

Native Plants for Lakeshore Buffers



Marsh Milkweed

Asclepias incarnata

Ht: 36-48" Flower: Purple Bloom: June-August
Habitat: Full sun to part shade. Wet to moist soils.

White Turtlehead

Chelone glabra

Ht: 18-36" Flower: White Bloom: July-September
Habitat: Full sun to part shade. Wet to moist soils.



Thick Spike Blazing Star

Liatris pycnostachya

Ht: 36-48" Flower: Purple Bloom: July-September
Habitat: Full sun to part sun. Moist soils.

Sweet Joe-Pye Weed

Eutrochium purpureum

Ht: 36-54" Flower: Purple Bloom: June-September
Habitat: Full sun to part shade. Wet to moist soils.



Northern Blue Flag Iris

Iris versicolor

Ht: 18-36" Flower: Purple Bloom: May-July
Habitat: Full sun to part shade. Wet to moist soils.

Pickeral Weed

Pontederia cordata

Ht: 24-40" Flower: Purple Bloom: June-September
Habitat: Full sun. Wet soils.



Switch Grass

Panicum virgatum

Ht: 48-72" Flower: Beige Bloom: June-August
Habitat: Full sun to part shade. Wet to moist soils.

Little Bluestem

Schizachyrium scoparium

Ht: 12-36" Flower: Purplish Bloom: August-September
Habitat: Full sun to part shade. Moist to dry soils.



Indian Grass

Sorghastrum nutans

Ht: 36-84" Flower: Amber Bloom: August-September
Habitat: Full sun to part shade. Wet to moist soils.

Prairie Cordgrass

Spartina pectinata

Ht: 60-72" Flower: Purplish Bloom: August-September
Habitat: Full sun. Wet to moist soils.



Three Square Bulrush

Scirpus pungens

Ht: 36-60" Bloom: June-September
Habitat: Full sun. Wet soils.

Fowl Manna Grass

Glyceria striata

Ht: 48-60" Flower: Purplish Bloom: July-September
Habitat: Full sun to part shade. Wet soils.



Native Shrubs for Lakeshore Buffers



Buttonbush

Cephalanthus occidentalis

Ht: 4-10' Flower: White Bloom: June-August
Habitat: Full sun to part shade. Wet soils.

Red Osier Dogwood

Cornus sericea

Ht: 4-12' Flower: White Bloom: June-September
Habitat: Full sun to part shade. Wet to moist soils.



Sandbar Willow

Salix interior

Ht: 5-15' Flower: Yellow Bloom: April-July
Habitat: Full sun to part sun. Wet to moist soils.

Highbush Cranberry

Viburnum trilobum

Ht: 6-12' Flower: White Bloom: July-September
Habitat: Full sun to part shade. Wet soils.



Technical Assistance

Expert assistance is available to homeowners interested in determining the best methods for managing their lakeshore for stability, fish, wildlife, and water quality. Assistance may include on-site consultations, project design, cost estimation, and guidance throughout project installation and maintenance. Contact the Anoka Conservation District for assistance.

Financial Assistance

Cost-share grants may be available for restoring lakeshores with native vegetation and correcting or preventing shoreline erosion. Grants may cover 50-75% of the cost for plants and other materials on projects that will provide benefits to the lake and the public.

Regulatory Compliance And Permitting

Federal, state, and local permitting authorities have different permit requirements, fees, and timelines. Federal and state agencies accept a single Joint Notification Form (JNF) application. Local governments often have unique forms, but may accept the JNF as well.

Some Permitting Authorities

United States Army Corps of Engineers
Minnesota Department of Natural Resources
County, City, and Township
Watershed Management Organization

Anoka Conservation District
1318 McKay Dr. NE, Suite 300
Ham Lake, MN 55304
763-434-2030
www.AnokaSWCD.org

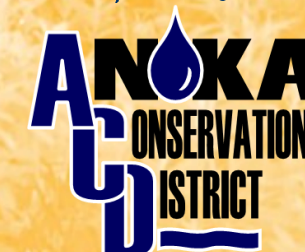
LAKE SHORE RESTORATION

Bringing Water Quality &
Wildlife to Your Shore



Conservation Starts at Home

Prepared by the



Introduction

This provides a starting point for understanding the potential problems and solutions common to lakeshore landowners. Some problems can be addressed by individual landowners, but many require the assistance of an engineer or local government entity. The cause and severity of the problem will dictate the best strategy.

Lakeshore Challenges

Ice Jacking

Ice jacking occurs when lake ice expands and contracts with temperature fluctuations, creating cracks each time. The cracks fill with water and refreeze. With each cycle, the ice sheet grows slowly wider pushing outward on all shores of lakes. Ice jacking typically occurs in very cold winters. Ice jacking is powerful enough to push houses off their foundations and topple well-established trees.



Ice Heaves

Ice heaves occur in the spring as the lake ice melts and breaks in to mobile sheets. Winds move the large sheets of ice which plow into the shoreline with sufficient momentum to roll the landscape back onto itself.



Waves

The ceaseless beating of waves against lakeshores, whether drummed up by winds or boat traffic, eventually mine the shoreline of soil, carrying the soil and even rocks into deeper water.



