

Reduce Shoreland Erosion

If your shoreland is eroding away, stabilizing the shoreland will be necessary to reduce erosion. Possible causes may include:

- fluctuating water levels,
- increased wave or wake action, ice pushes in the spring, or
- loss of natural vegetation to hold the soil in place.

Each shoreland situation is different, and consulting shoreland landscaping professionals, the DNR area hydrologist, or the Stearns Soil and Water Conservation District is encouraged to determine the best solution for your shoreline erosion situation.

Rip rap and retaining walls are usually not the best choice for stabilization. They are expensive and can negatively impact the lake by creating an unnatural barrier between upland areas and the shoreline environment. Rip rap should only be used if deemed necessary after consultation, and never to replace a stable, naturally vegetated shoreline. If rip rap is used, it is most effectively used in combination with natural vegetation to stabilize the soil between the rock material. Permits are required for this type of work.

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

Naturalizing your shoreline or maintaining the natural shoreland vegetation is the most important and effective way to reduce shoreland erosion in addition to enhancing water quality, maintaining good fishery resources, and provide wildlife habitat. (See pages 10 & 11.)

Slow the Boat Down

Boat wakes can cause tremendous shoreland erosion, so boat slower. 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 other's 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 wildlife and other people—plus you'll see more and enjoy the lake longer. When running at higher speeds, keep the motor properly trimmed to reduce noise and wake.



On steep bluffs, selective pruning of trees to create a view corridor of the lake, while keeping the vegetative undergrowth, will stabilize the soil.

Shoreland Alterations are Regulated

Be aware that any type of shoreland or bluff alteration in the impact zone,* including grading, filling, or removal of vegetation other than dead or diseased trees, limbs, or branches, is regulated and will require a permit from Stearns County Planning & Zoning or the Minnesota DNR. Violators will be issued fines and required to restore the alteration.

* The *shore impact zone* is the area adjacent to the water for a distance equal to one half of the required structure setback or 50 feet, whichever is greater.

* The *bluff impact zone* includes the bluff itself and the area within 20 feet from the top of the bluff.

Preserving or restoring a natural shoreline is the best way to reduce shoreland erosion.

Additional benefits of shoreland buffers:

- Less time spent mowing; more time enjoying the lake.
- Attracts birds and butterflies.
- Enhances your view of the lake by adding interest, texture and color.
- Provides more privacy from people using the lake or neighboring properties.
- Protecting water quality is protecting your real estate value.
- Taller native plants create a biological barrier that will deter Canada geese from loitering on the lawn.
- Well established emergent aquatic plants discourages the establishment of non-native species.

Reduce Runoff: Maintain a Natural Shoreline

Preserving or restoring a native shoreline is the best way to reduce shoreland erosion, protect water quality, and improve the health and diversity of shoreland and upland birds, wildlife, and aquatic plants.

Native vegetation acts as a buffer zone between the shoreland and the water intercepting nutrients and reducing runoff, erosion, and sedimentation.

If your shoreland is already natural, congratulations—please keep it that way. If you have lawn to the water's edge, or very little native vegetation near the shore, consider a natural landscaping—"Lakescaping"—project to restore your shore by creating a shoreland buffer.

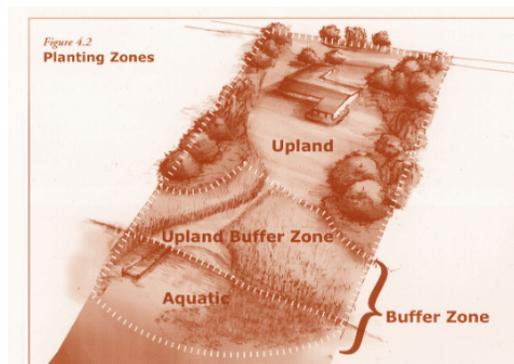
A mostly natural landscape has only 10% runoff.

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 lake shoreland should really look like. Even if your neighbors are not restoring their shoreland, it is important for you to proceed because it helps improve your property and protect water quality, and you can serve as good a model for others to follow. The individual choices by many can have cumulative impacts on the lake and its ecosystem. Ultimately, keeping the water clean can be far less costly than cleaning up a damaged lake, and clean waters framed by natural vegetation often have the highest property values.

What is a Buffer Zone?

