



# Bangs Lake

## Management 2024



# Who We Are

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- Lake Management Services for Over 30 years
- Holistic Approach
- Ecologists
- New Technologies
- Prevent
- Predict



# Large Lakes We Manage

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- Chicago Park District
- Island Lake
- Hook Lake
- Waukegan Port District (Lake Michigan)
- Schaumburg Park District Lakes (37 acres)
- Diamond Lake





# Desired Outcomes:

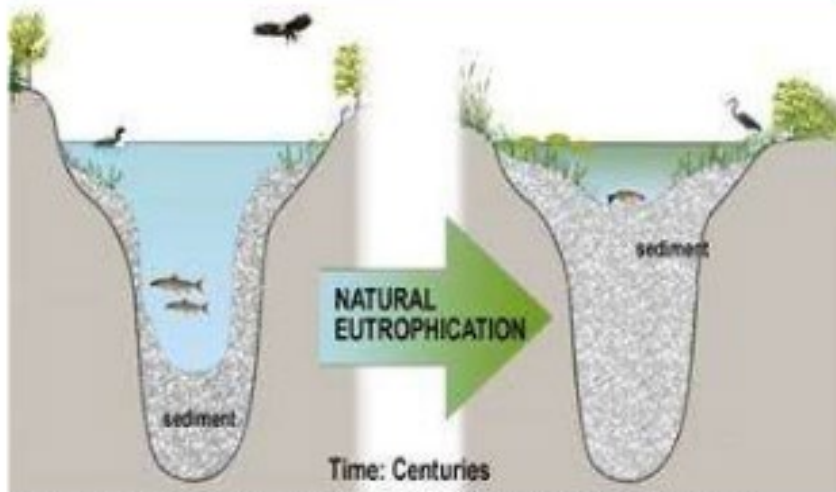
- Open Water
- Good Fishing
- Water Sports
- Fewer Aquatic Weeds
- Less Algae
- Water Clarity



TRUSTED CARE OF LAND & WATER

# EUTROPHICATION

## Natural Eutrophication



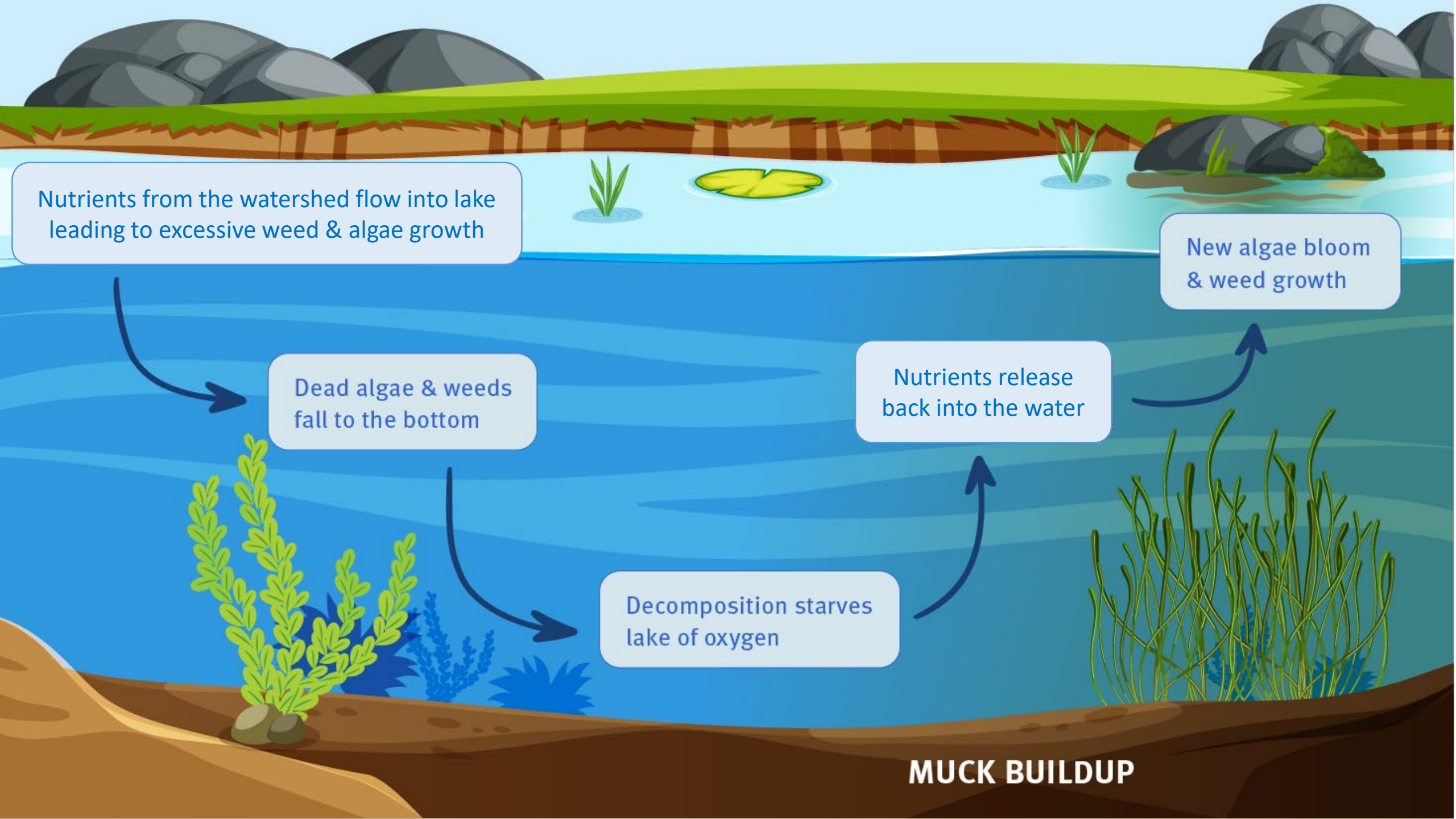
a process that occurs as a lake or river ages over a period of hundreds or thousands of years.