Geese

Geese, as grazers are drawn to open low cut vegetation, particularly near water. The mess they leave behind deters recreation in lawns, and is washed into lakes during rain events. Once in the lake, the nutrient and bacteria rich waste contributes to algae blooms and can lead to restrictions on aquatic recreation, such as beach closings.



Muskrats

Muskrats generally burrow into shorelines that have a relatively vertical face and rise several feet out of the water. The dens become problematic when the ground above is not strong enough to support foot traffic and homeowners fall into them. The burrows can also cave in naturally over time as the overlying soils are weakened by infiltrating rain.



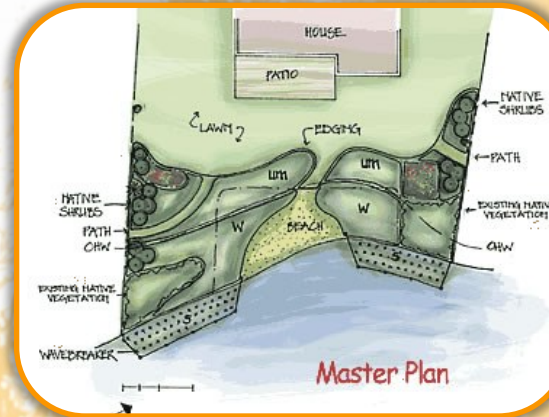
Lakes are Underwater Landscapes

- Healthy lakes support recreation and wildlife.
- Lakes are complex ecosystems and shouldn't be treated like swimming pools.
- Lake plants are good for lakes, just like plants are good for lawns, gardens, and forests.
- Attempts to make lakes behave like swimming pools with crystal clear waters and no vegetation are expensive and doomed to fail.
- Nutrients in lake water will grow plants. If we don't allow plants like lily pads and rushes, we must accept our lakes being green with algae.

A Balanced Approach

Lake properties can be designed with lake ecology and human enjoyment in mind. A balanced approach will incorporate:

- A small plant-free beach area for swimming.
- Dock and boat access.
- Lawn for recreation.
- A path or stairs down to the lake.
- Shoreline stabilization.
- Native terrestrial and aquatic vegetation for fish and wildlife habitat and water quality.
- Strategic buffer design using mulch, border edging, grouping and plant spacing will achieve a formal or natural look.
- Preserved but limited sight lines of the lake from the home, framed by trees shrubs and flowers.
- Obscured views of homes from the lake for privacy and aesthetics.



Benefits of Native Plant Buffers

- Adapted to lakeshore stresses such as waves, periodic flooding, high winds and ice.
- Deep fibrous root systems resist erosion, and encourage infiltration to treat water before it runs into the lake.
- Provides habitat for wildlife and improves connectivity between habitats along the lakeshore.
- Deters nuisance geese, which prefer open sight lines and easy access to the water to avoid predators.
- Obscures shoreline damage from large ice heaves to small muskrat burrows.



Lakeshore Stabilization

Whereas structural engineering is focused solely on erosion control using materials such as boulders, retaining walls, and rock riprap, bioengineering combines engineering techniques with ecological principles to also improve habitat, water quality and aesthetics. Bioengineering relies heavily on deep-rooted native plants in conjunction with a variety of other natural materials to prevent erosion from starting and to stabilize moderate erosion sites. The relatively low cost, habitat enhancement, and ability to self-repair makes bioengineering a functional management strategy. To treat severe erosion, however, structural engineering solutions may be necessary with assistance from a professional.



Vegetated Riprap

Aquatic emergent vegetation planted through riprap adds soil stabilizing root mass while improving habitat, water quality and aesthetics.

Live Staking

Dormant tree and shrub cuttings driven through revetments or rock are inexpensive and establish soil stabilizing root structure.



Tree Revetment

Small red cedar trees secured to the shore decrease erosion while promoting sediment accumulation to help rebuild the bank; often combined with live staking and native buffer planting.

Lakeshore Property Practices

- **Avoid mowing** to the edge of the water or bluff. Turf grasses have very shallow root systems, providing little soil stability. Deeper rooted species are also better at filtering out excess nutrients and sediment in runoff.
- **Prune lower branches** on trees to increase the amount of light that penetrates to the ground. This will increase plant growth at ground level where the stems, roots, and foliage will help keep soil in place.
- **Allow large trees to grow** by the lakeshore to anchor the landscape against the damaging effects of ice jacking and heaves.
- **Help control invasive species** by cleaning equipment and contributing to control efforts with time and financial resources.
- **Allow lake vegetation** to grow outside of the dock and beach area such as sedges, rushes, lily pads and underwater species.
- **Control runoff** from downspouts and other hard surfaces to prevent it from flowing into the lake. Promote infiltration of rain water into the soil.
- **Manage your septic system and pet waste** to keep harmful bacteria, chemicals and nutrients out of the lake.
- **Dispose of yard waste properly** to avoid smothering shoreline vegetation and contributing nutrients to the lake, which commonly occurs when leaves and grass clippings are thrown over the bank.