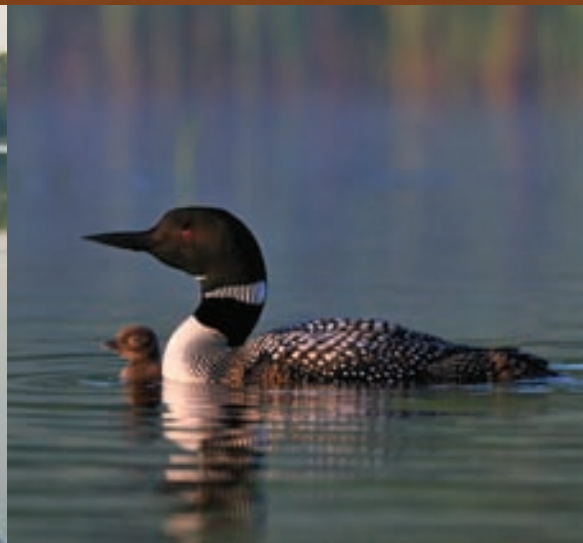
Hubbard County Shoreland Guide to Lake Stewardship



This guidebook will provide you with basic information on good lake stewardship; however, it should not be considered complete or current. Many of the matters discussed are subject to detailed ordinances, rules, regulations, and statutory provisions to which you should refer for details and are subject to periodic changes that may not be reflected in this guidebook. Neither the Hubbard County SWCD nor any of the other contributors assume any responsibility for errors or omissions.

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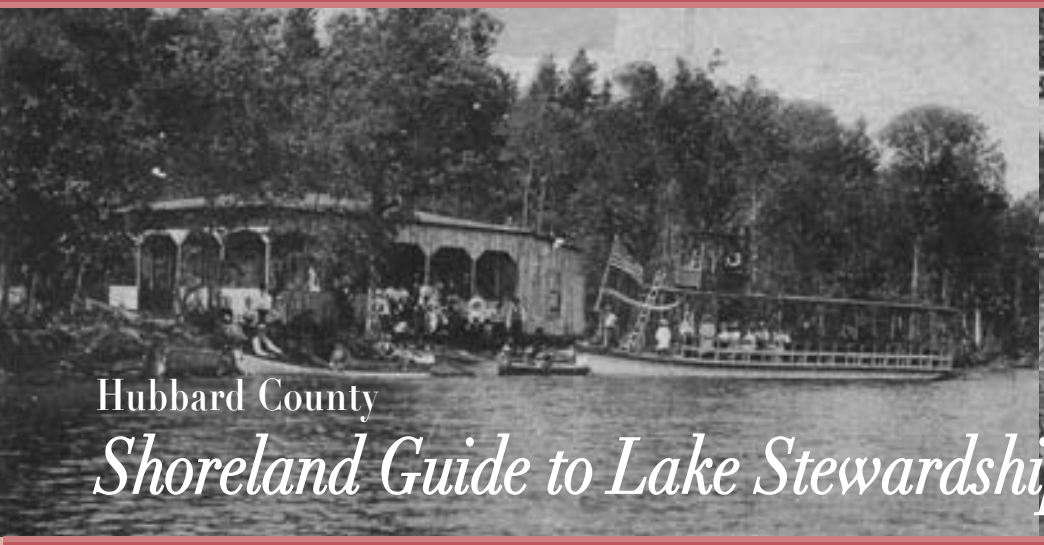
References:

1 *Lakescaping for Wildlife and Water Quality,* State of Minnesota, Department of Natural Resources; Henderson C; Dindorf C; Rozumalski, F.

2 Rain Barrel Fact Sheet, Crow Wing County Extension, 2007.



Hubbard County

Shoreland Guide to Lake Stewardship

Introduction

Hubbard County is blessed to have some of the clearest and cleanest lakes in the State of Minnesota. Some lakes have water clarity over 40 feet deep. These crystal clear waters provide a wonderful recreational venue for residents, seasonal visitors, and vacationers alike. During the summer people come from all parts of the country to fish, swim, boat, or just relax while taking in the natural beauty that abounds in lake country. With 313 lakes and 230 miles of rivers, water covers almost 20 percent of the county and provides plenty of recreational opportunities for everyone.

With these great resources comes responsibility. Our area lakes have been a cornerstone of the local economy from the time trappers and loggers arrived. These pioneers were followed by resorters and anglers and now land developers and lake service providers. As has often occurred in the past and still occurs today, maintaining the quality of our local water resources can take a back burner to the economics of lake country. Keeping the current local economy strong and preserving the local tax base are very important, but striking a balance with proper management of our water resources will ensure clean water and a sustainable and strong economy for generations to come. Nature is designed to take care of itself to a point, but when harmful impacts reach the tipping point water resources can be quickly degraded. Once a downward trend begins it is difficult and expensive to reverse, if it can be reversed at all.

The Hubbard County Shoreland Guide to Lake Stewardship is designed to provide lakeshore owners and lake users with some simple tips and tools that can be used to ensure that clean water persists long into the future. It is our hope that our children and grandchildren can enjoy recreating in the same clean water we grew up with and enjoy today. Although this guide does not include ideas or solutions for every issue related to management of our waters, it is meant to provide a foundation that can be built on by each of us in our own unique situations. We hope you will enjoy and use this guide.

" ....we must never forget that the land and the water are ours for the moment only, that generations will follow who must themselves live from the land and drink that water. It would not be enough to just leave something for them, we must also leave it a little better than we found it."

L. L'Amour

It's Up to Us

This *Shoreland Guide to Lake Stewardship* will provide you with basic information on good lake stewardship. You'll learn about two primary ways you can manage your property to protect water quality: 1) **curbing pollution** at the source; and 2) **reducing, capturing, and cleansing runoff** that can carry pollutants to the lake. If we who live around the lake practice the ideas in this guide, collectively we will keep our lakes healthy to protect our investment in shoreland property, continue our enjoyment of the lake, and also preserve ecological integrity.

When you own shoreland you do have certain rights and privileges, such as the right to put out a dock to a navigable depth; to fish, boat, hunt, and swim; and to use the water for domestic purposes. But, these rights must be exercised in compliance with the rules of Hubbard County and the State of Minnesota. These rules are in place for the benefit of your health and safety and the health of the adjacent lake or stream.

Along with those rights also comes the responsibility to protect, improve, and enhance the quality of the water for your enjoyment and that of future generations, keeping in mind that the water itself is a public resource for everyone to enjoy. **That's called stewardship: the individual responsibility to manage one's life and property with regard for the rights of others.** The lake is a living ecosystem and part of the larger ecosystem of all living plants and animals to which we also belong.

Keeping Our Lakes Healthy

Water quality is primarily dependent on what happens on the land around the lake or along a river and within its watershed, which is the area of land that drains to a particular waterbody. It's the runoff from the land, and the pollution that is carried with it, that can determine the quality of the water.

A healthy lake depends on a healthy watershed. A healthy lake doesn't just happen. It comes about when shoreline property owners and others living in the watershed take steps to insure the lake's health.

Each lake has its own watershed or land that directly influences what comes into the lake and ultimately impacts water quality. Each lake watershed is part of a larger watershed that influences water quality, too. The southern half of Hubbard County lies within the Crow Wing River Watershed, the northwestern portion is in the Mississippi Headwaters Watershed, and the northeastern portion is in the Leech Lake Watershed.

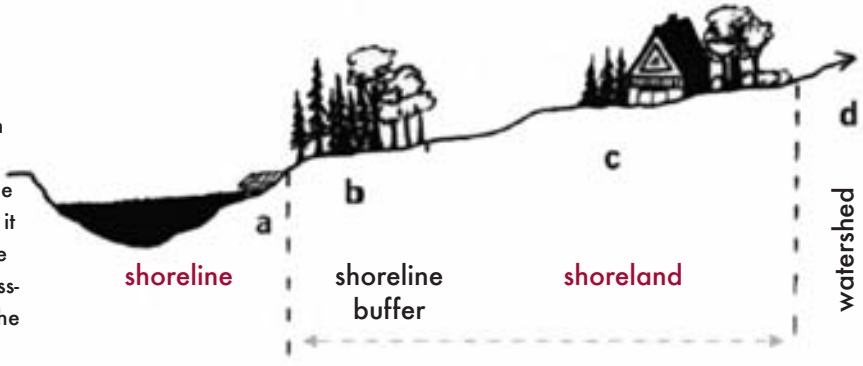
While the land activity in the watershed contributes pollution to the lake, **the shoreland zone is the lake's first line of defense.** What you and your neighbors do or don't do on your shoreland property can have a significant impact on the quality of the lake. Managing water quality means appropriately managing the land use around the lake to reduce the amount of pollution that enters the lake.

