

SHORELAND STEWARDSHIP RESOURCE GUIDE



A TOOL FOR SHORELAND PROPERTY OWNERS
TO PROTECT OUR NATURAL RESOURCES

Cook County, Minnesota
2019



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This guide can be found online at cookswcd.org.

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INTRODUCTION

Welcome to Cook County, Minnesota. Here, you will find pristine waters, vast forests, spectacular views, healthy wetlands, and wild areas amongst diverse styles of living. With over 800 lakes and thousands of miles of shoreline in the county, residents and visitors alike cherish the recreational opportunities, wildlife viewing, and peaceful serenity our area lakes, rivers, and wetlands offer. The County leadership recognizes the importance of its water resources and has acted to preserve, protect, and enhance these waters and their adjacent lands by regulating land use. The need to develop and to protect natural resources throughout the development process is understood. Regulations are established not to hinder progress, but to protect the natural environment we all love. The consequences of uncontrolled and unplanned development can be detrimental to our land and water resources.

Whether you are considering buying shoreland property or already own a piece of shoreland, understand that the enjoyment of our lakes, rivers, and wetlands comes with the responsibility to protect and enhance the quality of those waters for your own use and for future generations. As a shoreland owner, practicing good stewardship is essential to ensure our waters remain healthy, clean, and pristine.

STEWARDSHIP

The personal responsibility to manage one's life, property, and shared natural resources with regard to the rights of others.

This guide serves to provide an opportunity for shoreland property owners to better understand how to safeguard water quality, practice good shoreland stewardship, and uphold the rules, standards, and regulations Cook County and the State of Minnesota have established for shoreland properties. Ways to manage shoreland property to protect water quality will be covered in addition to specific local and state rules and regulations related to shoreland living and development. Utilizing this guide will protect your shoreland property investment and ensure a healthy watershed. The result will be continued enjoyment of our water resources while preserving their ecological integrity.

UNDERSTANDING CLASSIFICATIONS & REGULATIONS

Water resources such as lakes and rivers are classified in numerous ways for a variety of purposes. For example, some lakes are classified to assess ecosystem health, to identify similarities and differences, or to establish policies and regulations. Many agencies have different responsibilities or interests, and therefore water resources are sorted according to different characteristics. One common way lakes are classified is by their trophic status or level of productivity. This approach groups lakes into categories such as oligotrophic, mesotrophic, or eutrophic which describe the lake's ability to support plant and animal life. Low productivity, or nutrient poor lakes are classified as oligotrophic while high productivity, or nutrient rich lakes are classified as eutrophic. Another common reason why lakes and rivers are classified is for shoreland management, planning, and regulation.

How are Minnesota lakes classified for shoreland management and planning?

The Minnesota Department of Natural Resources (DNR) groups lakes into three main categories for making shoreland management decisions: natural environment lakes, recreational development lakes, or general development lakes. Natural environment lakes are small and often shallow with uplands that are difficult to develop. Recreational development lakes are generally medium-sized, have moderate recreational use, and are surrounded by seasonal and year-round lake homes. General development lakes vary in size, are often heavily developed around the shoreline, and are typically used for recreation.



The DNR uses the following characteristics to decide whether a lake should be classed as a natural environment, recreational, or general development lake:

- ✓ Size and shape
- ✓ Amount and type of existing development
- ✓ Road and service accessibility
- ✓ Natural characteristics of the water and shorelands
- ✓ State, regional, and local plans and management programs
- ✓ Existing land use restrictions
- ✓ Presence of significant historic sites

In addition to the DNR classes, local governments can specify additional classes, allowable land use, and permitted development along the shoreline. The Cook County Zoning Ordinance should be referenced for specific classifications and regulations.

CLASSIFICATIONS

The DNR groups public waters in Cook County into the following general classes for shoreland management:

LAKE *

Natural Environment: Natural environment lakes are generally small and often shallow with limited capacity for assimilating the impacts of development and recreation use. They often have adjacent lands with substantial constraints for development such as high water tables, exposed bedrock, and unsuitable soils. They usually have less than 150 total acres, less than 60 acres per mile of shoreline, and less than three dwellings per mile of shoreline. These lakes may have some winter kill of fish, shallow and swampy shoreline, or depths of less than 15 feet.

Recreational Development: Recreational development lakes are generally medium-sized lakes with varying depths and shapes with a variety of landform, soil, and groundwater situations on the lands around them. They often are characterized by moderate levels of recreational use and existing development. These lakes usually have 60 to 225 acres of water per mile of shoreline, 3 to 25 dwellings per mile of shoreline, and depths of more than 15 feet.

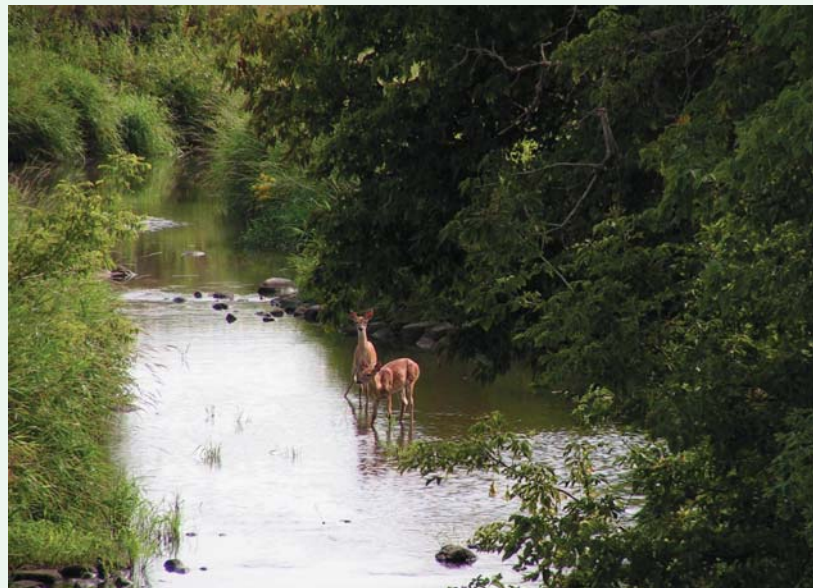
General Development: General development lakes are generally large, deep lakes or lakes of varying sizes and depths with high levels and mixes of existing development. These lakes often are extensively used for recreation and, except for the very large lakes, are heavily developed around the shore. These lakes usually have more than 225 acres of water per mile of shoreline, 25 dwellings per mile of shoreline, and depths of more than 15 feet.

STREAM & RIVER

Remote River Segments: Remote river segments are primarily located in roadless, forested, and sparsely-populated areas of the northeastern part of the state.

Forested River Segments: Forested river segments are located in forested and sparsely to moderately populated areas with some roads in the north-central part of the state.

Tributary River Segments: All other rivers in the Protected (Public) Waters Inventory not classified above.



* In Cook County, local officials adopted the following additional lake classifications: Special Natural Environment and Special Recreational Development.

Why are there regulations?

Shoreland regulations are established to protect Minnesota's water resources. Regulating the subdivision, use, and development of the shorelands of public waters is necessary to preserve and enhance the quality of surface waters, to preserve the economic and environmental value of shorelands, and to provide for the wise utilization of waters and related land resources. Uncontrolled or unplanned use of shorelands affects the public health, safety, and general welfare by contributing to the pollution of public waters and impairing the local tax base. Sound management of shorelands in Cook County is important and will help maintain high water quality, sustain property values, and retain the scenic quality of our lakes, rivers, and streams.

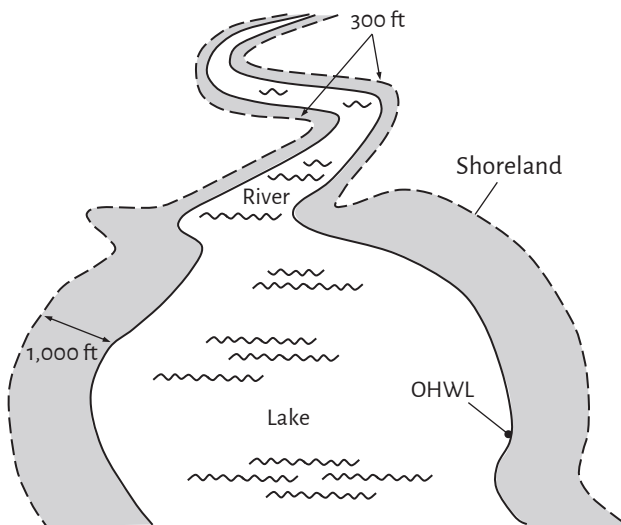
COMMONLY ASKED QUESTIONS

RULES & REGULATIONS FOR SHORELAND PROPERTIES

An important stewardship responsibility is knowing what you can and cannot do in the water and on the shorelands. Understanding local and state regulations will help you manage your shoreland property appropriately.

Shoreland regulations are defined in statewide standards, and the local zoning ordinance is modeled after state regulations. These standards set guidelines for the use and development of shoreland property including: minimum lot size, suitable land use, placement of sanitary and waste disposal facilities on lots, building setbacks, building heights, and subdivision regulations. They establish minimum setbacks from the ordinary high water level of lakes and rivers, and from the tops of bluffs. Setback provisions are intended to keep development activity a safe distance away from the shore. These setbacks depend on how the waterbody is classified. Cook County Land Services should be consulted to find out what regulations may apply to your specific shoreland property.

Definition of Shoreland



SHORELAND

All lands located within the following distance from the normal high water mark of a public water, except within the North Shore Management Planning Area.

- ✓ 1,000 feet from a lake, pond, or flowage
- ✓ 300 feet from a river or stream

What is the ordinary high water level?

The ordinary high water level (OHWL) is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to terrestrial vegetation. The OHWL is used by the DNR and local zoning authorities to determine lot size, structure setback, and drainfield location and elevation.

Are there any limitations to impervious surfaces on my lot?

In order to minimize overland runoff and reduce the amount of contaminants entering a body of water, the state shoreland rules limit the total coverage of impervious surfaces to 25% of the lot area. Impervious surfaces include rooftops, decks, sidewalks, patios, swimming pools, driveways, and other similar surfaces.

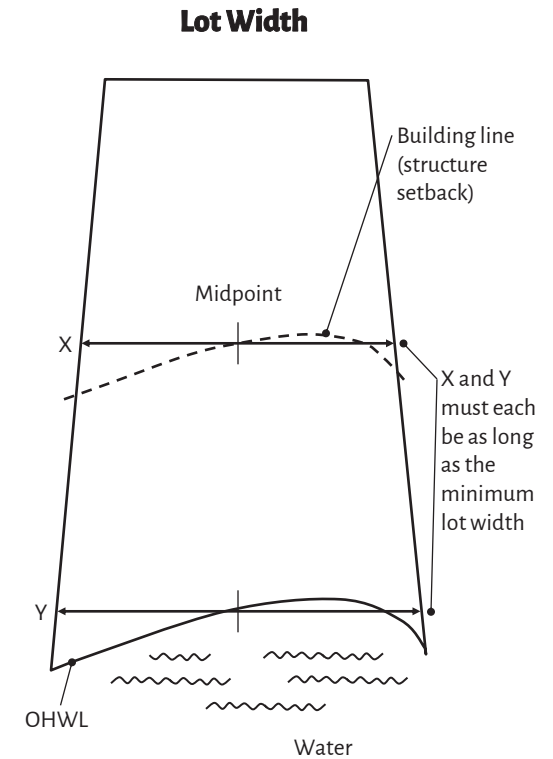
What lot sizes and setback standards apply to my shoreland property?

	Lot Width	Lot Size	Building Setback from OHWL	Soil Absorption Setback from OHWL
Special Natural Environment	200 Feet	2.5 Acres	150 Feet	150 Feet
Natural Environment	200 Feet	2 Acres	150 Feet	150 Feet
Special Recreational Development	200 Feet	1.5 Acres	100 Feet	150 Feet
Recreational Development	150 Feet	1 Acre	100 Feet	100 Feet
General Development	150 Feet	1 Acre	75 Feet	100 Feet
General Development Lake Superior	200 Feet	1 Acre	**	100 Feet
Remote River Segment	300 Feet	*	200 Feet	150 Feet
Forested River Segment	200 Feet	*	150 Feet	100 Feet
Tributary River Segment	100 Feet	*	100 Feet***	100 Feet

* Minimum lot size depends on specific zone district

** 40 Feet from the Vegetation Line

*** 75 Feet in the North Shore Management Area



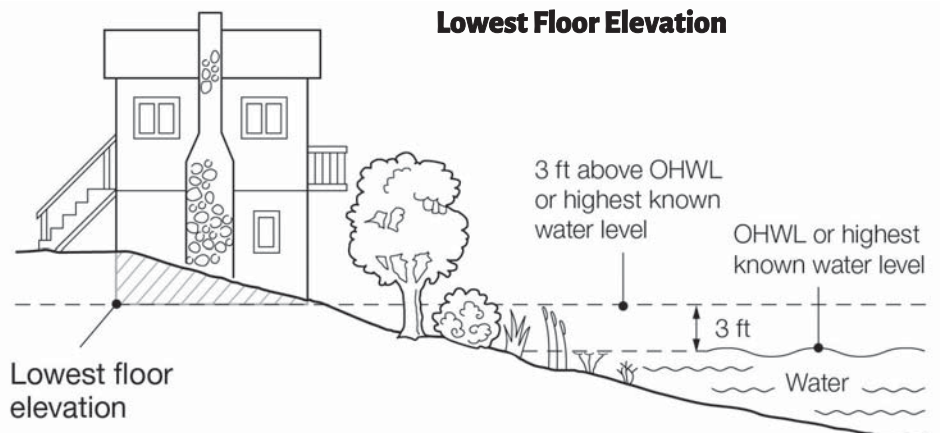
Additional structure setbacks apply, regardless of the classification of the water body.

