management authority from NDGF, is a direct attempt to undermine chronic wasting disease (CWD) management efforts in the state. We need to advocate for the long-term health of the resource the NDGF is trying to protect for future generations of hunters in this state. The NDGF has used baiting bans as a management tool to reduce the risk and spread of CWD.

The practice of baiting and its role in deer management have grown in terms of controversy and complexity in recent years. Baiting increases density around a single food source and therefore increases the potential for direct and indirect contact among wildlife specifically deer. The NDGF has used baiting bans as a management tool to reduce the risk and spread of CWD. The supporters of this bill cannot legitimately prove that these efforts have NOT been significant at reducing the spread of CWD in North Dakota.

Wildlife management decisions, and especially disease management decisions, should remain in the hands of professional wildlife managers. HB 1151 would result in a massive setback for disease and deer management in North Dakota. HB 1151 intentionally and irrationally removes this management practice from the authority of NDGF. I ask you to vote NO on HB 1151 and keep management of North Dakota's wildlife in the hands of the professionals and biologists. Thank you for your time and consideration,

Steve Goroski

Concerned Sportsman of ND Bismarck, ND 58501 (701) 391-2665 Testimony in opposition to HB 1151 Andrew McKean, P.O. Box 1183, Glasgow, MT 59230

Phone: 406-263-5442

Email: montanamckean@gmail.com

My name is Andrew McKean, and I live in Glasgow, Montana. I'm a lifelong hunter, the Hunting and Conservation Editor for Outdoor Life magazine, and a former Montana Fish and Game Commissioner. I'm also a national board member for the Mule Deer Foundation (MDF), but am writing you today in my capacity as an individual, not as a representative of the MDF.

Although I am not a resident of North Dakota, and as such fully expect you to dismiss my testimony in opposition to HB 1151, I would like to provide my experience with Chronic Wasting Disease, and encourage you to avoid the fate of your neighbors to the west.

Montana had been bracing for the arrival of CWD for years before it was actually detected here, in 2017. We expected it to arrive either from Wyoming, where it's so widespread that it's become endemic, or from Saskatchewan, where the prevalence of CWD among mule deer is the highest of anywhere in North America. Once it was detected, and Montana Fish, Wildlife & Parks started intensively sampling hunter-killed deer and elk, we found it in many more places, including high concentrations along our common border with Canada.

I mention this because of the similarities between Saskatchewan and North Dakota. Both allow for baiting deer, which has led to unnaturally high concentrations of animals and accelerated the spread of CWD. Saskatchewan has followed a practice of not managing CWD, which has caused infections to spread far beyond initial "hot zones" to include most of the province. More notably, for me, it has spread to the northern tier of counties in Montana, which share deer with Saskatchewan. The prevalence of CWD in these Montana counties now exceeds the threshold for drastic disease-management action, which can include depopulation of deer in these areas.

Looking back on our experience, I wish we had been more persuasive with our neighbors about addressing CWD early on. I wish they had prohibited baiting, deer farming, and other practices that cause unnatural concentrations of deer. The main item of HB 1151 that I oppose is taking away that tool from North Dakota Game and Fish Department.

Chronic wasting disease is a complex, divisive issue, and I don't pretend that any one action will stop its spread. Instead, I believe it takes many small changes in our management in order to slow the spread of the disease. One of those is to give the authority to professional wildlife managers to apply best management practices, an authority that you are removing with the passage of HB 1151.

It also occurs to me that you are setting your wildlife agency up for failure. I can foresee with some clarity a future in which CWD becomes so widespread and so prevalent in populations that it will be impossible to slow. I hope legislators who vote for HB 1151 have the courage to

stand up at that time and tell the sportsmen and women of North Dakota that, when they had the chance to do something proactive about CWD, they actually hastened its spread.

I am in support of SB 1151 . I have hunted in North Dakota for several years (bow hunting) and have been able to bait except the last two seasons. There is no common sense used for the baiting ban. Deer eat , fight , lick each other , breed and travel together. Stopping baiting during hunting season does nothing to stop or slow down CWD. NDg/f have no valid reason for letting people bait to watch deer and take pictures but opening day of deer season it's illegal to bait. Sounds like they have an agenda that they can do whatever they want and no one can question them. They have so called studied CWD for years with nothing to show for it , other than kill the infected animals. They haven't worked or listened to the ranchers, farmers or hunters . This bill is exactly what is needed and if smart people listened to all the testimony from both sides and didn't let politics get in the way it would pass.

Concerned Hunter

Joseph DeBuck

Testimony in support of HB1151

Mr Chairman and the members of the Senate Energy and Resources Committee,

I am writing to encourage you to support this bill. I have read numerous reports on this subject and do not agree with the North Dakota Game and Fish. Yesterday I observed a herd of deer feeding together closely in a stubble field. There were more deer in that one spot than there were at one of my bait stations several years back when it was legal for us to do it. Please vote yes on HB1151 and thank you for your time.

Darrell Olson 1125 23rd St NW Minot, ND The North Dakota Bowhunters Association (NDBA) has the following comments on House Bill 1151 that seeks to prevent any agency from banning baiting for the lawful hunting of deer. That would include preventing the North Dakota Game and Fish Department (NDGF) from implementing science-based restrictions designed to help reduce the spread of Chronic Wasting Disease (CWD) in North Dakota ungulates including deer and elk in and near units where CWD has been found.

CWD is an infectious and always fatal disease spread by deer which have the disease. CWD has continued to expand across the country and North Dakota. There are still many unknowns with CWD, but like all infectious diseases, putting distance between animals with the disease and those without it, helps reduce the spread of the disease. That is why we don't sit next to people who are sniffling and coughing, because we know it helps reduce the chance of us catching a common cold. If it would kill us, we would move as far away as possible. When CWD is identified in a Deer hunting Unit, banning baiting is one of the steps in the NDGF strategic plan to reduce the spread of CWD by putting distance between animals.

NDBA does not have a stance on the ethics of baiting as our members are diverse and some engage in lawful baiting, and some do not. We all want to see the deer herd managed in the way most beneficial to the resource. If the deer herd is significantly reduced by disease or mismanagement, it would have a significant impact on our members to hunt deer in this state.

The North Dakota Game and Fish Department holds Spring/Fall Advisory board meetings at multiple locations across the state to allow open public input. In addition, the NDGF professionals are always open to listening to comments and input on decisions affecting management of our game populations. After considering such input, the NDGF department attempts to apply the science and best management practices to their stated mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

NDBA has seen loss of hunting opportunity, including outright hunting bans, in many other states when game management is left up to their popularly elected officials influenced by well-funded outside sources. NDBA believes that game management decisions are best left to professional, science-based game and fish departments like the NDGF Department after considering public input. Passage of this bill would prevent the North Dakota Game and Fish Department from implementing science-based restrictions designed to help reduce the spread of wildlife diseases in North Dakota. For the above reasons the North Dakota Bowhunters Association (NDBA) opposes House Bill 1151.

Steve Goroski



Steve Goroski Board President North Dakota Bowhunters Association www.ndbowhunters.org

Testimony in Favor of Bill 1151

Senate Natural Resources Committee

My name is Kimberly Thompson from Antler ND. I am speaking in favor of Bill 1151. Please consider my perspective as someone who is very concerned with the consequences of your decision regarding this bill as it relates to my families' hunting traditions that have been anticipated and treasured for decades and also the ability of the citizens of this state to have a voice in the regulations of those traditions.

This very bill is an example of how unelected government agencies can be held accountable and questioned on their proclamations.

Please consider the following questions:

Is it possible that the data of science can be manipulated, skewed or conveniently ignored to support the agenda of the "experts"?

Would we the citizens have any effective recourse to challenge these dictates and proclamations if our voices are not respected.

If in unit 3F2, hunting over bait has been banned for over a decade and the number of deer with CWD is steadily increasing can you continue to claim there is a cause and effect.

If the NDG&F fund the planting of food plots for deer and as a result, hundreds, yes, hundreds of deer congregate in a small acreage, is that considered to be a factor in the transference of CWD?

Is it irrefutable and definitive science regarding CWD that is being used by the experts or is it the "interpretation" of chosen data.

The consequences are significant. They are reflected in my concerns regarding the decades of my familes' hunting traditions being impacted. There is nothing more rewarding then to see the relationship that my brother has fostered with his children while bow hunting. First his sons and now his daughter. Sitting for hours at a time, day after day waiting patiently, and watching the natural habits of many animals and birds. This time spent together is priceless. The result is priceless. My nephews and my niece are outstanding young people that I am very proud of. Respectful of nature, all life and the ethical aspects of hunting.

These bow hunting opportunities have been generously extended to others also. Many young people, older people, friends and new acquaintances have had a successful and memorable experience bow hunting on our farm/ranch. They are also appreciative of the deer they harvest to use the venison for their families. By achieving a targeted and successful shot the deer is quickly found and the meat is not spoiled by the deer running a long distance. This is a significant benefit for many families nowadays.

Please place these concerns amongst those you seriously consider. I urge you to vote in favor of Bill 1151. Thank you very much for your time you have generously given.

Senate Natural Resources Committee members,

My name is Wyatt Stanley and I've been an avid outdoorsman in North Dakota for the last 20 years. My first deer ever harvest was with a bow over a bait pile. That bait pile was a tool that I used at a young age to be able to take an ethical shot, at a known yardage I had been practicing at.

I have helped 8 youth fill their tags the last couple years and would like to continue to do so, and if baiting is a tool I can use again, I would like to use our stands to help get youth into archery hunting. I feel like after helping kids practice shooting, and then being able to place a bait pile at that same yardage, it is a very valuable thing to keep kids entertained and help them take that ethical shot.

Deer are naturally herd animals... between spending time in bachelor groups in the summer, or congregated in the winter, or using the same food plot or scrape as other deer, they have contact with a number of other deer year around, and the data that has been released by the department does not back that a baiting restriction has helped slow the spread.

For these reason I Support HB 1151.

Thank you,

Wyatt Stanley

RE: Opposition to HB 1151

North Dakota House Bill 1151 would severely undermine the North Dakota Game and Fish Department's (NDGF) authority and ability to manage deer and deer hunting with the best-available science. Specifically, the bill removes the authority from NDGF to issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting. The bill, and the removal of management authority from NDGF, is a direct attempt to undermine chronic wasting disease (CWD) management efforts in the state.

The North Dakota Game and Fish Department recently reported 24 deer from the 2022 hunting season tested positive. Single positive deer were also found in four new units – 3A3, 3E1, 3F1 and 4F – where the disease had not been previously detected. The department is encouraged the number of cases was on par with results from the 2021 hunting season when 26 cases were found. This stable trend is a good thing and supports the current management approach being used by the Game & Fish department.

Any time there are 2 sides to an issue, it is very hard for a governing board to come up with something which satisfies everybody. We need to advocate for the long-term health of the resource the NDGF is trying to protect for future generations of hunters in this state.

The practice of baiting and its role in deer management have grown in terms of controversy and complexity in recent years. Baiting increases density around a single food source and therefore increases the potential for direct and indirect contact among wildlife specifically deer. The NDGF has used baiting bans as a management tool to reduce the risk and spread of CWD. The Association of Fish and Wildlife Agencies (AFWA) sites that the prohibition of baiting or feeding wild deer as a best management practice for the prevention of CWD introduction and establishment.

Wildlife management decisions, and especially disease management decisions, should remain in the hands of professional wildlife managers – not lawmakers. HB 1151 would result in a massive setback for disease and deer management in North Dakota. HB 1151 intentionally and irrationally removes this management practice from the authority of NDGF. I ask you to vote NO on HB 1151 and keep management of North Dakota's wildlife in the hands of the professionals and biologists.

Thank you,

Michael Goroski

ND Sportsman

Chairman Patten, Honorable Committee members,

My name is Dave Brandt and I am one of your constituents who lives along the James River north of Jamestown. I am writing you to urge you to vote no on HB 1151.

This is a bad bill that would take away a vital tool from our Game and Fish agency to manage for minimizing disease potential in our big game populations. Whereas big game such as deer do naturally congregate during part of the year, typically after gun season, baiting prior to and during season (and often done year-round) artificially extends that period when they are in close proximity and therefore logically increases their potential exposure to transmissible diseases such as CWD and brucellosis. This bill is being pushed by a minority of hunters who only have their interests at heart which is evidenced by the submitted testimony of practically all ND sportsmen and women's groups against this bill, many of which I am personally a member. Even though I am one, we as hunters do not even make up 30% of ND's citizenry, and our G&F is mandated to manage the state's wildlife for all citizens. The minority of a minority should not dictate what our trained wildlife professionals decide is in the best interest of ND's big game herds.

Please vote NO on this bill which would hamstring those who are best qualified to make decisions pertaining our Public Trust wildlife resources. Thank you for your time and attention to this matter.

Dave Brandt

Buchanan, ND

Good Afternoon.

I am writing this in the support of feeding big game wildlife, small game wildlife, and any other wildlife that would like to eat at my buffet.

I am and will always be a hunter. I have hunted animals since I can remember with my dad's daisy BB he had as a kid. I have always Enjoyed the outdoors and will continue till I die, teaching the youth and also new outdoors people.

I did a speech in high school in 1987 or 1988 (I have looked for this speech and can't find) back then CWD was about 25-30 yrs since it was discovered and no one knew what to do so they just said no baiting, no moving bones, no moving brain matter, no bout a lot of stuff Because the big game animals will all be dead in 50 yrs if Game and Fish don't do anything about it. Well is it 50 yrs later and we still have Deer, Elk, Moose or any other animal that can infected with so called CWD, and what is weird is that the numbers in many of these So called contaminated areas are growing. So where is the idea of all these animals being dead now.

Feeding of wildlife should be the right of the land owner or private property owners. These are the people that will help save the big game animal by feeding them the minerals that these animals need to survive winters, rut, or any other stress these animals can have. The way Game and Fish have written their law is that only big game animals that get this CWD is by hunters, everyone in the world that feeds these animals but doesn't hunt that is ok. There are many many studies out there that have proven feeding certain minerals can help stop Or slow the spread of CWD in animals and I'm sure you have heard the private deer farms that have paid a lot of money for this to help them continue making a living. There are articles from DR. Deer, Keith Warren, Ted Nugent and others out there. But the Game and Fish don't believe this they don't even try to figure out a cure they just test and test and test already dead animals that have died from a gunshot, Car accidents, and other unnatural things but not from CWD itself. There is not one proof of a big game animal that has straight up died from CWD, they say one near Williston but I believe that deer was old had no teeth and was a bad winter so she finally died from starvation. I would think Game and Fish would get more involved in the treatment of this disease than just testing this disease like have a 7-10 yr study to see if some of these minerals do really work, try some of the testing of live animals to really get an idea of this disease. The ND big game biologist isn't the man for this job because he throws out a lot of the tries to say these results from game farms and other very well know doctors of big game animals. Calling some of the minerals bleach what in the world his is agenda? I believe it is just to collect money from government. Game and Fish get a lot of money from government funding for CWD but never use it all on it only certain percent of it really goes to CWD treatment and testing if that isn't the case maybe all of us hunters need to see where it goes or doesn't go.

There is a lot of stuff being said about feeding animals for hunting purposes if it is ethical or not. The way I look at it is that the people that were here millions of yrs ago also feed animals for the purpose of killing them for meat, fur, and other usages of all body parts. So to me ethics as nothing to do with it. If people say that it isn't ethical then they need to quit using compound bows, long range rifles, metal broadheads, carbon arrows they need to make their own bow out of willows and carve their own arrows chip their own broadheads use guns that only shoot 50-75 yards. Hunting over feed is a great way to take out the oldest the weak or wounded animals. It is also a way to feed them with proper minerals so they are healthy the healthier the animals are the less amount of disease they get. As a hunter my main concern is a healthy animal heard for birds to moose and there are minerals out there that will help stop the spread of this CWD and help the animals. WHY is that bad to help the animals as a hunter? You would think that game and fish would be on board with this they say they are for the animals but truly they are not if we can't help them be healthy. We need to get together on this as sportsmens for the common good of the wildlife. Right now it is a fight for us hunters to save the health of the animals to keep hunting them for a group that just wants to collect money for government funding.

My final thoughts on this. Game and fish show numbers of new hunters coming in well with todays youth they need something to keep their concentration going for sake they can't even watch a baseball game, anymore because it is to long. Hunting over feed is a way to keep the attention of young hunters and get them into the sport. Well dang I use a minnow or worm to catch a fish and I'm sure they get sick and spread infection between them also if they try eat the same bait. There are 2 reasons to pass this bill our youth and the health of our animals as hunters we are truly the ones that care about the health of a herd, flock, pack, etc. without us hunters there would be no animals we are the true managers of wildlife.

Thank you for the time
Lane Johnson a sportsmen

I am favor of SB1151. I am against the baiting ban for deer during open hunting season. The whole reasoning behind CWD is false and not completely scientifically proven. Deer and wildlife comingle and eat together all year long. Being able to feed deer is not a factual reason behind CWD. CWD could be transferred in many other ways. With harsh weather and early winters, a lot of deer rely on alternative food sources to survive. It absolutely does not make any since to be able to feed deer only up until hunting season starts. Obviously, this creates and advantage for hunters in a since, but banning baiting during hunting season is in no way going to stop or eliminate any so-called wasting disease. I am in favor for feeding and baiting year around.

To whom this concerns,

I am taking a few minutes to write up a testimony in support of HB 1151.

This bait ban has yet to directly affect me as it's not in my unit but I can see the writing on the wall. I know that's just a matter of time and a personal agenda for some of the employees to see baiting gone will effect my kids and my bowhunting.

I will make this short and sweet....If you take away baiting in my opinion you take away alot of opportunities for the average blue collar guy in ND. We have seen how hunting is slowly shifting to a rich mans sport. People with lots of land will probably still have plenty of opportunities and possibly even more with a state wide bait ban. People who don't own land will struggle to kill whitetails in ND. Not to mention this will eliminate a lot of disabled people from the bow hunting sport entirely. I have a cousin that is limited to a wheelchair and two years ago when his unit was banned from baiting he sold his archery equipment. He is on disability and doesn't have a rich dad or farm land to hunt. He was extremely happy to take a doe or first buck that would come in yearly until he was told he would have to "sit on a trail or pattern deer" because baiting was no longer a tool available to him. I would like to see anyone try who says people with disabilities should trudge around in a wheelchair in 6" of snow because baiting is no longer an option to allow them to hunt.

I work hand in hand with Prairie Grit on some outdoor activities, the banning of baiting will eliminate these kids opportunities. Period!!

At a meeting last year in Minot, I saw the biologist out of Turtle Lake get extremely frustrated when asked about baiting. After the meeting I approached him to try to have a 1 on 1, he stated to me "kellen my kids will learn to hunt without bait and even if it was legal I would never let them hunt that way anyway" To me that sounded a lot like ethics and not like science.

While I type this our neighbor who is a rancher, located south of Minot, has reached out in prior years for assistance in winter for hay... Why??? Beause currently he has 300-500 deer nightly in his haystacks. We are supposed to follow the Game and Fish's recommendation to ban baiting because they believe ten pounds of corn and 3-4 deer will spread CWD but a person with a bird feeder or a Haystack in the winter won't? Herding happens every winter, this isn't a new phenomenon.

Why eliminate or limit our rights because someone has a "ethics" issue.... I wish we would release all Northern Pike over 40 inches but does that mean the rest of the state should??

Thank you for taking the time to read my testimony and I urge you to vote yes on HB1151.
Respectfully submitted,
Kellen Latendresse Minot, ND

The North Dakota Bowhunters Association (NDBA) has the following comments on House Bill 1151 that seeks to prevent any agency from banning baiting for the lawful hunting of deer. That would include preventing the North Dakota Game and Fish Department (NDGF) from implementing science-based restrictions designed to help reduce the spread of Chronic Wasting Disease (CWD) in North Dakota ungulates including deer and elk in and near units where CWD has been found.