## Cultural Eutrophication



a process that occurs when humans release excessive amounts of nutrients; it shortens the rate of aging to decades.





Nutrients from the watershed flow into lake leading to excessive weed & algae growth

Dead algae & weeds fall to the bottom

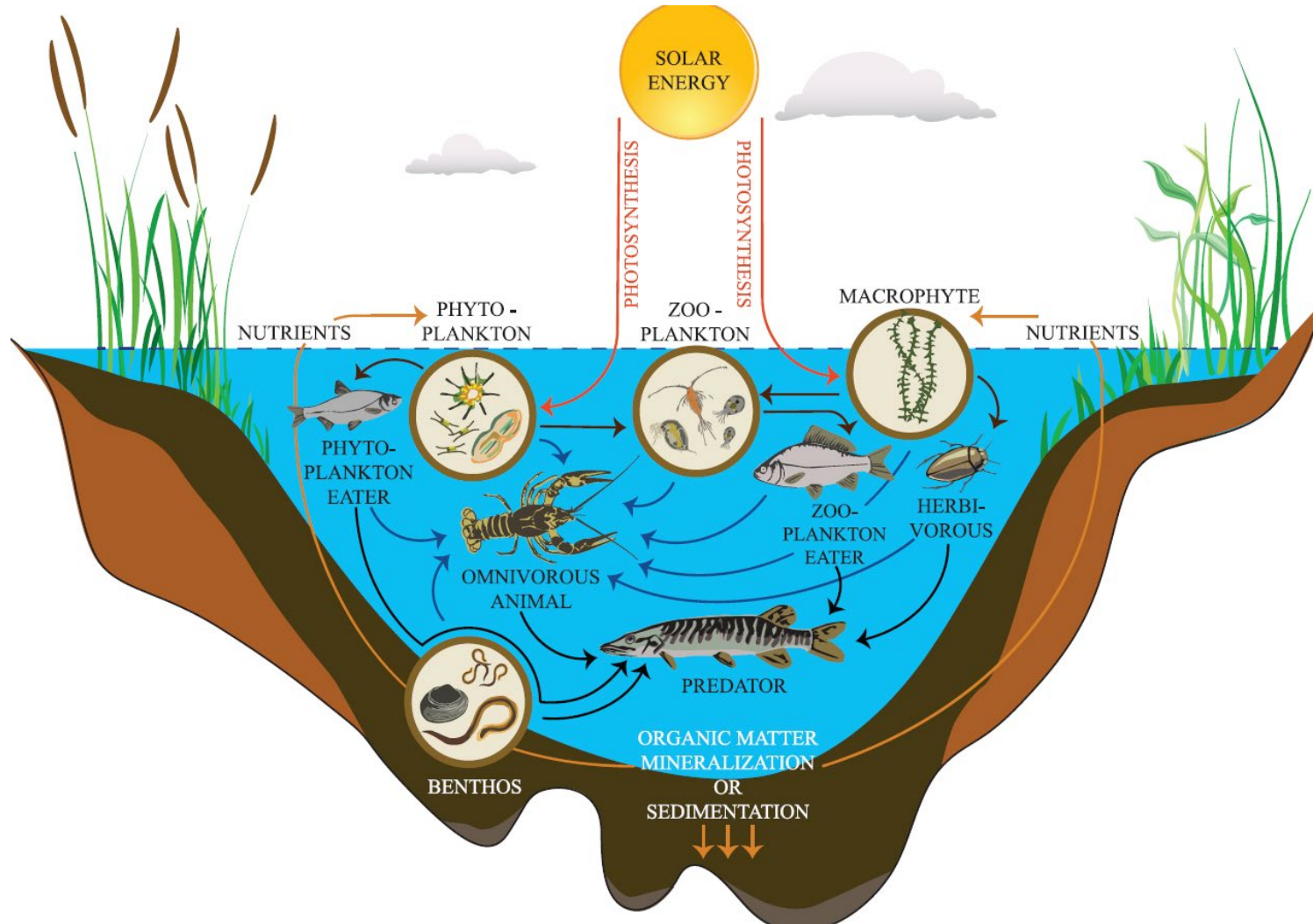
Decomposition starves lake of oxygen

Nutrients release back into the water

New algae bloom & weed growth

**MUCK BUILDUP**

# Balanced Ecosystem



Switch from a **non-native/invasive** plant dominated lake to a diverse **native** plant dominated lake.

**Amount** of plant material  
- approximate 30% coverage

**Native** food web

- algae
- plants
- plankton
- benthic organisms
- scavengers
- fish



# GOAL: Balance lake ecology with lake use







BANGS LAKE  
LAKE MANAGEMENT PLAN  
2024-2028



# Lake Management Plan

Species Name (NWPL/Mohlenbrock)	Species(Synonym)	Common Name
Ceratophyllum demersum	Ceratophyllum demersum	Coon's-Tail
Elodea canadensis	Elodea canadensis	Canadian Waterweed
