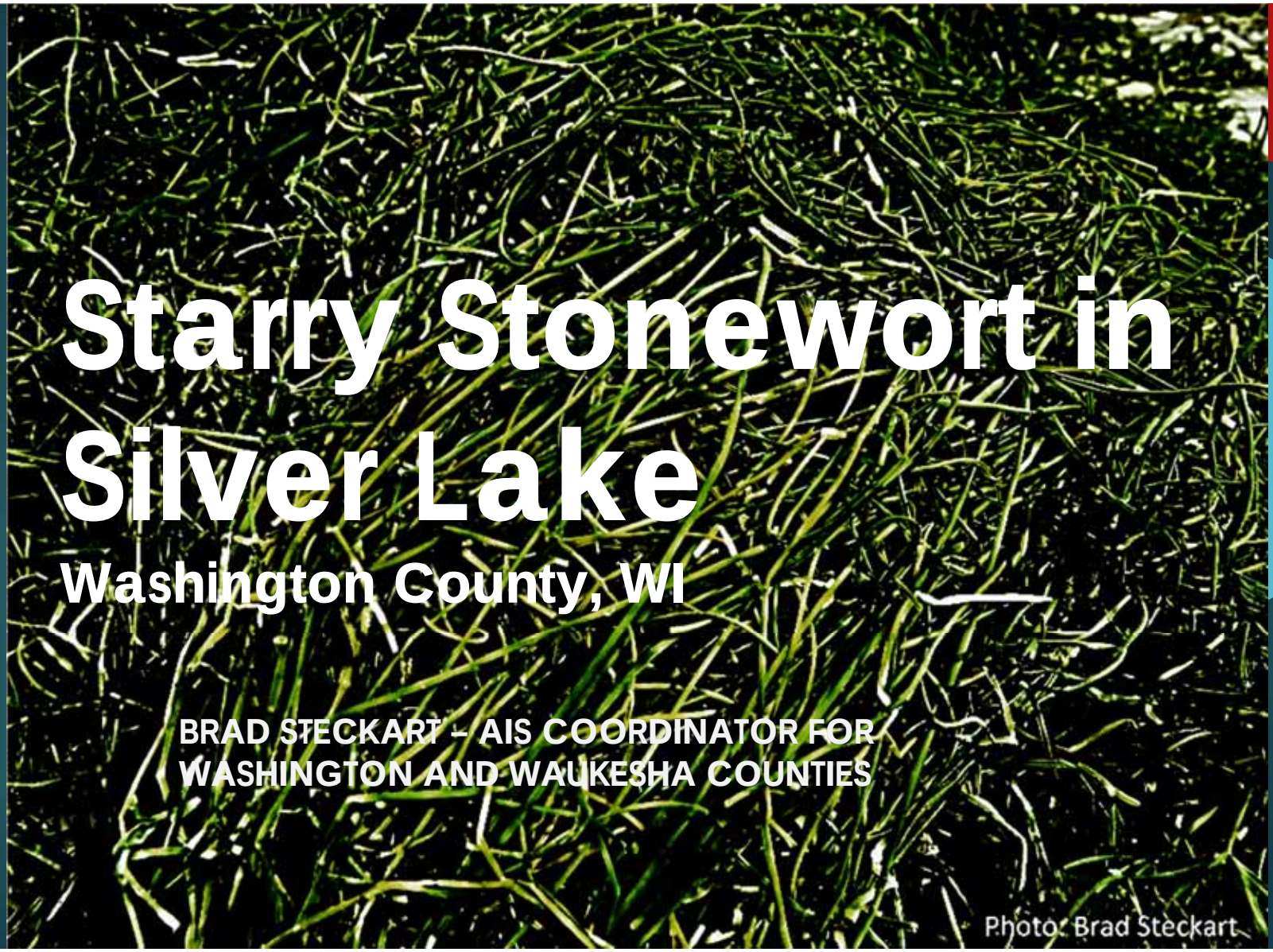

Starry Stonewort in Silver Lake
Washington County, WI
BRAD STECKART – AIS COORDINATOR FOR WASHINGTON AND WAUKESHA COUNTIES
Photo: Brad Steckart

Brad Steckart

-AIS coordinator for Washington and Waukesha Counties

-Graduated from UWSP in 2013 with BS in biology and a minor in conservation biology

-Interested in reptiles/amphibians/insects/arthropods

-Got an internship at Golden Sands RC&D as an Environmental Education Coordinator