- ✓ Top of bluff - 30 Feet
- ✓ Unplatted cemetery - 50 Feet



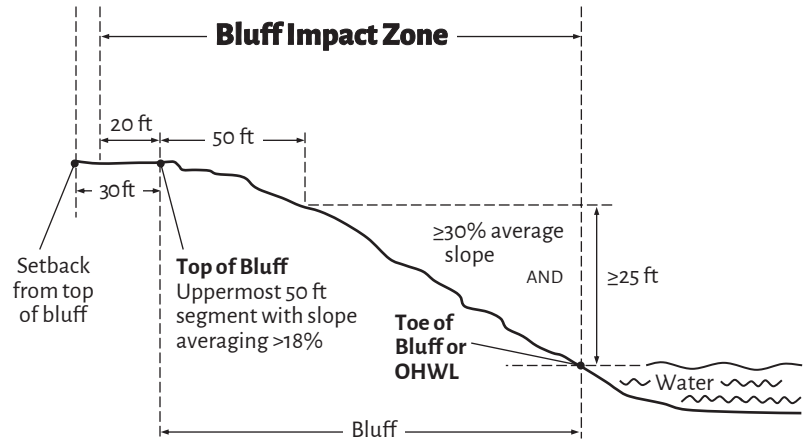
I have a low-lying lot. Do I need to elevate my structure to build?

All structures are required to meet floodplain standards in areas where a floodplain is mapped. Where a floodplain is not mapped, the elevation to which the lowest floor (including basement) is placed or flood-proofed must be at least three feet above the OHWL or highest known water level, whichever is greater.



How do I know if I have a bluff and what is the bluff impact zone?

A bluff is any slope draining towards a waterbody that averages at least 30% over 25 vertical feet, except for an area with an average slope of less than 18% over a distance of at least 50 feet. The structure setback from the top of a bluff is 30 feet, and the bluff impact zone includes the bluff and 20 feet from the top of the bluff.



Can I cut vegetation on my shoreland property for a view or water access?

Intensive vegetation clearing within the shore and bluff impact zones and on steep slopes is not allowed. Steep slopes are those that average 12% or more over a 50 foot horizontal distance, and are not bluffs.

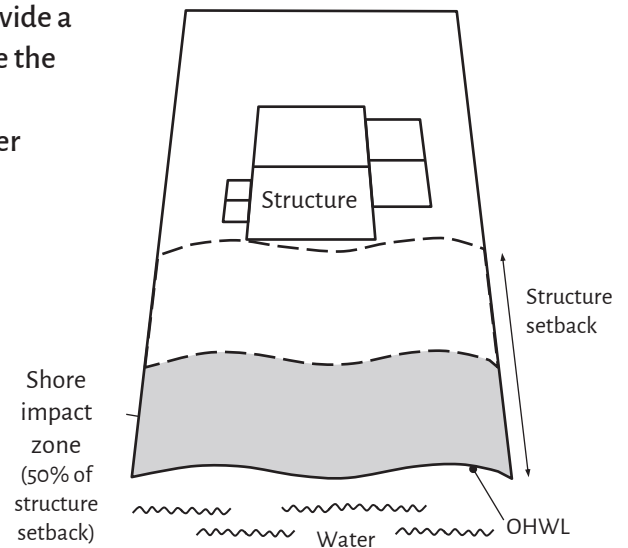
The **shore impact zone** is all the land located between the OHWL of a public water and a line parallel to it at a setback of 50% of the required structure setback.

The **bluff impact zone** is a bluff and land located within 20 feet from the top of the bluff.

Limited clearing, cutting, pruning and trimming of trees and shrubs is allowed in the shore and bluff impact zones and on steep slopes to provide a view to the water from the principal dwelling site and to accommodate the placement of stairways, landings, picnic areas, access paths, livestock watering areas, beach and watercraft access areas, and permitted water oriented accessory structures or facilities, provided that:

- ✓ The screening of structures, vehicles, or other facilities as viewed from the water, assuming summer, leaf-on conditions, is not substantially reduced.
- ✓ Along rivers, existing shading of water surfaces is preserved.
- ✓ The above provisions are not applicable to the removal of trees, limbs, or branches that are dead, diseased, or pose safety hazards.

Shore Impact Zone



Do I need a permit to grade or fill areas on my shoreland property?

A grading and filling permit is required for:

- ✓ Movement of more than 10 cubic yards of material on steep slopes or within shore or bluff impact zones.
- ✓ Movement of more than 50 cubic yards of materials outside of steep slopes and shore and bluff impact zones.
- ✓ A small site stormwater permit is needed for excavation or fill in excess of 100 cubic yards of material, but less than 1000 cubic yards. Any excavation or fill exceeding 1000 cubic yards will require a large site stormwater permit.

For any actions in the water or on the land below the OHWL of a public water, consult the appropriate DNR office for permit requirements.

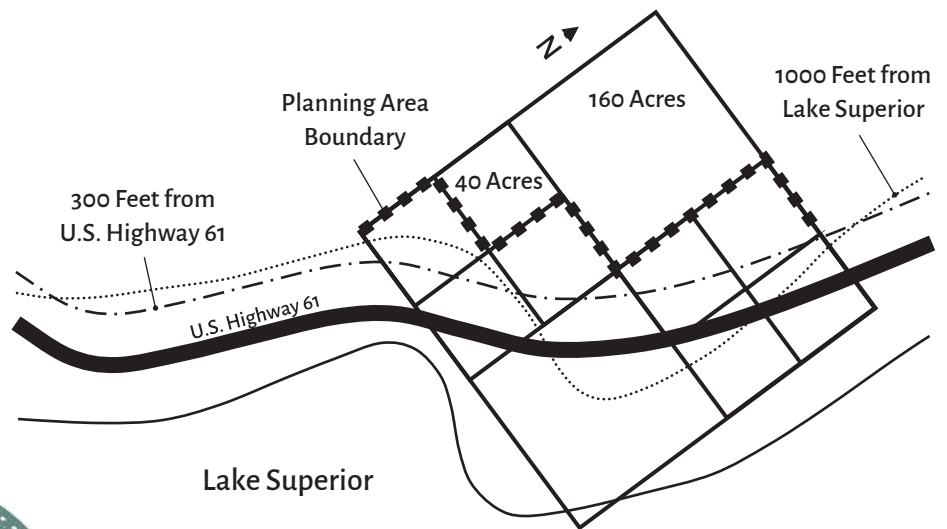
LAKE SUPERIOR SHORELAND PROPERTIES IN COOK COUNTY

Minnesota's Lake Superior shoreline has long been recognized for its stunning features and unique characteristics. Because Lake Superior is so different than other lakes in Minnesota, it was identified in the 1980s as a distinct management unit not adequately addressed by the existing Statewide Shoreland Management Program. A Joint Powers Board called the North Shore Management Board was formed in 1987 for the purpose of developing and implementing a management plan for the shoreland corridor of Lake Superior. Through coordination and cooperation with the DNR, the North Shore Management Plan, a shoreland management plan for Lake Superior's North Shore, was adopted in 1988.

North Shore Management Plan

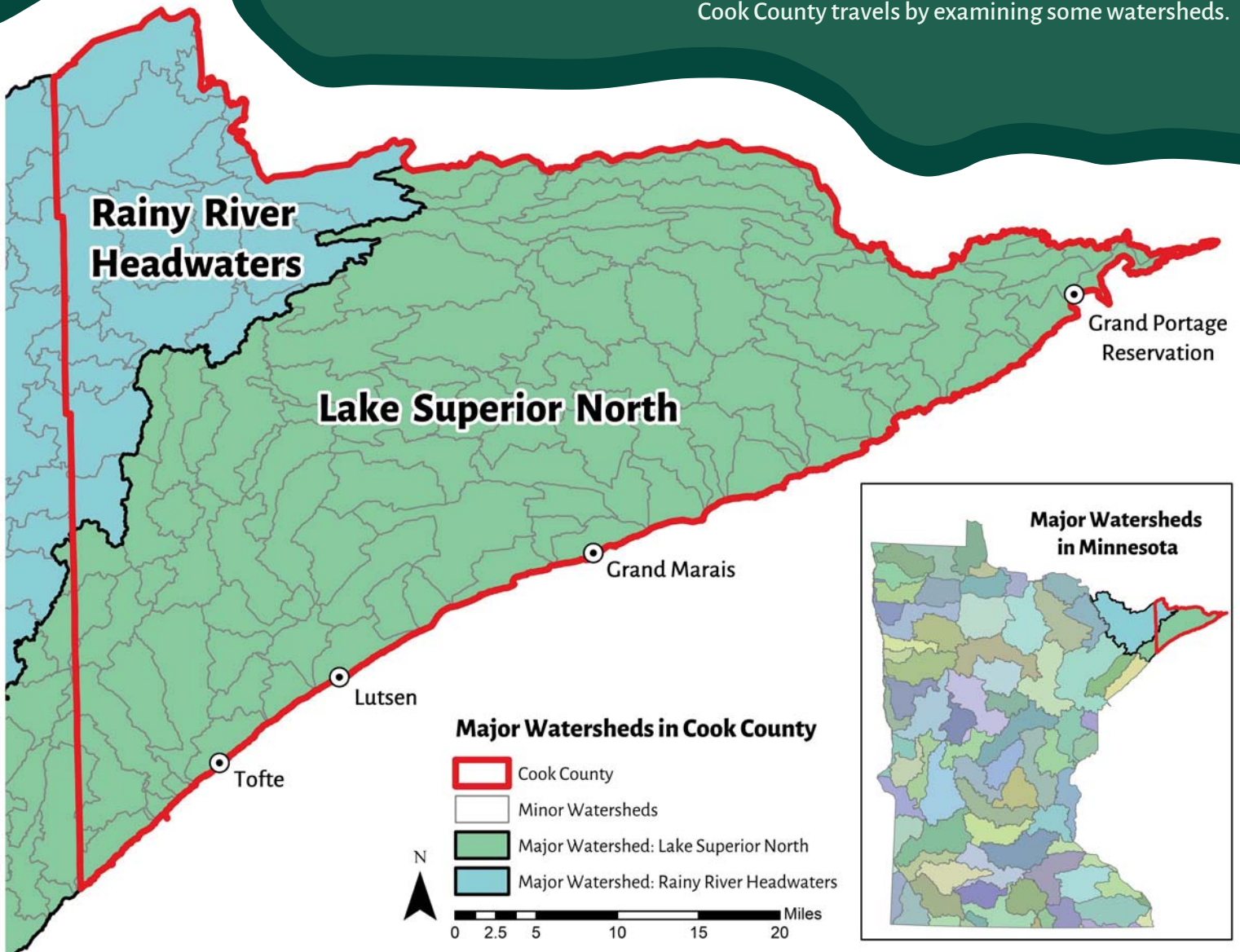
The North Shore Management Plan specifies the minimum standards and criteria for the subdivision, use, and development of the Lake Superior shoreland, except for the city of Duluth's planning area. Local units of government, such as Cook County, are required to adopt as restrictive or more restrictive standards than those contained in this plan. Specific regulations for Cook County are outlined in Article 8 of Cook County's Zoning Ordinance #37.

The North Shore Management Plan area boundary is defined along the 40-acre subdivision lines of the rectangular coordinate system established in the U.S. Public Land Survey. For a 40-acre parcel to be included in the plan it would need to have any portion of the parcel within 1000 feet of the Lake Superior shoreline or 300 feet from the center line of U.S. Highway 61.