Heteranthera dubia	Heteranthera dubia	Grass-Leaf Mud-Plantain
Lemna aequinoctialis	LEMNA AEQUINOCTIALIS	Lesser Duckweed
Myriophyllum spicatum	MYRIOPHYLLUM SPICATUM	Eurasian Water-Milfoil
Myriophyllum verticillatum	Myriophyllum verticillatum pectinatum	Whorled Water-Milfoil
Nymphaea odorata	Nymphaea tuberosa	American White Water-Lily
Potamogeton amplifolius	Potamogeton amplifolius	Large-Leaf Pondweed
Potamogeton crispus	POTAMOGETON CRISPUS	Curly Pondweed
Potamogeton foliosus	Potamogeton foliosus	Leafy Pondweed
Potamogeton gramineus	Potamogeton gramineus	Grassy Pondweed
Potamogeton pusillus	Potamogeton pusillus	Small Pondweed
Potamogeton zosteriformis	Potamogeton zosteriformis	Flat-Stem Pondweed
Stuckenia pectinata	Potamogeton pectinatus	Sago False Pondweed
Vallisneria americana	Vallisneria americana	American Eel-Grass
Wolffia borealis	Wolffia borealis	Northern Watermeal

Table 7-2: Species observed in early June.

\*Highlighted text indicated nuisance or undesirable species.



