

Wisconsin Lakes Partnership Starry stonewort Public Informational Meeting

Four Slide Presentations

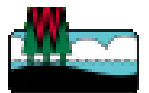
1. Biology and Management
2. Status and Monitoring
3. Identification
4. Clean Boats Clean Waters/Citizen Lake Monitoring Network
5. AIS Grants

Starry Stonewort (*Nitellopsis obtusa*)

Biology and Management

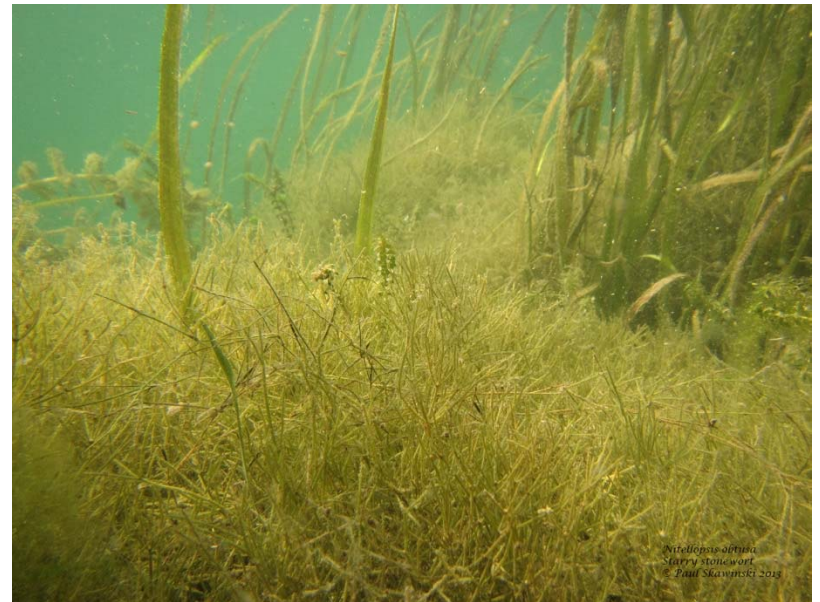


Scott Van Egeren
Wisconsin DNR
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What is starry stonewort?

- Starry stonewort (*Nitellopsis obtusa*) is a member of the Characeae family.
- Characeae are green algal macrophytes that can range in size from centimeters to meters
- Chara and Nitella species are found around the world.



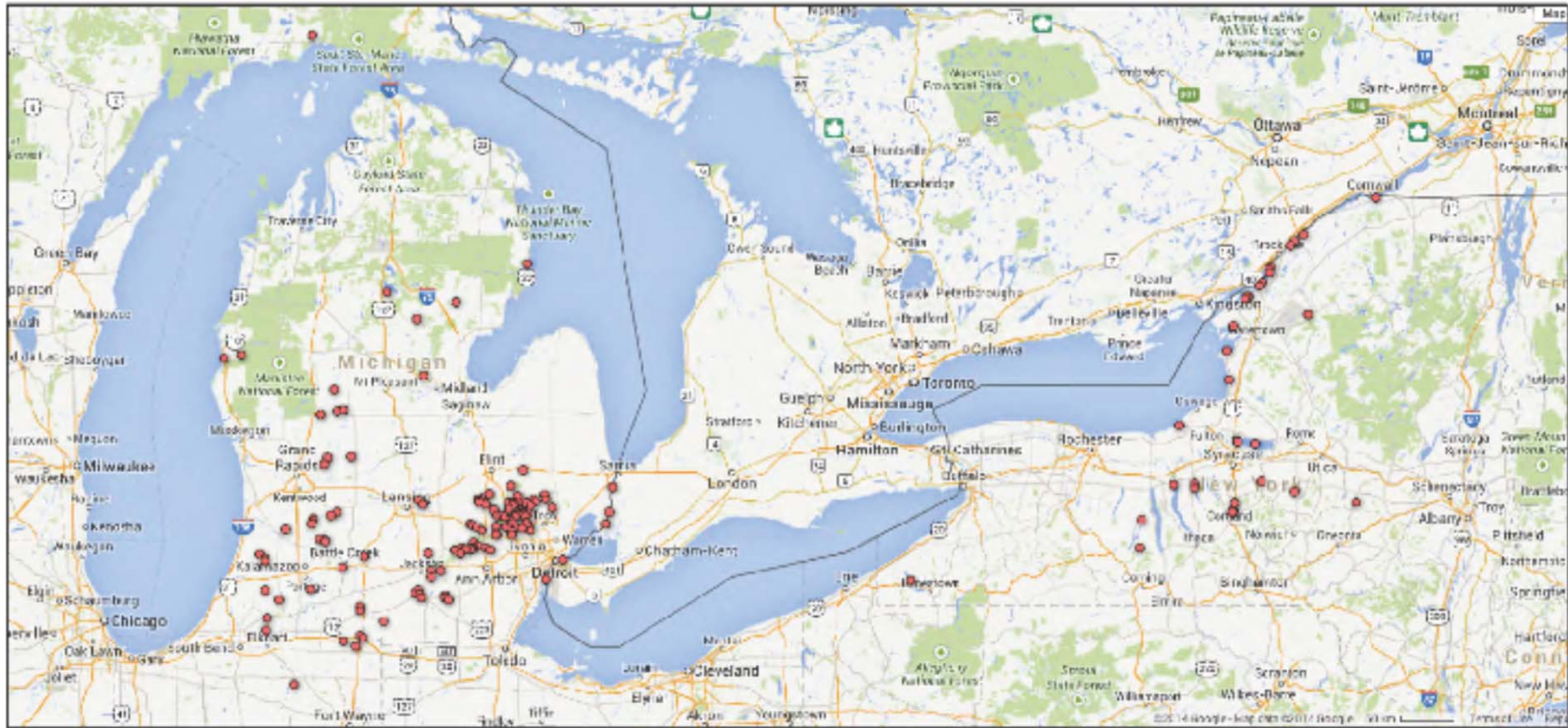
Where did it come from?