The buffer zone consists of:

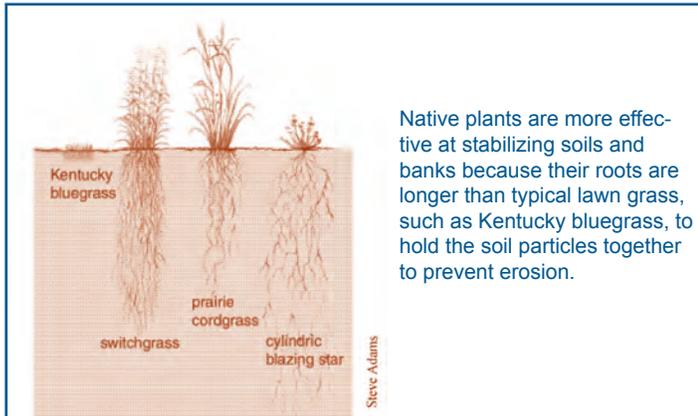
- The shallow **aquatic zone** of the emergent, submerged, and floating leaf aquatic plants that provide food and shelter for ducks, songbirds, fish, and reduce problems caused by Canada geese. The taller plants, like bulrush, sedges, and cattails can reduce the energy of wave and wake action to minimize erosion and help maintain water quality.
- The **upland zone** of native trees, shrubs, grasses and wildflowers that hold the soil on the bank in place, slow rainwater runoff, absorb water and nutrients, and break down pollutants.



Source: *Lakescaping for Wildlife and Water Quality*³

A natural shoreline is a bridge between two worlds—the land and water.
Studies show that there can be as much as 500% more diversity of plant and animal species along a natural shoreline compared to upland areas.

Current State law requires permanent vegetation with an average width of 50 feet landward from the shore. When it comes to shoreline buffers, wider is better.



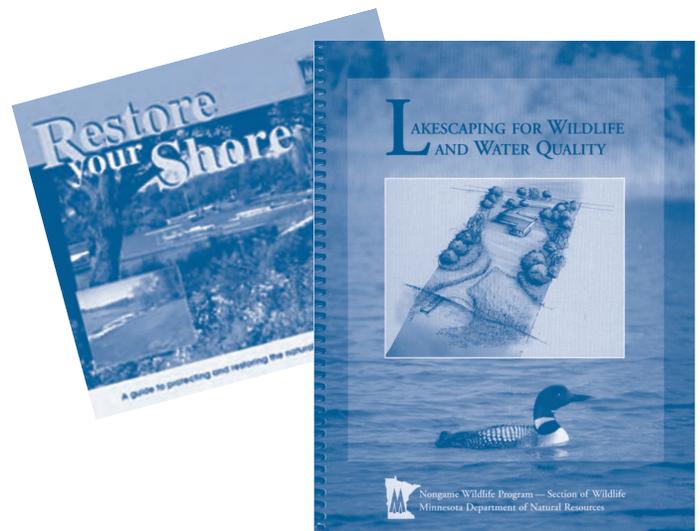
Getting Started: Creating a Shoreland Buffer

- **Don't mow.** A simple, no-cost way to get started in restoring your shoreland is to stop mowing for the width of the desired buffer strip. 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 shorelines around the lake to get an idea of what is likely to appear or will be suitable for growing in your area. You may later need to weed out nuisance species or add native plants for diversity, but it will get you started.
- **To be more thoughtful about a restoration project, assess the shoreline and your needs.** Do you have erosion problems to correct? Problems with geese? What kind of wildlife would you like to attract? How much area is needed for lake access for boats and swimming? Limiting the beach and dock area to 15-20 feet and leaving the rest of the shoreland natural is ideal to have both the benefits of the buffer zone while having recreational access to the lake.

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. 4

- **Consult resources and natural landscaping professionals.** Before proceeding with an extensive planting project, you'll likely need to consult with professionals for help with designing your project to insure your project goals are met. Consult with natural landscaping specialists at local nurseries, take a class in shoreland restoration offered through the University of Minnesota Extension Service, talk with extension educators, or contact the Stearns Soil and Water Conservation District for resources and fact sheets on designing your project, selecting plants, preparing the site, and planting.

The book *Lakescaping for Wildlife and Water Quality* and the CD *Restore Your Shore* are two highly recommended resources to get you started. Financial assistance for your project may be available; check with the Stearns County Soil and Water Conservation District.



Protect Aquatic Habitats

The aquatic zone is a vital part of the shoreland buffer system. Aquatic vegetation helps purify the lake by removing contaminants and calming the water, which allows suspended soil particles to settle to the lake bottom. If submerged aquatic plants are interfering with swimming, clear by hand only what is needed to provide a small swimming area. Leave other submerged plants in place. Chemical treatment or any destruction of cattails, bulrushes, or wild rice will require a permit from the DNR Area Fisheries office.

Leave Fallen Trees and Branches in the Water

Unless they are interfering with your recreational access, leave trees and branches that have fallen into the water alone. They form critical habitat for aquatic organisms that fish and other aquatic life feed on, and they serve as a dock for turtles, kingfishers and other interesting wildlife. The fish and wildlife will appreciate you.

