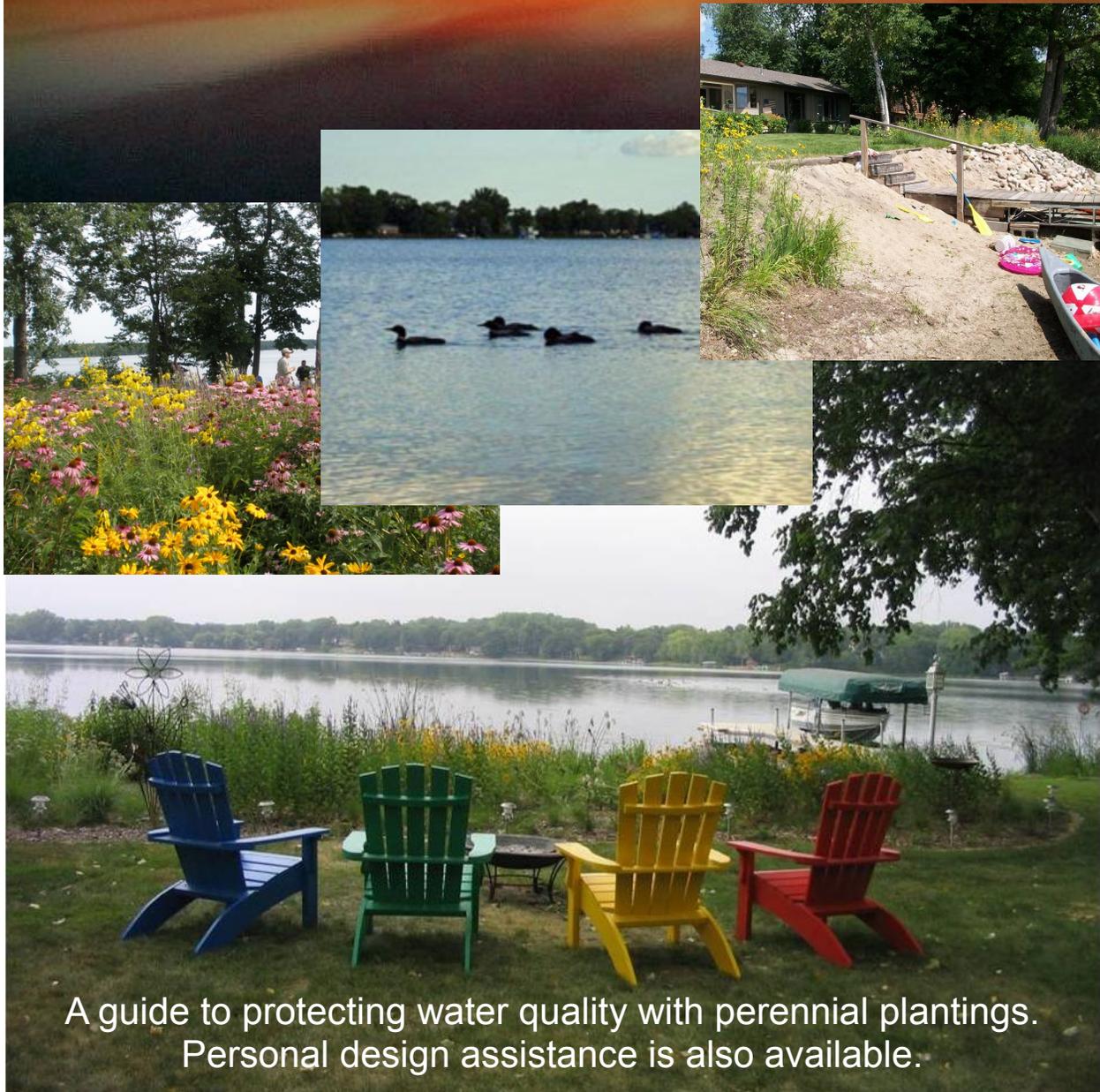


Otter Tail County Lakeshore Landscaping Manual



A guide to protecting water quality with perennial plantings.
Personal design assistance is also available.

Partial funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

We are fortunate here in Otter tail County to enjoy lakes with good water quality and scenic views. Growing up with bountiful resources of water, fish, and wildlife is a blessing many of us enjoyed and hope to preserve for future generations. This guidebook is intended to help you design and install native wildflower plantings to protect and improve water quality in your lake, stream, or neighborhood. Deep rooted native vegetation absorbs and purifies both surface runoff and shallow groundwater reducing the amount runoff reaching the lake and the pollutants the runoff carries..

