Nutrient Management Plans

Indicator # 7061

This indicator report was last updated in 2005.

Overall Assessment

Status:	**Not Assessed**
Trend:	**Not Assessed**

Lake-by-Lake Assessment

Separate lake assessments were not included in the last update of this report.

Purpose

- To determine the number of Nutrient Management Plans
- To infer environmentally friendly practices that help to prevent ground and surface water contamination

Ecosystem Objective

This indicator supports Annexes 2, 3, 11, 12 and 13 of the Great Lakes Water Quality Agreement. The objective is sound use and management of soil, water, air, plants and animal resources to prevent degradation of the environment. Nutrient Management Planning guides the amount, form, placement and timing of applications of nutrients for uptake by crops as part of an environmental farm plan.

State of the Ecosystem

Background

Given the key role of agriculture in the Great Lakes ecosystem, it is important to track changes in agricultural practices that can lead to protection of water quality, the sustainable future of agriculture and rural development, and better ecological integrity in the basin. The indicator identifies the degree to which agriculture is becoming more sustainable and has less potential to adversely impact the Great Lakes ecosystem. As more farmers embrace environmental planning over time, agriculture will become more sustainable through nonpolluting, energy efficient technology and best management practices for efficient and high quality food production.

Status of Nutrient Management Plans

The Ontario Environmental Farm Plans (EFP) identify the need for best nutrient management practices. Over the past 5 years farmers, municipalities and governments and their agencies have made significant progress. Ontario Nutrient Management Planning software (NMAN) is available to farmers and consultants wishing to develop or assist with the development of nutrient management plans.

In 2002 Ontario passed the Nutrient Management Act (NM Act) to establish province-wide standards to ensure that all land-applied materials will be managed in a sustainable manner resulting in environmental and water quality protection. The NM Act requires standardization, reporting and updating of nutrient management plans through a nutrient management plan registry. To promote a greater degree of consistency in by-law development, Ontario developed a model nutrient management by-law for municipalities. Prior to the NM Act, municipalities enforced each nutrient management by-law by inspections performed by employees of the municipality or others under authority of the municipality.

In the United States, the two types of plans dealing with agriculture nutrient management are the Comprehensive Nutrient Management Plans (CNMPs) and the proposed Permit Nutrient Plans (PNP) under the U.S. Environmental Protection Agency's (U.S. EPA) National Pollution Discharge Elimination System (NPDES) permit requirements. Individual states also have additional nutrient management programs. An agreement between U.S. EPA and U.S. Department of Agriculture (USDA) under the Clean Water Action plan called for a Unified National Strategy for Animal Feeding Operations. Under this strategy, USDA Natural Resources Conservation Service has leadership for the development of technical standards for CNMPs. Funds from the Environmental Quality Incentives Program can be used to develop CNMPs. The total number of nutrient management plans developed annually for the U.S. portion of the basin is shown in Figure 1. This includes nutrient management plans for both livestock and non-livestock

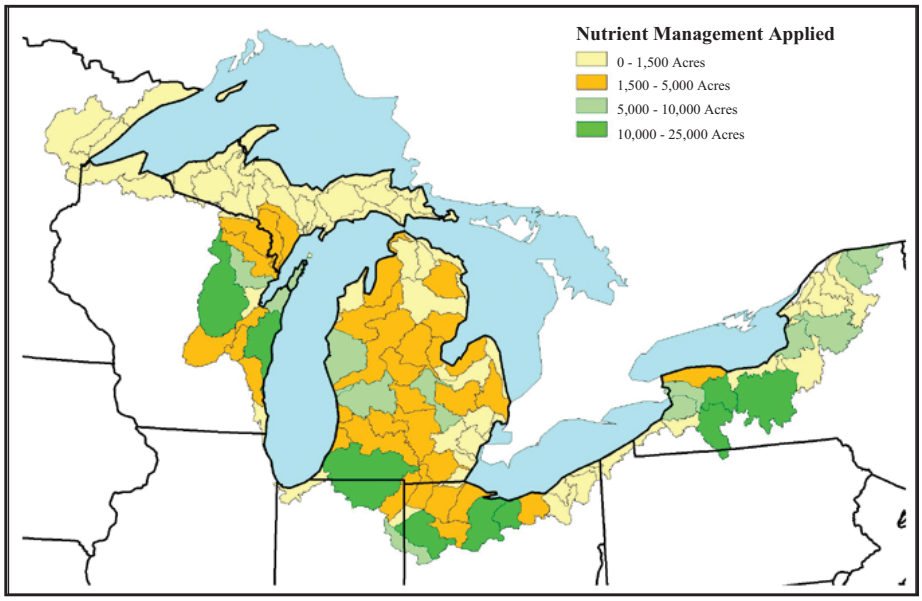

Figure 1. Annual U.S. Nutrient Management Systems total number of nutrient management plans developed annually for the U.S. portion of the basin, 2003.

Source: U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), Performance and Results Measurement System

producing farms. The CNMPs are tracked on an annual basis due to the rapid changes in farming operations. This does not allow for an estimate of the total number of CNMPs. U.S. EPA will be tracking PNP as part of the Status's NPDES program.

Figure 2 shows the number of Nutrient Management Plans by Ontario county for the years 1998 through 2002, and Figure 3 shows cumulative acreage of Nutrient Management Plans for the Ontario portion of the basin. The Ontario Nutrient Management Act is moving farmers toward the legal requirement of having a nutrient management plan in place. Prior to 2002 the need for a plan was voluntary and governed by municipal by-laws. The introduction of the Act presently requires new, expanding, and existing large farms to have a nutrient management plan. This has brought the expectation, which is reflected in Figure 2, that there will be on-going needs to have nutrient management plans in place.