-Lead to this job for the past two years

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

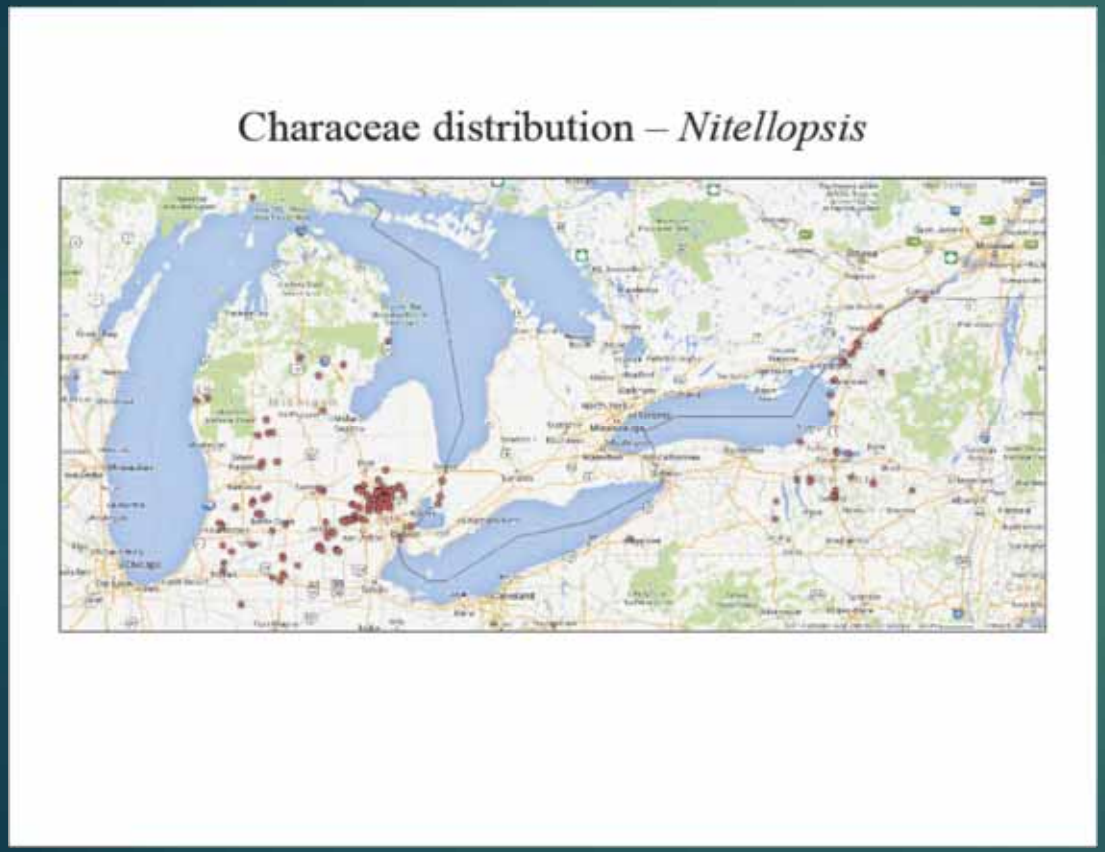
Slide courtesy of WDNR

Where did it come from?

Starry Stonewort Distribution

Slide: Courtesy WDNR

Where is it within the US?

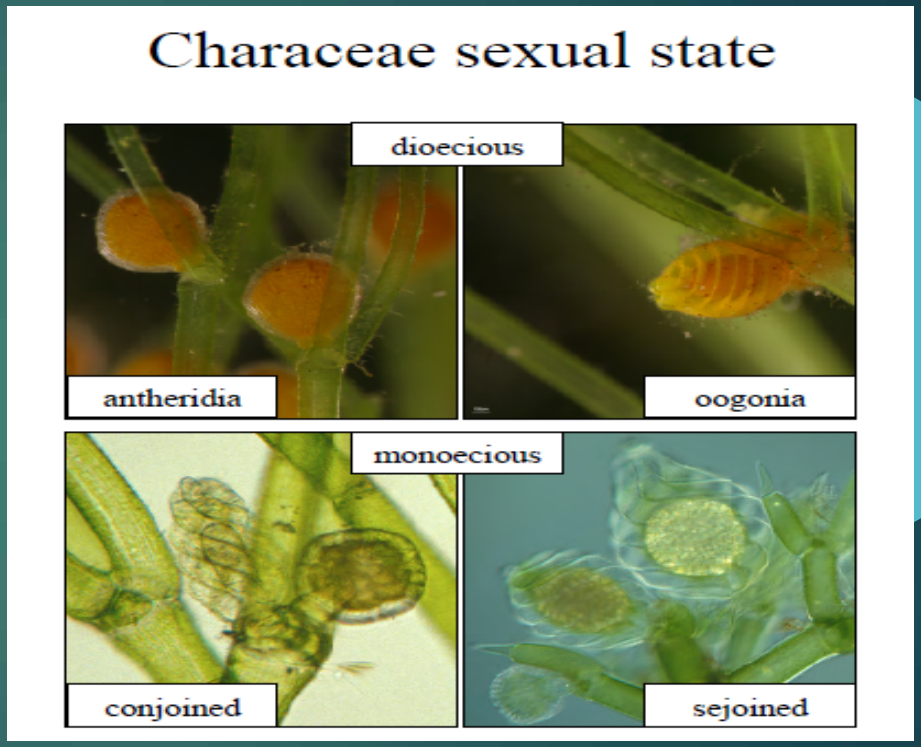


- St Lawrence River – 1978 – thought to be from ballast
- St Clair River – 1983
- Michigan inland lakes in 2006 – unclear whether it took SSW a long time to move inland or whether it wasn't recognized until after it had been there for some time