Nutrients carried from residential areas to Otter Tail County lakes have increased significantly from 1993 to 2009 . www.land.umn.edu 2.

Picking the Right Spot

Plantings that catch down-spout discharge or surface runoff have a direct impact on water quality. These plantings can be in road ditches, between buildings, or on slopes.

The deep roots of native plants capture, purify, and utilize large amounts of water.

Converting natural areas to lawn has been shown to more than triple annual runoff. 3.



Lakeshore plantings attract and support fish, birds, and butterflies by providing food and cover. Deep roots stabilize the soil while absorbing and purifying rainfall. Plantings on slopes near the lake combine both benefits and eliminate hard to manage areas. Naturally screened areas of your shoreline are excellent locations for native wildflowers.

Contact the Shoreland Specialist at (218)-346-4260 ext.3

Pick a Garden Style

The style of garden you prefer has a large influence your planting. Plant choices, height layouts, site preparation, and annual maintenance vary based on garden type. Height profile is also a personal preference that can be built into a planting.



o Cottage Garden

- Groupings of flowers in a mulch base with accent and border grasses.
- Requires weeding and mulch replenishment .
- Can be very structured.
- Easier to manage for a planned result.

o Prairie Garden

- Mixed or clustered flowers in a short grass base with border grasses.
- Good site preparation is necessary.
- Weeding can be reduced to an annual mowing and removal of perennial weeds.
- Better for water quality.



Pick Your Plant Heights

- | | | | |
|---------|--------|----------------|--------|
| o Knee | 2 feet | o Belly button | 4 feet |
| o Thigh | 3 feet | o Shoulder | 5 feet |

If you have room taller plants add structure to your planting attracting more wildlife. Many taller plants are vigorous bloomers and don't reach full height till after mid-summer. Shrubs often have early blossoms, berries, and excellent fall colors.

Building height into your planting adds visual impact from

Contact the Shoreland Specialist at (218)-346-4260 ext.3

Costs

Native plantings generally cost around \$2.00 per square foot. Bluff plantings can cost an extra \$0.50 per square foot. Shoreline plantings can cost an extra \$5 to \$15 per foot of shoreline.

Cost share funding may be available; typically 75% of a projects eligible cost can be reimbursed to the homeowner after completion of their project.

Cost sharing requires a signed and approved contract prior to project installation to be eligible for funding. Funds may be available from a variety of grants, projects include Raingardens, Shoreline Plantings, and Sealing Abandoned Wells.

Typical Timeline

July	Select your planting area. Develop your design template.
August	Attend an Open House or call the County Shoreland Specialist
October	Submit your project for cost sharing.
January	Receive a letter indicating your cost share status.
February	Submit your plant and material orders.
Early April	Pick a planting day, make arrangements for labor assistance.
Late April	Mark your planting area.
Early May	Apply herbicide to the area.
Late May	Re-apply herbicide to the area.
Early June	Rake the area, seed, install erosion controls, place plants and install. Projects typically take 3 people one day to install.
Late June	Submit "Paid" receipts and volunteer time voucher for cost sharing.
Late July	Receive cost share check.

"Landowner's have been very interested in having Conservation Corps Young Adult Crews come to prepare and install their project. It's a win-win for the homeowner and the crew."

Permits

Your project may require permitting.

Otter Tail County Land & Resource permits are required if any soil will be moved within 100' of the lake. Contact (218)-998-8095

MN DNR permits are required to plant aquatic vegetation or spray herbicides on aquatic vegetation Contact DNR Aquatic Plant Management at (218)-755-3959 for more information. Other permitting agencies include but are not limited to City, Township, or Watershed District.

Vegetation conversion alone usually does not require permit but always check before beginning any projects.

