

Managing Pond Vegetation and Aquatic Invasives Species

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Stormwater Pond Vegetation and Maintenance Training

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Prohibited vs Restricted vs Native

Prohibited-Invasive species that are not currently found in Wisconsin, with the exception of small pioneer stands of terrestrial plants and aquatic species that are isolated to a specific watershed in the state or the Great Lakes, but which, if introduced into the state, are likely to survive and spread, potentially causing significant environmental or economic harm or harm to human health. Cannot be transported, possessed, transferred, or introduced without a permit. **CONTROL IS REQUIRED.**

Restricted- Invasive species that are already established in the state and cause or have the potential to cause significant environmental or economic harm or harm to human health. Cannot be transported, transferred, or introduced without a permit. **Control is encouraged but not required.**

Native- Species that occurs in its historical natural range. Can become a nuisance species in certain circumstances that may require treatment.

Curly-Leaf Pondweed-**Restricted INVASIVE**



- Curly Lasagna shaped leaves with serration on edges
- Starts growing under the ice in winter, one of the first plants to emerge in spring dying back as the water warms.
- Grows in dense stands outcompeting natives, summer die back increases phosphorus and decreases D.O.
- Spreads by fragmentation, rhizomes and turions.
- **Herbicide treatment** (endothall)
 - Expensive, Multiple years needed to treat turion bank
 - Spring is best time for treatment
- **Manual/Mechanical removal**
 - Fragmentation causes further spread
 - Needed 1-3 times per year

Eurasian Watermilfoil-**Restricted Invasive**



- Thin leaflets about ½”-1” long arranged in whorls of 3-6 around the stem giving a feathery appearance, 12 or more leaf segments on each side of leaflet.
- Forms large floating mats of vegetation on the surface, preventing light penetration for native plants.
- Winter-hardy able to overwinter in Wisconsin lakes and ponds.
- Spreads through rhizomes, stem fragments, and axillary buds.
- **Herbicide treatment**
 - 2,4-D, Triclopyr, Fluridone, Endothall or Diquat
 - Spring is best time to avoid killing natives
- **Manual hand pulling** is effective on small populations, can be used as follow-up after herbicide treatments. Care is needed to prevent small fragments being left behind.

Yellow Flag Iris-**Restricted Invasive**



- Broad Sword-shaped leaves, grow upright and stiff. White to vibrant yellow flowers.
- All parts of the plant is poisonous, lowering food sources in locations where it is established
- Dense stands alter hydrology, trapping sediments reducing water flow.
- Spreads via floating seeds and rhizomes
- **Herbicide Treatment**
 - Foliar spraying, cut steam, and handswiping all effective
- **Manual Control**
 - Effective on small populations
 - May have sensitivity to sap and plant tissue
 - Need to dig out entire plant-particularly rhizomes and landfilled

Flowering Rush- **Restricted Invasive**



- Grows 1-5 feet tall, white to light pink flowers with 3 sepals 3 petals and red anthers, 3-sided stiff leaves.
- Invades marshes, backwaters and shorelines forms dense colonies and crowds out native species
- Spreads by rhizomes and seeds
- **Herbicide Treatment**
 - Glyphosate or Penoxsulam can be effective
- **Manual Control**
 - Can be cut several times a year below water line to drown the plant.

Phragmites-**Prohibited Invasive**



Photo credit: S. Kelly Kearns

- Can grow 3-20 feet tall, Blue green leaves, large feather-duster like plume.
- Invades moist habitats including, lakeshores, drainage ditches, riverbanks. Common in disturbed areas.
- Grows in dense stands shade out native species.
- Spreads by root fragmentation, long above ground runners, and seeds or cut stem fragments.
- **Herbicide Treatment**
 - Imazapyr or Glyphosate foliar treatment or applied to cut stems.
- **Mechanical Control**
 - Mowing or burning can be used for maintenance after chemical applications.