Slide: Courtesy WDNR

Reproductive and Dispersal Capacity

Photo credit: Robin Sleith



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

Slide: Courtesy WDNR

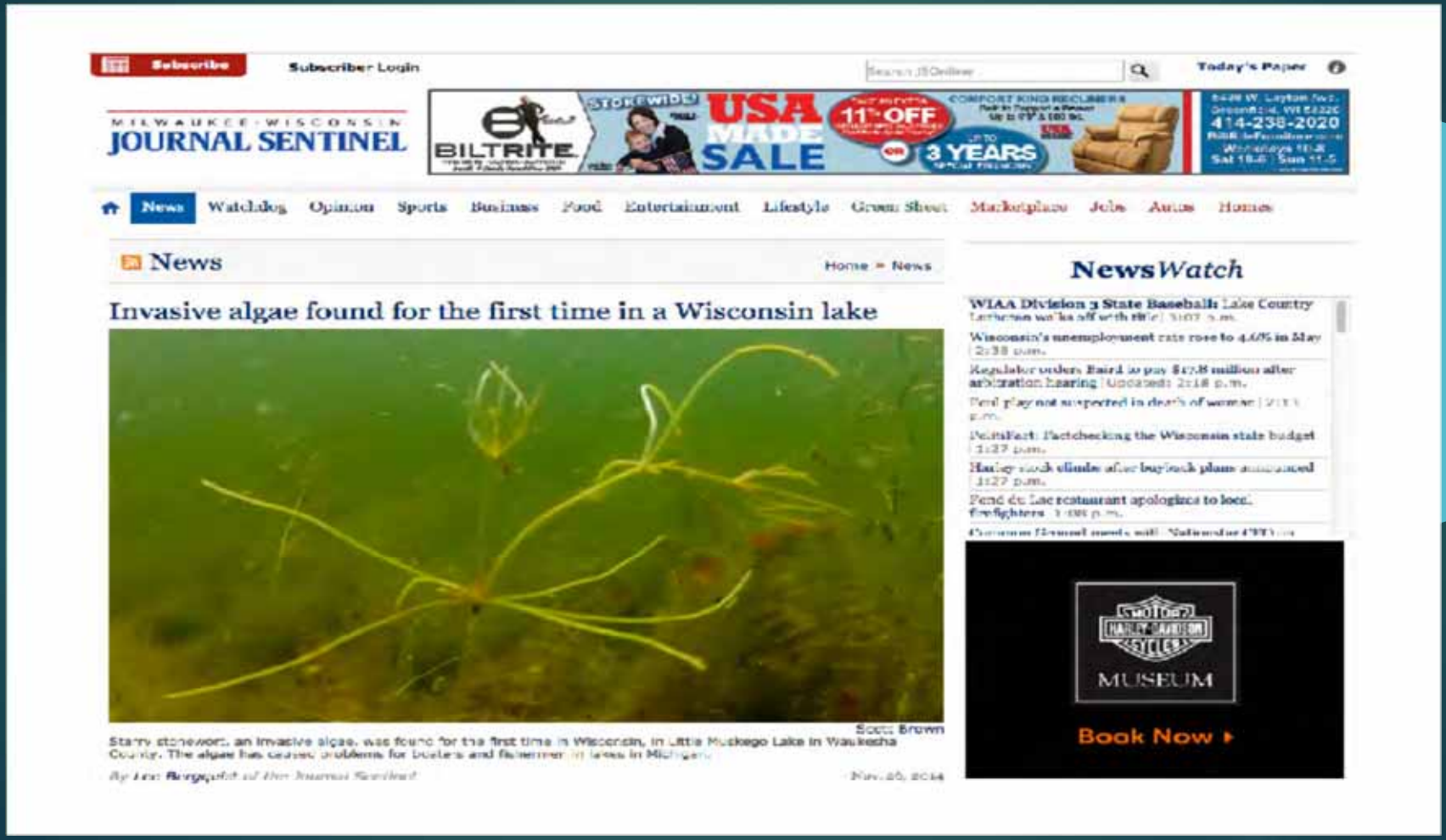
How might starry stonewort affect a lake?

- 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 re-suspension

Photo: Paul Skawinsky

Slide: Courtesy WDNR

Found in Wisconsin in September 2014



Slide: Courtesy WDNR

Presentation Outline

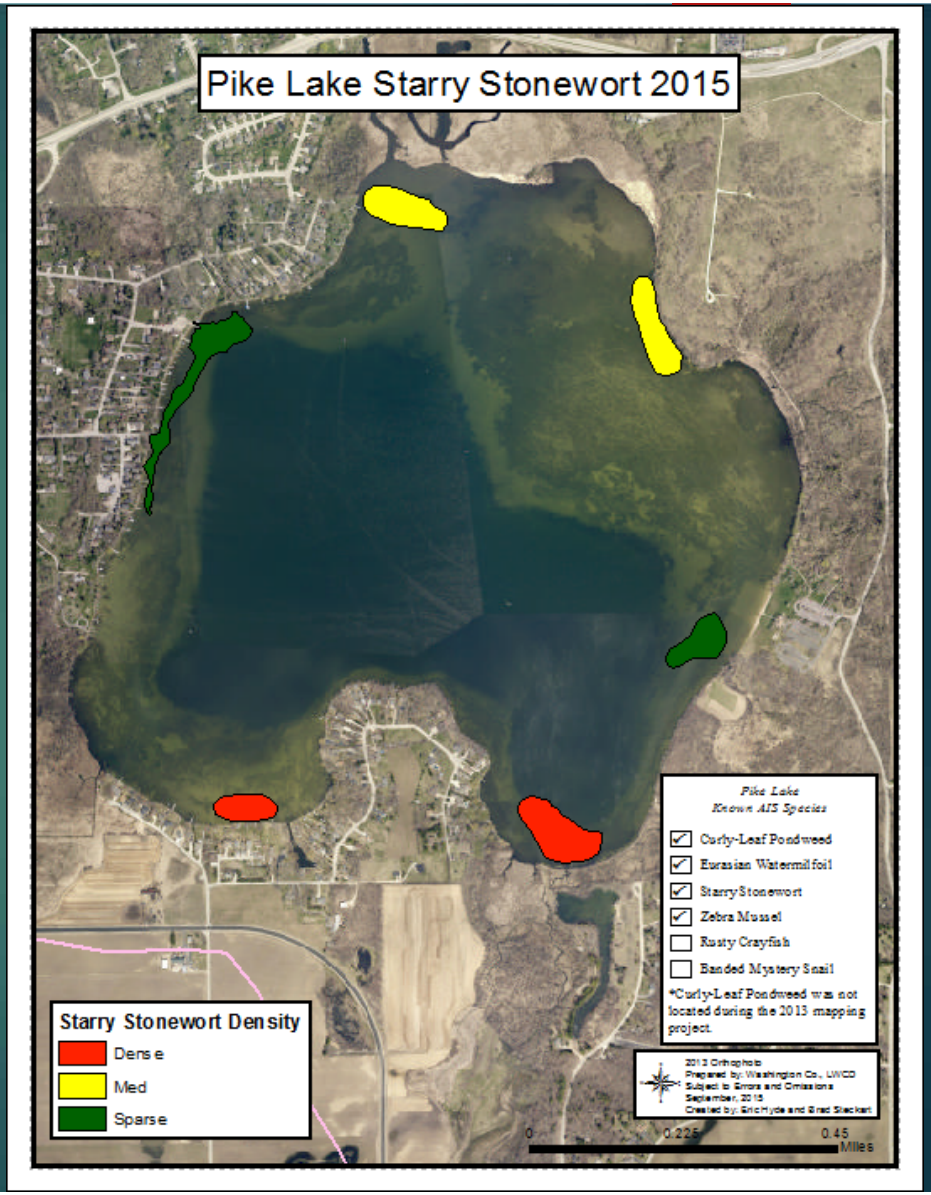
- Focus on 2 lakes infested in Washington County and treatment methods
  - Pike Lake
    - *Nitellopsis* Discovery
    - Meetings with PRD
    - CBCW Grant
    - Outreach
  - Silver Lake
    - *Nitellopsis* Discovery
    - Rapid Response
    - DASH Removal
    - Outreach

