

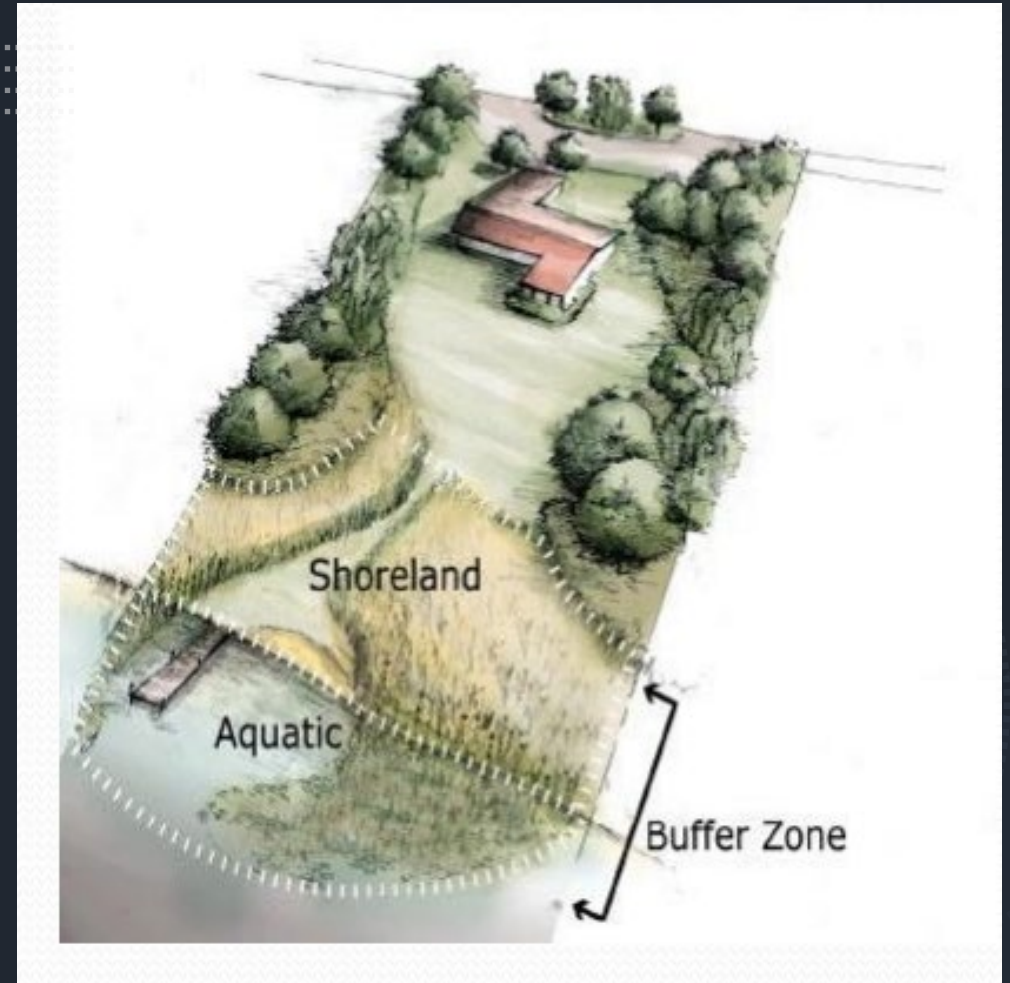
# Shoreland Buffer Vegetation Plan User Guide

A guide of trees, shrubs, forbs, grasses, sedges, and rushes commonly used in shoreland buffer vegetation plans

Hardiness Zones 5a and 5b

Prepared by Waukesha County Department of Parks and Land Use Planning and Zoning Division

