

# Areawide Water Quality Management Plan Chapter 6

## AGRICULTURAL RUNOFF

### Executive Summary

#### Agriculture and the TMACOG Region

Northwest Ohio and Southeast Michigan is a largely agricultural region. The watersheds draining into the Western Basin of Lake Erie have 75% or more agricultural land use. Part of the Huron-Erie Lake Plains Eco-Region, the topography is mostly flat, and most soils are silts and clays. The area is good farmland when provided with artificial drainage, but agriculture can also result in large pollution loadings of sediment and nutrients (phosphorus and nitrates).

The Agricultural Runoff Chapter of this Plan identifies public agencies (“Designated Management Agencies, or DMAs) and their roles in preventing agricultural water pollution. Each agency has a role in educating the public, providing technical assistance to the agricultural community, providing cost share incentive funding, and monitoring and enforcing regulations.

**County DMAs:** the Lucas, Ottawa, Sandusky, and Wood County Soil, & Water Conservation Districts (SWCDs), and the Monroe County Soil Conservation District.

**State DMAs:** Ohio and Michigan Departments of Agriculture, Ohio and Michigan Departments of Natural Resources, Ohio EPA, Michigan DEQ, Ohio and Michigan State University Extensions.

**Federal DMAs:** USDA through its Natural Resources Conservation Service (NRCS) and Farm Services Agency (FSA); and US EPA

#### Agricultural Runoff and Water Quality

Agricultural runoff is a concern over four potential pollutants:

1. Sediment
2. Nutrients, particularly phosphorus and nitrates from fertilizers
3. Bacteria, from land application of manure or runoff from livestock facilities
4. Pesticides

Sediment is a concern because it covers over aquatic habitat, and fills in drainageways and shipping channels. Phosphorus tends to attach to fine silt and clay soils, so where sediment goes, phosphorus goes also.

Phosphorus is a concern because it is the critical nutrient in eutrophication of Lake Erie. High nutrient levels in the 60s and 70s led to algae blooms and anoxic conditions. With decreased oxygen in the water, fish populations dropped, and Lake Erie was declared “dead.”

Phosphorus reduction targets were set for each state, each county. By 1997, the TMACOG counties had met 66% of the target reductions through improved conservation practices.

From 1975 to 1995, sediment loads from the Maumee and Sandusky River declined 18% and 27% respectively; total phosphorus declined 41% and 46% respectively. Nitrate loads, however, increased 21% and 12% respectively. The nitrate data is highly variable and has a lower confidence level than the other data. However, the nitrate levels appear to be rising. The data implies that agricultural conservation practices have helped reduce sediment and the phosphorus that attaches to fine soil particles. They have not similarly reduced nitrates, which are soluble and carried by water.

#### This Plan’s Recommendations

This Plan recommends outreach and educational programs, technical assistance to the agricultural community, and voluntary use of Best Management Practices (BMPs) to achieve water quality goals.

The BMPs recommended under this plan improve soil and water conservation. They reduce water pollution by keeping topsoil on the field, or by capturing sediment and nutrients before they can reach a stream. Some BMPs also provide riparian or aquatic habitat, benefiting fish and wildlife. County SWCDs develop specific BMP programs. BMPs recommended include:

- Conservation tillage
- Nutrient Management
- Filter strips of at least 20’ along streams & ditches
- Grassed waterways
- Riparian buffer areas at least 50’ along streams
- Grade control structures
- Windbreaks
- Pest Management to minimize the amount of pesticides used

- Cover crops for seasonal protection of topsoil

SWCD implementation activities vary from county to county. Each county develops its own program. Activities recommended by this Plan include:

- Develop watershed plans
- Conduct educational and informational programs
- Provide technical assistance to the agricultural community
- Make new or innovative conservation equipment available to farmers on a trial basis, for lease, or demonstration
- Develop and implement conservation cost share projects.

Developing cost share projects includes TMACOG, the SWCDs, and watershed councils (RAP, Portage River Basin Council, Sandusky River Watershed Coalition) developing projects to promote soil and water conservation through BMPs. Use of state and federal cost-share programs to accomplish these goals is encouraged. Under this Plan it is TMACOG's policy to support funding of these cost share programs through local, state, and federal agencies, and support funding for participating agencies to administer them. Programs that may be available to provide cost share funds include:

- Conservation Reserve Program (CRP)
- Conservation Reserve Enhancement Program (CREP)
- State cost share programs, such as Ohio DNR
- Northwest Ohio Windbreak Program
- Wetlands Reserve Program
- Clean Water Act §319 Non-Point Source Grants
- Environmental Quality Incentive Program (EQIP)