AGRICULTURE COMMITTEE

The Agriculture Committee was assigned four studies.

- Section 20 of House Bill No. 1126 (2017) directed a study of the practices and procedures with the potential to increase consistency and reduce variability in the sampling and testing of grains for deoxynivalenol (DON/vomitoxin), falling numbers, and protein.
- Section 3 of House Bill No. 1390 (2017) directed a study to review and monitor the nutrient management plan developed by the State Department of Health.
- Section 14 of Senate Bill No. 2020 (2017) directed a study of the State Soil Conservation Committee. The study directive required a review of the duties, responsibilities, and related costs and efficiencies of the committee and related North Dakota State University (NDSU) Extension Service staff, the needs of the soil conservation districts, and the necessity to continue the State Soil Conservation Committee.
- Section 1 of Senate Bill No. 2245 (2017) directed a study of the desirability and feasibility of creating a state wetlands bank. The study directive required consultation with stakeholders to examine land parcels under the control and management of the state, which are suitable for wetlands mitigation.

The committee was directed to receive a report from the Advisory Committee on Sustainable Agriculture on the status of the committee's activities. The committee also was directed to receive a report from the State Board of Agricultural Research and Education on its annual evaluation of research activities and expenditures.

Committee members were Representatives Dennis Johnson (Chairman), Kathy Hogan, Michael Howe, Craig A. Johnson, Dwight Kiefert, Kathy Skroch and Senators Bill L. Bowman, Jim Dotzenrod, Joan Heckaman, Larry Luick, and Janne Myrdal.

The committee submitted this report to the Legislative Management at the biennial meeting of the Legislative Management in November 2018. The Legislative Management accepted the report for submission to the 66th Legislative Assembly.

DON/VOMITOXIN, FALLING NUMBERS, AND PROTEIN

Section 20 of House Bill No. 1126 (2017) directed a study of the practices and procedures with the potential to increase consistency and reduce variability in the sampling and testing of grains for deoxynivalenol (DON/vomitoxin), falling numbers, and protein.

The study was proposed to address the misunderstanding regarding the differences between the inspection of grain and the inspection of grain licensees, who governs the testing of grain, the standards for grain testing, and the practices and procedures dictating the resolution of disputes involving the testing of grain samples. Testimony in support of the study detailed the complexity and variability of testing equipment and how that may impact a grain testing sample. Concerns were expressed that the Federal Grain Inspection Service (FGIS) may not be training grain elevator operators adequately in the proper procedures for grain testing, which may result in variance within a sample among multiple elevators.

Background

According to the NDSU Extension Service, vomitoxin is a mycotoxin produced in wheat and barley grain infected by fusarium head blight or scab. Fusarium head blight may infect grain heads when wet weather occurs during the flowering and grain filling stages of plant development. Mycotoxins are toxic products of fungal metabolism, which occur in a wide variety of substances, including animal feed and human food. Mycotoxins can cause human health problems and economic losses in livestock due to feed refusal and poor weight gain. The United States Food and Drug Administration has established vomitoxin advisory levels to provide safe food and feed. Human food products are restricted to one part per million of vomitoxin in finished products.

Issues surrounding vomitoxin arose in the 1980s and 1990s, and the economic impact of vomitoxin on the production levels of grains has been substantial for the state. Vomitoxin affects everyone from the producers to the grain elevators to the end users. The world market sets certain health standards and part of the reason the standard for vomitoxin is so high is because that is what the world market demands. Fifty percent of North Dakota wheat is sold overseas.

Federal Guidelines

The United States Grain Standards Act was passed by Congress in 1916, and the standards for grains have been revised and amended multiple times since 1916. Under the Act, the Secretary of Agriculture of the United States has the

authority to investigate the weighing, handling, and grading of grain and to establish standards of kind, class, quality, and condition of grain. The secretary also may establish standards and procedures for accurate weighing of grains and safeguards over equipment calibration and maintenance for grain shipped in interstate or foreign commerce. The secretary may delegate responsibility for these duties to competent employees of an official agency or state agency. The administrator of the United States Department of Agriculture's (USDA) Grain Inspection, Packers and Stockyards Administration (GIPSA) has been delegated authority from the Secretary of Agriculture to administer the United States Grain Standards Act and to establish policies, guidelines, and regulations by which FGIS is to carry out the Grain Standards Act.

The Federal Grain Inspection Service is authorized to test wheat for protein, and governs and approves the equipment for bond tests, protein tests, moisture tests, and weighing for any grain being shipped out of state. Any dispute involving an official grain grade is resolved by the federal inspection process through a laboratory in Kansas City, Missouri, and grain grading is conducted by an official grain inspection agency appointed by FGIS. The United States Department of Agriculture does not require domestic or export shipments to be tested for vomitoxin, but GIPSA provides voluntary vomitoxin testing services locally at various field locations.

North Dakota Laws

Under North Dakota Century Code Section 60-02-03, the Public Service Commission has the authority to oversee the public warehouses of the state, including the handling, weighing, and storing of grain. A public warehouse includes any elevator, mill, warehouse, or grain warehouse. Under Section 60-02-04, the Public Service Commission may employ a federal licensed inspector to carry out the commission's oversight duties. Section 60-02-05 provides a procedure for resolving disputes relating to grain delivered to a public warehouse and which relate to grain grading, dockage, vomitoxin level, moisture content, or protein content. The sample grain involved in any dispute must be sealed in a proper container forwarded to be inspected by a federal licensed inspector or mutually agreed upon third party. The person requesting the inspection pays the cost of the test. The grain inspector determines the quality of the grain based on the inspection rules and grades adopted by the United States Secretary of Agriculture.

Chapter 60-02.1 addresses grain buyers. Under Section 60-02.1-03, the Public Service Commission has the authority to oversee grain buyers in the state. Under Section 60-02.1-04, the commission may employ a federal licensed inspector to carry out the commission's oversight duties. Section 60-02.1-05 provides a procedure for resolving disputes relating to grain grading, dockage, vomitoxin level, moisture content, or protein content. The sample grain involved in any dispute must be forwarded to be inspected by a federal licensed inspector or mutually agreed upon third party.