The 4 Zones:

a) At the shoreline interface of land and water;
b) The shoreline buffer zone, the land immediately adjacent to the water;
c) The shoreland zone 1,000 feet from a lake and 500 feet from a river or stream;
d) The lake's watershed.

The 4 Zones of Lake Protection

The 4 zone approach to lake protection is most restrictive at the shoreline, and it is more flexible as one progresses further up the watershed.

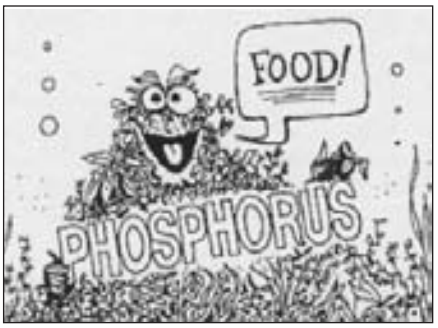


Curb Pollution: Reduce Phosphorus and Other Pollutants

Nitrogen, potash, and phosphorus are the nutrients necessary for plant growth. Phosphorus is the key nutrient needed for aquatic plant and algae growth. When excessive phosphorus reaches the lake, it fuels the overgrowth of aquatic plants and algae, those microscopic organisms that give water a greenish tinge and can cause blue-green scums along the shore. Excessive plant and algae growth decreases water clarity, interferes with the recreational use of the lake, and diminishes oxygen for fish.

Natural rainfall contains some phosphorus, which increases when the rain hits a surface and picks up grime. We can't control rainfall, but we can control our own shoreland practices that contribute phosphorus to the lake. Excessive phosphorus can get into lakes from shoreland properties in a number of ways, including:

- excessive fertilizer application;
- decomposition of leaves and other plant material;
- erosion of soil, which has phosphorus particles attached to it;
- improper human and pet waste management, both of which contain high amounts of phosphorus; and the
- use of household products high in phosphorus.



One pound of phosphorus can feed the growth of over 500 pounds of algae.

The average one acre lawn yields one pound of phosphorus to the lake every year.

Apply Fertilizer Sparingly. Use Zero-Phosphorus Lawn Fertilizer—It's the Law in Minnesota

By law since 2005, Minnesota homeowners cannot use fertilizers containing phosphorus, except for exemptions for new lawns or when a soil test indicates a need for phosphorus. In much of Hubbard County, soils are naturally high in phosphorus so lawns generally don't need extra phosphorus.

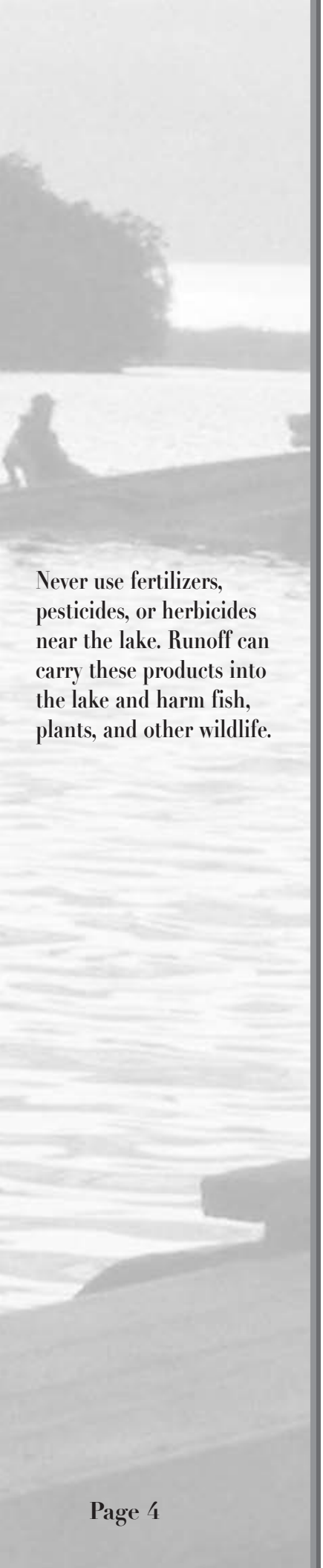
When shopping for fertilizer, buy a brand that has a middle number of zero i.e. 22-0-15. The law did not prohibit retailers from selling phosphorous fertilizers, and even though most retailers are carrying more zero phosphorus fertilizers, it's up to you to make sure you comply with the law.

If you have left over phosphorus fertilizer, using it on the garden is a good way to dispose of it.

Other herbicide and pesticide precautions to follow:

- Eliminate the use of fertilizers near water or wetlands.
- Before you consider fertilizing your lawn, aerate it first and see if that improves its health.
- Use the minimum amount needed to replenish the soil and apply at the right time of year, usually spring and early fall. Water lightly after fertilizing to ensure absorption by the roots before a heavy rainfall.
- Sweep fertilizer that has spilled on the driveway and other hard surfaces back onto the lawn to prevent runoff.

Managing water quality means appropriately managing the land use around the lake and within the watershed to reduce the amount of pollution that enters the lake.



Never use fertilizers, pesticides, or herbicides near the lake. Runoff can carry these products into the lake and harm fish, plants, and other wildlife.

Use Herbicides and Pesticides Sparingly, or Not at All

- Keep lawn healthy to avoid the need for herbicide applications.
- When necessary, use the least toxic and most degradable herbicide and follow directions carefully.
- Use corn gluten meal, a byproduct of the corn milling process, as a natural pre-emergent herbicide that stops the root growth of germinating plants. If you can't find it in major retail stores, ask them to carry it.
- Remove dandelions and other unwanted plants from your lawn using hand-tools instead of chemical applications. If you feel you must use a herbicide for control, do not apply it to the whole lawn. Instead, use an applicator which allows you to direct a small spray towards each unwanted plant.
- Identify the pest and learn about the best way to control it; there are many methods of control other than pesticides. See Integrated Pest Management resources.
- When you use pesticides outside your house, on the lawn and in the garden, use them according to the instructions on the label to prevent spillage on the ground, where watering or rain can percolate it into the groundwater or wash it into the lake with runoff.

Do Not Dump Yard Waste

Grass clipping, leaves, and aquatic plant material that wash up on shore all contain phosphorus, which is released when the plant material decomposes. To prevent phosphorus from getting into the lake:

- Use a mulching lawn mower and leave grass clippings on the lawn as natural fertilizer.
- Collect and compost leaves and clippings, or haul them away from the lake to a disposal site.
- Leave a strip of taller grass along the lake to catch windblown leaves and debris.
- Do not burn leaves near the lake; it destroys the organic matter releasing the phosphorus, which could then be washed into the lake.

Locate Fire Pits Away from the Shore and Dispose of Ash

The leftover ash from burning wood is very high in phosphorus. If the fire pit is located near the lake, rain can wash the ashes into the lake.

- Locate the fire pit at least 50 feet away from the lake; and,
- Remove ashes from the fire pit to prevent the phosphorus-loaded ashes from being blown or washed into the lake.

Pick Up Pet Waste

Improper disposal of pet waste not only jeopardizes water quality, but your health as well. Pet waste contains phosphorus and may contain disease causing organisms, which, if washed into the water, can make it unsafe for swimming.

- Pick up pet waste in the yard or near the shore and dispose of it properly.

Practice Low-Impact Boating

To reduce the pollution impact of motorized watercraft on the lake:

- When fueling the boat, take precautions not to overfill the fuel tank. If you do spill, wipe it up with a rag, do not hose into the water.
- Boat slowly; motors stir up sediments releasing nutrients that can lead to deterioration of water quality. A 50-horsepower motor operated full throttle can stir the water column and sediment up off the bottom in water as deep as 15 feet.
- Keep your motor well-tuned; use four-cycle motors.

Reduce Rainwater Runoff... It Doesn't Go Away!

What is runoff?