Having completed a NMP provides assurance farmers are considering the environmental implications of their management decisions. The more plans in place the better. In the future there may be a way to grade plans by impacts on the ecosystem. The first year in which this information is collected will serve as the base line year.

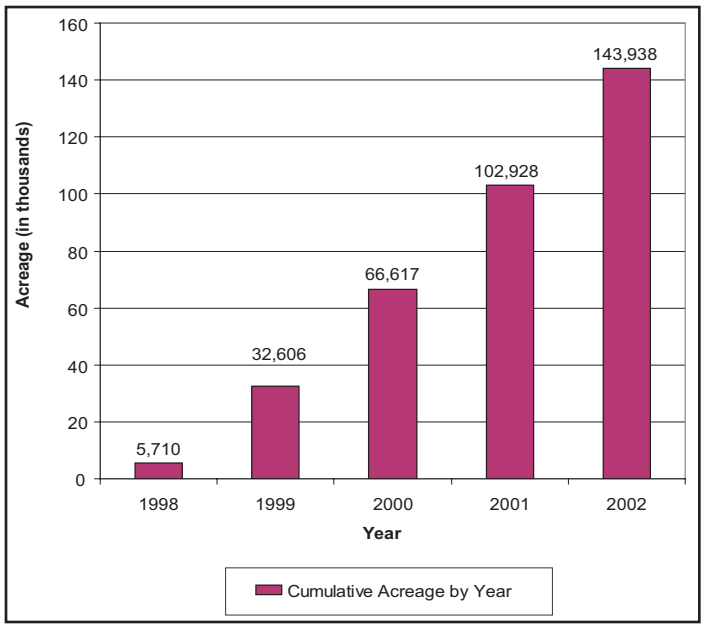

Figure 2. Nutrient Management Plans by Ontario county, 1998- 2002.

Source: Ontario Ministry of Agriculture and Food

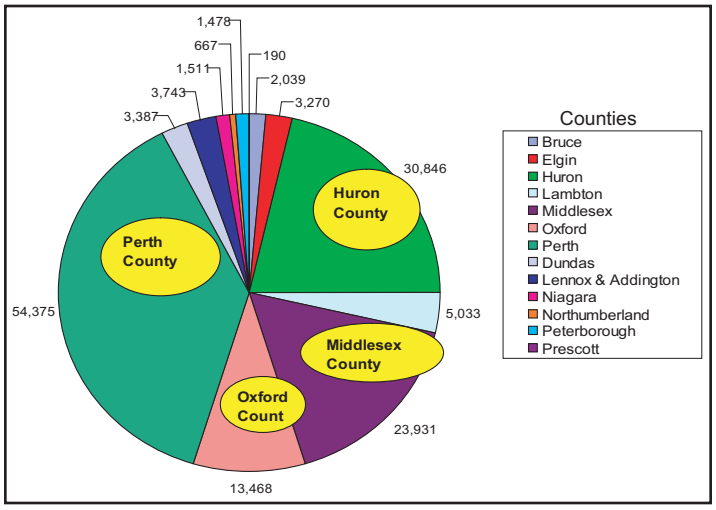

Figure 3. Cumulative acreage of Nutrient Management Plans for selected Ontario Counties in the basin.

Over 75% NMP acreages found in Huron, Perth, Oxford and Middlesex Counties.

Source: Ontario Ministry of Agriculture and Food

Pressures

As livestock operations consolidate in number and increase in size in the basin, planning efforts will need to keep pace with changes in water and air quality standards and technology. Consultations regarding the provincial and U.S. standards and regulations will continue into the near future.

Comments from the author(s)

The new Nutrient Management Act authorizes the establishment and phasing in of province-wide standards for the management of materials containing nutrients and sets out requirements and responsibilities for farmers, municipalities and others in the business of managing nutrients. It is anticipated that the regulations under this act will establish a computerized NMP registry; a tool that will track nutrient management plans put into place. This tool could form a part of the future "evaluation tool box" for nutrient management plans in place in Ontario. The phasing in requirements of province-wide standards for nutrient management planning in Ontario and the eventual adoption over time of more sustainable farm practices should allow for ecosystem recovery with time.

The USDA's Natural Resources Conservation Service has formed a team to revise its Nutrient management Policy. The final policy was issued in the Federal Register in 1999. In December 2000, USDA published its Comprehensive Nutrient Management Planning Technical Guidance (CNMP Guidance) to identify management activities and conservation practices that will minimize the adverse impacts of animal feeding operations on water quality. The CNMP Guidance is a technical guidance document and does not establish regulatory requirements for local, tribal, State, or Federal programs. PNPs are complementary to and leverage the technical expertise of USDA with its CNMP Guidance. U.S. EPA is proposing that Concentrated Animal Feeding Operations, covered by the effluent guideline, develop and implement a PNP. There is an increased availability of technical assistance for U.S. farmers via Technical Service Providers, who can provide assistance directly to producers and receive payment from them with funds from the Environmental Quality Incentives Program.

Acknowledgments

Authors:

Peter Roberts, Water Management Specialist, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Guelph, Ontario Canada, peter.roberts@ontario.ca;

Ruth Shaffer, U.S. Department of Agriculture, Natural Resource Conservation Service, ruth.shaffer@mi.usda.gov; and

Roger Nanney, Resource Conservationist, U.S. Department of Agriculture, Natural Resource Conservation Service.

Last Updated

State of the Great Lakes 2005