Previous Study

The 1993-94 interim Agriculture Committee studied systems used in the testing of wheat protein and how the consistent protein testing of wheat can be encouraged. The final report of that committee indicated, under rules adopted by FGIS, all official protein analyses must be performed in accordance with the procedures prescribed by the service and must be performed by authorized or licensed employees of the service at delegated or designated agencies. The report stated in an effort to measure larger samples and reduce human error, FGIS required official tests to be done while using whole grain analyzers. Testimony indicated grain testing is more of an art than a science and sampling errors may occur for a variety of reasons, including human error, improperly calibrated or used testing equipment, and failure to follow proper sampling methods, or if grain buyers do not use the testing procedures outlined by FGIS. The committee recommended a concurrent resolution urging FGIS to disseminate useful information about technological and regulatory changes affecting the grading of wheat and encourage the use of contractual provisions that require the acceptance of first official grades as the price and quality determinants at destination ports.

Testimony and Committee Considerations

The committee received information from a representative of FGIS regarding the practices and procedures of vomitoxin testing. The Federal Grain Inspection Service's mission is to facilitate the marketing of grain, oilseeds, and related agricultural commodities. The Federal Grain Inspection Service carries out its mission by establishing standards for grain quality assessments, regulating grain handling practices, and managing a network of federal, state, and private laboratories that provide official grain inspection and weighing services. The occurrence and concentration levels of DON/vomitoxin are directly related to the weather conditions during key stages of crop development. It is not possible to eliminate the occurrence of vomitoxin in cereal grain crops through agronomic practices and it occurs in some geographic locations at significant levels nearly every crop year, especially in wheat and barley.

According to the information, FGIS provides official testing services for vomitoxin for both domestic and export grain lots using rapid testing methods at grain receiving sites throughout the United States. The United States Grain Standards Act mandates the inspection of all export grain lots by FGIS, or with FGIS oversight, with few exceptions. Official testing for vomitoxin is not mandatory and is performed upon request of the buyer or seller of the grain. However, testing often is requested since contracts between buyers and sellers often contain vomitoxin maximum level specifications.

Vomitoxin is regulated internationally, and countries that import United States grain have implemented regulations with maximum levels from 1.1 to 2.0 parts per million for unprocessed cereal grains. Some export contracts between buyers and sellers of wheat contain maximum level specifications for vomitoxin as low as 0.8 parts per million.

All grain inspection procedures have variability associated with the measurement result, which is caused by random variation in factors that cannot be completely controlled. There are two reasons why this variation is larger for mycotoxins, including vomitoxin, than for some other grain quality factors. First, a single wheat kernel can have vomitoxin concentration levels of 200 parts per million or higher and other kernels may contain a level near zero. Heterogeneity in the sample adds variability because sampling procedures will sometimes include this high-level kernel and other times it will not. Second, the variability in chemical analyses such as those for vomitoxin is higher because of the extremely low concentration levels. Vomitoxin concentrations of interest are in the parts per million range, whereas other quality factors are in the parts per hundred range or higher.

According to the testimony, official FGIS procedures for the sampling and testing of grain lots for vomitoxin have been optimized to minimize the overall variability that occurs, without making the test too expensive. The main procedures affecting the variability are those used to sample the lot, those used to prepare the sample for analysis, and the procedures involved in the final chemical analysis. Official FGIS service providers are required to use FGIS sampling and subsampling procedures, to use FGIS-approved rapid test kits, to provide trained and licensed technicians, and to participate in FGIS quality assurance programs. Unofficial testing is performed at country elevators due to the need to provide extremely rapid testing during harvest when trucks are lined up to deliver grain loads, which can lead to much larger variability and inaccurate assessments of the truck lot concentration.

The Federal Grain Inspection Service testing procedures are designed to minimize variation in vomitoxin results. Overall variability includes contributions from sampling, sample preparation, and analysis steps. A smaller test sample size increases overall testing variability. A 95 percent probability range of 0.68 to 1.3 parts per million is a 50 percent variation.

The Federal Grain Inspection Service does not have any authority or control over testing by grain elevators. The Federal Grain Inspection Service requires test kit manufacturers to comply with FGIS recommended grain sample sizes to participate in the program and be certified as an FGIS test kit. Variance can increase exponentially if elevators are using different testing procedures. Multiple tests would reduce variation. However, multiple tests cost both time and money, and during harvest season, many producers and elevators do not want to spend additional money or take the extra time to run multiple tests. The Federal Grain Inspection Service procedures require testing equipment be cleaned between tests to ensure a sample has not been contaminated by a previous test sample.

The committee received information from representatives of NDSU regarding grain breeding, genetics research, and the development of vomitoxin and protein resistant grains. Before 1993, little was known about breeding vomitoxin and fusarium head blight resistant strains of grain or controlling the related issues with fungicides. Vomitoxin testing methods are accurate, but there are many opportunities for sampling errors, variance, and standard deviations during the testing process, which can lead to a wide range of outcomes.

According to the testimony, it is easier to remove and clean infected wheat grains if the infection is detected early, and more difficult if the infection is detected later. Barley is less prone to visible symptoms of fusarium head blight and vomitoxin. The infection can continue to grow during malting and be transferred to beer. Fusarium can continue to grow and produce vomitoxin even after harvest and the grain being placed in storage. There is no immunity to fusarium head blight and vomitoxin because it has complex genetic traits. Identifying resistant breeding lines takes time to research, cross breed, and requires extensive disease screening nurseries. The testimony indicated some progress has been made in developing moderately resistant wheat and barley varieties since the late 1990s and early 2000s. Research has shown fungicide understanding and application timing windows are improving and researchers are gaining more control in suppressing fusarium and vomitoxin. New fungicides are being developed and likely will be available in 2019 or 2020.