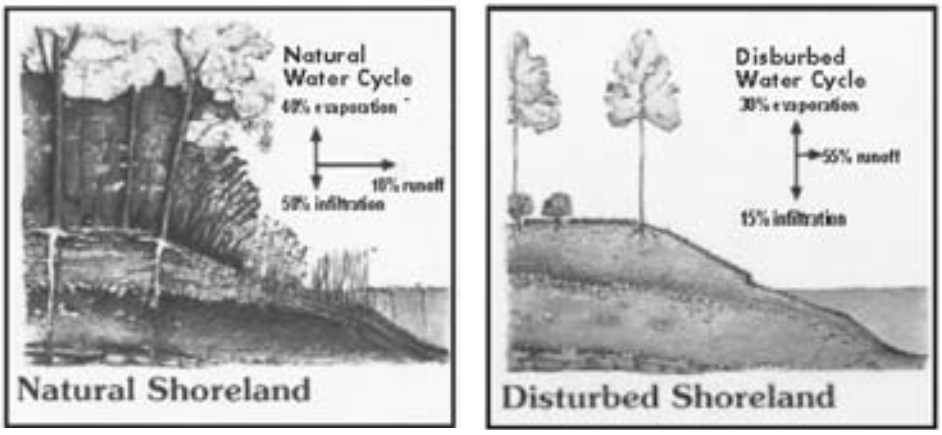
Rainwater or snowmelt that does not soak into the ground and instead runs off hard surfaces that don't absorb water (impervious surfaces) or washes off lawns and steep slopes is called *runoff.* Impervious surfaces include roofs, driveways, sidewalks, and compacted soils. When the runoff reaches the lake, it can carry with it nutrients, eroded soil sediments, toxic materials, bacteria and other pollutants that can cause reduced water clarity, increased aquatic plants and algae, and impact fish and wildlife habitat.

What was once an occasional cabin along a wild shore has become a ribbon of structures and paved areas circling the lakes. All this construction has added more rooftops, roads, walkways, decks, parking areas and driveways, increasing the amount of impervious surfaces, which act like funnels for runoff to reach lakes, rivers, and wetlands. Runoff from compacted soils and impervious surfaces also increases erosion and sedimentation.

Managing runoff on your property is the best way to reduce pollutants before they reach the lake. Increasing opportunities for water to soak into the ground (infiltrate) instead of running off is the best way to reduce runoff and filter out the pollutants before they reach the lake.

Learn From Mother Nature

With the natural water cycle, when there is precipitation, water will evaporate, run off the land, or soak (infiltrate) into the ground. The amount of vegetative cover on the ground will determine the amount of runoff and infiltration. Natural vegetation will hold back the runoff providing time for it to soak into the ground.



You Don't Have to Live on the Lake for Runoff to Impact Water Quality

If you live in town, the water running off your lawn and into the storm sewers has to go somewhere, and it eventually drains to the lake carrying with it nutrients, pollutants, and sediments that impact water quality. Whether you live on the lake or not, practice the principles in this guide for reducing the amount of runoff from residential and commercial properties to increase the amount of rainfall that infiltrates back into the ground.

Rainwater runoff is the #1 source of pollution to our lakes. Residential and urban runoff has been increasing in Hubbard County in recent years while other sources of pollution have been declining.

How much of the rainfall runs off?

Woods	0.05%
Prairie	1%
Lawn	3%
Impervious surfaces	98%

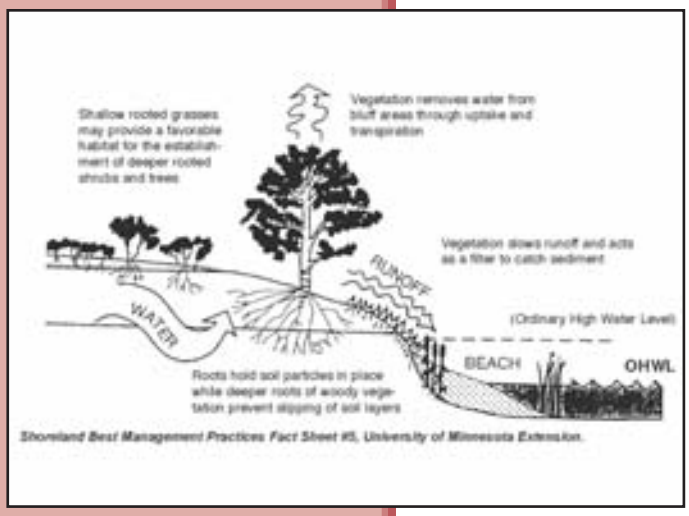
If we love our lakes, we have to change our ideas about what is a good lawn for shoreland properties. Limit the amount of lawn and keep it as natural as possible to reduce maintenance and increase its ability to absorb runoff.

Maintain Natural Vegetation

Natural vegetation will naturally reduce runoff by holding back the water to provide time for it to soak into the ground.

- When clearing your lot, minimize the removal of wooded areas, trees and low growing shrubs. Their removal causes more rain to fall to the ground instead of landing on leaves and branches.
- Grading large areas of land removes the natural depressions of land where water can pond and soak in.
- Carefully landscape your yard near roads, driveways, and along the shoreline to direct runoff away from the lake.

Practice Good Lawn Management



Shoreland Best Management Practices Fact Sheet #5, University of Minnesota Extension.

Maintain a Healthy Lawn to Absorb More Water

- Aerate your lawn to alleviate some of the compaction that turns many lawns into "green concrete."
- Mow to a height of two to three inches; mow when dry to prevent clumping. Taller grass provides shade for better root growth, which helps with water absorption.
- Consider replacing some of the grass in your lawn area with clover, native grasses, or other groundcovers that don't need watering.
- If watering is necessary, water deeply, but infrequently, to encourage deep root growth. Water with lake water. (*Hint:* use the nutrients in the lake to make a healthy lawn instead of frequent fertilizer applications.) Water in the morning, not mid-day or evening.
- In hot weather, allow lawn grasses to go dormant so that they require less water and nutrient intake for survival. Water 1/4 to 1/2 inch every two or three weeks to keep crowns from dehydrating beyond the point of recovery.

Building a home and establishing a lawn to the water's edge can cause seven times the amount of phosphorus and 18 times the amount of sediment to enter the water compared to a natural shoreline.[1]

Identifying Lake Problems Caused by Runoff

Problem	Is the water near shore cloudy?
Possible Cause	*Excess sediment reaching the water.*
Problem	Is there an oily rainbow film on the water?
Possible Cause	*Possible petroleum contamination.*
Problem	Are there algal blooms, green scum, or abundant plant growth in the water?
Possible Cause	*Excess nutrients such as nitrate or phosphorus reaching the water.*
Problem	Are washouts, trenches, small piles of sediment, leaves, or debris found at the bottom of slopes?
Possible Cause	*Excessive water runoff across the property.*
Problem	Is your shoreline eroding?
Possible Cause	*Removal of natural vegetation for property development or creation of beaches, both on-shore and in the lake; dredging, filling, or construction on or near the shoreline; trampling of banks; inadequate protection against runoff from roofs, driveways, roads, or other developed areas.*

Buffer the Lake from Runoff

Scientific research shows that the way we treat our shorelines affects lake water quality and fish and wildlife habitat. **To protect and improve our lakes, we need to improve our shorelines.** The best way we can do that is by adding or keeping a buffer strip of natural vegetation along the shore. Buffer strips of native wildflowers, grasses, trees, and shrubs protect water quality and provide habitat for fish and wildlife.

If you have lawn to the water's edge, lawn behind rip-rap, steep slopes, or little vegetation near the shore, consider a natural shoreland landscaping project to restore the native vegetation by creating a shoreland buffer zone—an area of native vegetation along the water's edge.

Rethinking How our Shorelands Should Look

Creating and maintaining a natural buffer zone along your shore does not mean your property has to look messy, but it may mean you have to re-think what your shoreland should look like. Lawn-to-lake shorelines are no longer ecologically smart.

Creating or keeping a native shoreline buffer reduces the amount of nutrients entering the lake along with providing better wildlife habitat. For example, a 20-foot buffer strip along the lake can trap about 80% of the phosphorus runoff and about 90% of the sediment pollutants.

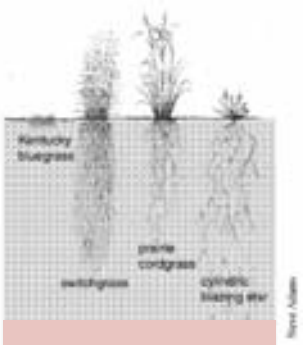
This lawn is labor-intensive and expensive to maintain. Fertilizer and grass clippings add nutrients to the lake leading to weed and algae growth. A shallow-rooted lawn (turfgrass) has a minimal ability to filter nutrients and sediment entering from rainwater runoff and is ineffective at allowing infiltration of water into the soil. The shallow roots leave subsurface runoff untreated while native plant roots intercept and withdraw the nutrients and water.

This shoreland buffer of native vegetation protects the shoreline, maintains the natural landscape, and filters out boat noise. Many plants are suitable that are low growing and won't impede your view of the lake. Using ornamental grasses, perennials and smaller woody plants will significantly reduce and filter runoff while restoring the natural beauty to the shore, and they are less work so there's more time to recreate.

