

2023 LTL AIS Report

August 5th, 2023

Topics

Terrestrial Invasive Species

Aquatic Invasive Species

Prevention

Rapid Response

New Technologies

Terrestrial Invasive Species

The background image is a composite night scene. The upper portion shows a clear night sky with a dense field of stars and the faint, glowing band of the Milky Way galaxy stretching across the frame. Below the sky is a dark horizon line with silhouettes of hills and trees. In the middle ground, a calm body of water reflects several bright, out-of-focus light sources, likely from buildings or streetlights on the far shore. The foreground is a dark, textured surface, possibly a lawn or field, which is illuminated with a strong green light, creating a surreal, monochromatic effect at the bottom of the image.

Yellow Iris

Dig it Out

Deadhead it



Purple Loosestrife



Management

Chemical

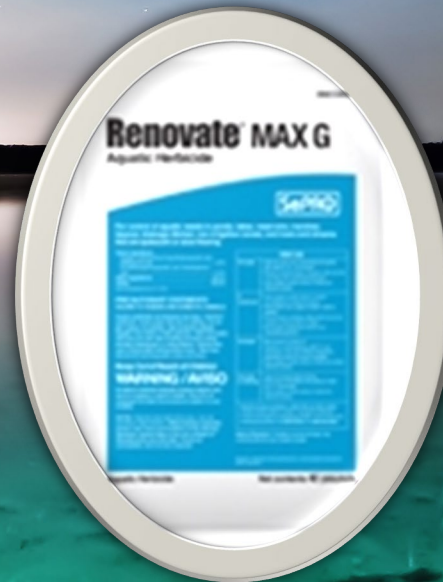
Biological

Mechanical

Mechanical

Biological

Chemical



Mechanical

Works best when there are a limited number of plants.

Plants can be identified in early July. They are small and easy to dig out.

Carefully dig out the plant. Ensure that the entire root ball is removed. Similar to a Dandelion, PL will grow back if any roots are left in the soil.

Bag or burn the dug out plant. They have an amazing ability to re-root.

Biological

Galerucella Beetles. \$1.00 each.

*The beetles and their larvae eat “shot holes” in the leaves.
The plant cannot adequately photosynthesize.*

*Will control but not eliminate PL. Beetles overwinter and
quickly multiply.*

*We have released 1,800 beetles over the last 4 years.
Primarily on the far west side of the lake.*

The beetles have reduced the PL population by 70%.

Chemical

Triclopyr selective herbicide. Renovate MAX G by Dow Agroscience.

Target sprayed. Kills dicots, not monocots. Stops cell division. Dead in 24 hr. US EPA registered. Approved for use in wetlands by EGLE.

Contract with Wildlife and Wetland Solutions of TC. Registered and approved herbicide applicator.

Treating 7 sites. Twice in August. Total cost \$5,000.