The committee received information from a representative of the North Dakota Grain Dealers Association regarding methods to improve consistency and reduce variability in vomitoxin testing. The challenge of the grain industry is to move commodities from areas of surplus to areas of deficit, while providing for quality, regulatory compliance, safety, and cost efficiency. Moving commodities is done in bulk, and the loads are comingled with the grain of many producers. According to the testimony, it is impossible to keep the varieties of grain completely separate because grain comes from multiple farms and comingled at the elevator. The grain is moved to a regional terminal where it can be comingled again. Finally, grain from multiple regional terminals is moved to an export terminal to be shipped overseas, where it is comingled yet again. The testimony noted one of the issues in improving consistency and reducing variability is that different segments of the supply chain have different definitions and standards of quality. There also are inconsistencies between domestic and international grain graders. Grain quality can deteriorate during shipping or while being stored in an elevator.

The committee received information from a representative of the North Dakota Wheat Commission regarding methods to improve consistency and reduce variability in vomitoxin testing. Some producers are being pushed out of the market due to the increasingly high standards in quality from foreign buyers despite the safe consumption levels being lower, which leads to varying levels of price discounts and acceptance rates by grain handlers and millers as vomitoxin levels increase. Entire trainloads and overseas shipments of grain have been rejected due to the levels of vomitoxin in the sample test once the shipment arrives at its destination despite being below the threshold when tested before shipping. This leads to significant economic losses to the producers and elevators.

The committee received information from a representative of the North Dakota Grain Growers Association regarding practices and procedures involved in the testing of vomitoxin and methods to improve consistency and reduce variability in vomitoxin testing.

The committee received information from a representative of the North Dakota Department of Agriculture regarding concerns associated with the testing, variability, consistency, falling numbers, and protein of grains associated with vomitoxin. The testimony noted, in 2016, numerous producers were frustrated with growing grain testing inconsistencies that cost time and money. There have been reports of producers taking the same grain sample to multiple elevator locations for testing and receiving wildly different results. As a result, it was suggested distrust in the system is growing. According to the testimony, all grain elevators in the state have a level of inconsistency when it comes to the testing of grains, but there are several that seem to have more issues than others, which may suggest human error as the main culprit.

The committee received information from a representative of the Public Service Commission regarding the state's role in the testing and regulation of vomitoxin and the interaction between state and federal laws regarding vomitoxin and the enforcement of those laws. The commission's role in the grain dispute resolution under Sections 60-02-05 and 60-02-05.1 is a requirement to produce and distribute the notice outlining the dispute resolution process which licensees must post in their facilities. The commission's grain warehouse inspectors verify the notice is posted when at the facility for an inspection.

The Public Service Commission is charged with overseeing the licensing and bonding of grain warehouses, facility-based grain buyers, and roving grain buyers. The commission employs 1.75 full-time equivalent (FTE) licensing inspectors who ensure licensees are adhering to generally accepted business practices, are adequately bonded, and have sufficient grain inventories on hand to cover the licensee's cash and grain storage obligations. Additionally, the licensing inspectors inspect for compliance to state laws and administrative rules. Inspectors also assist in complaint investigation and resolution, insolvency processes, and other duties.

Sections 60-02-27 and 60-02.1-19 established the standard that all warehouses and grain buyers are required to purchase grain in accordance with the federal standards with the exception of dry edible beans. Grain may be purchased utilizing nonfederal standards if the standards are agreed to in writing by the warehouseman and the owner of the grain. The commission may prohibit the use of nonfederal standards only after a hearing. Warehouses handling dry edible beans are required to file a policy with the commission outlining purchasing, handling, storing, and delivering beans. The only state grading criteria required by state law is that the dockage must be removed before testing under Sections 60-02-28 and 60-02.1-20.

Conclusion

The committee generally agreed while vomitoxin, protein, and falling numbers are issues that plague producers and elevators, there is little that can be done legislatively because much of the grain quality standards are dictated at the federal level and by international importers that buy North Dakota grain on the world market. The committee recognized additional research and funding dedicated to improving grain testing methodology, technology, knowledge of safe consumption levels of vomitoxin, fungicides, and breeds of grain resistant to vomitoxin and other blights is necessary.

The committee makes no recommendation regarding its study of the practices and procedures with the potential to increase consistency and reduce variability in the sampling and testing of grains for deoxynivalenol (DON/vomitoxin), falling numbers, and protein.

NUTRIENT MANAGEMENT PLANS DEVELOPED BY THE STATE DEPARTMENT OF HEALTH

Section 3 of House Bill No. 1390 (2017) directed a study to review and monitor the nutrient management plan developed by the State Department of Health.

Background

According to the National Oceanic and Atmospheric Administration of the United States Department of Commerce, nutrient pollution is the process by which too many nutrients, mainly nitrogen and phosphorus, are added to bodies of water and act like fertilizers to cause excessive growth of algae in a process called eutrophication. An excessive amount

of algae in a body of water can lead to the death of many indigenous species of animals within the body of water due to a reduced level of oxygen. Human activities often are a direct contributing factor to the amount of nutrients introduced into a body of water.

According to the United States Environmental Protection Agency (EPA), the primary sources of nutrient pollution are agricultural uses, including animal manure, excess crop fertilizer, and soil erosion; storm water that carries pollutants from rooftops, sidewalks, and roads into local waterways; wastewater from sewer and septic systems; fossil fuels that increase the amount of pollutants in the air and water; and pollutants from domestic uses, including home fertilizer, pet waste, soaps, and detergents. Nutrient pollution is an issue in streams, rivers, lakes, bays, and coastal waters of the United States.

Federal Law

Control of nutrient pollution is a requirement of the federal Clean Water Act. The Clean Water Act establishes the structure for regulating the discharge of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis for the Clean Water Act was enacted in 1948, but was reorganized and expanded in 1972 with the "Clean Water Act" becoming the common name. The Clean Water Act made it unlawful to discharge pollutants from a point source into navigable waters unless a permit was obtained through the National Pollutant Discharge Elimination System. The Environmental Protection Agency regulates discharges of pollutants from municipal and industrial wastewater treatment plants and sewer collection systems and storm water discharges from industrial facilities and municipalities.