2023



# Shoreland Buffer Vegetation Plan User Guide

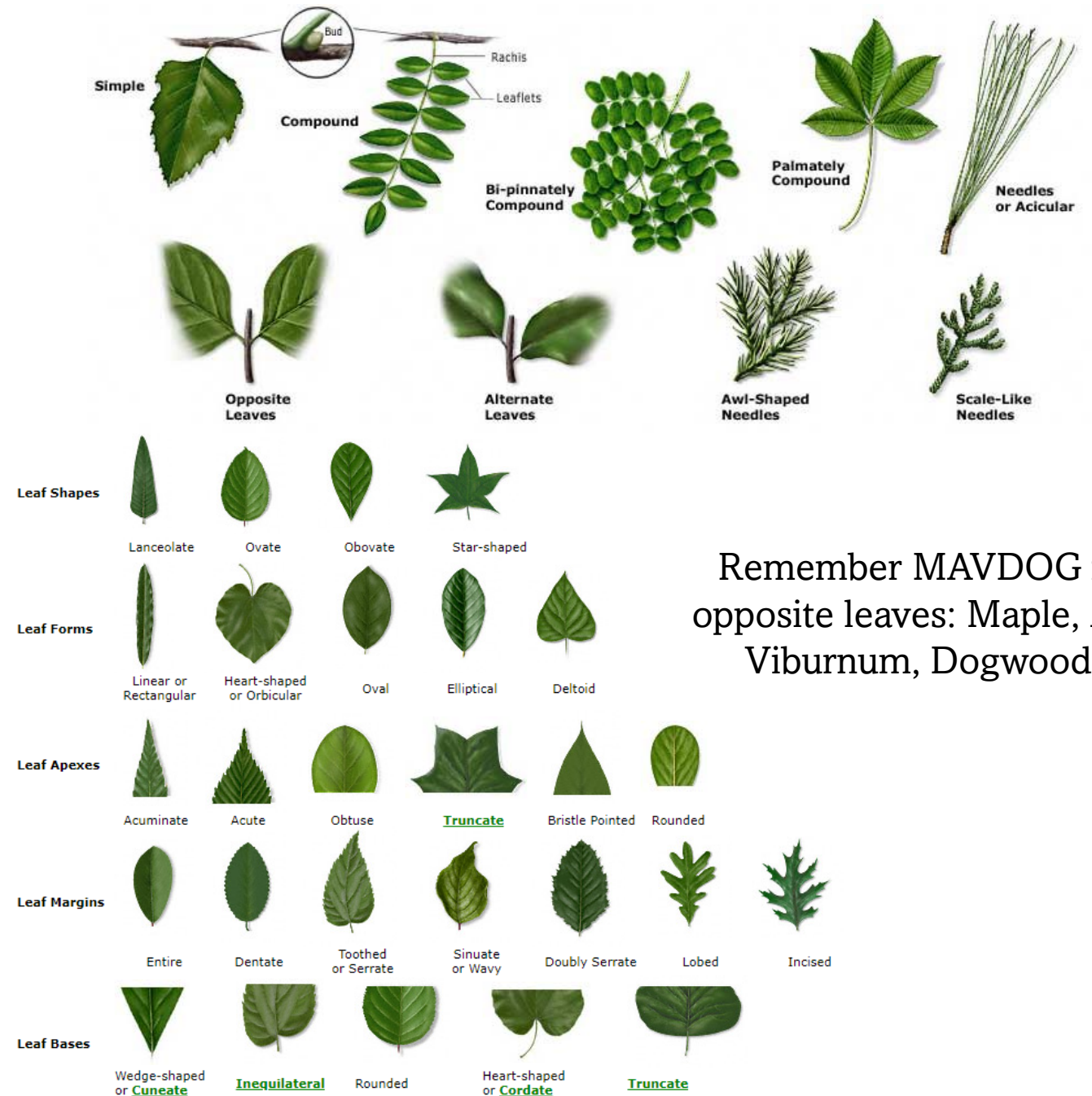
A shoreland buffer vegetation plan provides native vegetation is important for the protection of water quality, fish and wildlife habitat, and natural scenic beauty in our lakes and rivers.

This User Guide will help property owners create a plan by identifying common native species of:

- Trees
- Shrubs
- Forbs
- Grasses
- Sedges
- Rushes
- Ferns

# Trees

- ❖ Red, Silver, and Sugar Maple
- ❖ Northern Pin, Bur/Burr, and Swamp White Oak
- ❖ White Spruce
- ❖ White Pine
- ❖ Eastern Hemlock
- ❖ River and Paper Birch
- ❖ Basswood (Linden)
- ❖ Ironwood
- ❖ Black and Peach-Leaf Willow



# Maple Trees-Red, Silver, Sugar (*Acer spp.*)

(leaves have an opposite branching pattern, i.e., they grow directly across from one another)

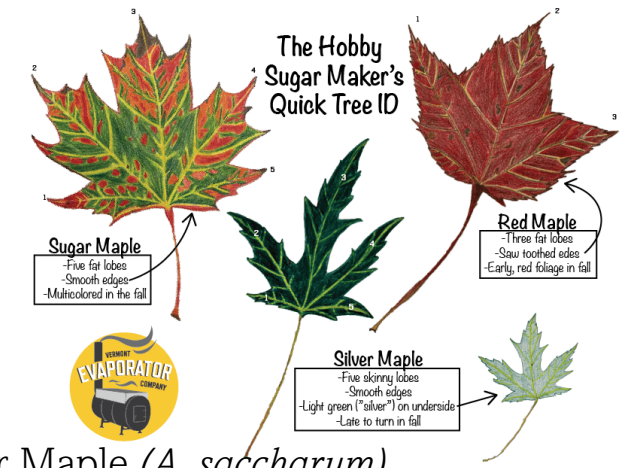
Red Maple (also known as Swamp)  
(*A. rubrum*)



Silver Maple (*A. saccharinum*)



Sugar Maple (*A. saccharum*)



# Oak Trees-Northern Pin, Bur, Swamp White (*Quercus* spp.)



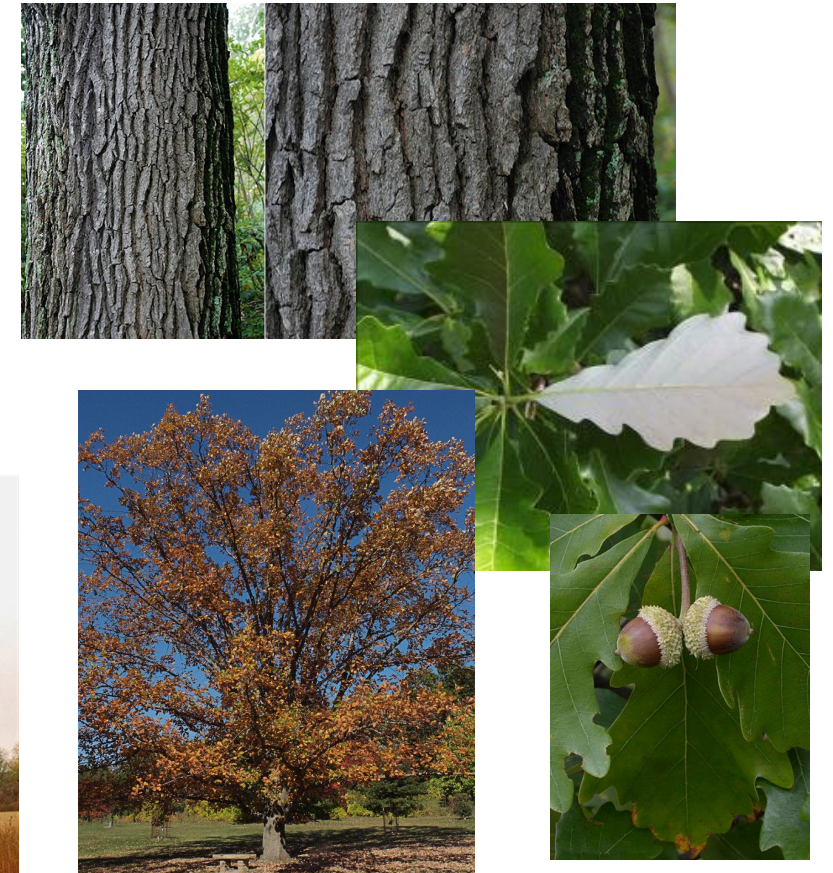
Northern Pin Oak (*Q. ellipsoidalis*)