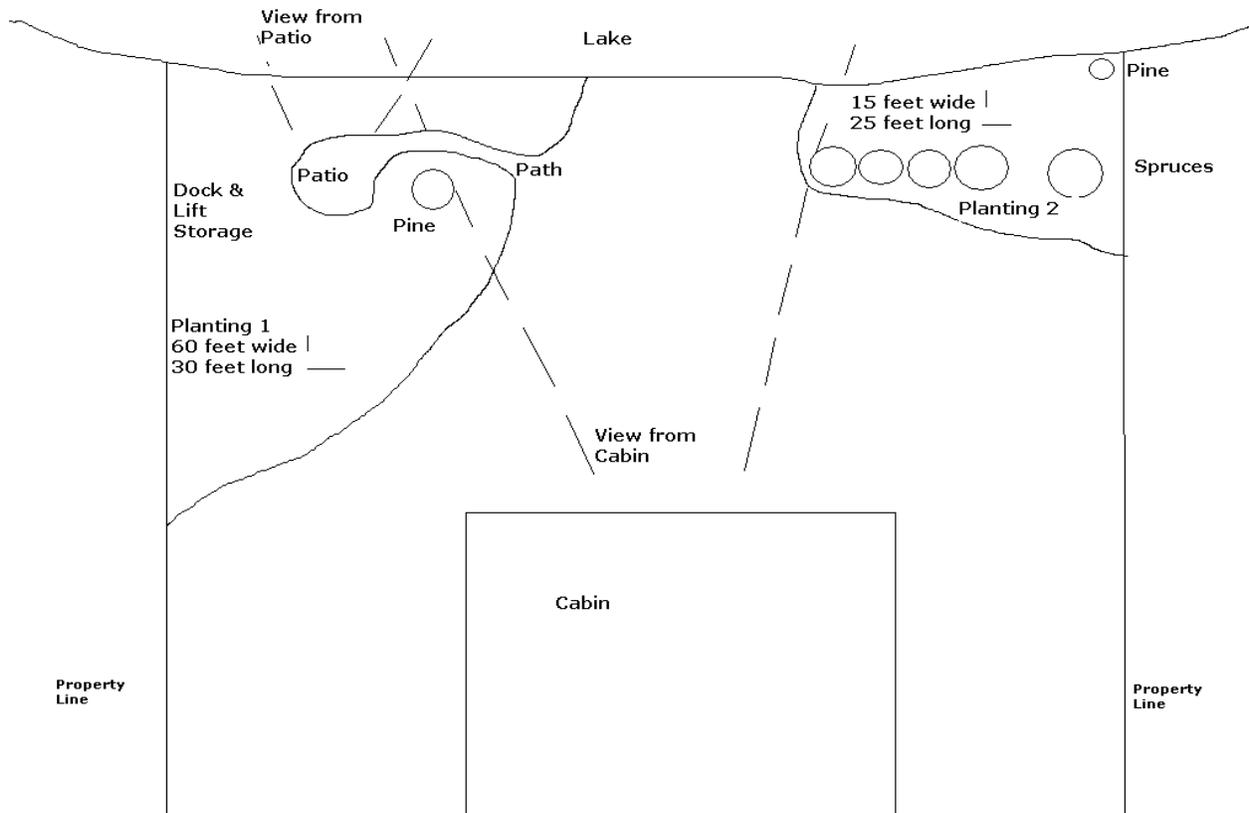
Contact the Shoreland Specialist at (218)-346-4260 ext.3

Choose Your Elements

- Dock or lift storage area
- Sitting Area
- Privacy Screen
- Birdhouse/Birdbath
- Rock feature
- Lake Access Area
- Path
- Sand Area
- Accent Planting
- Shrub Planting

Start Your Sketch

Sketching your lot on a sheet of paper will allow you to visualize how your elements and varied plant heights fit into your landscape. Sketches can be simple or take considerable time. Marking areas of excessively wet or dry soils, steep slopes, viewing lines, and shade on your sketch simplifies the plant selection process.



Now with your sketch you can:

Select your own plants and materials.

Attend a local Design Openhouse

Contact OT Shoreland Specialist for personal assistance.

For more info visit www.eotswcd.org or call (218)-346-4260 ext3

Contact the Shoreland Specialist at (218)-346-4260 ext.3

Site Preparation

Preparing your site is similar to preparing any perennial bed. In general all existing vegetation must be killed before re-establishing native flowers and grasses. Applying a lake friendly Roundup formulation (Eraser AQ, Killz All Aquatic, Rodeo) is most effective and doesn't harm water quality if label directions are followed. Two applications ten days apart are very effective. Wait a minimum of seven days before disturbing the site. For Cottage gardens spread a layer mulch four inches thick on top of the dead vegetation. For Prairie gardens rake the site vigorously immediately before scattering the short grass seeds then cover with an erosion control blanket. Erosion control blankets retain moisture improving germination and growth.

Maintenance

First Two Years

Water immediately following seeding and planting. Watering seeds and small seedlings after sprouting is critical in sandy soils. Plan to water 1/2 inch daily, preferably in the morning, for the first few days or until plants are germinating and growing well. Once plants are established water is only needed if prolonged dry periods occur.