CWD is an infectious and always fatal disease spread by deer which have the disease. CWD has continued to expand across the country and North Dakota. There are still many unknowns with CWD, but like all infectious diseases, putting distance between animals with the disease and those without it, helps reduce the spread of the disease. That is why we don't sit next to people who are sniffling and coughing, because we know it helps reduce the chance of us catching a common cold. If it would kill us, we would move as far away as possible. When CWD is identified in a Deer hunting Unit, banning baiting is one of the steps in the NDGF strategic plan to reduce the spread of CWD by putting distance between animals. NDBA does not have a stance on the ethics of baiting as our members are diverse and some engage in lawful baiting, and some do not. We all want to see the deer herd managed in the way most beneficial to the resource. If the deer herd is significantly reduced by disease or mismanagement, it would have a significant impact on our members to hunt deer in this state. The North Dakota Game and Fish Department holds Spring/Fall Advisory board meetings at multiple locations across the state to allow open public input. In addition, the NDGF professionals are always open to listening to comments and input on decisions affecting management of our game populations. After considering such input, the NDGF department attempts to apply the science and best management practices to their stated mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

NDBA has seen loss of hunting opportunity, including outright hunting bans, in many other states when game management is left up to their popularly elected officials influenced by well funded outside sources. NDBA believes that game management decisions are best left to professional, science-based game and fish departments like the NDGF Department after

considering public input. Passage of this bill would prevent the North Dakota Game and Fish

Department from implementing science-based restrictions designed to help reduce the spread

of wildlife diseases in North Dakota. For the above reasons the North Dakota Bowhunters

Association (NDBA) opposes House Bill 1151.

Dear members of the natural resource committee please vote yes on HB1151. I am a young man who lives and breathes the outdoors. I shot my first deer at the age of 9 over a bait with my dad. Now my dad's eye sight is starting to fail and I find myself taking him now like he took me. I respect the land and the wildlife. In our harsh winters in our great state of ND our deer need every advantage they can get. This winter is an excellent example of why we should be able to help out the wildlife. If a disease is here the banning of baiting will do nothing to stop the spread of it. The deer are in huge bunches all congregated together as I type this. Please pass the bill. Our game and fish needs to use more common sense and not follow in suit with MN and other anti baiting states. Thank you Grant Meyer

Please vote yes on HB1151 Thank you Kiefer Finley

To Whom it may concern

I am writing to encourage the committee to offer up the recommendation of Do Not Pass on House Bill 1151. The North Dakota Game and Fish is charged with managing the deer in North Dakota for all residents of the state, weather they hunt or not. Removing their ability to ban baiting of deer as a tool to combat CWD and other diseases, will only benefit a small portion of the population. I believe the NDGF biologist are best suited to make this decision, based on the best science available. In 2020 we were encouraged to wear masks and not gather together because of covid. CWD is spread in much the same way, close contact with an infected individual. Unlike covid, CWD is always fatal. Creating bait sites and artificially congregating deer together in areas that CWD is present is not a good idea. The latest testing results from last years deer head collection by the Game and Fish shows that the number of positive results for CWD is stable. Mean while the number of hunting units is increasing. Again, I urge you to let the North Dakota Game and Fish manage the deer herd in our state with the best science available, and recommend a Do Not Pass for HB1151. Thank you for your time.

Sincerely

Dirk McWhorter

Testimony support for HB1151

Dear Senate Energy and Natural Resources Committee

I am in support of this bill because it can improve the odds of hunters having success and getting good organic meat for the freezer. I also strongly believe that baiting is a good tool to help youth harvest their first deer and allows for a clean and ethical shot opportunity. Baiting/feeding also provides nutrition that helps deer and other animals survive and stay healthy throughout the winter. Please vote yes on HB1151.

Thank you for your time and consideration,

Otto Williamson Minot, ND Senate Natural Resources Committee members, my name is Jamie Thompson a seventeen year old highschool student from Antler ND. I am here today testifying in favor of HB1151.

I was introduced to the sport of archery at an early age at our local bow club. After several years of becoming proficient my dad and brothers introduced me to the sport of bow hunting. We use baiting as a tool to position the deer for a clean ethical shot at a known yardage I am proficient at as an archer. That is the simple mechanics of bow hunting that has led to two successful archery hunts over the years, but the sport of bow hunting is so much more.

Being part of the archery community growing up has been a huge part of my life. I have learned that with one arrow you can take the life of an animal. With that being said, becoming a proficient archer was a top priority of mine. As the years went by I was finally old enough and ready to invest in a youth bow tag, which came with a lot of responsibilities. Not only trying to find the time I could put into sitting in the stand, but to practice and stay adept at shooting my bow. As the years went on and I slowly got more involved in school activities and sports, I soon came to realize that finding the time would be difficult. Every moment I had that was not filled with school activities or sports I found myself sitting in the archery stand waiting and hoping I could harvest a deer that time. Bow hunting takes a lot of time and patience, but time for me was not at the essence. I was very limited on when I would be able to sit for a deer. A person only has so much time to shoot a deer before the season comes to an end. Archery season goes into the cold, cold temperatures of the year; therefore, getting a good shot off on a deer can lead to more than just a short walk to find the deer. It can help protect the people from being out in the freezing temperatures for too long. Baiting has helped us to get the correct position of the deer to get a proficient shot off on a deer. Getting a good shot off on the deer also means the deer does not suffer from having an arrow inside of them and not dying. Baiting is used to help an archer have a successful bow season with a happy ending.

Bow hunting to me is so much more than just shooting a deer. It allows me to spend time and make memories with my family. Over the years the memories I have made with my friends and family while bow hunting have been some of the greatest memories I have. From sitting in the stand playing card games with my dad waiting for the deer to come in; to uncontrollable giggling with a friend even though you are supposed to be quiet while hunting. For me it has allowed me to see the happiness it brings to not only me, but to my family. After I got a good shot off at my deer this year and heard my dad say "Nice shot kid, you got him" then giving me a fist bump gave me the biggest feeling of happiness ever. Then hearing the voice of a couple of proud brothers as they got the call saying "Your sister got her buck" was something I will never forget.

The last thing I would like to say is that bow hunting allows a person to enjoy the peacefulness that nature brings. Seeing the wind blow through the field and the trees. Seeing the birds fly around singing their songs. Seeing the deer wander the land finding food and relaxing in the sunshine. Taking in the beauty of nature allows people to take a deep breath and enjoy the time we all have on this earth. To me bow hunting is so much more than just harvesting a deer. It is a whole life lesson waiting to be taught through generations to come.

In closing I would encourage a yes vote on HB1151.

Thank you, Jamie Thompson



Senate Energy and Natural Resources Committee Testimony on HB 1151

North Dakota Game and Fish Department Dr. Charlie Bahnson, Wildlife Veterinarian March 16, 2023

Chairman Patten and members of the Senate Energy and Natural Resources Committee, my name is Dr. Charlie Bahnson. I serve as Wildlife Veterinarian for Game and Fish and an outsized portion of that role has become wrestling with CWD.

That's a difficult task. CWD is caused by a prion which is different from a virus or bacteria. That's important because it means that current vaccines or antibiotics don't work. There are a handful of human and animal prion diseases, some of which have been studied for over a hundred years by people around the world. They remain 100% fatal. If you are diagnosed with variant Creutzfeldt-Jakob disease or any of these diseases, it's a death sentence. No supplement or vitamin will change that.

The same is true for CWD. Infection results in a months-long course of disease that will end in death. A lot of these deer don't even make it that far because they become more vulnerable to other causes of mortality as the brain disease sets in. This is all while they shed the disease in their bodily fluids, potentially infecting others.

Now if only a few animals in a herd have this brain disease, it's pretty easy to write off. However, as infection rates climb - as a larger portion of your herd consists of these sick animals - the impact becomes larger, to a point where you can no longer ignore it. That means finding sick deer. That means producing fewer mature animals to hunt. This new cause of mortality will cut into the "harvestable surplus" meaning fewer licenses if we're trying to maintain population levels. In the most extreme situations, that cause of mortality can outpace the herd's ability to compensate, meaning population declines. The tipping point at which these things will happen will vary. In some western herds, declines were documented at as low as 30% infection rates.

Also challenging is how CWD prevalence grows. Drought, harsh winters, or other diseases like EHD tend to be cyclical – you have bad years followed by good years and population rebound. In contrast, CWD starts small and slowly builds over years, eventually becoming a continuous pressure on the population. It's probably not feasible to *lower* prevalence. Rather your first goal is to prevent the disease. Your second goal is to maintain as low of a prevalence as possible. Ultimately, you get one shot. When infection rates reach an exponential phase, the outlook is grim. CWD is now established in portions of the state, but it is currently rare. It's easy to dismiss. We want to keep it that way.

That comes down to managing risk. Knowing how CWD is transmitted, what are we as hunters doing that promotes those behaviors? Numerous studies have documented that baiting alters natural behavior, it breaks down social structure, it brings lots of unrelated animals into close proximity. It increases the odds of consuming feed along with the urine, saliva, or feces of other deer. Studies have shown that baiting and feeding play large roles in the transmission of other diseases like brucellosis and

bovine tuberculosis. Outbreaks of either of those diseases in deer would be devastating to the cattle industry. House Bill 1151 would prevent Game and Fish from trying to help producers in such an event. During an outbreak of bovine tuberculosis, which can be spread between cattle and deer, a neighbor who doesn't particularly care about your cattle could continue to bait deer year-round spreading it among those animals and threatening your livelihood.

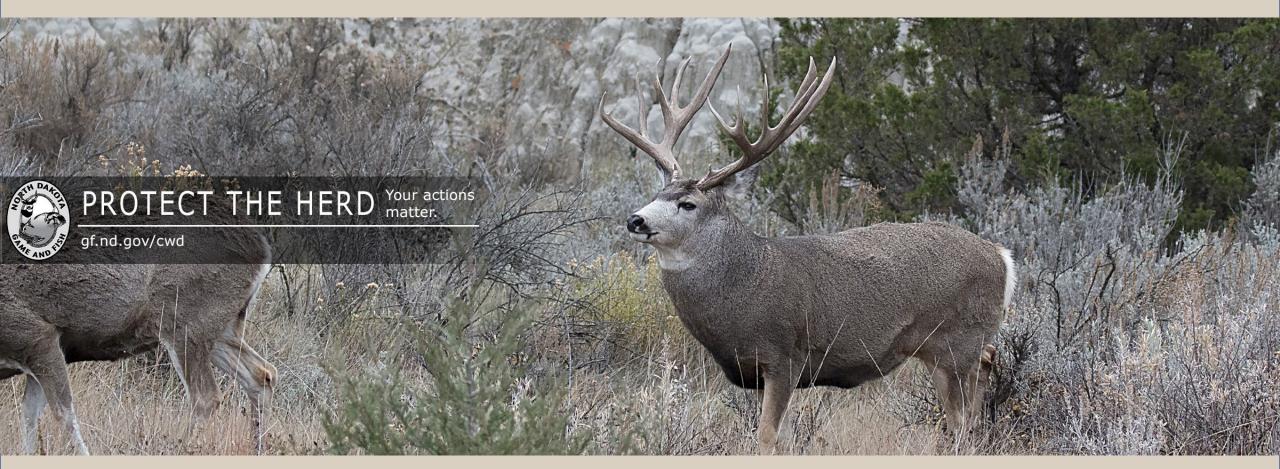
Baiting restrictions are one of only a handful of very blunt tools we have to combat CWD. We make no claims that it will stop the disease in its tracks. We know that deer are social animals that yard up for portions of the year. This winter is bad. But it didn't start in August and run through all deer seasons. And we don't have a winter like this every year. That is all to say that we can't use the existence of some risk that's beyond our control to justify increasing it- by congregating animals more intensely and for a much larger portion of the year.

As a lifelong hunter, I can understand why some folks are upset. If baiting has been a part of how you hunt for years, it's hard to imagine hunting without it. Imagine another scenario. Imagine you shoot a nice buck and as you walk up to it, you realize it's skin and bones. Imagine your kid or grandkid shoots his first deer and a week later you get a phone call and have to decide if you throw away that infected meat or feed it to your family. Those scenarios have already begun to happen in North Dakota. We don't want them to become common. This conversation around CWD is not fun. It'd be much easier in the short term to ignore it. But it'd be irresponsible of the Department to do so. We have to face reality. Our hunting heritage depends on a healthy deer herd. When we pass it along to the next generation, I hope we can look them in the eye and tell them we did everything we could to protect their opportunity to enjoy it.



Senate Energy and Natural Resources Committee

HB 1151



The mission of the North Dakota Game and Fish Department is to protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and nonconsumptive use.







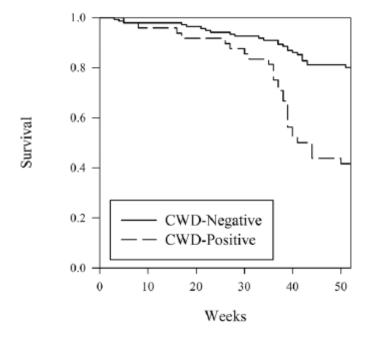
Mississippi Dept of Wildlife, Fisheries, and Parks



Wyoming Game and Fish Department; CWD Alliance



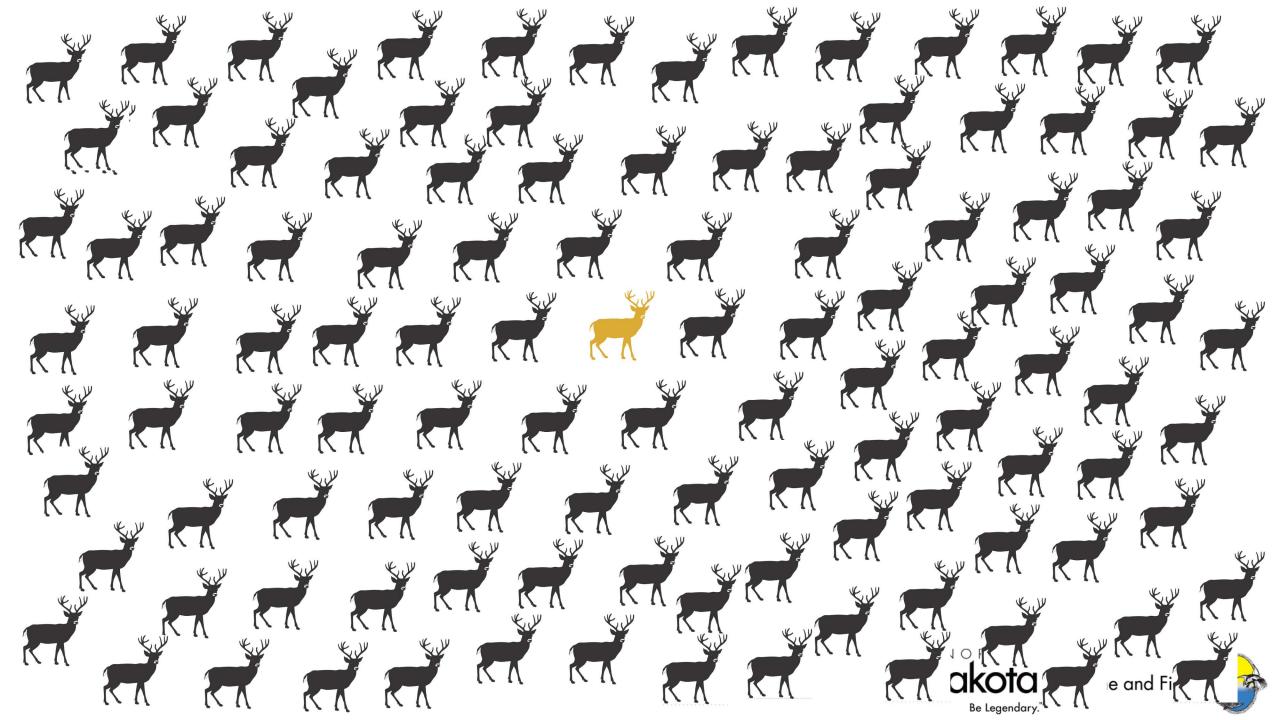
A) CWD-Negative vs. CWD-Positive

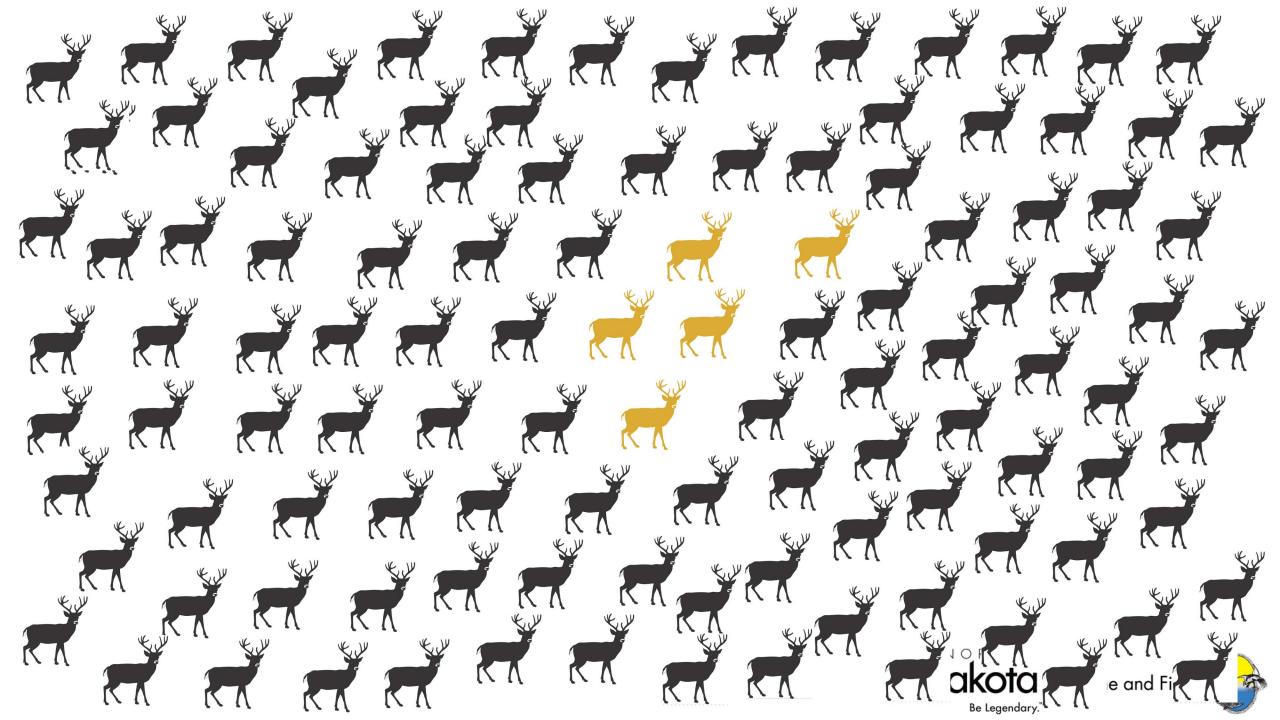


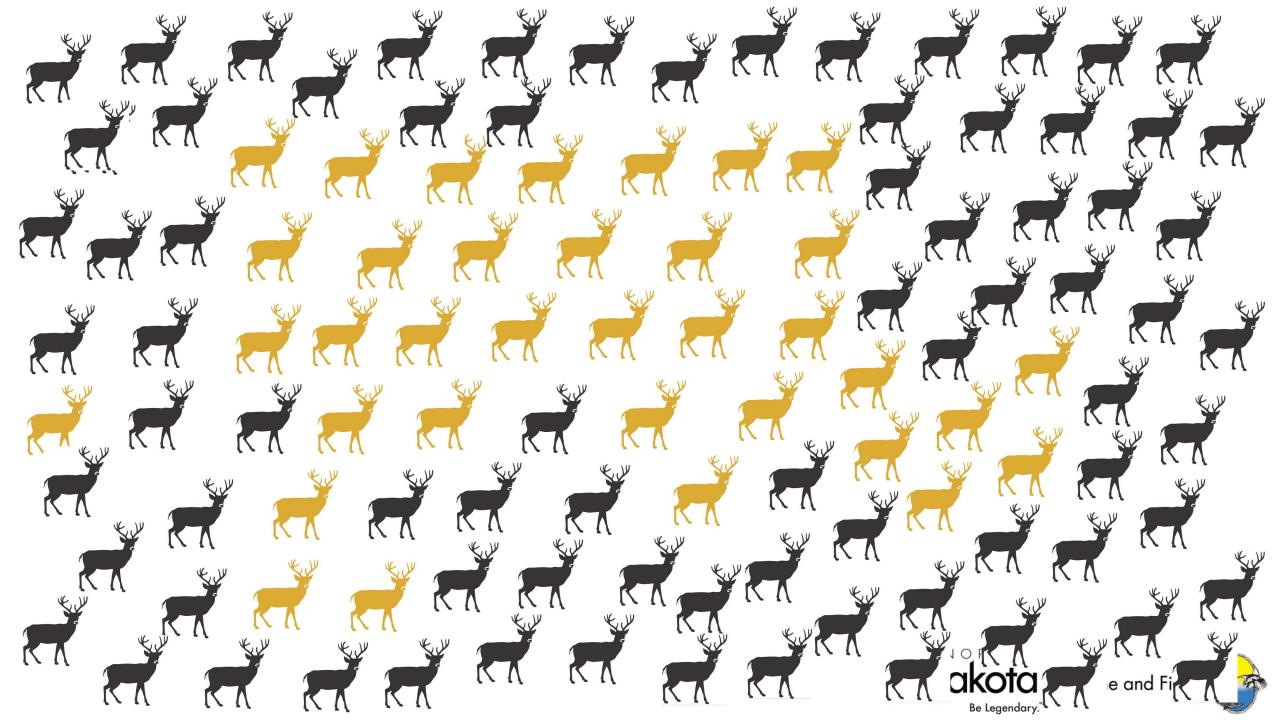
Edmunds et al. 2016. Chronic wasting disease drives population decline of white-tailed deer. PLoS One E0161127.