Water Hyacinth-**Prohibited Invasive**



Photo Credit: Alabama Department of Conservation and Natural Resources

- Free-floating, thick green waxy leaves in a “sail” shape
- Fast growing, forms dense mats on the surface restricting light to natives
- Blocks air-water interface, greatly reducing water oxygen levels
- Spreads through offshoots from “mother” plant and seeds
- **Herbicide Treatment**
 - Small scale 2,4-D or Glyphosate can be effective
- **Manual Removal**
 - Small scale manual removal before flowering and seeds set

Water Lettuce- **Prohibited INVASIVE**



Photo Credit: Troy Evans, Great Smoky Mountains National Park

- Soft thick leaves ~6” long formed in rosettes. Roots hang beneath submerged.
- Quick- growing, forms thick mats.
- Degrades water quality by blocking air-water interface, blocking sunlight and reducing oxygen levels in the water.
- Spreads through offshoots from “mother” plant and seeds
- **Herbicide Treatment**
 - Small scale application can provide temporary control
- **Mechanical control**
 - Small scale manual removal before flowering and seeds set
- **Biological Control**
 - Two insect species approved for water lettuce control
 - South American Water lettuce weevil and Asian Moth caterpillars

European Frog-bit- **Prohibited Invasive**



- Resemble a cluster of tiny lily pads, free floating with roots dangling in water below. Leaves are round or slightly heart shaped
- Forms dense, thick mats
- Degrades water quality by blocking air-water interface, blocking sunlight and reducing oxygen levels in the water.
- Spreads through offshoots from “mother” plant, seeds, plant fragmentation and turions
- **Chemical control**
 - Diquat, Imazapyr, Triclopyr can be effective
- **Mechanical control**
 - Can be removed by hand but need to get entire plant

Reporting Invasives

1. Take photos of the plant, include all parts of plant in the photos
2. Collect up to 5 intact specimens for help with identifying
3. Record location and density of plants found
4. Submit photos, specimens and location to local AIS Coordinator or AIS Specialist
 - AIS Coordinator- Tyler Mesalk- tyler.mesalk@wisconsin.gov
 - AIS Specialist- Ben Ewoldt- benjamin.ewoldt@wisconsin.gov

Common Duckweed- Native



© Robin R. Buckallew

- Smallest known flowering plant, Tiny floating leaves ~1/4” long.
- Extremely fast growing, forms thick mats on the waters surface
- Important food source for waterfowl and fish, thick mats can be a nuisance to humans
- Lowers the dissolved oxygen levels in small ponds
- Spreads through offshoots from a “mother” plant, seeds, and turions
- Used as bioremediation on waterways with high phosphorus and nitrogen levels
- **Herbicide Control**
 - Small scale treatments with diquat or fluridone
 - Manual removal of remaining plants after herbicide

Coontail- Native

(C) Paul Skawinski, 2009



- Leaves whorled light green to brown, heavily branched, very bushy, rootless.
- Provides cover for insects and invertebrates
- Forms large dense mats in warm nutrient rich waters
- Spread by fragmentation and turions
- Control is best accomplished by controlling runoff
- **Herbicide Treatment**
 - 2,4-D, diquat, fluridone
- **Manual control** not recommended due to fragmentation

Common Waterweed- Native



(C) Paul Skawinski, 2009

- Dark green leaves in whorls of 2-3, stays green all winter
- Provides excellent cover for aquatic insects and fish. Great food source for wildlife
- Dense mats can reduce dissolved oxygen levels, can prevent some uses of waterway (e.g., boating and fishing)
- Overabundant growth a sign of high nutrient loading
- Spread by stem fragmentation
- Control is best accomplished by reducing nutrient runoff into waterway
- **Herbicide Control**
 - Diquat and fluridone
- **Manual control** not recommended due to fragmentation

Treatment Permits

[dnr.Wisconsin.gov/permits/water](https://dnr.wisconsin.gov/permits/water)

Permit is needed when:

- Herbicide treatments are used
- Biological controls are used
- Drawdowns or plant barriers are used
- Wild Rice is involved
- Mechanical removal
- Plants are removed manually from >30' along shore.

Please contact local APM Coordinator before any treatment is preformed.

Jodi Lepsch- jodi.lepsch@wisconsin.gov

-Buffalo, Chippewa, Clark, Crawford, Eau Claire, Jackson, La Crosse, Monroe, Pepin, Rusk, Trempealeau, and Vernon counties

Tyler Mesalk- tyler.mesalk.@wisconsin.gov

-Ashland, Barron, Bayfield, Burnett, Douglas, Dunn, Pierce, Polk, St. Croix, Sawyer, and Washburn counties

Native Shoreland Plants

Possible Native Shoreland Plants

- Blue Flag Iris
- Rattlesnake Master
- Blue Vervain
- Marsh Milkweed

WI DNR Healthy Lakes Program

- Link: <https://healthylakeswi.com/>
- Provides information of shoreline practices that are applicable for ponds.
- Provides lists of native grasses, wildflowers, and woody vegetation for shoreland planting.

CONNECT WITH US

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"WILD WISCONSIN:
OFF THE RECORD"