80% of the first year's growth in your planting will be root growth!

Perennial natives will eventually out-compete annual weeds that sprout from seed.

The best method is to repeatedly trim weedy vegetation to 6 to 8 inches with a weed-whacker. This should be done every few weeks or when the weed species reach 10-12 inches in height.

Remove clippings immediately if they cover the native seedlings. This will discourage weed growth, remove shade, and allow native seedlings to grow.

Year Three and Beyond

No watering or weeding should be necessary except for extreme drought conditions or stubborn invasive weed problems. Leave vegetation in place in the fall and through the winter months.

Disclaimer

These instructions are for plantings in areas with gentle slopes and no active erosion. Projects that include work on steep slopes, eroding areas, or shoreline plantings require professional assistance. Design assistance is available from a variety of sources including local individuals, County Soil and Water Conservation Districts, the University of Minnesota Extension, and Minnesota DNR.

Contact the Shoreland Specialist at (218)-346-4260 ext.3

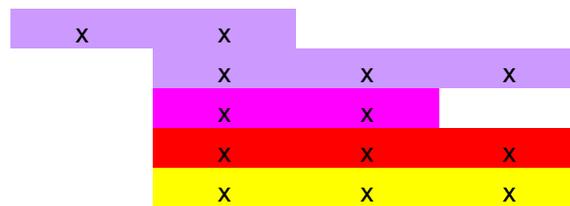
Otter Tail County Favorites by the Otter Tail County Shoreland Specialist
 All of the flowers and grasses listed tolerate dry soils, except those labeled Wet.

	Bloom	Season	and	Color	Sept	Oct
	May	June	July	August		
Short 1-2feet						
Pasque Flower	x					
Prairie Onion			x	x		
Dotted Blazing			x	x	x	
Prairie Pussytoes	x	x				
Thimbleweed		x	x			
Prairie Blue-eyed Grass	x	x				
Harebell		x	x	x	x	
Prairie Smoke	x	x				
Prairie Alumroot	x	x	x			
Hoary Puccoon	x	x				
Short Spreading						
Prairie Spiderwort	x	x	x			
Canada Anemone	x	x	x			
Upland White Aster		x	x	x	x	
Golden Aster		x	x	x		
Medium 2-3 feet						
Lg. Flw. Beardstongue	x	x				
Larkspur		x	x			
Lead Plant		x	x	x		
Button Blazing Star			x	x	x	x
N. Leaf Coneflower		x	x			
Purple Prairie Clover		x	x	x		
Butterfly Milkweed		x	x	x		
White Prairie clover		x	x	x	x	
Whorled Milkweed			x	x	x	
Heart-leaf Golden Alex.	x	x				
Long Head Coneflower		x	x	x		
Showy Goldenrod				x	x	x
Medium Spreading						
Prairie Phlox	x	x	x			
Hoary Vervain		x	x	x	x	
Silky Aster					x	x
Bedstraw		x	x			
Prairie sage		x	x	x		
Prairie Coreopsis		x	x	x		
Old Field Goldenrod				x	x	x

Contact the Shoreland Specialist at (218)-346-4260 ext.3

Tall Clumps 4-5 feet

- [P. Purple Coneflower](#)
- [Prairie Blazing star](#)
- [Showy Tick Trefoil](#)
- [Bergamot](#)
- [Yellow Coneflower](#)



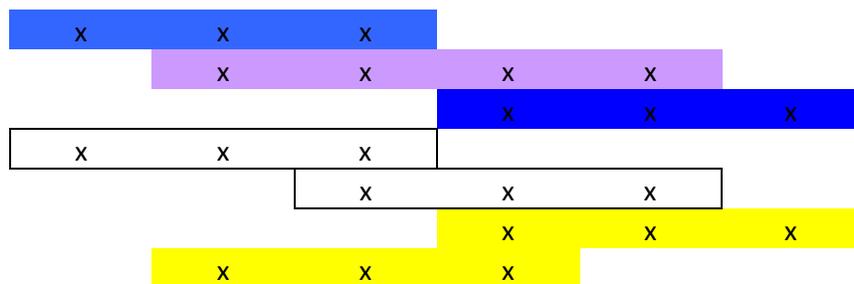
Tall Spreading

- [Smooth Blue Aster](#)
- [Sky Blue Aster](#)
- [Mountain Mint](#)
- [Heath Aster](#)
- [Stiff Goldenrod](#)



