



Capital Region Partnership for Regional Invasive Species Management Aquatic Detection & Monitoring Report

Section 1: Survey Summary

General Information	
Date Survey Conducted: June 13 th , 2025	County: Schenectady
Site Name: Collins Lake	Permit(s)/Permission(s) Acquired? Yes TRP/public WB
Address (if different): Schonowee Ave/Kiwanis Way, Scotia, NY 12302	Time Spent on Site (Hours)/# of Staff on Site: 3 hours on site/2 staff (6 total staff hours)
Parking Lot Latitude/Longitude: 42.824644, -73.955096	Property Owner Name, Title, and Contact: Village of Scotia Parks & Rec 518.374.8611
Total Waterbody Size (acres): 56.3	
Worksite Size (acres): 56.3	Survey Leader Name, Title, and Contact: Alexa Howansky—AIS Program Manager; ajh363@cornell.edu
Average Depth (ft): 10	Team Member Name(s) and Title(s): Alex Picard—WISP Assistant Supervisor
Report Author: Alexa Howansky	Data Recorder & iMapInvasives ID: Alexa Howansky—iMap ID 28804
# of Volunteers (if applicable): None	Total Volunteer Hours: NA

Conservation Goal:

- Delineate & assess a conservation value To prevent and protect a conservation value
 Local Eradication Post-Treatment Monitoring Containment
 Suppression Exclusion Restoration

Survey Type:

- Detection Delineation Follow-up Monitoring Detection Training
 Volunteer Engagement Crew Assistance Program Project eDNA

Launch Description:

A boat launch is located on the southern shore of the waterbody in Collins Park on Kiwanis Way (off Schonowee Ave), managed by the Village of Scotia. The launch is unimproved/integrated with the beach sand, with a gravel approach. An additional cartop boat launch is also present on the eastern shore (off Washington Ave), but with limited access to the water due to the Water Chestnut monoculture on that side of the lake.

Site Description:

Collins Lake is a 56.3-acre waterbody located within Collins Park in the Village of Scotia. The lake’s substrate is comprised mostly of muck and sand with a bottom cover of macrophytes, woody debris, and benthic algae. A small island, Scotia Island Preserve, is located in the center of the waterbody—access to the island is not permitted for the public, and there is a heavy population of Canada Geese surrounding the island.





Collins Lake is within the immediate floodplain of the Mohawk River and flows into the river via a flapper valve in the Schonowee Dike. There is limited visibility in many sections of the waterbody due to poor water quality, as Collins Lake is eutrophic and has been subject to extensive disturbance (such as flooding from Hurricane Irene & Tropical Storm Lee in August & September of 2011). The lake has a history of aquatic herbicide use (namely fluridone); because of this there are multiple aerators between the shoreline and island to combat reduction in dissolved oxygen.

Collins Lake is used for boating, fishing (see the [Collins Lake Fishing Brag Board](#) where anglers can post their catches on the Village website), and swimming. Impacts to recreational use of the lake are documented as far back as the early 1900s, when Water Chestnut populations would have already covered expansive areas of the lake—Collins Lake is one of two known “ground zero” sites for the introduction of Water Chestnut in North America.

Water Chestnut, Curly-Leaf Pondweed, and Eurasian Watermilfoil continue to harm the lake’s potential for recreation, and remediation attempts such as dredging have yielded little relief if only temporarily. Likely a result of the extensive AIS presence and the consequences associated with such populations, Collins Lake has periodically suffered high bacteria levels that cause closures of public access to the waterbody.

Site Significance:

Given the nature of Collins Lake’s connections to nearby watersheds, coupled with the history of initial AIS introductions to Collins Lake resulting in mass spread to other waterbodies in the immediate floodplain and across the State (and broader Northeast), it could be considered a priority pathway for monitoring for early detection of Tier 1 and 2 AIS.

According to the [Aquatic Invasive Species Pond and Lake Vulnerability Prioritization for New York](#) tool developed by the New York Natural Heritage Program, Collins Lake is in the 96th percentile for risk of introduction/establishment and the 63rd percentile for impact, with boat and road traffic in the 93rd and 96th percentile, respectively. In other words, it is at extremely high risk for new AIS, which would have very high impacts, and the amount of boat and vehicle traffic provides extremely high opportunity for spread. Early detection (and subsequently rapid response) could prevent widespread ecological harm.