Bur Oak (*Q. macrocarpa*)



Swamp White Oak (*Q. bicolor*)



# Spruce (*Picea spp.*), Pine (*Pinus spp.*), and Hemlock (*Tsuga spp.*)

-These are commonly found in N. Wisconsin but may be beneficial in Waukesha County



N. White Spruce (*P. glauca*)



Eastern White Pine (*P. strobus*)



Eastern Hemlock (*T. canadensis*)

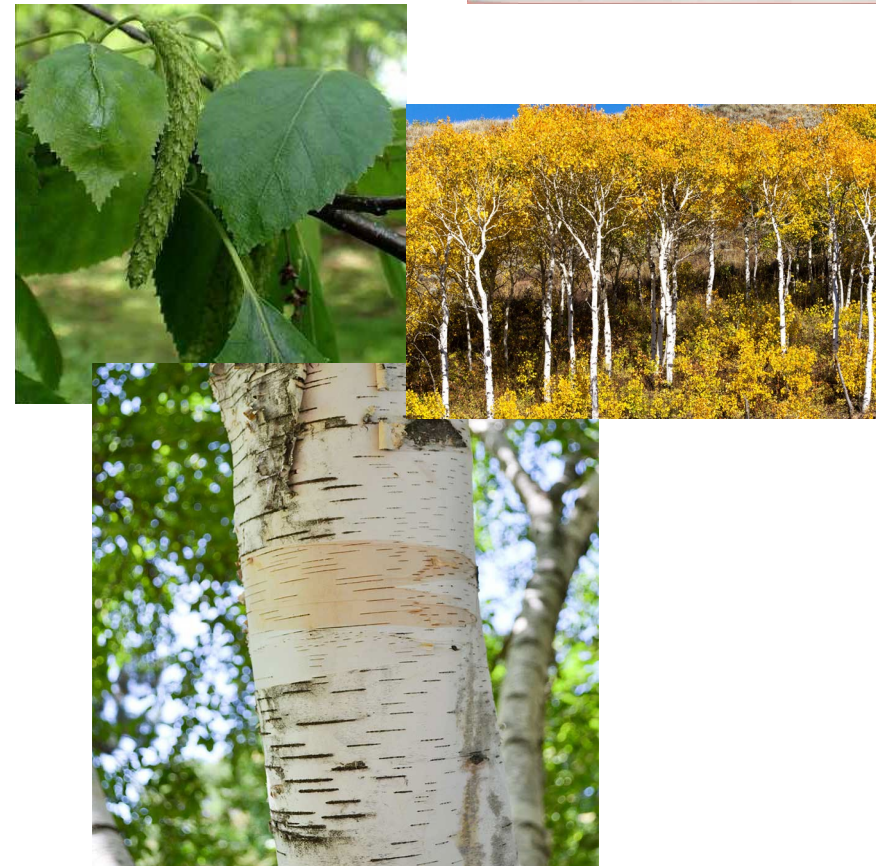


# Birch Trees-River and Paper (*Betula spp.*)

River Birch (*B. nigra*)



Paper Birch (*B. papyrifera*)



# Basswood (*Tilia spp.*) and Ironwood (*Ostrya spp.*) Trees

Basswood (*T. americana*)

-also known as a Linden Tree



Ironwood (*O. virginiana*)

-belongs to Birch family-Betulaceae

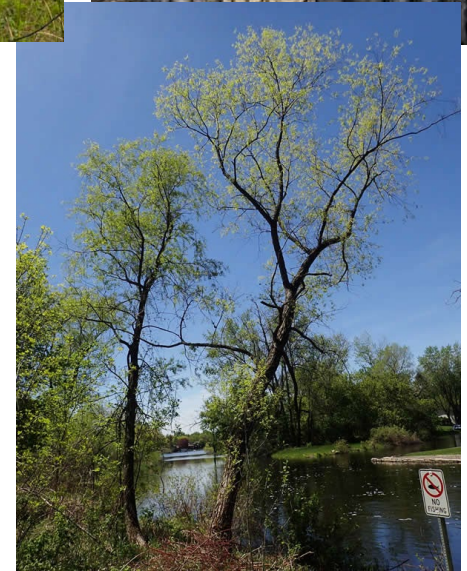


# Willow Trees-Black and Peach-Leaf (*Salix spp.*)

Black Willow (*S. nigra*)



Peach-Leaf Willow (*S. amygdaloides*)