Standards Utilized by Other States

In 1997, the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, commonly known as the Hypoxia Task Force, was created to address the growing problem of pollution in the Gulf of Mexico caused by excess nitrogen and phosphorous. The 12 member states of the task force are Iowa, Mississippi, Minnesota, Louisiana, Missouri, Indiana, Illinois, Wisconsin, Kentucky, Tennessee, Arkansas, and Ohio. The task force works to provide executive-level direction and support in coordinating the actions of the participating members working on nutrient management within the watershed pursuant to the most recent action plan created in 2008.

The 2008 action plan lays out a number of guiding principles. The principles encourage actions that are voluntary, incentive-based, practical, and cost-effective; utilize existing programs, including existing state and federal regulatory mechanisms; follow adaptive management; identify additional funding needs and sources during the annual agency budget processes; identify opportunities for, and potential barriers to, innovative and market-based solutions; and provide measurable outcomes as outlined in the 3 goals and 11 actions of the plan. The goals of the plan are to reduce the average area extent of the Gulf of Mexico hypoxic zone to less than 5,000 square miles; to restore and protect the waters of the 31 states and tribal lands within the Mississippi/Atchafalaya River Basin through implementation of nutrient and sediment reduction actions; and to improve the communities and economic conditions across the basin through improved land management and a cooperative, incentive-based approach.

Montana, South Dakota, Iowa, and Minnesota have taken action to propose and implement nutrient reduction strategies or nutrient management plans in surface waters that impact agricultural, municipal, recreational, and industrial uses.

North Dakota

The State Department of Health has adopted rules for water quality standards that are effective for Clean Water Act purposes pursuant to Chapter 61-28 regarding the control, prevention, and abatement of pollution of surface waters and Chapter 23-33 regarding ground water protection. The department will continue to administer both chapters until the transfer of that authority to the newly created Department of Environmental Quality is complete. The rules regarding the control, prevention, and abatement of pollution of surface waters are located in North Dakota Administrative Code Article 33-16. The rules establish procedures governing the discharge of pollutants into the waters of the state as required as a condition precedent to the state's participation in the National Pollutant Discharge Elimination System under the Clean Water Act and the pretreatment of wastewater. The rules also provide a system for classifying waters of the state, standards of water quality, and permit procedures for animal feeding operations.

In 2012, the State Department of Health, in collaboration with other agencies and stakeholder sectors, including industry and agriculture, began developing a state nutrient reduction strategy to reduce the amount of nutrients in the surface waters of the state. There are two divisions within the State Department of Health that develop nutrient management plans. The Division of Waste Management develops nutrient management plans for agricultural processors, such as those that process potatoes and sugar beets, and the Division of Water Quality develops nutrient management plans for confined animal feeding operations.

Testimony and Committee Considerations

The committee received information from a representative of the State Department of Health, Division of Water Quality, regarding the nutrient management plans developed by the department for agricultural processors and confined animal feeding operations. The purpose of the nutrient management plans is to develop and implement efficient and cost-effective approaches to reduce the delivery of nutrients. The oversight of nutrients from agricultural processors and confined animal feeding operations includes asking entities to prepare nutrient management plans to detail how the entities will utilize nutrient-rich materials in a beneficial manner on the land. The department tests the nutrient content of the material being applied, the nutrient content of the soil, and appropriate methods of application. The department also looks at the sources of nutrients into a body of water to determine the percentage of nutrients the body of water can sustain from both point and nonpoint sources. The department currently is working on a nutrient reduction strategy for the state that will include education and outreach to ensure collaboration between the state, the federal government, and stakeholders to maintain safe water for use by people, agriculture, and livestock.

Conclusion

The committee makes no recommendation regarding its study of nutrient management plans developed by the State Department of Health.

NORTH DAKOTA STATE SOIL CONSERVATION COMMITTEE

Section 14 of Senate Bill No. 2020 (2017) directed a study of the State Soil Conservation Committee. The study directive required a review of the duties, responsibilities, and related costs and efficiencies of the committee and related NDSU Extension Service staff, the needs of the soil conservation districts, and the necessity to continue the State Soil Conservation Committee.

Testimony in support of the study expressed concerns that the State Soil Conservation Committee requires too much funding to administer continually shrinking grants to the various soil conservation districts to justify the committee's continued existence. Concern also was expressed that it costs approximately $250,000 to disburse $1 million in grants and that the soil conservation districts can utilize the North Dakota outdoor heritage fund for grant money and no longer need to rely on the committee. It was suggested soil conservation activities could be moved from the NDSU Extension Service to the North Dakota Association of Soil Conservation Districts where there is greater support and staff, or the work could be completed by other existing entities, and the State Soil Conservation Committee could be eliminated.

Background

Federal Soil Conservation Efforts

According to the USDA's Natural Resources Conservation Service (NRCS), the NRCS has been working with landowners, state and local governments, and other federal agencies to maintain healthy and productive working land since 1935. In 1935, Congress passed Public Law 74-46 (the Soil Conservation Act) which directed the Secretary of Agriculture to establish the Soil Conservation Service as a permanent agency in USDA. The agency was created to prevent the "wastage of soil and moisture resources on farm, grazing, and forest lands" after observing how the threat of soil erosion by water and wind reduced the ability of the land to sustain agricultural productivity during the dust bowl conditions of the early 1930s. The agency worked to advance scientific understanding of erosion processes, develop effective conservation practices, and extend conservation assistance to farmers. The agency accomplished this by organizing soil conservation districts to lead the conservation efforts at the local level. There are over 3,000 conservation districts in the country. The United States Department of Agriculture drafted the Standard State Soil Conservation District Laws, which was sent to all state governors. In 1936, the agency assumed responsibility for performing surveys and devising flood control plans for watersheds under Public Law 74-738 (the Flood Control Act). In 1938, the agency was made responsible for administering the USDA's drainage and irrigation assistance programs, the snow survey and water supply forecasting program, the water facilities program, the land utilization program, and the farm forestry program. These programs made the agency the lead lands conservation agency. The name of the agency officially changed to the Natural Resources Conservation Service in 1994.

