

Executive Summary

There is substantial statewide implementation of actions to reduce nutrient losses to water. Implementation is occurring at the programmatic level (statewide programs

that target phosphorus and/or nitrogen reduction) and at the watershed level (e.g., implementation of Total Maximum Daily Load plans).

Background:

The Wisconsin Nutrient Reduction Strategy was developed with partners and finalized in 2013, partly in response to the 2008 Gulf of Mexico Hypoxia Action Plan. This national plan set a national goal of 45% reduction in nitrogen (N) and phosphorus (P) loading to the Mississippi River to address the size of the hypoxic zone in the Gulf of Mexico. In Wisconsin, the main focus of nutrient reduction efforts is to address water quality problems caused by nutrients affecting state rivers, lakes and streams. Wisconsin's strategy follows the 2011 U.S. Environmental Protection Agency

framework, which established elements for state nutrient reduction strategies: target watersheds with highest loading; address all sources; and track, measure and report progress. Implementation of the Wisconsin Nutrient Reduction Strategy is occurring through existing state, federal and local programs.

Current water quality conditions:

In-state and Gulf of Mexico water quality issues persist, as these ecosystems slowly respond to restoration efforts.

Programmatic Implementation

There have been significant reductions in phosphorus discharges from **point sources**. For point sources, the main implementation action is Wisconsin Pollutant Discharge Elimination System (WPDES) permit limits for phosphorus, which has been included in 85% of the permits reissued since January 1, 2011. Many permittees with new phosphorus limits are optimizing existing operations as a first step. Compliance options of adaptive management or water quality trading, which allow point sources to work with nonpoint sources to achieve phosphorus load reductions, have been selected by 13 permittees, with many more exploring these options. Tracking

of annual point source discharges by DNR indicates **phosphorus loading in the Mississippi River Basin decreased 11.4% between 2013–2015**.

There are many programs for **agricultural nonpoint sources** at the federal, state, and county level which are providing incentives to farmers to implement nutrient reduction best management practices. County land and water resource management plans and Nine Key Element watershed plans are effective tools for assessing the contributing causes/sources of nonpoint source pollution, setting goals and identifying actions to address them.

In addition, Wisconsin DNR and Department of Agriculture, Trade and Consumer Protection (DATCP) continue to implement (in partnership with county land and water conservation departments) the state's nonpoint source performance standards and prohibitions found in [Chapter NR 151, Wisconsin Administrative Code](#) and [Chapter ATCP 50, Wisconsin Administrative Code](#). These include the cropland phosphorus index and requirements for nutrient management planning. According

to DATCP, nutrient management plans are in place for 32% of cropland acres. Farmer-led watershed groups have emerged as an important vehicle for implementation in which farmers lead planning, education and best management practice innovation with their neighbors. As a result, conservation practices implemented in critical locations have resulted in measurable (by model estimation) phosphorus reductions. There are currently 15 groups and more are being organized.

Watershed Level Implementation

Nutrient reduction actions are occurring in many watersheds through total maximum daily load or TMDL implementation, WPDES permit compliance options (whether control, adaptive management or water quality trading) and voluntary conservation to improve water quality. At the watershed level, many different groups are partnering for effective implementation; USDA Natural Resources Conservation Service, county land and water conservation departments, municipal wastewater agencies, University of Wisconsin Extension, farmers, local

environmental/watershed groups, U.S. Geological Survey and state agencies. Planning and/or implementation is occurring in all watersheds identified as the "top group" of watersheds targeted for phosphorus reduction because of their high load contribution, many of which have approved TMDLs or are developing TMDLs. Phosphorus TMDLs and watershed or county land/water resource plans are driving nutrient reduction implementation in "non-targeted" watersheds as well. Initiatives to address nitrates in groundwater are underway.

Future Focus

Over the next biennium, work by DNR and partners will include developing better ways to measure and track nutrient reduction progress (particularly for nonpoint sources).