# Shrubs

- ❖ Nannyberry and Mapleleaf Viburnum
- ❖ Creeping Juniper
- ❖ Black Chokeberry
- ❖ Redosier Dogwood
- ❖ Bebb's and Sandbar Willow

# Viburnum-Nannyberry and Mapleleaf (*Viburnum* spp.) (leaves are opposite)

Nannyberry Viburnum (*V. lentago*)



Mapleleaf Viburnum (*V. acerifolium*)



# Creeping Juniper (*Juniperus spp.*) and Black Chokeberry (*Aronia spp.*)

Creeping Juniper (*J. horizontalis*)

\*\*useful on steep slopes



Black Chokeberry (*A. melanocarpa*)



# Dogwood-Redosier and Pagoda (*Cornus spp.*)

Redosier Dogwood (*C. sericea*)  
(leaves are opposite)



Pagoda Dogwood (*C. alternifolia*)

(leaves are alternate or staggered - most species of dogwood are **opposite**)



# Willow shrubs-Bebb's and Sand Bar (*Salix spp.*)

Bebb's Willow (*S. bebbiana*)



Sand Bar Willow (*S. interior*)



# Forbs

(flowering, non-grassy, herbaceous plants)

- White Turtlehead
- Wild Bergamot
- Spiderwort
- Culver's Root
- Mountain Mint
- Butterfly Weed
- Prairie and Marsh Blazing Star
- Great Blue Lobelia
- Cardinal Flower
- Wild Petunia
- Partridge Pea
- Vervain
- Fox Glove and Showy Beardtongue
- Purple Prairie Clover
- Red, Swamp, and Whorled Milkweed
- Blue Flag Iris
- Wild Lupine
- White Wild Indigo
- Ohio and Grass-Leaved Goldenrod
- Black-Eyed Susan
- Purple and Yellow Coneflower
- Prairie and Lanceleaf Coreopsis
- Aster Family (Sky Blue, New England, Heath, Big-Leaved)

# Forbs with 2 petals

(White Turtlehead and Wild Bergamot)

White Turtlehead (*Chelone glabra*)



Wild Bergamot (*Monarda fistulosa*)

-five petals form a tube, tube separates into two lobes



# Forbs with 3-4 petals

(Spiderwort, Culver's Root, Mountain Mint)

Spiderwort (*Tradescantia occidentalis*)



Culver's Root (*Veronicastrum virginicum*)



Mountain Mint (*Pycnanthemum virginianum*)



# Forbs with 5 petals

(Butterfly Weed and Blazing Star)

Butterfly Weed (*Asclepias tuberosa*)

-not to be confused with Butterfly Bush



Blazing Star (*Liatris spp.*)

-Prairie (*L. pycnostachya*) and Marsh (*L. spicata*) are commonly used, Marsh prefers wetter conditions over Prairie; they look similar



# Forbs with 5 petals

(Cardinal Flower (*Lobelia spp.*) and Great Blue Lobelia)

Cardinal Flower (*L. cardinalis*)



Great Blue Lobelia (*L. siphilitica*)



# Forbs with 5 petals

(Wild Petunia and Partridge Pea)

Wild Petunia (*Ruellia humilis*)



Partridge Pea (*Chamaecrista fasciculata*)



# Forbs with 5 petals

(Vervain, Beardtongue, and Purple Prairie Clover)

Vervain (*Verbena spp.*)

Blue/Swamp (*V. hastata*) and Hoary (*V. stricta*) commonly used



Beardtongue (*Penstemon spp.*)

Fox Glove (*P. digitalis*)



Purple Prairie Clover (*Dalea purpurea*)



# Forbs with 5 petals

(Whorled (*Asclepias spp.*) and Red/Swamp Milkweed)

Whorled Milkweed (*A. verticillata*)



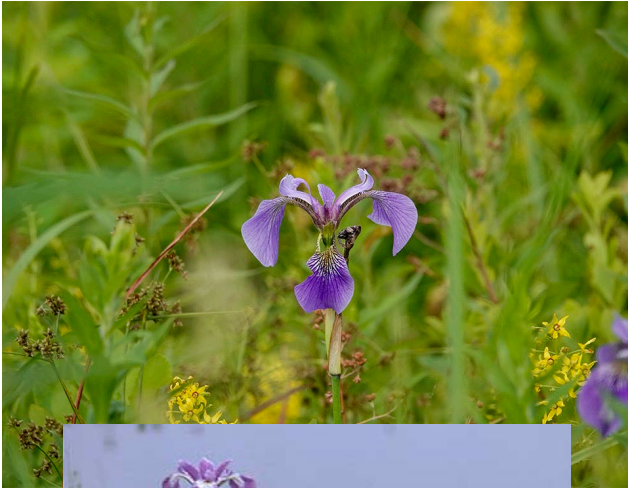
Red/Swamp Milkweed (*A. Incarnata*)



# Forbs with 6 petals or pea shaped petals

(Blue Flag Iris-6 petals; Wild Lupine, White Wild Indigo-pea shaped)

Blue Flag Iris (*Iris versicolor*)



Wild Lupine (*Lupinus perennis*)



White Wild Indigo (*Baptisia alba*)



# Forbs with many petals

(Grass-Leaved (*Solidago spp.*, *Euthamia spp.*) and Ohio Goldenrod)

Grass-Leaved Goldenrod (*E. graminifolia*)

-*Euthamia* genus separated from *Solidago* based on inflorescence and DNA differences



Ohio Goldenrod (*S. ohioensis*)