Capture and Cleanse Runoff

Gardening with water quality in mind!

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 (0.6 gallons).

For example, if you have a shed that is 10' x 10' and you can collect roof runoff from all 100 square feet of your roof, you can collect 60 gallons of rainwater during a 1-inch rain event.⁵

When It Rains, It Pollutes

Rain naturally contains pollutants, including phosphorus and mercury. You cannot do much about the source of the pollution, but you can **capture** some rainwater and allow it to be **cleansed** through natural soil processes to prevent it from running off into the lake, where it can be detrimental to water quality.

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

Divert Rainwater Off Roofs and Driveways

Roofs of houses and other buildings, especially larger houses, and driveways comprise most of the impervious (impermeable) surfaces on a shoreland lot. Redirect rainwater flow from drain spouts, roof gutters, and driveways onto vegetated areas and away from steep slopes and bluffs. There it can be captured and have time to infiltrate naturally into the soil, or be used later for watering, instead of running off to the lake .

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—it's a natural way to fertilize.

Due to lack of research at this time, water collected in a rain barrel is not recommended for watering vegetable gardens. Humans and pets should not drink the stored water. Non-toxic mosquito dunks are available at garden supply stores and mail order catalogs to prevent the breeding of mosquitoes in rain barrels.

Rain barrels need to be cleaned routinely during spring and summer months to reduce algae growth. During winter months, take your barrel out of operation by simply turning upside down at the same location or storing elsewhere.

Rain barrels can be purchased at garden centers, ordered online from garden catalogs, or you can make your own (see resources on back cover).



Plant a Rain Garden

A rain garden is just what they sound like—a garden to soak up rain water. A rain garden is a recessed planting bed, shaped like a saucer or shallow bowl, designed to collect runoff from driveways, roofs, and other hard surface or sheet flow of rain from lawns. The collected water is then infiltrated into the ground instead of running off to the lake.

They 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 in rainwater that run into the garden area. Rain gardens allow sediments carried with runoff to settle and plants to absorb the nutrients. During a rainfall, the highest concentration of pollutants is during the first inch or first flush of a storm, which is retained in the rain garden.

A typical rain garden should be located at least 10 feet from the house and will range from 100 to 300 square feet in size with a depth of 4 inches to 10 inches. As a rule of thumb, one garden will handle the runoff from a hard surface that is about three times their size. For larger surfaces, more than one rain garden may be needed to handle the runoff, perhaps one rain garden near each down spout. Rain collected will recede into the ground within several days, sometimes even hours depending on your soil type.

To be effective, rain gardens must be properly designed for the right shape and size to accommodate the amount of roof, driveway, and other hard surfaces on your property as well as your soil conditions. Plants must be used that are appropriate for your soil type and will also tolerate standing water for up to 48 hours.

For proper design, it's recommended to consult resources to help you determine the proper plants and dimensions. Talk with the local extension agent or a landscaping professional knowledgeable about rain gardens. See the "How-To" resource on the back cover or do an internet search for amazing resources.

Use rain gardens in combination with natural shoreland landscaping for optimal runoff control on your shoreland property.



Rain Garden Tips:

- Don't worry about mosquitoes. Most rain gardens will not hold water long enough for mosquitoes to reproduce.
- When first planted, weed biweekly until native plants are established.
- Don't fertilize near the rain garden, it will stimulate weed competition without benefiting the native plants.
- During heavy rains, your rain garden may fill up and overflow. Make sure the overflow drainage follows the drainage designed for your lot.

Source: Taylor Creek Restoration Nurseries

**Locate utilities before you dig—
call Gopher One State,
Minnesota toll free 800-252-1166**

Manage Waste Properly

Don't Burn Garbage

Burning household garbage in burn barrels, wood stoves, and fire pits creates pollution that's dangerous to human health and contaminates the air, water, and soil. **It's against the law in Minnesota.**

Garbage today contains a lot of plastics; paper treated with chemicals, coatings, and ink; and many other chemicals. Backyard burning is a low-temperature fire that receives very little oxygen and produces lots of smoke. Under these conditions, a variety of toxic substances are produced and released primarily into the air close to ground level, where they are easily inhaled—with no pollution controls! Dioxin, a potent human carcinogen, is the major health risk posed by residential garbage burning. U.S. EPA research shows that burn barrels are the #1 source of dioxin in the U.S. Just one burn barrel can produce as much or more dioxin as a full-scale municipal waste combustor burning 200 tons/day.