Benefits of a Shoreland Buffer

1. **Enhances water quality.** A good buffer protects your lake, stream, or wetland by slowing runoff and allowing it to soak into the ground.
2. **Stabilizes shorelines.** Buffers prevent fluctuating water levels, moving ice, flooding, surface runoff and wave action from eroding your shoreline.
3. **Provides fish and wildlife habitat.** The shoreline buffer provides habitat for fish and cover for birds, butterflies, turtles, and other wildlife.
4. **Enhances aesthetics.** Natural buffers beautify your yard with a variety of colorful wildflowers, create a natural screen for privacy, and enhance that "Up North" feeling.
5. **Increases property value.** A high quality buffer is an asset that can add resale value.
6. **Limits nuisance bugs and wildlife.** A native plant buffer creates a natural barrier to Canada geese.

One of the greatest benefits of establishing native vegetation is their deep root systems that stabilize the shore from erosion and ice damage, and they loosen the soil allowing the rain to soak into the ground instead of running off to the lake.



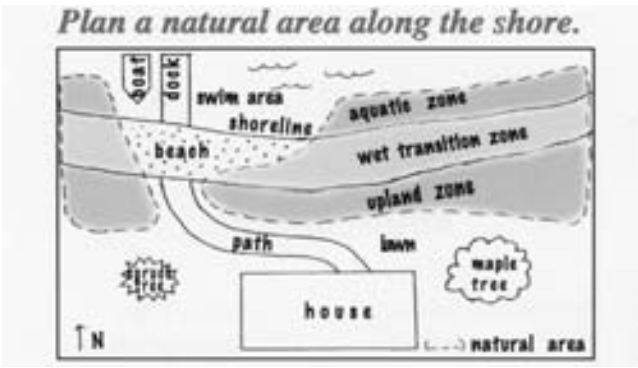
Native plants are more effective at stabilizing soils and banks because their roots are longer (3-5 feet) and more dense than typical Kentucky bluegrass (2-3 inches). They hold the soil particles together to prevent erosion and reduce ice damage.

What is a shoreland buffer?

A shoreland buffer is an unmowed strip of native vegetation that extends both lakeward and landward from the water's edge. A buffer zone of native plants that extends 25-50 feet landward from the shore is preferable, but even adding a buffer as narrow as 10-15 feet can restore many functions critical to the health of the lake that may have been eliminated previously by sod, hard structures, or mowing. **When it comes to shoreland buffers, wider is better for more benefits.**

A shoreland buffer consists of:

- The shallow **aquatic zone** of the emergent, submerged, and floating leaf aquatic plants that provide food and shelter for ducks, songbirds, frogs and other amphibians, and fish. The taller plants, like bulrush, sedges, and cattails can reduce the energy of wave action to minimize erosion and help maintain water quality.
- The **wetland transition zone** of more water-loving plants that bind the lake bed to the upland soils.
- The **upland zone** of native trees, shrubs, grasses, and wildflowers slows rainwater running over-land, making sediment drop out, absorbing water and nutrients, and breaking down pollutants.



Source: University of Minnesota Extension Service, 2005; Item #08308

Getting Started Creating a Shoreland Buffer

There are a number of ways to create a shoreland buffer depending on the characteristics of the shoreland and the desires of the property owner. Some decisions in creating a buffer are easy, such as: "How tall do you want the plants to be?" Others, are more complicated, like: "What is your soil type and holding capacity?"

The Hubbard County SWCD can assist you with, and possibly help fund, the installation of a shoreland buffer on your property. Contact the Hubbard SWCD:

212 1/2 2nd St W
Park Rapids MN 56470

218-732-0121

Website: www.hubbardswcd.org

Native Shoreland Buffer

Photo courtesy of Steve Hall, Shoreline Creations, www.shorelinecreations.net

Resource professionals recommend that you maintain a shoreland buffer along 75% of the shoreline frontage.

Here are some options to help you decide how you want to establish a shoreland buffer.

Don't Mow, Let It Grow A simple, no-cost way to get started in restoring your shoreland is to stop mowing for the width of the desired buffer strip. Turf grasses will grow 12-24 inches before going to seed, after which seeds in the soil will germinate and valuable native plants will begin to appear. You can note the types of native plants and wildflowers growing on natural shorelands around the lake to get an idea of what is likely to appear or will be suitable for growing in your area. While the buffer is getting established, you may need to weed out nuisance species or add native plants for diversity, but not mowing will get you started. Perennial native plants will take three to five years to become apparent.

Restore Your Shoreline

Local nurseries and garden centers are starting to carry more native plant stock and can recommend the best plants for your site. Plants used should be native to this region of Minnesota-don't buy plants from a mail order catalog grown in another part of the country and expect them to grow. The DNR website has a list of native plant suppliers and landscapers. Consult with University of Minnesota Shoreland Specialists, DNR Shoreland Restoration Specialists, or the Hubbard County Soil and Water Conservation District for resources and fact sheets on designing your project, selecting plants, preparing the site, and planting. Take one of the many classes, tours, and open houses offered throughout the summer on the basics of shoreland restoration. Professionals teaching the classes will help you design your own project and may later be available for further consultation. Many classes include an opportunity to participate in the planting of a restoration project to give you experience for planting your own project.

Hire a Professional

Shoreland restoration is a rapidly growing field among landscape professionals; consult the yellow pages or watch for promotions. Ask for recommendations from other property owners who have completed re-vegetation projects. If your site has a steep slope or other unusual characteristics, getting professional assistance will be very important to the success of your project.

Maintaining Your Restored Shoreland

A shoreland restored with native vegetation should maintain itself once it is established. Apply mulch to new planting beds to prevent soil erosion, hold moisture in the soil, and control weeds. You may need to water and weed the first season, but once the plants are established, they will be able to out-compete most weeds. Native species should never be fertilized because they are adapted to the nutrient levels found in local soils, and fertilizers and pesticides applied to areas near shore can be a threat to aquatic life and water quality. Plants left standing in fall and winter provide seeds and shelter for wildlife, protect the soil from wind erosion, and capture windblown leaves and debris.

Protect the Aquatic Zone

The aquatic zone is a vital part of the shoreland buffer. Emergent vegetation, such as soft stem bulrush, wild rice, and cattails, help purify the lake by removing contaminants and calming the water, which allows suspended soil particles to settle to the lake bottom. They provide food, shelter and spawning areas for fish and other wildlife and add oxygen back into the water. If submerged aquatic plants are interfering with swimming, clear by hand only what is needed to provide a small swimming area and access to the water. Leave other submerged plants in place. Remember, aquatic plants are protected and any disturbance or removal may require a DNR Fisheries permit (see page 19).

The book *Lakescaping for Wildlife and Water Quality* is a highly recommended resource. It is available in bookstores and online at www.mnbookstore.com. Another valuable tool is the *Restore Your Shore* online tool available at www.dnr.state.mn.us/restoreyourshore/index.html.

Suggested Buffer Strip Plants:

Blue giant hyssop
Bigleaf Aster
Canadian Anemone
Ox-eye Sunflower
Goldenrod
Fireweed
Columbine
Wild Bergamot
Sneezeweed
Prairie Blazing Star
Black eyed Susan
Big Bluestem
Side Oats Gramma
Fox Sedge
Tussock Sedge

Allow Water to Settle Into the Soil— Not Run Off Into the Lake!

The fewer hard surfaces there are for rainwater to collect and runoff from the less likely there will be erosion and runoff into the lake. The key to solving this problem is to stop water from running off your property so it can soak into the ground. You can **capture** rainwater and allow it to be **cleansed** through natural soil processes.

The best way to do this is to: divert rainwater off roofs, driveways, walkways, and other hard surfaces into rain barrels or to the lawn, or create a rain garden designed to capture and cleanse the rainwater naturally.

Divert Rainwater off Roofs and Driveways

Paved driveways and roofs of buildings comprise most of the impervious surfaces on a lot. Redirect rainwater flow from downspouts, roof gutters, and driveways onto lawns or into a rain garden where it will have time to naturally infiltrate into the ground. Or, capture the water in a rain barrel, where it can be used later for watering.

Install a Rain Barrel

A rain barrel is any type of container used to catch water flowing from a downspout and store it for later use.

The rain barrel is placed underneath a shortened downspout diverting the roof runoff into the barrel. The rain barrel has a spigot to collect the stored water for use in watering flower gardens, house plants and lawns. Rainwater is naturally high in phosphorus; it's a natural way to fertilize.

Humans and pets should not drink the stored water, nor should it be used on food products. A screen should be installed on the barrel to keep mosquitoes and debris from entering. Mosquitoes cannot breed if the barrel is drained weekly.