-smooth leaves and stem



# Forbs with many petals

(Black-Eyed Susan (*Rudbeckia spp.*), Purple (*Echinacea spp.*), and Yellow Coneflower (*Ratibida spp.*))

Black-Eyed Susan (*R. hirta*)



Purple Coneflower (*E. purpurea*)



Yellow/Gray-Headed Coneflower (*R. pinnata*)



Brown-Eyed Susan

(*R. triloba*)



# Forbs with many petals

(Lanceleaf (*Coreopsis spp.*) and Prairie Coreopsis)

Lanceleaf/Sand Coreopsis (*C. lanceolata*)

-basal leaf is unlobed



Prairie/Stiff Coreopsis (*C. palmata*)

-deeply lobed, shorter leaves than Lanceleaf



# Forbs with many petals

(Aster Family (*Aster* spp., *Symphyotrichum* spp., *Eurybia* spp.))

Sky Blue Aster (*S. oolentangiense*)



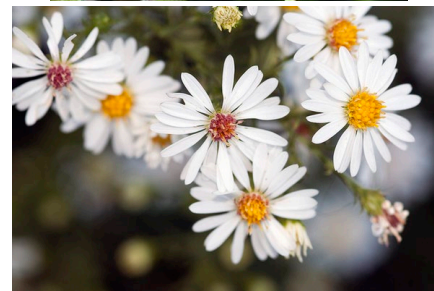
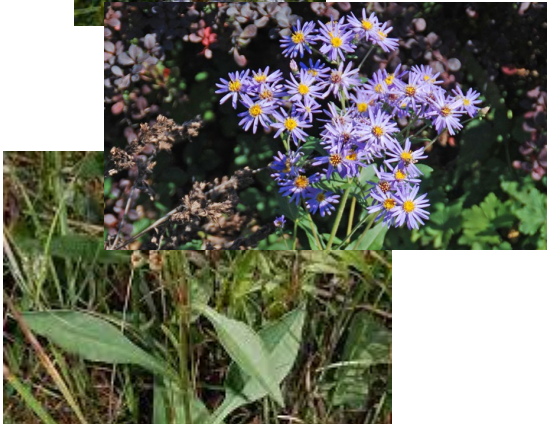
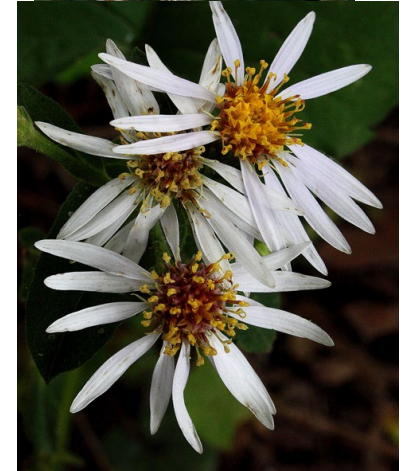
New England (*A/S. novae-angliae*)



Heath Aster (*A/S. ericoides*)



Big Leaved Aster (*A/E. macrophyllus*)



# Grasses

(with narrow leaves;  
and round, hollow  
stems)

- ❖ Prairie Dropseed
- ❖ June Grass
- ❖ Side Oats Grama
- ❖ Blue-Eyed Grass
- ❖ Canada and Virginia Wild Rye

# Prairie Dropseed (*Sporobolus spp.*) and June Grass (*Koeleria spp.*)

Prairie Dropseed (*S. heterolepis*)



June Grass (*K. macrantha*)



# Side Oats Grama (*Bouteloua* spp.) and Blue-Eyed Grass (*Sisyrinchium* spp.)

Side Oats Grama (*B. curtipendula*)



Narrow Leaved Blue-Eyed Grass (*S. angustifolium*)



# Wild Rye-Canada and Virginia (*Elymus* spp.)

Canada Wild Rye (*E. canadensis*)



Virginia Wild Rye (*E. virginicus*)



Bottlebrush Grass (*E. hystrix*)

# Sedges

(commonly found in shallow water and moist soils, form in dense clumps/tufts, stems have edges- usually 3 sided- “sedges have edges”)

- ❖ Brown Fox Sedge
- ❖ Bristly Sedge
- ❖ Plains Oval Sedge
- ❖ Bebb's Sedge
- ❖ Pennsylvania Sedge

# Fox and Bristly Sedge (*Carex spp.*)

(remember “sedges have edges”!)

Fox Sedge (Brown) (*C. vulpinoidea*)



Bristly Sedge (*C. comosa*)



# Plains Oval, Bebb's, and Pennsylvania Sedge (*Carex spp.*)

Plains Oval Sedge (*C. brevior*)



Bebb's Sedge (*C. bebbii*)



Penn Sedge (*C. pensylvanica*)



# Rushes

(stems are round, not hollow; leaves are alternate or basal, and expanded at the base into sheaths around the stems)

- ❖ Common Rush
- ❖ Torrey's Rush
- ❖ River Bulrush
- ❖ Dark-Green Bulrush

# Rush-Common and Torrey's (*Juncus spp.*)

Common Rush (*J. effusus*)



Torrey's Rush (*J. torreyi*)



# Bulrush-River and Dark-Green (*Scirpus spp.*)

River Bulrush (*S. fluviatilis*)



Dark-Green Bulrush (*S. atrovirens*)



Ferns  
(reproduce via spores; do  
not have seeds or  
flowers)

- ❖ Sensitive
- ❖ Cinnamon
- ❖ Interrupted
- ❖ Maidenhair
- ❖ Ostrich



# Ferns

(*Osmunda* spp., *Onoclea* spp., *Adiantum*, *Matteuccia* spp.)