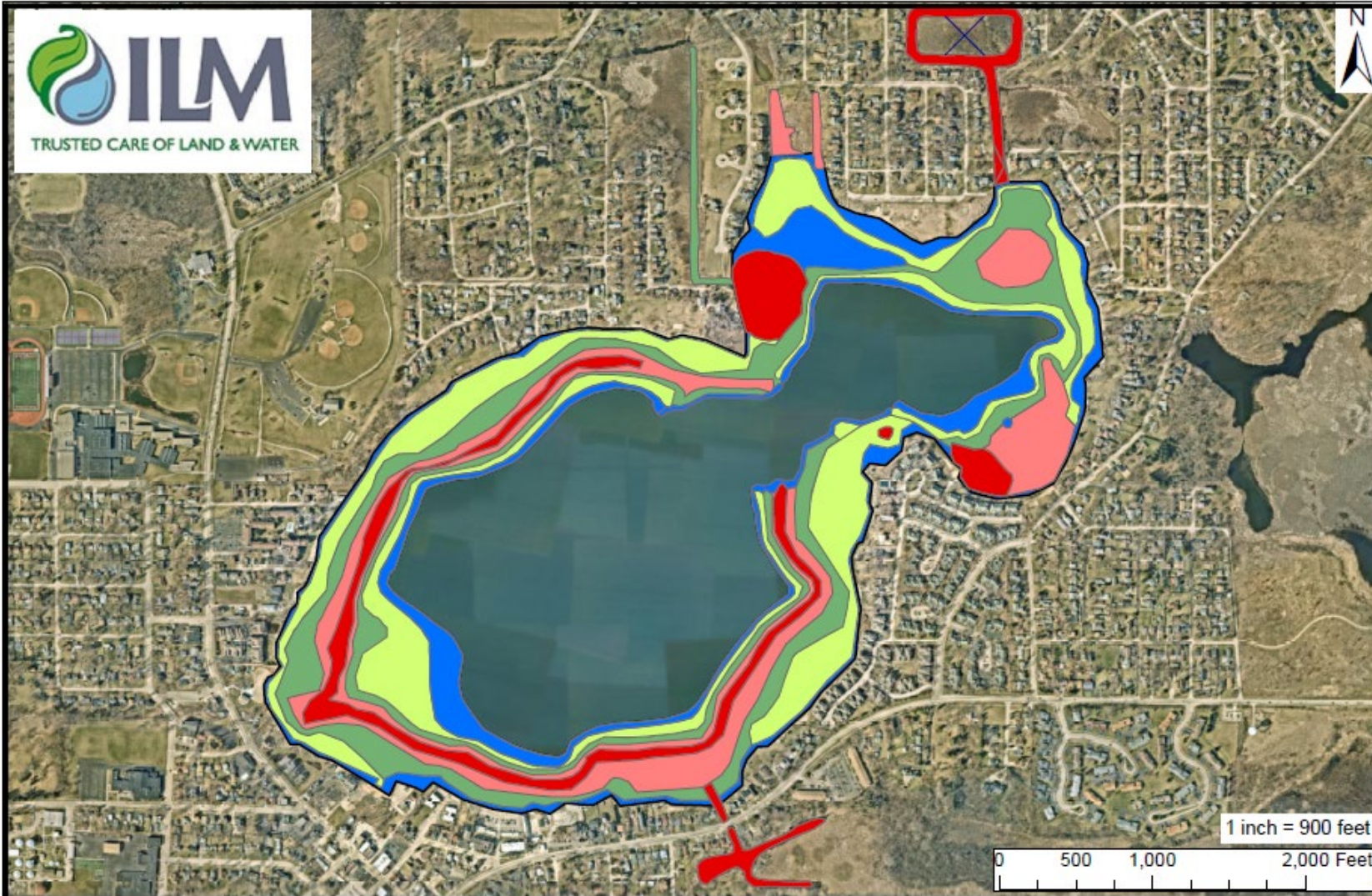
***Myriophyllum spicatum* - Eurasian watermilfoil**





***Potamogeton crispus* – Curlyleaf  
Pondweed**





**Plant Density Map**  
Bangs Lake, Wauconda, IL  
June 5th - 7th, 2023

- Legend**
- Bangs Lake Shoreline
  - Very Sparse
  - Sparse
  - Medium
  - Dense
  - Very Dense