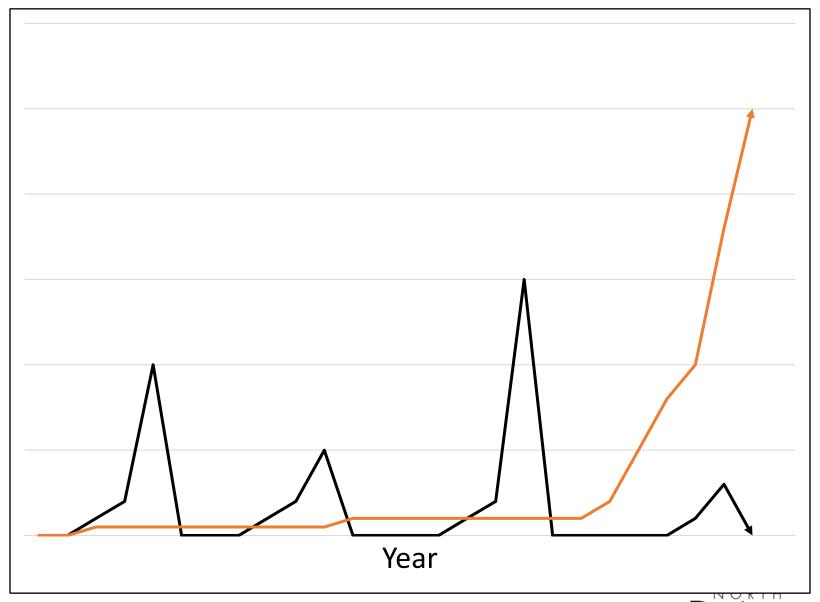




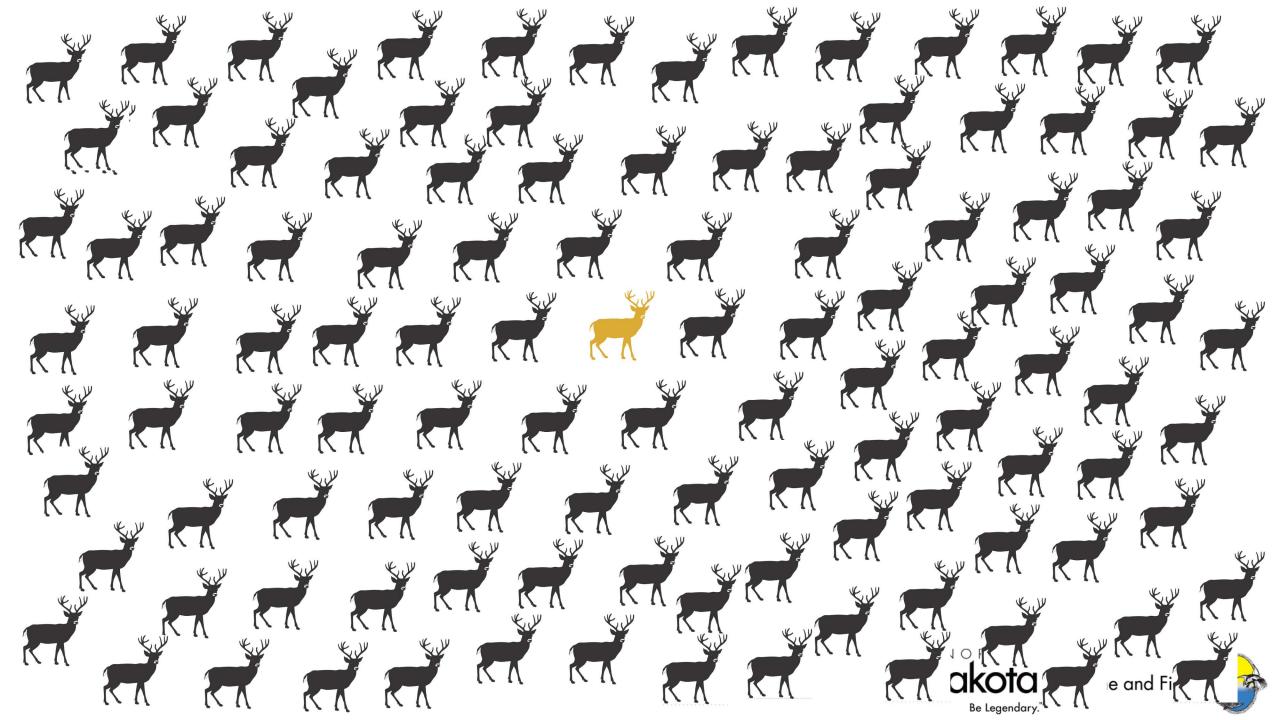














 $\frac{\text{https://lancasteronline.com/sports/pa-game-commission-explains-cwd-deer-feeding-ban-proposal-petition-opposes-it/article}{\text{347de1b2-a8a7-11ea-8fda-8b8106f45593.html}}\\$















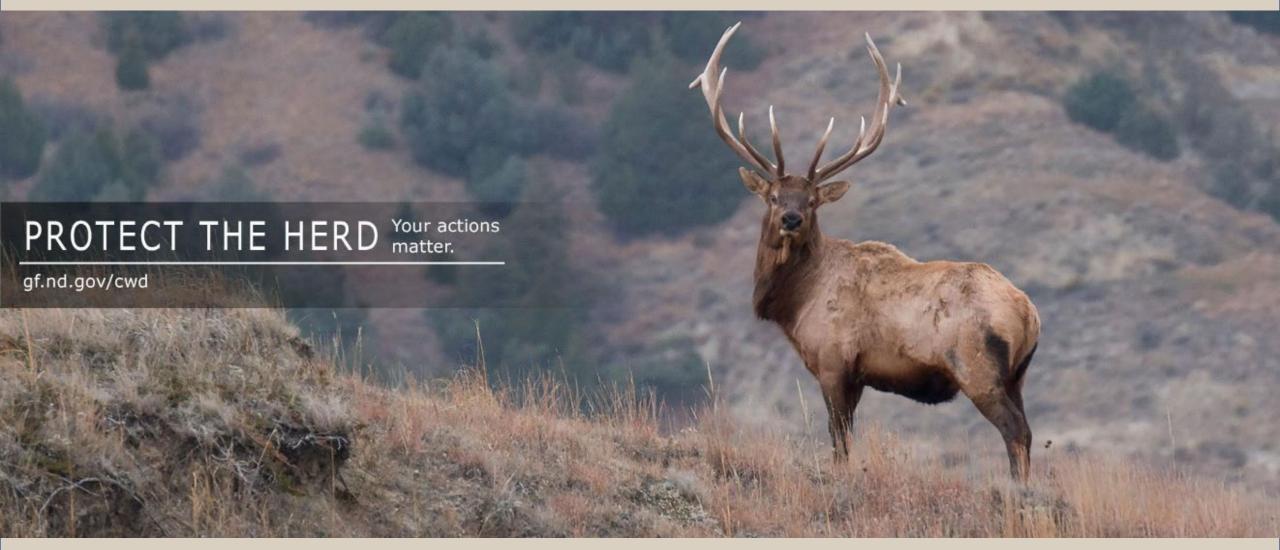








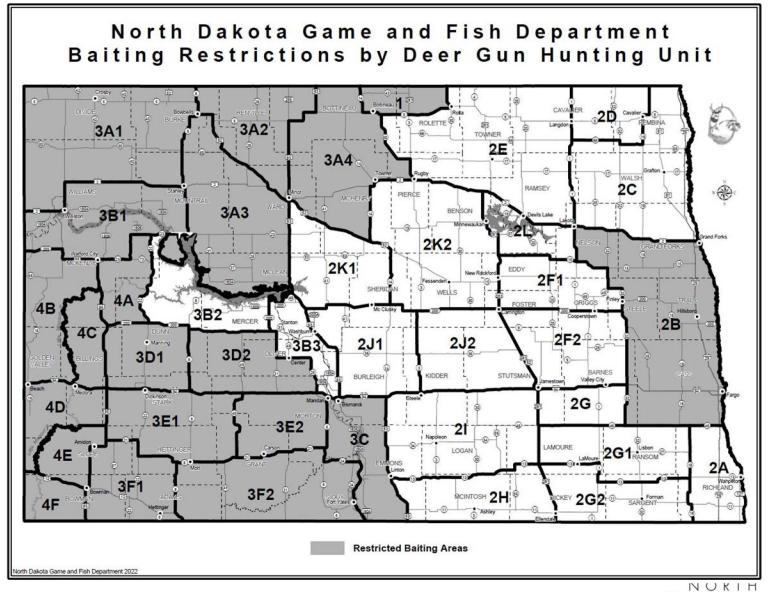




The mission of the North Dakota Game and Fish Department is to protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and nonconsumptive use.

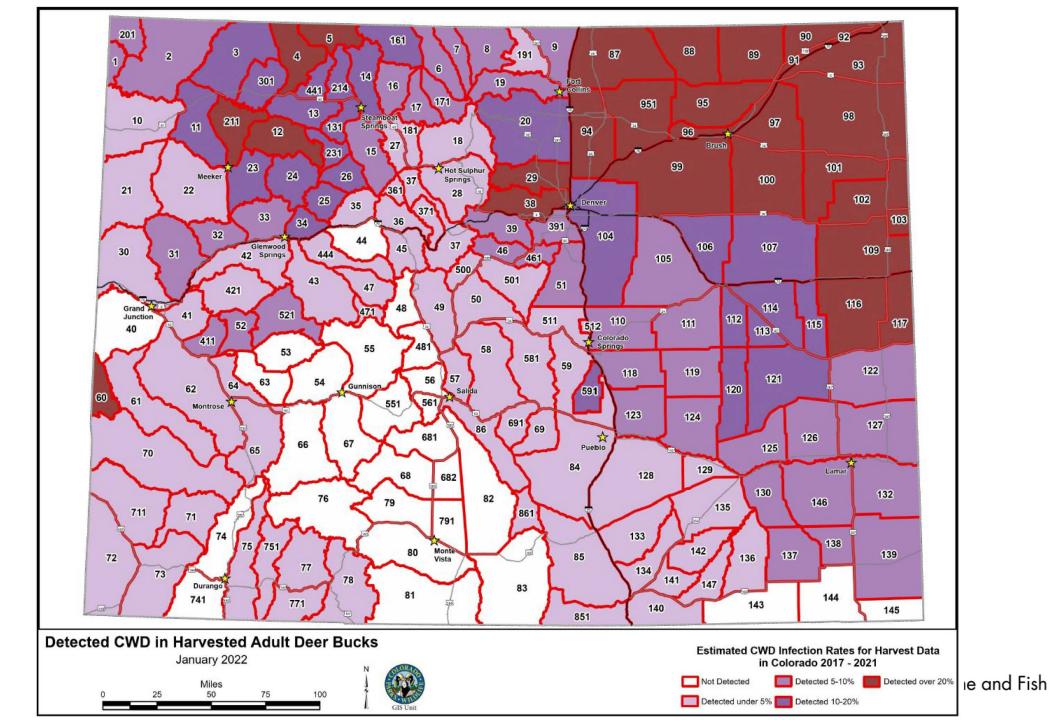




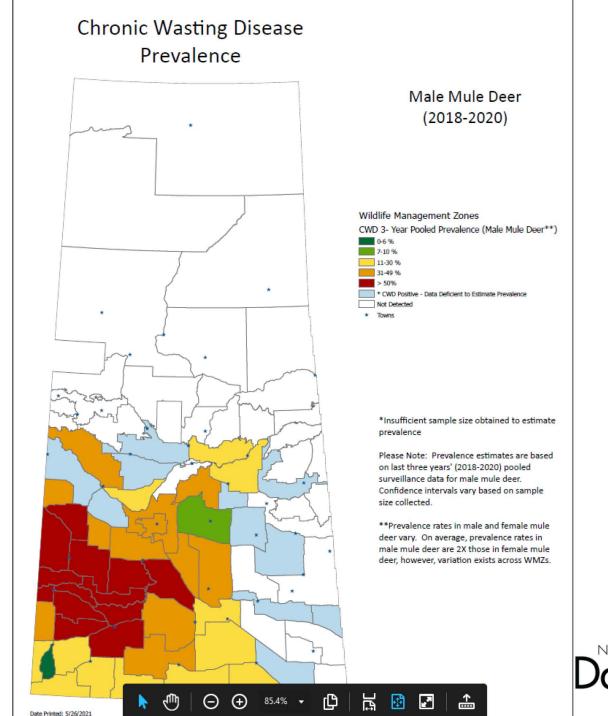




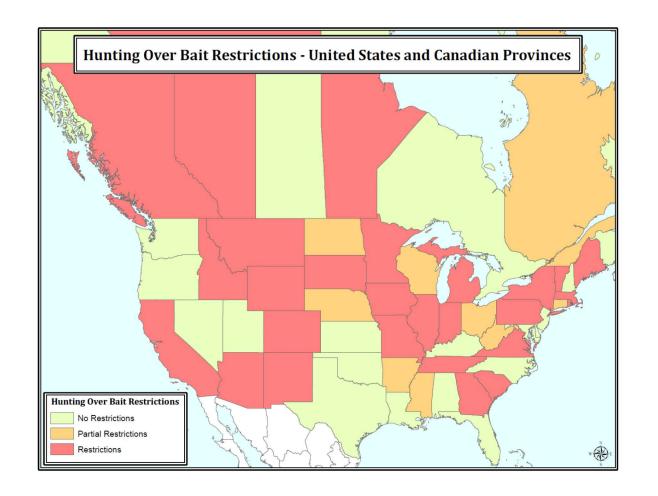














Please vote yes on HB1151 Thank you Tim Finley Please vote yes on HB1151 Thank you Josie Finley Please vote yes on HB1151 Thank you Carol Finley Please vote yes on HB1151 Thank you Jayne Isaak I grew up hunting with a rifle. I don't think I even knew anyone who hunted with a bow. All that changed when I met Paul from Velva, a left-handed bow hunter. That fall I found myself up a tree in Paul's stand with his bow, on his property, and in walked a deer. Houston, we are go for launch.

The second year I was still pretty green but I had me one of those new lightning-fast compounds, with sights and trigger. I tried the more traditional approach. It's not ethical for me to shoot at something with a recurve or longbow. Fact is, after countless weeks of disciplined practice, I could just pass for a hunter the deer would consider a vague threat.

There is no substitute for experience and first year archery for me was filled with questions, only answered by time. Where to set up? How high, what tree, won't they see me? How do you know when to draw? I've since found out that many questions have nothing to do with first year hunting. I'm still asking myself those same questions.

The trail camera helped me the most. Having a picture of a buck gave me confidence and while I never really figured out a pattern, I always went out knowing there was at least one good buck in the area. He came by one night and alerted Houston that I was ready for lift off. Too late, too dark, too excited.

I started paying more attention to details. Picking the best wind and what I hoped would be a good night to sit. One of those nagging questions I asked, and still do is, "Won't I scare him off by over hunting?" I decided once a week at most would be my best strategy.

One of the best aspects of archery hunting is waiting. Silence and stillness bring out the best in nature. From birds to squirrels, clouds to leaves, it all takes on new meaning. Maybe we don't do enough of that, just sitting, being still and waiting. Just maybe sitt'n and wait'n brings out the best in people too.

It's Sunday, late November and we have a warm up with SE winds 10-15. Perfect. There is at least 16 inches of snow on the ground but the air is warm. I climb into the stand and follow my routine. Draw back, check for branches, sit down and wait. My rule in those days was ½ hour before sunset I would stand up and stay standing, just in case.

I'm an hour from standing when I notice a great set of horns moving my way through the trees, just like a TV hunting show. Glimpses of horns, testing the wind, cautious, silent, slowly moving my direction. He is at least 50 yards out yet. Slowly I stand, bow ready.

I'm certain he will hear my heart pounding. Mr. Big Buck sends reconnaissance ahead. I hardly remember the spiked scout as I was focused on a bigger target. Draw? Wait-- not yet- - easy-- wait. By now I'm not even sure I will be able to get my bow back.

Finally broadside, 11 yards, head down and slightly turned away, I make my move. I'm not that good of a shot and even 11 yards is no sure bet, particularly in my advanced stages of buck fever. Looking back everything was perfect. Broadside, head turned slightly, wind in my favor. Even the shot was perfect. The arrow sliced through and stuck deep into the snow.

Someone else was on launch sequence with Houston. I have never seen a deer move faster. Out of the trees, up the field edge, gone from sight in 2 seconds! Certainty and doubt meet in a head on collision.

Finally, I get a breath of air and realization begins to take effect. Snow is splashed red as far as I can see. Waiting for that necessary half hour is completely forgotten.

With a blood trail the color blind could follow, it was no challenge. 20 yards into the trail I remember my bow is still hanging in the tree. I still have symptoms of the fever. Back on the trail, through the deep snow, I see antlers on the ground. Deer Down!

Soon as I got home I told my wife, "Those guys who snort coke have no idea what a rush is!" Houston we are go for launch!

That set-in motion a series of lift offs. Jesse, age 9, my oldest, was in a tree 30 yards from my observation post. In walked a buck that turned broadside at 12 yards, his first. Now was my son's turn to run through the questions. We were quietly standing together at the base of his tree after his first encounter. Suddenly he exclaimed, "Dad, there is something wrong with my legs!" Looking down I could see the problem. Severe knee knocking had set in. Turns out the fever is contagious.

The next shot into space was a father, son team. Levi inherited his brother's bow. We were together in a pine tree. I silently whispered, "Easy, get your bow ready, draw, now!" I have no idea if the fever got him as I was too busy trying to manage my own symptoms. Levi, age 9, first buck.

All that family building adventure was the result of baiting. The extent of my permission was the outer edges of town on small 10-20 acre parcels. Baiting turned poor habitat into endless weekend adventures. A bonus was the flowers and gardens got raided a little less.

I won't get to decide if I introduce my grandkids to archery hunting. Big government has taken that privilege away from me and the landowners who used to let us hunt.

This bill will restore my right to choose if I want to hunt with bait or not. I know some won't bait, just not something that sits right with them. I'm ok with that. Choice is what gives us color, helps ourselves, and others see who we are. We are created unique, one of a kind, for a purpose.

I am, however, asking for something that will be hard for all of us. Some need to stand up and fly your colors. Others need to lower their flag to half-mast and let uniqueness have a chance.



BOONE AND CROCKETT CLUB

March 15, 2023

Senator Dale Patten, Chair North Dakota Senate Committee on Energy and Natural Resources 600 E Boulevard Ave, Bismarck, ND 58505

Re: Boone & Crockett Club Opposition to HB 1151

Dear Senator Patten:

We write in opposition to HB 1151 and respectfully request you vote "No" when this bill comes to a vote in your committee.

Wildlife management decisions in North Dakota, especially those relating to the spread of disease, should be based on the best available science. We believe the North Dakota Game and Fish Department is best equipped to make those decisions. North Dakota Game and Fish Department personnel understand the ever-evolving threats to wildlife species, such as Chronic Wasting Disease (CWD) and bovine tuberculosis (Tb). This legislation would harm the ability of the agency to effectively fulfill their mission to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and non-consumptive use."

While we can appreciate the Authors' desire to take actions designed to ensure the longevity of North Dakota's public trust big game resources, we would reiterate that the Department, using existing management authority, has utilized baiting restrictions in areas where conservation challenges, including where disease transmission is of highest risk, are most pressing. Recognizing their timely and effective actions on this front, we maintain that HB 1151's attempt to strip the North Dakota Game and Fish Department's authority is counterproductive.

It is imperative that the North Dakota Game and Fish Department, the agency specifically established by this legislature to protect the fish and wildlife resources of North Dakota, keep their authority to regulate baiting.

We respectfully request you oppose HB 1151.

Sincerely,

Tony Schoonen, CEO Boone and Crockett Club

CC: Senator Jeffery J. Magrum, Vice Chairman North Dakota Senate Committee on Energy & Natural Resources

HB 1151

I am in support of house bill 1151. As a disabled veteran at the age of 70 this still allows me the ability to go out and ethically harvest an animal.