Survey Techniques:

The survey intensity was entire waterbody. Top-water methods were used, specifically top-side (visual) and

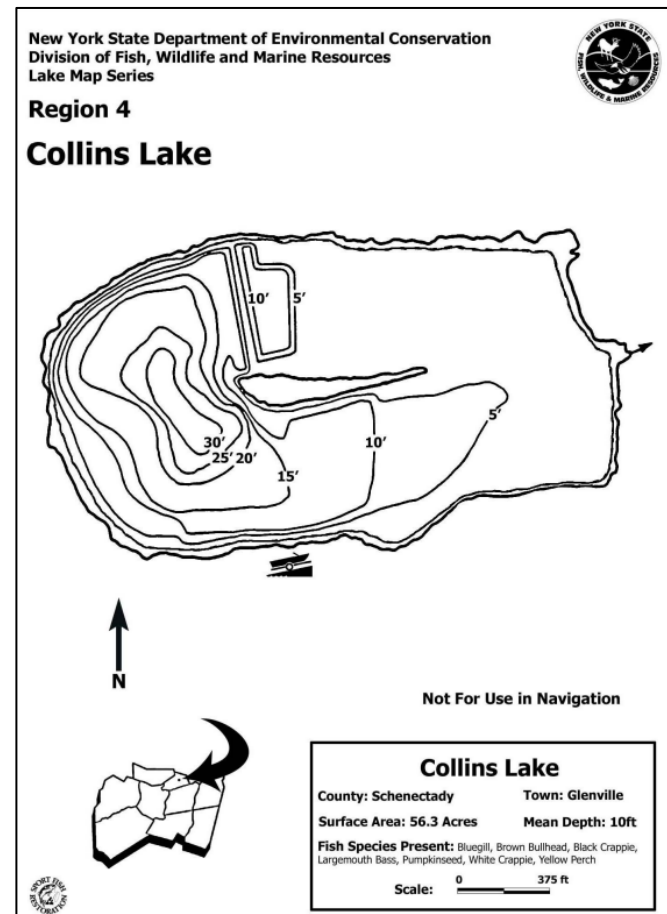


Figure 1. Bathymetric map of Collins Lake. Source: dec.ny.gov



meandering rake toss (Cornell method)—these methods entail paddling around the littoral zone in a meandering (S-shaped) pattern, recording species observed by looking over the side of the boat, and conducting sporadic rake tosses (recording overall and per-species relative abundance). Observation data includes both native and invasive species, and is recorded using SAS_Pro in the Survey123 app.

Section 2: Survey Result Summary

Invasive Species Present:

Common Name & Scientific Name	Tier Rank	Threat Ranking	Growth Form	Phenology/ Life stage	Percent Cover (%)	Distribution/ Abundance	Area Infested (acres/miles if linear)
Water Chestnut (<i>Trapa natans</i>)	4	Very High	Floating	Vegetative	26 – 50%	Dense to Monoculture	15 – 20 acres
Curly-Leaf Pondweed (<i>Potamogeton crispus</i>)	4	Very High	Submerged	Vegetative; Senescing	5 – 25%	Sparse to Dense	Scattered throughout whole WB
Eurasian Watermilfoil (<i>Myriophyllum spicatum</i>)	4	Very High	Submerged	Vegetative; Senescing in some areas	26 – 50%	Dense to Monoculture	Scattered throughout whole WB
Yellow Iris (<i>Iris pseudacorus</i>)	4	High	Wetland	Flowering	< 5%	Sparse	Scattered around perimeter
Common Reed (<i>Phragmites australis ssp. Australis</i>)	4	Very High	Wetland	Vegetative	5 – 25%	Dense to Monoculture	~ 2 – 3 acres
Zebra Mussel (<i>Dreissena polymorpha</i>)	4	Very High	Animal (bivalve)	Adult	< 5%	Trace	UNK—just 2 detected on plant from rake toss
Asian Clam (<i>Corbicula fluminea</i>)	4	High	Animal (bivalve)	Adult	< 5%	Sparse	UNK—seen scattered throughout beach area

Native Species Present:

Scientific Name	Common Name	Growth Form	Phenology/ Life stage	Percent Cover (%)	Distribution/ Abundance	Area Inhabiting (acres/miles if linear)
<i>Utricularia spp.</i>	Bladderworts	Free-floating	Vegetative/ Carnivorous	< 5%	Trace	UNK—only 2 found
<i>Vallisneria americana</i>	Eelgrass/Water Celery	Submerged	Vegetative	< 5%	Sparse	< 1 acre