Pike Lake, Washington County

Starry Stonewort in Pike Lake 2015

- Discovered during routine meander survey at boat launch
- Population was large but not very dense… Patch here, patch there

- Conducted *Nitellopsis* meander survey around entire lake
- Present all around the lake



What next?

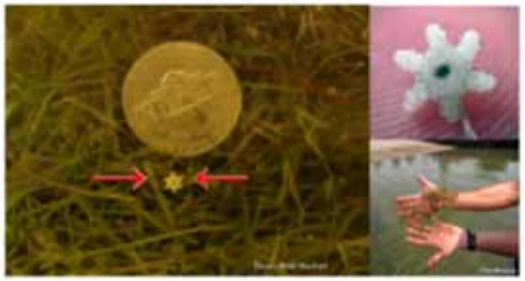
- Met with DNR, Pike Lake Association, and County
  - Manual removal not an option – population too large
    - DASH would take too long/be too expensive
    - Manual removal would take even longer
    - Harvester would break up algae and bulbils would spread
  - Chemicals have made the problem worse in other lakes

Warning Signs at Launches

ATTENTION BOATERS, ANGLERS, AND ICE-ANGLERS:

THIS LAKE CONTAINS AN INVASIVE SPECIES CALLED **STARRY STONEWORT.**

WASH OFF ANCHORS, BOATS, TRAILERS, AND ICE FISHING EQUIPMENT BEFORE LEAVING LAUNCH

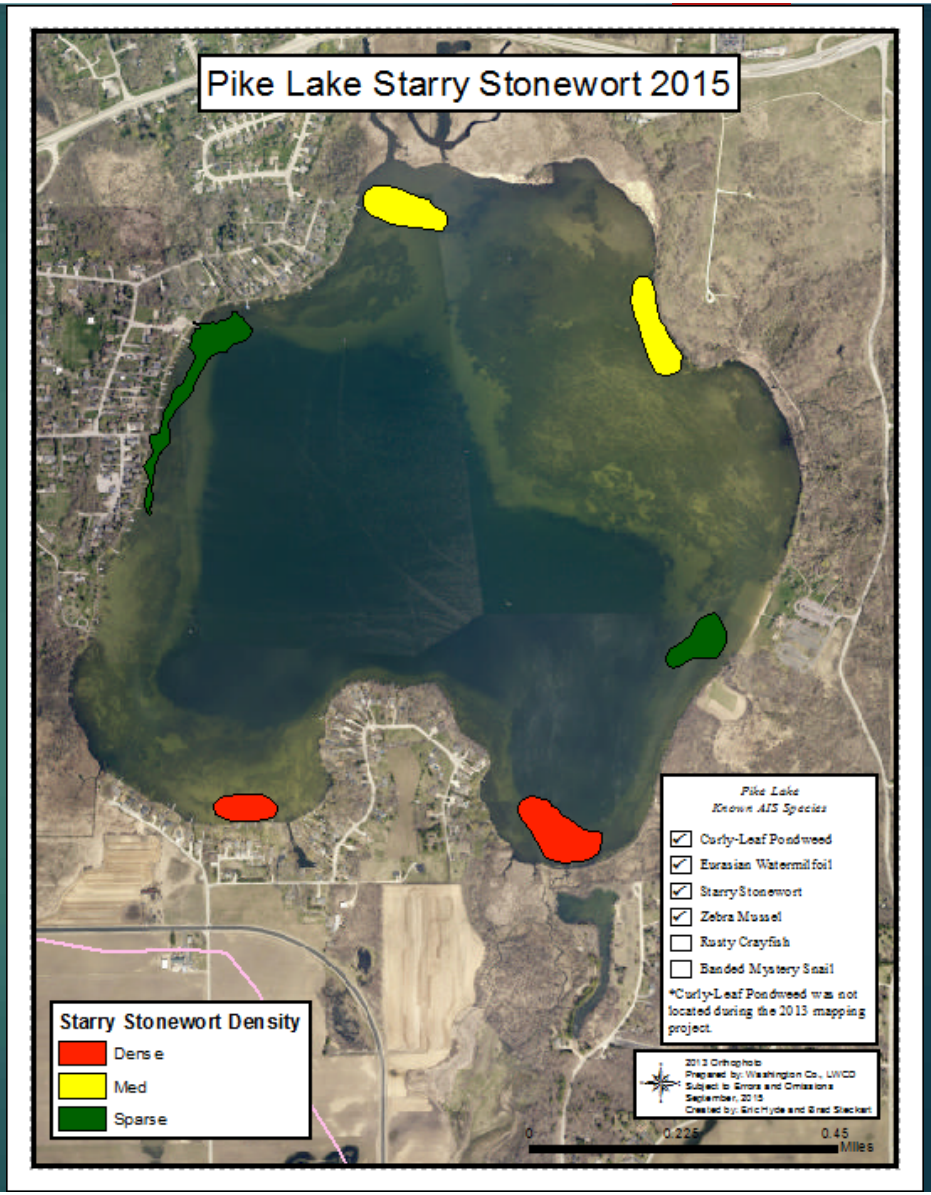


WATCH OUT FOR TINY STAR-SHAPED "BULBILS" THAT CAN EASILY BE LOOKED OVER WHEN CLEANING EQUIPMENT. THEY CAN SPREAD IN NEW WATERS.

CBCW for 2016

- Starry stonewort present in undisturbed areas around perimeter of lake
- Most dense population in SE bay

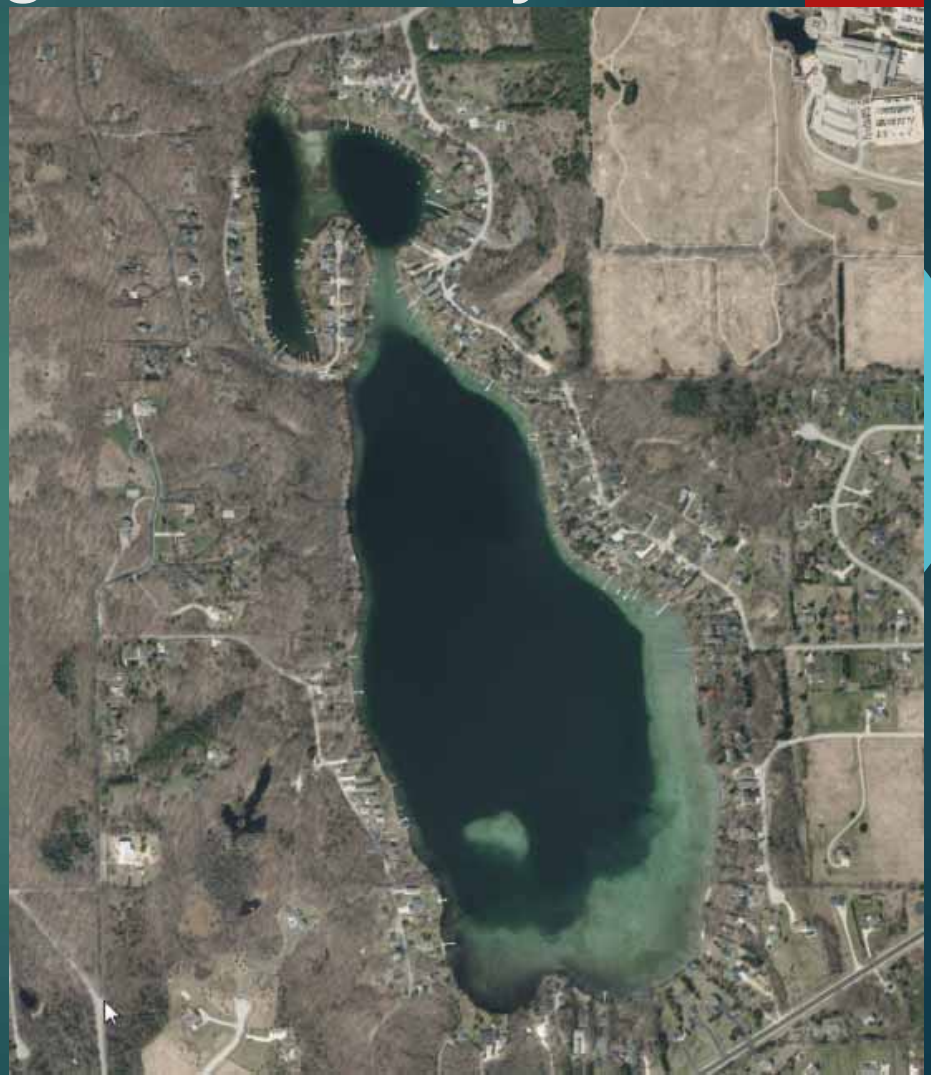
- Clean Boats, Clean Waters grant awarded for 2016
- Monitor population, keep updated maps
- PI Survey 2016



Silver Lake – Washington County, WI

Silver Lake – Washington County, WI

- 122 acres
- Drainage Lake
- Depth: 47 feet
- Substrate: sand/muck



July 2015: Starry stonewort found in Silver Lake (Washington County) by SEWRPC conducting routine PI Survey.

