

Protecting Wetlands



**Ohio EPA staff
conducting a wetland
assessment**

Until recently, wetlands have been largely ignored in evaluations of watershed water quality. Heightened awareness of their valuable function has led to a movement to include wetlands in these surveys. Ohio EPA is a national leader in the development and application of wetland assessment methods. These monitoring tools have been modeled after those used to evaluate streams and rivers by the Division of Surface Water's Ecological Assessment Section, long recognized as the national standard for effective and comprehensive stream assessment methods and reporting.

Each year, Ohio EPA staff conduct biological monitoring to gauge the health and quality of Ohio's wetland and water resources. During these surveys, Agency staff collect information including the kinds and numbers of organisms living in the area, the habitat quality, water levels and soil and water chemistry. This information is compared to conditions and data gathered from known high to poor quality sites. If an area is disturbed or affected by development or other factors, it will generally have less diversity of species and a lower number of sensitive species present.

Ohio EPA's 401/Wetland Section is devoted to protecting wetlands. The section is divided into two parts, the [Certification & Permitting Unit](#) and the [Wetlands Ecology Group](#). The Certification & Permitting Unit reviews applications regarding projects that would physically impact waters of the state, including streams, lakes and wetlands. The Wetlands Ecology Group performs wetland research with the goal of developing wetland assessment techniques

including biocriteria.

The Wetlands Ecology Group recently started a study of wetland conditions on a watershed basis. The focus will be on the Cuyahoga River watershed where 200 representative wetlands will be assessed using the [Ohio Rapid Assessment Method](#) (ORAM). In collaboration with Kenyon College, the Wetlands Ecology Group will then pick about 10 percent of the sites where they will conduct more in depth studies of the biology, physical features and chemistry.

What is a wetland?

Wetlands are areas where terrestrial and aquatic systems meet. Wetlands are characterized by their water levels, dominant plant species and soil types. The areas have either shallow standing water or are saturated within the surface soils. To be considered a wetland, an area does not have to hold water all year. In fact, many wetlands dry up for at least part of the year.

Before anyone can degrade a wetland, they must obtain a Clean Water Act Section 401 water quality certification or isolated wetland permit from Ohio EPA. To disturb wetlands adjacent to other water bodies, they must also obtain a Clean Water Act [Section 404 permit](#) from the U.S. Army Corps of Engineers.

There are many different names for wetlands including [marsh](#), [bog](#), [fen](#), [swamp](#), [ephemeral wetlands or vernal pools](#), peatland, mire, moor, muskeg, bottomland, wet prairie, reed swamp, [wet meadow](#), slough, pothole, playa and mudflat. For a photo gallery of some species found in Ohio wetlands, [click here](#).

Why are wetlands important?

Regardless of their name, wetlands are valuable because they often support diverse species of plants, wildlife, insects and fish. Many endangered species inhabit wetlands during part of their life cycles. They are often referred to as "nature's kidneys" because they retain and cycle nutrients from the soil and water.

Amphibians like frogs and salamanders often rely on wetland areas for mating, laying eggs and early development of young. With the loss of wetlands, species are becoming threatened and disappearing from many parts of Ohio.

Wetlands are important for flood reduction and control because they help store large amounts of water which is released slowly to surrounding surface or ground water sources. Wetlands also help reduce erosion by trapping soil that is washed off of farm fields and other open areas.

Many local economies rely on wetland areas used for wildlife and waterfowl preservation, nature areas, recreation and hunting. In addition, some wetlands help replenish water supplies for local drinking water sources.

For more neat facts about wetlands, [click here](#).



A cluster of Wood Frog eggs

What are some common threats to wetlands?

Historically, most wetland losses were due to agriculture. Today, the most common threat to Ohio wetlands is development. Because of their fertile soil and location, many wetland areas are desirable for farming, business and housing developments. Other threats come from fertilizers, herbicides and pesticides that are applied to surrounding areas and washed into wetlands with storm water. [Click here](#) for a list of things you can do to help protect wetlands.

What is Ohio EPA doing to protect wetlands?

Ohio EPA regulates disturbances to wetlands by ensuring adherence to Ohio's [Water Quality Standards](#) and through the review and issuance of Clean Water Act [Section 401 water quality certifications](#) under [Ohio Administrative Code \(OAC\) 3745-32](#) and isolated wetland permits. In 1998, Ohio EPA adopted wetland water quality standards and wetland antidegradation rules. These rules allow staff to categorize wetland areas based on their function, sensitivity to disturbance, rarity and mitigation potential, then determine appropriate avoidance, minimization and mitigation techniques based on the wetland's [category](#).