Hemlock Woolly Adelid

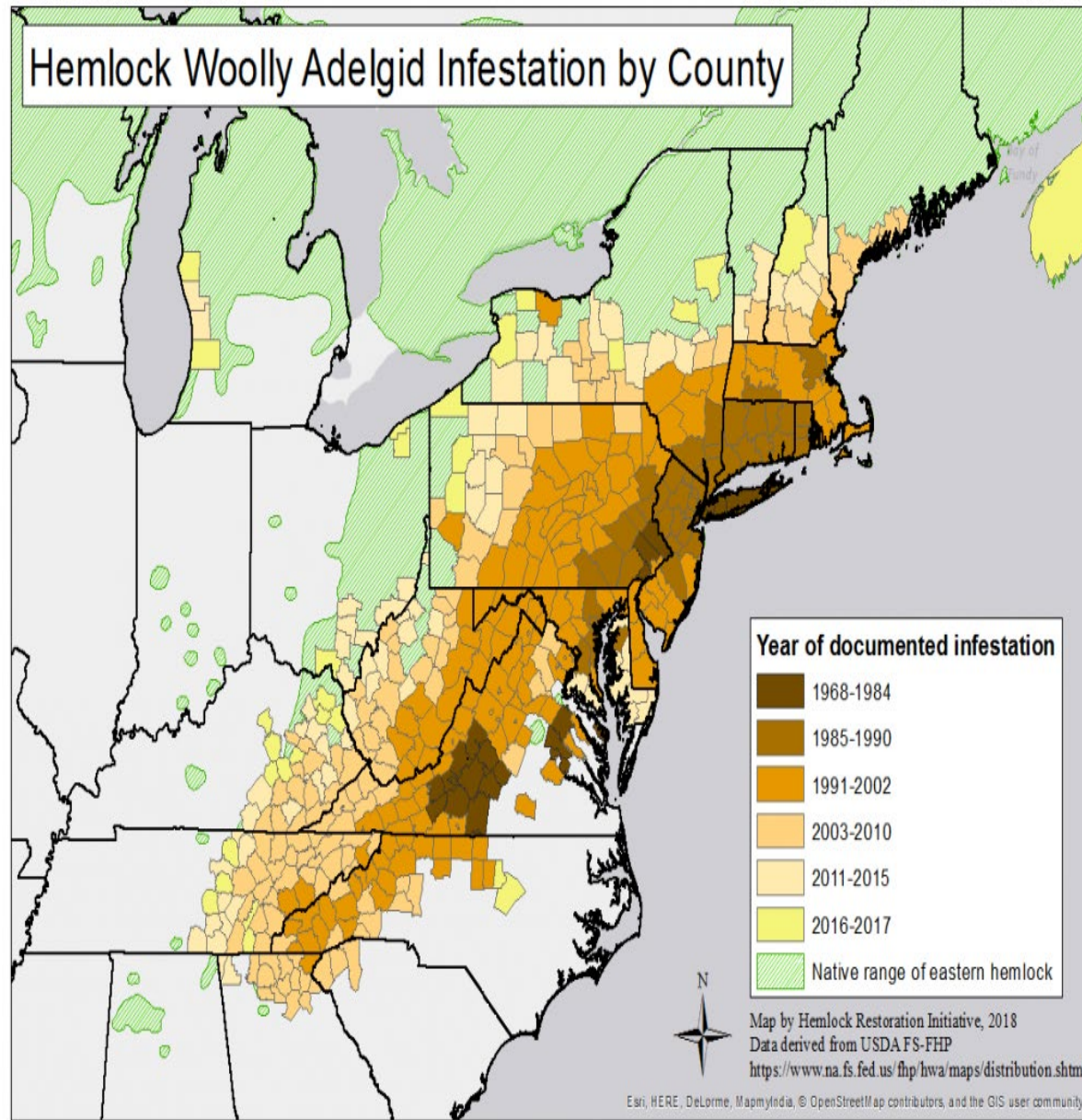
Insect sucks starches out of the needle. Can kill a Hemlock in 4-10 years. Has devastated forests along the East Coast.

Found at Sleeping Bear Dunes National Park at Platte River Campground.

We accompany employees of NW Michigan Invasive Species Network during their winter survey.

Trees can be treated with insecticides injected in surrounding soil. Effective 3-5 years.

Hemlock Woolly Adelgid Infestation by County



Prevention

Vigilance is eternal

Boat Cleaning Station (BCS)

First line of defense.

How often is it used?

How can we monitor usage?

Is there a way to enforce usage?

Glen Lake's boat wash is the gold standard . Only one ramp. Been there for 25 years. No invasive species.

Found 8 boats with EWM in 2022. All from Lake Leelanau.

Spend \$40,000 a year for wages and electricity.

Opens May 19th, closes October 31st. 7 days a week, 6am-7pm. Friday/Saturday/Sunday in October.

5 employees, one manager. Reports to the GL Board.

Monitoring

A night landscape featuring a starry sky with the Milky Way galaxy visible. The sky is a deep blue, filled with numerous stars. Below the sky, a dark horizon line separates the sky from a body of water. The water is calm and reflects the lights from the sky and the ground. In the foreground, the water is illuminated with a greenish glow, possibly from a light source. The overall scene is serene and atmospheric.