<i>Nymphaea odorata</i>	White/Fragrant Waterlily	Floating	Vegetative/ Flowering	5 – 25%	Dense	1.5 – 2 acres
<i>Elodea spp. (canadensis and/or nuttallii)</i>	Native Elodeas (Canadian and/or Nuttall's Waterweed)	Submerged	Vegetative	5 – 25%	Dense to Monoculture	3 – 5 acres
<i>Ceratophyllum demersum</i>	Coontail/ Hornwort	Submerged	Vegetative	5 – 25%	Sparse to Moderate	< 5 acres
<i>Chara spp.</i>	Muskgrass/ Skunkweed	Submerged	Macroalgae	< 5%	Sparse	< 1 acre
<i>Potamogeton spp.</i>	Native Pondweeds (various)	Submerged/ Floating	Vegetative	5 – 25%	Sparse to Dense	3 – 5 acres
<i>Stuckenia spp. (pectinata or filiformis)</i>	False Pondweeds (Sago or Slender)	Submerged	Vegetative	< 5%	Dense	~ 1 acre
<i>Chrysemys picta</i>	Painted Turtle	Animal (reptile)	Adult	< 5%	Trace	UNK—only a few seen

Water Chestnut is the predominant AIS in Collins Lake, with dense to monoculture populations on the eastern third of the lake and scattered in lower abundance throughout the rest. At this stage in the growing season, other macrophytes were found cohabitating in the same areas (namely Curly-Leaf Pondweed, Eurasian Watermilfoil, and large beds of native Elodea), but the Water Chestnut here has been known to form a monoculture as it covers more of the water's surface later in the season.

Eurasian Watermilfoil (EWM) is the other dominant AIS in Collins Lake, with dense populations and monocultures throughout much of the lake's littoral zone. In many areas, there were large mats of degrading EWM floating at the surface, potentially indicative of a mass die-off. There were also areas within the Water Chestnut population where there were large beds of long, bare stems that upon closer inspection appeared to be EWM without leaves. These factors may be related to the fact that Collins Lake has historically been subject to aquatic herbicide application in attempts to manage Water Chestnut and EWM populations. It is not clear when the most recent herbicide application took place or with what chemical(s).

Curly-Leaf Pondweed (CLP) is also very abundant in the lake, though seemingly not quite as dominant as EWM. This very well may vary depending on the time of season, as CLP grows rapidly very early in the season and then senesces midsummer. Some senescence was already apparent at the time of the survey.

Several Asian Clam shells were found sparsely scattered in the substrate near the boat launch/beach area. Two live Zebra Mussels were found attached to a piece of CLP from a rake toss along the northern shore. Asian Clams reside in the substrate (not often visible during the survey) and Zebra Mussels tend to be attached to surfaces (and can also be invisible to the naked eye during larval stages), so it was not clear the extent of either bivalve infestation.

Native Pondweeds (various species) exist in seemingly healthy populations throughout much of the littoral zone, often in shallower areas adjacent to slightly deeper EWM beds.