WATER & WATERSHEDS

Water is one of Minnesota's most valuable resources, and the lakes, rivers, and wetlands scattered throughout the landscape are important assets to everyone. Water is necessary for all life, and without clean water ecosystems and life on Earth would cease to exist as we know it. While our everyday actions and the changes we individually make on the land may seem to have little to no effect on the Earth, their effects add up and create a significant environmental impact. No matter where we are, we are all in a watershed and affect a part of the Earth's hydrology system. Our impacts are most easily seen on the local level and nearby the watershed you live. Understanding where water goes when it leaves our property, county, state, and country is important. Let's look where our water in Cook County travels by examining some watersheds.



WHAT IS A WATERSHED?

An area of land where all the surface water and precipitation drains into the same place, whether it's a creek, river, lake or wetland, or seeps into the ground as groundwater.

The individual actions you do or don't do on your shoreland property have a significant effect on water quality.

Watersheds Are Diverse

Watersheds can be urban, rural, wild or anywhere in between. Cook County contains several river watersheds which outlet into Lake Superior, itself a part of the Great Lakes Basin. However, not all the watersheds in the county drain here. The Laurentian Divide is the continental divide separating the area where water flows northwards from the Rainy River Headwaters Watershed into Canada's Hudson Bay Watershed, and from the area where water flows eastward into Lake Superior and on into the greater St. Lawrence River Watershed. While watersheds come in all shapes and sizes, they are not confined to county, state or international boundary lines. They are populated with freshwater features such as lakes, rivers, wetlands, reservoirs, groundwater aquifers, snowpacks, and more.



**Minnesota's waters flow outward in three directions:
north to Hudson Bay, east to the Atlantic Ocean, and south to the Gulf of Mexico.**

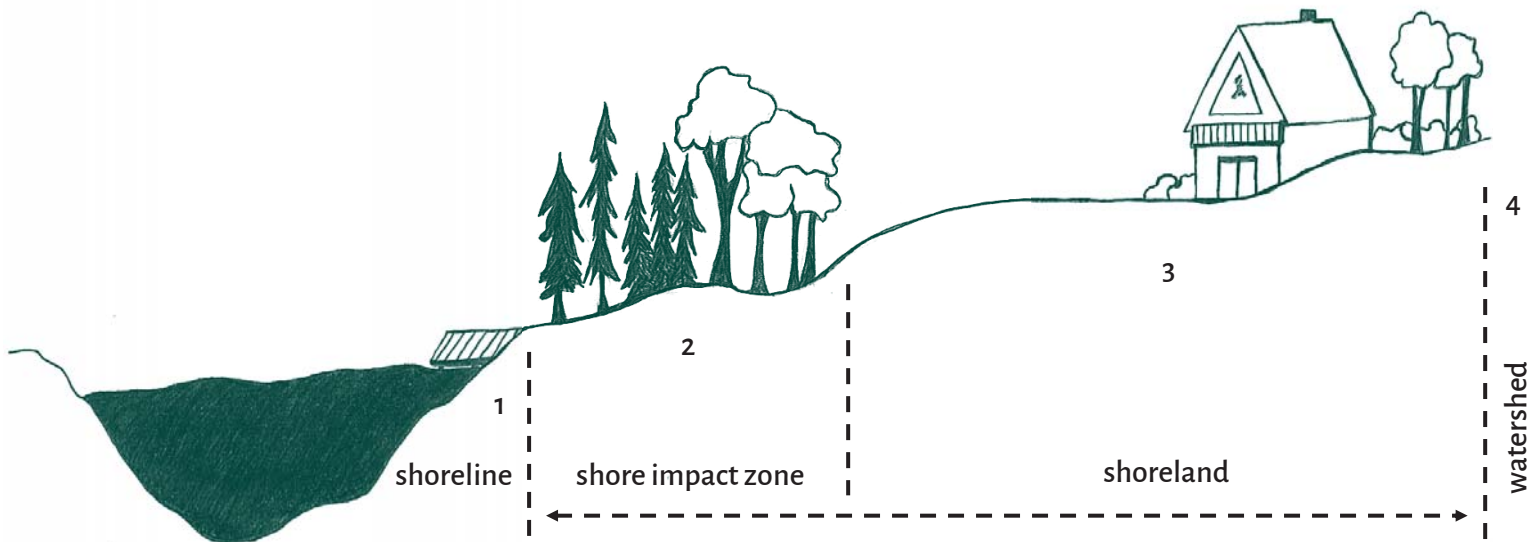
Water Problems Flow Downstream

Because all the water in a watershed flows to the same place, watersheds are sensitive to both good and bad land use. Pollution, runoff, erosion, land use practices, failing septic systems, landscaping, stormwater, and other factors can affect water quality in all watersheds downstream. Watersheds contain streams and rivers that direct water to the ocean, so what we do on land and in our waterways eventually affects our waters on a global scale. Every drop of water and the pollutants it picks up along its journey, accumulate to influence water quality. As a steward of the land, it is important to ensure the water leaving your shoreland property is as clean as it was when it entered. This can be achieved by limiting impacts on the natural environment and incorporating best management practices whenever possible.

SHORELAND STEWARDSHIP

While all activity in a watershed impacts water quality, there are four major zones to focus on when considering lake and water quality protection; the shoreline, the shore impact zone, the shoreland, and the watershed. This four-zone approach is most restrictive at the shoreline and more flexible further away from the lake and up the watershed. Owning lakeshore property means you have a greater potential to impact the lake through development and land use and therefore a greater responsibility to practice good stewardship. The immediate shoreland zone is the lake's first line of defense and should be a priority for protection on your property.

The Four Zones of Protection



The **shoreline** is the interface of land and water. Here you will find upland vegetation blending into transitional and aquatic vegetation. This diverse vegetation is crucial for wildlife and water quality.

The **shore impact zone** is all the land between the ordinary high water level and half the setback distance for building. The setback distance is determined by the classification of the lake.*

The **shoreland** zone is 1,000 feet from the lake or 300 feet from a river or stream.

The lake's **watershed** is the greater drainage area to the lake.

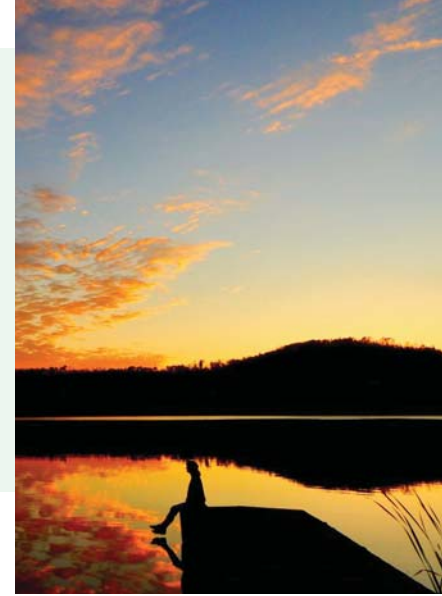
*In Cook County, the shore impact zone for general development lakes, recreational development lakes, and natural environment lakes are 150, 150, and 200 feet, respectively. Refer to setback standards on page 5.

STEWARDSHIP

The personal responsibility to manage one's life, property and shared natural resources with regard to the rights of others.

LEAVE A LEGACY

Shoreland properties are often purchased to enjoy with family and friends. Life on the lake is memorable and rich in experiences that keep calling you back to the waters' edge. Regardless of what you do with your property, your legacy of land management and stewardship will outlive you. The future health of the lake is dependent on you making wise management decisions and incorporating best management practices whenever possible.



What are best management practices?

Best management practices are basic principles you can observe or actions you can take on your property to reduce your impact on the environment and protect water quality.

Managing water quality and watershed health means appropriately managing shoreland land use to reduce the amount of pollution entering the lake. In the following pages, you will learn about various best management practices which will reduce runoff, minimize erosion, prevent pollution, and ultimately help keep our water resources clean and pristine. Small and deliberate actions to protect our natural resources add up, improve water quality, and benefit your shoreland property. In many cases, the best management for shorelands may be retaining the natural characteristics of your property and keeping development and alterations to a minimum.

Before making alterations to your shoreland property, ask yourself these questions:

Do I need a permit?

Will this change negatively impact the lake?

What are the short and long term impacts?

How will wildlife habitat or viewing opportunities be affected?

Will this change cause more runoff on the property?

If everyone who lives on this lake did the same thing, would I be okay with it?



SHORELAND BEST MANAGEMENT PRACTICES

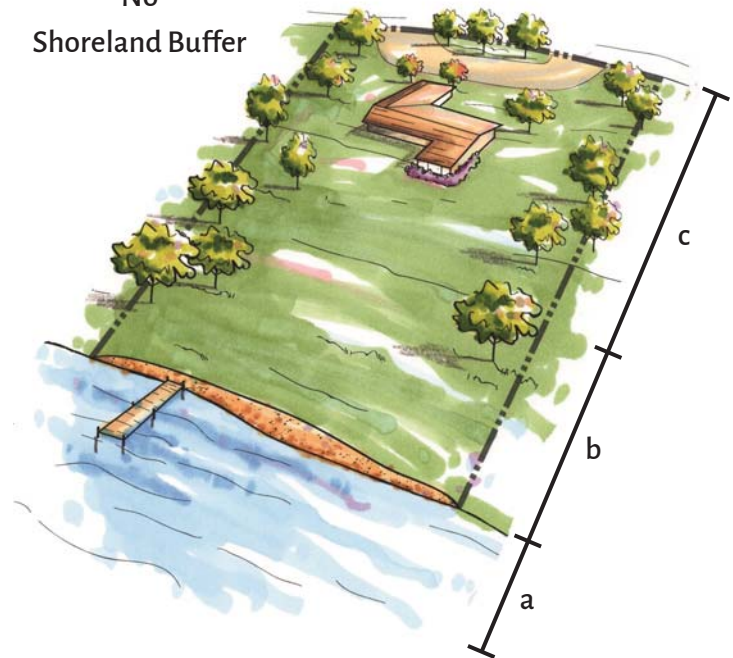
PRESERVE THE SHORELAND ZONE

Whether you are developing new acreage or continuing to manage an existing shoreland dwelling, one of the most important best management practices you can do is to preserve or restore a natural shoreland buffer. A shoreland buffer is an un-mowed strip of native vegetation extending both lakeward and landward from the water's edge. They shield and protect our water and the creatures that live there from human activities. Buffers are essential for lake and stream health as numerous plants, animals, and ecosystem functions depend on them. A proper buffer size is unique to each site, but typically a preferred buffer width is at least 50 feet. However, a narrow buffer is better than no buffer, and a larger buffer is ideal. Eliminating small areas of sod, hard structures, or mowed vegetation can restore the essential ecosystem functions taking place which are critical to the health of the lake.

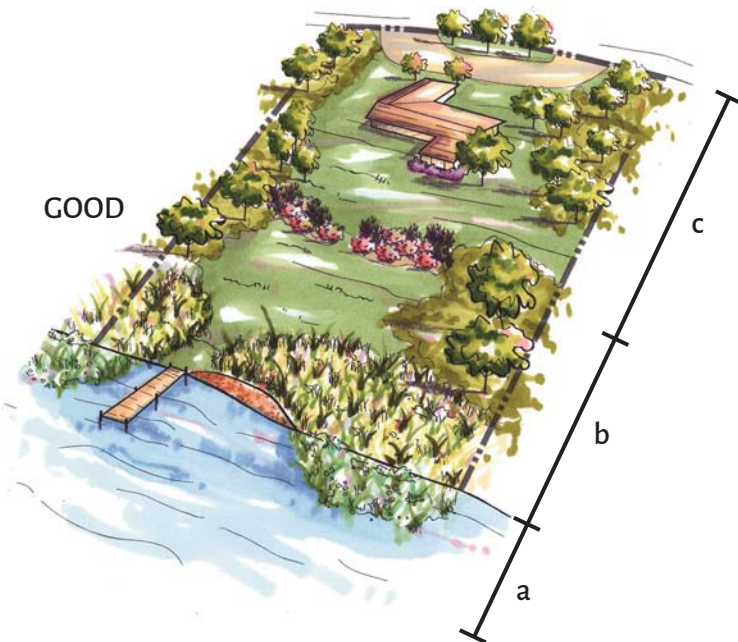
A Shoreland Buffer Consists of:

- the shallow **aquatic zone** of emergent, submerged, and floating leaf aquatic plants. This zone provides food and shelter for songbirds, waterfowl, reptiles, amphibians, and fish. Taller plants, like bulrushes, sedges, and cattails can reduce the energy from wave action. This minimizes shoreline erosion and helps maintain water quality.
- the **wetland transition zone** of water loving plants that bind the lake bed to the upland soils.
- the **upland zone** of native trees, shrubs, grasses, and wildflowers. This vegetation slows runoff as it flows overland, allowing water, sediment, and pollutants to absorb into the soil and breakdown overtime.