To Whom It May Concern

Please recommend a Do Not Pass on HB 1151. I believe it has been proven in other states that Ballot Box Biology does not work. We have to let the Biologist and science lead our decisions. If we pass laws every time there is something we don't like, we are in for a world of hurt. We need to come together to protect North Dakota's deer herd. We need to remember that the deer belong to the people of North Dakota and not the person who owns the land that they may be standing on today. If we want a healthy deer herd for our children to hunt or to just watch, we need to make hard decisions now for a better tomorrow. Do we really want to put our herd in jeopardy so that I can throw some corn out, so I can look like a great hunter. I think not. Thank you for your time.

Sincerely

Brianne McWhorter

HB 1151

I am in support of house bill 1151.

RE: HB1151

Senate Natural Resources Committee

House Bill 1151, regarding using bait when deer hunting and the control/regulation thereof, should not be passed. The bill, as written and amended, does not allow the North Dakota Game and Fish Department to regulate a method of hunting that has the potential to spread disease throughout North Dakota's entire deer herd, as well as elk and moose populations.

The North Dakota Game and Fish Department was developed to manage methods of taking game (i.e., no shining of animals at night, draw weights of hunting bows, no pursuit of animals with motor vehicles)—as well as taking care of our birds and animals by monitoring populations for disease and sustained longevity—through biological science, not hearsay.

While champions of the bill would tell you that it encourages young people to become hunters, my belief is the opposite. Hunting becomes shooting; when the sacrifice is minimal, the prize is devalued and interest wanes with maturity.

As for those with disabilities, there are few people in this state who would flat out refuse the opportunity to help them by providing a good spot to hunt without a bait attractant.

The quantity of bait issue written into the amended version of the bill is not acceptable. Nor is the distance from property lines—virtually not enforceable and basically accomplishing nothing. Disease spread and ethics are not satisfied with these amendments.

In closing, a no vote on this bill is the right one—biologically, ethically, and enforcement-wise.

Respectfully,

Joe Solseng

1951 20th Street NE

Grand Forks, ND 58203

HB 1151

I am in support of house bill 1151. Being elderly and also having young grandchildren hunt with me. This is something that keeps us in the game taking away this right without scientific backing is absolute nonsense. I asked for your vote on house bill 1151.

Dear Senate Energy and National Resources Committee,

Please consider voting against HB1151 as it is written. I certainly understand that there needs to be a very fine line between Politics, Policy, and Science for everyone to be successful, but this bill is not in the best interest of the deer population or the folks that enjoy pursuing deer in ND. The topic of baiting deer rules and the science behind CWD is not something that should be handled by the legislature. You have much bigger issues to discuss and spend your time on. Instead, you have trusted in the past, and should continue to trust the NDGF with topics like this. You have invested millions of dollars and hired experts to manage the wildlife in ND, please continue to leave the rule making authority with them.

The NDGF has been tasked with managing all of the wildlife in North Dakota, and overall, they continue to do an excellent job, based on what I am seeing in the several hours that myself and my family spend in the outdoors each year. I know they aren't going to please everyone and they are also struggling with the decreasing amount of habitat and other uncontrollable things that impact big game management in ND. This specific topic is actually fairly embarrassing and after reading through many of the testimonies that were given already, it's challenging to hear that people, including youth, have indicated that they have to "bait" game to make hunting easy and make ethical harvests. I would agree that shooting a deer over a bait pile does create some controllable items, but anyone's testimony that youth need baiting to harvest deer is completely inaccurate, and in fact, a lazy response to this serious topic. I would also note that the issuance of a deer tag in North Dakota IS NOT A GUARANTEE to have a successful hunt or harvest an animal. It's a license that allows the tag holder to pursue game based on the regulations that are made and maintained by the NDGF.

Again, I know that there is a very fine line of where this bill lands and what side of the equation that folks may be on. I'm also sure that you are feeling pressure from your constituents to vote one way, or another. That is what you elected to do. However, you do need to consider in this situation that if you decide that politics and policy should be voted ahead of science, you are not only putting our deer herd in jeopardy, but you are creating a very difficult process to get your legislation over turned in the future, when CWD continues to spread.

On a final note, if you are a "Yes" vote on HB1151, you absolutely must consider removing the verbiage of the baiting volume and proximity to the property line. The NDGF Game Wardens and our other state law enforcement individuals are already understaffed and have more area then they can cover. WE ABSOLUTELY DO NOT NEED THEM responding to calls about folks putting out too much bait for big game or having them become part of a neighboring landowner quarrel over the proximity to the property line. This would be a COMPLETE WASTE OF TIME and RESOURCES for law enforcement.

Sincerely,

Brenton Hell

ND Outdoorsman and Property Owner

I am in opposition of HB 1151 for the following reasons:

- The North Dakota Game and Fish Department is directed and entrusted to manage wildlife populations for all citizens. Putting legislative blocks on their ability to do their job is misguided. The restrictions outlined in this bill are especially concerning given the threat that Chronic Wasting Disease poses to deer in our state.
- I reject the idea that this bill protects private property rights. Wildlife are a public trust resource. They are not owned by individuals or only those that own property. Please do not let the personal interests of a very few outweigh the public good.

I urge the committee to reject this bill, as it is not in the best interest of the citizens of North Dakota.

Sincerely,

Aaron Pearse Jamestown, ND Courtney Maguire

5266 W Plum Dr

Grand Forks, ND 58203

I am in support of HB1151.

Thank you,

Courtney Maguire

Matthew Maguire

5266 W Plum Dr

Grand Forks, ND 58203

I am in support of HB1151.

Thank you,

Courtney Maguire

To Members of Senate Energy and Natural Resources Committee:

I write to you in opposition to HB 1151.

The North Dakota Game and Fish Department (NDGF) is charged with protecting, conserving and enhancing fish and wildlife populations and their habitat for sustained public consumptive and nonconsumptive uses. NDGF's ability to carry out that mission hinges on them having the authority to make and implement management decisions based on the best available information. I am opposed to any legislation, including HB 1151, that strips decision making and management authority from NDGF in matters of wildlife and fisheries management.

As a longtime North Dakotan and life-long hunter, angler, and outdoor recreationist, I have come to respect that no matter how NDGF's decisions affected my personal fishing and hunting opportunities, those decisions were in the interest of ensuring the well-being of our State's fish and wildlife resources for the benefit of all North Dakotan's, present and future.

Please give HB 1151 a Do Not Pass. Let our State's fish and wildlife professionals do their jobs.

Thank you.

Terry Shaffer

Chairman Patten, Committee Members... My name is Wyatt Thompson. I will be talking about some data that the Game and Fish has been collecting from unit 3F2. CWD was first found in North Dakota in 2009 in the southwestern part of the state, more specifically inside the borders of unit 3F2. The North Dakota game and fish department then moved quickly, implementing the first restriction on hunting over bait in the state within the borders of unit 3F2 through their 2010 Chronic Wasting Disease proclamation, even after a bill to ban baiting introduced into the legislature in 2007 and 2009 was shot down.

70 positive CWD cases have been found in North Dakota in 13 years of testing. 48 of these cases have come from 3f2, or 68.6% of all positives. In the last 3 years of released data 2019-2021, 34 of 52 positives have come from 3F2, or 65% of positives from that time frame, even though the baiting restriction had been in place for 9 years prior.

-I did not include 2022 data in this as it was not released when I typed this originally but would include 8 more positives from 3F2.

In North Dakota since 2009 there has been 1 deer found dead in our state where they say CWD was the possible cause of death but are unable, with 100% certainty, to say that CWD was the direct cause. This deer was found dead, then tested positive. For a disease that is being pushed as always fatal, in a state where the average lifespan of a deer is roughly 3 years and a disease that usually takes 3-4 years to show symptoms, my question is where are the dead deer in the state from this always fatal disease, especially in units with higher prevalence rates?

In the spring of 2019, after finding that one doe that had possibly died due to CWD, the ND Game and Fish department went in and did targeted removal of 52 additional deer, 29 adults and 23 yearlings and fawns. After the results came back, with not 1 of these deer testing positive, none of the meat was used or donated, just disposed of. The North Dakota Game and Fish Department culled 52 CWD negative deer for test results on a disease that has had 1 possible fatality in our state.

After running through those numbers and remembering a baiting restriction has been in place now for 12 years total in 3F2, has that restriction the Game and Fish implemented been effective at impacting spread beyond a normal, natural deer to deer interaction, especially after the drastic spike the last 3 years?

At a Minot CWD meeting this past year, the Game and Fish Department stated they are moving away from data collection in 3F2, going to less frequent but more thorough testing. although from 2019 through 2021 hunter head participation across the state has already dropped from 15% to 4.9% over that time span. 3F2 has been the data collection site in the state that could back up the science they want us to believe... That a baiting restriction slows the spread of CWD, yet they are moving away from data there, specifically after the huge leap in positives from 2019 through 2022. Perhaps the data and science does NOT match the narrative and agenda.

Casey Anderson mentioned in his testimony in the house that in 2021 there was an independent survey sent out to hunters in North Dakota where 74% perceived a baiting restriction to be slightly to very effective at managing CWD.. If that independent survey was correct, why would this bill have this much traction? Submitted Testimony in support of this Bill on the House side was about 75% and had

one of the largest numbers of testimony submitted out of any bill introduced, with an 80% due pass on the House Floor.

I thank you for the opportunity to testify today and will answer any questions to the best of my abilities that the committee might have.

Thank you for your time, Wyatt Thompson



TESTIMONY OF BROCK WAHL NORTH DAKOTA BACKCOUNTRY HUNTERS AND ANGLERS HOUSE BILL 1151 SENATE ENERGY AND NATURAL RESOURCE COMMITTEE MARCH 16, 2023

Chairman Patten and Members of the Senate Energy and Natural Resources Committee

The North Dakota Chapter of Backcountry Hunters and Anglers opposes House Bill 1151 in both the amended and original versions. Both versions would strip authority from the North Dakota Game and Fish to implement their CWD Management Plan by prohibiting the Department from banning baiting practices in North Dakota.

While we do not have a stance regarding baiting ethics, we do have a stance on legislation or ballot initiatives that seek to restrict or control the ability of the wildlife professionals at the North Dakota Game and Fish to do their job. That job, according to state law, is managing the wildlife resource on behalf of the public, for current and future generations.

The North Dakota Game and Fish is an agency driven by wildlife professionals who are also North Dakotans that live, work, and hunt in North Dakota. Their mission is to "protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and nonconsumptive use." We believe H.B. 1151 is in direct opposition to that mission.

The scientific analysis around the effects and impacts of baiting on disease transmission is well established. Baiting unnaturally congregates deer, shrinks home range size, increases home range overlap, increases face to face contacts, and condenses feeding areas up to thousands of times. Scientific studies around Bovine Tuberculosis and baiting have been conducted in Michigan, and epidemiological research suggests that baiting and feeding of deer enabled the TB outbreak in Michigan to persist and spread, and that declines in TB prevalence were associated with a ban on baiting and feeding in those areas. While a baiting study has not been performed specifically around CWD due to the limitations in feasibility and logistics of such a study, the science supporting lateral transmission of CWD amongst deer is strong and well documented. Increasing close contact beyond normal seasonal periods and intensifying that close contact between deer should be minimized as much as possible.

While we understand that this is a controversial issue, and it is always difficult to change long used practices, the public's deer resource must come first. We understand that baiting bans alone will not completely arrest the spread of this disease. Some natural spread will occur, deer do naturally congregate during winter, and some of those natural occurrences will never be a variable managers can control in wild animals. However, natural herding is a far cry from eating off the same proverbial, man made plate, day after day.

With that in mind we believe it is outright disingenuous to suggest that baiting practices are not in fact encouraging higher concentrations of deer for longer periods throughout the year and increasing disease transmission.

Article XI Section 27 of the North Dakota Constitution:

"Hunting, trapping, and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people and managed by law and regulation for the public good."

Link - Article XI - North Dakota Constitution

With a contagious and 100% fatal disease on the landscape, one with the potential to do irreparable harm to our public resource, we ask how is allowing this practice in CWD zones "preserving for the people" or "for the public good"?

We also fail to see how allowing practices that artificially concentrate deer around high densities of food, where deer are repeatedly putting their mouth and snout on the same tiny piece of ground as other deer, is not a vector for disease.

The passage of this bill would not only abandon 12+ years of current baiting ban prescriptions, but it would also throw a wrench in millions of dollars of management activities that are direct efforts to decrease artificial congregations of deer and elk around ag producer's feed storage. This program pays 100% of the costs of materials and cost shares labor. From 2009 through today, the Game and Fish has spent 4.3 million dollars on these exclusionary practices specifically targeted at cervids. These funds have resulted in the implementation of 464 hay yard projects during that time.

Biennium	\$ Spent	Hay Yard Projects
2009-11	\$1,068,000.00	2009: 43
2011-13	\$851,000.00	2010: 28
2013-15	\$253,000.00	2011: 94
2015-17	\$276,935.00	2012: 25
2017-19	\$689,339.00	2013: 17
2019-21	\$471,910.00	2014: 18
2021-23	\$699,528.00	2015: 3
		2016: 4
Since 2009	\$4,309,712	2017: 82
		2018: 27
		2019: 25
		2020: 24
		2021: 6
		2022: 44
		2023: 24
		Total = 464



Current restrictions are bans on baiting practices where CWD is found. That is the compromise to the statewide bans that were proposed by the department in 2009. An effort led by the ND Game and Fish that the Stockman's Association and Farmers Union supported.

CWD was found just months after that legislative assembly, and now the Game and Fish has 13 years invested directly into its management. This bill would represent a significant change of direction for management of this disease within our state. Management that could be viewed as some of the most effective in the country based on our prevalence.

Hunters and this legislature should be helping the Department combat this disease, not taking essential tools away. We advocate for more political and social support for the department, especially in getting buy-in from producers dealing with concentrated deer and elk issues in the winter.

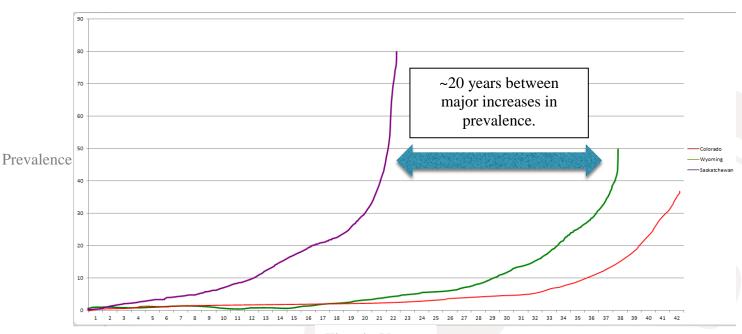
Additionally, We have some direct comparisons that support the idea that whatever we're doing here has been more effective than those states and provinces that chose not to ban baiting practices.

The state of Texas has registered 449 positives in only 10 years of CWD being on the landscape. Saskatchewan, also registered a few hundred positives over their first 12 years with the disease. That is in comparison to North Dakota's 70 positives over its first 12 years with the disease.

In fact, Saskatchewan has had CWD on the landscape for a full 22 years. They lead the world in prevalence rates and they reached that milestone faster than any state or province on record.

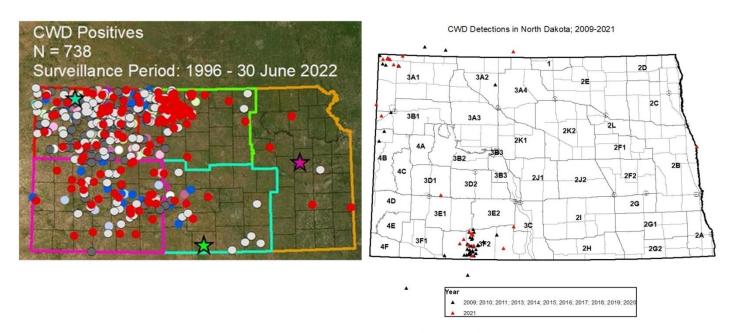
Colorado has had CWD for 42 years, Wyoming for 38 years, baiting is banned in both, Saskatchewan passed both states in CWD prevalence in just 22 years.

Wyoming's most infected herd sits at around 50% prevalence. Colorado, around 35-40% prevalence. Meanwhile, Saskatchewan's worst infections are 70-80% prevalence according to Saskatchewan's 2022 published reports.



Time in Years

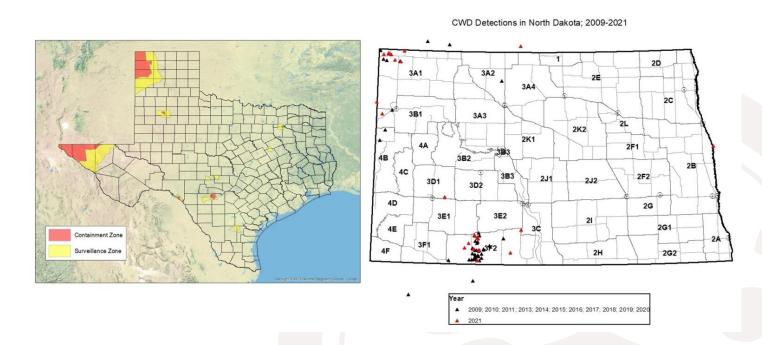
North Dakota CWD since 2009 (Baiting Bans) = 70 Positives Kansas CWD since 2005 (No Baiting Bans) = 738 Positives

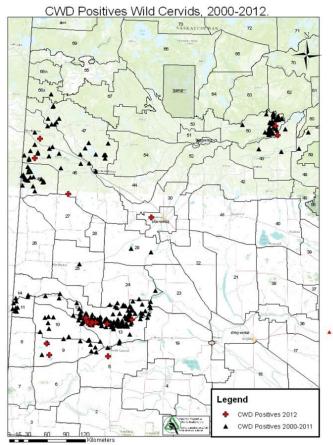


CWD in Texas and North Dakota

North Dakota after 12 years with CWD (Baiting Bans) = 70 positives

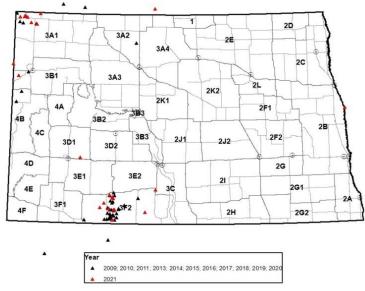
Texas after 10 years with CWD (No Baiting Bans) = 449 positives





The First 12 years of CWD in Saskatchewan and North Dakota North Dakota (Baiting Bans) = 70 positives Saskatchewan (No Baiting Bans) = A few hundred positives





South Dakota vs Saskatchewan

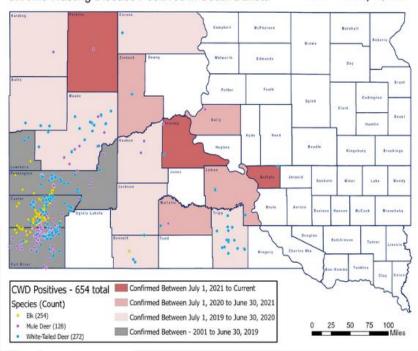
South Dakota bans baiting statewide.

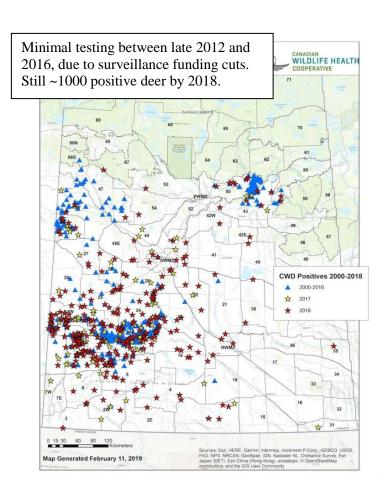
CWD has been in South Dakota's wild herds since 2001, with no gaps in surveillance funding like Saskatchewan, who's had the disease for **1 year longer**.

In nearly the identical amount of time with the disease in the wild as Saskatchewan (21 years vs 22 years), South Dakota has only 25% of the total recorded positive cases that Saskatchewan has recorded (2,500+).