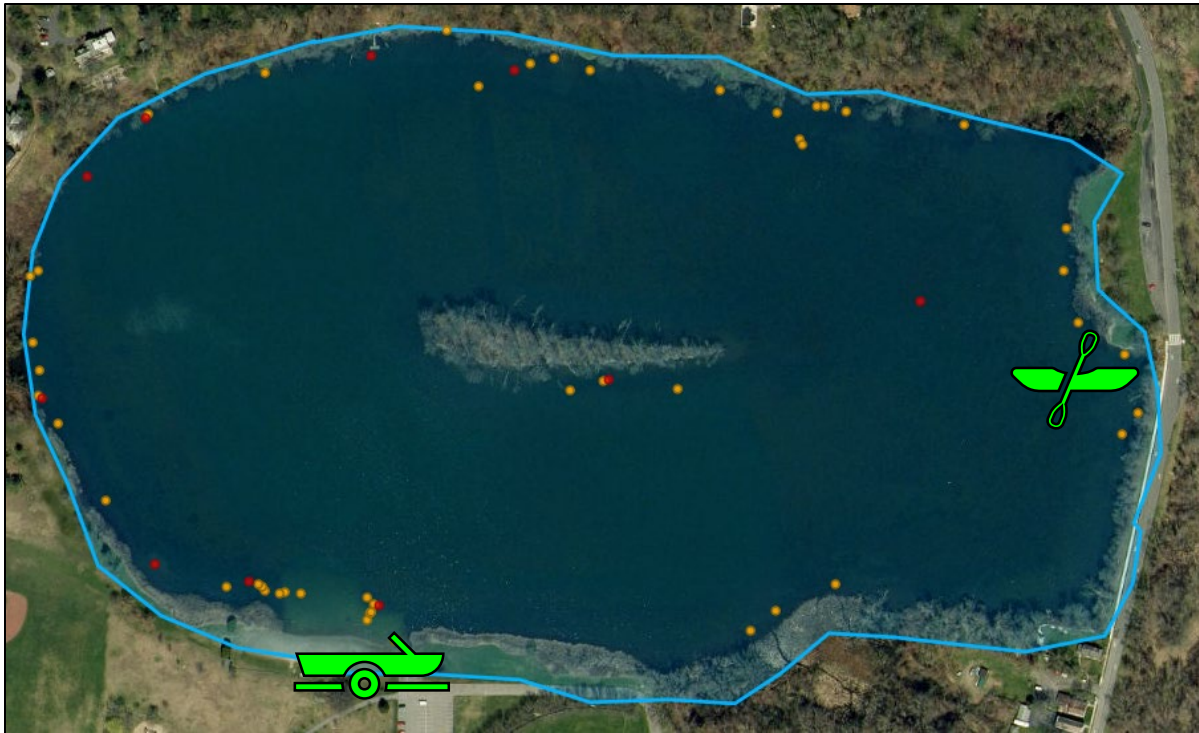


Figure 2. Collins Lake survey area. Light blue outline = searched area; red circles = rake toss; yellow-orange circles = species detected outside of rake toss; boat launches depicted with bright green icons. Source: SAS-Pro Editor Map accessed via cugis.maps.arcgis.com.



Figure 3. Water Chestnut aerial imagery. This satellite view of Collins Lake from July 31st of 2023 shows the extent of the Water Chestnut infestation—it comprises most, if not all, of the light green surface vegetation visible in this photo. The linear markings are likely from past herbicide or dredging treatments. Source: earth.google.com.



Photos:



Figure 4. Asian Clam shell.



Figures 5 & 6. Unidentified *Stuckenia* spp. Note the stipular sheaths > 10mm (differentiates from *Potamogeton* spp.)

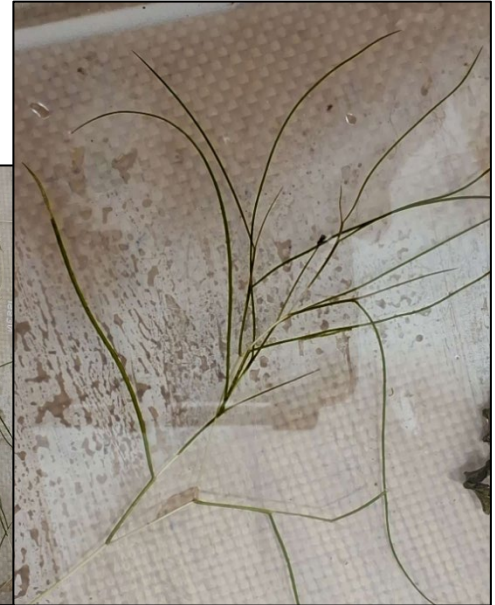


Figure 7. Senescing EWM monoculture.

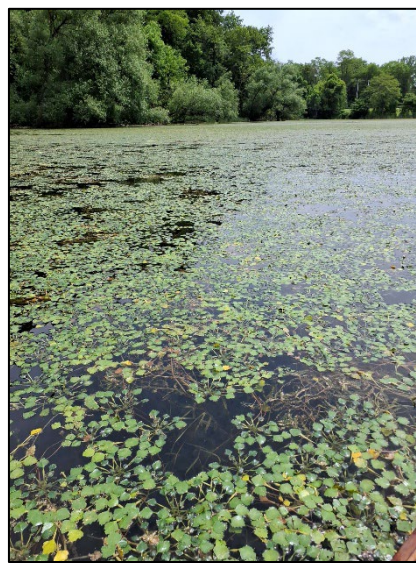


Figure 8. Expansive WC patch.