Starry Stonewort Distribution

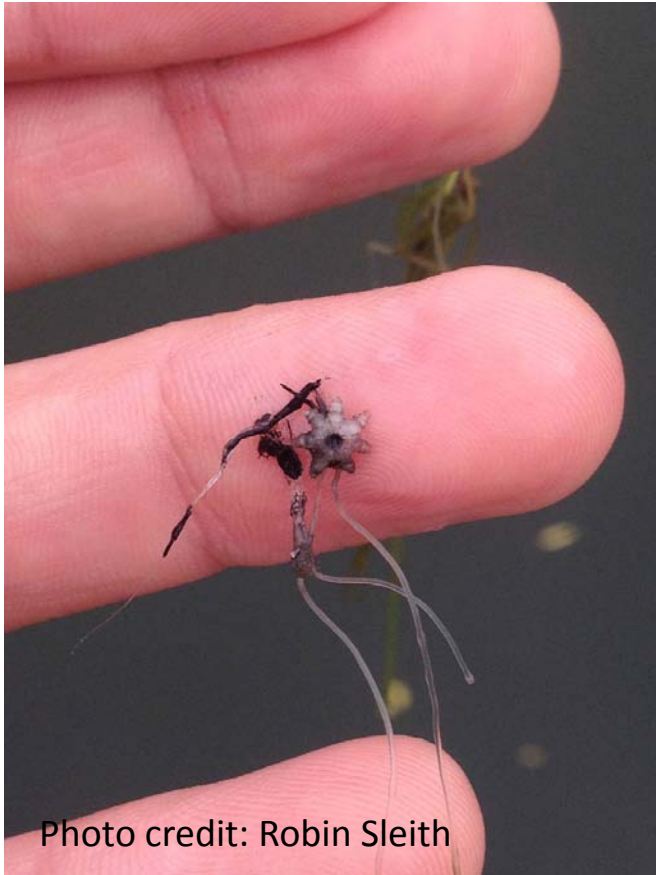


Where is it within the US?