North Dakota

In response to the Federal Soil Conservation Act, the 1937 Legislative Assembly adopted Chapter 4-22 regarding soil conservation districts to provide for the conservation of the soil and soil resources of the state and to prevent soil erosion. During the 2017 legislative session, as part of the ongoing agricultural rewrite project, Chapter 4-22 was repealed and the contents of the chapter were moved into the newly created Chapter 4.1-20. Among the duties of the State Soil Conservation Committee under Section 4.1-20-05, the committee is responsible for assisting local soil conservation districts in carrying out local conservation districts powers and programs. In addition, that section delegates the committee the authority to distribute money appropriated by the Legislative Assembly for grants to soil conservation districts. For the 2017-19 biennium, the State Soil Conservation Committee received a general fund appropriation of $1,091,520 for soil district conservation grants.

Testimony and Committee Considerations

The committee received information from a representative of the State Soil Conservation Committee regarding the duties, responsibilities, costs, efficiencies, and needs of the committee. The North Dakota State University Extension Service is directed under Section 4.1-20-06 to assist the committee in performing the committee's duties under Chapter 4.1-20, within the limits of legislative appropriations. One of the primary responsibilities of the committee is to distribute Soil Conservation District Assistance Program funds allocated by the Legislative Assembly biennially, and to assist soil conservation district supervisors in carrying out the soil conservation programs. The funds are awarded on a competitive basis to the soil conservation districts in the state, taking into consideration discrepancies in county mill levies and property valuations. The district assistance programs promote soil, water, and plant health to create resilient sustainable landscapes by emphasizing conservation practices that maintain adequate vegetative cover or residue to protect lands from wind and water erosion. District staff is funded by the grants and work with the Extension Service, NRCS, and other agencies to promote conservation practices and information. The money allocated by the committee to local conservation districts through the assistance programs goes toward paying the salaries of district employees. The money is not used to fund conservation projects. During the 2017-19 biennium, a soil conservation district may apply for up to $40,000 of funding through the program. The committee works directly with the soil conservation program coordinator of the Extension Service to administer soil conservation laws, agency budgets, surface mining reports, the district assistance program, and other laws and programs.

The committee received numerous letters from soil conservation districts around the state in support of the ongoing efforts of the State Soil Conservation Committee.

The committee received information from a representative of the NDSU Extension Service regarding the role of the Extension Service in relation to the State Soil Conservation Committee. The Extension Service helps educate the public in science-based fields, and is in a supporting role regarding soil conservation. The Extension Service assists the State Soil Conservation Committee by organizing meetings, publishing notices and meeting minutes, managing the operating budget, maintaining a committee website, and providing staff and support for the benefit of the committee and the local conservation districts. The Extension Service also manages the conservation committee's budget, because the budget has been included in the Extension Service's budget since 1997. The committee had its own budget and staff, but that was eliminated in 1997 in a cost-saving and efficiency effort.

The North Dakota State University Extension Service currently has 1.6 FTE positions allocated in support of the State Soil Conservation Committee consisting of a full-time program specialist, a part-time administrative assistant, and a part-time extension agent. The salaries and benefits of the positions was $257,623 last biennium. The operating expenses for the committee have varied between $7,500 and $14,000 per biennium since 2007 for travel, and the rental of meeting facilities. Operating expenses incurred by the Extension Service in assistance of the committee relate to employee travel costs, office rent, computer equipment, information technology support, and office supplies. There is not a formal agreement between the State Soil Conservation Committee and the Extension Service, but a working relationship has evolved as necessary. Any work done by the Extension Service on behalf of the committee is billed to the internal line item of the committee in the Extension Service budget. According to the testimony, the amount of overhead expenses likely would be the same regardless of whether the grant disbursements were $1 million or $5 million per biennium. The operation is funded at a minimal amount and it would be difficult to reduce further as the committee has no staff of its own. Ongoing efforts are underway between the State Soil Conservation Committee and the Extension Service to enter a memorandum of understanding to clarify the roles of each entity in the pursuit of conservation efforts. An amendment was suggested to Section 4.1-20-19 to make ongoing training for soil conservation district supervisors mandatory.

A representative of the North Dakota Department of Agriculture testified state funding is critical to support the State Soil Conservation Committee and local districts, and loss of financial assistance would severely diminish the ability of local districts to fulfill conservation duties.

The committee received information from a representative of the North Dakota Association of Soil Conservation Districts regarding the structure, duties, and responsibilities of the association, the association's relationships with the local districts, and the programs and services the districts offer. The association is a nonprofit corporation that promotes the welfare of the local conservation districts, which are political subdivisions, and the people employed by the districts. The association facilitates sharing and cooperation among the local districts, and at the national level where districts and associations join to discuss issues and affect wise use of soil and water. The association also represents the districts in relationships with the State Soil Conservation Committee and other state and federal agencies. Local conservation districts rely on mill levy funds to support conservation efforts, but the mill levy amounts fall short. Approximately 60 employees of local conservation districts rely on mill levy funds and funding through the assistance program for continued employment. According to the testimony, without the employees at the local level, the local districts would be unable to function. There are approximately 116 total district employees in the state. There are 54 FTE positions, one for each conservation district in the state.

The committee received information from a representative of the Game and Fish Department regarding the role of the department in soil conservation efforts and the department's relationship with the State Soil Conservation Committee. According to the testimony, the department has a long history of working with the committee on conservation efforts such as tree planting and entering contracts with local districts to provide cost-sharing for conservation projects. It was noted outdoor heritage fund grants have been issued in the past, but those funds are authorized for the funding of projects. It also was noted the advisory board of the outdoor heritage fund has not been receptive to funding staffing needs of local conservation districts, and funding those needs would require a statutory change.

The committee received information from a representative of NRCS regarding the conservation efforts among various states. A memorandum of understanding exists among the Association of Soil Conservation Districts, the Resource Conservation & Development Association, the State Soil Conservation Committee, the Conservation District Employees Association, and NRCS. These entities represent the five core partnerships in the state regarding soil conservation. The memorandum of understanding is modeled in all 50 states. It was noted the State Soil Conservation Committee is the link between all state and federal associations and agencies. According to the testimony, the State Soil Conservation Committee gives guidance on how best to utilize state and federal dollars for conservation efforts.