- Instead of burning garbage, dispose of it properly.
- REDUCE, REUSE, RECYCLE. Reduce the amount of waste you create by buying products with less packaging and buying items that last longer instead of disposable ones. REUSE the durable packaging you get (like wash out that sour cream container and use it to put leftovers in). RECYCLE all the materials you can, like cardboard, newspapers, plastic grocery bags, cans and bottles.



Composting Basics

Greens provide nitrogen and act as a source of protein for the microbes that are hard at work in your compost pile.

- Green leaves
- Coffee grounds
- Tea bags
- Plant trimmings
- Raw fruit and vegetable scraps
- Fresh grass clippings
- Egg shells

Browns are a source of carbon and provide energy for the microbes.

- Dried grasses, leaves
- Woodchips
- Twigs and branches
- Straw
- Sawdust

NO meat, dairy, pet feces, weed seeds, and charcoal.

Compost Waste

Composting is a natural process. You don't need fancy equipment or expensive artificial additives to break down your organic scraps and turn them into something useful. All you need is: food, water, air/oxygen, and correct temperature.

Like any simple recipe, you'll get the best results if you use the right mix of ingredients to make your compost. The key materials are nitrogen-rich "greens," carbon-rich "browns," water, and air. All of these are essential, and they're easy to mix together for quality compost.

Getting your own compost bin started can be boiled down to three simple steps:

1. Make a compost bin (or buy one).
2. Throw in your kitchen scraps and yard waste.
3. Mix it up with a shovel or pitchfork once in a while. It's that easy!

Lay a base. Start with a layer of browns, laying down 4-6 inches of twigs or other coarse carbons on the bottom of the pile for good air circulation. Add Browns and Greens, and **stir**. Add water as you go (about the amount of a damp sponge).

Benefits:

- Improves soil structure
- Provides aeration
- Drought protection
- Reduces erosion
- And much more...



Working Around Wetlands

What are Wetlands?

Wetlands are a vital transitional link between land and water. When you think of wetlands you probably think of wet, swampy, marshy areas. This would be true for some, yet other types of wetlands may be dry most of the year and support trees and shrubs. 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 rainfalls.
- **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 all of their 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 in certain situations. Generally, wetlands in shoreland areas are given extra 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 Stearns Co E} çã[] { ^} çã! çã!• can 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 MN DNR Public Works Program.

Contact the Stearns County Environmental Services at (320) 656-3613 for permit information and requirements when working around wetlands.

Contact the Stearns SWCD for:

- Soils information for your property.
- Assistance with shoreland buffers and vegetation protection.
- Technical assistance for erosion control practices.
- Tree sales and design assistance for windbreaks and wildlife plantings.
- Information on sealing abandoned water wells.
- Cost share programs for installing conservation practices on your property.
- The County Agriculture Inspector and information regarding the Noxious Weeds Law.

Statewide, Minnesota has lost over 50% of its pre-statehood wetlands and has about 9 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.

Be a Caring Boater—Stop the Spread of

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. They can cause great environmental harm to our lakes.

Common AIS in Minnesota Lakes

"Starry Stonewort newest invasive in Stearns County has now been identified in at least 7 lakes in Minnesota. It is a Macro Algae forming dense mats which can grow to the surface in greater than 8 feet of water. Main stem of the plant is smooth to the touch. Branchlets 5- 8 per whorl each with 1-2 bract cells giving the appearance of branchlets being forked. Star shaped Bulbils may be produced on colorless rhizoids. This invasive can interfere with recreational use and fish spawning."...



Eurasian Watermilfoil (EWM), now in over 295 lakes, rivers, and streams in Minnesota. EWM forms dense mats that interfere with boating and swimming. The plant has delicate feather like leaves arranged in whorls (circles) of 3-5 around stem; leaves are limp out of the water. Each leaf has 12-21 leaflet pairs. Northern watermilfoil is a native look-alike but it has only 7-10 leaflet pairs. Hybrid forms of watermilfoil are now being found in Minnesota lakes.



Curlyleaf Pondweed (CLP) CLP forms weed mats that can shade out native plants and impede recreation. The plant has stiff, wavy leaves with fine-toothed edges that are ½ inch wide and 2-3 inches long, arranged alternately around the stem. When it dies back in mid-summer it releases nutrients, which can cause summer algal blooms.



Zebra Mussels, now in over 200 water bodies in Minnesota. Zebra mussels filter water and take the plankton out of the water that young fish rely on for food. Initially upon infestation the filtering makes the water clearer, but eventually they damage the lake ecosystem and can impact fish populations. Their sharp edges impede swimming. They are yellowish-brown clams, up to 2 inches long, have light and dark stripes on the "D" shaped shells.

