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UNIVERSITY OF MINNESOTA
Extension
SERVICE

PROTECTING our waters

# Preserving Wetlands

SHORELAND BEST MANAGEMENT PRACTICES

NUMBER 12 IN THE SERIES

## What Are Shoreland BMPs?

Best Management Practices (BMPs) are actions you can take to reduce your impact on the environment. BMPs have been described for agriculture, forest management, and construction. This fact sheet describes BMPs you can adopt on your shoreland property to help protect and preserve water quality. In many cases, the best management for shorelands may be retaining the natural characteristics of your property.

## Wetland Values

Why are we even concerned about wetlands? Wetlands have many values, some very evident, others less discernable. Many creatures, such as amphibians and migratory birds, depend on wetland fringes that border lakes and streams for nesting and food.

A not-so-obvious benefit of wetlands is flood control. Flood damage in Minnesota is estimated to be at $130,000,000 per year! Wetlands hold storm water and release it gradually, reducing flood damage and improving water quality by filtering nutrients and some pollutants. Other values of wetlands include aesthetic benefits and ground water recharge and discharge.

## What Is a Wetland?

The term *wetland* is used to describe a wide variety of wet environments found in Minnesota. A wetland can range from a slight depression that holds water only after spring runoff to a forested swamp with saturated peat soils.

Most people probably would describe a wetland as a small body of open water with cattails on the fringe. Lakes and streams are generally not wetlands, but may be bordered by wetlands. How then do we know what is and what is not a wetland?

Since there are many laws today protecting wetlands, it is important to identify wetlands and define their boundaries. There are some clues that are helpful in determining wetland or non-wetland areas.

Water usually determines soil color and influences the vegetation found on a site. Therefore, vegetation, soils, and hydrologic (water) factors must all be present in legal identification of a wetland. In undisturbed sites, vegetation is the most easily identifiable criterion and can be useful in wetland observations. Soils and hydrologic factors are more complex and are only briefly described in this fact sheet.

## Wetland Vegetation

Wetland areas are usually dominated by vegetation that competes well or survives in wet conditions. In fact, some plants are almost always found in wetlands! These "obligate" wetland plants are good indicators of the existence of a wetland.

If you see the following obligate wetland plants, you are looking at a wetland:

- bog rosemary
- bog birch
- cotton-grass
- black willow
- labrador tea
- bulrush
- cattail
- swamp milkweed
- sundew
- sand bar willow
- skunk-cabbage
- sphagnum moss
- wild rice

The following plants are usually found in wet areas and are fairly good indicators of the presence of a wetland. If any of these are found in the area of interest, further investigation should be done to determine the presence of a wetland:

- red-osier dogwood
- larch (tamarack)
- northern white cedar
- black spruce
- speckled alder
- black ash

Produced by the Arrowhead Water Quality Team, a cooperative effort of Carlton, Cook, Itasca, Koochiching, Lake, and St. Louis counties and state and federal agencies. All publicly funded agencies involved are committed to equal opportunity education, service, and employment.

# Wetland Soils

Soil development is also affected by water. In Minnesota, two major soil types develop in wet conditions. One is organic soils, or peat. The second is mineral soils that do not drain well because of low land, ground water seepage, or a slowly permeable soil layer (e.g., clay, bedrock, or hardpan). These are both called hydric soils.

Organic soils develop in depressions and consist of plant remains that do not decompose because soil is saturated. Organic soils can range in thickness from 2 to 30 feet. Plant parts are often still discernable in many organic (peat) soils.

Mineral soils that are saturated much of the time become dull-colored or gleyed. Gleyed soils are neutral gray and occasionally greenish or bluish gray.

Mineral soils saturated for short periods develop spots or blotches of different colors. These spots are called mottles and can be an indication of hydric or wetland soils.

# Wetland Hydrology

Hydrology is the third criterion used in describing a wetland. Hydrology refers to the presence or flow of water through the site. Some wetlands are relatively dry during drier times of the year (i.e., late summer). Often, aerial photographs, personal interviews with neighbors, and visual evidence are used to determine wetland hydrology.