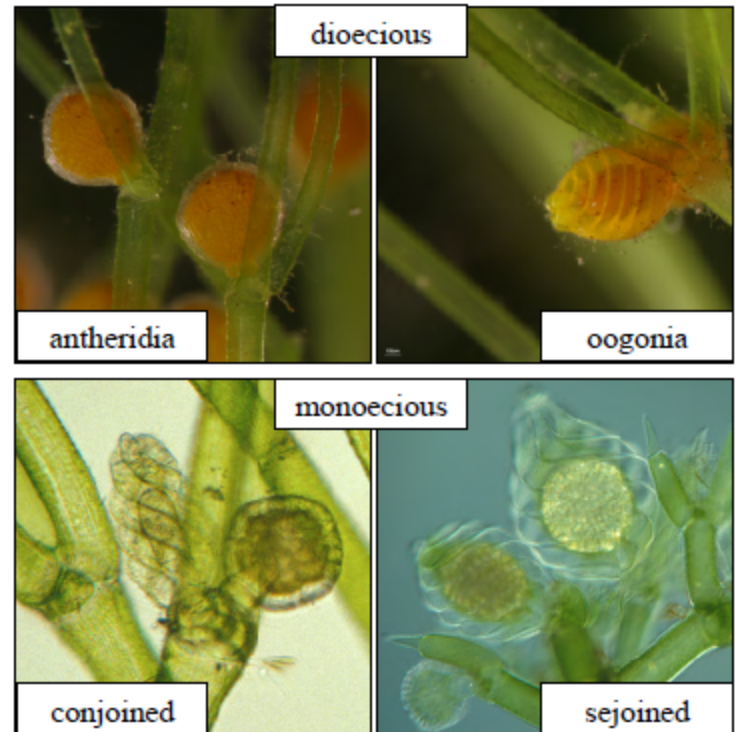
Characeae distribution – *Nitellopsis*



Reproductive and Dispersal Capacity



Characeae sexual state



- Capable of sexual and asexual reproduction
- North American clones are all male – no zygotes produced
- Asexual reproduction occurs by bulbil or plant fragments

How might starry stonewort affect a lake?

- May outcompete native aquatic plants
- Thick “meadows” may prevent fish from spawning
- Can become a navigational nuisance in shallow waters (< 6 feet)
- Meadows may increase water clarity by minimizing sediment resuspension, producing allelopathic substances that inhibit algae and precipitating calcium carbonate that may bind phosphorus.

Management alternatives

- **First, need to assess the amount of starry stonewort present and determine management goals.**
- **Chemical control**
 - Copper sulfate + hydrothol
 - Flumioxazin
 - Spot treatment –
 - Potential for targeting high traffic areas
 - Mixed success at best when attempting EWM control due to rapid herbicide dissipation.
 - Whole-lake treatment
- **Physical control**
 - Hand pulling and diver assisted suction harvest (DASH)
 - Dredging
 - Mechanical harvest
- **Drawdown**
- **Biological control – no control method known.**
- **“Wait and see” – monitoring and assessing**

Plan for Wisconsin

- Stress prevention of spread.
- Search for species at nearby heavily used lakes
- Assess the population at newly discovered sites to determine appropriate management.
- Engage local stakeholders in management planning.
- Stress monitoring of management actions.
- Work with other states and partners to learn and adaptively manage starry stonewort.

Management take homes

- **Prevention and surveillance monitoring are necessary.**
- **Eradication is not a realistic goal.**
- **No one management strategy alone will control and maintain low levels of AIS, while not causing other impacts.**
- **A wait and see strategy is a viable option.**
- **Herbicide treatments have not been effective at large reductions in other states.**
- **We will adaptively learn together with other regional partners**