They use byssal threads to attach to all hard surfaces making them easy to transport, and they are very difficult to remove.

Flowering Rush Flowering Rush outcompetes native shoreland vegetation impeding access to the lake and interrupting natural shoreland ecological functions.

Rusty Crayfish Adults are 3-5 inches long, have claws that are larger and smoother than other crayfish, and dark rusty spots on either side of the body. They graze on and can eliminate aquatic plant beds that are important to fish and wildlife, and they can displace and hybridize with native crayfish.

Spiny Waterflea Spiny waterflea is a tiny crustacean (< ½") that competes with small fish for food and fouls up fishing gear with gelatin-like clumps of waterfleas. It has 1-4 barbs on the tail and is difficult to distinguish without magnification.

For help in species identification, call the DNR at 320-223-7847 or 320-223-7843 or bring a sample to the nearest DNR Fisheries office.

Clean, Drain, Dry

How you can help prevent the spread of AIS when moving your boat between waterbodies.

REMOVE visible plants, animals, and mud from the boat, trailer and other boating equipment (anchors, rollers, axles). On jet skis, clean out all water intakes and other parts before transporting.

DRAIN water from your boat, motor, live well and bait containers before leaving the water access. You must remove the drain plug and leave it removed prior to leaving any water access and while transporting the boat—it's the law.

DISPOSE of unwanted bait in the trash. Never release live bait. When cleaning off fishing lines while fishing, collect plant fragments in a bucket and dispose of onshore.

SPRAY, RINSE, DRY boats and recreational equipment before transporting to another water body. Spray/rinse with high pressure and/or hot tap water (above 140 degrees F); locate the nearest boat decontamination station in Stearns County. This is critical when leaving zebra mussel infested waters. Or, dry at least 5 days, preferably more depending on temperature and humidity. Between 60-80 degree F, optimum drying time is 14 days: above 80 degrees, optional drying time is at least 7 days.



Aquatic Invasive Species (AIS)

KNOW THE LAW – PULL THE PLUG

In Minnesota it is unlawful to:



- **Transport** aquatic plants, ruffe, round goby, zebra mussel or any other prohibited invasive species on any road.
- **Leave** any body of water before removing drain plugs and draining all water related equipment (including live wells and bait containers). Note: to keep unused bait, drain and replace with tap or spring water.
- **Launch** a watercraft with aquatic plants, zebra mussels or any prohibited invasive species attached.
- **Harvest** bait (minnows, frogs, crayfish, or other wild animals) from designated infested waters.



Know what waters are infested in Stearns County; check lake accesses for DNR infested waters signs. A complete list of infested waters can be found at www.dnr.state.mn.us/invasives/ais/infested.html



What you need to know about hiring a dock installer, removing and moving water-related equipment, and storing lifts and docks

- **If you hire a business to install or remove your boat, dock, or lift**, or other water-related equipment, make sure they have completed AIS training and are on the DNR's list of **Permitted Service Providers**. Lake service providers that have completed DNR training and obtained their service provider permit will have a permit sticker in the lower driver's corner of their vehicle's windshield. They have attended training on AIS laws and many have experience identifying and removing invasive species.
- **If you plan to move a dock, lift or other water equipment from one lake or river to another**, all visible zebra mussels, faucet snails, and aquatic plants must be removed whether they are dead or alive. According to Minnesota law, the equipment must be free of AIS and dried for 21 days before it can be placed in another waterbody.
- **When removing water-related equipment for the winter**, it is legal to take the equipment out of infested waters – even if it has zebra mussels or other prohibited invasive species attached – and place it on the adjacent shoreline property. Boat lifts, docks, swim rafts, weed rollers, irrigation equipment, or pumps can be removed from infested waters and placed on the shore without a permit. However, if you want to transport a dock or lift from infested waters to another location for storage or repair, **you must have a DNR authorization form** to move it legally to the new location. Forms can be found at: http://dnr.state.mn.us/invasives/shoreland_owners.html
- **When removing boats for winter storage**, there are two important things to know:
 - It is illegal to transport any watercraft with zebra mussels, faucet snails, or other prohibited invasive species attached away from a water access or other shoreland property, even if you intend to put it in storage for the winter.
 - To transport watercraft at the end of the season, the DNR has developed a special one-way pass, or authorization form. The form allows boaters to move watercraft to another location to clean off invasive species, and once cleaned, to store it for the winter. See same website as above for form.
 - Stearns has a monetary incentive for holding placement for 31 DAYS, contact the ESD office.

Lakes currently infested with AIS in Stearns County are listed on insert.

To locate boat decontamination stations, contact the Stearns ESD, check the county website, or ask an access inspector where the nearest boat decontamination station is located in Stearns or adjacent counties.