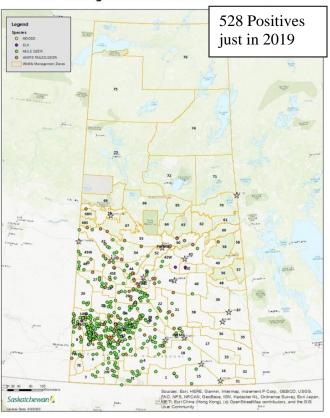
Chronic Wasting Disease Positives in South Dakota

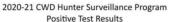
2001 - February 16, 2022

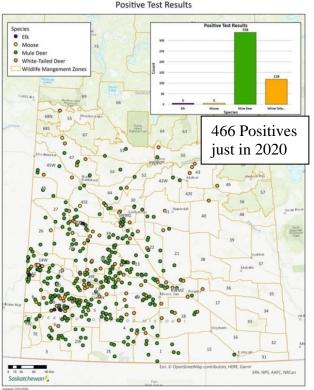


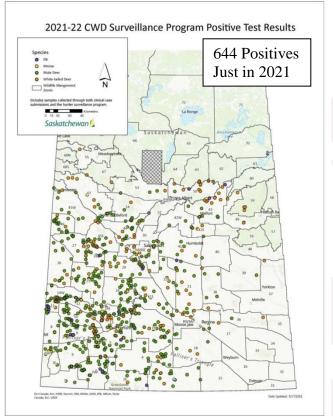


Chronic Wasting Disease 2019 Positive Test Results









This is not the same...



As this...



or this...



Deer defecating within a foot of bait block buried in the snow



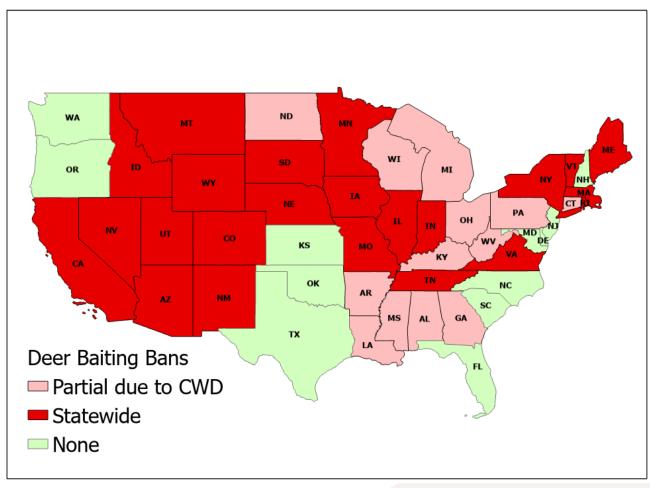
We CAN stop this....

We can't stop this...but they are obviously not the same.



36 states have statewide bans or partial baiting bans. 12 of 13 partial baiting bans are due to CWD management.

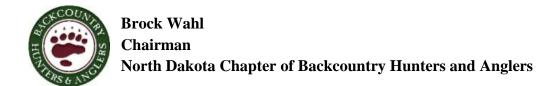
*All information came from State Game and Fish Agency Regulations



^{*}All states ban baiting on federal or state managed lands

The bill proponents do not speak for all hunters. The hunting practices of one user group do not take priority over what is beneficial for the entire public deer resource and therefore, the public good. This bill would be counterproductive to over a decade of work already invested by the North Dakota Game and Fish to slow the spread of this disease. This bill is not in the best interest of the deer held in public trust, or current and future generations who are beneficiaries of that trust.

The North Dakota Chapter of Backcountry Hunters and Anglers finds H.B. 1151 to be in direct violation of the North Dakota constitution, North Dakota statute, the North American Model of Wildlife Conservation, the mission of the North Dakota Game and Fish, and a breach of the public trust doctrine that all wild deer in North Dakota belong to.



20.1-01-03. Ownership and control of wildlife is in the state - Damages - Schedule of monetary values - Civil penalty.

The ownership of and title to all wildlife within this state is in the state for the purpose of regulating the enjoyment, use, possession, disposition, and conservation thereof, and for maintaining action for damages as herein provided. Any person catching, killing, taking, trapping, or possessing any wildlife protected by law at any time or in any manner is deemed to have consented that the title thereto remains in this state for the purpose of regulating the taking, use, possession, and disposition thereof. The state, through the office of attorney general, may institute and maintain any action for damages against any person who unlawfully causes, or has caused within this state, the death, destruction, or injury of wildlife, except as may be authorized by law. The state has a property interest in all protected wildlife. This interest supports a civil action for damages for the unlawful destruction of wildlife by willful or grossly negligent act or omission. The director shall adopt by rule a schedule of monetary values of

Link - https://www.ndlegis.gov/cencode/t20-1c16.pdf

CHAPTER 20.1-16 INTERSTATE WILDLIFE VIOLATOR COMPACT

20.1-16-01. Interstate wildlife violator compact.

The interstate wildlife violator compact is entered with all states legally joining the compact, in the form substantially as follows:

ARTICLE I - FINDINGS, DECLARATION OF POLICY, AND PURPOSE

- 1. The participating states find that the following provisions apply:
 - Wildlife resources are managed in trust by the respective states for the benefit of all residents and visitors.
 - b. The protection of the wildlife resources of a state is materially affected by the degree of compliance with state statutes, laws, ordinances, regulations, and administrative rules relating to the management of such resources.
 - c. The preservation, protection, management, and restoration of wildlife contributes immeasurably to the aesthetic, recreational, and economic aspects of such natural resources.
 - d. Wildlife resources are valuable without regard to political boundaries; therefore, every person should be required to comply with wildlife preservation, protection, management and restoration laws, ordinances, regulations, and administrative rules of the participating states as a condition precedent to the continuance or issuance of any license to hunt, fish, trap, or possess wildlife.

Link - https://www.ndlegis.gov/cencode/t20-1c01.html



HB Bill 1151

I am in support of HB Bill 1151 as it was originally written. I have attended a number of ND Game & Fish advisory meetings and when I asked them to provide data that baiting Restrictions stopped the spread of CWD they had none. I also attended a meeting they put on CWD management and the attendees could not ask questions. It is overreach by the ND Game & Fish Dept. & this is a property rights issue.

Emery Duben, President

ND ELK Growers

I am in full support of Bill HB 1151 in favor of keeping hunting rights. Hunters are losing their rights due to a series of accidents that has been happening for over 20 years and has very few confirmed deaths due to (CWD) accidents

By not supporting this bill many people who love to hunt, but are restricted in their time are not going to be able to enjoy this great sport. Kids, veterans, older individuals, and people who just do not have time to go out and walk the fields and pastures for their hunt will not be able to hunt anymore. If this right is taken away from hunters, what right is next?

Again, I am in full support of Bill HB 1151

Samuel Dobitz Dickinson, ND Dear Senate Natural Resources Committee Members,

I am writing testimony in favor of 1151. I'd like to start by saying that as a guide for Twist of Fate(a physically challenged archery hunt) that baiting deer is ESSENTIAL to our organization. Without baiting our hunters would have little to no chance at harvesting a deer.

North Dakota has very little public land compared to neighboring states and even less trees and habitat. Which make it very difficult to hunt white tail deer with archery equipment without the use of baiting. I'd like to be able to take my daughter, neice, and nephew hunting and give them an actual chance at harvesting a deer to keep the hunting tradition alive in North Dakota.

• While I tend to want to leave these types of decisions up to the NDGF I feel that they have such a bias towards baiting and want it gone that they are using CWD as their way to get rid of it. I've attend their advisory board meetings and all they said the entire time was "we hope", "we feel", we think", "we are optimistic" that their baiting bans in certain units across the state are doing good. When in reality they really have no idea if it's actually working. CWD has been around since the 60s in Colorado. Guess what they still have a healthy deer population. Every state around North Dakota has had baiting bans for decades, and they all have more CWD cases than North Dakota. There is less than 1% of deer in North Dakota that have CWD according to the G&F's numbers. I know you will hear testimony that CWD is ALWAYS fatal to deer... the G&F also showed a statistic that it takes 2-4 years for the prion in CWD to kill a deer. The average life span of a whitetail deer is is 3.5 years!! The so called "science" that says baiting spreads CWD is a joke at best. If it really did, there wouldn't be any deer left in North Dakota. Thank you for your time. Please pass this bill.

Thank you for your time.

Lyle Sinner

SB 1156

Senators,

Please vote in favor of this bill. Baiting is wanted in North Dakota and I think the people have shown their feelings in the matter. I have yet to see facts from science that show this disease is a large threat to deer populations across the state. Matter of fact all the rest of the states in the US that have baiting bans have failed to stop CWD, but the numbers of CWD infections are microscopic when compared to the number of deer. We had 24 cases in the state in 2022. How many deer get hit by cars in North Dakota? Id bet its more than 24 deer a year. My mind could be changed if science could show us that CWD was spreading rapidly and was an actual threat to deer populations. Most scientists and biologists agree that deer can live for numerous years with CWD, 6-7-8-9 years even. This is protecting hunters rights. We are tying the hands of game and fish, but this law can always be reversed in the future, if CWD does suddenly start killing our deer at a rate that is significant. 24 deer last year that were killed by other means and then tested positive for CWD is not a significant number. As I stated earlier, more deer die from vehicle collisions than CWD. Id also like the bird feeder and property line rules taken out completely. What does a bird feeder have to do with CWD, likewise what does a property line have to do with CWD. Restrictions on property lines is a just an attack on property rights.

Thanks

Ken Carbary

701 230-2875

<html><head></head><body style="word-wrap: break-word; -webkit-nbsp-mode: space; line-break: after-white-space;">RE HB 1151<div>
</div><div>Senate resource energy natural committee </div><div><div><div><div><div>Im a life long rancher, land owner, and hunter from <u>Medina ND. In support of HB1151</u></div><div><u>
</u></div><div><u>Vote on HB yes you </u></div><div><u>Tom 1151 </u></div><div><u>
</u></div><div><u>Thank Kleven</u></div><div></div></body></html>

Energy and Natural Resources Committee,

Please vote NO on HB 1151

I am writing today as a sportswoman, North Dakotan, and as a mother.

CWD is an always fatal disease to deer, elk, and moose. There are numerous rigorous scientific studies that demonstrate baiting contributes to the spread of disease in wildlife populations. The North Dakota Game and Fish Department is charged with managing our wildlife populations now and into the future. If the rate of CWD infection is allowed to grow unchecked, the health of our deer herd will be negatively impacted. These statements are fact.

As a hunter and someone that relies on wild game as part of my family's diet I am concerned about the short-sighted nature of this bill. As a hunter and as a mother I take great pride in my ability to harvest healthy sustainable protein for my family. I am thankful that my daughter understands where her food comes from and the sacrifice of life that is involved in sourcing that food. My hope is that someday, when she is ready, she chooses to be a hunter. I hope that when she makes that choice, her opportunities are as great as mine have been. Every year that my family harvests a deer we submit that deer to the North Dakota Game and Fish Department for CWD testing. Every year we wait with bated breath, hopeful the results of that test come back negative. When you have put so much of yourself into harvesting an animal that will sustain your family, the thought of that animal being CWD positive is unbearable. Right now, CWD rates are low in our deer population and my family has yet to face the difficult decision of discarding meat from a CWD positive harvest (the CDC states that if your animal tests positive for CWD, do not eat the meat). Food that was meant to feed my family. That is a choice I hope never to have to make and one that is preventable. For me personally, increased CWD rates in our deer herd will mean less opportunity and a greater chance of harvesting a CWD positive deer.

If this bill is allowed to pass the wildlife professionals that are charged with protecting and managing our wild deer herd, will lose a valuable tool in combating the spread of CWD. If wildlife managers can no longer use one of the easiest most cost-effective tools to manage CWD, it will only be a matter of time until we see CWD rates increase, and the health of our deer herd decrease. I ask that you allow the ND Game and Fish Department to continue managing our wildlife populations without the restrictions of HB 1151.

An ounce of prevention is worth a pound of cure. Let's use that same common sense approach and oppose HB 1151.

Respectfully,

Rachel Bush

Megan Langley 280 102nd St NW Souris, ND 58783 (701) 303-0840

Good morning, Chairman Patten and members of the committee, thank you for taking my testimony into consideration today.

I am a lifelong North Dakotan. While hunting was a big part of my childhood, at the ripe old age of 35, I finally wrapped up my first full archery season, securing a nice 5 x 5 off my parents' land in 2F1 in September. I am lucky to have had a very successful first run, and I recognize that I had several tools at my disposal that many first-time archery hunters in our state don't have, including plentiful land along the Sheyenne River Valley, a partner with vast hunting expertise, and the ability to bait.

I spent an incredible amount of time from the spring of 2022 to the fall of 2022 getting ready for archery season. I acquired a bow and associated archery implements; spent time learning to shoot and estimate yardage; set up five tree stands and one tower stand; installed and monitored Tactacams; planned out and spent time hauling bait; and made a plan for which buck I wanted to shoot.

As all of you know, along with an investment of time came an investment of money. Based on receipts and a listing of debit card transactions, I am estimating that between equipment, clothing, bait, fuel, food, and taxidermy costs, I spent just north of \$8,000 to get myself set up this archery season for future seasons. Now, this year being my first year, I know my hard costs were especially high because of the capital expenses of a bow, tree stands, and cameras. I had some "catch up" to do. But my potential annual costs were not out of the ordinary in comparison to costs published by the North Dakota Game & Fish. According to the North Dakota Game & Fish. Hunter & Angler Spending Report of 2017/2018, resident archery hunters spent, on average, approximately \$969.12 per season.

This equates to a primary spend per season by the total number of resident licensed hunters, which was 26,114 in 2017/2018, to \$25,307,600. *Please note, this is direct-spend, not secondary economic impact.*

Many on the committee may feel like this is an impressive number, and you're right. However, since baiting has been restricted across North Dakota, the amount of direct-spend by resident licensed archers is actually down 27.4% based on the

economic reports published by Game & Fish. In 2017/2018, baiting was banned in 20 of 38 units. Based upon the same economic impact report from the Game & Fish, the average spend of resident licensed archers in North Dakota in 2011/2012 was \$1,335.54. In 2011/2012, baiting was banned in 1 of 38 units. If that average spend would have remained consistent from 2011/2012 to 2017/2018 with an assumed same or similar amount of licensed resident archers, the total direct-spend impact would have been \$34,876,292. That is a difference of nearly \$10 million.

While the decline in average spend per archer cannot be fully attributed to the restrictions on baiting across the state, one can assume a correlation. More recent numbers are not yet available, as it appears the Game & Fish only collects and publishes this data approximately every 5 years. Yet, if we assume a similar decline based on baiting restriction patterns of 27.4% and a similar amount of licensed resident archers, restrictions on baiting may bring the total direct-spend in North Dakota to \$18,373,317. A nearly \$17 million potential difference from pre-banning of baiting numbers.

You will hear from the Game & Fish that license sales for archery in North Dakota have increased by 3,000, which includes non-resident archery tags, between 2016 and 2021. Although this is an excellent statistic for the archery sector, it doesn't nullify the negative correlation of baiting bans - it simply indicates that - during a time period where North Dakota saw an unprecedented growth of the state's population - approximately 90,000 people - we happened to pick up additional hunters.

As I close today, I ask for your support of HB 1151 to not only maintain the viability of North Dakota's archery hunting economy but also to support the magnification of other recent state investments, like investments in workforce recruitment and retention by the Legislature, and, most recently, investments by the Wonder Fund North Dakota, a North Dakota Development Fund investment program, in Land Trust, as an online land sharing marketplace connecting landowners with outdoor enthusiasts, designed to create income for landowners and drive economic development in rural communities. Allowing for the continued banning of baiting in units across the state may cut this most recent investment of taxpayer dollars by hardworking North Dakotans off at the knees if resident and non-resident archers are not able to access baiting as a tool for hunting success.

Thank you. I will now stand for any questions.

Summary of Archery Figures in Testimony

Year	Units Banned	Reported Per Season Spend	Number of Licensed Resident Hunters	Total Annual Spend All Archers
2011/2012	1 of 38	\$1,335.54	26,114*	\$34,876,292
2017/2018	20 of 38	\$969.12	26,114	\$25,307,600
2024/2025**	38 of 38	\$703.58	26,114*	\$18,373,317

^{*}Because exact numbers for licensed resident hunters are not published or available, the known number of hunters for the year in which the data was collected was utilized for all estimates (26,114).

Firearm (Rifle) Deer Resident Hunter Numbers for Comparison

Year	Reported Per Season Spend	Number of Licensed Resident Hunters	Total Annual Spend All Rifle Hunters
2011/2012	\$643.04	40,904*	\$26,302,908
2017/2018	\$657.07	40,904	\$26,876,791

^{*}Because exact numbers for licensed resident hunters are not published or available, the known number of hunters for the year in which the data was collected was utilized for all estimates (40,904).

Report Referenced & Utilized for Figures: ND Game & Fish Hunter & Angler Spending Report (2017/2018)

^{**}Numbers for 2024/2025 are extrapolated based upon an assumption that baiting could be banned statewide, which could result in another 27.4% per archer decrease in reported per season spend.

My Name is Curt Francis, from Bismarck, ND. I am ND deer hunter and am discouraged by this bill.

This bill and its amendments do nothing to decrease the spread of CWD within our deer herd.

As a hunter I am concerned about the impacts this bill will have on our deer population long-term and what that will mean for deer license availability.

Most hunters feel a responsibility towards the future health of our deer herd. We do this by trusting the Game and Fish to manage with the best available information. This bill is short sighted and does nothing to protect the future health of our deer herd.

Please keep not only current deer hunters in mind when considering this bill, but what its implications will be for future generations of deer hunters. I ask that you give this bill a DO NOT PASS.

Respectfully,

Curt Francis

I am in support of bill HB1151. I believe there is a more of a negative impact for banning baiting on private land than not allowing it. It should remain to the private landowner if he/she wants to bait or not bait on their property.

Senate Energy and Natural Resources Committee:

I am writing today to submit testimony in opposition to HB1151, both in its original and current amended form.

The North Dakota Game and Fish Department has a difficult job of managing for diseases among wildlife while keeping long held hunting traditions and methods in place. Thus far North Dakota has not had significant increases in CWD-positive deer and I believe that is due to management practices implemented by NDGF. One of those management practices is the banning of baiting big game in hunting units that have had deer test positive for CWD.

My concern with this bill does not involve the ethics of baiting deer for the purposes of hunting. My concern is with having legislative bodies create statute that will inhibit the NDGF's ability to manage game populations utilizing the latest science and best management practices.

This bill may be well intentioned but it sets a dangerous precedent. Other states have had legislatures enter the wildlife management arena and have thus managed by "popular opinion" and have seen declines in opportunities and outright bans of some hunting opportunities. I don't want to see North Dakota go down that same road and therefore would like to see HB1151 defeated.

Thank you, Joseph R. Doll Cody Hilliard 280 102nd St NW Souris, ND 58783 (701) 460-7295

Good morning, Chairman Patten and members of the committee, thank you for taking my testimony into consideration today.

My name is Cody Hilliard, and I am a lifelong North Dakotan and avid bowhunter, rifle hunter, and hound hunter. I am in favor of HB 1151.

I submitted written testimony that highlights three critical points as to why I am in favor of HB 1151 and the existing ineffective approach of the North Dakota Game & Fish, and I will quickly attempt to provide context to those points for your consideration.

The North Dakota Game & Fish's Wildlife Veterinarian has been touting for a number of years the strength of their data collection processes for CWD, and that testing and collecting dead heads is slowing the spread of CWD. But if that were true, why are we all here today? How is it that the Game & Fish's data collection and CWD intervention strategies are so effective, that a bunch of sportsmen with their own jobs who are not paid to study existing North Dakota and surrounding state's CWD data are able to challenge or otherwise present studies and state-based outcomes counter to the Game & Fish's?

The Game & Fish seems to only be interested in counting the number of CWD positive deer. Why have there been no efforts to engage in meaningful best-practices-based solutions to cure or otherwise treat CWD positive deer? You hear over and over again from the Game & Fish that deer will die from CWD; however, there is only 1 recorded case of a dead deer being found in the wild in North Dakota that had an unknown cause of death that - just so happened to have - CWD.

What you won't hear from the Game & Fish is that there are successful efforts in other states to support CWD immunity in deer herds. You will not hear them discuss the success stories or breakthroughs that high-fence operations have had in treating CWD positive deer AND CWD positive soil. You only hear fear that if we don't ban hunting using baiting we will increase the spread of CWD. But mind you it is still ok to feed animals and take pictures of them with a trail camera over a bait pile AND the Game & Fish still utilizes interceptive feeding in non-CWD positive units. But when you bring a bow or a firearm the chances of CWD increase, by their logic.

In a bit you will see other hunting groups come up here to take a stance against HB 1151. We can only wonder what their true agenda is. How can you have a so-called sportsmen's group stand up against an overwhelming group of sportsmen and still claim to represent sportsmen? They don't represent a group, they represent one person of that group with their own agenda.