Sensitive Fern (*Onoclea sensibilis*)



Cinnamon Fern (*Osmunda cinnamomea*)



Interrupted Fern (*Osmunda claytoniana*)



Maidenhair Fern (*A. pedatum*)



Ostrich Fern (*M. struthiopteris*)



# Wisconsin Native Deer and Rabbit Resistant Species

(some not found in User Guide)

\*Deer Resistant

\*\*Rabbit Resistant

Keep in mind deer will graze on anything when food supply is low.

## Forbs

- *Asarum canadense* (Wild Ginger, not included in User Guide) \*,\*\*
- *Coreopsis spp.* (*C. verticillate* is a good replacement for Lanceleaf and Prairie Coreopsis) \*,\*\*
- Ferns \*,\*\*
- Most Grasses (N. Sea Oats, not included in User Guide) \*,\*\*
- *Monarda spp.* (Wild Bergamot) \*,\*\*
- *Solidago spp.* (Goldenrod) \*\*

## Trees

- *Corylus americana* (American Filbert/Hazelnut) \*
- While deer may not eat the following, be sure to protect them from buck rub when establishing: River/Paper Birch, Musclewood, Beech, Kentucky Coffeetree, Ironwood, Swamp and Bur/Burr Oak

## Shrubs

- *Viburnum dentatum* (Arrowwood Viburnum, a good replacement for Mapleleaf and Nannyberry Viburnum) \*
- *Physocarpus opulifolius* (Common Nine Bark, not in User Guide) \*,\*\*
- *Hamamelis virginiana* (Common Witchhazel)
- *Ilex verticillate* (Common Winterberry) \*,\*\*
- *Sambucus racemose* (Red Elderberry) \*,\*\*
- *Symphoricarpos albus* (Common Snowberry) \*,\*\*

## Vines

- *Parth. Quinquefolia* (Virginia Creeper) \*
- *Smilax herbacea* (Carrion Flower) \*

# Examples of Native Deer and Rabbit Resistant Cultivars

- *Cimicifuga ramosa*-‘Hillside Black Beauty’
- *Geranium pratense*-‘Boom Chocolatta’
- *Panicum virgatum*-Switchgrass ‘Northwind’
- *Carpinus caroliniana*-‘Wisconsin Red’  
Musclewood/American Hornbeam
- *Picea glauca*-‘Conica’

# Homeowners Guide to Installing a Shoreland Vegetation Buffer

When installing a shoreland vegetation buffer, the following should be included in the plan, as applicable:

- Planting Densities
- Planting Dates
- Calculation Worksheets
- Companion Seeding for Steep Slopes
- Plant and Seed Installation
- Tree and Shrub Installation and Transplanting

\*All information taken from the Wisconsin NRCS Biotechnical Note 1: Shoreland Habitat which can be found here:

<https://dnr.wi.gov/topic/ShorelandZoning/documents/NRCSBioTechNote.pdf>

# Planting Density

The table below describes planting standards for two major shoreland types: woodland, and barrens/dry prairie/wet prairie. The woodland has a nearly complete canopy of trees while the barrens/prairie and wetland are more open. Plant numbers are to be calculated based on the area in square feet to be reestablished and the appropriate density. The area to be reestablished shall be calculated for each layer. See Worksheet 1 for example area calculations.

Table 1. Shoreland Habitat Planting Densities				
	Woodland		Wetland or Barrens/Dry Prairie/Wet Prairie	
Layer	Minimum Number of Species <sup>1</sup>	Density	Minimum Number of Species <sup>1</sup>	Density
Trees <sup>2</sup>	2	0.5 – 5 per 100 sq. ft.	0	0 - 0.2 per 100 sq. ft.
Shrubs	3	1 - 4 per 100 sq. ft. <i>If clumped, maintain min. 2 foot spacing</i>	2	0.2 - 0.5 per 100 sq. ft. <i>If clumped, maintain min. 2 foot spacing</i>
Herbaceous Cover <sup>3</sup>				
- <i>Plant plugs</i>	3	25 –75 plants per 100 sq. ft. <i>Soil must be mulched</i>	5	50 – 100 plants per 100 sq. ft. <i>Soil must be mulched</i>
- <i>Seeding</i>	3	Grass/Sedges: 4-8 oz. per 1000 sq. ft. Forbs: 2-4 oz per 1000 sq. ft.	5 <sup>4</sup>	Grass/Sedges: 4-8 oz per 1000 sq. ft. Forbs: 2-4 oz. per 1000 sq. ft.

<sup>1</sup> Select species from established plant lists for shoreland habitat. Trees, shrubs, and groundcovers may be transplanted from adjacent woodland or open areas outside the restoration area.

<sup>2</sup> Trees must be at least 2 year old seedlings, 8 inches or taller.

<sup>3</sup> The herbaceous cover layer shall be comprised of a minimum of 30% grasses and/or sedges.

<sup>4</sup> Consider the use of plants rather than seeds in wet areas.

# Planting Dates

The table below provides approximate dates for planting. Weather and soil conditions, which vary year-to-year, determine the most appropriate planting time. Please note that adequate moisture levels are assumed due to required watering practices.