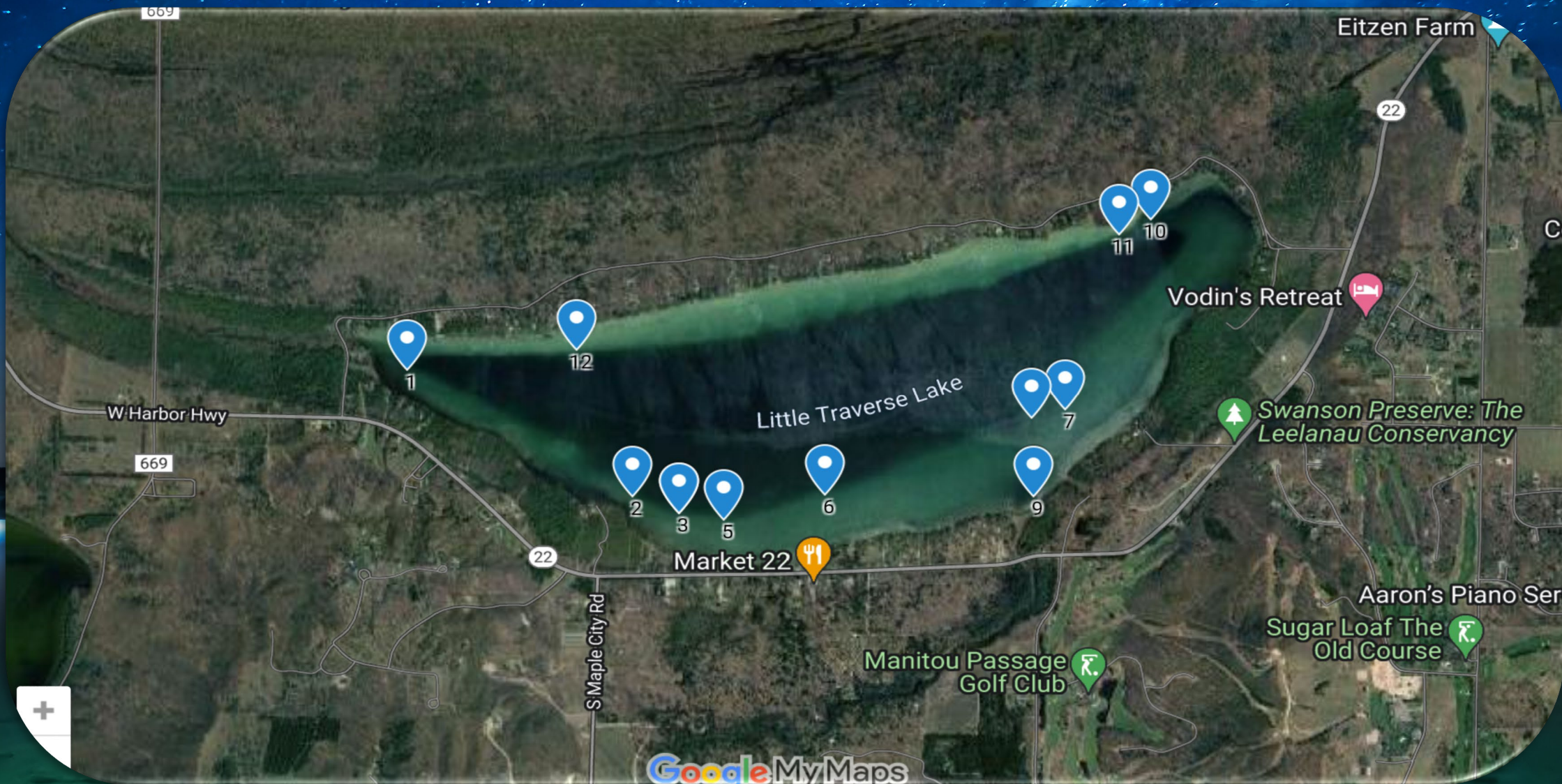
Contracted with Freshwater Solutions for EWM surveillance. Total cost \$4,500.

Rake toss.

Snorkel and scuba dive on all aquatic gardens twice per year.

Annual drone survey.

Aquatic Gardens



Site 1 west side of LTL by swim platform



eDNA sampling

Exciting, cutting edge technology. 2 year study.

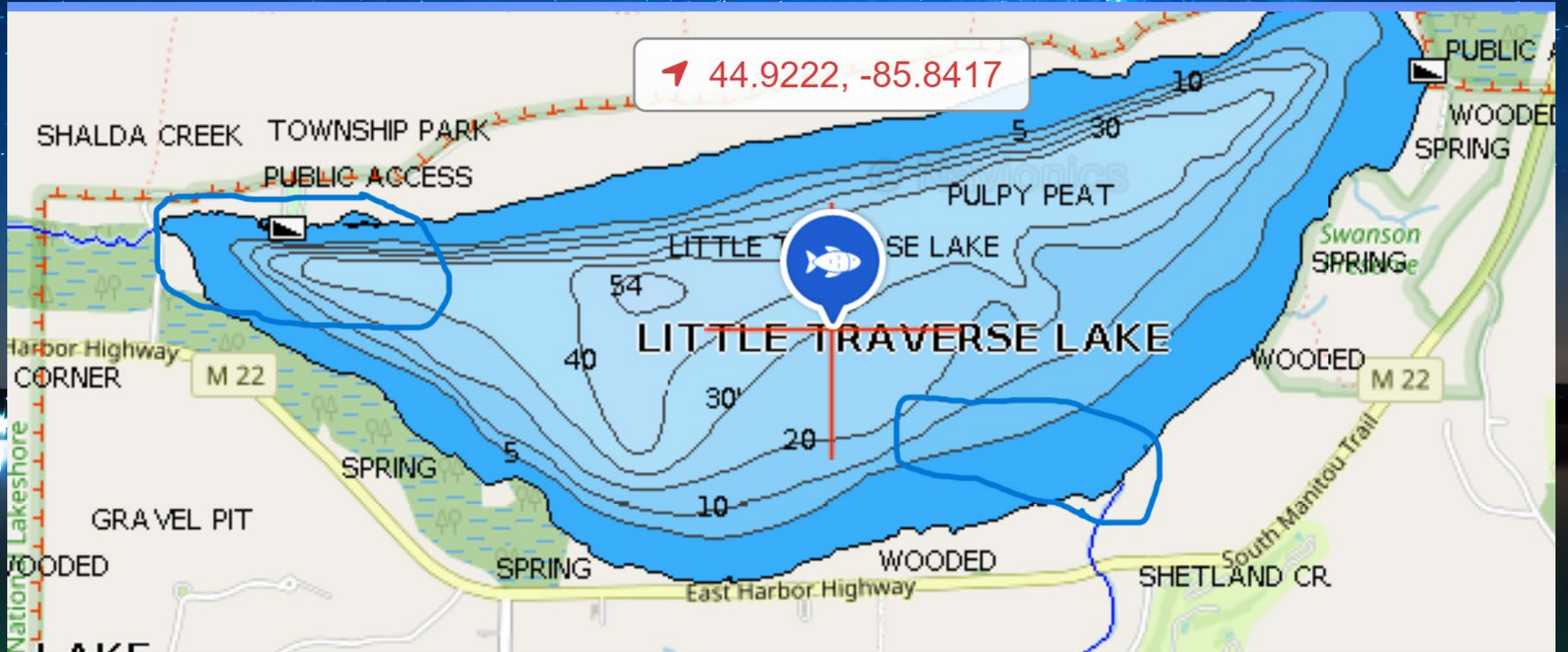
Collaboration with FWS, the GTB of Ottawa and Chippewa Indians, Lime Lake , Lake Leelanau and Long Lake.

