



Capital Region PRISM AIS Lake Survey Report

Date: September 8th, 2022

Site Name: Moreau Lake State Park, Moreau Lake

General Information: (518) 793-0511

Site Size: 122 acre(s) / Lake Perimeter: / 2.9 Miles

Mean Depth: 32 Feet

GPS Location of Site/Parking lot: 43.226288 -73.708176

Physical Address: 605 Old Saratoga Road Gansevoort, NY 12831

County: Saratoga

Town: Moreau NY 12831

Property Owner Contact: Andy Damon Stewardship Specialist

NYS Office of Parks, Recreation & Historic Preservation
Saratoga-Capital District 19 Roosevelt Dr. Saratoga Springs, NY 12866
(O): 518-584-2000, ext. 152 (C): 518-646-3652 andy.damon@parks.ny.gov

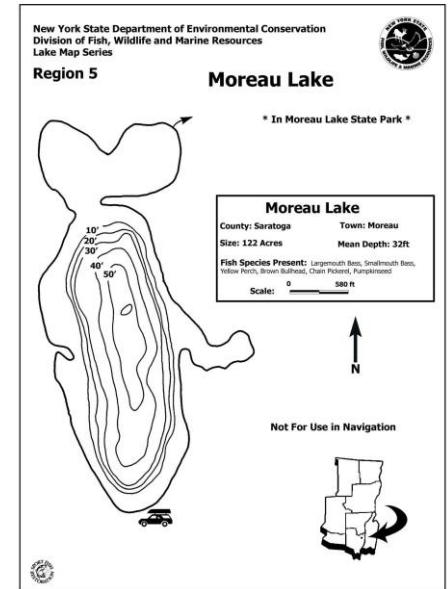
Survey Leaders: Kristopher Williams PRISM Coordinator, Hannah Coppola

AIS Program Manager

Phone: 518-885-8995

Email: kbw44@cornell.edu, hwe22@cornell.edu

iMapInvasives User ID: 9274, 21052



Summary

On September 8th, 2022 the Capital Region PRISM with the assistance of the NYS OPRHP, conducted an early detection AIS survey on Moreau Lake in Saratoga County. Top side visual and a meandering rake toss methods were conducted along the edge (littoral zone) of the shoreline to survey for AIS. The primary focus of this survey mapped out Eurasian water-milfoil beds throughout the waterbody to detect growth from the 2020 survey. The entirety of the main section of Moreau Lake was surveyed, comprised of 87.8 acres. The back pond was not surveyed. Field Maps was utilized to accurately document growth and density changes. Rake tosses were not documented using SAS-Pro, but were conducted throughout the waterbodies littoral zone to help determine the presence of EWM and other AIS.

Aquatic Invasive Species Present

- Eurasian water-milfoil; (*Myriophyllum spicatum*) is a very high threat species with an assessment score of 100. http://nyis.info/wp-content/uploads/2018/01/5cdc8_Myriophyllum.spicatum.NYS_.pdf For General Information: http://nyis.info/invasive_species/eurasian-watermilfoil/
- Chinese Mystery Snail (*Bellamya Cipangopaludina chinensis*) was detected throughout the waterbody. https://nyis.info/wp-content/uploads/2017/10/55afa_Bellamya-chinensis-Ecological.pdf
- No other AIS species were observed, although curly leaf-pondweed has been reported in 2020.

Areas of Concern:

The populations of Eurasian water-milfoil (EWM); (*Myriophyllum spicatum*) are growing and becoming more abundant and dense in population since the last survey conducted in 2020. Please note the mapped presence polygons and data table below for specific points as posted in ArcGIS iMap Mobile Advanced (IMMA). Polygons were mapped using Field Maps around EWM populations to determine growth and density changes.

- A new dense infestation of Eurasian Water-milfoil; (*Myriophyllum spicatum*) has formed on the West side of Moreau Lake. Object IDs: 9990, 9988, 9991.