Rain barrels need to be drained regularly during spring and summer months to reduce algae growth. During winter months, take your barrel out of operation by simply turning it upside down at the same location or storing it elsewhere. Rain barrels can be purchased at garden centers, ordered online from garden catalogs, or you can make your own.

How much rain do I need to fill a 50-gallon barrel? For every inch of rain that falls on one square foot of your roof, you can collect just over half a gallon of rainwater. Example: 100 square feet of roof could collect 60 gallons of rainwater during a 1-inch rain event.[2] Sixty-five (65) percent of all annual rain events are one inch or more.

Plant a Rain Garden

A rain garden is just what it sounds like, a garden to soak up rain water. It is a recessed planting bed, shaped like a saucer or shallow bowl, and it is designed to collect runoff from driveways, roofs, other hard surfaces. The collected water is absorbed into the ground instead of running off to the lake.

Rain gardens are planted with hardy, water-loving native perennial plants that have deep roots, which along with the soil, work to provide a filter system to catch pollutants such as phosphorus, oil, mercury and other heavy metals.

Rain gardens capture nutrients that are carried in runoff so plants in the garden can absorb them. During a rainfall, the highest concentration of pollutants is during the first inch, or first flush of the storm, which is retained in the rain garden. Rain gardens are designed so any water collected will be absorbed into the ground within a few hours of the rainfall ending.

To be effective, rain gardens must be properly designed for the right shape and size to accommodate runoff from the amount of roof, driveway, and other hard surfaces on your property as well as your soil conditions. For proper design, it is recommended you consult the Hubbard County SWCD or a landscape professional. Remember to always call the Gopher State One Call at 800- 252-1166 before digging to prevent cutting into an electrical line or cable.

Additional Resources for Rain Barrels and Gardens:

Constructing a Rain Barrel:

http://home.comcast.net/~leavesdance/rainbarrels/construction.html

Designing a Rain Garden:

http://www.lowimpactdevelopment.org/raingarden_design/how2designraingarden.htm

http://bluethumb.org/raingardens/

Suggested Rain Garden Plants:

- Butterfly Weed
- Smooth Blue Aster
- Common Yarrow
- Stiff Goldenrod
- Little Blue Stem
- Beaked Sedge
- Bush Honeysuckle
- Pagoda Dogwood
- Downy Arrowwood

Rain Garden Tips:

- Don't worry about mosquitoes. Most rain gardens should not hold water long enough for mosquitoes to reproduce.
- When first planted, hand weed biweekly until native plants are established.
- Don't fertilize near the rain garden, it will stimulate weed competition without benefiting the native plants.

Source: Taylor Creek Restoration Nurseries

Use Pervious Pavement and Pavers

Pervious pavement and pavers are made of special materials that allow the water to flow through and infiltrate into the ground. They can be used for driveways, sidewalks, walkways, and patios. Pavers are quite attractive and some have a 5-year life span. A 1,000 square foot pervious driveway can infiltrate over 12,000 gallons of water per year. Runoff from rooftops and lawns can be diverted to pervious areas for additional water treatment.

Don't Let Your Shoreline Slip Away—Curb Erosion

Rainwater runoff or waves lapping at the bank of your shore can erode the shoreline, silt up the water, wash away sand blankets and impair fish spawning areas. When soil washes into the lake, it carries with it phosphorus, the nutrient that stimulates algae growth. It causes sediment to build up in the lake; increases turbidity; and impacts fish and wildlife habitat. Degradation of the water quality is the result. **Reducing the erosion of soil into the lake will lower the amount of pollutants reaching the lake.**

Shorelines can erode through many processes. Natural causes of erosion include currents, waves, ice, and rain. Many human activities may significantly increase the rate of erosion. Some common causes of erosion include:

- removal of natural vegetation for property development or creation of beaches, both on shore and in the lake.
- improper installation of erosion control structures, such as retaining walls.
- increased wave action from watercraft traveling close to the shore.
- dredging, filling, or construction on or near the shoreline.
- trampling of banks by human, animal, or vehicle traffic.
- inadequate protection against stormwater runoff from roofs, driveways, streets, and other paved or hard surfaces.

Curbing the erosion of soil into the lake will reduce pollutants reaching the lake.

Signs of a Serious Problem

- A large area of bare soil on a steep, high shoreline bank.
- A noticeable recession of the shoreline over a period of time.
- Large patches of muddy water near a lakeshore, or unusually muddy streams during periods of high water or following a rainstorm.
- Excessive deposits of sand or other sediments on the stream bed, or very wide, shallow areas in a stream.

Erosion may be accelerated by activities such as boat wakes or high waves during storms. Each year erosion causes the loss of valuable shorefront property.

How can shoreline erosion be controlled?

If your shoreland is eroding away, stabilizing the shoreland will be necessary to reduce erosion.

Each shoreland situation is different. You are encouraged to consult with shoreland landscaping professionals, the DNR Area Hydrologist, University of Minnesota Shoreland Specialists, or the Hubbard County Soil and Water Conservation District to determine the best solution for your shoreline erosion situation.

Rip-rap, stone, retaining walls, or turf grass might seem like good solutions for stabilizing erosion, but they are not usually the best choice. Rip-rap reflects wave energy back towards the lake causing previously sandy areas to erode to gravel or cobblestones. Water can undercut retaining walls and turf grasses. Rip-rap and non-native grasses don't reduce chemical runoff polluting the water and causing unsightly algal blooms. These choices can negatively impact the lake by creating an unnatural barrier between upland areas and the shoreland environment that destroys vegetative transition areas and eliminates critical habitat for many species.

Preventing Erosion

Some basic preventive actions include:

- Preserve existing rock and vegetation that naturally occur along the shoreline.
- Stop mowing a strip of land near the shoreline or restore a shoreland buffer of native vegetation.
- Prevent impervious surface (i.e. roofs, driveways, etc.) runoff from flowing to the shoreline, steep slopes and bluff areas.
- Avoid construction within 100 feet of the shoreline, steep slopes or bluffs.
- Protect berms pushed up by ice action along lakeshores. They prevent excessive surface runoff and trap sand which "nourishes" the beach.
- Limit the amount of foot traffic and other recreational activities in erosion prone areas. Regardless of preventive measures, the right combination of conditions, such as high water level, violent windstorms, drastic ice movement, and certain shoreline configurations, may result in serious shoreline erosion.

Preventing Erosion on Steep Slopes and Bluff Areas

The erosion potential on steep slopes and bluffs can be reduced by:

- Diverting water away from steep slopes by rerouting drainpipes and gutters.
- If you need a walkway to the shore, follow the natural contours of the slope to go across or around the slope, or use steps when a walkway must go directly up and down a slope, but minimize destruction of natural vegetation during construction.
- Keep the moisture- and nutrient-absorbing natural vegetation on steep slopes by limiting clearing and grading.
- Replant vegetation on barren slopes.
- Create a view corridor through the trees with selective pruning for an excellent view while maintaining the natural trees and shrubs.

On steep bluffs, selectively prune trees to create a view corridor of the lake. Keep the vegetative undergrowth to stabilize the soil on the bluff.

Neither rip-rap or retaining walls will prevent ice ridges from forming because rock cannot withstand the up to 30,000 pounds of ice pressure per square foot.

Naturalizing your shoreline or maintaining the natural shoreland vegetation is the most important way to reduce shoreland erosion.

Reduce Erosion By Slowing Down the Boat

Boat wakes can cause tremendous shoreland erosion, so slow the boat down. In shallow areas (less than 15 feet), motor at slow-no-wake speeds (5 mph or less) to reduce the boat wake and the consequent wave action that can erode your shoreline and the shoreline of others around the lake. Observe all posted “no-wake” and low-speed zones. For personal watercraft, running at slow, no-wake speed within 150 feet of the shore is the law.

Boating slowly makes less wake, less noise, reduces pollution and is less disruptive to bottom sediments, wildlife and other people. When running at higher speeds, keep the motor properly trimmed to reduce noise and the boat wake.

Make Friends with the Ice Ridge

Ice ridges are formed by the pushing action of the lake's winter ice sheet against the shore. Cracks form in the ice because of different contraction rates at the top and bottom of the ice sheet, and it is especially pronounced in years when there is little insulating snow cover. Ice cracks also develop because the edges of the ice sheet are sometimes firmly attached to the shore. Then, as the water rises in cracks and freezes, the ice sheet expands slightly and exerts thrust against the shore.

Unless the ice ridge is impeding your use of the lake or access to your dock area, consider making friends with the ice ridge and leave it alone. An ice ridge has many benefits to the lake, such as creating a natural berm to protect the lake from nutrient runoff. Nutrients collect on the landward side of the mound, producing fertile soil where trees and plants thrive and provide roots to hold the soil in place. If you do want to remove an ice ridge, you must follow the Hubbard County requirements. Historical ice ridges are a feature of many lakes and are protected by state law as a valuable resource to prevent runoff into the lake.