No
Shoreland Buffer

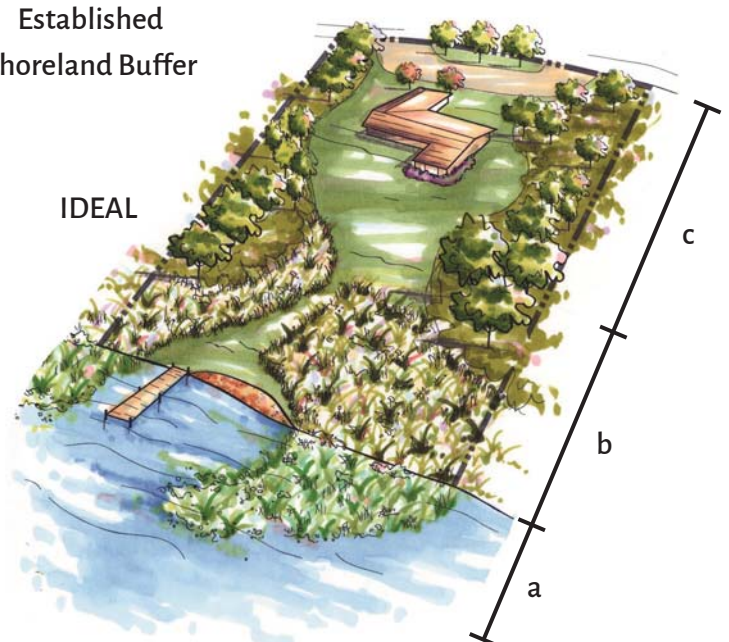


GOOD



Established
Shoreland Buffer

IDEAL

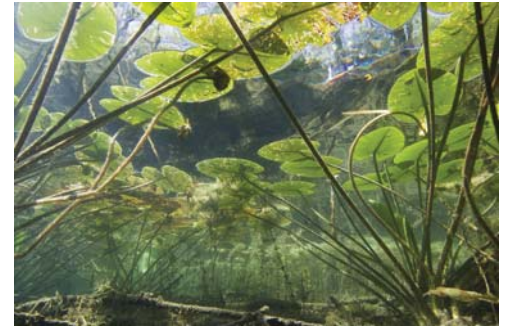


BENEFITS OF SHORELAND BUFFERS

Natural shoreline buffers are full of diverse native plants and provide countless benefits to landowners and the environment. In addition to protecting water quality and stabilizing shorelines, shoreland buffers provide wildlife habitat, regulate temperatures, increase property values, and reduce nuisance wildlife and plants.

Water Quality Protection

Pollutants and contaminants transported with runoff negatively impact water quality by altering the water's chemistry and providing excess nutrients. Nutrients promote excessive aquatic plant growth or algae blooms, which can produce toxins harmful to human and animal health. They also cause catastrophic fish kills. Natural shoreline buffers protect water quality by slowing, infiltrating, and filtering nutrient dense runoff through the soil layer before it reaches a waterbody.



Stabilize Shorelines

The vegetation in a diverse shoreline buffer prevents fluctuating water levels, moving ice, flooding, surface runoff, and wave action from eroding your shoreline. Plants create an elaborate underground root system which weaves its way through the ground binding and interlocking soil particles together like a strong thread. This minimizes soil loss from disturbances common along a shoreline like wave action. Dense vegetation above ground intercepts rainfall and slows runoff, preventing soil erosion had vegetation not been present.



Reduced Nuisance Wildlife and Plants

A native plant buffer is more resilient to invasive species such as purple loosestrife and non-native cattails. Also, the diverse tall vegetation creates a natural deterrent for nuisance wildlife, such as Canada geese, and thus eliminating droppings they leave behind.

Wildlife Habitat

Shorelines provide vital habitat for numerous species of reptiles, amphibians, fish, birds, insects, and mammals. Almost all wildlife depends on shorelines during different stages of their lives. This essential environment is utilized for sources of food, shelter, protection, refuge during migration, breeding grounds, and rearing of young. Creating or maintaining a healthy shoreline protects habitat and provides more opportunities to view and enjoy wildlife.

Temperature Regulation

Shade produced by vegetation helps moderate temperatures during the summer months near the shore and in the water. Terrestrial and aquatic wildlife seek refuge and relief from sun exposure and heat in the shade provided by buffers. Shade from vegetation provides a cooling effect and is necessary to maintain the healthy and productive cold water fisheries we have in northern Minnesota.



Increased Property Values

A high quality, natural shoreline is an asset to your property. While waterfront views and access are important, eroding shorelines and poor water quality diminish your property's value. Buffers can be maintained or created in a way to allow access and sightlines to the lake while also providing shoreline protection, water quality, and wildlife benefits. A healthy lake directly correlates to high property values.

SHORELAND BEST MANAGEMENT PRACTICES

SHORELAND RESTORATIONS

To protect and improve our lakes and streams, we need to improve our shorelines. The best way to accomplish this is by adding or keeping a buffer strip of natural vegetation along the shore. Buffers of native wildflowers, grasses, trees, and shrubs protect water quality and provide habitat for fish and wildlife.



Remodeling the Shoreland Vision

Creating or maintaining a natural shoreland buffer on your property does not mean you lose your view or a messy property. However, it may mean you have to rethink what the shoreland should look like. Lawn-to-lake shorelines are no longer acceptable to create and are not ecologically smart. While you may have a shoreland property with management practices that have been grandfathered in, such as a home, structure, or deck within the setback, or a cleared shoreland buffer, the health of the lake is dependent on the collective management of shorelands. This includes your property. Studies have found that even a 20 foot buffer strip along the lake can trap about 80% of the phosphorus runoff and about 90% of the sediment pollutants. Lakes are very sensitive to these pollutants in particular and there is a direct relationship between water clarity against algae growth and pollutant inputs.



Shoreland Restorations

If you have a lawn to the water's edge, lawn behind riprap, steep slopes, or little vegetation near the shore, consider a natural shoreland landscaping project to restore the native shoreland vegetation. A shoreland restoration can be accomplished through several techniques and done at several scales depending on your preferences. Keep in mind that the qualities we enjoy about our lakes such fishing, wildlife viewing, clean water, or swimming can all be lost if the shoreland and watershed is mismanaged.



Natural Restoration – Don't Mow, Let it Grow!

A very simple and no cost way to restoring a shoreland is to stop mowing the width of the desired buffer. The native seed bank retained in the soil is amazing. Native vegetation will recover naturally when the site is protected from disturbance, such as mowing. After you stop mowing, you will find many native plant seeds will begin to germinate and appear. While the native buffer is re-establishing, you may need to selectively weed out nuisance species or add native species to increase diversity. This approach does not yield immediate results, and areas where a dense growth of turf grass or invasive species are established may not be well suited for natural restoration. While the results may be slow, there is virtually no cost to this technique and the result may appear most natural.



Accelerated Restoration – Plan Your Shoreland's Recovery

Another common shoreland restoration technique is to design and plan a native shoreland restoration. Many resources are available to assist with site design and installation methods. Plants used in shoreland restorations should be native to northern Minnesota and selected based on your specific site conditions. Contact Cook Soil and Water Conservation District (Cook SWCD) for resources, design assistance, selecting plants, site preparation, planting, and maintenance. Designing a planting will allow for you to incorporate access corridors to the lake, showy native flowers, and viewing areas strategically into the landscape.



BEFORE - MOWED GRASS



DURING - SHORELAND RESTORATION

Maintenance and Beyond

Native vegetation will require no maintenance or fertilizing once fully established as native species are adapted to local conditions. Some watering and selective weeding may be needed when the plants are young. Cleaning up plants, fallen branches, or trees is not necessary. Plants left standing in the fall and winter provide seeds and shelter for wildlife, protect the soil from erosion and capture windblown leaves and debris before they can reach the lake. Branches and trees that have fallen at the water's edge provide critical habitat for aquatic life, cover from predators, and sunning and roosting areas for turtles. Unless they are interfering with your recreation access or creating a safety hazard, vegetation, whether standing dead or fallen into the lake, should be left alone.

SHORELAND BEST MANAGEMENT PRACTICES

REDUCE RUNOFF

Rainwater, snowmelt, or other forms of precipitation that does not soak into the ground and instead runs off the land or impervious surfaces is called runoff or stormwater. Runoff can carry nutrients, eroded soil sediments, toxic materials, bacteria, and other pollutants detrimental to water quality, fish, and wildlife.

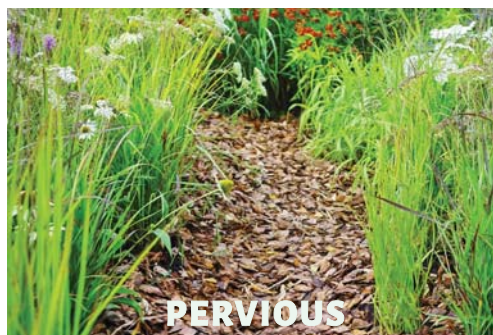
Managing runoff on your property so it infiltrates and soaks into the ground rather than running off is one of the best ways to help filter out pollutants before they reach waterways. Impervious surfaces, such as roofs, decks, driveways, or compacted soils, do not allow the absorption of water. Green space, such as native vegetation, gardens, or other landscaping using vegetation allows water to infiltrate slowly down into the soil. Below are several ways you can reduce runoff.



Limit Impervious Surfaces

Since impervious surfaces cannot absorb water, reducing the amount of impervious surfaces on your property will directly reduce the volume of runoff. Cook County limits the amount of impervious surfaces on shoreland parcels. In general, impervious surface coverage of lots must not exceed 25% of the lot area.

- ✓ When remodeling or considering additions, decide if the extra space is really necessary and if your shoreland can handle additional runoff. Could you build up instead of out to reduce the roof size?
- ✓ Minimize hard surfaces, such as pavement, compacted gravel, sidewalks or decks. Locate driveways, sidewalks, stairways, and footpaths away from steep slopes.
- ✓ If you're planning any paving project in your future landscaping, consider using permeable pavements for your driveway, patio, parking area or sidewalks. Permeable paver surfaces look very similar to convention paver surfaces, but construction of the sub-base is much deeper and built to infiltrate and collect stormwater.
- ✓ Use mulch to absorb water and cover worn paths that may be too compacted to infiltrate water.





Maintain Natural Vegetation

Vegetation will naturally reduce runoff by holding back the water providing time for it to soak into the ground. The amount of vegetation cover will significantly impact the amount of evapotranspiration, runoff and infiltration.

- ✓ Minimize the removal of wooded areas, trees, and low growing shrubs. Their removal causes more rain to fall directly on the ground instead of being intercepted by leaves and branches.
- ✓ Keep your landscape rough. Grading large areas of land removes the natural depressions 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.



Cut the Lawn Out

Bringing the suburban lawn mentality to the lake has also brought more opportunities to degrade the quality of our lakes. Limit the amount of lawn to keep or re-establish as much natural vegetation as possible — especially near the lake. Not only will you reduce runoff, you will reduce the amount of yard work.



SHORELAND BEST MANAGEMENT PRACTICES

RAIN BARRELS & RAIN GARDENS

Treating stormwater where it falls is most beneficial to the environment. This can be done by incorporating practices onto your property which use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat.

Divert Runoff from Roofs and Driveways

Roofs and driveways encompass most of the impervious surfaces on a lot and are often the greatest contributors of runoff. Finding ways to redirect runoff to areas where it can be captured, stored, filtered, and cleansed before reaching the lake or entering the storm sewer will benefit water quality and protect your lake. Diverting roof runoff is easily accomplished by installing gutters and directing downspouts to rain barrels, rain gardens, or dense vegetation. Installing channel drains, rubber razors, speed bumps, or water bars on your driveway are great methods for diverting runoff towards appropriate areas such as dense vegetation or rain gardens.



How much runoff can a roof create?

For every inch of rain that falls on one square foot of a roof, just over a half gallon of rainwater is collected or will runoff. Instead of sending this water out the downspout and into the lake, you can collect and store the rainwater for later use with a rain barrel. For example, if you had a 100 square foot roof, you could collect 62 gallons of water during a one inch rain event.



Rain Barrels

A rain barrel is a container used to catch and store roof runoff for later use. The rain barrel is placed underneath a shortened downspout or a rain chain to collect water during rain events. A spigot on the barrel is used to dispense the stored rain water to water gardens and lawns or slowly release it back into the environment.

HARVESTED WATER (GALLONS)	=	CATCHMENT AREA (SQUARE FEET)	X	RAINFALL DEPTH (INCHES)	X	CONVERSION FACTOR (0.623)
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Create a Rain Garden



Rain gardens are bowl shaped gardens designed to collect, store and infiltrate runoff. They act like giant sponges, soaking up water and gradually allowing it to permeate it back into the environment. Rain gardens are planted with hardy, water loving, native perennial plants that have deep roots. These native plants, along with the soil and soil microbes, filter out pollutants and nutrients.