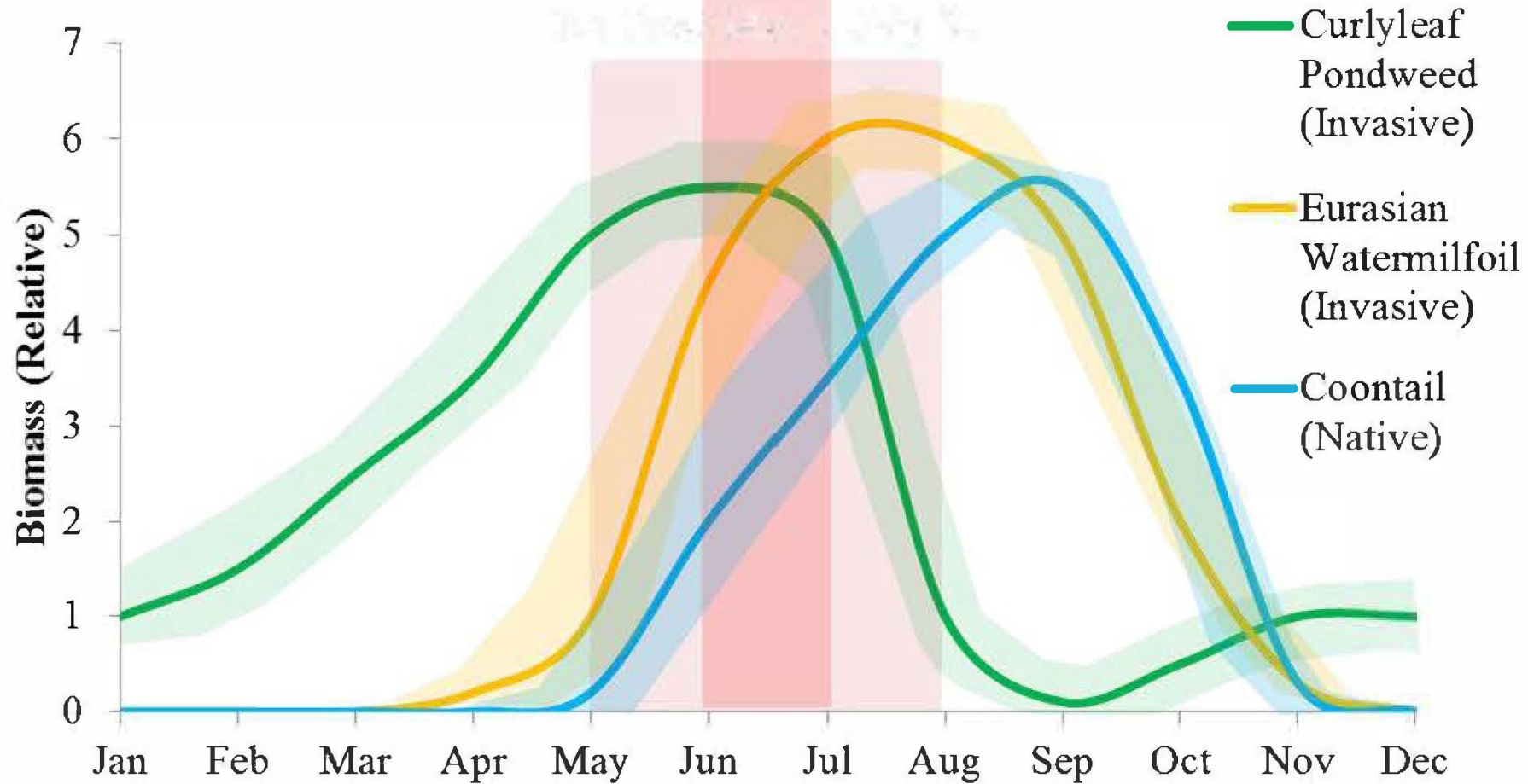
Eurasian  
Watermilfoil and  
Curlyleaf Pondweed  
= 80 acres  
(areas shown in red  
and pink)







# Plant Growth Bangs Lake





Mechanical Removal



# Contact Herbicide vs. Systemic Herbicide

# Contact Herbicide

- Kills the portion of the plant that encounters the herbicide.
- Does not penetrate the roots.
- Is indiscriminate and browns off portions of **any plant** it touches.
- Browning of plant material visible the day of treatment.
- Typically apply later in the growing season (May) when both EWM and Curlyleaf are growing.
- Decomposition of decaying plant material can lead to issues later in the season, like algal blooms.
- Needs to be reapplied every year.