Verified next day by Ken Karol – New York Botanical Gardens

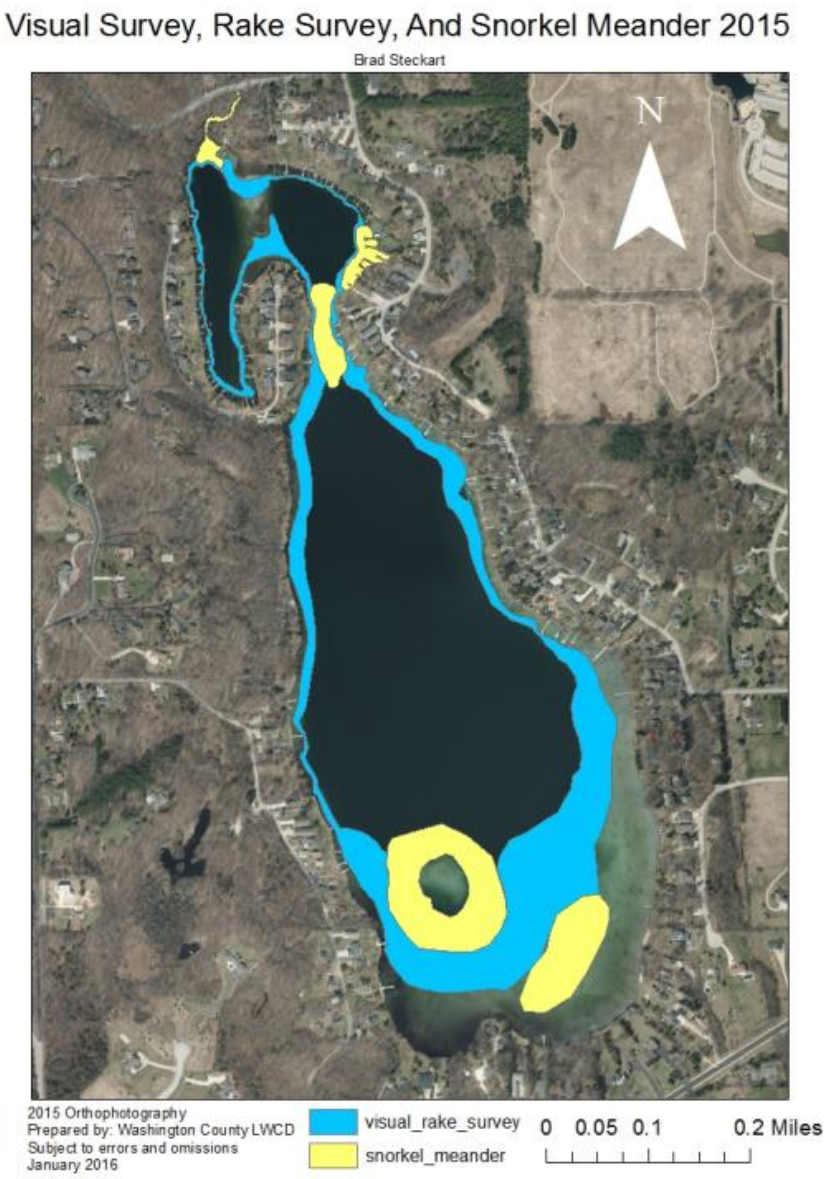
Rake/Snorkel meanders: determined population distribution