From day 1, banning baiting under the guise of CWD mitigation has been a veiled attempt to further an ethics-based argument being pushed subliminally by the Game & Fish. As I wrote in my testimony to the House Committee, the Game & Fish has paid hunter education instructors grooming our future sportsmen and sportswomen to believe baiting is unethical. At that time, I did not want to expand too extensively as there was fear of retaliation against a future sportsman who was in the course at the time. When a Game & Fish employee was questioned at the House Committee hearing on this by Representative Ruby, he said he would not be in support of framing baiting as an ethical issue and he had not heard this happened. Even in the Game & Fish hunters education online portal, they are grooming future hunters to believe baiting is a "gray area" in terms of ethics. After the hearing was done and we went back to everyday life, the future sportsman returned to their hunter's education course to take the final exam. No more did the class sit down and the paid hunters education instructor said "hello" that the instructor went on a rant about how there was miscommunication and he never said baiting was unethical. Seems like there has been inconsistency amongst the Game & Fish regarding messaging of baiting to sportsmen.

I am sharing this information as context for your consideration as you listen to the testimony against this bill. What's the agenda that is really being pushed? Is the concern truly about CWD? Or is this an opportunity for ethics to be pushed on North Dakotans?

Thank you for your time. I will now stand for questions.

TESTIMONY FOR HOUSE COMMITTEE HEARING | JANUARY 2023

Cody Hilliard 280 102nd St NW Souris, ND 58783 (701) 460-7295

Good morning, Chairman Porter and members of the committee, thank you for taking my testimony into consideration today.

My name is Cody Hilliard, and I am a lifelong North Dakotan and avid bowhunter, rifle hunter, and hound hunter. I am in favor of HB 1151 in order to create and enact a new section of the North Dakota Century Code, relating to baiting deer for hunting, where baiting deer for lawful hunting cannot be prohibited.

The part of the proposed legislation I would like to speak to is the inclusion of language stating "...the department may not issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting." Much of the pushback from North Dakotans regarding this bill hinges on this limitation of control by the North Dakota Game & Fish Department. I feel the inclusion of this language is necessary for the successful implementation of wildlife conservation and practices reflective - not only of good science - but also the wishes and wisdom of the people of North Dakota. Specifically, I will discuss three specific actions that have caused people, like myself, to lose faith and trust in the North Dakota Game & Fish.

1. Lack of Transparency

As some on the committee may already know, the momentum generated behind HB 1151 has roots in the way in which the North Dakota Game & Fish leadership rolled out and enacted its late summer and early fall public meetings regarding Chronic Wasting Disease or CWD. I attended the meeting in Minot held on August 29th, 2022 and heard from several others that attended similar meetings throughout the state.

I was under the impression upon receiving a notice and invitation to attend this meeting that it was a true public meeting - not a one-sided conversation with strategies and protections in place to ensure that members of the public could not ask questions and were discouraged from engaging in conversations regarding CWD with one another to learn and share information. The complete

and total lack of transparency was unnerving. It became clear that the experiences, collective wisdom, and wishes of the public were to be ignored.

2. Spread of Misinformation

As has been mentioned by many others supporting HB 1151, the North Dakota Game & Fish Department has succeeded in shifting their focus and allocation of resources to promote the notion that baiting is unethical and is the primary cause of CWD transmission across the state. This is categorically untrue; however, members of the general public would not and do not know this through the "Protect the Herd" stickers on government-issued vehicles and the misinformed and completely biased rhetoric that is spewed to youth and new hunters. One particular example of intentional misinformation took place on Monday evening in Bottineau at a Hunters Safety class, where a 20+-year instructor, allegedly (according to his own admission), the first *paid* Hunters Safety instructor in North Dakota, stated that baiting was an example of disrespecting fair chase and violating the ethics of hunting. He indicated to a room full of young and new hunters that baiting was banned in Bottineau's unit *NOT* because of anything-related to CWD but rather because of ethical issues. This is just one example of information being manipulated to fit the agenda of the North Dakota Game & Fish rather than the Department clearly presenting unbiased information to allow young hunters and new hunters to make their own decisions.

3. Lack of Accountability

Some in opposition have cited concerns that this bill may limit the power of a state department head. I believe this bill does the complete opposite: HB 1151 builds accountability. This sets the precedent that decisions made and policies enacted by the department must be reflective of North Dakotans, with our emphasis on common sense, science, and good practice - not misinformation and lack of transparency.

Thank you. I will now stand for any questions.

HB 1151 – Support Testimony
Sixty-eighth Legislative Assembly of North Dakota

Andy Buntrock Menoken ND 3/15/23

Dear Committee Member -

I am writing in support of HB 1151 as it is currently proposed on 3/15/23 and I urge you to please move it forward without major modifications that would strip it of its intended purpose. Please let the people speak through a vote on the legislative floor.

Support for HB1151: My family and I feel strongly that this bill is needed to realign sportsmen with the hunting resource that has been gradually pulled away from them over the last decade, through the North Dakota Game and Fish's (NDG&F) gradually increasing restrictions on baiting.

Natural Immunity: According to Dr Christopher Seabury a professor at the College of Veterinary Medicine at Texas A&M and whom is a foremost expert in CWD genomic predictive research, there is a tendency for genomic resistance to CWD in deer that is nearly 20-30%. *In essence nearly 1/3 of the deer population may hold the genetic makeup to be resistant to CWD.* This phenomenon is also seen in areas of states where government agencies eradicated large groups of deer due to a CWD positive and found that a significant slice of the exterminated deer were CWD negative. Dr Seabury is working closely with the USDA as well as the university, to continue this ground breaking work that is uncovering that mother nature is caring for her own and natural immunity is a real thing.

If Sheep Can Do It So Can Deer: Scrappies is a similar disease that is no longer prevalent in our sheep population due to the *coadaptation of host versus pathogen* over generations of sheep. CWD in deer was found as recent as 1960, so only about 60 generations of deer have been through this adaptation period. It takes time, but mother nature will figure this out, not mandates issued by agencies that have failed to work in other states and will reduce hunter opportunity and turn people away from the sport.

Previous Attempts On Baiting Bans: In the 2007 legislative session, the NDG&F proposed a ban on baiting through the legislator. This bill made it to a vote on the floor and was badly beaten. *Some legislators even admitted during session vote of getting more emails opposed to this particular bill to ban baiting, than any other bill proposed that year.* After that defeat, the NDG&F has slowly been restricting baiting where a positive CWD case is found or even in neighboring units.

Unnecessary Hysteria: The reaction to CWD is similar to other unnecessary and heavy mandates by the government that we have seen in recent years, which have been fed by media frenzy and federal dollars. *Recent infection of EHD has killed 80-90% of deer in some units.* The reaction to this by the NDG&F when asked, is that it is naturally occurring and just needs to run its course. I ask if the concern is about the herd, then why is a total EHD die off like that, brushed aside and CWD remains center stage? When the herd is dead its dead, regardless of cause. CWD is also a naturally occurring phenomenon, so one would think the two issues would be treated equally.

Thank you for your consideration in supporting this bill for the sportsmen and women of North Dakota and the generations of youth that we need to recruit into hunting.

This Bill, 1151 needs to pass. Taking the opportunity away from an elderly, handicap or child to harvest a deer is not acceptable. The Game & Fish have overstepped their boundaries on this situation and it is not going to matter if people put out a little bit of bait to harvest a deer when there are hundreds of them eating amongst each other every winter. I strongly urge you to pass Bill 1151.

Thank you,

Jeff Sinner

HB 1151 – Support Testimony
Sixty-eighth Legislative Assembly of North Dakota

KariAnn Buntrock Menoken ND 3/15/23

Dear Committee Member -

I am writing to ask you to support HB 1151. My family bow hunts and we have utilized baiting for decades in our pursuit of whitetails. We have two little girls that are coming of age and we hope to get them started in bowhunting. Please help us move HB 1151 forward so that we can continue the heritage that is being slowly taken from us for reasons that are tied more to money than science.

Thank you for your consideration in supporting this bill.

KariAnn Buntrock

This Bill, 115	1 needs to pass.	ND Game & Fish	has overstepped	their boundaries	on this situation a	ınd I
strongly urg	e you to pass Bill	1151.				

Thank you,

Danica Sinner

My Name is Terry Kissner from Westhope, ND.

I have been a bowhunter for 60 years, an archery instructor for 40+ years and was a competitive archer for may years during the 80s and 90s.

I take young archers hunting for the first time and a bait pile to pull a deer close and hold them there gives me time to explain shot placement and where to aim. A lot of these kids have never been close to any wildlife and to see their eyes light up when any animal come close is priceless.

I believe bait is just another tool a hunter uses just like the Indians used bait to pull animals into an area. I have witnessed 15 bucks by my stand in one night all use the same scrape and all 15 licked the same licking branch above the scrape and 2 does did the same. Further, a buck and doe exchange fluids in November and December.

There's only one way to control CWD, and that is to eliminate every deer, moose and elk in North Dakota which I think everyone would agree is not the way to go.

For these reasons I urge a do pass on HB 1151.

Thanks, Terry Kissner



Senate Energy and Natural Resources - HB 1151 Pete Hanebutt, NDFB Public Policy Director Meghan Estenson, NDFB Legislative Counsel March 16, 2023

Chairman Patten and members of the committee,

North Dakota Farm Bureau supports HB 1151.

NDFB is a grassroots organization. Our members bring issues to their county Farm Bureaus, then to their district meetings, and finally to the NDFB Annual Meeting to be voted on by fellow Farm Bureau members. Then these issues are compiled to make up our member driven Farm Bureau Policy Book.

Our policy specifically states that we support baiting of big game animals as a method of take on private property to control Cervidae populations. – ID #2595/23

NDFB respectfully requests a "Do Pass" recommendation on HB 1151.

My name is Dylan Bauer and I want to express my opposition to HB 1151 and the intended actions of this bill. I am a lifelong sportsman of North Dakota and value the opportunities which hunting, and fishing allow in ND.

North Dakota House Bill 1151 would severely undermine the North Dakota Game and Fish Department's (NDGF) authority and ability to manage deer and deer hunting with the best-available science. Specifically, the bill removes the authority from NDGF to issue rules or adopt a policy or practice prohibiting the baiting of deer for lawful hunting. The bill, and the removal of management authority from NDGF, is a direct attempt to undermine chronic wasting disease (CWD) management efforts in the state.

The practice of baiting and its role in deer management have grown in terms of controversy and complexity in recent years. Baiting increases density around a single food source and therefore increases the potential for direct and indirect contact among wildlife specifically deer. The NDGF has used baiting bans as a management tool to reduce the risk and spread of CWD. The supporters of this bill cannot legitimately prove that these efforts have NOT been significant at reducing the spread of CWD in North Dakota.

Wildlife management decisions, and especially disease management decisions, should remain in the hands of professional wildlife managers. I ask you to vote NO on HB 1151 and keep management of North Dakota's wildlife in the hands of the professionals and biologists.

Dylan Bauer

North Dakota Sportsman Bismarck, ND 58501 My name is Krista Lundgren. I am submitting testimony in opposition to HB 1151.

I am a lifelong resident hunter of deer, pheasants, grouse, and waterfowl in our state. This past year I was fortunate enough to draw a resident moose tag. I also volunteer my time as a Hunter Education instructor.

This bill is important to me because I fully support management of this state's wildlife resources based on best scientific knowledge. This bill directly jeopardizes our professionals' management ability.

I value our deer, elk, and moose populations in the state. The current CWD restrictions prohibited me from bringing my moose home whole in the carcass, but I was glad to do it. It was a small ask to contribute to longer moose hunting opportunities into the future.

I personally am successful without the use of baits, but I do not see allowing or disallowing baiting as a main driver of hunting interest or success. I do see the spread of CWD or other diseases as a threat to our deer, elk, and moose populations on top of the pressures they already face-especially lack of quality habitat.

I strongly urge you to vote no, and to keep wildlife management decisions in the power of professionals who base their decisions on the supporting science and public input.

Thinking about the future: for my daughters and all hunters,

Krista Lundgren



March 15, 2023

The Honorable Dale Patten
North Dakota State Senate, District 26
Chairman, Energy and Natural Resources Committee
State Capitol
600 East Boulevard Avenue
Bismarck, ND 58505
dpatten@ndlegis.gov

RE: Opposition to House Bill No. 1151 – Diseases Risk & Authority of NDFG

Dear Chairman Patten,

The Central Mountains and Plains Section of The Wildlife Society (CMPS) includes professional wildlife biologists in the State of North Dakota. CMPS strongly opposes House Bill No. 1151, introduced in North Dakota's 68th Legislative Session. This letter outlines CMPS' primary concerns regarding this bill, focused on (1) the increasing risk of transmitting diseases and infections among individuals (including to domestic livestock) and (2) that it undermines the North Dakota Game and Fish Department's authority and ability to manage deer populations based on the best available science.

Known as the "Baiting Bill," this legislation endeavors to create and enact a new section to chapter 20.1-05 of the North Dakota Century Code. This bill was originally described as relating to baiting deer for hunting but has recently been broadened, according to the Legislative website, and now reads "relating to baiting big game animals and supplemental feed attractants." Following intense, and at times emotional testimony and discussion concerning the Bill, the House of Representatives passed the Bill, and it has now moved to the Senate for consideration.

CMPS opposes H.B. 1151 for two major reasons. First, the practice of artificially placing bait on a site to attract deer, primarily for hunting purposes, has the potential to severely impact and threaten the deer and elk populations in the state by increasing risk of transmitting diseases and infections among individuals. *Chronic Wasting Disease* (CWD) is of high concern, presently, as it spreads across North Dakota and the nation. CWD is a transmissible disease that can be spread directly from animal to animal, or indirectly through CWD-contaminated environments.

Baiting and feeding artificially increases the frequency in which deer directly contact one another and creates contaminated hotspots with higher risk of indirect transmission of disease. Many of these diseases, such as CWD, are spread by saliva exchange on bait sites. Once contracted, CWD results in mortality of the affected animal and can cause population-level effects [1]. In Saskatchewan, where baiting and feeding are widespread and were never regulated, infection rates in mule deer have risen from approximately 3% to 70% in 15 years in core areas [2]. This is the fastest increase documented in free-ranging deer.

Research has repeatedly demonstrated that supplemental feeding and baiting have been major factors in the propagation and persistence of several diseases in deer and elk populations, many of which can also infect livestock [3,4].

Bovine Tuberculosis (bTB) is one such pathogenic disease that should be considered as it are capable of being transmitted rapidly as deer and elk feed in high density and in close proximity to one another. Michigan and Minnesota continue to have outbreaks of bTB in wild white-tailed deer, with concerns for human health. In response, both states have followed the same general approach to eradicating bTB, which includes eliminating baiting and supplemental feeding of wildlife [5,6]. Scientific studies in Michigan found that baiting and feeding of deer enabled the bTB outbreak to persist and spread. Specifically, "consistent availability of food over longer periods of time, as would occur with supplemental winter feeding or persistent recreational feeding, increased [bTB] prevalence in deer and cattle herd[s]" [7]. The infected deer population of the endemic area of Michigan contribute to continued infections in cattle – a cause for concern among producers who engage in national and international market [6]. In addition to bTB, Bovine brucellosis is also a heightened concern to the U.S. Department of Agriculture because this contagious and costly disease of ruminants (e.g. cattle, bison and cervids¹) has significant animal health, public health, and international trade consequences.

The North Dakota Game and Fish Department has developed a *Chronic Wasting Disease and Surveillance Plan 2023-2027*. This plan seeks to scientifically slow down the spread of this deadly disease in the North Dakota deer herd. One tool that can be used to slow down the spread of the disease is the elimination of artificially placed bait piles. CMPS supports the North Dakota Game and Fish Department's plan to address this rapidly growing threat to the deer population. During winter in North Dakota, deer will naturally concentrate in areas where food is available. However, the responsible management action for the sustainable health and well-being of the deer herd is to eliminate congregating deer on artificially created sites such as on bait piles that increase the risk of disease transmission.

_

¹ Cervid – deer, elk, moose, etc.

Second, CMPS opposes H.B. 1151 because it would seriously and severely undermine the North Dakota Game and Fish Department's authority and ability to manage deer and deer hunting with the best-available science. The Game and Fish Department has been given the authority and responsibility to manage wildlife populations and their habitats by the State of North Dakota. The Department employs educated and trained personnel in fulfilling this responsibility using the best and most up-to-date science available. CMPS encourages the North Dakota Senate to support the North Dakota Game and Fish Department in its efforts to manage and perpetuate wildlife populations and their necessary habitats in the state. The use of sound science by the Game and Fish Department in managing the state's wildlife populations will result in the best and most sustainable use of these resources by the public, which we recognize are of great value to residents and visitors alike.

We hope that the discussion related to H.B. 1151 spurs the state of North Dakota to consider following the lead of other Great Plains and Midwestern states and provinces that are protecting their deer (and the benefits associated with them, to include but not limited to hunting, local economies, etc.) from disease, not putting them at greater risk. Of note, in the aforementioned region, baiting is banned in Iowa, Missouri, Indiana, Illinois, Nebraska, Minnesota, and South Dakota, minimizing disease transmission risk. In places where baiting is regulated, Michigan, Wisconsin, Wyoming, and Saskatchewan, increased levels of costly disease transmission have been documented.

Thank you for the opportunity to offer comment to the North Dakota Senate as it discusses and debates H.B. 1151 and ultimately, make a decision on the proposed legislation.

Respectfully,

Stephanie Ferrero

Stephanie Ferrero, President
Central Mountains and Plains Section | The Wildlife Society
Certified Wildlife Biologist®
president@cmps-tws.org

cc: Jeb Williams, Director | North Dakota Game and Fish Department (ndgf@nd.gov)

Doug Goehring, Agriculture Commissioner | North Dakota Department of Agriculture (ndda@nd.gov)

ABOUT THE WILDLIFE SOCIETY

Founded in 1937, The Wildlife Society is an international network of over 11,000 leaders in wildlife science, management and conservation who are dedicated to excellence in wildlife stewardship. The Wildlife Society is composed of regional sections, state and provincial-based chapters, and working groups.

The *Central Mountains and Plains Section* represents TWS members in seven states: North Dakota, South Dakota, Kansas, Nebraska, Colorado, Utah, and Wyoming. Alongside our seven state chapters, we endeavor to sustain wildlife populations and habitats through science-based management and conservation. For more information: https://wildlife.org/cmp/

REFERENCES CITED

- [1] Edmunds DR, Kauffman MJ, Schumaker BA, Lindzey FG, Cook WE, Kreeger TJ, et al. 2016. Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PLoS ONE 11(8): e0161127. https://doi.org/10.1371/journal.pone.0161127
- [2] Saskatchewan Ministry of Environment. 2021-2022 Chronic Wasting Disease Surveillance Program Results. https://www.saskatchewan.ca/cwd and https://publications.saskatchewan.ca/ api/v1/products/115232/formats/130286/download
- [3] VerCauteren, K. and R. Miller. 2021. Characteristics and perspectives of disease at the wildlife-livestock interface in North America. In Vincente, J., K. VerCauteren and C. Gortazar, editors. Disease at the Wildlife/Livestock Interface: Research and Perspectives in a Changing World. Springer.
- [4] O'brien DJ, Schmitt SM, Fitzgerald SD, Berry DE, Hickling GJ. 2006. Managing the wildlife reservoir of Mycobacterium bovis: the Michigan, USA, experience. Vet Microbiol. 112:313-323. https://pubmed.ncbi.nlm.nih.gov/16376030/
- [5] Bovine Tuberculosis in Wild White-Tailed Deer: Background and Frequently Asked Questions. Forestry & Natural Resources. Purdue University. Accessed 3/15/23 https://www.purdue.edu/fnr/extension/bovine-tb/
- [6] VerCauteren KC, Lavelle MJ and Campa H III. 2018. Persistent Spillback of Bovine Tuberculosis From White-Tailed Deer to Cattle in Michigan, USA: Status, Strategies, and Needs. Front. Vet. Sci. 5:301. https://www.frontiersin.org/articles/10.3389/fvets.2018.00301/full
- [7] Cosgrove MK, O'Brien DJ, Ramsey DSL. Baiting and Feeding Revisited: Modeling Factors Influencing Transmission of Tuberculosis Among Deer and to Cattle. 2018. Front Vet Sci. 5:306. https://www.frontiersin.org/articles/10.3389/fvets.2018.00306/full

Energy and Natural Resources Committee,

As a lifelong resident, hunter, and landowner in North Dakota, I am writing testimony today in SUPPORT of HB 1151 for a couple of reasons.