Hubbard County Ice Damage Repair Policy

Ice ridges provide a natural form of shoreline protection and have many benefits to the lake.

In Hubbard County, property owners may repair damage to a shoreline from a single season of ice damage that occurred within the last twelve months when the ice ridge had been legally altered in prior years providing such work is reported to the Environmental Services Department. Removal of an ice ridge in all other circumstances must be authorized by a variance. Permanent ice ridges may not be removed.

Before doing any repair work on an ice ridge, contact Hubbard County Environmental Services for the current requirements.

Natural shoreline vegetation and other preventive actions are the best protection from both wave erosion and ice heaves, and it's less expensive and longer lasting.

Be a Careful Boater

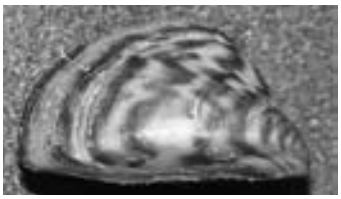
Stop the Spread of Aquatic Invasive Species (AIS)

Aquatic Invasive Species (AIS) are plants and animals released either accidentally or intentionally into areas where they are not native. Such introductions usually occur through human activities and often are spread through boating activity.

Common AIS in Minnesota lakes include:

- Eurasian watermilfoil is now in over 246 lakes, rivers, and streams statewide. There are no infested lakes in Hubbard County yet; let's keep it that way.
- Curlyleaf pondweed is found in 3 lakes in Hubbard County.
- Zebra mussels are still not found in Hubbard County but they are found in over 70 lakes statewide.
- Faucet snails are present in one lake and river system.

Eurasian Watermilfoil



Zebra Mussel

AIS, such as Eurasian watermilfoil and Curlyleaf pondweed, cause problems by replacing native plants important for fish and wildlife habitat and form thick mats that make boating difficult. When Curlyleaf pondweed dies back in mid-summer it releases phosphorus that can fuel noxious algal blooms. Zebra mussels attach to hard surfaces and interrupt the food chain eventually impacting fish populations.

To stop the spread of AIS, boaters should:

- Inspect boat, trailer, and boating equipment (anchors, centerboards, rollers, axles) before entering a lake or leaving a lake, and remove any plants and animals that are visible.
- Drain water from the motor, livewell, bilge, and transom wells while on land before leaving any waterbody; it is the law.
- Dispose of unwanted bait in the trash. Never release live bait into a waterbody. When cleaning off fishing lines, collect plant fragments in a bucket and dispose of onshore away from the lake.
- Wash then dry your boat, tackle, downriggers, trailer, and other boating equipment to kill harmful species that were not visible at the boat launch.
- Know which waters are infested; check lake accesses for DNR infested waters signs.

Jet skies can carry AIS, too, so clean out all water intakes and other parts before transporting jet skies.

AIS Prevention in Hubbard County

The Hubbard County Coalition of Lake Associations (COLA) is recognized as a leader and innovator in AIS prevention. Several AIS initiatives that were started in Hubbard County have become the standard for counties across Minnesota. Currently, the COLA is educating lake users and lake residents about the negative impact AIS can have on our lakes through billboards, roadside signs, signage at boat ramps, distribution of AIS information to resorts and campgrounds, and by sponsoring public service announcements on the radio. The COLA has also worked hard to obtain funding from the DNR, several area townships, lake associations, and private sources to ensure that Hubbard County lakes receive the highest level of watercraft inspections possible each summer.

To learn more about local AIS initiatives or how to become a volunteer watercraft inspector, visit the Hubbard County COLA website at http://www.minnesotawaters.org/group/hccola/welcome.

In Minnesota it is against the law to transport any aquatic plants and invasive species.

The law requires boaters to remove the drain plug and drain all water from the boat. The plug must remain out while the boat is transported.

AIS Infested Lakes in Hubbard County:
Zebra Mussels: None

Curlyleaf Pondweed:
Upper Twin, Portage, and 11th Crow Wing

Faucet Snails:
Upper Twin

Although Hubbard County does not have zebra mussels, rusty crayfish, eurasian watermilfoil, or flowering rush each of these harmful invasive species are found in counties that share a border with Hubbard County.

Properly Install, Operate, and Maintain the Septic System

Many homes in shoreland and rural areas rely on Subsurface Sewage Treatment Systems (SSTS), commonly known as a septic system. Your septic system, if designed, installed, operated and maintained properly, will effectively treat wastewater before it is returned to the environment to protect public health and prevent pollution of nearby waters.

Understand How Your Septic System Works

Understanding your system is essential to proper operation and maintenance. The basic components of most systems are:

- **The Septic Tank** receives the wastewater from the household plumbing. In the tank, the solids are separated from the liquid. Here, naturally occurring bacteria decomposes food particles and human waste and the remaining solids settle to the bottom until they are pumped out. Newer tanks will have an inspection pipe for monitoring of the tank and a manhole for access when pumped. The size of the tank is based on the home's potential water use and types of appliances installed. When the capacity of the tank is reached, the excess liquid flows, or is pumped, over into the drainfield.
- **The Soil Treatment System (drainfield)** is typically a network of perforated pipes surrounded by small rock and soil. The liquid, which contains pathogens (disease-causing organisms), nutrients such as phosphorus, and fine solids, is treated naturally by bacteria as it percolates down through the soil. The design of the treatment system (trench, mound, etc.) is based on the soil conditions on your property, which must allow for at least three vertical feet of unsaturated soil for the wastewater to percolate through for proper treatment. The correct type of system needed for your property will be determined by a state-licensed septic designer. Where gravity flow is not enough to move the liquids from the tank to the soil treatment system, pumps or lift stations are used. This is typical with mound systems.

Source: University of MN Extension Protecting Our Waters Series, #2

What Causes a Septic System to Fail?

Septic system failure is most commonly the result of:

- Improper design or installation of the system;
- Overuse of water in the home; and/or
- Improper maintenance.

When your system, or a neighbor's system fails, untreated wastewater could come in contact with people, causing a public health hazard. Or, it could enter the groundwater and eventually a nearby lake, river, or stream, adding pollution that can contribute to increased algae and aquatic plant growth and declining water quality.

What are the signs of a potentially failing system?

- Sewage backup into the house or slow toilet flushing,
- System alarms sounding,
- Wet and/or black areas around a septic mound,
- Algal blooms and excessive plant growth in the water near shore,
- Sewage odors indoors or outdoors,
- Water or sewage surfacing in the yard or a nearby low spot, or
- High levels of nitrates or coliform bacteria in well water tests.

If you have a problem:

1. **Contact a licensed installer for advice.**
2. **Reduce/eliminate the volume of wastewater until the problem can be addressed.**
3. **If the drainfield or household pipes are not clogged, have the system pumped for both solids and liquids as a temporary measure.**
4. **If there is surface pooling of wastewater, temporarily fence off the area to prevent contact with humans or pets, and then repair or replace the septic system immediately.**

Properly Operate and Maintain Your System

Proper operation and maintenance will extend the life of your system for many years and prevent costly repairs.

✓ Pump the Tank Regularly

Have a licensed professional pump the solids (floating scum and sludge) that have accumulated in the septic tank every one to three years; the more use, the more often pumping is needed. Make sure they pump through the manhole and not an inspection pipe. While garbage disposal use is not recommended with septic systems, pump annually if you are using one. Failure to remove the solids can cause them to enter the drainfield, which can result in expensive repair or replacement. For licensed septic system maintenance services, see the yellow pages.

✓ Practice Water Conservation

Too much water flowing into the tank will cause the tank to back up and lead to ineffective treatment of wastewater. To prevent this:

- Repair all leaky faucets, fixtures, and appliances.
- Install low water-use fixtures and appliances (especially toilets and shower heads).
- Do not empty roof drains and sump pump water into the septic system.
- Wash only full loads of clothing and dishes, and spread out water use, such as laundry, throughout the day and week. Consider front loading machines; they use less water.
- Reduce the length of showers and the number of toilet flushings, especially during high use periods.
- Do not route water softener discharge water into the septic system.
- Do not hook floor drains or drain tile into the septic system.

✓ Limit What Goes Down the Drain

- Do not put household cleaners, paint, solvents, medications, and other chemicals down the drain.
- Limit the use of antibacterial products. As the name suggests, they can reduce the amount of working bacteria in the septic tank.
- Use only the recommended amounts of liquid non-phosphorus detergents and cleaners.
- Do not use powdered laundry detergent as it can clog your drainfield.
- Prevent food particles, grease, lint from a washing machine, coffee grounds, plastics, and other non-degradable solids from getting into the system.
- Use single-ply toilet paper for the best decomposition.

