



Caring for Shoreland Lawns and Gardens

SHORELAND BEST MANAGEMENT PRACTICES

NUMBER 9 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.

Why Are Lawns and Gardens a Potential Problem?

Lawns and gardens near shorelands must be carefully planned and maintained to prevent possible contamination of surface waters. Native vegetation should be considered as a quality alternative to cultured lawns and landscapes. Landscapes will revert to a native state if no maintenance is performed; planting native vegetation will hasten the process.

Establishment of new lawns must conform to Shoreland Management Regulations, which prohibit excessive removal of vegetation near the shore and on slopes and bluffs. Check with your local zoning authority for specific regulations governing the body of water in question.

Existing lawns and gardens must be maintained in a manner that prevents the possible contamination of ground and surface waters.

Before beginning any practice, stop and think about potential risks to water quality. Shoreland owners must be aware of potential problems caused by soil erosion, as well as pollution due to chemical amendments and organic yard waste.

Special attention should be paid if the following conditions exist:

- There are areas of exposed soil—flower beds, vegetable gardens, or poorly established vegetation.
- Soils have a coarse texture, such as sands or sandy loams.
- The property slopes toward surface water.

- There are impervious surfaces, such as sidewalks and driveways.
- Lawn or landscape maintenance is being done close to the surface water.
- Fertilizers, pesticides, or soil amendments are being applied.

Avoid or minimize the use of chemical fertilizers and pesticides.

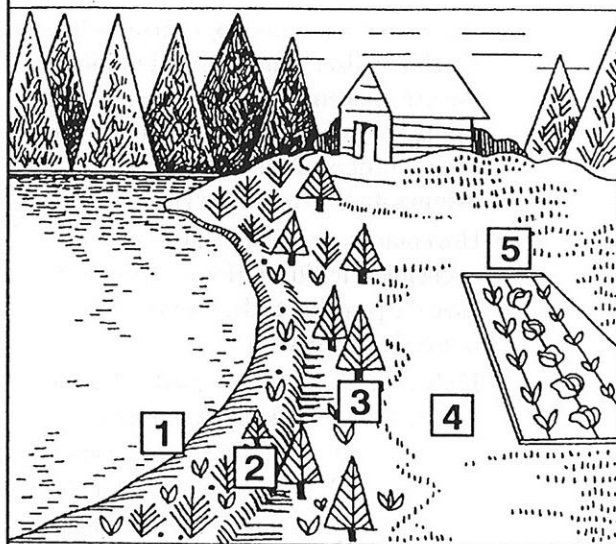


Figure 1: A well-designed landscape plan includes ① natural vegetation along the water's edge; ② an intact ice ridge or added berm; ③ a natural vegetation filter strip; ④ well-established grass or ground cover; and ⑤ a level garden set back from the waterfront.

Preventing Soil Erosion

Surface waters can be contaminated by soil particles that are washed or blown into the water. In addition to the problem of sediment, soil particles can carry phosphorus, which is a potential pollutant, into the water.

To avoid this problem:

- maintain a vigorously growing filter zone of grass, trees, and shrubs next to surface waters
- minimize areas of exposed soil by maintaining native vegetation or dense turf
- preserve ice ridges or construct an earth berm near the shore to minimize the possibility of runoff; the berm, which is a small mound of earth, should run parallel to the shore to prevent runoff into surface water

Preventing Potential Problems from Fertilizers

If possible avoid the use of chemical fertilizers. Native vegetation does not require the application of additional fertilizer. Use caution if applying fertilizers to lawns and adhere to the following guidelines:

- **Have your soil tested to determine how much fertilizer is needed and minimize the use of chemical fertilizers; soil test sample bags are available through the county offices of the University of Minnesota Extension Service.**
- Use compost or manure; this is preferable to chemical fertilizer. However, these also have the potential to damage water quality if used in excessive amounts.
- If chemical fertilizers are used, select slow-release (water insoluble) forms; see recommendations for fertilizing on next page.
- Water your lawn after fertilizing, but do not allow excess water to run off into surface waters.
- Sweep up any fertilizer spilled on hard surfaces such as walks and driveways, instead of washing it off.
- Use extra caution when applying fertilizer near surface waters; do not spread fertilizer within 75 feet of surface waters or wetlands; use a "drop" spreader and not a "cyclone" spreader to minimize the possibility of getting fertilizer directly into the water.
- Never apply fertilizers to frozen ground.
- Leave a natural vegetation filter strip of grass, trees, and/or shrubs next to the shoreline; another option would be to construct a berm along the shore.

Preventing Potential Problems from Pesticides

If possible avoid the use of chemical pesticides. Consult a professional from the University of Minnesota Extension Service or Soil and Water Conservation District to determine if the use of a pesticide is justified. The following practices will minimize the potential of contamination from pesticides:

- Properly identify whether the pest is an insect, disease, or other problem.
- Determine if there is an economic or aesthetic justification for initiating control of the pest.
- Consider control options other than the use of a chemical pesticide; **biological controls and pest-resistant plant varieties are becoming more available.**
- Use the least toxic and most readily degradable pesticide that will be effective.
- **Read the pesticide label carefully and pay special attention to safety precautions and warnings about use near water.**
- Do not apply pesticides when it is windy to avoid the possibility of drift.
- When purchasing pesticides, buy only what is needed to control the problem during the current season.
- Waste pesticides should be disposed of properly. Never pour excess pesticides on the ground, into surface waters, or into sanitary treatment systems; consult with your county solid waste office, the Minnesota Pollution Control Agency, or your sanitary district for proper methods of collection and disposal.

Best Management Practices for Lawns

The establishment of new lawns must conform to Shoreland Management Regulations. Natural vegetation cannot be excessively removed from the "Shore Impact Zone," generally a distance of 50 to 100 feet from the surface water, depending upon the county, and lake or river classification. Removal of vegetation from slopes and bluffs is also regulated. **Check with your local zoning authority for specific regulations.**

ESTABLISHING NEW TURF

- If permitted by regulation, a grass lawn can be established with either sod or seed.
- **Sod should always be used if there is a slope and the danger of soil erosion exists.**
- Seeding is effective if runoff is not a problem and if the seedbed can be kept moist. Bluegrass seed requires three weeks to establish, and if the seed bed dries out during this time, the seedlings may die.
- When seeding, preparation of a good seedbed is necessary for success. Seed-soil contact is essential. Select seed varieties that are suitable for full sun or partial shade. For specific recommendations consult *The Home Lawn*, University of Minnesota Extension Service Bulletin MI-0488.

MAINTAINING ESTABLISHED TURF

Fertilizing

For dense growth, grass requires the addition of some form of nitrogen fertilizer. **Nitrogen is a very mobile nutrient and attention must be paid to application rates and timing to eliminate the possibility of water contamination.**

- Do not apply more than 1 lb. of actual nitrogen per 1,000 square feet of lawn per year. If soils are sandy or grass is sparse, 1/2 lb. of nitrogen per 1,000 square feet per application is appropriate. (The analysis of fertilizers is a percentage by weight. For example, a 34-0-0 fertilizer is 34% nitrogen by weight; 3 lb. of fertilizer contains 1 lb. of actual nitrogen.)
- Low-maintenance lawns will grow well with one application of fertilizer per year (1 lb. of actual nitrogen per 1,000 square feet). The best time of year to apply this fertilizer is in the early fall, during the month of September.
- The use of slow-release nitrogen is desirable. This may be some form of organic fertilizer or "synthetic" slow-release form.
- Never apply fertilizer to frozen ground or on snow.
- Use extreme caution when applying fertilizers near water. Never allow any fertilizer to enter surface water or wetlands.
- Always sweep up any fertilizer that is on hard surfaces and reapply to the grass. Never wash it off.
- Apply commercial fertilizers just before moderate rain or irrigate immediately after application.