# Contact Herbicide - 2023



- 160 gallons of contact herbicide to treat approximately 80 acres
- 370 ppb active chemical

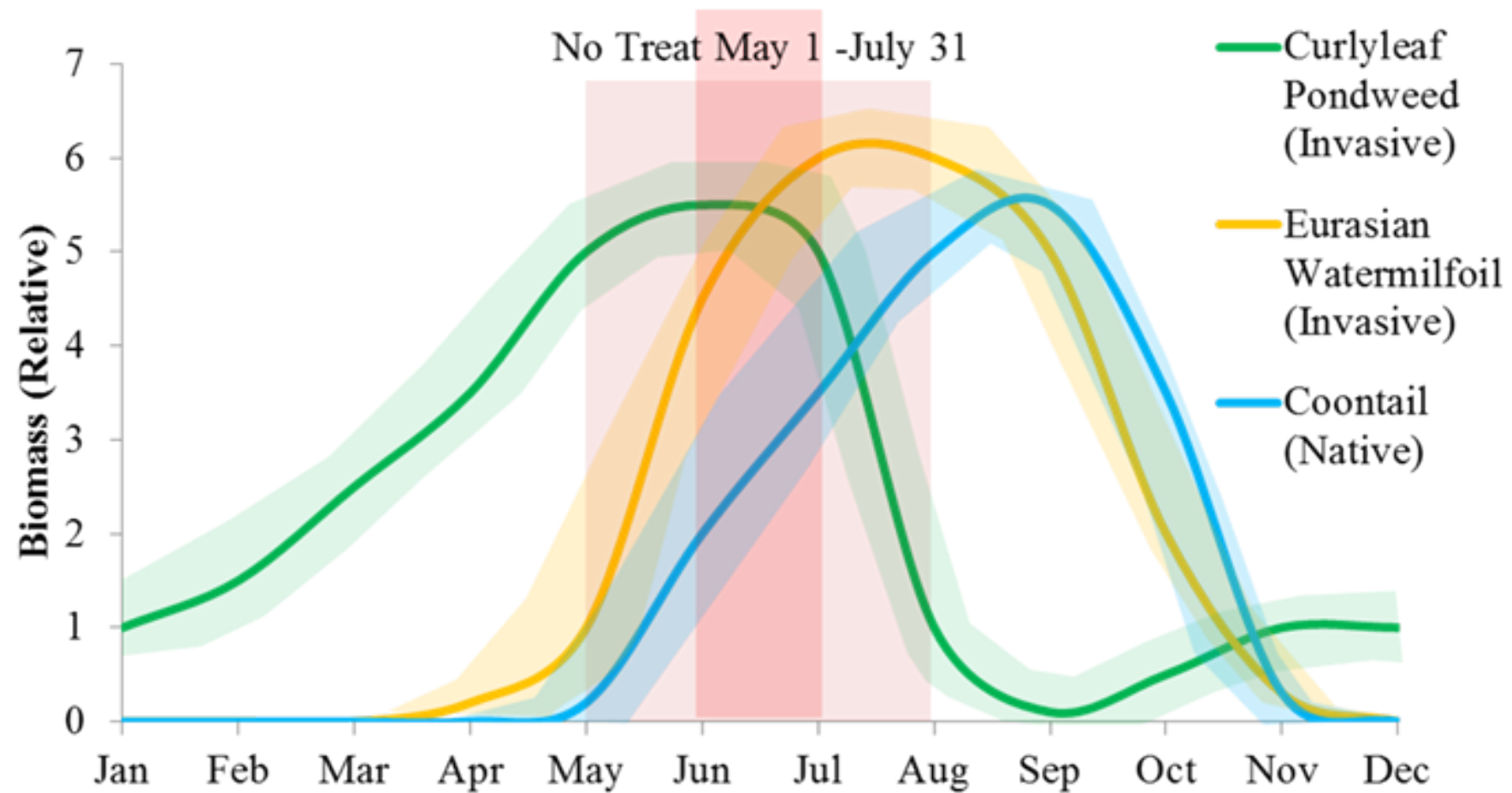
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# Herbicide Restrictions Bangs Lake



