

AGRICULTURE COMMITTEE - NUTRIENT MANAGEMENT PLAN BACKGROUND MEMORANDUM

Section 3 of 2017 House Bill No. 1390 directs the Legislative Management to study and monitor the nutrient management plan developed by the State Department of Health.

The standing committee minutes for House Bill No. 1390 indicate the State Department of Health has been studying nutrient management, and including a legislative study would allow legislators oversight and the opportunity to weigh in on the findings of the agency study. Testimony in the standing committees indicated excessive nutrients may adversely affect surface waters by leading to excessive algae growth and blooms that result in making surface waters unusable for recreational, fishing, domestic, or agricultural use.

FEDERAL GUIDELINES

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, 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.

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.

NORTH DAKOTA

The State Department of Health has adopted rules for water quality standards which are effective for Clean Water Act purposes pursuant to North Dakota Century Code (NDCC) Chapter 61-28 regarding the control, prevention, and abatement of pollution of surface waters and NDCC 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 Federal Water Pollution Control Act (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 which 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.

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 include 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 areal 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. The plan calls for 11 actions to be taken to fulfill the guiding principles and meet the goals, including:

- Complete and implement comprehensive nitrogen and phosphorous reduction strategies for states within the basin;
- Complete and implement comprehensive nitrogen and phosphorous reduction strategies for appropriate basinwide programs and projects, initially targeting the programs and projects with significant federal lead or co-implementation strategies;
- Enhance protection through existing federal and state programs;
- Develop and promote more efficient and cost-effective conservation practices for conserving nutrients;
- Identify and quantify the effects of the hypoxic zone on the economic, human, and natural resources in the basin;
- Coordinate, consolidate, and improve access to data collected by state and federal agencies on activities and results of programs related to hypoxia in the basin;
- Track progress on the actions to reduce nutrient pollution by producing an annual report on federal and state nutrient-reducing activities and results;
- Continue to reduce scientific uncertainties identified to continually improve the accuracy of management tools and efficacy of management strategies for nutrient reduction;
- Continue to reduce scientific uncertainty about the relationship between nitrogen and phosphorous loads and the formation, extent, duration, and severity of the hypoxic zone;
- Promote effective communications to increase awareness of hypoxia and support the activities of the task force; and
- In 5 years, reassess nitrogen and phosphorous load reductions, the response of the hypoxic zone, changes in water quality throughout the basin, and the economic and social effects, including changes in land use and management, of the reductions.

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. Minnesota's Pollution Control Agency developed a nutrient reduction strategy that includes reduction goals and milestones to be achieved in individual bodies of water. In major Minnesota basins, goals and milestones call for nutrient measurements to be taken where the basin waters leave the state. Minnesota also has ground water protection goals to ensure viable drinking water.

Iowa's nutrient reduction strategy, designed in collaboration by the Iowa Department of Agriculture and Land Stewardship, Department of Natural Resources, and the Iowa State University College of Agriculture and Life Sciences, directs efforts to reduce nutrients in surface waters from both point and nonpoint sources in a scientific, reasonable, and cost-effective manner. The strategy proposes a pragmatic, strategic, and coordinated approach for reducing nutrient loads discharged from the state's wastewater treatment plants while also targeting nonpoint sources and evaluating the need for long-term nutrient water quality standards. The strategy promotes the continued need to work with farmers, industry, and cities to optimize nutrient management and lessen impacts to streams and lakes.

South Dakota's Natural Resources Conservation Service developed a nutrient management standard to budget, supply, and conserve nutrients for plant production and minimize agricultural nonpoint source pollution of surface

and ground water resources. The standard requires that a budget for nitrogen, phosphorous, and potassium be developed that considers all sources of nutrients. Nutrient planning must be based on current soil, manure, and tissue test results developed in accordance with South Dakota State University guidance or industry practice.

Montana's Natural Resources Conservation Service assists livestock producers in developing comprehensive nutrient management plans to properly evaluate nutrient management considerations and prepare alternatives that meet producer objectives and protect water resources.

STUDY APPROACH

In conducting this study, the committee may desire to receive testimony from representatives of the divisions within the State Department of Health which develop nutrient management plans to help define any issues that need addressing. The committee may consider receiving information regarding the nutrient management plans and nutrient reduction strategies developed in other states. The committee also may wish to seek additional information from organizations such as the Environmental Protection Agency and the National Conference of State Legislatures.