For more information on Aquatic Invasive Species and what you can do to stop the spread see: <http://dnr.state.mn.us/invasives/aquatic/index.html>

Photos courtesy of MN DNR

What Can I Do On My Shoreland Property? What Permits are Required?

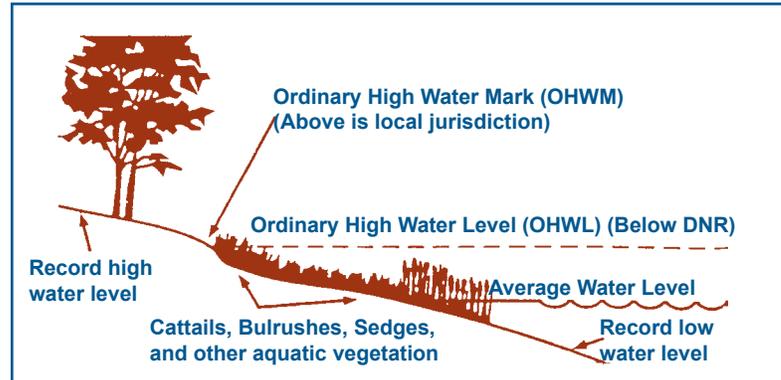
Who Has Regulatory Authority in the Shoreland Zone?

The shoreland zone is defined as the land within 1,000 feet of a lake and 300 feet of a river or stream or the floodplain extent.

- **For any actions in the water or on the land below 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 above the ordinary OHWL (ordinary highwater level) and within the shoreland zone,** contact the appropriate Stearns County office for lands located within the boundaries of a city, contact the city offices.

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 chemicals applied in the water is a regulated activity to ensure that the quality of the environment is not compromised by the activity.



See the Shoreland Homeowners Checklist on inside back cover for the appropriate Stearns County office 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 sufficient period of time 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.

The OHWL is a reference elevation that defines the DNR's regulatory authority, and it is used by Stearns County to determine their regulatory zone and appropriate setbacks for buildings.

If there is a question about the OHWL on your property, contact the DNR Area Hydrologist for Stearns County or check with the Stearns ESD office.

Commonly Asked Questions about Shoreland Activities:

What are the requirements for installing a retaining wall or rip rap for erosion control? A DNR public waters work permit is required to build a retaining wall along your shoreline if the structure is proposed below the OHWL. Retaining walls are discouraged, particularly on relatively undeveloped lakes. Planting vegetation for erosion control is preferred; rip rap (coarse stones, boulders, or rock placed against the bank or shore) may be allowed without requiring a DNR permit if specific conditions are followed in installation. For either a retaining wall or rip rap installation, you will need technical advice for the best success. Contact both the DNR Hydrologist and the Stearns County SWCD for assistance. Refer to the DNR Shoreland Alteration fact sheet.

Do I need a permit for a sand blanket or beach development? Everyone wants a nice sandy beach area, but trying to create a sandy beach where it has not existed naturally may not always be successful. Before making your decision, be aware that wave action can erode the beach and sand will migrate down shore, possibly damaging fish and wildlife habitat. If the lake bottom is soft, the sand will only sink into the muck and disappear. Sand blankets cannot be applied over bulrush and cattails.

Before installing a sand blanket, contact the Area DNR Waters and Stearns ESD office for installation and possible permit requirements. Refer to the DNR Shoreland Alteration fact sheet for specifications.

What rules apply to docks? Docks are privately owned structures, which are allowed to be placed in public waters of the state to provide access to the use of the water. Dock rules are established by the DNR to prevent the deterioration of the lake's ecosystem from excessive or inappropriate dock placement. Local governments have the authority to regulate docks; Stearns County currently defers to state rules.

In choosing the right dock and boat lift configuration for your property, it is important to keep in mind that a dock is private property placed on a public resource and they can have detrimental impacts on the lake. They may shade out important aquatic plants and cause fragmentation and destruction of important emergent and submerged aquatic vegetation that provides habitat where fish spawn, feed, grow, and find shelter from predators.

Keep dockage appropriately balanced between reasonable access and resource protection. Minimize the use of docks for activities that are better intended for land, such as barbecues and screened structures.

In shoreland areas where there are large bulrush and other emergent aquatic vegetation beds, consider consolidating docking with your neighbors to minimize the destruction of bulrushes, which serve as nutrient filters for the lake.

A DNR permit is not required for a dock if it meets current dock rules which allow:

- Docks, not including the watercraft lift, that are not wider than 8 feet wide and not combined with other structures to create a larger structure.
- Docks that are no longer than is necessary to reach navigable water depth, are not a navigational or safety hazard to others, and do not close off access to other parts of the lake.