Rake/Snorkel meanders: determined population distribution

Search Area

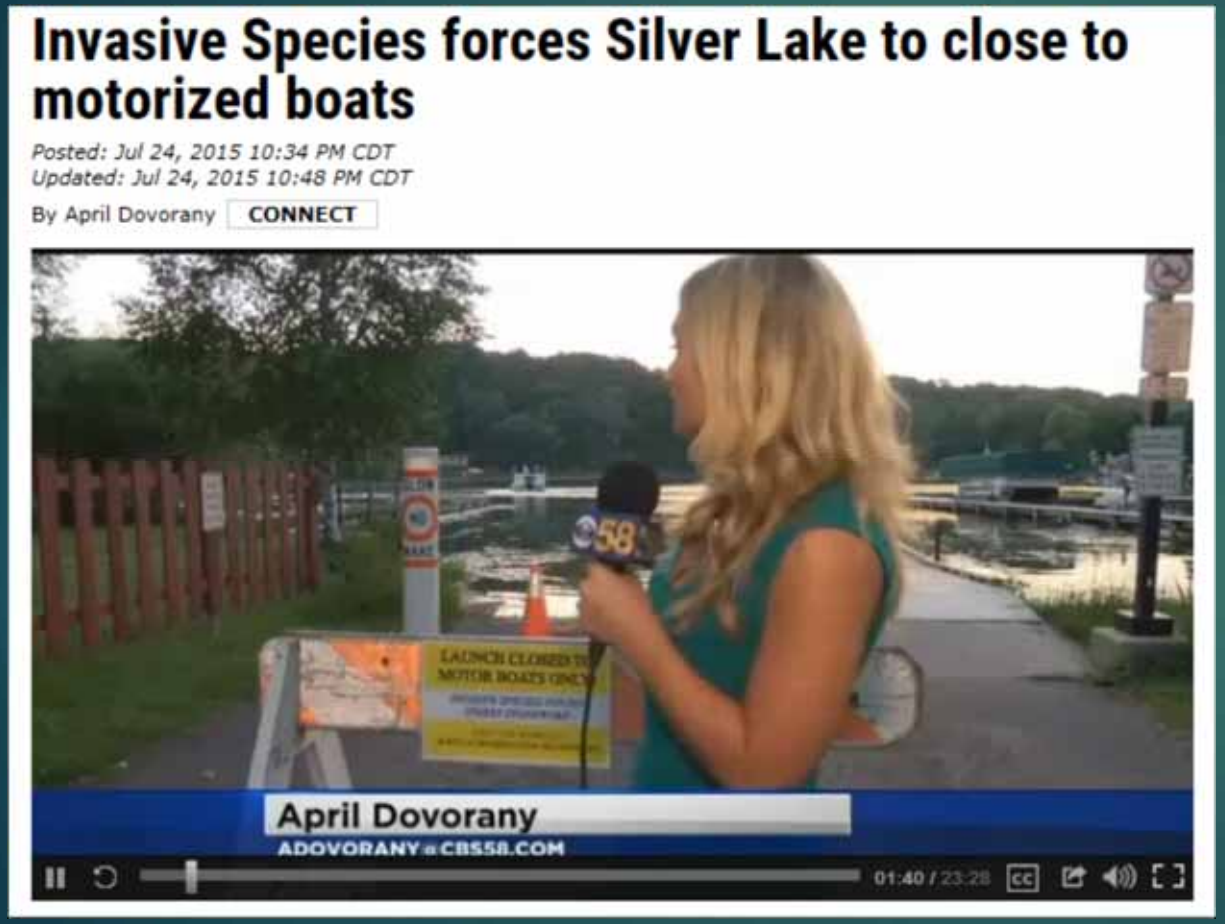
Visual Survey or
Vertical Rake Survey

Snorkel Meander



Infested area determined to be about 1 acre in NE corner of lake near public boat launch.

Hencshke Hillside Launch Closed



Invasive Species forces Silver Lake to close to motorized boats

Posted: Jul 24, 2015 10:34 PM CDT
Updated: Jul 24, 2015 10:48 PM CDT

By April Dovorany CONNECT

- Washington County temporarily closed launch to motorized watercraft until DASH contractor completed removal

Series of educational outreach sessions

- Both Washington County and DNR held info sessions open to the public about SSW

- High attendance rate allowed to get the word out about what was going on

- Allowed county and DNR to clearly explain problem and proposed solutions

Applied for Rapid Response AIRR-190-16 Grant

Grant requirements:

- DASH Harvesting
- Hand-pulling
- Clean Boats, Clean Waters efforts from Silver Lake Protection and Rehabilitation District
- Post-treatment surveys
- Report summarizing each removal event and CBCW data

Pre – DASH Treatment

DATE:	EVENT:	HOURS:	PARTNERS:
7/14/15	N. obtusa discovered	8	SEWRPC
7/15/15	N. obtusa verified	8	Wash Co, SEWRPC
7/16/15	Silver Lake visual survey/data collection SEWRPC	8	Wash Co, SEWRPC
7/21/15	Silver Lake N. obtusa specimen collection w/ SEWRPC	8	Wash Co, SEWRPC
7/23/15	Meander survey/hand pulling/mapping	8	Wash Co, DNR
7/24/15	Press release / signs up at Hencshke Hillside Launch	6	Wash Co
7/29/15	Meander survey/hand pulling	5	Wash Co, DNR
7/28/15	Meeting between SLPRD, DNR, Washington County	5	SLPRD, Wash Co, DNR
8/5/15	Hand pull/interview/ SLPRD meeting	8.5	Wash Co
8/11/15	Turned in rapid response grant	7	Wash Co, DNR
8/12/15	Survey of connected lakes - Paradise Valley and Lucas Lake	8	Wash Co
8/13/15	Met with Ecowaterway to set up DASH	3	Eco, Wash Co

Eco Waterway was contracted for Diver Assisted Suction Harvesting (DASH)

- DASH Benefits:
- "Selective" harvesting allows diver to harvest nuisance vegetation, leaving beneficial species intact
  - This allows native species to outcompete residual invasive populations after project
- Does not completely destroy habitat for wildlife
- Ability to harvest reproductive structures lodged in sediment

Diver Assisted Suction Harvesting

DATE:	EVENT:	HOURS:	PARTNERS:
8/17/15	Volunteer cooked and fed DASH crew	3	SLPRD
8/18/15	DASH Harvesting begins/ SLPRD Annual Mtg	8	Eco, SLPRD, Wash Co, DNR
8/18/15	Volunteer cooked and fed DASH crew	3	SLPRD
8/19/15	DASH Harvesting	12	Eco, SLPRD, Wash Co, DNR
8/19/15	Volunteer cooked and fed DASH crew	3	SLPRD
8/20/15	DASH Harvesting	12	Eco, SLPRD, Wash Co, DNR
8/20/15	DASH Harvesting	12	Eco, SLPRD, Wash Co, DNR
8/24/15	DASH Harvesting	12	Eco, SLPRD, Wash Co, DNR
8/25/15	DASH Harvesting/CBCW presentation to SLPRD	12	Eco, SLPRD, Wash Co, DNR
8/26/15	DASH Harvesting/boat decontamination	10	Wash Co, Eco
8/27/15	Dumped N. obtusa bags in allocated fill area	4	Wash Co

Diver-Assisted Suction Harvesting (DASH)Video

https://www.youtube.com/watch?v=ensWuwblU-k

Diver Assisted Suction Harvesting (DASH)

Harvested material is pumped through floating PVC to shore.