Watering

- Bluegrass lawns generally do not require watering. They will become dormant during the dry part of the summer, but will revive when it rains.
- If quality growth is desired throughout the season, bluegrass lawns will require additional water during dry summer months.
- Water deeply, but infrequently. Sandy soils require 1 or 2 inches of water per week. Clay soils require 1 inch of water per week.
- Water in the early morning to prevent water loss due to evaporation and to minimize the potential for disease.

Mowing

- Mow regularly and leave the clippings on the grass. By leaving the clippings on the lawn, nutrients are naturally recycled to the grass plants.
- Never allow grass clippings to enter the water. Clippings and other organic material contain nutrients that may contaminate the water.

With proper management, dense turf provides a good ground cover to prevent soil erosion.

BMPs for Gardens

Flower and vegetable gardens can add to the quality of life for shoreland owners. Certain precautions must be taken to prevent the possibility of surface water contamination.

LOCATION

- Gardens should **not** be located on slopes because they can promote accelerated soil erosion and runoff. An alternative on slopes is to install a terraced garden. Dense turf or other vegetation should be established on slopes.
- Gardens should **not** be located on septic system drainfields or mounds. Exposed soil increases the possibility of septic systems freezing. Drainfields and mounds should be covered with dense turf.
- To minimize the area of exposed soil, use intensive growing techniques such as intercropping, succession planting, and raised beds.

SOIL FERTILITY MANAGEMENT

Excessive application of fertilizers has the potential for ground and surface water contamination. This can be avoided by the following practices:

- Test the soil to determine nutrient needs; apply only the recommended amounts of nutrient; soil test bags and forms are available at the county offices of the University of Minnesota Extension Service.
- Make split applications of the total amount of nutrient required; this would include "side-dressing" nitrogen-loving crops, such as sweet corn, vine crops, and the cabbage family.
- Use organic fertilizers if available and practical; these include well-rotted manures and compost.

PEST MANAGEMENT

- Use pesticides only if necessary and if there are no other options for pest control. See section on "Preventing Potential Problems from Pesticides," p. 2. **Always read the pesticide label and pay careful attention to warnings on the potential for surface water contamination.**

VEGETABLE WASTES

- Vegetable wastes, such as corn husks, pea pods, or other plant material, should never be deposited in the water. Compost these materials instead and apply to garden soil.

Yard Waste Disposal

Yard waste, including leaves, grass clippings, fruit and vegetable wastes, and woody materials, should never be allowed to enter the water. These materials contain phosphorus and may contribute to degradation of surface water quality.

Collect and compost yard waste. Compost provides an excellent material for amending flower and vegetable gardens. Information on composting is available from your county office of the University of Minnesota Extension Service or the County Solid Waste office.

For More Information...

call

county offices:

- University of Minnesota Extension Service
- Soil and Water Conservation District (SWCD)
- Planning and Zoning Department

regional offices of MN State agencies:

- MN Department of Natural Resources (DNR)
- MN Pollution Control Agency (PCA)
- Western Lake Superior Sanitary District

read

Backyard Composting. FS-3899, University of Minnesota Extension Service

Composting and Mulching: A Guide to Managing Organic Yard Wastes. FO-3296, University of Minnesota Extension Service

The Home Lawn. MI-0488, University of Minnesota Extension Service

Lawn Care Practices to Reduce the Need for Fertilizers. FO-5890, University of Minnesota Extension Service

Soil Sample Bags and Information Sheets. University of Minnesota Extension Service, County Offices

Turfgrass Management for Protecting Surface Water Quality. BU-5726, University of Minnesota Extension Service

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
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- 15 Preventing the Introduction of Exotic Species
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- 17 Shoreland Stewardship Scorecard
- 18 Conserving Water

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

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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
Western Lake Superior Sanitary District

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