Can I control aquatic plants in front of my shoreline?

The removal or destruction of aquatic plants is a regulated activity under the DNR's Aquatic Plant Management Program. Aquatic plants are a valuable part of the lake system. They stabilize bottom sediments, protect water clarity, prevent shoreline erosion, and are important fish habitat.

You are encouraged to keep destruction of aquatic plants at a minimum. Unless aquatic plants are interfering with lake access, swimming, or other water recreation activities, they should be left alone. If you are seeing unusually high plant growth, where plant growth 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, improperly operating septic system, or shoreland erosion.

If management is desired, consider managing plants only in the swimming area; it is not necessary to have the entire shoreline devoid of submerged aquatic plants. For management, you need to know:

- No emergent plants can be destroyed (bulrushes, cattails, wild rice) unless authorized by a DNR permit.
- Submerged vegetation can be manually controlled (hand cutting or pulling) in an area 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 permit from DNR Fisheries is needed to:
 - Use any chemicals or automated mechanical devices (such as the Crary WeedRoller, Beachgroomer or Lake Sweeper).
 - Use copper sulfate for swimmers itch control.
 - Remove floating leaf vegetation in an area larger than a channel 15 feet wide to open water.
 - Remove or relocate a bog of any size that is free floating or lodged elsewhere than its original location.
 - Plant aquatic plants below the OHWL as part of a shoreline restoration project. This activity is encouraged and there is no permit charge.

These activities are not allowed in any circumstances:

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

If you see violations of these permit requirements, or any other permit requirements, contact your Conservation Officer immediately. Photo documentation is appreciated.

Stearns County Permit Requirements

For shoreland properties within municipal boundaries, check with the City.

Construction Permits for New Construction, Remodeling or Adding on Decks, Garages, etc:

Contact Stearns County ESD ~ Onsite inspection will be required in most cases before issuing a permit. Obtain the permit before starting any construction. Any new, altered, modified or moved-in building requires a permit.

Variances for Building Permits:

Contact Stearns County ESD ~ For projects that do not conform to the County regulations, a variance from the regulations may be requested from the Board of Adjustment, and mitigation of the development plan may be required. The amount of mitigation needed will vary by property and may include such actions as planting or retaining native vegetative buffers along the shoreland, diverting runoff away from structures, installing a rain garden, removal of impervious surfaces. Contact ESD

Accessory Structures

Contact County Environmental Services ~ A permit is required for any size structure.

Dirt Moving in the Shoreland Zone (such as ice ridges, shoreland landscaping, etc):

Contact Co Environmental Services ~ Most topographic alterations in the shoreland zone require a permit from Stearns County.

Wetland Filling in the Shoreland Zone:

Contact either Stearns Co Environmental Services or SWCD ~ In most cases, no wetland filling is allowed in the shoreland overlay district. For exceptions, a permit will be required.

Vegetation Removal in the Shoreland Zone:

Contact Stearns Co Environmental Services ~ Removal of emergent aquatic vegetation (cattails, wild rice, and bulrush) will require a permit from the DNR Fisheries office. For removal of submerged aquatic plants, see Aquatic Plant Management section for requirements. A vegetative alteration application is required in addition to a site visit by Stearns ESD prior to any vegetative alterations.

Placement of Wells:

Contact the MDH ~ Check on minimum setback requirements from septic systems, building, etc. for wells before proceeding with a licensed well drilling company. The well driller will obtain the required permits needed from the Minnesota Department of Health to drill a well.

Septic Systems:

Contact Stearns Co Environmental Services ~ To obtain a construction site permit in Stearns County, a septic system on the property may need to be inspected at the time of permit application. Check with the office before installing a septic system.

New Construction and Lot Development:

Contact Stearns Co Environmental Services ~ Before purchasing or building on a new shoreland property, check with the office to make sure the lot is suitable for building in compliance with County regulations. Allowable setback from the lake, impervious surface coverage, and lot width will vary depending on the classification of the lake. Additional setbacks and vegetation protection may apply to build on a bluff in the shoreland zone. Check with the office for specific requirements for your lot.

Before purchasing a shoreland property, ask these questions and/or check with Stearns County:

- ❖ Are all structures and the lot conforming to the County ordinances—is it legal?
- ❖ Is the septic system and well properly located?
- ❖ Is the septic system in compliance with County regulations?

It is better to ask first then to find out later you will not be able to build what you planned.

✓ County Shoreland Property Owner's Checklist:

Contact County Environmental Services before:

- Buying, clearing, or developing shoreland property.
- Building a new structure or remodeling an existing structure.
- Installing a septic system.
- Draining, excavating in or filling a wetland.
- Building a boardwalk or raised path to the lake.
- Building or repairing any accessory structure near the shore (boat house, gazebo, storage locker).
- Aquatic Invasive species resources and location of decontamination stations.