Starry stonewort

Status and Monitoring

Tim Plude

WI-DNR



Monitoring

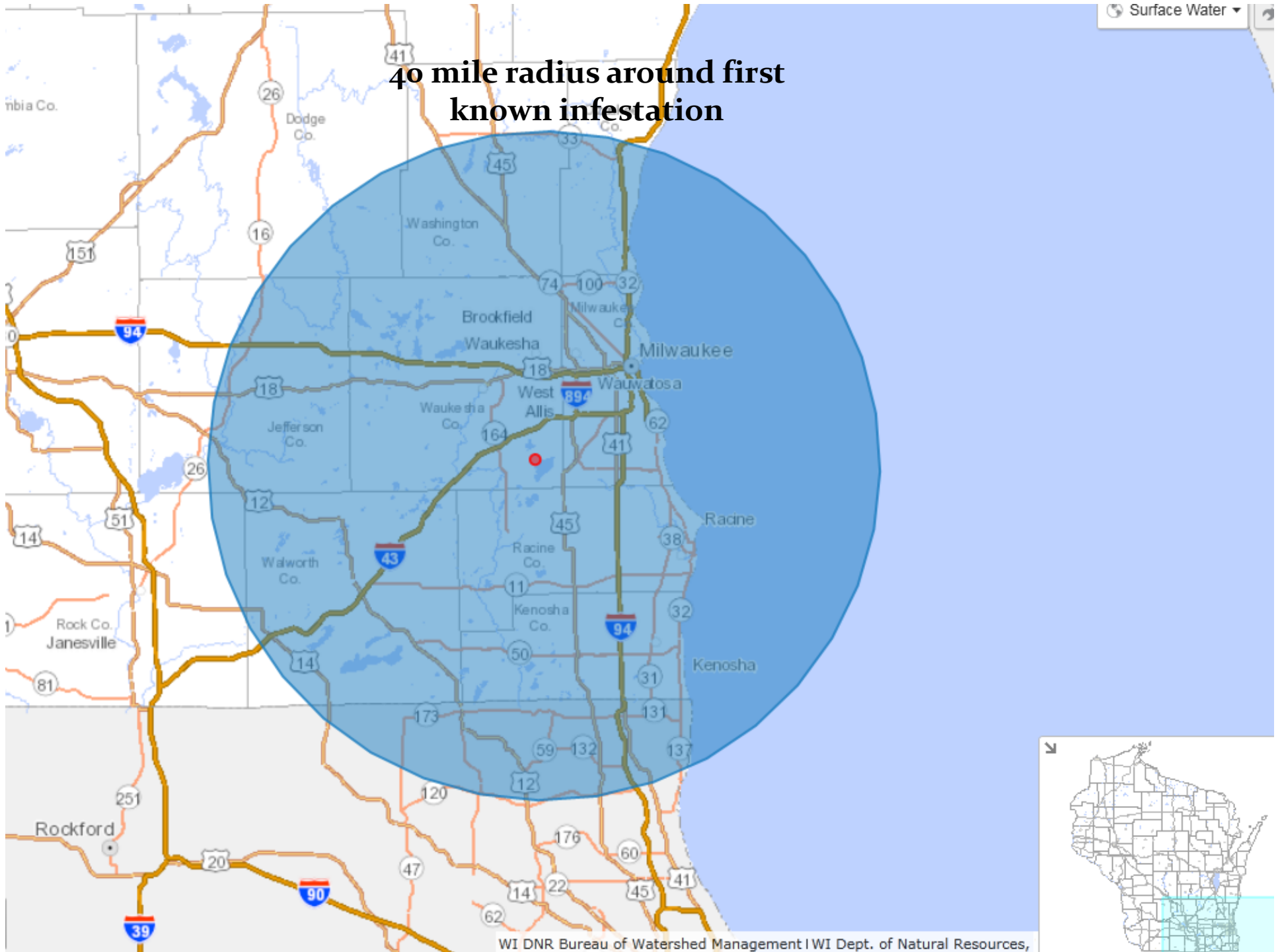
- Survey method-
 - Aquatic Invasive Species statewide Early Detection project protocol
- Slowly meander the entire shoreline, actively looking and dipping plant rakes
- Target Chara beds, boat landings, private landings for more intensive searching; snorkeling the target sites whenever possible



Monitoring

- Started with searching lakes within the immediate area of initial infestation (~7 mile radius around Little Muskego Lake)....then we found more
- Place **40** mile radius all around likely epicenter
- Include all lakes **>200** acres with public access

40 mile radius around first known infestation





Monitoring

- **Large list**, (all 200+ac. lakes w/in 40 mi. radius)=
40+lakes
- Prioritized list for 2015
- Prioritize search by:
 - Is Chara a dominant species?
 - Are there multiple landings?
 - Is there respectively high recreational use?