During the course of the study, the committee considered a bill to amend Section 4.1-20-19. The bill draft would require an individual elected or appointed as a soil conservation district supervisor to receive annual training as determined by the State Soil Conservation Committee. Current law does not require a supervisor to undergo any additional training once the supervisor completes the initial training session. The bill received support from the NDSU Extension Service and other interested parties, who contended annual training helps increase the knowledge and skills of district supervisors.

Conclusion

The committee recommends House Bill No. 1026 to require ongoing training for soil conservation district supervisors.

CREATING A STATE WETLANDS BANK

Section 1 of Senate Bill No. 2245 (2017) directed a study of the desirability and feasibility of creating a state wetlands bank. The study directive required consultation with stakeholders to examine land parcels under the control and management of the state, which are suitable for wetlands mitigation.

As introduced, Senate Bill No. 2245 would have required the Game and Fish Department to identify land parcels that may qualify for use as wetland mitigation on lands under the jurisdiction, management, or control of either the Game and Fish Department or the Department of Trust Lands, and submit the list to the Agriculture Commissioner. The bill would not have created a wetlands bank, but rather only would have identified land parcels under the control of various state agencies which may be suitable for wetlands mitigation. The bill was amended to include NRCS and the Army Corps of Engineers in the consultation process. The amendment also included consideration of lands remediated by the Department of Mineral Resources through the abandoned oil and gas well plugging and site reclamation fund. The bill was amended in the House to direct a Legislative Management study due to concerns that creating wetlands on state-owned property could take away from farmers renting land from the state.

Background

According to the NRCS, wetland mitigation banking is the "restoration, creation or enhancement of wetlands for the purpose of compensating for unavoidable impacts to wetlands at another location. Wetland mitigation banking is commonly used to compensate for wetland impacts from development, but it is also used for impacts from agriculture."

Federal Guidelines

In 1970, under Public Law 91-559 (84 Stat. 1468-1471), Congress enacted the Water Bank Act. The Act authorized the Secretary of Agriculture, in coordination with the Secretary of the Interior, to enter contracts with landowners to preserve wetlands through the use of annual payments.

In 1980, the EPA finalized regulations and criteria used in evaluating activities regulated under Section 404 of the Clean Water Act. In 1990, pursuant to a memorandum of agreement established between the EPA and the United States Department of the Army, policies and procedures were developed to be used in the determination of the type and level of mitigation necessary to demonstrate compliance with the Clean Water Act Section 404 guidelines. The policies and procedures were used to avoid adverse impacts to aquatic resources, minimize the impacts if they cannot be avoided, and practice compensatory mitigation when unavoidable impacts occur. Methods for compensatory mitigation under the policies and procedures include restoration, establishment, enhancement, and preservation of wetlands.

The three main mechanisms for compensatory mitigation are--permittee-responsible mitigation, which entails the restoration, establishment, enhancement, or preservation of wetlands undertaken by a permittee to compensate for wetland impacts from a specific project; mitigation banking, which is a wetland area restored, established, enhanced, or

preserved and set aside to compensate for future conversions of wetlands for development activities; and in-lieu-fee mitigation, which occurs when a permittee provides funds to an in-lieu-fee sponsor. The sponsor collects funds from multiple permittees to pool resources to build and maintain a mitigation site. In 2008, the EPA and the Army Corps of Engineers, through joint rulemaking, expanded the Clean Water Act Section 404 guidelines to include standards for all three mechanisms for providing compensatory mitigation.

The Food Security Act of 1985 included provisions prohibiting USDA program benefits to agricultural producers that convert wetlands to croplands. In 1995, the USDA, Army Corps of Engineers, United States Fish and Wildlife Service, and the EPA published the *Federal Guidance for the Establishment, Use and Operation of Mitigation Banks*.

North Dakota Laws

Section 4.1-01-15 directs the Agriculture Commissioner to create and maintain an electronic database of wetland credits available for purchase by an agricultural landowner.

Chapter 20.1-02 addresses the Game and Fish Department. Sections 20.1-02-18.4, 20.1-02-18.5, and 20.1-02-18.6 were enacted in 1987 and repealed in 1997. The repealed sections related to a Wetlands Mediation Advisory Board. Under the law, the advisory board was to meet at the call of the Governor, and included the Governor, the Agriculture Commissioner, the president of the North Dakota Farmers Union, the State Engineer, and the regional director of the United States Fish and Wildlife Service. The purpose of the advisory board was to mediate disputes or conflicts by persons aggrieved by a decision of the United States Fish and Wildlife Service pertaining to wetlands.

During the 1995-96 interim, the Government Organization Committee conducted a study of the membership, duties, and responsibilities of all boards, councils, committees, and commissions of state government. One of those boards was the Wetlands Mediation Advisory Board. The committee received testimony indicating that since the creation of the advisory board in 1987, the board had never met and that the federal government likely would not be bound by a decision of the board due to the Supremacy Clause in the United States Constitution. The committee recommended House Bill No. 1056 (1997) to abolish the board.

Section 20.1-02-18 gives the state's consent, subject to the Governor's approval, to the federal government's acquisition of land or water to establish migratory bird reservations pursuant to the federal Migratory Bird Conservation Act.

Section 20.1-02-18.1 requires the Governor to submit proposed acquisitions--along with detailed impact analysis from the federal agency involved--of land, wetland, and water areas by the United States for waterfowl production areas, wildlife refuges, or other wildlife or waterfowl purposes--to the board of county commissioners of the county in which the land, wetland, or water areas are located for the board's recommendations.

Section 20.1-02-18.2 provides a landowner may negotiate with the United States Department of the Interior, or its agencies, for leases, easements, or wetland areas sought by the federal government for use as waterfowl production areas, wildlife refuges, or other wildlife purposes.

Sections 57-02-08.4 and 57-02-08.5 address property tax exemptions for owners of wetlands. Under Section 57-02-08.4, a landowner may qualify for a property tax exemption if the landowner annually files, with the County Director of Tax Equalization, a legal description of the wetland for which the exemption is claimed and an agreement to not drain, fill, pump, or concentrate water in the wetland basin or alter the physical nature of the wetland in any manner that reduces the wetland's ability to function as a natural system during the year for which the exemption is claimed. Section 57-02-08.5 requires the County Auditor to certify to the Tax Commissioner the total amount of property tax that would have been due on the exempt property within the county.