- South end of the lake off the boat launch has patches of (EWM) that are continuing to enlarge and merge.
- The bridge between the north and south body of water has sparse populations of milfoil posing a potential area of concern in the future.
- Overall, the majority of the littoral zone/perimeter has trace to dense populations. No EWM was observed in 2022 on the East side of the lake, including the pond, with the exception of Object IDs: 1490, 9970. Areas with trace/sparse populations of EWM contain well established native species populations.

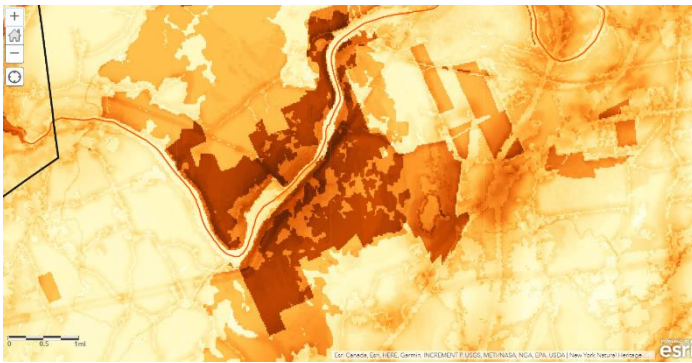
Site Description:

Moreau Lake State Park is within a NYS Bird Conservation Area. Moreau Lake BCA is a stopover site for Neotropical migratory songbirds especially forest dwelling migrants during both spring and fall migrations. Moreau Lake is accessible by non-motorized boats. There is a strong presence of personal watercraft recreation.

iMapInvasives Prioritization Model:

The area is ranked high on the prioritization model comprehensive score attribute with a strong coloring on the heat map. The vector of transition exist and the region is surrounded by protected and natural areas.

- <https://www.arcgis.com/home/webmap/viewer.html?webmap=57d30ff9bff7426c8950d90b0ba43bba&extent=-81.0352,39.2503,-70.2686,45.8067>



Does this site contain previously treated infestations?

- (Yes) Eurasian Water-milfoil; (*Myriophyllum spicatum*) Confirm with the OPRHP.

Survey Techniques:

- Meandering rake tosses within the Littoral Zone
- Visual Inspection of Surface and Subsurface

Map: Searched Area: Moreau Lake State Park (Entire Littoral Zone of main waterbody)

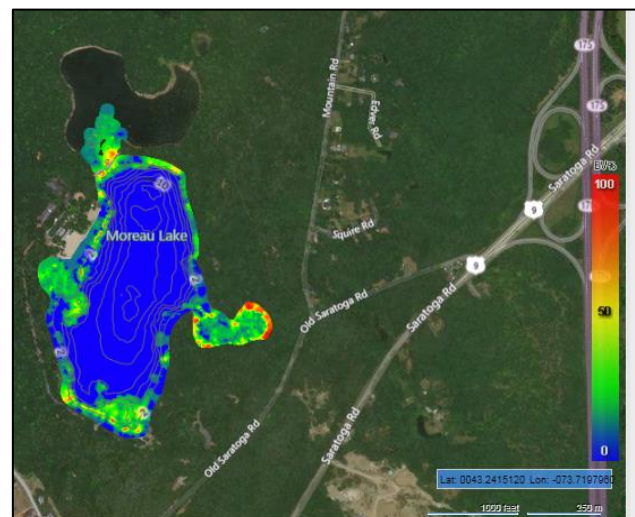
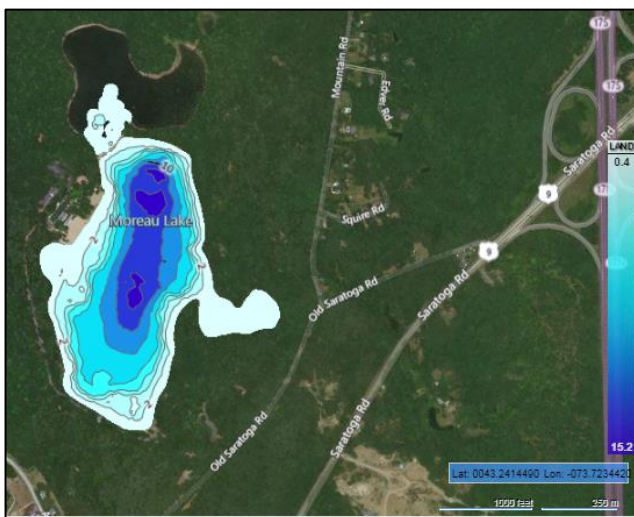