Through chopping pump. Chops material into 3” pieces.

From chopping pump to last water pump. Pumps to geotextile de-watering bags.

3 De-watering bags (20 x 24').

Filled up fairly fast with water. Had to stop every two hours to dewater.

Excess water directed through 50’ wetland buffer strip.

Monitored SSW populations throughout DASH process. Marked where we saw existing populations with buoys.

Formed strong partnerships between neighbors, DNR, County, and Silver Lake PRD.

Pressure washed boat/equipment with bleach solution.


©Brad Steckart


©Brad Steckart


©Brad Steckart


©Brad Steckart

In order to prevent this from happening. . .

Disposed of geo-textile bags in allocated landfill away from area that could potentially drain into lake

Disposed of geo-textile bags in allocated landfill away from area that could potentially drain into lake

After one week of DASH, we estimate 90% reduction in *Nitellopsis* populations.

Amount of Starry Stonewort Removed (estimated)

DATE	EVENT	ESTIMATED AMOUNT N. OBTUSA REMOVED (ACRES)
7/23/15	Hand pulling	0.01
7/29/15	Hand pulling	0.01
8/5/15	Hand pulling	0.01
8/18/15	DASH treatment	0.02
8/19/15	DASH treatment	0.02
8/20/15	DASH treatment	0.05
8/21/15	DASH treatment	0.10
8/22/15	DASH treatment	0.12
8/23/15	DASH treatment	0.30
8/24/15	DASH treatment	0.15
8/25/15	DASH treatment	0.10
9/3/15	Hand pulling	0.00
10/7/15	Hand pulling	0.01

Post- DASH Treatment

DATE:	EVENT:	HOURS:	PARTNERS:
8/28/15	Henschke Hillside Lake Access re-opens	1	SLPRD, DNR, Wash Co
8/29/15	SLPRD volunteer CBCW training	2	7 SLPRD, Wash Co
8/30/15	SLPRD volunteer CBCW	8	SLPRD
9/3/15	Follow-up monitoring/snorkel meander/hand pulling	3	Wash Co
9/5/15	AIS Coordinator CBCW Silver	3	Wash Co
9/5/15	SLPRD volunteer CBCW	6	SLPRD
9/6/15	SLPRD volunteer CBCW	5.15	SLPRD
9/7/15	SLPRD volunteer CBCW	7	SLPRD
9/12/15	SLPRD volunteer CBCW	2	SLPRD
9/13/15	SLPRD volunteer CBCW	2	SLPRD
9/19/15	AIS Coordinator CBCW Silver	8	Wash Co
9/23/15	AIS Coordinator CBCW Silver	4	Wash Co
9/25/15	AIS Coordinator CBCW Silver	2.5	Wash Co
9/27/15	SLPRD volunteer CBCW	1.45	SLPRD
10/7/15	Follow-up monitoring/visual meander/hand pulling	4	Wash Co
11/16/15	ROV monitoring through Friess Lake Middle School	5	5 volunteers

What Now?

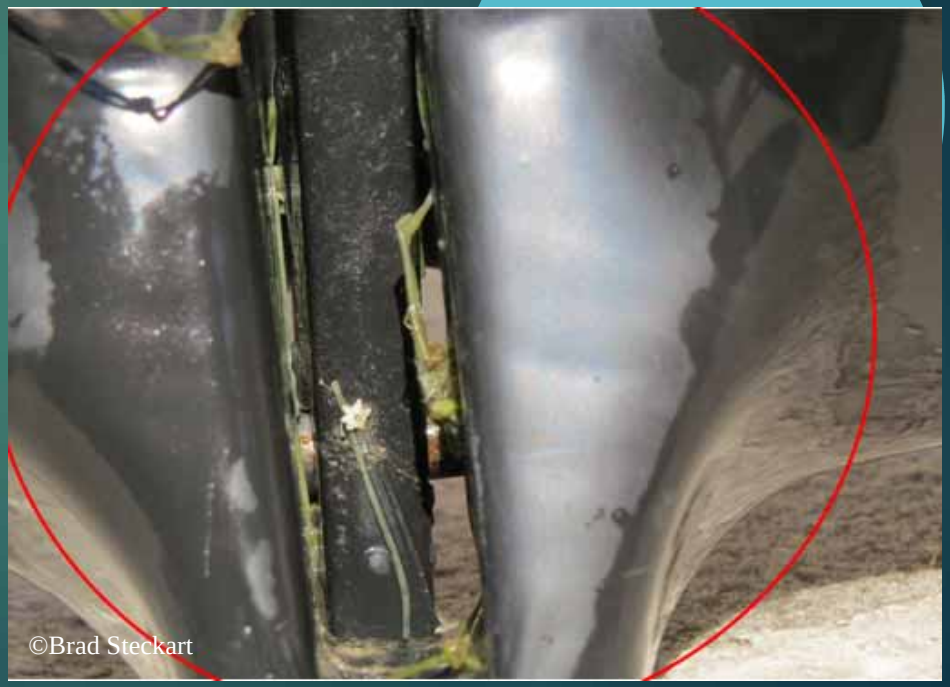
- Population is believed to be 90% reduced
- Continue to monitor boat launch area closely
- Native algae outcompetes starry stonewort and suppresses bulbil growth
- Strong focus on Clean Boats, Clean Waters education

Focus on Clean Boats, Clean Waters

Outreach and Education

Keep Partnerships Strong

Continue monitoring starry stonewort and adapt to manage residual populations successfully



Thank You!
Questions?