The main benefit of hunting over bait, for me, relates to time spent in the woods with my wife, two young sons, father, and friends (many new to deer hunting). Being able to hunt over bait on private land allows us a greater opportunity to interact with nature on a more consistent basis. With the kids especially, it's very important to as many deer, bird, and squirrel encounters as possible to keep them interested and engaged. Since the ban on baiting in the unit I bow hunt, my time spent hunting with my family has decreased substantially do to loss of opportunity and interest.

Hunting over bait has been banned on various public and PLOTS lands before a positive CWD test existed in the state. With CWD testing of hunter-harvested deer they are now using an insignificant amount of positive tests to infringe on private landowner rights in the designation of "needing to do something."

The new wave of baiting ban regulation directly and inappropriately impacts private landowners and hunters, especially the youth, novel, and elderly.

Thank you for your time and consideration. I hope after hearing all sides of testimony you can recommend a DO PASS on HB1151.

Andy Tomanek

Dickinson, ND

Gage Nelson HB1151

This is a easy choice for an outdoorsmen if he wants to bait deer or not but it is not a choice for the game and fish. The ND Game and Fish has put into place in certain units of our state that are completely unreal. They claim that bait piles are a way that the deer can spread CWD by congregating unnaturally during the year eating on the bait. We can feed deer with no threat of it but we cant hunt over it because then its baiting and it's a CWD spreader. The whitetail deer is a animal that naturally congregate no matter the conditions. There is no numbers that support a baiting ban because they are going to come together no matter what.

In a regular winter deer will move to find food and they will move a insanely long distance to get it. Deer have been documented moving more then 10 miles to find food and then go back to their Summer/fall areas. The best way to keep these deer from not doing this is being able to give them the food that they are searching for without making them wander. A baiting ban will not do anything for these animals but hurt them.

In the other aspect if one was to ban baiting you would have to get rid of all food plots as well. Cutting out a corn pile is just cutting out the small guys in the hunting world. These deer will have just as much contact in food plots as they will on a bait pile. They want to ban it to be proactive against the threat of CWD because other states have done this and have no numbers to support it. There is nothing good that will come out of a baiting ban in North Dakota. We need to be able to keep our states deer as healthy as possible and that's what food does.

I oppose HB1151. I'm asking you to please allow the North Dakota Game & Fish to manage wildlife and wildlife diseases. The potential long term negative effects of this type of legislation to the NDG&F department and the public's resource is very concerning. I ask you to please vote NO on HB1151 and allow the NDG&F to manage our wildlife.

Blake Amon

Minot, ND

I am a 20 year old male that dies for hunting big game. I'm on the game and fish side to band baiting. I have been hunting big game since I was old enough to get my first bow tag. Since then in my bow hunting career I have never used bait to shoot one of many deer I've shot. I personally feel it is not right to bait. Hunters do not need to have bait in order to harvest a big game animal. It's more of a challenge to hunt without bait. It also allows more big game to live and grow up to be a big buck or bull. With that last year we had diseases in animals and a lot of them were dieing and the numbers of big game were dropping and if baiting would be band a lot more of the big game animals would have survived. I think what the game and fish is trying to do is a great idea and I 100% agree with them to band baiting to increase the numbers of are big game animals.

Thanks.

My name is Mike Rabenberg from Bismarck. I am submitting this testimony in opposition to HB1151. I am an avid archery and rifle deer hunter. I understand that Chronic Wasting Disease poses a significant potential threat to North Dakota's deer and moose populations. In my opinion, the legislature should not limit the tools available to NDGFD for combating this potentially devastating disease. Let the wildlife professionals do their job. Real sportsmen understand that additional hunting rules and restrictions are sometimes necessary to ensure future hunting opportunity for all North Dakotans.

I'm reaching out to you today to respectfully ask for a no vote on HB 1151. As a wildlife biologist and deer hunter, I am opposed to the bill because it would severely undermine the North Dakota Game and Fish Department's authority and ability to manage the public's deer and deer hunting with the best-available science.

The bill removes the authority from NDGF to issue rules or adopt a policy prohibiting the baiting of big game for lawful hunting, regardless of disease risk in hunting units. If the Department loses their tools to manage for diseases like chronic wasting disease and bovine TB in the state, who is going to take responsibility when a disease outbreak occurs?

As a hunter, I want healthy, robust populations of deer. This bill puts the long-term viability of our deer herd and deer hunting in jeopardy for the benefit of a small minority of people. Hunting is one of North Dakotas best assets and I want it to remain that way for future generations.

Please Vote No on HB 1151.

Thanks,

Catrina Terry

1101 2nd Ave NW Mandan ND 58554

701 319 0585

Testimony in Support of HB 1151

I, like many other sportsmen in North Dakota, are very passionate about hunting. Spending most of my spare time educating myself by observing deer or reading about them. Deer health is always a top priority to ensure a bright future for our sport.

Deer constantly like to be congregated and are very social animals. Making direct contact by communicating through licking branches and grooming one another. Besides that most are eating together at the same destination food source. All this exposure naturally takes place year after year. Research shows that CWD prions in soil and on plants last for at least two years but likely longer. Deer are creatures of habit and will often use the same trails and eat on the same food sources each year. How does a deer briefly stopping at a bait have such a detrimental effect?

The data I have read shows in the past twenty years there have been 40,000 harvested deer and tested for CWD. In that time frame there have been 70 positive cases. Out of these 70, 69 were harvested deer and only one of them was a deer that was found dead. That is less than one percent of the tested deer testing positive for CWD. The numbers in all the current and past research do not add up to needing restrictions on baiting.

Currently you can bait if you want to get pictures but not if you have a weapon in your hand. Theories and speculation are taking away rights of hunters. Baiting should be a choice that is optional to all hunters. To limit educated, health conscious hunters who are trying to add nutrition to a deer's daily diet does not make sense to me.

Allowing baiting could get more elderly and disabled people involved in the sport. It also is appealing to out of state hunters in turn will increase hunting license sales. It is a great way to get young hunters outdoors and let them enjoy watching game in a close proximity. Baiting is a tool often used to help position deer for a more ethical shot placement. There are more pros than cons when it comes to baiting.

There is not enough factual data to justify not allowing baiting. I would appreciate it if you could reflect on what I have said and give back to sportsmen who are trying to enjoy their sport. Please vote yes on HB 1151.

			consi	

Sincerely,

Jordan Dahle

I am writing my testimony in opposition of HB 1151.

I have been a North Dakota resident my whole life and my family has lived in this state for 5 generations each one of them being hunters. I have grown to love the natural resources that we are so fortunate to have in this state. HB 1151 would have dramatic impact on our game and fish agency from making decisions and putting in place laws to better our natural resources. Growing up I wanted to be a biologist more than anything, I went to college at the University of North Dakota to obtain a wildlife biology degree to have an impact on the things that I care most about, the wildlife that call our state home. This bill would hinder and set a dangerous precedent going forward that the game and fish will not have lawful grounds to make other decisions and laws. Biological decisions should be made by professionals who have dedicated their whole lives to bettering resources and have the resources best interest at heart. The ban on baiting does not take away any opportunity from the public, the public still has every opportunity to hunt and take deer. The ban on baiting is a way to help slow the spread of Chronic Wasting Disease, if CWD gains a foothold in North Dakota this alone could take opportunity away from the sportsmen and women of North Dakota. I ask that you take into consideration, the consequences of this bill passing and CWD running rampant and unchecked through our deer herds.

Members of the Committee,

I am providing testimony in opposition of H.B. 1151. While I have no views on whether baiting is ethical or not, I do hold strong views on science-based decisions and common sense. What HB1151 has introduced is not legislation based on years of scientific data, it's based off of short-sided emotions. By overriding the wildlife management plans that Game & Fish has in place, you would be also introducing a dangerous precedent that multiple states have already negatively experienced.

Based off of the discussions since the bill was introduced, I see a majority of people would want this bill enacted because it best suits their style of hunting. In my opinion, the focus should be shifted to the resource. The scientific consensus is that congregating animals, in any fashion, is a good way to laterally transmit disease. We all know that deer are a social creature and we obviously can't stop them from their natural tendencies. But why is it so difficult to stop the one factor, the human factor, which could contribute to the spread of CWD?

As Representatives of the state, you are also the trustees of a public resource. Your responsibilities in managing that public resource are to take into account the best available data, not the loudest emotional response. Deer do not know the physical boundaries of property lines. Therefore, we can say this effects all people who take joy in seeing deer, whether they are hunters or wildlife viewers. Your decision today has the potential to damage a public resource for years to come. As stewards of this unique public trust, you need to realize that "It's not ours, it's just our turn".

I'll leave you with a quote from Theodore Roosevelt. "Defenders of the short-sighted men who in greed and selfishness will, if permitted, rob our country of half its charm by their reckless extermination of all useful and beautiful wild things sometimes seek to champion them by saying the 'game belongs to the people'. So it does; and not merely to the people now alive, but to the unborn people. The 'greatest good for the greatest number' applies to the number within the womb of time, compared to which those now alive form but an insignificant fraction. Our duty to the whole, including the unborn generations, bids us restrain an unprincipled present-day minority from wasting the heritage of those unborn generations. The movement for the conservation of wild life and the larger movement for the conservation of all our natural resources are essentially democratic in spirit, purpose, and method."

I implore you, Do Not Pass for HB 1151.

Very respectfully,

Liam Hale

Minot, ND

3/15/23

ND Senate Energy and Natural Resource Committee Members:

Thank you for the opportunity to submit this written testimony in support of HB 1151.

I am a lifelong ND resident hunter and I began going deer hunting on a regular basis 30 years ago with my dad when I was only 4 years old. He taught me woodsmanship, hunting skills, respect for the land, and respect for the animals that we love to pursue. Deer hunting is one of the most important things to my family and me. It is what I think about and prepare for all year.

This discussion on this bill will likely get heated as people on both sides of this issue feel that their hunting heritage and the way of life they grew up with is being threatened. Good arguments are going to be laid out on both sides of the issue.

The opposition is going to fight everything in the name of science. However, there have been plenty of studies on the other side of CWD that are simply ignored. Why is only one side of the CWD debate recognized by our Game and Fish? There has been no conclusive study saying that baiting bans actually slow the spread of this disease. However, what the NDGF is doing is not actually a baiting ban. It is a hunting over that bait ban. If these regulations are based on science, why is baiting still allowed? Why does feeding deer only become a problem when someone is trying to shoot a deer over it? Why does the NDGF still feed deer themselves to bait them away from hay yards? Why do they still plant small food plots to help concentrate deer in specific areas if they want to slow the spread? The answer is clear that this isn't about science. It is about a social or ethical preference our NDGF has against baiting. They are using science and CWD as vessel to ban what they feel is a morally wrong method of hunting.

Many on the opposition say this is an overreach by the Legislature. However, I see it as just the opposite. The overreach came from the NDGF first. This bill is to try and stand up against this overreach. Letting the Game and fish manage by social or ethical preference is a dangerous slope. The use of trail cameras could be next or maybe your favorite hunting rifle. They could also say it is no longer acceptable to use a rangefinder, scope or a high-powered long-range rifle. Maybe it is bowhunting they attack next? They could come after any method of take they want if the precedence is continued to be tolerated by sportsman. While I agree that wildlife management should be left up to the professionals, when the unelected professionals abuse their power, they need to be kept in check.

My support of this bill is also based on a loss of opportunity. I do not need bait to kill a deer and my success rate will not change no matter what direction this falls. This isn't about me. It is about certain groups of people that are less mobile or less fortunate to have no access to great land; a baiting ban will hit them the hardest. My elderly father, who can no longer hike the badlands chasing deer with his bow will suffer. Hunters with disabilities will suffer. Everyone wants to support Diversity, equity and inclusion. A baiting ban does the exact opposite. It makes the resource more available to able bodied people that have access to good land.

Of all the groups a baiting ban will hurt, Youth hunters are my biggest concern. We need to keep recruiting new hunters into the outdoors. Without them, we have no hunting future at all. Bait can enhance the hunter experience in the eyes of young kids. Seeing their eyes light up when they can watch a deer up close is one of my favorite things to watch. Keeping kids interested in the outdoors is crucial for the future of hunting. Bait can also aid in making their first hunting experience a positive one. It

helps with a more controlled setting when trying to get a child their first deer. It can keep a deer calmer and still while they wait for a good shot angle. The kid will have less of a chance wounding a deer and having all the negative emotions that come with that as their first hunting memories.

Again, Thank you for your time and consideration. I hope all of you hear both sides of the argument and decide on a best path forward. I urge you to support HB1151.

Jacob Wheeling

January 18, 2023

North Dakota Game and Fish Department 100 North Bismarck Expressway Bismarck, ND 58501-5095

RE: HB 1151

Dear Energy and Natural Resource Committee:

This letter is in strong support of HB 1151. My name is Travis Rinehart and I have hunted the great state of North Dakota since 2012. Our target game are white-tailed and mule deer but I've also had the pleasure of chasing upland game in your beautiful state.

North Dakota is often overlooked as a hunting destination but its truly blessed with quality trophy animals. Each year we strategically place trail cameras in July with hopes of catching a monarch buck snapshot by early October. And more often than not we are successful because of the use of bait.

Our hunting journal is chock-full of harvest memories from 2012 Curly Buck to 2014 Perfect Buck to 2016 Backer Buck to 2019 Bullberry Buck. The chase list goes on and on with Flattop, PJ, 60, Gregg, Sven, and Casper to name a few. I'm happy to report the North Dakota deer herd is healthy and bursting with world-class bucks!

All of these experiences are dependent on the use of bait. As the hunting season approaches we continue to use bait for a couple reasons. As an avid archery hunter I appreciate the fact of knowing the exact distance to my target. This provides the best opportunity to secure a clean kill shot and for my quarry to expire quickly. As the father to four children bait also provides increased success rate to my young hunters. The hunter as we know it faces extinction and its important we provide successful hunting opportunity to foster the passion our parents extended to us.

To recapitulate I strongly encourage you to support HB 1151 and keep providing quality hunting opportunity for the residents, non-residents, and youth of our Great Nation. Thank you for the consideration.

	fessional	

Travis Rinehart



Testimony of John Bradley
North Dakota Wildlife Federation
House Bill 1151
Senate Energy and Natural Resources Committee
March 16, 2023

Chairman Patten and members of the Senate Energy and Natural Resource Committee:

For the record, I am John Bradley, Executive Director of the North Dakota Wildlife Federation (NDWF). I'm here today representing our thousands of members in 15 affiliated wildlife and sportsmen's clubs across North Dakota that make up the North Dakota Wildlife Federation.

NDWF opposes HB 1151. As an organization that is built on our grassroots, our members and affiliates bring ideas forward through a delegate and resolution process, and just like you are elected to represent your districts, they represent their clubs and their members throughout the state. Earlier this year they supported via our resolution process that, and I quote:

"Therefore, be it resolved that the North Dakota Wildlife Federation supports the North Dakota Game and Fish Chronic Wasting Disease and Surveillance Plan 2023 – 2027 and the proposed actions and strategies to manage and restrict the spread of Chronic Wasting Disease."

HB 1151 would severely undermine the North Dakota Game and Fish Department's (NDG&F) authority and ability to manage deer and deer hunting with the best-available science. Specifically, the bill removes the authority from NDG&F to issue rules or adopt a policy or practice prohibiting the baiting of big game for lawful hunting. The original one-line bill, and now the amended bill, look to remove management authority from NDG&F. This. is a direct attempt to undermine chronic wasting disease (CWD) management efforts in the state and would have a detrimental impact on managing other diseases as well.

Our deer managers are working hard to implement methods and tactics to mitigate the spread of diseases, including CWD. The science tells us that artificial baiting increases unnatural, manmade density around a single food source and therefore increases the potential for direct and indirect contact among individuals. We understand that natural congregation occurs in our deer herds, but we shouldn't remove what we as humans can control from our management toolbox. Proponents of the bill have pointed that hunters are being unfairly targeted by NDG&F, while others are allowed to feed year-round. Unfortunately, the Department doesn't have the authority to regulate wildlife feeding. We should be looking to give the Department that authority to regulate wildlife feeding that is high-risk for spreading disease. This legislative body should be adding tools in their management toolbox to minimize the spread of disease, not stripping them of their authority. When it comes to CWD, we are buying our future selves time to figure this disease out and discover new ways to reduce and hopefully eliminate CWD from the landscape.

Outside of CWD, there are 11 other deer diseases that are thought to be spread by direct contact, including bovine tuberculosis (TB), some of these diseases, left unchecked, can severely impact our livestock producers as well.

The Association of Fish and Wildlife Agencies (AFWA) sites that unnatural concentration of cervids facilitates CWD transmission and establishment if CWD prions are present. AFWA, (which is made up from every state game and fish agency, as well as the National Rifle Association, National Shooting Sports Foundation, Boone and Crockett Club, Rocky Mountain Elk Foundation, Mule Deer Foundation, National Wildlife Federation, Wild Sheep Foundation, etc.) lists the prohibition of baiting or feeding wild deer as a best management practice for the prevention of CWD introduction and establishment. Imagine removing a ratchet from a mechanic's toolbox, and still expecting them to be able to fix your vehicle. HB 1151 intentionally removes this management practice (tool) from the authority of NDG&F.

Furthermore, this bill would also have a negative impact on hunting opportunities for sportsmen and women. Healthy wildlife populations are essential to the sustainability of hunting opportunities, and the spread of diseases such as CWD and TB can have a significant impact on these opportunities. Sportsmen and women hunt on the harvestable surplus of our deer population. But they are not the only ones, coyotes and mountain lions also work into that harvestable surplus, as do diseases, natural death, long winters, Fords and Chevys, semi-trucks, and anything else that kill deer. Every deer that dies from CWD is equal to one less tag in the long run since it comes off that surplus. Because of this, if or when the CWD infection rate balloons like it is in some states, that means fewer tags issued to hunters. By limiting the ability of the department to protect wildlife populations from disease, HB 1151 would also limit the opportunities for deer hunting in the long run.

Wildlife management decisions, and especially disease management decisions, should remain in the hands of professional wildlife managers – not lawmakers. HB 1151 would result in a massive setback for disease and deer management in North Dakota. We urge a Do Not Pass on HB 1151



March 15, 2023

The Honorable Dale Patten
North Dakota State Senate, District 26
Chairman, Energy and Natural Resources Committee
State Capitol
600 East Boulevard Avenue
Bismarck, ND 58505
dpatten@ndlegis.gov

RE: Opposition to House Bill No. 1151 – Diseases Risk & Authority of NDFG

Dear Chairman Patten,

The Central Mountains and Plains Section of The Wildlife Society (CMPS) includes professional wildlife biologists in the State of North Dakota. CMPS strongly opposes House Bill No. 1151, introduced in North Dakota's 68th Legislative Session. This letter outlines CMPS' primary concerns regarding this bill, focused on (1) the increasing risk of transmitting diseases and infections among individuals (including to domestic livestock) and (2) that it undermines the North Dakota Game and Fish Department's authority and ability to manage deer populations based on the best available science.

Known as the "Baiting Bill," this legislation endeavors to create and enact a new section to chapter 20.1-05 of the North Dakota Century Code. This bill was originally described as relating to baiting deer for hunting but has recently been broadened, according to the Legislative website, and now reads "relating to baiting big game animals and supplemental feed attractants." Following intense, and at times emotional testimony and discussion concerning the Bill, the House of Representatives passed the Bill, and it has now moved to the Senate for consideration.

CMPS opposes H.B. 1151 for two major reasons. First, the practice of artificially placing bait on a site to attract deer, primarily for hunting purposes, has the potential to severely impact and threaten the deer and elk populations in the state by increasing risk of transmitting diseases and infections among individuals. *Chronic Wasting Disease* (CWD) is of high concern, presently, as it spreads across North Dakota and the nation. CWD is a transmissible disease that can be spread directly from animal to animal, or indirectly through CWD-contaminated environments.

Baiting and feeding artificially increases the frequency in which deer directly contact one another and creates contaminated hotspots with higher risk of indirect transmission of disease. Many of these diseases, such as CWD, are spread by saliva exchange on bait sites. Once contracted, CWD results in mortality of the affected animal and can cause population-level effects [1]. In Saskatchewan, where baiting and feeding are widespread and were never regulated, infection rates in mule deer have risen from approximately 3% to 70% in 15 years in core areas [2]. This is the fastest increase documented in free-ranging deer.

Research has repeatedly demonstrated that supplemental feeding and baiting have been major factors in the propagation and persistence of several diseases in deer and elk populations, many of which can also infect livestock [3,4].