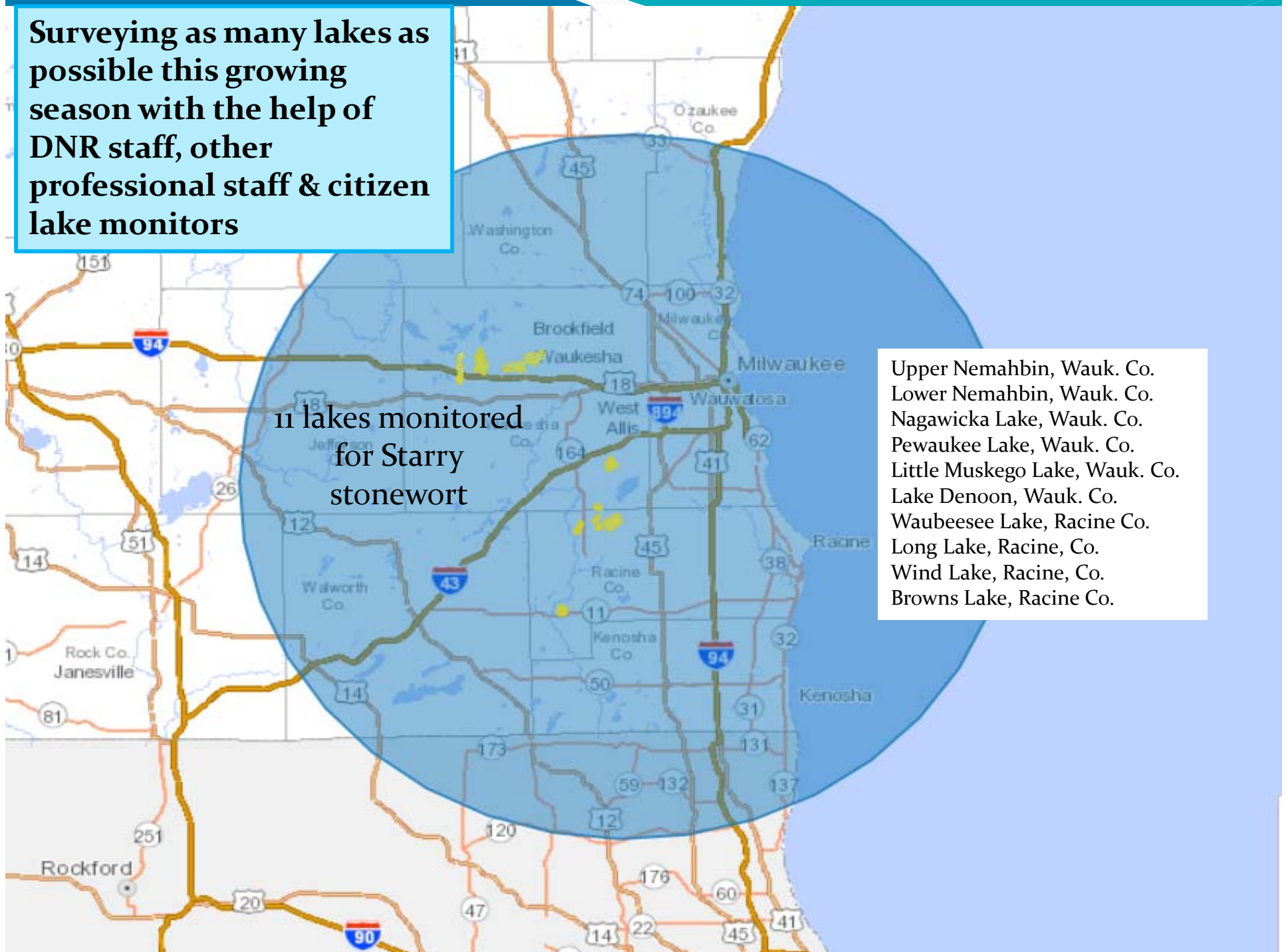
Monitoring

- Started looking in late-Spring of 2015
- So far, 11 lakes searched specifically for Starry stonewort...
- We will continue to search for possible infestations
- Currently using prioritized list then moving to larger list of lakes

Surveying as many lakes as possible this growing season with the help of DNR staff, other professional staff & citizen lake monitors

11 lakes monitored for Starry stonewort

Upper Nemahbin, Wauk. Co.
Lower Nemahbin, Wauk. Co.
Nagawicka Lake, Wauk. Co.
Pewaukee Lake, Wauk. Co.
Little Muskego Lake, Wauk. Co.
Lake Denoon, Wauk. Co.
Waubeesee Lake, Racine Co.
Long Lake, Racine, Co.
Wind Lake, Racine, Co.
Browns Lake, Racine Co.



An underwater photograph showing a starry stonewort (Nitellopsis obtusa) growing on a sandy bottom. The plant is a small, white, star-shaped organism with five distinct arms. The background is a murky, brownish water column with some green plant stems and dark, vertical structures. The text is overlaid on the top half of the image.

Biology and Identification of Starry Stonewort (*Nitellopsis obtusa*)

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Origin

- Native to Europe and Asia
- Documented in St. Lawrence River in 1978
- Documented in Lake St. Clair in Michigan in 1983.
- Documented in inland Michigan lakes in 2000.
- Found in Waukesha County, WI in Sept. 2014.

Dispersal

- Probably moved by boats, trailers, anchors (NOT waterfowl)
- Only male starry stonewort has been found in North America. No sexual reproduction (seeds)