\$5,250 per year.

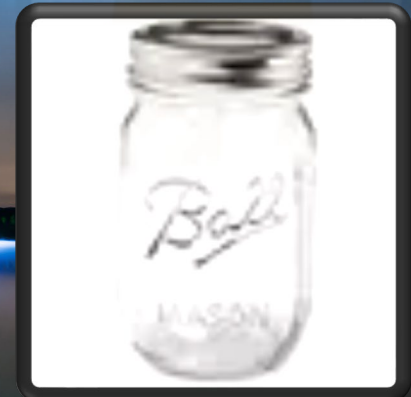
Rapid Response

A night landscape featuring a starry sky with the Milky Way, a calm lake reflecting distant lights, and a greenish, textured foreground. The text "Rapid Response" is centered in the sky.

Primary monitoring areas



What to look for/do



Jeff Shutz

Mobile/Text: 616-540-3349

Email: jeff1shutz@gmail.com

Actions

Suspicious plant taken to FWS, located on Lime Lake

Positive identification

Complete littoral zone survey

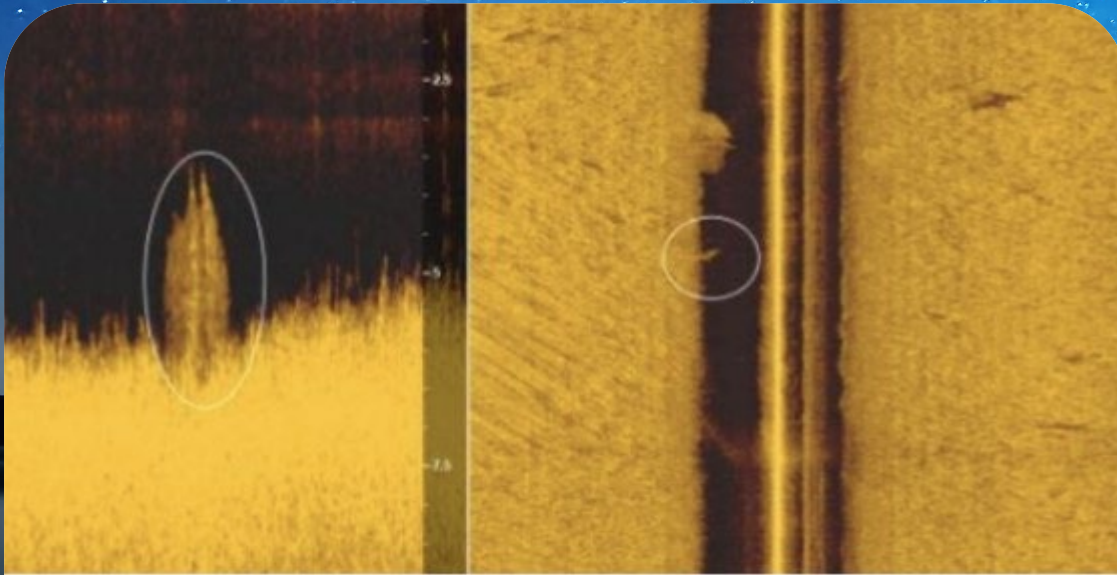
Barrier installation

Assessment of barrier

New Technologies

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Side-Scan Sonar



Milfoil under Boat
No side scan shadow but abrupt rise in
vegetation

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Drone-Enabled Multispectral Imagery Analysis