Table 2. Recommended Planting Dates			
	North	Central	South
<b>Seeded Herbaceous Covers</b> <i>Seeding early favors cool season plants. Seeding after soil temperature increases above 55 degrees favors warm season plants. Seed after July 1 to reduce weed seed germination.</i>	May 15 – August 10  <i>Best dates: June 1 – July 15</i>	May 1 – August 31  <i>Best dates: May 10 – July 20</i>	May 1- August 31  <i>Best dates: May 5 – July 31</i>
<b>Plugs (Seedlings) and Potted Herbaceous Covers</b> <i>Plant after danger of frost is past, and up to first frost. Later plantings may require more frequent watering because of increased temperatures.</i>	May 20 – September 15	May 1- October 31	May 1 – Nov. 15
<b>Bare-root Trees and Shrubs</b>	Any time soil is not frozen and before leaf-out, or after leaves fall.		
<b>Potted Trees and Shrubs</b>	Any time soil is not frozen.		

# Calculation Worksheets

Worksheet 1 can be used to calculate the square footage of area to be restored for each vegetative layer. Worksheet 2 can be used to calculate the amount of trees, shrubs, plants and seeds needed.

Worksheet 1: Area Calculations						
	Total Area of Shoreland Habitat (Square Feet)		Total Area of Viewing/ Access Corridor		Total Area of Existing Layer to Preserve and/or Natural Recovery Zones	Total Area to be Planted
Tree Layer		-		-		=
Shrub Layers		-		-		=
Herbaceous Layer - Plants		-		-		=
Herbaceous Layer - Seeds		-		-		=
<i>SAMPLE<sup>5</sup></i> <i>Herbaceous Layer-Plants</i>	<i>6,000</i>	-	<i>1,500</i>	-	<i>1,000</i>	<i>= 3,500</i>

Worksheet 2: Seed or Plant Densities						
	Total Area to be Planted (Square Feet)		Density Factor <sup>6</sup>		Seed or Plant Densities from Table 1.	Total Plants or Seeds to Install
Tree Layer		÷	100	×		=
Shrub Layer		÷	100	×		=
Herbaceous Layer						
Plants		÷	100	×		=
Grass Seeds		÷	1000	×		=
Forbs Seeds		÷	1000	×		=
<i>SAMPLE<sup>7</sup></i> <i>Herbaceous Layer-Plants</i>	<i>3,500</i>	÷	<i>100</i>	×	<i>70</i>	<i>= 2450</i>

<sup>5</sup> This sample is 60x100 foot restoration (6,000 sq. ft.), with a 25x60 view corridor (1,500 sq. ft), and 1,000 sq. ft. of natural recovery.

<sup>6</sup> See Table 1, column 3, on page 4. Trees, shrubs and plant densities are given in number of plants/100 sq. ft., and seeding densities are given in number of ounces/1000 sq. ft.

<sup>7</sup> Sample site is 3,500 sq. ft., to be planted at 70 plant plugs per 100 sq. ft., for a total of 2450 plants needed.

# Companion Seeding for Steep Slopes

When seeding on steep slopes, a companion seeding and/or other erosion control practices shall be used. See companion seeding rates table below.

**Slopes >12%:** Companion seeding of oats, side oats grama, or Canada wild rye.<sup>8</sup>  
**Slopes >20%:** Companion seeding of oats, side oats grama, or Canada wild rye, and use either mulch and netting or an erosion control blanket.

Table 3. Seeding Rates for Companion Crops	
Oats	0.5 lbs./1000 ft. <sup>2</sup>
Canada Wild Rye	1 oz./1000 ft. <sup>2</sup>
Side Oats Grama	1 oz./1000 ft. <sup>2</sup>

<sup>8</sup> Oats are annuals that will temporarily stabilize an area and then be killed by a hard frost. Canada wild rye and side oats grama are short-lived native perennial grasses.

# Plant and Seed Installation

Dead vegetation left in place after smothering or an herbicide application does not need to be removed. Leave the dead material to serve as a mulch to capture moisture, reduce weed growth,

## Plants Installation

1. **Lay mulch down prior to planting.** Spread 2 to 3 inches of straw, wood chips, leaves, or pine needles to conserve moisture and reduce weed growth. Avoid using field hay because it generally contains weed seeds. Do not use marsh hay, which is reed canary grass, and is an invasive species.
2. **Be ready to water.** Watering plant plugs is critical to their success. Be ready with hoses and sprinklers before planting. Water seedlings immediately after they are planted.
3. **Dig holes for plants.** A bulb planter or bulb auger drill bit attached to an electric drill will work well to speed up planting. Be sure the holes for the plants penetrate the dead grass.
4. **Fertilize.** A small amount of slow release, phosphorus-free fertilizer is recommended. The second number on the fertilizer label represents phosphorus. To fertilize, place a small amount in each plant hole. Excess fertilizer will encourage weed growth.
5. **Place live plants in the ground soon after they are brought to the site.** To store plants for a few days before planting, keep them in an area with partial sun such as on the east side of a building or under a deciduous tree. Do not leave them in a dark area for long periods; this will weaken plants. Water to keep packs moist once or twice a day.
6. **Plant in the cool hours of the day.** Plants will have a greater survival rate if planted on a cool day or during the morning or evening hours. To plant, separate the mulch, dig a hole, sprinkle organic fertilizer, place the plug in the hole, press the soil gently around the plug, and replace the mulch, being careful to keep mulch 1/2" from stem of plants.
7. **Water.** Water immediately after planting. Plan to water at least daily for the first few weeks or until plants are well established. If plants wilt or droop, a repeated watering may be necessary during the day. Once plants are established, water only if prolonged dry periods occur.