Rain gardens are an asset to any property. In addition to the water quality benefits, rain gardens are beautiful landscape features that benefit pollinators and wildlife by providing habitat, nectar, and seed sources. To be effective, rain gardens must be properly designed to accommodate runoff inputs and soil conditions. For guidance, consult Cook SWCD or a landscape professional.



SUGGESTED RAIN GARDEN PLANTS FOR COOK COUNTY

Blue Flag Iris	Common Boneset ₃	Coral Bells ₄	Gray Goldenrod
Marsh Marigold	Spotted Joe-pye Weed ₂	Red Columbine ₁	Obedient Plant
Soft Rush	White Turtlehead	Black-eyed Susan	Pearly Everlasting ₅

SHORELAND BEST MANAGEMENT PRACTICES

REDUCE EROSION

The vegetation in a diverse shoreland buffer creates an elaborate underground root system. Roots weave their way through the ground binding and interlocking soil particles together like strong thread. This minimizes soil loss from runoff, wind erosion, and wave action. Dense vegetation above ground intercepts rainfall and slows runoff, preventing erosion had vegetation not been present.



Prevent Erosion

Erosion on your property or along the shoreline can create serious impairments in a water body. Excess sediment interferes with normal lake functions, negatively impacts fish and wildlife habitat, and hinders water recreation. Reducing the erosion of soil into the lake will reduce the pollutants reaching the lake and safeguard water quality. Shorelines can erode through many natural processes including currents, waves, ice, wind and rain. However, many human activities and shoreland alterations can significantly increase the rate of erosion.



Common Causes of Erosion

- ✓ Removal of natural vegetation that buffers the land from water.
- ✓ Shoreland property development.
- ✓ Beach creation.
- ✓ Improper installation of erosion control structures, such as retaining walls or rip rap.
- ✓ Increased wave action from watercraft use close to the shore.
- ✓ Dredging, filling, or construction on or near the shoreline.
- ✓ Trampling of banks by human, animal, or watercraft traffic.
- ✓ Increased stormwater runoff from impervious surfaces.



Signs of a Serious Erosion Problem

- ✓ Large areas with exposed soils or roots.
- ✓ Undercut banks or banks lacking vegetation.
- ✓ Noticeable recession of the shoreline over a period of time.
- ✓ Loss in water clarity due to excess sediment in the water column.
- ✓ Unusually muddy streams and excessive deposits of sediments on the streambed.

How can shoreline erosion be controlled?

If your shoreland is eroding away, stabilizing the shoreland will be necessary to prevent further erosion. Each shoreland situation is different. You are encouraged to consult with shoreland landscaping professionals, the DNR, or Cook SWCD to assist with determining the best solution for your shoreline erosion situation. Riprap, stone, retaining walls, or turf grass might seem like good solutions for stabilizing erosion, but they are not usually the best choice.

Riprap and retaining walls deflect wave energy back toward the lake and along the unarmored shoreline instead of diffusing it. This can undercut the base of the hard armor and create more erosion in previously stable areas. These practices also negatively impact the lake by creating an unnatural barrier between upland areas and the shoreland environment. This destroys vegetative transition areas and eliminates critical habitat for many species. In addition to this, retaining walls and riprap do not provide any runoff treatment. Naturalizing your shoreline or maintaining the natural shoreland vegetation is the most important way to reduce shoreland erosion.



Some basic preventive actions include:

- ✓ Preserve vegetation and natural rock along the shoreline.
- ✓ Direct runoff away from the shoreline, steep slopes, and bluff areas.
- ✓ Do not mow vegetation near the shoreline.
- ✓ Limit impervious surfaces.
- ✓ Avoid construction within 100 feet of the shoreline, steep slopes or bluffs.
- ✓ Protect the ice ridge as it prevents excessive surface runoff and traps sediment.
- ✓ Limit foot traffic and other recreational activities in sensitive areas.
- ✓ Build smart and locate structures well away from erosion prone areas.

Riprap, stone, retaining walls, or turf grass might seem like good solutions for stabilizing erosion, but they are not usually the best choice.



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.

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

- ✓ Diverting water away from steep slopes by rerouting drainpipes and gutters. If diverting water away from the bluff is impractical, it should be routed through a non-perforated plastic drain pipe that empties into rock drainage at the bottom of the bluff.
- ✓ If a walkway to the shore is needed, follow the natural contours of the slope and go across or around the slope rather than straight down. Use steps when a walkway must go directly up and down a slope. Minimize destruction of natural vegetation during construction.
- ✓ Limiting clearing and grading on slopes and replant vegetation in barren areas.
- ✓ Create a view corridor through the trees by selectively pruning rather than removing entire trees.



SHORELAND BEST MANAGEMENT PRACTICES

PREVENT POLLUTION

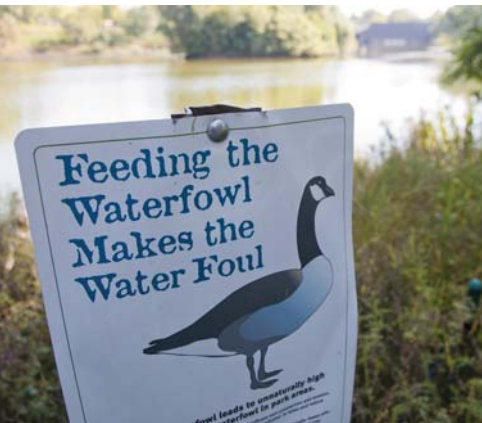
Pollution threatens our lakes and rivers every day. While we can't control others' actions, we can control our own shoreland practices, which have the potential to cause pollution. There are many practices you can consider applying to your shoreland property to help protect the water from pollution.



Common Pollution Threats to Lakes & Rivers

Excessive phosphorus, nitrogen, and other harmful pollutants can get into lakes from shoreland properties in several ways including:

- ✓ Excessive fertilizer application.
- ✓ Decomposition of leaves and other plant material.
- ✓ Soil erosion, which contains phosphorus particles.
- ✓ Improper human and pest waste management.
- ✓ The use of household products high in phosphorus or toxic chemicals.



Apply Fertilizer Sparingly, or Not at All

Since 2005, it is against the law for Minnesota homeowners to use fertilizers containing phosphorus. Phosphorus is the key nutrient needed for aquatic plant and algae growth. When fertilizer unintentionally reaches the lake, it fuels the overgrowth of aquatic plants, algae, and cyanobacteria.

- ✓ If you must fertilize, use the minimum amount needed and be sure to buy a brand with zero phosphorus.
- ✓ Eliminate the use of any kind of fertilizer near water or wetlands.
- ✓ Do not apply fertilizers in areas where the runoff could reach the lake.



Minimize Herbicide and Pesticide Use

- ✓ When necessary, use the least toxic and most degradable herbicide. Follow the label's instructions carefully and use an applicator to deliver targeted treatment instead of broadcast treatment.
- ✓ 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.
- ✓ Remove dandelions and other unwanted plants from your lawn using hand tools instead of chemical applications.
- ✓ Identify the pest and learn about the best way to control it. There are many methods of control other than pesticides such as integrated pest management.
- ✓ Limit use where watering or rain can percolate the herbicide into the groundwater or wash it into the lake with runoff.



Do Not Dump Yard and Aquatic Plant Waste Near the Lake

Grass clippings, leaves, and aquatic plant materials 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 as natural fertilizer.
- ✓ Collect and compost leaves and clippings or haul them away from the lake to a disposal site.
- ✓ Leave a buffer strip of taller vegetation along the lake to catch windblown leaves and debris.
- ✓ Do not burn leaves or yard waste near the shoreline.
- ✓ Remove washed up aquatic plant materials away from the shore, compost, or use as mulch in the garden.



Locate Fire Pits Away from the Shore

Leftover ash from burning wood is very high in phosphorus. If fire pits are located near the lake, rain can wash the ashes into the lake.

- ✓ Locate fire pits at least 50 feet away from the shore.
- ✓ Remove ashes from the fire pit to prevent the phosphorus-loaded ashes from being blown or washed into the lake.
- ✓ Repurpose ashes. They can be used to make a great garden soil amendment.



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, especially near the shore.
- ✓ Dispose of pet waste properly.



Seal Abandoned Wells

An unused water well—abandoned well—provides a direct route for pollutants to reach groundwater, your primary drinking water source and interconnection to the lake. Sealing the abandoned well is a safeguard against unwanted pollution. It must be done by a licensed groundwater professional. Financial assistance may be available for sealing an abandoned well. Contact Cook SWCD for more information.



SHORELAND BEST MANAGEMENT PRACTICES

PREVENT POLLUTION

Pollution threatens our lakes and rivers every day. While we can't control others' actions, we can control our own shoreland practices, which have the potential to cause pollution. There are many practices you can consider applying to your shoreland property to help protect the water from pollution.



A 50-horsepower motor operated full throttle can stir the water column and disturb sediment on the lake bottom in water as deep as 15 feet.

Practice Low-Impact Boating

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

- ✓ Check motorized water equipment regularly for leaks.
- ✓ Take precautions when refueling to avoid spills. If you do spill, use a rag to wipe it up and do not wash any contaminants into the water.
- ✓ Boat slowly and do not power load boats at accesses. Motors stir up sediments that can release nutrients and toxins.

Do Not 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 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. When burned, they release toxic substances 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. Research shows that burn barrels are the number one source of dioxin in the United States.
- ✓ Instead of burning garbage, dispose of it properly. **Just one burn barrel can produce as much or more dioxin as a full-scale municipal waste combustor, burning 200 tons/day.**



**Don't burn your trash.
It's toxic and illegal!**

Schedule household pickup service or bring your garbage to a nearby transfer station.

REDUCE, REUSE, RECYCLE

- ✓ REDUCE the amount of waste you create.
- ✓ REUSE anything you can or buy and borrow second hand.
- ✓ RECYCLE all the materials you can.

Metal, glass, plastic, paper, and cardboard can be recycled in Cook County. In addition to the Recycling Center in Grand Marais, and the Tofte Transfer Station, there are several green recycling trailers located throughout Cook County where recyclable items can be dropped off. Do your part to limit the amount of waste produced by following Reduce, Reuse, and Recycle principals.



Properly Dispose of Household Hazardous Waste

Household hazardous waste such as paints, cleaners, garden chemicals, automotive products, and aerosol cans should be disposed of properly to protect the environment. Dumping these outside or down the drain can contaminate ground and surface waters and/or impair septic systems. Beware of any products with labels including the words: flammable, toxic, corrosive, or reactive. Read product labels carefully, buy the least hazardous products, use according to package directions, and store in a safe place away from heat, flames, and cold temperatures. Hazardous waste collection days are hosted annually at the Recycling Center in Grand Marais.

Cook County Recycling Center
630 - 5th Avenue W.
Grand Marais, MN 55604
218-387-3044

Safely Dispose of Unwanted or Expired Medications

The disposal of expired or unwanted prescription or over-the-counter medications down the toilet or drain causes adverse effects on fish and aquatic wildlife when they get into water systems. The Cook County Sheriff's Office provides a disposal box for any unneeded over-the-counter medications, prescriptions, or narcotic drugs. A box is located at the Law Enforcement Center lobby, 365 days a year for anyone to turn in unwanted medication, at any time.

Cook County Law Enforcement Center
143 Gunflint Trail
Grand Marais, MN 55604
218-387-3030

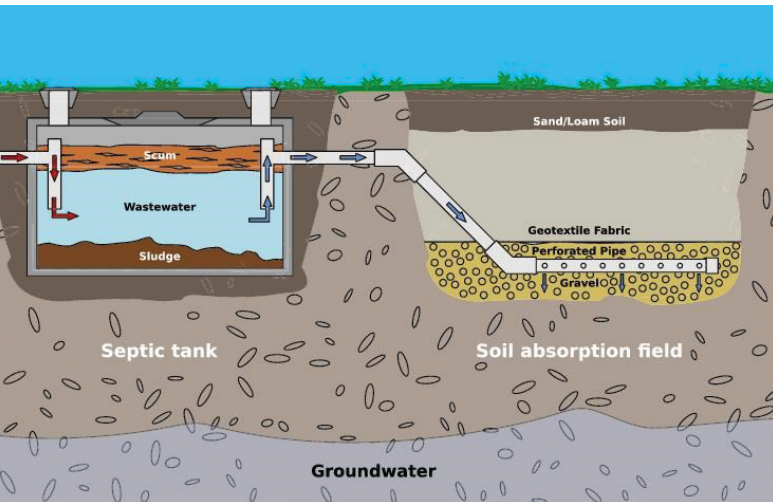


SHORELAND BEST MANAGEMENT PRACTICES

SEPTIC SYSTEMS

Most homes in shoreland areas rely on subsurface sewage treatment systems, commonly known as the septic system. Your septic system, if designed, installed, and maintained properly, will effectively treat wastewater before it is returned to the environment, protect public health, and prevent pollution of nearby lakes or rivers.