Chapter 61-32 addresses drainage of water in the state. Section 61-32-01, which was enacted in 1987 and repealed in 1995, stated the intent of the chapter, and provided agriculture was of great concern in the state and agricultural concerns must be accommodated through wetlands protection. Section 61-32-05, which was enacted in 1987 and repealed in 1995, directed the State Engineer and the Director of the Game and Fish Department to establish a wetlands bank. The section required the State Engineer to keep a record of acres of replacement wetlands debited from and credited to the wetlands bank.

Chapter 61-31, enacted in 1981, creates a water bank program under the guidance and rulemaking authority of the Agriculture Commissioner. The chapter authorized the commissioner to enter 5- or 10-year agreements with landowners for the conservation of wetlands. The chapter requires landowners, after any agreement is reached, to place eligible wetlands into the program and to not drain, burn, fill, or destroy the area. Section 61-31-04 prevents landowners from using the area for agricultural purposes Section 61-31-05 requires the Agriculture Commissioner to make annual payments to the landowner under the agreement and provide advice and practices regarding conservation and

development of wetlands. Section 61-31-09, which was repealed in 1993, required the State Engineer to notify the Agriculture Commissioner of any drainage permit denied by the State Engineer. The section required the commissioner to investigate the wetland area proposed to be drained and see if the area was eligible for inclusion under the state water bank program.

Other States

Minnesota and South Dakota have taken action to implement wetland mitigation banking.

In 1991, Minnesota enacted the Wetland Conservation Act to protect wetlands not covered under the Department of Natural Resources public waters permit program. Rules for administering the Act are adopted by the Minnesota Board of Water and Soil Resources. Under the Act, wetlands cannot be drained or filled unless replaced by restoring or creating wetland areas of at least equal public value under an approved replacement plan. A replacement plan under Minnesota law must demonstrate wetland impacts have been avoided as much as possible, impacts have been minimized as much as possible if impacts cannot be avoided, and unavoidable impacts have been replaced by the restoration or creation of new wetlands of equal or greater public value elsewhere. Replacement plans require specifics as to the location, size, and type of replacement wetlands. In addition, rather than restoring or creating a wetland, a replacement plan may provide for the use of credits purchased from the state wetland bank operated by the Board of Water and Soil Resources. The amount of wetland bank credit is related to the extent of functional improvement and ranges from 0.5 to 1.0 credits per acre of restored or created wetland in one of 10 wetland bank service areas in the state, which are based on watershed boundaries. The credits can be purchased and held for later use or resale.

In 2016, the South Dakota Farm Bureau received a $1 million grant from the USDA to establish an agriculture wetland mitigation bank in the state, under the Wetland Mitigation Banking Grant Program created in the Agricultural Act of 2014. The Farm Bureau used the money, in collaboration with several other entities and the NRCS, to create the South Dakota Wetland Exchange.

Testimony and Committee Considerations

The committee received information from a representative of the Department of Agriculture regarding the funding, purpose, eligibility, and payment rates of the department water bank program. The Agriculture Commissioner initially was authorized to create a water bank program by the 1987 Legislative Assembly. The program was created to allow the Commissioner to enter agreements with landowners for the conservation of wetlands. The agreements are for periods of 5 or 10 years, and during that time landowners are to place the wetland and adjacent areas into conservation to not drain, burn, fill, or otherwise destroy the wetland. At the discretion of the Commissioner; however, the area may be used for agricultural purposes. Under the agreements, the department may make lump sum or annual payments at an agreed upon rate, and provides advice and assistance for conservation practices and uses. In addition, under drought conditions, 100 percent of the grassland under contract is made available for grazing or haying. According to the testimony, under the program, contracts have been entered with 21 landowners covering approximately 760 acres of wetland and 2,000 acres of uplands. Cropland payments are contracted at $40 per acre, wetlands at $20 per acre and non-tillable acres at $20 per acre. The Game and Fish Department also will award an additional $2 per acre to any landowner that adds public access to the contracted acres.

A second wetland management program, the Wetland Credit Database, is housed in the Department of Agriculture. The program, created in 2013, is a resource for landowners wishing to buy credits to mitigate a wetland, as well as landowners with wetland credits to sell. Landowners can contact the department to coordinate with landowners that need to buy credits with landowners that have credits for sale and vice versa. It was noted the information is forwarded to the NRCS, which works with the producers through the mitigation process. The interest in the program has been small, as only nine landowners have expressed willingness to participate.

The committee also received information from a representative of the NRCS regarding federal wetland mitigation rules and regulations. The Food Security Act of 1985 sets forth the requirements for agricultural wetland mitigation. Participation in USDA programs requires compliance with the wetland "swampbuster" law that was a part of the Act. A federal water bank program, similar to the state water bank program under Public Law 91-559, receives $4 million of federal funding annually. The money primarily has been directed to the Devils Lake Basin area to help 294 producers combat excess water on 45,000 acres of property. The federal law would allow for a program similar to what is already in place under the Department of Agriculture, and would allow for 10-year renewable agreements with landowners. Under the federal law, if mitigation occurs and wetlands are placed in a new location, maintenance is required to ensure the area properly functions as a wetland, including ensuring invasive species do not invade the area. If using a wetland bank, the bank is responsible for maintaining the wetland not the landowner. The testimony indicated creating new wetlands is more expensive than restoring or enhancing existing wetlands.

The committee received information from a representative of Ducks Unlimited regarding private wetland mitigation efforts, structure, and process. Ducks Unlimited established an in-lieu-fee mitigation service in 2014 and was approved

by the Army Corps of Engineers as the state's only in-lieu-fee provider of mitigation credits. Under the program, a private contractor provides a product for developers needing mitigation credits for wetland impacts. The developer contacts Ducks Unlimited with a need for mitigation credits and a credit availability letter is issued with the number of credits, the service area, the price, and a 6-month hold. A permit application then is submitted to the Army Corps of Engineers with the credit availability letter. Once a permit is issued, Ducks Unlimited has 3 years to complete the mitigation project. Since 2014, 97 credits have been sold under the program with an additional 35 requests pending. According to the testimony, wetlands mitigation is governed by rigorous, highly technical federal standards, and the standards developed for agricultural mitigation may be different from the standards developed by the Army Corps of Engineers for developmental mitigation under the Clean Water Act.

