

Starry Stonewort
(*Nitellopsis obtuse*)
Removal Using Diver Assisted
Suction Harvesting (DASH)

Keith Gray, President
ILM Environments

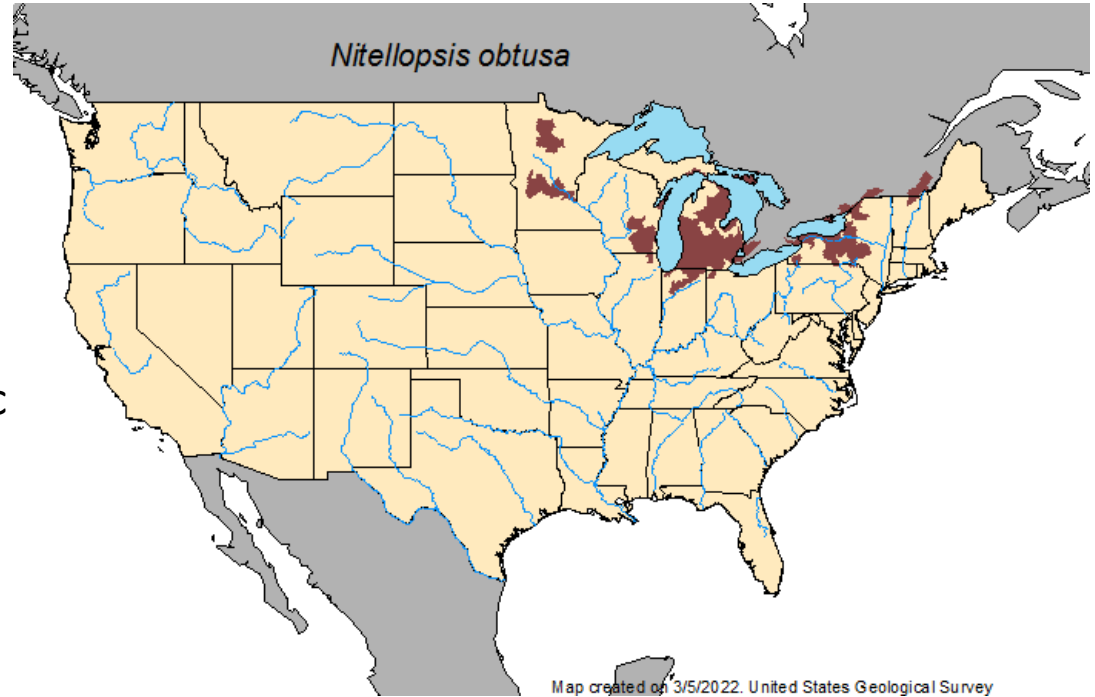


About ILM

- In business for more than 30 years
- Staff are degreed ecologists
- Specialty equipment for access to hard-to-reach places
- Focus on sustainable practices

About Starry Stonewort

- Native to the Eurasia (west coast of Europe to Japan)
- Green alga (similar to *Chara*)
- Highly aggressive
- Is not supportive of native aquatic species



DASH Sustainability



- Chemical free
- Selective plant removal
- Wildlife safe



Case Study – Keuka Lake, Upstate NY



Cornell Cooperative Extension
Yates County

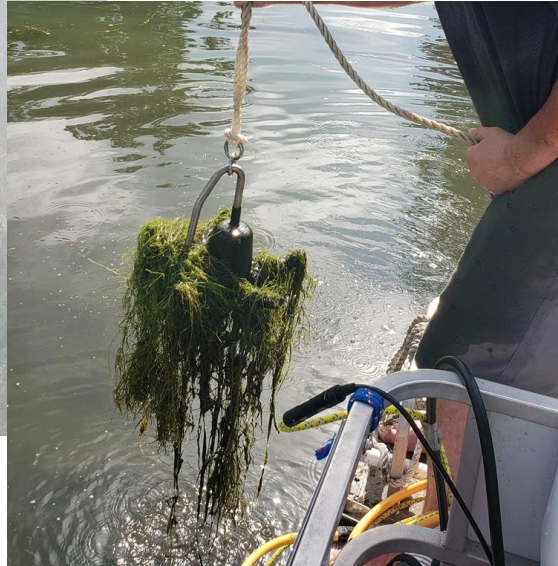
Zoom out (Ctrl+Minus)



Keuka Lake SSW Hotspots



How Starry Stonewort Spreads



FRAGMENTATION!

- Boat Propellers
- Anchors
- Fishing Tackle (lures, weights)
- Boat Trailers



ILM Dash Boat Operation

- Crew of three
- Two divers
- Divers rotate every two hours
- Headset communication
- One topside crew member sorts material and returns wildlife to the water

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Facility DEC ID 8-5726-00479



PERMIT
Under the Environmental Conservation Law (ECL)

GENERAL PERMIT GP-0-21-004
Management of Invasive Species

Permittee and Facility Information

Permit Issued To:
TOWN OF JERUSALEM
3816 ITALY HILL RD
BRANCHPORT, NY 14418
(315) 595-6668

Facility:
KEUKA LAKE
KEUKA LAKE @ SUGAR CREEK
JERUSALEM, NY

The Permitting Process

7. Hand Harvesting Hand harvesting (the use of hand removal techniques to remove invasive species from areas of infestation) may be assisted only with non-motorized hand tools.

8. Suction Harvesting Vegetation must be pulled and removed from the sediment by hand, and fed into the suction harvesting nozzle. **The suction nozzle must not be used to directly remove vegetation from bottom sediments.**

No visible turbidity is allowed outside of the immediate work area. Turbidity curtains must be installed as needed to ensure waters outside the project area are not visibly impaired beyond background condition. The turbidity curtains(s) must be removed when turbidity has returned to normal conditions.

DEC Field Observers





Containment

- Filter table
- Multiple screen sizes to catch bulbils
- Table allows us to sort out wildlife and return it into the water







Containment



Containment

- Burlap bags





Care Taken to Contain Fragments



Containment



Productivity



Productivity

- After filter table dewatering, the material is pushed into a burlap bag
- We stopped filling bags at around 70 lbs. (weight to handle safely)
- Six bags represent about a cubic meter of material
- One bag represents 100-200 sf of lake bottom growth (variable being visibility and working amongst other desirable growth)
- We filled 20-30 bags/8 hours of operation (representing 2,000-6,000 sf of lake bottom growth)
- Most of the high priority growth is in water <4' deep
- We are developing ways to offer greater productivity at a lower cost

Knowledge Gained

- Prioritize the work areas (highly vulnerable, avoid weekend traffic)
- Balance between pump rate (suction volume) and filter table drainage is important
- Target species comes with a variety of 'dust' (more from shallow areas than deeper areas)
- Having a variety of screen and screen sizes allows for optimal containment and production
- SSW comes out much easier than other types of aquatic growth
- SSW sinks!
- Keep tools and an inventory of spare parts (belts, clamps, hoses, etc.) on the boat
- DASH might be useful for sample collection for other studies

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Thank you

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