Figure 9. Native *Elodea* monoculture.

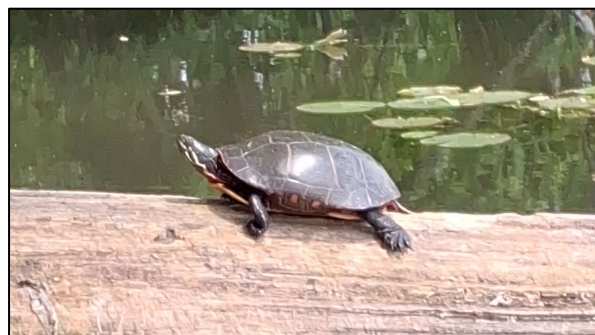


Figure 10. Native painted turtle.



Section 3: Summary of Recommendations

Management *:

Hand Pulling: hand pulling alone is not recommended for any AIS in Collins Lake—the populations are too large and would not be significantly reduced generationally due to the aggressive seed production/growth habits of AIS.

However, hand harvesting resistant plants after herbicide application could be justified for Water Chestnut if the majority were successfully killed by the herbicide. In this case, recommended procedure would be to break off the rosettes at an arm's length depth and leave the stem/root structures so that any herbicide which may be left in them remains in the water column/sediment.

Mechanical Harvesting: could be a viable option for managing Water Chestnut if the funds are available. A major potential downside is that Eurasian Water Milfoil, which is in many of the same areas as the Water Chestnut, reproduces via fragmentation—pieces of EWM broken off & scattered during harvesting would be able to sprout roots and become new plants, potentially exacerbating the EWM infestation even further in the attempt to manage Water Chestnut. That said, there are different types of harvesters; some are more or less likely to do this depending on the removal mechanisms. It may also be less of a concern for lakes like Collins that already have extensive EWM infestations/don't have much uninvaded area to protect.

Mechanical harvesting with EWM as the target species is also not recommended for long-term management due to the same reasons listed above but can provide temporary relief for recreation if repeated each season or multiple times per season, so long as the limitations are known.

Chemical Herbicide **: a sound option for Collins Lake and one which has already been utilized here. There are aerators in the lake to prevent hypoxic conditions that can occur with chemical use.

For Water Chestnut, options include 2,4-D and/or glyphosate which should be administered before the fruit has ripened/dropped to reduce addition to the seed bank. Note that these chemicals have the potential to negatively impact non-target species.

For Eurasian Watermilfoil, options include: amine salts of endothall (Hydrothol 191[®]), dipotassium salts of endothall (Aquathol K[®]), diquat dibromide (Reward[®]), Komeen[®], amine formulations of 2,4-D granules (Navigate[®], Aquakleen[®], Aquacide[®]), fluridone (Sonar[®], Avast![®]), liquid triclopyr (Renovate[®] 3, Renovate[®] OTF), and ProcellaCOR[®]—all best applied in the Spring while the plant is actively growing. Current research suggests that ProcellaCOR[®] is the most effective chemical option for managing EWM with the least impacts on non-target species.

Environmental: Manipulations of physical habitat can be used to control nuisance aquatic vegetation, such as water level drawdown, dredging, or benthic barriers. As with any control method, each of these strategies has its trade-offs—for example, water level drawdown could effectively manage Curly-Leaf Pondweed, but could cause an explosion of Brittle Naiad (previously detected in Collins Lake; this year's survey was too early in the season to see any). Dredging could help to reduce the Water Chestnut seed bank, but could exacerbate other AIS that reproduce via fragmentation (i.e. EWM, Brittle Naiad, etc.). Benthic barriers are effective, but expensive to install and maintain.

**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 or endorsement by NY Sea Grant or Cornell University.*

***Please consult an expert or certified applicator when applying herbicides. Read and follow herbicide product labels as*





Capital Region PRISM
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Invasive Species Management
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required by law. Always seek out proper local, state, and federal permitting/regulations.

Post-Survey Monitoring:

Collins Lake is considered a Priority Waterbody in the Capital Region PRISM—early detection surveys will be conducted every 2 to 3 years to ensure any new introductions are caught early when eradication may still be achievable.

An Invasive Species Management Plan will not be created at this time.



Department of
Environmental
Conservation

The New York State Department of Environmental Conservation provides financial support to The Capital Region PRISM via the Environmental Protection Fund