If in doubt or you need clarification about any activity in the shoreland zone, contact the Stearns County Environmental Services office.

Contact the Stearns County Soil and Water Conservation District (SWCD) for assistance with:

- Shoreland landscaping, buffers, and vegetation restoration
- Installation of rain gardens.
- Forest stewardship planning and management of private woodlots.
- Land conservation programs.
- Water Quality Monitoring.

Contact County Environmental Services for assistance with:

- Changing the appearance of your building setback zone (shoreland impact zone) or near shore area by clearing, cutting, planting, grading, or filing.
- Altering the shoreline

Contact the Minnesota Department of Natural Resources before:

- Removing emergent vegetation (cattails, bulrushes, wild rice).
- Removing or applying chemicals to underwater (submerged) vegetation.
- Installing any form of riprap or installing a retaining wall.
- Any land disturbance below the ordinary high water level (ohwl).

References:

- ¹ *Protecting Your Waterfront Investment*, Center for Land Use Education, UW Extension; 2005.
- ² *Shoreland Property: a guide to environmentally sound ownership*; 2002; Southeast Wisconsin Fox River Basin Partnership Team, University of Wisconsin-Extension and Wisconsin Department of Natural Resources.
- ³ *Lakescaping for Wildlife and Water Quality*, State of Minnesota, Department of Natural Resources; Henderson C; Dindorf C; Rozumalski, F.
- ⁴ Minnesota DNR Shoreline Alternations Fact Sheets: Natural Buffers and Lakescaping; Riprap.
- ⁵ Rain Barrel Fact Sheet, Crow Wing County Extension, 2007.



Frequently Called Contact Information:

**Stearns County
Environmental Services, Room 343**
705 Courthouse Square
St. Cloud, MN 56303
(320) 656-3613 Fax: (320)-656-6484
1-800-450-0852

**Stearns County Soil and Water Conservation
District (SWCD)**
110 2nd Street S., Suite 128
Waite Park, MN 56387
320-251-7800, ext. 3



**See County website, Department/
Environmental Services** for more information on the County Shoreland Ordinance, building permits, variances, lake classifications. Contact information for county commissioners also listed.
www.co.stearns.mn.us

Additional Resources:

Aquatic Invasive Species:



Minnesota DNR: www.dnr.state.mn.us/invasives/aquatic/index.html
University of Minnesota Sea Grant: www.seagrants.umn.edu/ais/
Wildlife Forever: www.CleanDrainDry.org
Protect Our Waters: www.protectyourwaters.net

Aquatic Plant Management: <http://www.dnr.state.mn.us/shorelandmgmt/apg/permits.html>
DNR Water Permits Requirements: <http://www.dnr.state.mn.us/permits/water/answers.html#ohwl>
Dock Rules: http://files.dnr.state.mn.us/publications/waters/shoreline_alterations_water_access.pdf
Erosion Control for Home Builders: <http://clean-water.uwex.edu/pubs/pdf/erosion.pdf>
General Shoreland Homeowner Information: www.shorelandmanagement.org
Non-Toxic Household Product Alternatives: <http://www.reduce.org/toxics/index.html>
Rain Barrels/Gardens:

Constructing a rain barrel:

http://www.shorelandmanagement.org/quick/easypdf/rain_barrel_const.pdf

Rain Garden: A How -To Manual: <http://dnr.wi.gov/topic/shorelandzoning/documents/rgmanual.pdf>

Rain Garden Design Fact Sheets: <http://www.appliedeco.com/RainGarden.cfm>

Septic System Design and Maintenance: <http://www.septic.umn.edu/owners/index.htm> or call the Onsite Hotline with questions at 800-322-8642.

Shoreland Alteration Fact Sheets

(Docks, Rip Rap, Sand Blankets, Ice Ridges)

http://www.dnr.state.mn.us/publications/waters/shoreline_alteration.html

Shoreland Landscaping:

The Water's Edge:

<http://files.dnr.state.mn.us/assistance/backyard/shorelandmgmt/savewateredge.pdf>

Lakescaping and Shoreland Restoration: <http://www.dnr.state.mn.us/lakescaping/index.html>

Restore Your Shore CD: www.dnr.state.mn.us/restoreyourshore/index.html

Living Shore Video/DVD: A 17-minute video showing the importance of leaving a natural buffer zone on the shore; check with your county Extension Office for a loaner copy.

Lakescaping for Wildlife and Water Quality: available in Minnesota Book Stores