# Systemic Herbicide

- Selective option that targets specific non-native/invasive plants.
- Penetrates the roots of target plants.
- Needs to be reapplied every one to three years.
- Applied early in the growing season.
- Plants are small when treated, leaving less decaying plant material that can lead to algal blooms.
- Allows for the establishment of native plants that grow later in the season.



# Sonar

- Early season whole lake herbicide treatment



# Systemic Herbicide - 2024



- 21.8 gallons of product
- 6 ppb active chemical



# Systemic Herbicide

- 21.8 gallons of Sonar
- Stays in the water column longer and so use less product compared to contact herbicides.
- Irrigation restrictions apply for certain plants and newly seeded areas.
- No irrigation restriction for trees and established lawn at 6ppb.
- Some irrigation restrictions in place as long a product levels are **above 5 ppb**. Once it falls below 5 ppb, all irrigation restrictions will be lifted (anticipate April).

Application Site	DAYS AFTER APPLICATION		
	Established Tree Crops	Established Row Crops/ Turf/Plants	Newly Seeded Crops/Seedbeds or Areas to be Planted Including Overseeded Golf Course Greens
Ponds and Static Canals †	7	30	Assay required
Canals	7	14	Assay required
Lakes and Reservoirs ††	7	14	Assay required
Dry or De-watered Canals †††	0	0	†††

† For purposes of Sonar A.S. labeling, a pond is defined as a body of water 10 acres or less in size. A lake or reservoir is greater than 10 acres.

†† In lakes and reservoirs where one-half or greater of the body of water is treated, use the pond and static canal irrigation precautions. When applying Sonar A.S. to exposed sediments of aquatic sites such as lakes and reservoirs, follow these time frames prior to using water for irrigation once sites are reflooded.

††† When Sonar A.S. is applied to exposed sediments of dry or de-watered canals, allow canals to refill for a minimum of 24 hours before using water for irrigation.