✓ Do Not Use System Additives

It is not necessary to use starters, feeders, cleaners, or other septic additives to enhance the performance of your system. If your system is properly maintained and operated, it will operate at maximum performance with the use of naturally occurring bacteria.

✓ Protect Your Drainfield

Compacting or obstructing the soil over the treatment area can cause malfunctioning of the drain field. To protect it:

- Keep heavy vehicles off the drainfield.
- Maintain vegetative cover, but do not plant trees or shrubs on the drainfield because the roots may penetrate and clog the distribution system.
- Mow the area, but do not fertilize or water.
- Reroute roof drains and drain tile away from the drainfield.

For more information on septic system design and maintenance, see the University of Minnesota Water Resources Center's homeowner resources at: http://septic.umn.edu/owners/index.htm; call the hotline at 800-322-8642; or email questions to septic@umn.edu

Protect Your System from Freezing in the Winter

Common causes of septic system freezing during the winter can be lack of snow cover, extreme cold, compacted snow, irregular use of the system, leaking plumbing fixtures, pipes not draining properly, or a water-logged system.

What to do if the system freezes? Unplug your pump and call a septic system professional. Do not add antifreeze, additives, or continuously run water to try to thaw the system.

To prevent freezing, follow these general guidelines:

- Fix any leaking plumbing or appliances prior to winter.
- Late fall, add a layer of hay or straw mulch (8-12 inches) over the pipes, tank, and soil treatment area.
- Spread hot water use (laundry, showers, dishwasher) out over the day and week.
- For high efficiency furnaces that have low water discharge, you can put a heat tape in the pipe or install a small condensate pump.
- If you are gone for extended period of time, consider having someone stop by to run hot water regularly or pump the tank before leaving.

Hubbard County Requirements

Who Regulates? The design and installation of septic systems is regulated by Hubbard County, and permits are required from the Environmental Services Department. All septic systems, including outhouses, must be designed, permitted, installed, inspected, and maintained (pumped) by a state-licensed business. For a list of licensed contractors see: www.pca.state.mn.us/programs/ists/ or ask your preferred provider for license information.

Who certifies systems? Licensed inspectors review all newly installed septic systems and will sign a Certificate of Compliance on properly installed new systems. For an existing system, a certificate of compliance can be obtained by a certified design professional.

What are the setbacks from a structure? Ten (10) feet from the structure for the septic tank and 20 feet for the drainfield. Wells require a 3 foot setback from the structure; they are regulated by the MN Department of Health.

Call the Hubbard County Environmental Services Department for questions about septic systems, including your lake setback requirement.

What Permits Are Required in the Shoreland Zone?

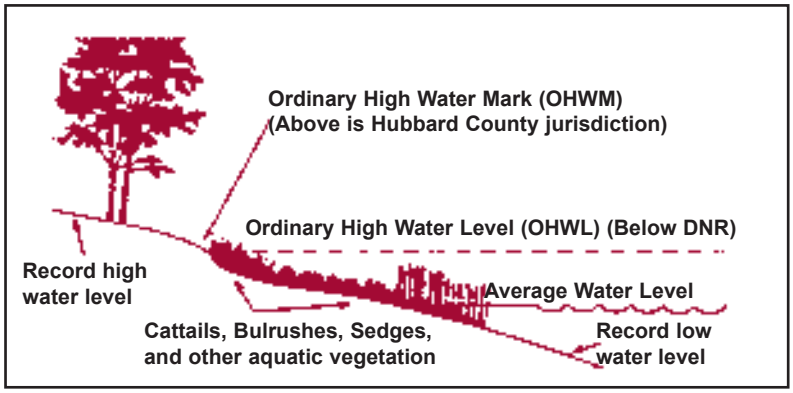
Knowing what you can and cannot do in the water and on the adjacent shoreland area, and following the regulations that apply, is an important stewardship practice.

Any activity that disturbs land, plant or animal life or applying chemicals in the water is a regulated activity to ensure that the quality of the environment is not compromised.

Who Has Regulatory Authority in the Shoreland Zone?

The shoreland zone in Hubbard County is defined as the land within 1,000 feet of a lake and 500 feet of a river or stream plus the near shore waters.

- **For any actions in the water or on the land <u>below</u> the ordinary high water level (OHWL)** of a public water (lakes, rivers, streams, wetlands), check with the appropriate Minnesota Department of Natural Resources (DNR) office for permits that may be required.
- **For any actions on the land <u>above</u> the OHWL (the upland areas of your property) and within the shoreland zone,** contact the appropriate county, city or watershed office.



See checklist on inside back cover for appropriate authority in various situations.

How do I know where the ordinary high water level (OHWL) is? For lakes and wetlands, the OHWL is the highest water level that has been maintained for a <u>sufficient period of time</u> to leave evidence on the landscape; it is not necessarily the highest place the water has been. It is commonly that point where the natural vegetation changes from predominately aquatic to predominantly terrestrial.

If there is a question about the OHWL on your property, contact the DNR Area Hydrologist or the Hubbard County Environmental Services Department (HCESD).

What Rules Apply To These Shoreland Activities?

Any land alteration in the shoreland area above the ordinary highwater mark, including building retaining walls and installing rip-rap, requires a permit from the HCESD.

Dock Placement and Size

Docks are privately owned structures, which are allowed to be placed in the public waters of the state to provide access to the use of the water. The DNR establishes dock rules to prevent the deterioration of the lake's ecosystem from excessive or inappropriate dock placement that can harm aquatic plants or disturb fish spawning, feeding, and shelter from predators.

Local governments have the authority to regulate docks; Hubbard County currently follows state rules.

Currently, no DNR permit is needed to install, construct, or reconstruct a dock

if: 1) the dock, not including the watercraft lift or canopy, is not wider than 8 feet and is not combined with other structures that create a larger structure; or 2) the dock is no longer than is necessary to reach navigable water depth, is not a safety hazard, it does not close off access for others to the lake, allows for free flow of water under it, and is not intended for use as a marina.

A general permit was issued in 2008 that allows for a modest platform at the lake end of the dock under the following circumstances: 1) a single temporary platform up to 120 square feet measured separately from the access dock, or; 2) 170 square feet including the area of the adjacent access dock. The access dock must be 5 feet or less in width and is located on a lake with a classification of General Development or Recreational Development. The general permit for platforms expires when the revised rules for docks are adopted. A DNR Waters permit will be needed if a dock exceeds these conditions. Check the DNR website for final dock rule revisions.

Control of Aquatic Plants

The removal or destruction of aquatic plants in Minnesota lakes is regulated by the Minnesota DNR. Aquatic plants are a valuable part of the lake system. They stabilize bottom sediments, protect water clarity, prevent shoreline erosion and provide fish habitat. Keep destruction of aquatic plants to a minimum.

If you see unusually high plant growth where it has not previously occurred, look for possible sources of phosphorus getting into the lake from your property that might be fueling this growth, such as excessive runoff, a malfunctioning septic system, or shoreland erosion.

If it is necessary to manage submersed aquatic vegetation for swimming or boat docking consider removing only that vegetation allowed without permit (see below). DNR aquatic plant management applications are available on the web under “Fishery Permits” at mndnr.gov or call the Area Fisheries office.

DNR Aquatic Plant Management rules require:

- No destruction of emergent aquatic plants (bulrushes, cattails,wild rice) is allowed unless authorized by a DNR permit.
- Limited mechanical control (cutting or pulling) of submerged vegetation not exceeding 2,500 square feet or wider than 50 feet along the shore or half the width of your property, whichever is smaller; more than that requires a permit.
- Cut or pulled vegetation must be removed from the water and the cleared area must remain in the same place from year to year.

A DNR Fisheries aquatic plant management (APM) permit is required for:

- Use of any chemicals or automated mechanical devices (such as the Crary WeedRoller, Beachgroomer or Lake Sweeper).
- Use of copper sulfate for control of swimmers itch or filamentous algae.
- Removal of lily pads in an area larger than a channel 15 feet wide to open water.
- Any removal of any bulrushes, cattails, or wild rice.
- Removal or relocation of a bog.
- Planting aquatic plants below the OHWM (ordinary high water mark).

These activities are not allowed in any circumstances:

- Excavating the lake bottom for aquatic plant control.
- Using lake-bottom barriers to prevent the growth of aquatic plants.
- Removing vegetation within posted fish-spawning areas.
- Removing aquatic plants from an undeveloped shore.
- Removing aquatic plants where they do not interfere with swimming, boating or other recreation.