Bovine Tuberculosis (bTB) is one such pathogenic disease that should be considered as it are capable of being transmitted rapidly as deer and elk feed in high density and in close proximity to one another. Michigan and Minnesota continue to have outbreaks of bTB in wild white-tailed deer, with concerns for human health. In response, both states have followed the same general approach to eradicating bTB, which includes eliminating baiting and supplemental feeding of wildlife [5,6]. Scientific studies in Michigan found that baiting and feeding of deer enabled the bTB outbreak to persist and spread. Specifically, "consistent availability of food over longer periods of time, as would occur with supplemental winter feeding or persistent recreational feeding, increased [bTB] prevalence in deer and cattle herd[s]" [7]. The infected deer population of the endemic area of Michigan contribute to continued infections in cattle – a cause for concern among producers who engage in national and international market [6]. In addition to bTB, Bovine brucellosis is also a heightened concern to the U.S. Department of Agriculture because this contagious and costly disease of ruminants (e.g. cattle, bison and cervids¹) has significant animal health, public health, and international trade consequences.

The North Dakota Game and Fish Department has developed a *Chronic Wasting Disease and Surveillance Plan 2023-2027*. This plan seeks to scientifically slow down the spread of this deadly disease in the North Dakota deer herd. One tool that can be used to slow down the spread of the disease is the elimination of artificially placed bait piles. CMPS supports the North Dakota Game and Fish Department's plan to address this rapidly growing threat to the deer population. During winter in North Dakota, deer will naturally concentrate in areas where food is available. However, the responsible management action for the sustainable health and well-being of the deer herd is to eliminate congregating deer on artificially created sites such as on bait piles that increase the risk of disease transmission.

-

¹ Cervid – deer, elk, moose, etc.

Second, CMPS opposes H.B. 1151 because it would seriously and severely undermine the North Dakota Game and Fish Department's authority and ability to manage deer and deer hunting with the best-available science. The Game and Fish Department has been given the authority and responsibility to manage wildlife populations and their habitats by the State of North Dakota. The Department employs educated and trained personnel in fulfilling this responsibility using the best and most up-to-date science available. CMPS encourages the North Dakota Senate to support the North Dakota Game and Fish Department in its efforts to manage and perpetuate wildlife populations and their necessary habitats in the state. The use of sound science by the Game and Fish Department in managing the state's wildlife populations will result in the best and most sustainable use of these resources by the public, which we recognize are of great value to residents and visitors alike.

We hope that the discussion related to H.B. 1151 spurs the state of North Dakota to consider following the lead of other Great Plains and Midwestern states and provinces that are protecting their deer (and the benefits associated with them, to include but not limited to hunting, local economies, etc.) from disease, not putting them at greater risk. Of note, in the aforementioned region, baiting is banned in Iowa, Missouri, Indiana, Illinois, Nebraska, Minnesota, and South Dakota, minimizing disease transmission risk. In places where baiting is regulated, Michigan, Wisconsin, Wyoming, and Saskatchewan, increased levels of costly disease transmission have been documented.

Thank you for the opportunity to offer comment to the North Dakota Senate as it discusses and debates H.B. 1151 and ultimately, makes a decision on the proposed legislation.

Respectfully,

Stephanie Ferrero

Stephanie Ferrero, President
Central Mountains and Plains Section | The Wildlife Society
Certified Wildlife Biologist®
president@cmps-tws.org

cc: Jeb Williams, Director | North Dakota Game and Fish Department (ndgf@nd.gov)

Doug Goehring, Agriculture Commissioner | North Dakota Department of Agriculture (ndda@nd.gov)

ABOUT THE WILDLIFE SOCIETY

Founded in 1937, The Wildlife Society is an international network of over 11,000 leaders in wildlife science, management and conservation who are dedicated to excellence in wildlife stewardship. The Wildlife Society is composed of regional sections, state and provincial-based chapters, and working groups.

The *Central Mountains and Plains Section* represents TWS members in seven states: North Dakota, South Dakota, Kansas, Nebraska, Colorado, Utah, and Wyoming. Alongside our seven state chapters, we endeavor to sustain wildlife populations and habitats through science-based management and conservation. For more information: https://wildlife.org/cmp/

REFERENCES CITED

- [1] Edmunds DR, Kauffman MJ, Schumaker BA, Lindzey FG, Cook WE, Kreeger TJ, et al. 2016. Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PLoS ONE 11(8): e0161127. https://doi.org/10.1371/journal.pone.0161127
- [2] Saskatchewan Ministry of Environment. 2021-2022 Chronic Wasting Disease Surveillance Program Results. https://www.saskatchewan.ca/cwd and https://publications.saskatchewan.ca/ api/v1/products/115232/formats/130286/download
- [3] VerCauteren, K. and R. Miller. 2021. Characteristics and perspectives of disease at the wildlife-livestock interface in North America. In Vincente, J., K. VerCauteren and C. Gortazar, editors. Disease at the Wildlife/Livestock Interface: Research and Perspectives in a Changing World. Springer.
- [4] O'brien DJ, Schmitt SM, Fitzgerald SD, Berry DE, Hickling GJ. 2006. Managing the wildlife reservoir of Mycobacterium bovis: the Michigan, USA, experience. Vet Microbiol. 112:313-323. https://pubmed.ncbi.nlm.nih.gov/16376030/
- [5] Bovine Tuberculosis in Wild White-Tailed Deer: Background and Frequently Asked Questions. Forestry & Natural Resources. Purdue University. Accessed 3/15/23 https://www.purdue.edu/fnr/extension/bovine-tb/
- [6] VerCauteren KC, Lavelle MJ and Campa H III. 2018. Persistent Spillback of Bovine Tuberculosis From White-Tailed Deer to Cattle in Michigan, USA: Status, Strategies, and Needs. Front. Vet. Sci. 5:301. https://www.frontiersin.org/articles/10.3389/fvets.2018.00301/full
- [7] Cosgrove MK, O'Brien DJ, Ramsey DSL. Baiting and Feeding Revisited: Modeling Factors Influencing Transmission of Tuberculosis Among Deer and to Cattle. 2018. Front Vet Sci. 5:306. https://www.frontiersin.org/articles/10.3389/fvets.2018.00306/full



Contact:

Matt Perdue, Lobbyist

mperdue@ndfu.org | 701.641.3303

Testimony of Matt Perdue North Dakota Farmers Union Before the Senate Energy and Natural Resources March 16, 2023

Chairman Patten and members of the committee,

Thank you for the opportunity to testify in support of House Bill No. 1151. My name is Matt Perdue, and I am testifying on behalf of North Dakota Farmer Union's (NDFU) members.

NDFU supports HB 1151, which prohibits rules or policies that restrict landowners' ability to use baiting for lawful hunting. During our most recent annual convention, NDFU's members approved new policy that opposes the North Dakota Game and Fish "restricting baiting as a response to Chronic Wasting Disease (CWD)." Our members approved this policy due to skepticism around the effectiveness of baiting restrictions in slowing the spread of CWD and desire to protect private property rights. Without stronger evidence of baiting restrictions' effectiveness, our members do not believe a ban on baiting is the right response to CWD.

NDFU supports amendments to the bill to ensure baiting is allowed on a year-round basis and to eliminate subsection 3 of the bill. We believe these amendments bring the bill closer to its original intent and the intent of NDFU's policy.

Thank you for your consideration. We respectfully request a "Do Pass" recommendation on HB 1151.

In Favor of House Bill 1151 – Relating to baiting deer for hunting

Dear Committee Members:

As a landowner/rancher (since 1882) and an outfitter (since 2000) in North Dakota, I strongly disagree with the North Dakota Game and Fish controlling the public's access to bait for deer. We plant many food plots, have plenty of bait stations, and care for the wildlife as much as we can when mother nature doesn't cooperate. The management of the wildlife that roam across our property is a huge priority, which leads to plenty of opportunity for the sportsman because of the improved health we provide for them. We have increased the health of our deer herds over the last decade through management and baiting.

The bait stations we use typically would have a max of a dozen deer at any given time, but more than likely 2-3 is more normal. Without baiting for deer, we would not be able to get photos from our deer herd. Without these photos, we would not be able to target mature deer that need to be harvested. Without being able to target the right deer, many deer would get harvested prematurely and we would not have control over our deer herd. On the flip side, we would lose over 75% opportunity for these targeted deer and also lose interest from the sportsman from less excitement in the field. If we lose this excitement from sportsmen and younger hunters, the revenue coming into the game and fish would decrease. The deer would also not have the best living environment due to the decrease in funding, therefore have a lack of control on the herd.

I disagree that baiting influences CWD. Baiting is usually done in the summer/fall by sportsman when deer are more spread out. If there are only a handful coming into a baiting area, how do you control the wintering of deer herds. Our deer herds have wintered together of more than several hundred in a group without any bait every year. This is a natural thing for deer to group up in the winter around hay yards, shelterbelts, or crop fields in huge numbers. Shouldn't this be the bigger concern? This is a natural trait deer do in the winter is herd up. Why is there even a discussion about having a few deer together of bait when they naturally group together in extremely large numbers each season on their own?

Please consider joining landowners/sportsman and be in favor of HB 1151.

Sincerely,

Jeremy Doan

Black Leg Ranch/Rolling Plains Adventures

To whom it may concern,

Please allow baiting of big game. As a self employed individual, with multiple kids in variety of activities. Baiting allows me the opportunity to ethically harvest in the short amount of time I am allotted throughout the year. We use our game for sausage, bacon, steaks and many other types of table fare.

Thank you for your time, Matthew Geinert

My family and I are in support of HB 1151, NDGF says you can feed/bait deer all year but when it becomes hunted over it somehow causes CWD which is obscured. Deer in ND go through tough winters and heard up to food sources and it's a proven fact that if deer have a good nutrition source they can fight off CWD. Deer can live beyond 8yrs with CWD and our deer just simply don't make it that long in the state if ND with our harsh winters and many other factors.

Baiting is an important part of hunting and a way our family has hunted for generations, when we are on private land it should be OUR choice! Baiting makes for ethical shots especially for the beginner hunters. I had our new local warden this last fall (22) tell me that my bait pile was unethical on private land in a zone that it is completely legal to bait, which leads me to believe this isn't a CWD issue and that NDGF is pushing an agenda.

In the end it has been a way of life for ND hunters, I believe we need to be able to bait to make ethical shots especially for youth and disabled hunters. Thanks again for hearing me out and lets pass HB 1151 and keep it a ND way of hunting like it has been!

23.0021.03001

FIRST ENGROSSMENT

Sixty-eighth Legislative Assembly of North Dakota

ENGROSSED HOUSE BILL NO. 1151

Introduced by

6

7

8

9

10

11

12

13

14

15

16

17

18

Representatives Thomas, Cory, Grueneich, Heinert, D. Ruby, M. Ruby, Tveit Senators Elkin, Hogue, Meyer, Patten, Vedaa

- 1 A BILL for an Act to create and enact a new section to chapter 20.1-05 of the North Dakota
- 2 Century Code, relating to baiting big game animals and supplemental feed attractants.

3 BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new section to chapter 20.1-05 of the North Dakota Century Code is created and enacted as follows:

Baiting big game animals for hunting.

- 1. The department may not issue rules or adopt a policy or practice prohibiting the baiting of big game animals for lawful hunting on private property. A person may not provide supplemental feed attractants for the purpose of baiting and hunting big game animals except during the period from August twenty fifth to January seventh. For purposes of this section, "supplemental feed attractants" include grain, seed, minerals, salt, fruit, vegetables, nuts, hay, and any naturally derived scent or lure, including urine, or natural or manufactured food.
- 2. The quantity of supplemental feed attractants provided to big game animals which may be provided from August twenty-fifth through January seventh may not:
 - a. Exceed fifty gallons [189.27 liters] capacity; and
 - b. Be placed within one hundred fifty feet [45.72 meters] of any property line, unless permitted by the adjacent landowner with written permission.
- 3. A person is not subject to criminal liability under this section if the person is engaged
 in:
- 21 <u>a. Normal agricultural practices.</u>
- 22 <u>b. The normal feeding of livestock.</u>
- 23 <u>c. The cultivation of lawns, gardens, or wildlife food plots or orchards.</u>

Sixty-eighth Legislative Assembly

	_	
1	<u>d.</u>	The practice of wildlife management activities conducted by or under the
2		direction of the game and fish department.
3	<u>e.</u>	The feeding of wildlife in an elevated bird feeder within one hundred feet
4		[30.48 meters] of an occupied residence.



North Dakota Bowhunters Association

RE: North Dakota Bowhunters Association Opposition to HB 1151

Senator Patton and Committee members, I am Darrell Belisle, the Government and Conservation Director for the North Dakota Bowhunters Association. I am here on behalf of the NDBA's mission to Preserve, Promote, and Protect our Archery and Bowhunting Opportunities in North Dakota. The North Dakota Bowhunters Association has existed since 1953 and is, with members in every corner, the largest group of Archers and Bowhunters in the State. The NDBA takes an active role in working with our states Archery and Bowhunting opportunities.

Baiting

The NDBA, currently does not take a position on baiting itself, we have members who do, and members who don't. However, the NDBA takes strong opposition to creating a law which takes away a tool used in combating a wildlife disease, such as the banning of baiting in CWD affected areas. The NDBA believes this is a valuable practice used to effectively control the human component in the gathering of deer. This legislation threatens to remove these Wildlife disease strategies and ultimately, should be left to those who are experts in the field of Wildlife Management and Disease. Thankfully, North Dakota has some of the best in the nation. The NDBA is greatly concerned about the long term health of our game resources.

Precedence

As you know, a bill which concerns the manner of taking a deer creates quite a storm. Some of our outdoorsmen's vision narrows and these folks tend to lose sight of the long term effects of a bill like this. Making a law of this nature works against current wildlife management practices and opens the door for additional, unknown, restrictions in the future. Setting a precedence is something all North Dakota Sportsmen should always be concerned with. When the Game and Fish Departments activities are proven invaluable or no longer necessary, changes to wildlife management practices can be dictated in the Governor's hunting and fishing Proclamation. A good example is working with our handicapped people's opportunity to enjoy the outdoors, we believe the department can develop an effective, controlled program, with respect to CWD, and see to the required needs of the handicapped.

Constituents

This bill, which concerns the management of a wildlife disease, should not be settled by a score of those in opposition versus those in favor. It is not a popularity vote or a contest. Passing HB 1151 is a solid threat to the future of our game resource. It certainly is not worth gambling on.

- Many of those in opposition are concerned about, one, making a law which takes a management tool out of the hands of our wildlife professionals, and two, the long term health of our Deer resource.
- Many of those in support of this bill, one, seem to believe CWD is not real, and is some sort of a
 conspiracy, and two, seem to only be concerned about the manner in which they choose to take
 their deer next season.

Please join the NDBA and those who are concerned for the long term health of our resource and recommend to your fellow Senators to oppose this HB 1151.

Thank you

Senator Patten and Members of the Senate Energy and Natural Resources Committee:

My name is Phil Mastrangelo, a 24-year resident of North Dakota and also District 33. I'm testifying in opposition to HB 1151, the "deer baiting bill" as it is often called. I'm voicing my opposition for the following reasons:

The North Dakota Game and Fish Department (NDGFD), which is charged with the management of all of North Dakota's wildlife resources, relies on science as its guiding doctrine. Science is fact and facts should prevail in the decisions made regarding the management of all our wildlife resources.

The NDGFD's management plan for chronic wasting disease (CWD) follows a science-based template used by other state wildlife management agencies. Application of those CWD management plans are supported by a number of non-government entities including the Theodore Roosevelt Conservation Partnership, the National Deer Association, and the Boone and Crocket Club.

The NDGFD are the wildlife experts, as such they should be allowed to make science-based decisions which are in the best interest of our statewide deer population. Passage of HB 1151 would severely restrict the NDGFD's ability to properly manage CWD. Therefore, I respectfully request a "Do Not Pass" vote on HB 1151.

Thank you.

Phil Mastrangelo

HB 1151 2023

· · ·

Mr. Chairman and members of the committee, my name is Bill Helphrey

I am asking for a do not pass recommendation on this bill.

This bill is being referred to as the "baiting bill". I am not going to argue whether baiting ethics are good or bad. I understand what some of those that are asking passage of this bill are asking for. As an example, being able to set up a blind for a physically challenged veteran is a noble effort. As a veteran I can relate to that.

The portion of the bill I am opposed to is the passing of legislation that will tell the Game & Fish what they can and cannot do.

In 1930 the North Dakota legislature created the North Dakota Game & Fish department with the expressed mission of taking care of the publicly owned wildlife in this state. Their job is to manage the fur, fish and feathers so that those that come after us can also enjoy the fact that we have wildlife in this state. The Game & Fish has been managing the wildlife in this state for 90 years. They have the experts in wildlife management. If they feel that baiting restrictions will at least slow down the spread, we should listen to them. Their experts in the field have contacts with other states and Canadian Provinces that have delt with disease spread and if they feel baiting restrictions will help contain or at least slow down a communicable disease we should do so.

You may recall when several years ago Minnesota had a bovine tuberculosis outbreak just across the river from Grand Forks. Bovine TB is spread by bacteria in moisture transfer from one animal to another. The Minnesota Game & Fish destroyed every deer they could find in the neighboring counties to help prevent the spread of the disease. The North Dakota Game & Fish was considering baiting restrictions to

prevent the spread in North Dakota. A legislator from the Grand Forks area said something to the effect" Why would we bother with it now; we should wait to see if it gets here then do something." I have listened to some comment that we don't have dead CWD deer laying around so why are we restricting baiting. If we wait until there are dead deer lying around, it will be too late. You can't un-ring a bell.

When your vehicle doesn't work you take it to the repair shop, when you need a tooth taken care of you go to the dentist. So, tell me, are we the "armchair quarterbacks", better off passing legislation to manage the wildlife in North Dakota, or should we listen to the agency which was created to manage the wildlife in North Dakota and has the expertise to do so.

We should not pass laws based on emotion.

Recommend a do not pass on this bill

Let the North Dakota Game & Fish department do their job.

I am writing in opposition to House Bill 1151. Removing hunting ethics and hunting styles from this conversation leaves only one thing, the science. This legislation would remove the ability for wildlife professionals to use science and data to manage wildlife resources on behalf of the public. The system of wildlife management balances the needs of people and wildlife using the best available science. This is what our North Dakota Game and Fish Department is charged with and it is in the best interest of citizens of North Dakota to let them manage fish and wildlife populations. I do not support the current language regarding 50 gallon capacities and distance from adjacent property, there is simply no data to support this. The North Dakota Game and Fish Department is the agency with the data and the trained biologists to make informed wildlife management decisions. My family trusts the North Dakota Game and Fish Department staff, their data and their decisions on this matter, and we urge you to oppose HB1151.

Thank you for your consideration.

Kevin and Erin Kading Bismarck, ND

Page 1, line 14, overstrike "which"

Page 1, line 15, overstrike "<u>may be provided from August twenty-fifth through January seventh</u>"

Page 1, line 17, replace "one hundred fifty feet [45.72 meters]" with "ten feet [3.05 meters]"

- <u>2. The quantity of supplemental feed attractants provided to big game animals may not:</u>
 - a. Exceed fifty gallons [189.27 liters] capacity; and
 - b. Be placed within ten feet [3.05 meters] of any property line, unless permitted by the adjacent landowner with written permission.

23.0021.02005 Title. Prepared by the Legislative Council staff for Representative D. Anderson February 16, 2023

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1151

Page 1, line 2, replace "deer for hunting" with "big game animals and supplemental feed attractants"

Page 1, line 6, replace "deer" with "big game animals"

Page 1, line 6, remove "not prohibited"

Page 1, after line 6 insert

"1."

Page 1, line 8 replace "deer" with "big game animals"

- Page 1, line 8, after "hunting" insert "on private property. A person may not provide supplemental feed attractants for the purpose of baiting and hunting big game animals except during the period from August twenty-fifth to January seventh. For purposes of this section, "supplemental feed attractants" include grain, seed, minerals, salt, fruit, vegetables, nuts, hay, and any naturally derived scent or lure, including urine, or natural or manufactured food.
 - 2. The quantity of supplemental feed attractants provided to big game animals which may be provided from August twenty-fifth through January seventh may not:
 - a. Exceed fifty gallons [189.27 liters]; and
 - b. Be placed within one hundred fifty feet [45.72 meters] of any property line, unless permitted by the adjacent landowner.
 - 3. A person is not subject to criminal liability under this section if the person is engaged in:
 - a. Normal agricultural practices.
 - <u>b.</u> The normal feeding of livestock.
 - c. The cultivation of lawns, gardens, or wildlife food plots or orchards.
 - d. The practice of wildlife management activities conducted by or under the direction of the game and fish department.
 - e. The feeding of wildlife in an elevated bird feeder within one hundred feet [30.48 meters] of an occupied residence.
 - f. The feeding of wildlife in a manner that excludes access to deer, elk, or moose."

Renumber accordingly