# Wetland Delineation

Wetland areas are identified on site using vegetation, soils, and hydrology. The hardest part of defining a wetland is locating the boundary between the wetland and upland. This is called wetland delineation. When any of the above three criteria are no longer present, legally, you are out of a wetland and into the upland area.

# Wetland Regulation

Due to the loss of many wetlands, the Federal government and Minnesota have established regulations to protect remaining wetlands. Some local governments also regulate wetlands. Since wetlands themselves are so very complex, it follows that the laws protecting them are also complex.

The Minnesota Legislature passed the Wetland Conservation Act (WCA) in 1991. The goals of the WCA are to protect wetlands (no net loss) and make the process of wetland regulation more equitable. Responsibility for administering WCA lies with local governmental units (LGU) throughout Minnesota.

If you think you have a wetland, the best plan is to avoid impacting it. If you must consider a drain or fill activity near the wetland, follow these steps:

1. Clearly outline the proposed project by drawing a sketch or writing a narrative.
2. Contact your local zoning office or Soil and Water Conservation District (SWCD) for information on required permits.
3. While at the zoning office or SWCD, request a Local-State-Federal Water Resource Project Notification Application Form. Complete this form by describing your proposed activity.
4. Send copies of the form to these agencies: municipal government or county; MN Department of Natural Resources (DNR) Division of Waters area office; U.S. Army Corps of Engineers; SWCD; and Watershed District, if one exists in your area. These agencies should advise you of their jurisdiction or permit requirements within 45 days.

If it is determined by the regulators that you are impacting a wetland, you will need further permits. In Minnesota, permits are provided by these regulating agencies:

- Small wetlands may be regulated by the U.S. Army Corps of Engineers, regarding drainage or the placement of fill; although the Corps may give you an exemption from its regulations to place fill in a wetland, WCA may require replacement.
- Wetlands listed on the Minnesota Protected Waters Inventory are regulated by the DNR; a permit is required for any alteration.
- Wetland impacts may need a water quality permit from the MN Pollution Control Agency (PCA); if a PCA permit is deemed necessary, your application will be automatically forwarded to them.
- LGUs may also have water quality ordinances regulating wetlands.
- All wetlands are covered by regulation through WCA; by law, WCA delegates implementation to LGUs such as cities and counties; under WCA, if you impact a wetland, it may need to be replaced elsewhere unless it is granted an exemption.

# Wetland Replacement

If avoidance is not possible, replacement of an impacted wetland area or paying into a "wetland bank" are two alternatives. Both replacement and banking programs are coordinated with your LGU.

Replacing an impacted wetland area with a wetland elsewhere on the landscape is ordinarily accomplished by restoring a wetland that was previously drained. Plugging an existing tile or building a dike is usually required to restore a wetland. Created wetlands are also generally acceptable for wetland replacement. Created wetlands can be achieved by shaping abandoned gravel pits or excavating upland areas.

Wetland banking allows someone proposing a project to buy credits from a "bank" of wetlands that have been restored or created elsewhere. The bank of wetlands must first be established so that credit will be available for withdrawal. Payment for wetland bank credit acres will depend on many factors, including the cost of land in your area and the cost of creating or restoring wetlands.

# BMPs for Wetlands

**Avoid, minimize, and replace** are the watchwords for wetland protection. Avoid wetlands whenever possible. If you must disturb a wetland area, minimize disruption of the soil, vegetation, and hydrology. A final alternative when a wetland is lost is mitigation by replacing it elsewhere.

Even very small wetland areas can help protect water quality. Following simple practices such as these on your property can help maintain the integrity and effectiveness of wetlands:

- Use docks or boardwalks to cross a wetland rather than filling.
- Lay out access paths along high ground, even if it means a longer walk to the shore.
- Preserve existing drainageways and never divert water to or from wetland areas.