## Seed Installation

1. **Rake or till only enough to expose soil for planting seed,** no more than 1–2 inches deep.
2. **Select seed.** Refer to Table 1 for seeding densities. Greater amounts of seed will result in denser growth and better chances for success. Include 1 ounce of Canada wild rye per 1,000 square feet if desired. This seed will germinate readily to indicate areas where seeding is successful and help to hold the soil in place. Canada wild rye is a short-lived native perennial grass.
3. **Mix seeds with slightly moist sand or sawdust.** Fill an ice cream pail or similar one gallon bucket 2/3 full with moist, but not wet, sand or sawdust. Add up to 4 ounces of seed and mix well. The seeds will adhere to the sand or sawdust, so they can be spread more thinly and evenly.
4. **Broadcast the seed/sand mixture.** Use half of the seed/sand mixture to cover the entire area. Sow the remaining half while walking perpendicular to the line of the first pass to assure good seed distribution. The sand or sawdust will make it easier to see places that have not been seeded.
5. **Press seed in by tamping down the soil** with a rake or lightly raking the seeds in. The site may be rolled with a water-filled roller to insure good soil/seed contact. Do not roll when soil is wet, this will compact the soil, decrease levels of oxygen in the soil, and reduce seed germination.
6. **Mulch lightly** with 1/2 inch of weed free straw. Soil must be visible between the straw stems, or the mulch is too thick to allow seedlings to grow. If mulch is used on steep slopes, hold it in place with jute or biodegradable net. A biodegradable erosion control blanket up to 1/2 inch thick may be used as an alternative to mulch.
7. **Water.** Water immediately following seeding. Watering seeds and small seedlings after sprouting is critical for sandy soils. Plan to water daily, preferably in the morning, for the first few weeks or until plants are well established. Check to see that soil is moist beneath the mulch. Very sandy sites may require watering more than once daily for the first few weeks. Once plants are established, water only if prolonged dry periods occur.

**Note:** Watering *may* not be necessary for spring plantings in areas with loamy or clay soils as long as regular (weekly) rainfall of 1/2 inch or more occurs.

# Shrub and Tree Installation and Transplanting













## Shrubs and Trees

1. **Keep bare-root stock moist and cool before planting.** Dormant bare-root shrubs can be ordered in fall or winter for delivery in the spring. Plant bare-root stock as soon as it arrives if possible. If necessary, store bare-root stock close to 34 degrees Fahrenheit, to avoid breaking dormancy. Keep tree roots moist by periodically sprinkling with water. Do not soak roots in water because this will deprive them of oxygen.
2. **Dig the hole deeply enough** so that the roots won't curl or bunch up. The trees and shrubs should be planted about one-half inch deeper than they were in the nursery. Paler colored bark and a slight swelling on the stem show where the old soil line was. Bare rootstock may need to be root pruned. For more information about bare rootstock refer to WDNR website [<http://www.dnr.state.wi.us/org/land/forestry/nursery/generalinfo/plantingprocs.htm#seedling>] and contact your local forester.
3. **Pack soil firmly around the roots.** Air pockets left around the roots will dry them out. Press soil around the roots with your foot, but do not stomp on them.
4. **Water regularly** to keep soil moist but not saturated.
5. **Mulch** a two-foot diameter circle around each plant 2 to 3 inches deep with wood chips, straw, or leaves. This will reduce competition with other plants. Keep this area free of other growth by weed whacking or hand-pulling weeds for the first couple of years. Avoid mulching where there are steep slopes. In this case, reduce competition by weed whacking.

## Transplanting Trees and Shrubs

It is best to transplant when trees and shrubs are dormant in the early spring or late fall. Identify and label trees and shrubs when leaves are on the plant. Obtain permission from the landowner before removing plant material. Dig up as much of the root as possible. Replace the duff layer of leaves and stems to reduce erosion at the site. Only dig up trees and shrubs if they are part of a large stand or if the seedlings are numerous. If the tree or shrub is uncommon or rare, do not move it. Only remove a small percentage of any one type of plant. Leave behind a large enough population to allow further reproduction of the native population.

# Preparing a Shoreland Buffer Vegetation Plan

Shoreland Habitat Restoration Plan Legend	What to Include in Your Plan
 Property Line	❖ Boundary of the buffer
 Ordinary High Water Mark	❖ Location of Ordinary High Water Mark
 Viewing Corridor/Access	❖ Location of the viewing/access corridor
 Buffer Boundary	❖ Existing shrubs and trees
XXXXXXXX "No-Touch" Boundary	❖ Locations of shrubs and trees to be planted
 Existing Channelized Drainage	❖ Areas where native ground will be planted
 Existing Trees	❖ Erosion control practices to be installed during buffer establishment
 Existing Shrubs	❖ Practices to eliminate channel flow in the buffer
 Existing Groundcover	❖ Source of water for watering
 Existing Structures	❖ Location of existing primary structures within the buffer
 New Trees (Corresponds to Plant List #)	
 New Shrubs (Corresponds to Plant List #)	
 New Ground Cover (Corresponds to Plant List #)	

Vegetation Specifications (attach additional pages if necessary)

List the plants selected for the project and the number to be planted  
(Include all trees, shrubs and ground cover)

Trees	
Tree Name	# of Trees
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Shrubs	
Shrub Name	# of Shrubs
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Ground Cover	
Plant Community	# of Plants
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

**Erosion Control Practices**  
Draw on Site Plan

☐ Silt Fence

☐ Mulch

☐ Erosion Blanket

☐ Hay Bales

☐ Runoff Diversions

☐ Shoreland Erosion Protection

☐ Other

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