Hubbard County Shoreland Management Ordinance

All counties and municipalities with shorelands within their jurisdiction are required to have and enforce a Shoreland Management Ordinance that regulates activities done in the shoreland zone. The local government ordinance must meet or exceed the Minnesota State Shoreland Rules.

The Hubbard County Shoreland Management Ordinance is not a building code. It addresses the setbacks and the location of structures on a shoreland lot and defines restrictions on the types of activities that can take place within the shoreland zone. It also regulates the setback and construction of septic systems.

Please contact the Hubbard County Environmental Services Department before commencing any project to find out what regulations may apply, what zoning approvals may be required, and if the project is allowed.

Working Around Wetlands

Statewide, Minnesota has lost over 50% of its pre-statehood wetlands and has about 9.285 million acres of wetlands remaining. Let's protect what we have left.

Wetlands are valuable because:

- they clean the water.
- recharge water supplies.
- reduce flood risks.
- provide fish and wildlife habitat.
- provide recreational opportunities and aesthetic benefits.

If access to the lake is limited due to the presence of wetlands along the shoreline, boardwalks and docking is encouraged.

What are Wetlands?

Wetlands are a vital transitional link between land and water. When you think of wetlands you probably think of wet marshy areas filled with cattails and ducks.. This would be true for some, but there are eight different types of wetlands in Minnesota. Wetlands can include moist forested areas, brushy lowlands, and small wet areas near a lake. Generally, a wetland is defined as an area that is mostly wet soil, is saturated with water either above or just below the surface, and is covered with plants that have adapted to wet conditions.

Wetlands have extremely valuable benefits, including:

- **Water Quality Protection:** Wetlands filter and absorb polluted surface water runoff before it enters groundwater, lakes and rivers.
- **Flood Control and Groundwater Recharge:** Wetlands serve as holding areas for water, slowing flood damage and soil erosion during heavy rain falls.
- **Fish and Wildlife Habitat:** Wetlands provide homes, nesting areas, and feeding areas for wildlife. Wetlands along shorelines are especially important due to the habitat they provide to aquatic insects and amphibians, which are also food sources for fish.
- **Reducing shoreline erosion:** Wetlands, and the deep rooted plants that grow in them, protect shorelines from the forces of wave action that erode away the shoreline.

Who has permit authority?

Despite these benefits, wetlands have been considered nuisances in the past and have been drained or filled in shoreland areas for development.

In 1991, the Minnesota Wetland Conservation Act (WCA) was passed to stop the loss of wetlands. To accomplish this, anyone proposing to drain, fill, or excavate in wetland areas must first try to avoid disturbing the wetland; second, try to minimize the impact on the wetland; and finally, mitigate, or replace the square footage of wetland loss. Some exemptions to the law may apply to certain situations. Generally, wetlands in shoreland areas are given extra consideration for protection due to the benefits they provide to lakes.

If access to the lake is limited due to the presence of wetlands along the shoreline, boardwalks and docking is encouraged. The Hubbard County SWCD can also provide assistance in helping you determine if wetlands are on your property and what permits may be needed. Work that is done below the ordinary high water level (OHW) in lakes, rivers or public waters will require a permit from the DNR Public Works Program.

Contact the Hubbard County SWCD at (218) 732-0121 for permit information and requirements when working around wetlands.

✓ Hubbard County Shoreland Homeowner's Checklist:

Depending on what you want to do with your shoreland property, permission and/or permits may be required from one or more agencies before proceeding with a project.

Contact the Hubbard County Environmental Services Department before starting any project in the shoreland zone.

The first step is to bring in a detailed plan of the project to review with the staff. Staff will then be able to provide advice on what permits or applications will be necessary for your individual project. Contact staff at 218-732-3890 or stop by the office on the 2nd floor of the Hubbard County Courthouse, 301 Court Avenue, Park Rapids, with any questions.

Contact the Hubbard County Soil and Water Conservation District (SWCD) for:

- Technical information and assistance on projects that involve shoreland stabilization (erosion control) and shoreland and woodland management.
- Technical information and assistance on shoreland restoration/landscaping projects.
- Funding assistance for abandoned well sealing, low interest septic compliance loans, and conservation program assistance.
- Cost-share programs for water quality and shoreline restoration projects; wildlife projects on private land; and wetland restoration projects.
- Tree sales.

Contact the Minnesota DNR before:

- Removing emergent vegetation (cattails, bulrushes, wild rice); contact the Fisheries office.
- Using chemicals to control any aquatic vegetation; contact the Park Rapids Area Fisheries office.
- Clearing a path through lilypads for access to open water; contact the Fisheries office.
- Altering a lake bed or any work done below the OHWL; contact Waters/Bemidji.
- Purchasing an automatic aquatic plant removal device.

Hubbard County Coalition of Lake Associations (COLA)

PO Box 746
Park Rapids, MN 56470

Website: http://www.minnesotawaters.org/group/hccola/welcome

The Hubbard COLA is a non-profit organization dedicated to protecting and enhancing the quality of Hubbard County's lakes and rivers; preserving the economic and recreational values of its shorelands; and promoting responsible use of its waters and related habitats. The COLA is comprised of 30 lake associations representing a total of 41 lakes and 2,150 lake association members.

The Hubbard COLA is active in the Healthy Lakes and Rivers Partnership which has led to the formation of 18 lake associations developing lake management plans and the formation of an Aquatic Invasive Species (AIS) Task Force to prevent the spread of AIS. It has been recognized throughout Minnesota for its AIS prevention efforts and clean water initiatives. Ken Grob, COLA past president, was selected as the 2010 Minnesota Waters Volunteer of the Year, and the Hubbard COLA was selected by the Northwest Minnesota Foundation for its 2010 Quality of Place Award for Natural Assets.

The COLA supports three annual initiatives for lakeshore and water quality improvement. Financial and volunteer support is provided to the Children's Freshwater Festival sponsored by the Hubbard County SWCD; shoreline shrubs/trees are distributed for lake associations; and the COLA coordinates the Water Monitoring Program for the Minnesota Pollution Control Agency (MPCA) and Minnesota DNR.

Frequently Called Numbers & Contact Information in Hubbard County

Projects that impact Minnesota's water resources are regulated by a variety of local, state, and federal agencies. This guidebook does not attempt to offer a comprehensive list of water-related contacts.

HUBBARD COUNTY CONTACTS

Hubbard County Government Services Center
301 Court Ave, Park Rapids MN 56470
Phone: 218-732-2300

Hubbard County Website
www.co.hubbard.mn.us/
Government officials (county, city, and township) and links to county departments.

Hubbard County Environmental Services
2nd Floor of the Hubbard County Courthouse,
301 Court Ave. Park Rapids MN 56470
Phone: 218-732-3890
Hours: Mon-Friday, 8 a.m.-4:30 p.m.
www.co.hubbard.mn.us/environmental.htm

Hubbard County Soil and Water Conservation District
212 1/2 2nd St W, Park Rapids MN 56470
Phone: 218-732-0121
Website: www.hubbardswcd.org
Hours: Mon. – Friday 8:00 a.m.-4:30 p.m.

Hubbard Solid Waste Department
Phone: 218-732-9568
www.co.hubbard.mn.us/Public%20Works/solidwaste.htm

Hubbard County Highway Administration Public Works Building
101 Crocus Hill Street Park Rapids, MN 56470
Phone: 218-732-3302
www.co.hubbard.mn.us/Public%20Works/highway.htm

MINNESOTA STATE OFFICE CONTACTS:

Minnesota Department of Natural Resources (DNR)

MN DNR Information Center
Toll free: 1-888-MINNDNR (646-6367)
TTY: 1-800-657-3929
info.dnr@state.mn.us www.mndnr.state.gov

Division of Fish and Wildlife - Park Rapids
Area Fisheries, 301 South Grove Avenue
Phone: 218-732-4153
Area Wildlife, 603 1st Street West
Phone: 218-732-8452

Division of Ecological and Water Resources
Bemidji office, Permits - Work in Protected Waters
Phone: 218-308-2620
Itasca office, Aquatic Invasive Species program
Phone: 218-699-7293

Minnesota Pollution Control Agency (MPCA)
Detroit Lakes Office: 218-847-1519
ISTS Licensing Phone: 651-296-7789

Minnesota Department of Health (MDH)
State Office Phone: 800-383-9808

University of Minnesota Extension
201 Fair Ave, Park Rapids, MN 56470
Phone: 218-732-3391
http://www.co.hubbard.mn.us/extension.htm
Shoreland Education website:
www.extension.umn.edu/Shoreland/