Understanding your system is essential to proper operation and maintenance. The basic components of most systems are the septic tank and the soil treatment system, commonly referred to as the drainfield.



The **septic tank** receives the wastewater from the household plumbing. The solids are separated from the liquid in the tank. Naturally-occurring bacteria decompose food particles and human waste, and the remaining solids settle to the bottom until they are pumped out. This occurs on a regular basis. The tank has an inspection pipe for monitoring 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, into the drainfield.

The **soil treatment system**, also referred to as the drainfield, is typically a network of perforated pipes surrounded by small rocks and soil. The liquid from the septic tank contains pathogens, nutrients such as phosphorus and nitrates, and fine solids. It is cleansed 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 the property. For proper treatment, at least three feet of unsaturated soil is needed for the wastewater to percolate through. 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 common—this is typical with mound systems.

What causes a septic system to fail?

Failure is most commonly the result of:

- ✓ Improper maintenance.
- ✓ Overuse of water in the home.
- ✓ Improper design or installation of the system.

When a system fails, untreated wastewater could come in contact with people, causing a public health hazard, or enter the groundwater and eventually add pollutants to the lake that can contribute to increased algae and plant growth.

What are the signs of a failing system?

- ✓ Sewage backup into the house or slow toilet flushing.
- ✓ Frozen pipes or soil treatment areas.
- ✓ 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.
- ✓ High levels of nitrates or coliform bacteria in well water tests.

Protect Your Drainfield

Compacting or obstructing the soil over the treatment area can cause the drainfield to malfunction.

To protect it:

- ✓ Keep heavy vehicles off the drainfield.
- ✓ Maintain vegetative cover, but do not plant trees or shrubs on the drainfield because their 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.

Protect Your System from Freezing

During winters with a lack of snow cover and cold temperatures, septic systems can freeze. This can be a tremendous inconvenience and result in costly repairs. To prevent freezing, follow these guidelines:

- ✓ Fix any leaking plumbing or appliances.
- ✓ In the fall, leave the grass longer over the tank and drainfield for better insulation.
- ✓ Add a layer of hay or straw mulch (8-12 inches) over the pipes, tank, and soil treatment area.
- ✓ Keep vehicles, ATVs, snowmobiles, and high traffic activities off the drainfield.
- ✓ Spread hot water use (laundry, showers, dishwasher) out over the day and week. If you plan to be gone for extended periods, consider having someone stop by to run hot water regularly.
- ✓ Talk with a professional before installing heat tapes or tank heaters. Tank heaters are not recommended as they have caused fires and explosions.
- ✓ If the system does freeze unplug your pump and call a septic system professional. Do not add antifreeze, additives, or continuously run water to try to thaw the system.



Maintenance

Regular pumping of a septic tank is vital for the longevity of your septic system. Pumping frequency depends on tank size, water use, and operating condition. Without routine pumping and maintenance, scum and solids will over accumulate in the septic tank and flow into the drainfield, causing expensive and often irreparable damage. Additionally, overloading the system with large amounts of water can also flush solids out of the tank before it has had a chance to separate the solids, scum and water, shortening the life of your system. A licensed professional should pump the septic tank every one to three years. Pumping is needed more often with greater use.

If you have a problem:

- ✓ Contact Cook County Environmental Health for advice and/or check their website for a list of licensed septic inspectors.
- ✓ If the drainfield or household pipes are not clogged, have the system pumped for both solids and liquids as a temporary measure.
- ✓ If there is surface pooling of wastewater, fence off the area to prevent contact with humans or pets.

SHORELAND BEST MANAGEMENT PRACTICES

PREVENT POLLUTION FROM SEPTIC SYSTEMS

The design and installation of septic systems is regulated by state standards and permitted through the Cook County Land Services Department. Septic systems must be installed by Minnesota licensed contractors. A list of licensed septic system contractors and permits for septic system installation can be obtained from Cook County Land Services. Follow these principles and tips to help your septic system function properly and prevent pollution.

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 water-conserving fixtures and appliances such as low-flow toilets and shower heads.
- ✓ Do not empty roof drains or sump pump water into the septic system.
- ✓ Wash only full loads of clothing and dishes, and spread out water use for laundry, dishes, and showers throughout the day and week. Consider front loading machines that use less water.
- ✓ Reduce the length of showers and the number of toilet flushes.

Limit What Goes Down the Drain

- ✓ Do not put household cleaners, paints, solvents, medications, and other chemicals down the drain.
- ✓ Limit the use of antibacterial products as they can reduce the working bacteria in the septic tank.
- ✓ Use only the recommended amounts of liquid non-phosphorus detergents and cleaners. Powdered detergents add fine particles that may clog the soil treatment system.
- ✓ Prevent food particles, grease, lint, 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 system additives (i.e. Rid-X, Septic Cleanse, etc.) 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.



Frequently Asked Questions

Q What is a Certificate of Compliance?

A A Certificate of Compliance shows that at the time of inspection, the septic system was installed properly. It is issued after a new system has been properly installed, or after an inspection of an existing system has found that the sewage system is in compliance with State standards. This Certificate of Compliance is considered to be effective for a period of five years for a new system and three years for an existing system.

Q Do I need a septic system certificate if I am just going to build a shed?

A Yes, if you live in shoreland and the shed or any other structure you are building is 160 square feet or larger.

Q Who tells me what type of system I need?

A The licensed septic system designer can make this determination based on soil and site conditions, and specific needs of the owner.

Q How is the type of system needed on my property determined?

A The type of system is determined by soil texture, depth to water table, proximity to surface waters, and the number of people it is intended to serve. Because of high

ground water table and heavy clay soils, 80% of Cook County's septic systems are mound systems. Alternative systems will be considered for approval, contact the Cook County Environmental Health Department.

Q How do I know if the septic system now existing on my property works? Who is responsible for checking it?

A Most systems in Cook County are mound systems. Signs of mound system failures include: wet areas around the edge of the mound, cattails or other wetland vegetation, and/or black areas around the edge of the mound. Trench systems in failure reveal ponding or leakage to a low spot. If buying property, even with a Certificate of Compliance, it is wise to hire an inspector to conduct a Point-of-Sale inspection.

Q Do I need a permit to construct an outhouse or install a composting toilet?

A Yes, a permit is required from the Cook County Environmental Health Department.

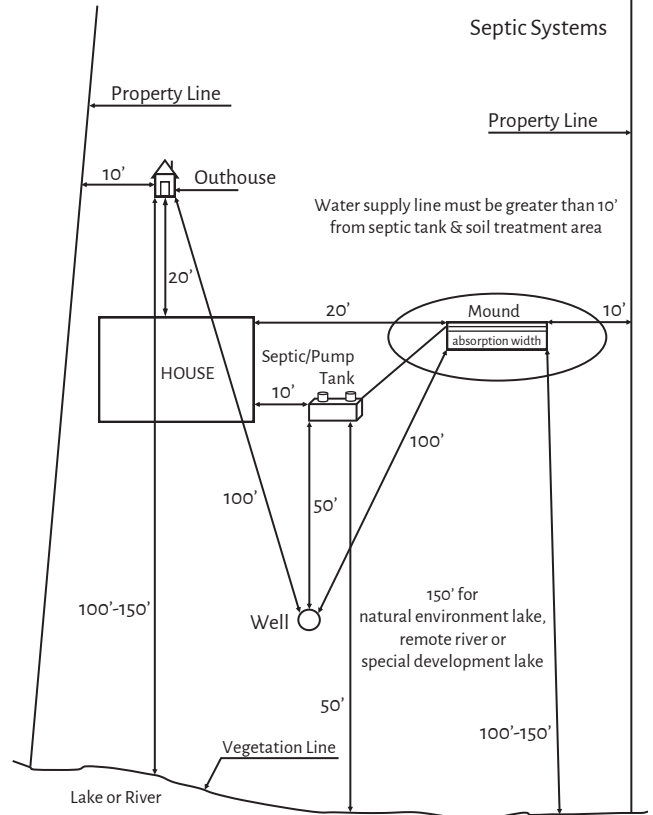
Q Can I install my own septic system? Do I even have to have a septic system?

A You cannot install your own septic system. Only licensed installers are legally allowed to. You are required to have a septic system if any structure has plumbing. If your structure does not have plumbing, an outhouse is acceptable, but this still requires a permit.

Setbacks to Structures & Septic Treatment Areas According to Water Body Classification		
Lakes	Structures	Septic
Special Natural Environment	150 Feet	150 Feet
Natural Environment	150 Feet	150 Feet
Special Recreational Development	100 Feet	150 Feet
Recreational Development	100 Feet	100 Feet
Lake Superior	40 Feet*	100 Feet
Rivers	Structures	Septic
Remote River Segment	200 Feet	150 Feet
Forested River Segment	150 Feet	100 Feet
Tributary River Segment	100 Feet***	100 Feet

Be sure to consult Cook County Land Services for other setback requirements.
* From Vegetation Line of Lake Superior

Minimum Setback Distances



SHORELAND BEST MANAGEMENT PRACTICES

AQUATIC INVASIVE SPECIES PREVENTION

Aquatic Invasive Species (AIS) are nonnative plants, animals, or pathogens which live primarily in the water and cause economic loss, environmental damage, or harm to human health when they are introduced to areas outside of their naturally occurring range.

In the absence of their natural predators, parasites, pathogens, and competitors, which would usually keep their populations in check, AIS overrun new environments, outcompete native species for resources, degrade habitat and cause biological diversity loss. Once AIS have become established, they rarely can be eliminated and will likely cause irreparable damage to lakes, streams, and wetlands – and native species.

How did they get here?

Unfortunately, most species introductions are due to human activities. AIS are unknowingly transported on animals, vehicles, boats, equipment, ballast water, produce, and even clothing. Often, they are very small and easily overlooked. However, some introductions were intentional, such as with purple loosestrife and carp, but caused unexpected damage.

How do they harm our shorelands and watersheds?

Once aquatic invaders move in, it's nearly impossible to get them out. They spread uncontrollably, harm fish populations, damage habitats, displace native species, impair water quality and water recreation, and can cost millions of dollars to manage. AIS harm our healthy water resources and ultimately damage Minnesota's economy, environment, and water recreation.

What can you do?

Preventing the spread of AIS is one of the most important things you can do as a shoreland property owner. If you recreate on or near the water, there are some important things you can do to prevent spreading the species from one water resource to the next. Follow this checklist to help protect your lake from AIS:



**STOP AQUATIC
HITCHHIKERS!™**

Be A Good Steward.
Clean. Drain. Dry.

StopAquaticHitchhikers.org

- ✓ Inspect your watercrafts, trailers and water related equipment and remove any visible plants or animals before leaving a water access or shoreland property.
- ✓ Learn to recognize AIS, how they spread, and the harm they can cause.
- ✓ Follow the laws and take precautions to make sure you are not transporting AIS.
- ✓ Work with watercraft inspectors and share the CLEAN DRAIN DRY message with everyone you know that spends time enjoying your shoreland property.

AQUATIC INVASIVES SPECIES IN MINNESOTA LAKES

The common AIS found in Minnesota lakes include: spiny waterflea, purple loosestrife, rusty crayfish, Chinese mystery snail, rainbow smelt, zebra mussels, Eurasian watermilfoil, and curly-leaf pondweed.

Spiny Waterflea

This invasive species eats zooplankton, which are also an important food source for native juvenile fish. Because of their rapid reproduction rate, spiny waterfleas can easily create populations that are able to monopolize the zooplankton food supply.

Characteristics:

- ✓ Range from 1/4 to 5/8 inch in total length.
- ✓ Long, spiny tails with 1 to 4 barbs.
- ✓ Head consists of a single, large eye filled with black pigment.
- ✓ Clumps look and feel like gelatin or cotton batting with tiny black spots.



Native Look-a-Like: Chaoborus (or Leptodora)



Purple Loosestrife

This plant invades wetlands, replacing native species by forming dense stands and displaces habitat for wetland animals including ducks, turtles, and frogs. A single plant can produce well over a million seeds a year.

Characteristics:

- ✓ Leaves are smoothed and attached opposite or in whorls of 3 to 4 along the stem.
- ✓ Main stem is square with 4 to 6 edges.
- ✓ Flowers are densely packed on a spike.
- ✓ Individual flowers have 5 to 7 purple petals.



Native Look-a-Like: Fireweed

Characteristics:

- ✓ Spike-like cluster of flowers.
- ✓ Individual flowers have 4 broad paddle shaped petals.
- ✓ Alternate leaf branching.



