

Devils Lake Water Improvement District

Aquatic Vegetation Management  
Update



[www.DLWID.org](http://www.DLWID.org)

# Current Estimated Vegetation Volume in Devils Lake

- An in-water survey of Devils Lake aquatic vegetation was conducted and mapped
- Approximately .3% of Devils Lake shoreline shows significant vegetative aquatic plant growth
- Current recommendations suggest a 20% volume of aquatic plants to maintain healthy water quality

# Dominant Plant Species Identified

- *Vallisneria Americana* ( water celery or tapegrass)



# Non Invasive (Introduced)

## Vallisneria Americana

- Deep rooted plant with leaves, approximately one inch wide, with the ability to rise two or more meters above the clustered base of the plant
- Like many seagrass ecosystems, ***V. americana*** beds provide a rich abundance of prey as food for other species, and is a refuge for many species, including commercial, recreational, endangered and invasive organisms, and also acts as a nursery for fishery species. Beds of ***V. americana***, especially in Louisiana, have been known to be homes to many crustacean, gastropods, invertebrates and fish, and have been known to be grazed on by West Indian Manatees. The beds of ***V. americana*** are great at stabilizing sediment and shorelines, facilitating detrital food webs, and improving water quality by filtering the surrounding water.
- Generally maintains its population by clonal reproduction using runners, but they are also capable of reproducing through the use of seeds.
- Although tapegrass was introduced in the Pacific NW for fish and wildlife habitat purposes, it appears to cause none of the problems associated with invasive introduced plants like Eurasian watermilfoil.

# Non-invasive (Native)

- *Nuphar polysepana* (Spatterdock)



# Nuphar polysepala

- Commonly found in shallow muddy ponds from northern Alaska and Yukon southward to central California and northern New Mexico and can be recognized easily by its large floating leaves and bright yellow blossoms.
- reproduces by both seed and rhizome. Seeds are generally gathered from mid August to early October. The rhizomes are underground stems that are thick and fleshy. These rhizomes are hard to pry since they are submerged in mud and are difficult to dig. The leaves float on the water surface, and have an external waxy coating which makes the leaf waterproof and thus allows the leaf stomata to breathe freely; they are glossy green, oval, 10–45 cm long and 7–30 cm wide, with a notch at one side to the leaf stem. The leaves provide shelter for fish. The rhizomes (underground stems) are round and submerged in mud.
- The seeds are edible; they pop like popcorn, and can be steamed as a vegetable, dried and ground for flour, or can be cooked like oatmeal. They were a significant source of carbohydrates for area native tribes.



# Mechanical harvesting



## Advantages

- Cuts and removes vegetation from the water
- Immediate results
- Can cover about 1 to 2 acres per day
- Can cut to 10' or more
- Can be contracted and regularly scheduled



# Mechanical Harvesting



## Disadvantages

- High initial cost  
\$100,000 to  
\$150,000 including  
labor and  
maintenance
- Unknown  
operational costs  
per year to operate





# Suction Harvesting



## Advantages

- Machines range from \$20,000 to \$30,000
- Removes all of the plant, including the roots
- Reduces growth significantly in subsequent years
- Doesn't remove any sediment



# Suction Harvesting



## Disadvantages

- Slow process
- Stirs up sediment, increasing turbidity
- Considered as dredging by the state



# Bottom Barriers



## Advantages

- Cheap to purchase and construct
- Kills all plants within 3 to 4 weeks
- Very effective over dense patches

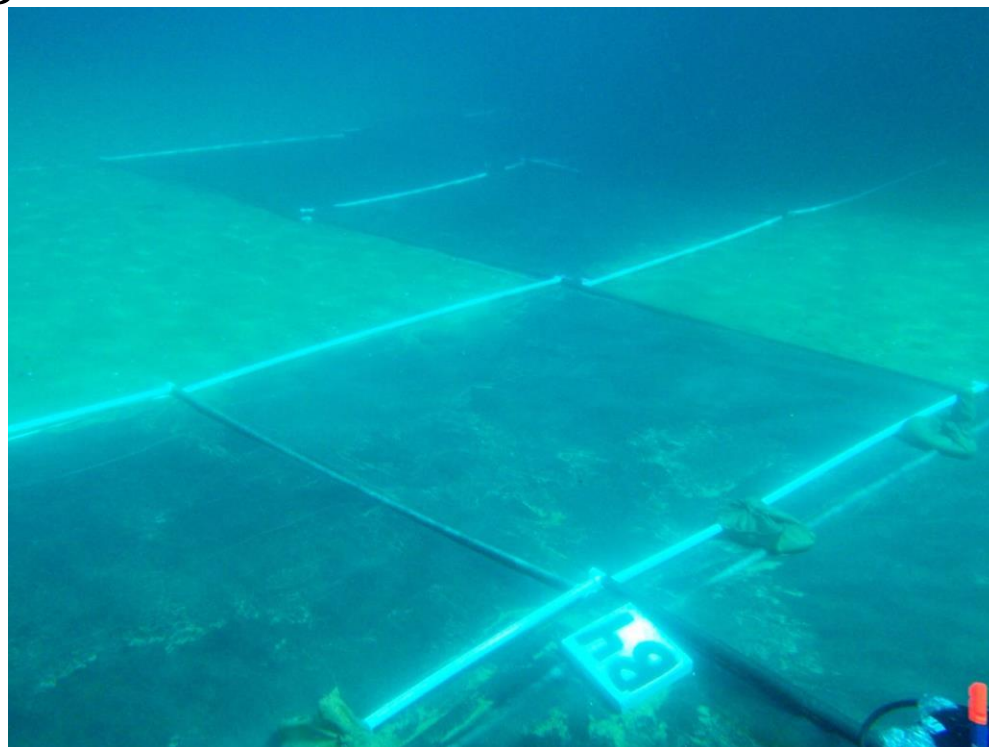


# Bottom Barriers



## Disadvantages

- Time consuming and tedious to place
- Not cost effective on large scale area
- Must be regularly inspected





# Hand Pulling



## Advantages

- Very species selective
- No detrimental effects to the environment
- No permits needed
- Cheap on small scales
- Can significantly reduce re-growth





# Hand Pulling



## **Disadvantages**

- Slow, labor intensive process
- Not very effective in deep water (over 4ft)
- May be difficult to remove entire plant and collect all plant fragments

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