Figure 1: Bathymetric map of Moreau Lake and a portion of Back Pond indicating the topography as the thin contour lines. Color indicates the lake depth, with the lightest shade representing shallower waters and darkest shade representing deeper waters. Depth is measured in meters. Areas where data is missing (i.e. large portion of Back Pond) will be shown as the underlying aerial imagery, or black sections.



Section 2: Survey Result Summary

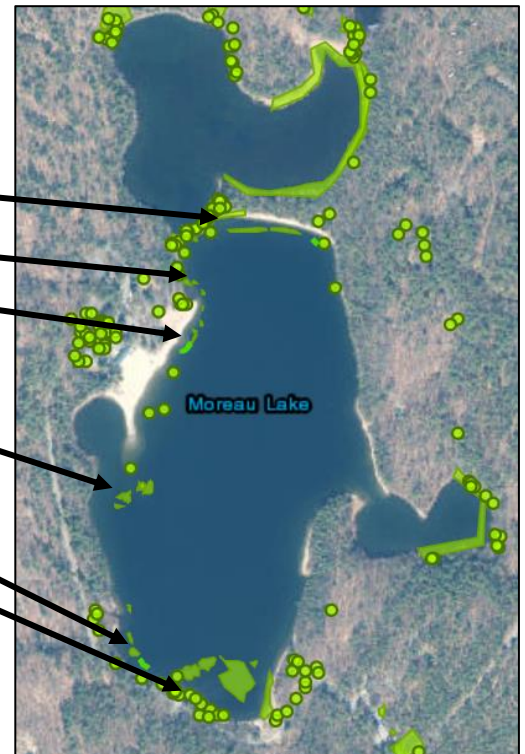
Common Name	Scientific Name	Location (GPS)	Growth Type	Phenology	Abundance
Eurasian water-milfoil; European water-milfoil	Myriophyllum spicatum	Note IMMA Polygons	Submerged/Rooted	Emergent Growth	Sparse/dense
Chinese mystery snail	(<i>Bellamya</i> <i>Cipangopaludina</i> <i>chinensis</i>)	Fie Sediments	- N/A	-N/A	Medium
No other AIS identified					

Searched Area:

Entire Littoral Zone excluding the back pond of Moreau Lake.

Areas of Concern Locations:

1. North End/ Small Section of Bridge
2. Upper Beach Area
3. Front of Beach
4. West Side of Lake
5. Bottom West Side
6. South End of Lake



1. North End/ Bridge Area and surrounding natural beach: Historically problematic area of human disturbance.

Location: 43.235439, -73.711386

Total Area of Pinned Presences: 0.15 acres

Object ID (left to right):

9977: 0.01acres. Sparse/trace population. Native pondweed is dominant.

9975: 0.07acres. Sparse to dense. Dense on far right of polygon.

9972: 0.06acres. Up to 85% milfoil patches in left half of polygon leading towards bridge

1490: 25.6sq ft. Sparse, competing with natives

9970: 210sq ft. Mixed with native clasping leaf pondweed. Rake toss indicates 60% EWM.



Field Maps IMMA Estimated Presence Polygons



2. Upper Beach Area

Location: 43.234428, -73.712696

Area of Pinned Presences: 0.04

Object ID (left to right):

9978: 0.02acres. Sparse, mixed with established native pondweed.