SHORELAND BEST MANAGEMENT PRACTICES

AQUATIC INVASIVE SPECIES PREVENTION



Rusty Crayfish

Rusty Crayfish destroy aquatic plant beds as they have a higher metabolic rate and appetite compared to native crayfish. Their habits are detrimental to native crayfish habitat and aquatic vegetation.

Native Look-a-Likes: Northern Clearwater Crayfish, Virile Crayfish (or Calico Crayfish)

Characteristics:

- ✓ Rusty red spot on the sides of carapace.
- ✓ Claws form an oval shaped gap when closed and have black tips.
- ✓ Can grow up to 5 inches long.



Northern Clearwater Crayfish



Virile Crayfish



Chinese Mystery Snail

Invasive snails that form dense aggregations, consume fish eggs, and are carriers of trematode parasites which negatively impact native mussels.

Characteristics:

- ✓ Light to dark brown color.
- ✓ Have an Operculum (“trapdoor”) covering/opening which is missing when dead.

Native Look-a-Likes: Can look similar to native snails or mussels



Zebra Mussel

Zebra Mussels negatively impact lake ecosystems by reducing the food available for larval fish by eating the tiny food particles they filter from the water. They can clog intakes and pipes, attach to boats, docks or other substrates, and impact recreation as swimmers can cut their feet on the shells.

Characteristics:

- ✓ Zigzag stipes often alternating from yellow to brown.
- ✓ Shells form a straight line when closed.
- ✓ Range from ¼ to 1 ½ inches long.

Native Look-a-Like: Can look similar to native snails or mussels



Zebra mussels on a native mussel

Rainbow Smelt

These smelt compete with native species for food sources as well as prey on the larvae of native species. They alter the zooplankton size structure, cascading food chain changes. A common misconception is they improve fishing by increasing the forage base for prey fish.



Eurasian Watermilfoil

Highly invasive plant able to form dense mats near the surface that entangle motor propellers and interfere with fishing and swimming. Spread by watercrafts, trailers, or transporting infested waters.

Characteristics:

- ✓ Delicate feather-like leaves with four leaves per whorl.
- ✓ Each leaf has 12 – 20 leaflet pairs.
- ✓ Leaves are usually limp when out of the water .



Native Look-a-like: Northern Watermilfoil

Characteristics:

- ✓ Each leaf has between 4 – 11 leaflet pairs.
- ✓ Leaves are usually rigid when taken out of the water.



Characteristics:

- ✓ Slender, cylindrical body.
- ✓ Back is silvery pale green and the sides are iridescent purple, blue, and pink.
- ✓ Underside is white.
- ✓ Deeply forked tail fin.



Curly-leaf Pondweed

Curly-leaf Pondweed

Curly-leaf Pondweed is a highly invasive plant that grows in late winter and crowds out native plants before ice out. Curly-leaf Pondweed forms dense mats which interferes with recreational activities and can cause algal blooms.

Characteristics:

- ✓ Thin wavy lasagna like leaves with toothed edges.
- ✓ Leaves do not clasp around the stem where they connect.

Native Look-a-Like: Claspingleaf Pondweed

Characteristics:

- ✓ Leaves clasp around the stem.
- ✓ Leaves are wide and wavy, but edges are smooth and lack teeth like curly-leaf pondweed.



Claspingleaf Pondweed

SHORELAND BEST MANAGEMENT PRACTICES AQUATIC INVASIVE SPECIES PREVENTION

Minnesota has several laws intended to minimize the introduction and spread of AIS. Invasive species are classified on a four-tiered system which establishes the level of regulation and allowable uses for each species.

Prohibited

You may NOT possess, import, purchase, transport, or introduce these species except under a permit for disposal, control, research, or education.

Regulated

You may possess, sell, purchase, or transport these species, but you can NOT introduce them into a free-living state, such as releasing or planting them in public waters.

Unregulated Non-native Species

These species are not subject to regulation under Minnesota Invasive Species Statutes, but fishing and hunting regulations should be referred to when considering transporting, hunting or fishing these species.

Unlisted Non-native Species

Those remaining species that are not classified otherwise. Before they can be released into a free-living state, the DNR must conduct a thorough evaluation and designate the species into an appropriate classification.



Before leaving a water access or shoreline property:

- ✓ **CLEAN** off all aquatic plants and animals.
- ✓ **DRAIN** all the water including bilge, live wells, baitwells, bait buckets, motor, and ballast tanks - pull the drain plug and leave it out.
- ✓ **DRY** everything for at least 5 days OR wipe with a towel before reuse.

COOK COUNTY INFESTED INLAND LAKES

Purple Loosestrife

- ✓ Alpine Lake (BWCA)
- ✓ Gillis Lake (BWCA)
- ✓ Hungry Jack Lake
- ✓ Little John Lake
- ✓ Saganaga Lake
- ✓ Vista Lake (BWCA)

Rusty Crayfish

- ✓ Gull Lake
- ✓ Hungry Jack Lake
- ✓ Pigeon River
- ✓ Pike Lake
- ✓ Saganaga Lake
- ✓ Seagull Lake
- ✓ Westet Bearskin Lake

Spiny Waterflea

- ✓ Caribou Lake (BWCA)
- ✓ Devil Track Lake
- ✓ Devil Track River
- ✓ Devilfish Lake
- ✓ Flour Lake
- ✓ Greenwood Lake
- ✓ Gunflint Lake
- ✓ Little John Lake
- ✓ McFarland Lake
- ✓ North Fowl Lake
- ✓ Pigeon River
- ✓ Pine Lake (BWCA)
- ✓ Royal River
- ✓ Saganaga Lake
- ✓ South Fowl Lake
- ✓ Trout Lake

Rainbow Smelt

- ✓ Duncan Lake (BWCA)
- ✓ Gneiss Lake (BWCA)
- ✓ Gunflint Lake
- ✓ Hungry Jack Lake
- ✓ Magnetic Lake
- ✓ Red Rock Lake (BWCA)
- ✓ Rose Lake (BWCA)
- ✓ Saganaga Lake
- ✓ Trout Lake
- ✓ West Bearskin Lake

Chinese Mystery Snail

- ✓ Thompson Lake

IN MINNESOTA IT IS UNLAWFUL TO:

1. Transport aquatic plants, zebra mussels, and other prohibited species of animals, except as allowed in statutes.
2. Place or attempt to place into waters of the state a watercraft, seaplane, or trailer that has aquatic plants, zebra mussels, or other prohibited invasive species attached.
3. Place a boat lift, dock, swim raft, or associated equipment that has been removed from any water body into another water body before a minimum of 21 days has passed.
4. Leave any water access or riparian property before removing drain plugs and draining all water related equipment (including live wells and bait containers). Note: keep unused bait, drain and replace with tap or spring water.
5. Keep drain plugs, bailers, valves, or other devices used to control the draining of water from ballast tanks, bilges, and live wells in place or closed while transporting a watercraft or water related equipment. Note: emergency response vehicles/equipment may be transported with the drain plug or similar device in place after all water has been drained from the equipment upon leaving the water body.
6. Harvest bait (minnows, frogs, crayfish, or other wild animals) from designated infested waters except for: noncommercial bait harvest for personal use in waters that contain Eurasian water milfoil if: the infested waters are designated solely because they contain Eurasian watermilfoil, and equipment for taking is a cylindrical minnow trap not exceeding 16 x 32 inches.
7. Transport water from infested waters on a public road or off riparian property except in emergencies or under permit
8. Transport water from infested waters to transport fish except by permit.

AIS pose a daily threat to our waters. Know what waters are infested in Cook County by checking lake accesses for DNR infested waters signs.



Wash 'em off! Wipe 'em out!

✓ CLEAN ✓ DRAIN ✓ DRY

Get into the habit of taking these three simple steps, and it will soon become part of your routine. Pull away from the boat ramp area. Check for plants while strapping the boat down. Pull the plug when adjusting the motor. Empty live wells, motor and ballast tanks, and anything else that holds water. Wipe everything down with a towel if you are entering another waterbody within 5 days. If you have other people (especially kids) with you, have them help. Taking a few minutes will help safeguard our waters.



SHORELAND BEST MANAGEMENT PRACTICES

PROTECT WETLANDS

Wetlands are areas that are consistently wet enough to support water-loving plants. Some are wet, swampy, marshy areas, yet other types of wetlands may be dry most of the year and support trees and shrubs. Wetlands are very common in Cook County and they serve as crucial transitional links between land and water. Protecting the wetlands on your property will help protect the water quality and ecosystem health.

Despite all their benefits, wetlands were considered nuisances in the past and they were drained, filled, or degraded to make way for development and agriculture. The goal of wetland protection is ensuring no net loss of wetlands. Federal laws, enforced through the U.S. Army Corps of Engineers, as well as Minnesota's Wetland Conservation Act of 1991 are in place to protect 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.

75% of Minnesota's wetlands are in the North-Northeastern region and the Arrowhead, including more than 90% of the wetland acres that existed before European settlement.

It is important to protect what we have left.



Minnesota has approximately 10.6 million acres of wetlands which provide a variety of functions beneficial to the general public and the environment.

Water Quality Protection

Wetlands filter and absorb runoff before it enters groundwater, lakes, and rivers.

Flood Control and Groundwater Recharge

Wetlands serve as holding areas for stormwater, slowing flooding, and soil erosion during heavy rainfalls.

Fish and Wildlife Habitat

Wetlands provide homes, nesting areas, and feeding areas for wildlife. They provided essential habitat and food sources for aquatic insects and amphibians.

Shoreline Erosion Protection

The deep rooted plants growing in wetlands protect shorelines from the forces of wave action that can erode the shoreline.





Frequently Asked Questions

Q *Are there different types of wetlands?*

A Yes. Wetland classes described by the U.S. Fish and Wildlife Service are used to evaluate wetlands in Cook County. They are listed as “wetland types” and are classified in eight different categories. Differences among the types of wetlands include variations of water conditions, kinds of plants, and soil conditions.

Q *What can I do to protect wetlands on my property?*

A Do not fill or alter wetlands, even if they are only wet during the spring. Avoid, minimize, and mitigate any impacts to wetlands.

Q *Is the county the only governmental entity regulating activities around wetlands?*

A No, both federal and state agencies may require permits. Contact Cook County Land Services first if you suspect wetlands exist on your property to request a review or obtain necessary permits for projects that may impact wetlands.

Q *I have a wet spot on my lawn, can I fill it in?*

A Chances are, this area was once a wetland that was converted to a lawn. Rather than fighting a wet spot, consider restoring previously drained or filled wetlands.

Q *When does a landowner need a permit to fill a wetland?*

A Always. In some cases, the permitting process can take a long time if state and federal permits are needed.



SHORELAND BEST MANAGEMENT PRACTICES

PRIVATE FOREST MANAGEMENT & LAND CONSERVATION



Private Forest Management

Cook County has an abundance of high quality forests in private, county, state, and federal ownership. Healthy forests are important for healthy waters. Their roots hold soil in place, reducing erosion. They serve as natural sponges, collecting and filtering nutrients and pollutants from rainwater. They also slow down and cool the flow of water before reaching a lake, river, or stream. It is widely accepted that **if a watershed can maintain 75% of its land in natural forest cover, the surface waters within the watershed can also maintain high water quality**. Local, state, and federal agencies manage their forest lands in Cook County for productivity, sustainability, and enhanced forest integrity. This ultimately benefits water quality. For the private forest landowner, good forest management can also benefit water quality, and improve fish and wildlife habitat while contributing to the landowner's financial well-being. See side bar for private forest financial incentive programs.

Land Conservation

Limiting development of privately owned shorelands or forested lands is another stewardship option to protect water quality. Land conservation tools are available to preserve land in its natural state for the continued enjoyment of family and future generations, as well as the protection of fish and wildlife habitat. These tools will permanently limit development and preserve the land's natural features as a living legacy. Options include:

Donate or sell private land to a public entity or qualified non-profit conservation organization. They will manage the land in perpetuity for aquatic and wildlife habitat protection and public use and enjoyment. If land value is donated, an IRS charitable tax deduction may be available based on the donated conservation value.

Place a conservation easement on your property. A conservation easement prohibits or limits future development on the land. The easement is a legally binding agreement between a qualified entity that holds the easement (government entity or non-profit conservation organization) and the landowner. The easement permanently limits the use and development of the land in order to preserve the land's natural features and conservation value while still allowing the landowner to enjoy the land. The landowner determines the terms of the easement and still retains ownership and use of the land. There are different conservation easement programs available. See the side bar for more information and resources.

Private Forest Management Financial Incentive Options for the Private Forest Landowner

The Sustainable Forestry Incentive Act (SFIA) program is a per acre annual cash payment for sustainably managed forested lands.

The 2C tax classification provides a reduction in property taxes on acres enrolled.