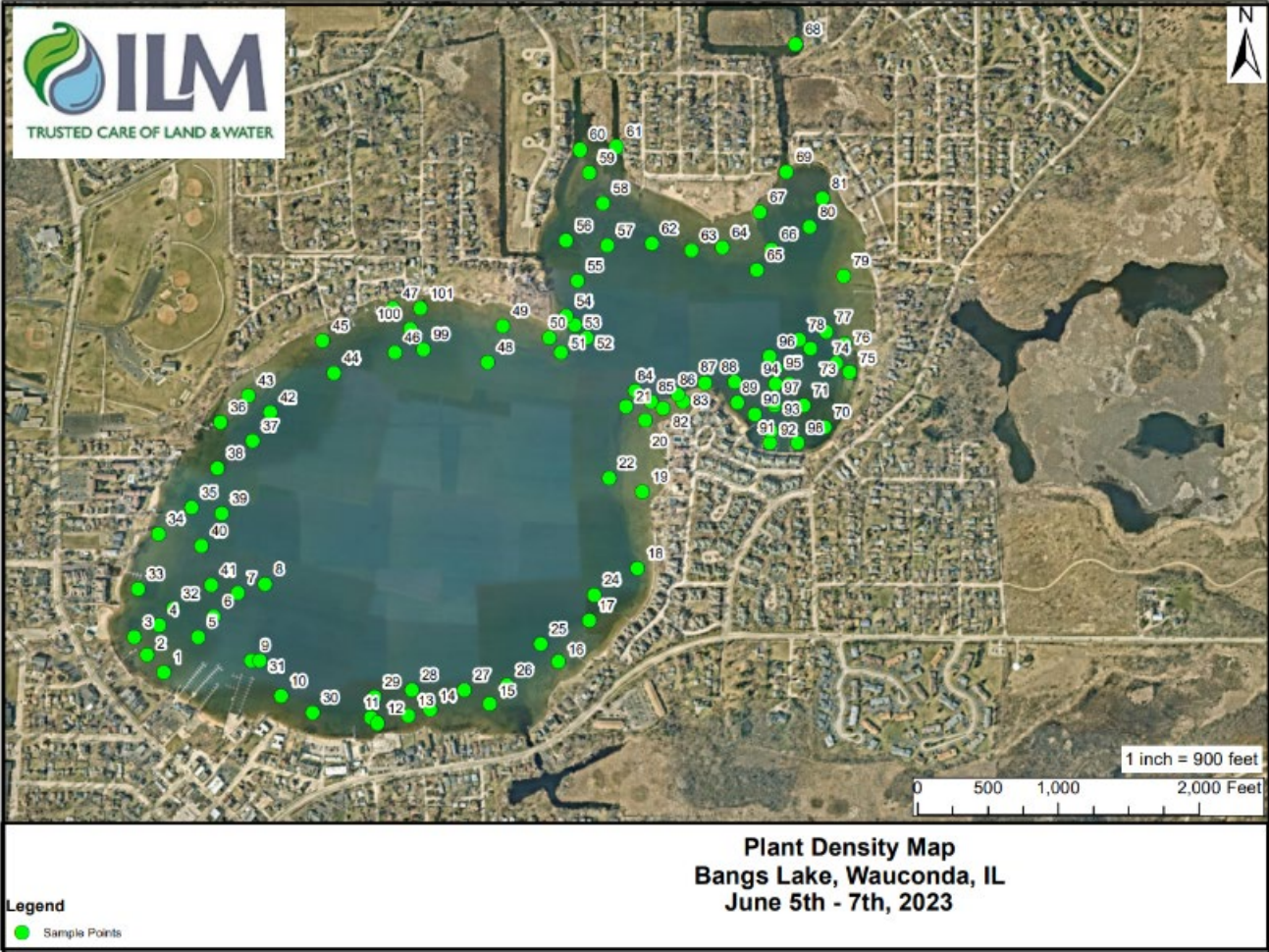
Where the use of Sonar A.S. treated water is desired for irrigating crops prior to the time frames established above, the use of a FastEST assay is recommended to measure the concentration in the treated water. Where a FastEST has determined that the concentrations are less than 10 parts per billion, there are no irrigation precautions for irrigating **established tree crops, established row crops or turf. For tobacco, tomatoes, peppers or other plants within the Solanaceae Family and newly seeded crops or newly seeded grasses such as overseeded golf course greens, do not use Sonar A.S. treated water if measured fluridone concentrations are greater than 5 ppb. Furthermore, when rotating crops, do not plant members of the Solanaceae family in land that has been previously irrigated with fluridone concentrations in excess of 5 ppb. It is recommended that an aquatic specialist be consulted prior to commencing irrigation of these sites.**

# Sonar Systemic Herbicide

- Apply mid to late March
- Apply 13.13 gallons to achieve a low dose chemical rate of 6 parts per billion in the entire lake.
- Need to keep chemical concentration above 2 ppb for 60 days. If levels fall below 2 ppb we will “bump” the levels up (additional 8.75 gallons if needed). Monitoring of levels takes place as follows:
  - 3 Days After Treatment (DAT)
  - 14 DAT
  - 28 DAT
  - 42 DAT
  - 56 DAT



# Monitor Plants at Beginning and End of Treatment (March and May)



# Other Considerations

- Neither approach will control lilies.
- Algal blooms may emerge late in the season; more likely after contact herbicide treatment than systemic.
- Native plants (American pondweed and Coontail) expected to establish in EWM and Curlyleaf dominated areas, just not as dense and aggressive.

# Large Lakes We Manage

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- Chicago Park District (Sonar)
- Island Lake (Sonar)
- Hook Lake (Sonar)
- Waukegan Port District (Lake Michigan)
- Schaumburg Park District Lakes (37 acres)
- Diamond Lake (Sonar)







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