

# CARING FOR SHORELAND LAWNS & GARDENS

## SHORELINE BEST MANAGEMENT PRACTICES

### 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.

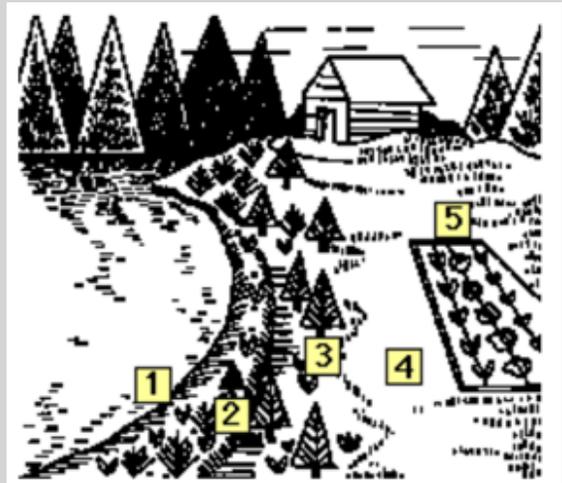
Special attention should be paid if the following conditions exist:

- 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.

A well-designed landscape plan includes:

- natural vegetation along the water's edge;
- an intact ice ridge or added berm;
- a natural vegetation filter strip;
- well-established grass or ground cover;
- 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

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## MAINTAINING ESTABLISHED TURF

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### 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, 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.



## Best Management Practices 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.

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## CONSERVING WATER

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### Why Is Conserving Water Important?

Reducing our use of water will decrease water pollution, increase energy savings, and create more efficient use of our water resources. Too much water in an on-site sewage treatment system can flush untreated material through before organisms have a chance to break it down. If untreated material gets to the drainfield, the material can plug up the soil within the drainfield and shorten the life of the septic system. Sending too much water down the drain can also cause systems to "blow out," allowing untreated material to flow out onto the ground. If this occurs, the system needs to be dug up and repaired. Failing septic systems can:

- contaminate drinking wells
- cause health risks such as hepatitis or dysentery
- cause chemical pollution from household cleaning products
- contribute excess nutrients to ground water, lakes, or streams

Conserving water in rural areas will increase the life of existing septic systems. Conserving water within a municipal water system will reduce household expenses, increase treatment plant efficiency, and reduce the amount of electricity and chemicals needed to treat wastewater. In both situations, conserving water protects water quality through improved wastewater treatment.

### Saving Water Saves Energy and Money

By conserving water, you will save money. Using a low-flow showerhead will annually save you an estimated \$10 per person in waterheating savings alone. Savings can be realized from water and wastewater service fees, electric city bills, and longevity of your pumps and switches. The largest savings in the rural setting is your septic system performance and longevity.

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## MAINTAINING SHORELAND VEGETATION

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### Why Are Shoreland Trees Important?

Trees and shrubs are an excellent inexpensive and attractive way to control runoff and erosion. Roots hold soil and help stabilize slopes by trapping and using precipitation that would otherwise run off. They also increase soil porosity, allowing water to infiltrate rather than run off. Vegetation helps protect water quality by filtering out nutrients and pesticides that could otherwise reach a lake or stream and cause algal blooms or excessive plant growth. Trees and shrubs also improve air quality by taking in carbon dioxide and giving off oxygen. In addition, trees provide shade and help moderate weather extremes such as hot sun or strong winds. Trees and shrubs offer habitat for wildlife and privacy for humans by screening adjacent property.



#### Best Management Practices

- Rake dead leaves and brush away from the water; compost vegetation in a sturdy structure away from the shoreline.
- Never dump leaves or vegetative debris into a lake or stream because this releases nutrients and organic acids into the water.
- Avoid burning on the beach or near shore because the remaining ash is highly alkaline and may change the pH of the lake and promote growth of undesirable plants.
- Use lake water for irrigating trees, shrubs, and lawns; lake water usually can supply the nutrients your near-shore vegetation needs to promote healthy growth.
- When treating diseases or insect pests, use chemicals responsibly and use only the required amount.