Both programs require a private forestry management plan for your land that is prepared by a forestry consultant and approved by the DNR.

Land Conservation Options

Conservation easements can range from donated easements, which may have tax benefits (income, estate, or property) to easements where the landowner is paid a predetermined portion of the land's value for the development rights that are given up.

For more information on private forestry management programs and conservation easements, contact:
Cook SWCD, 218-387-3647, cookswcd.org

SHORELAND BEST MANAGEMENT PRACTICES

JOIN A LAKE ASSOCIATION

Joining a lake association is a great way to help foster a collaborative mindset for lake protection and show your dedication to protecting water quality. There are several active lake associations in Cook County and if their isn't one established for your lake yet, start one.

Cook County Coalition of Lake Associations (CCCoLA)

CCCoLA is an action-oriented, independent organization made up of Cook County lake and road associations. Serving as an umbrella group, the Coalition board of directors brings together these associations to focus on issues of common interest such as promoting and implementing sound and responsible lake and shoreland management practices. The goal of CCCoLA is to develop an informed community of Cook County lakeshore property owners who accept responsibility for the preservation and protection of their lakes and who work actively to protect their quality.



CCCoLA activities include:

Citizen Lake Monitoring Program

The Coalition cooperates with the County Water Planner to recruit and support volunteers who sample and gather data used to track lake health.

Workshops and Seminars

The Coalition sponsors programs to inform lakeshore property owners about best shoreland management practices and other standards in place to protect lake water quality.

Aquatic Invasive Species Program

The Coalition, in cooperation with the county AIS coordinator, supports efforts aimed at keeping invasive species out of Cook County.

Cooperative Connections

The Coalition is represented on the Cook County Water Advisory Committee, AIS Task Force, Septic Task Force, Soil and Water Conservation District Board, and the Gunflint Trail Scenic Byway Committee. The Coalition participants in the Minnesota Pollution Control Agency Lake Superior-North Watershed Restoration and Protection Strategies.

SHORELAND CHECKLIST

Contact Cook County Land Services before:

- ✓ Buying, clearing, or developing shoreland property.
- ✓ Building a new structure, remodeling, or adding on to an existing structure.
- ✓ Installing a septic system.
- ✓ Building a boardwalk, raised path to the lake, or anything that does not meet setback requirements.
- ✓ Building or repairing any accessory structure near the shore.
- ✓ Building stairways, landings, or clearing access paths in bluff areas.
- ✓ Any kind of dirt moving, shoreland alteration, clearing, cutting, or planting in the shoreland impact zone.
- ✓ Installing any form of riprap or installing a retaining wall.
- ✓ Draining, excavating, or filling a wetland anywhere in Cook County.

Contact Cook Soil & Water Conservation District for:

- ✓ Information about soil for your property.
- ✓ Assistance with shoreland buffers and vegetation protection.
- ✓ Technical assistance for erosion control practices.
- ✓ Information on sealing abandoned wells.
- ✓ Cost share programs for installing conservation practices on your property.

Contact the Minnesota Department of Natural Resources before:

- ✓ Removing emergent vegetation (cattails, bulrushes, wild rice).
- ✓ Using chemicals to control aquatic vegetation.
- ✓ Altering a lake bed.
- ✓ Conducting work or disturbing land below the ordinary high water level.

Additional Resources:

Aquatic Invasive Species:

- * Minnesota DNR: dnr.state.mn.us/invasives/aquatic/index.html
- * University of Minnesota Sea Grant: seagrant.umn.edu/ais/
- * Stop Aquatic Hitchhikers: stopaquaticchithhikers.org

Aquatic Plant Management: dnr.state.mn.us/shorelandmgmt/apg/permits.html

DNR Water Permits Requirements: dnr.state.mn.us/permits/water/needpermit.html

Erosion at the Shoreline: mishorelinepartnership.org

General Shoreland Homeowner Information: shorelandmanagement.org

Rain Barrels/Gardens:

- * Rain Barrel: lakesuperiorstreams.org/citizen/rainbarrel.html
- * Rain Garden: A How – To Manual: dnr.wi.gov/topic/shorelandzoning/documents/rgmanual.pdf
- * The Blue Thumb Guide to Raingardens – Design and Installation for Homeowners in the Upper Midwest: available to borrow at Cook SWCD and to purchase online at blue-thumb.org/raingardens/

Septic System Owners Guide: septic.umn.edu/septic-system-owners/owners-guide or call the Onsite Hotline 800-322-8642

Shoreland Alterations (Docks, Rip Rap, Sand Blankets, Ice Ridges): dnr.state.mn.us/publications/waters/shoreline_alteration.html

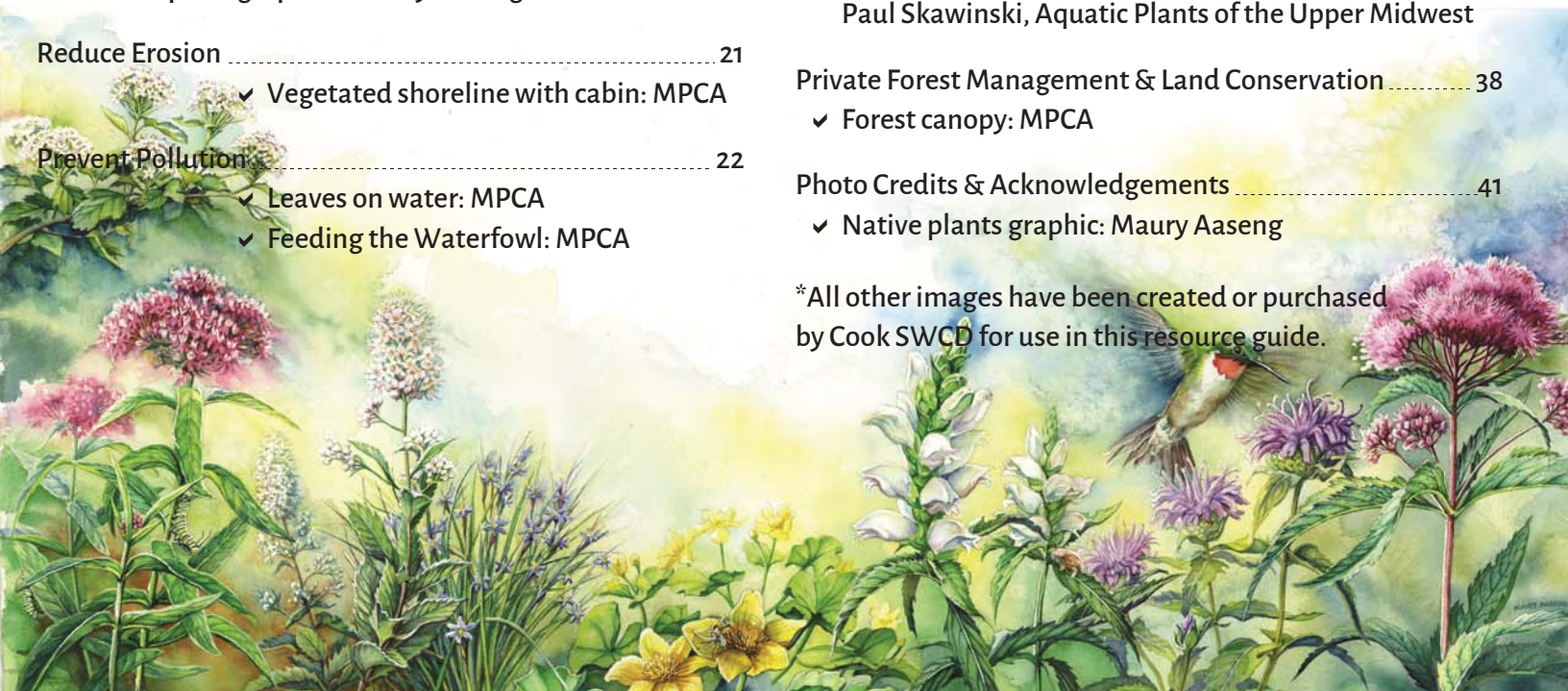
Shoreland Landscaping:

- * The Water's Edge: files.dnr.state.mn.us/assistance/backyard/shorelandmgmt/savewateredge.pdf
- * Lakescaping and Shoreland Restoration: dnr.state.mn.us/lakescaping/index.html
- * Restore Your Shore: dnr.state.mn.us/rys/index.html
- * Lakescaping for Wildlife and Water Quality: available to borrow at Cook SWCD and to purchase at Minnesota's Bookstore, mnbookstore.com/lakescaping-for-wildlife-310.html

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*All other images have been created or purchased by Cook SWCD for use in this resource guide.



COOK COUNTY FREQUENT CONTACT INFORMATION

City of Grand Marais

City Hall 218-387-1848

Driveway Access Permits

Permits are required before installing a culvert or constructing an access driveway off of a township, county or state road

- * Cook County Highway Department 218-387-3014
- * Schroeder Township 218-663-7559
- * U.S. Forest Service Gunflint Ranger District 218-387-1750
- * U.S. Forest Service Tofte Ranger District 218-663-8060

Fire Burning Permits

If you plan to burn brush or grass on your property you are required to obtain a burning permit before proceeding to burn. Be aware if you cause an out of control fire, you are personally responsible for the firefighting costs. Burning trash and use of burn barrels are illegal.

- * MN DNR 218-387-3037
- * US Forest Service, Gunflint Ranger District 218-387-1750
- * US Forest Service, Tofte Ranger District 218-663-8060
- * Isak Hansen & Sons 218-663-7201
- * Online burning permit and information
webapps15.dnr.state.mn.us/burning-permits/

Grand Portage

Trust Lands and Natural Resources Department

- Front Desk 218-475-2202
- Housing Authority 218-475-2552
- Water/Sewer 218-475-2212

Land Use Permits/Grade and Fill Permits/ Stormwater & Erosion Control/Sub-Dividing Land

Before building a driveway or building on land in Cook County, contact the Cook County Land Services Department to obtain zoning requirements and information. If you are in the city limits of Grand Marais, contact the City Clerk.

- * Cook County Land Services 218-387-3630
- * Grand Marais 218-387-1848

Property Assessments / Ownership

Property classification, estimated market and assessed property values, maps and current property ownership. www.co.cook.mn.us

- * Cook County Assessor 218-387-3650

Recorded Documents

Deeds, surveys, restrictive covenants, and property restrictions

- * Cook County Recorder 218-387-3660

Sewage Treatment Systems

State law regulates sewage treatment system installation, including separation distance from wells, buildings, and property lines. Cook County has additional requirements and/or recommendations.

- * Cook County Environmental Health 218-387-3630
www.co.cook.mn.us

Water Information

Basic information on streams and lakes: www.cookswcd.org or

www.lakesuperiorstreams.org

Solid Waste Management

Household garbage and hazardous waste, demolition material, and recycling.

- * Cook County Recycling Center 218-387-3044
- * West End Transfer Station. No on-site phone 218-387-3630
www.co.cook.mn.us

Surface Waters

Permits are needed for docks, culverts, beach development, stream and lakeshore stabilization and stream crossings when working in public waters and/or wetlands. Before diverting, withdrawing, impounding or distributing any surface water, you must obtain a water use permit.

- * Minnesota DNR 218-834-1441
www.dnr.state.mn.us/permits/water/index.html

Water Quality

Livestock manure, pesticides, sediment, erosion and shoreline stabilization concerns. Testing services, pollutants and spills that may impact both environment and health.

- * Cook County Soil & Water 218-387-3647
- * Cook County Land Services 218-387-3630
- * Cook County Extension 218-387-3015

Water Wells

All wells must be registered with the State of Minnesota. Your well driller should take care of your registration.

- * Water Testing Kits:
Cook County Environmental Health 218-387-3630
- * Minnesota Department of Health
Well Management Unit 218-302-6166
health.state.mn.us/divs/eh/wells

Wetlands

The Cook County Land Services Department regulates activities in wetlands and permits are required. You may also need permits from local, state and federal governments for your projects.

- * Cook County Land Services 218-387-3630
- * Grand Marais 218-387-1848
- * US Army Corps of Engineers 218-720-5291 ext. 35403
- * DNR Division of Waters 218-834-1441
bwsr.state.mn.us/wetlands-regulation-minnesota
www.dnr.state.mn.us/wetlands/index.html

Utilities

Coordination of utilities installation.

- * Arrowhead Electric Cooperative 218-663-7239
- * Grand Marais Public Utilities Commission 218-387-1848
- * Before digging call Gopher State One 1-800-252-1166
www.gopherstateonecall.org

Various Homeowner Matters

- Cook County Extension 218-387-3015
- Firewise 218-387-3642
cookcountyfirewise.org



Cook Soil & Water Conservation District
411 W. Second St. Grand Marais, MN 55604
www.cookswcd.org
218-387-3647