9979: 0.01acres. Smaller dense population.

9980: 0.01acres. Dense



Field Maps IMMA Estimated Presence Polygons

3. Front of Beach

Location: 43.233889, -73.712535

Area of Pinned Presences: 0.042acres

Object ID (top to bottom):

9981: 0.002acres. Sparse/dense

9982: 0.01acres. Sparse/dense

9983: 0.02acres. Dense

1491: 0.01acres. Dense to sparse

3 presence points indicate trace EWM detects.



Field Maps IMMA Estimated Presence Polygons



4. West Side of Lake

Location: 43.231184, -73.714423

Area of Pinned Presences: 0.19acres

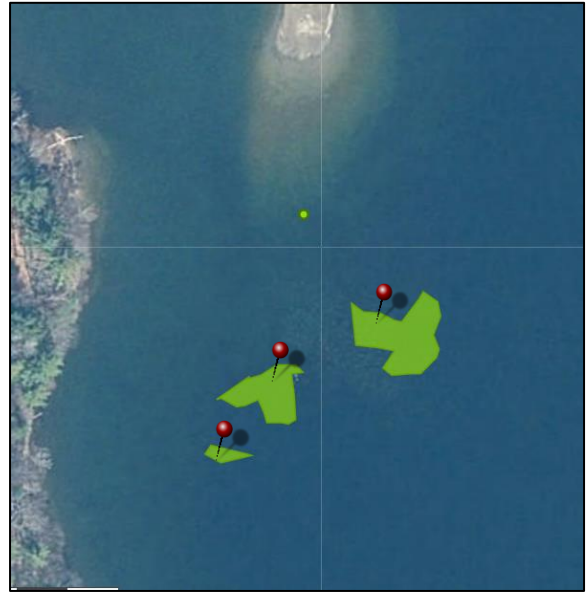
Object ID (top to bottom):

9990: 0.11acres. Dense

9988: 0.07acres. Dense

9991: 0.01acres. Two Dense patches within polygon.

1 presence point indicates trace EWM.



Field Maps IMMA Estimated Presence Polygons

5. Bottom West Side of Lake

Location: 43.228532, -73.714164

Area of Pinned Presences: 0.09acres

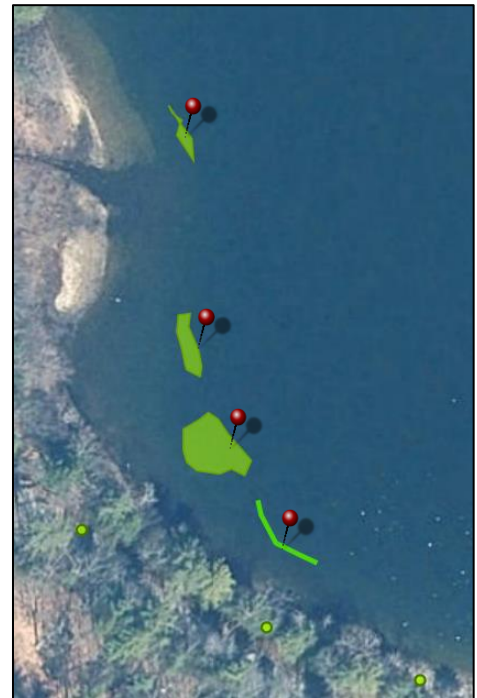
Object ID (top to bottom):