If an applicant obtains a permit, they must adhere to the permit conditions. This almost always includes construction of new wetlands to replace those lost to development. Construction of mitigation wetlands can happen as single projects or as mitigation banks. A mitigation bank is an area where large acreages of wetlands have been restored or created to compensate for wetland losses resulting from completed projects.

Ohio EPA is currently studying existing mitigation wetlands, including mitigation banks, to see if and how well they are working and also examining ways that they could be more effective. Included in these studies is a survey of approximately 100 individual mitigation wetlands constructed to satisfy permit conditions of Section 401 water quality certifications issued since the early 1990s.

What is the Ohio Rapid Assessment Method (ORAM)?

The Ohio Rapid Assessment Method (ORAM) is a general wetland assessment tool developed and used by Ohio EPA staff and applicants to quickly estimate the function and quality of wetlands through a survey of the wetland's size, buffers, surrounding land uses, water sources, habitat, special features, plant communities and their distribution and other habitat features to help determine the quality of the wetland. The information collected is collaborated with data from more intensive monitoring techniques, including results from surveys of the plant, amphibian and macroinvertebrate communities at reference wetlands. Therefore, in most cases, the ORAM can be used to quickly determine the appropriate wetland category for review purposes reducing the need for more time consuming and expensive methods. Wetland ecologists from all over the United States have come to Ohio to learn about ORAM, and several states are using it as a foundation to develop their own assessment methods.

- Category 1 wetlands are low quality, typically dominated by cattails and often located in active agricultural fields.
- Category 2 wetlands are good quality but don't support threatened or endangered species.
- Category 3 wetlands are the cream of the crop - the highest quality and relatively scarce.



Category 1 Wetland



Category 3 Wetland

For More Information and Helpful Links

- Association of State Wetland Managers - www.aswm.org/index-alt.htm
- U.S. EPA Wetlands site - www.epa.gov/owow/wetlands/ including information about Ohio EPA's ORAM system (www.epa.gov/owow/wetlands/bawwg/case/oh1.html)
- American Wetlands Month - May - www.iwla.org/SOS/awm
- FrogwatchUSA - www.nwf.org/frogwatchUSA/
- Save Our Streams - Izaak Walton League - www.iwla.org/SOS/
- Volunteer Monitoring Program - www.epa.gov/owow/monitoring/vol.html
- Ohio Environmental Council vernal pool monitoring program - www.theoec.org/cwater_vernal.html

- United States Geological Survey National Wetlands Research Center - www.nwrc.usgs.gov/
- Ohio Wetlands Foundation - www.ohiowetlands.org
- A Guide to Creating Vernal Ponds - www.southernregion.fs.fed.us/boone/vernal.pdf
- U.S. Army Corps of Engineers, Region 2 [U.S. ACOE 2](#)
- [Swampbuster](#)
- United States Department of Agriculture Natural Resources Conservation Service - [Wetlands Reserve Program](#)
- Local soil and water conservation districts
- Ducks Unlimited
- Nature Conservancy
- [Ohio Department of Natural Resources](#)
- [U.S. Fish and Wildlife Service](#)

Especially for Kids and Teachers

- Wetlands coloring book from U.S. Fish and Wildlife Service - training.fws.gov/library/Pubs/Wetlands_colbk.pdf
- Ohio Department of Natural Resources wetland site - www.dnr.state.oh.us/wetlands/
- OSU Wetlands/Olentangy River Wetland Research Park - swamp.ag.ohio-state.edu
- Wetland Quiz - www.dnr.state.oh.us/wetlands/test.htm
- United States Geological Survey National Wetlands Research Center - Outreach and Education site - www.nwrc.usgs.gov/educ_out.htm
- NatureWorks - www.dnr.state.oh.us/realm/grants/natrwrks.htm
- Photo Tour of Ohio Wetlands - from U.S. EPA's site - www.epa.gov/owow/wetlands/bawwg/case/ohphoto1.html
- Kenyon College/Fennessy site - biology.kenyon.edu/fennessy/envs93/home.htm
- Indiana Wetlands - has some good kids and teacher links - www.in.gov/wetlands/kids/
- U.S. EPA Region V Wetland Education sites - www.epa.gov/region5/water/wshednps/topic_wetlands_education.htm
- Swamp Survivors - www.nwoet.org/swamp/