The committee received information from representatives of the South Dakota Farm Bureau and Wenck Associates, Inc., regarding wetland mitigation efforts in South Dakota. Wetland mitigation did not exist in South Dakota until 2012, when the state created a legislative subcommittee to address and increase agricultural wetland mitigation and provide a framework to meet the regulatory criteria in place under the NRCS rules, and to provide a plan to conduct mitigation. The South Dakota Farm Bureau is tasked with contracting with professional service providers for the technical work associated with wetland mitigation. The Farm Bureau contracts with Wenck Associates, Inc., an engineering and environmental consulting firm. The federal "swampbuster" provisions prohibit USDA program participants from converting wetlands unless there is compensation through wetland mitigation on an acre-for-acre basis with no net loss of wetlands. The functions and values in the mitigation area must be equal to or greater than the wetlands converted or destroyed. The framework established in South Dakota for wetland mitigation, which was accepted by the NRCS, provides uniform guidance for agricultural wetland mitigation banks. The framework includes guidance on the establishment, use, and operation of wetlands for mitigation.

South Dakota also received a USDA grant to assist in mitigation banking. The grant requires South Dakota to develop and market 300 mitigation credits for sale. The Farm Bureau is responsible for monitoring credit trading in the state, developing and holding the perpetual easement placed on each bank site, and long-term managing of each bank site. Under the program, 12 percent of credit revenue from sales is placed in a nonwasting fund to provide for the management of bank sites, 3 percent is used for long-term management and easement holding, and 5 percent is used for administrative costs of the Farm Bureau in listing credits for sale and tracking all bank sales and purchases. The consultant firm designs the sites, approves the plan, and oversees construction. The consultant firm is funded through the grant. The landowner owns the site, provides financial assurances during construction, signs an easement on the area to the Farm Bureau, pays for construction, monitors the site until the credits are sold, pays taxes on the land, and receives 80 percent of the credit revenue sale. Consultant fees and mitigation costs are determined on a site-by-site basis. The cost information is given to the landowner of the site before any agreement. The committee was informed the supply of available wetland sites in South Dakota is outpacing the demand of landowners looking to mitigate. However, the testimony indicated the South Dakota program has been operational since 2013-14 and again is able to offer credits for sale. According to the testimony, the South Dakota program will be able to sustain itself with money generated from credit sales once the federal grant money expires, but it would not have been possible to start the program without the grant money.

The committee received information from a representative of the Game and Fish Department regarding the management of wildlife management areas by the department and the relation to wetland mitigation efforts. According to the testimony, North Dakota has some of the highest densities of wetlands in the United States, and is a key breeding area for waterfowl populations. The department controls and manages approximately 219,000 acres of land for wildlife management areas throughout the state. The lands are managed specifically for the development and enhancement of habitat to maximize wildlife production and public hunting, fishing, trapping, and wildlife viewing opportunities. The lands have been acquired over 100 years and developed to provide premium wildlife and public-use benefit. The department has developed the land under its control and no longer has any land resources to offer for a state wetlands bank or mitigation credits.

The committee received information from a representative of the State Engineer's office regarding the role of the State Engineer and the State Water Commission in wetland mitigation through the management of sovereign land in the state. The engineer is responsible for identifying rivers and lakes within the state which are navigable and therefore, are sovereign to the state. The state takes title to the ordinary high water mark on navigable waters. Sovereign lands are wetlands, and as a result, the ability to use sovereign lands as mitigation acres to offset other wetland impacts does not exist. In the 1980s and 1990s, the State Engineer oversaw a state wetlands bank that since has been repealed. During the existence of the program, only 760 debits were taken out of the bank and 6,900 credits added to the bank.

The committee received information from a representative of the Department of Trust Lands regarding the role of the department in a potential state operated wetlands bank, amount of land held by the department, and potential uses of the land for wetland mitigation. The Board of University and School Lands and the department have a fiduciary responsibility, as outlined in the Constitution of North Dakota and state law, for the management of permanent trust lands

and for assets held for the benefit of the common schools and other education beneficiaries. Through the department, the board competitively leases trust lands for grazing and farming, as well as for the production of minerals, including coal, gravel, clay, potash, and oil and gas. In addition, numerous rights-of-way applications on trust lands are processed each year with application fees and negotiated consideration payments for issued right-of-way agreements providing revenue to the various trusts.

Through the Department of Trust Lands, the board manages 706,609 acres of trust land including 655,955 acres of grant land and 50,654 acres of acquired lands. The Constitution of North Dakota limits the use of grant land to pasture and meadow purposes. Most trust lands are in the western two-thirds of the state. The board's land lease prohibits draining water on or off trust lands. There are certain instances in which a wetland has been converted by the county or township to protect a road, by a lessee to increase watershed size to create a viable livestock water source, or by a lessee to create more acres of palatable forage. Testimony indicated little opportunity exists for wetland mitigation credits on trust lands, and further study would be required to determine if wetland mitigation would present an income producing opportunity for the permanent trust, or if the program would encumber and burden the trusts.

Conclusion

The committee determined South Dakota is significantly ahead of North Dakota in the implementation of a state wetlands bank, and South Dakota had the added advantage of federal grant money, to which North Dakota may not have access. The committee concluded the implementation of a state wetlands bank would require several years and considerable state funding, which would be difficult in the current economic environment. North Dakota also does not have an organization in place to administer the program as South Dakota does with its Farm Bureau.

The committee makes no recommendation regarding its study of the desirability and feasibility of creating a state wetlands bank.

REPORTS

The committee received the following reports:

- A report from the Advisory Committee on Sustainable Agriculture on the status of the committee's activities.
- A report from the State Board of Agricultural Research and Education on its annual evaluation of research activities and expenditures.