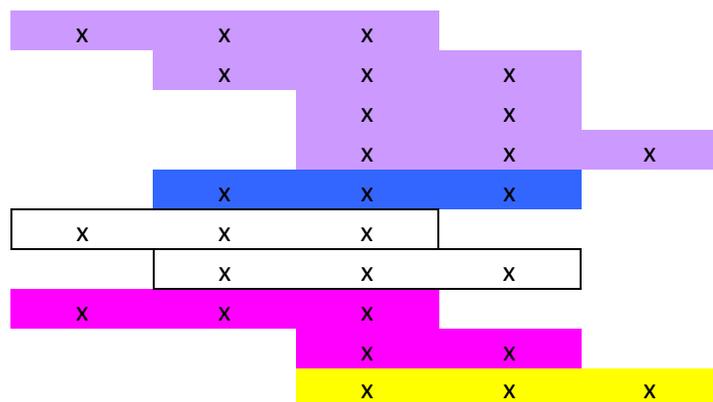
Wet Short

- [Blue flag Iris](#)
- [Monkey Flower](#)
- [Bottle gentian](#)
- [Canada Anemone](#)
- [Wild Mint](#)
- [Marsh Marigold](#)
- [Fringed Loosestrife](#)



Wet Tall

- [Joe Pye weed](#)
- [Common Ironweed](#)
- [Meadow Blazing star](#)
- [New England Aster](#)
- [Blue Vervain](#)
- [Culvers Root](#)
- [Boneset](#)
- [Swamp Milkweed](#)
- [Obedient plant](#)
- [Sneezeweed](#)



Grasses

- [Blue gramma](#)
- [June Grass](#)
- [Side-oats gramma](#)
- [Little Bluestem](#)
- [Green Needle](#)
- [Northern Drop-seed](#)
- [Switch grass](#)

Ht.

1'	Lawn Alternative, can form a sod, very short. General Base Grass.
1.5'	Comes up early, forms nice seed head display. Good for edging.
1.5'	Comes up rapidly, short loose bunches. General Base Grass.
2'	Very Good stabilizer for dry soils, excellent summer & fall color. Edging species.
2'	Greens up early. Common in our area especially on bluffs with Side Oat's Grama.
2.5'	Beautiful flowing mounds. Greens up early. Great for edging.
4'	Very strong root system. Interesting seed heads.

Contact the Shoreland Specialist at (218)-346-4260 ext.3

Indian grass	4'	Forms a loose sod. Generally a co-dominant grass.
Big Bluestem	4'	Very Good stabilizer for semi-moist soils, bunch grass.
Shrubs		
	Ht.	
Red Osier Dogwood	6'	Very strong stabilizer in sandy to dark soils.
Gray Dogwood	4'+	
Meadow Sweet	4'+	
New Jersey Tea	3'	
Ninebark	6'+	
False Indigo	4'	Excellent Stabilizer for Gravelly, Sandy Banks. Delicate leaves on an open
High Bush Cranberry	6'+	Nice winter berries, great bird shrub. Early bloomer, variegated leaves.
Black Chokeberry	5'	Produces many edible berries.

Resources

Visit the DNR maintained list for current information in your area.
<http://www.dnr.state.mn.us/gardens/nativeplants/suppliers.html>

Erosion Control Products

Brock White Company www.brockwhite.com (800)-487-9256
 Natural Shore Technologies www.naturalshore.com (612)-703-7581

Native Plant Nurseries

Morning Sky Greenery www.morningskygreenery.com (320)-795-6234
 Prairie Moon www.prairiemoon.com (866)-417-8156
 Prairie Restorations www.prairieresto.com (763)-383-4342

Design Assistance

Otter Tail County Shoreland Specialist www.eotswcd.org (218)-346-4260 x3
 MN DNR Shoreland Habitat Program www.dnr.state.mn.us (320)-634-4573
 MN Extension www.extension.umn.edu (218)998-5787

Visit www.BlueThumb.org for a comprehensive listing of additional resources.

Other great resources

Lakescaping for Wildlife and Water Quality (C.L. Henderson, C.J. Dindorf, F.J. Rozumalski, 1999 MN DNR) is a book showing techniques to prevent shoreline erosion and restore wildlife, habitat, wildflowers and clean water. **Retail Price: 19.95**

Restore Your Shore (2002, MN DNR) is a sequel to the lakescaping book. This instructional CD-ROM presents ideas to use in protecting and restoring natural shorelands. 400 native plants on a searchable database. Visit the Restore Your Shore website at <http://www.dnr.state.mn.us/restoreyourshore/index.html>