9993: 0.01acres. Sparse to Dense

9994: 0.02acres. Dense

9995: 0.05acres. Dense

1493: 0.01. Sparse/Dense



Field Maps IMMA Estimated Presence Polygons



6. South End of Lake

Location: 43.227808, -73.712859

Area of Pinned Presences: 1.05

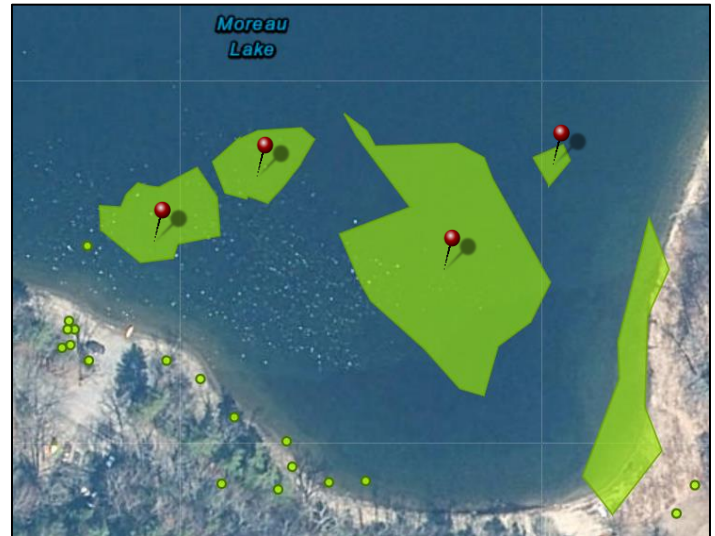
Object ID (left to right):

9964: 0.17acres. Sparse/Dense

9965: 0.12acres. Dense

9966: 0.74acres. Dense clumps

9967: 0.02acres. Dense



Field Maps IMMA Estimated Presence Polygons

Section 3: Summary of Recommendations

This page provides recommendations of any treatment methods, monitoring methods, and restoration efforts based on the survey.

Treatment: Describe briefly any recommendations for future treatment methods, why they are recommended, and any alternatives to consider. Please use abundance and site-specific factors in your treatment recommendation. **Optional:** Attach or reference BMP guidance document

Selective Control Strategies:

- Harvest/Suctioning
- Chemical Treatment with Selective Herbicide
 - ProcellaCOR

A number of chemicals impact the growth and survival of *M. spicatum*. Amine salts of Endothall (Hyrothol 191®), and Dipotassium Salts of Endothall (Aquathol K®), Diquat dibromide (Reward®), Komeen® have been found to be effective. Some of these herbicides may also affect other non-target rooted submerged plants, including some rushes. Treatment is most effective in still water in the spring while the plant is actively growing.

The amine formulations of 2,4-D granules (Navigate®, Aquakleen®, Aquacide®) are effective on controlling Eurasian watermilfoil and will not damage most non-target grasses. This herbicide method, however, is not appropriate for large unmanageable areas of milfoil. One lose-dose application (10 µg/ L) of fluridone (brand names Sonar® and Avast!®) applied in the early stages of growth has the potential to provide season-long control of milfoil. However, this application rate causes collateral damage to native vegetation. Liquid triclopyr (Renovate 3® and Renovate® OTF) can control milfoil without unintended damage to cattails and grasses. *Note: Always check state/provincial and local regulations for the most up-to-date information regarding permits for control methods. Follow all label instructions. Mention of chemicals, particularly the mention of brand names in this profile does not represent a recommendation by NY Sea Grant or Cornell University.* http://nyis.info/invasive_species/eurasian-watermilfoil/

Non-Selective Control Strategies

- Benthic Mats

Post- Survey Monitoring: Briefly explain the monitoring procedure, when it will occur, and who will complete it. Consider the phenology of species when suggesting time-lines. If a separate management or monitoring plan was developed or to be completed, attach or describe here.

- The Capital Region PRISM will commit to Early Detection AIS Surveys in Moreau State Park in a Collaboration with the NYS OPRHP on an annual basis. The PRISM will continue to monitor the infestation(s) of Eurasian Water-milfoil; (*Myriophyllum spicatum*) and delineate their size using Field Maps polygons. The PRISM will also monitor for other AIS.
- **Will post-treatment management be handled by another person/entity?**
Not Applicable at this time.
- **Will an Invasive Species Management Plan be created?**
Not Applicable at this time.