# Costs

If you cannot avoid altering a wetland on your property, there will be some financial cost. Costs will be incurred for acquiring permits to work in the wetland; there will also be mitigation costs for restoring wetlands:

- **DNR permits for working on protected wetlands or streams depend on the size and scope of the project. Fees are charged.**
- U.S. Army Corps of Engineers has permit fees for individuals and for commercial applications. These fees relate to nationwide permits. Larger projects may require individual permits with increased costs.
- LGUs may have fees in addition to building permits. Fees may be charged for inspecting erosion control near streams or for wetland replacement.
- The landowner may be responsible for delineating the wetland boundary by paying the LGU or by using a consultant.
- Costs for replacing a wetland will vary greatly across Minnesota. Costs may range from $4,000 to $50,000 per acre to buy credits in the wetland bank depending on land acquisition, earthwork, and seeding costs.

# Example Project

Let's say you want to build a new garage and driveway. If you think your property includes a wetland that may be affected by the project, your first step is to ask your LGU to check it out. If it determines that the area is in fact a wetland, you should consider altering your plans so the project doesn't impact the wetland. If there is no alternative, you will need to minimize impact and possibly provide wetland replacement.

After acquiring a building permit for the garage from your LGU, complete a project notification form describing the proposed project. The U.S. Army Corps of Engineers may determine that the fill area is small enough to be exempt from their program.

However, WCA regulations will apply. If your driveway is 50 feet long by 15 feet wide, you will impact 750 square feet. The garage fill will require 20 feet by 18 feet or 360 square feet. Total wetland impact is 1,110 square feet. Your LGU will review and approve or reject your proposed wetland replacement plan.

In this example, you would be required to replace the lost wetland. If replacement elsewhere on your property is impossible, there

would be an assessed cost per square foot of filling. That money would be paid into a wetland bank and might range from a couple hundred dollars to $1,000 in this example.

Avoiding wetlands altogether is preferable, considering the potential costs of working near a wetland. But if you must impact a wetland, use protective practices described in the other Shoreland BMP fact sheets.

# For More Information...

**call**

*county offices:*

- Planning and Zoning Department
- Soil and Water Conservation District (SWCD)

*regional offices of MN State agencies:*

- MN Department of Natural Resources (DNR)
- MN Board of Water and Soil Resources (BWSR)

*federal agencies:*

- U.S. Army Corps of Engineers (USACoE)

**read**

**Water Permits in Minnesota: What You Need to Know About Federal, State, and Local Permit Requirements.** Brochure available at above-mentioned offices.

**Minnesota Wetland Conservation Act.** Rules available from MN Board of Water and Soil Resources, One West Water Street, St. Paul, MN 55107. (612) 297-3767.

**Wetland Types and Definitions.** Brochure available from the MN Department of Natural Resources, Division of Waters, 500 Lafayette Road, St. Paul, MN 55155-4001. (612) 296-4800.

# PART OF A SERIES...

This fact sheet is one of a series designed to assist shoreland property owners in protecting and preserving water quality. The series includes:

1 Understanding Shoreland BMPs
2 Maintaining Your Shoreland Septic System
3 Installing a Shoreland Septic System
4 Ensuring a Safe Water Supply
5 Limiting Impact of Recreation on Water Quality
6 Developing Shoreland Landscapes and Construction Activities
7 Stabilizing Your Shoreline to Prevent Erosion
8 Minimizing Runoff from Shoreland Property
9 Caring for Shoreland Lawns and Gardens
10 Managing Your Shoreland Woodlot
11 Valuing Your Shoreland Trees
**12 Preserving Wetlands**
13 Managing Crops and Animals Near Shorelands
14 Reducing the Use of Hazardous Household Products
15 Preventing the Introduction of Exotic Species
16 Accessing Information to Protect Water Quality
17 Shoreland Stewardship Scorecard
18 Conserving Water

This series of fact sheets is a cooperative effort of the following agencies:

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College of Natural Resources, University of Minnesota
Water Plan Coordinators of the Arrowhead counties
Minnesota Board of Water and Soil Resources
Minnesota Department of Health
Minnesota Department of Natural Resources, Division of Fish and Wildlife, Division of Waters, Division of Forestry
Minnesota Pollution Control Agency
Minnesota Sea Grant Extension Program
Mississippi Headwaters Board
St. Louis County Health Department, Environmental Services Division
Soil and Water Conservation Districts of the Arrowhead counties
Natural Resources Conservation Service
Environmental Protection Agency
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