Capital Region Aquatic Plant Surveys

2023 Report

ADIRONDACK RESEARCH

2023 Capital Region Aquatic Invasive Species Surveys

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Adirondack Research
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Background Cover image: Map of Rensselaer Lake, main image from Brown's Pond and inset images are from Brown's and Dyken Ponds.

Executive Summary

Invasive species are any kind of living organism that are not native to an ecosystem and causes some sort of ecological, human health, or socio-economic harm. In 2023, Adirondack Research, a private research and mapmaking firm, constituted the Capital Region PRISM's Aquatic Invasive Species (AIS) Early Detection Team. The team surveyed prioritized lakes and ponds in the Capital Region PRISM with a focus on discovering and documenting new populations of tiered AIS species of concern and utilizing data collected in the field to produce individualized maps documenting AIS distribution.

In this report, we address the results of this year's work along with recommendations for continuing and adapting the survey strategy to enhance early detection and rapid response capabilities as well as ways to continually improve ongoing efforts to address AIS impacts in the Capital Region.

Figure 1: Illustration of the survey techniques utilizing a combination of sonar recording and manual rack toss.

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Acknowledgments

The Capital Region PRISM, a program hosted by the Cornell Corporation Extension of Saratoga County, is one of eight PRISMs in New York State whose mission is to protect the Capital region from the negative impacts of invasive species. The Capital Region PRISM contracted Adirondack Research during the 2023 field season to conduct AIS early detection surveys on 7 lakes in the Capital Region. Field work, data collection and the compilation of the narrative, maps and materials included in this report were conducted by Carrie Griffo, Justin Wolford, Tucker Wells, Tucker Jakobe, Julia Luna, and Dr. Ezra Schwartzberg, who constituted the Capital Region Early Detection Team. Project planning and lake prioritization was conducted by Kristopher Williams, Invasive Species Coordinator of the Capital Region PRISM.

Completion of this project would not have been possible without members of lake associations, businesses, and other agencies: Capital Region PRISM, Kristopher Williams, Cornell Cooperative Extension, Dyken Pond Environmental Education Center, and others. We are grateful for their role in protecting many of these important Capital Region Lake ecosystems.

This project was advanced under contract with Adirondack Research by the Capital Region PRISM with funding provided by the New York State's Environmental Protection Fund as administered by the New York State Department of Environmental Conservation.

Photo 1: *Research Technician, Josh Young investigating aquatic plants on Ballston Lake, Saratoga Co., NY in June 2021.*

Introduction

By deploying an Early Detection Team, new infestations of aquatic invasive species can be quickly recognized, and appropriate management actions taken before significant impacts are observed. Surveys this year were the third of three initial years completed by Adirondack Research and were part of a pilot study to better understand how to prioritize lakes in the Capital Region PRISM for future aquatic invasive species early detection surveys. Each survey on a lake had an emphasis on searching for AIS of concern based on the tiered system of AIS classification.

Objectives

The primary objective of the 2023 AIS Early Detection Team was to detect and delineate any new or existing aquatic invasive plant or animal infestations within prioritized lakes with an emphasis on surveying for tiered AIS species of concern. The secondary objective was to deploy the Lowrance HDS Live system to map the contour lines and bottom hardness of all waterbodies to gather important baseline data on the physical parameters that influence aquatic species invasion.

Species Prioritization – A tier ranking system.

The PRISM has categorized invasive species based on known populations into a tier ranking system. The purpose of the tier system is to focus attention on high threat species that are not found in our region or are appearing in small populations that are manageable with limited resources. Preventing the introduction of new species is the most cost-effective strategy in controlling invasive species. Early identification and rapid response to new infestations that are found in small populations can result in successful eradication that are cost effective. When an invasive species is found regionally over a widespread area the cost to control populations can become prohibitive. As such, we focused our surveys on performing early detection on Tier 1 and 2 species. Tier three and four species presence points are delineated with the understanding that if these species are relatively new to a waterbody the exclusion is still possible at the local level.

Photo 3: *Research technician Ingrid Miller assisting with a survey on an Adirondack Lake in 2022.*

Tier 1 - Prevention / Early Detection

Tier 1 includes species that are not in yet PRISM, but that have anticipated high or very high impacts. Species delineation is necessary when new populations are found to advise on management.

- **Tier 1a:** Species not in the PRISM, but in the buffer (surrounding PRISM)
- **Tier 1b:** Species not in PRISM or the buffer, but in Eastern North America (with potential for establishment)
- **Tier 1c:** Species far outside PRISM and buffer (not in east NA), but introduction pathway exists

Tier 2 – Eradication / Full Containment may be Feasible

Tier 2 species have high and very high impacts but with low enough abundance and suitable treatment method available to make eradication feasible within the PRISM. These warrant the highest level of early detection and response efforts and surveys are designed to delimitate populations to determine the full extent of such populations.

Tier 3 – Containment / Strategic Management

High and very high impact species that are likely too widespread for eradication, but low enough abundance to think about regional containment. Target strategic management to slow the spread since many surrounding regions could be at risk if left unattended.

Tier 4 – Local Control / Exclusion or Suppression

Well-established species with high and very high impacts. Eradication efforts not feasible; only localized management over time to contain, exclude, or suppress, if justified to meet local management goals. (Suppression efforts) *Subcategory: Not established outside of PRISM, manage to contain within PRISM.

Plant List APPIP / CR-PRISM Tier Ranking and Assessment Levels

Plant List	Capital Region Tier	APIPP Tier	Growth	Threat Level
Capital Region Tier 1 AIS Plant Species				
Carolina fanwort (*Cabomba caroliniana*)	1	3	Submerged	High Threat
Hydrilla (*Hydrilla verticilate*)	1a	1	Submerged	Very High Threat
Floating water-primrose (*Ludwigia adscendens*)	1a	2	Floating	Very High Threat
Floating primrose willow (*Ludwigia peploides*)	1a	n/a	Floating	Very High Threat
Parrot feather (*Myriophyflum aquaticum*)	1a	1a	Emergent/Sub	High Threat
Capital Region Tier 2 AIS Plant Species				
Brazilian elodea (*Egeria densa*)	2	1a	Submerged	High Threat
European frog-bit (*Hydrocharsis morsus-ranae*)	2	4	Floating	Very High Threat
Starry stonewort (*Nitelopsis obtuse*)	2	5	Submerged	Very High Threat
Variable-leaf milfoil (*Myriophyllum heterophyflum*)	2	4	Submerged	Very High Threat
Capital Region Tier 3 AIS Plant Species				
Water chestnut (*Trapa natans*)	4	3	Floating	Very High Threat

Yellow floating heart (*Nymphoides peltate*)	3	2	Floating	High Threat
Capital Region Tier 4 AIS Plant Species				
Curly pondweed (*Potamogeton crispus*)	4	4	Submerged	Very High Threat
Eurasian Water Milfoil (*Myriophyllum spicatum*)	4	4	Submerged	Very High Threat
Animals				
Fishhook water flea (*Cercopagis bengoi*)	1a	3	N/A	Very High
Spiny water flea (*Bythotrephes longimanus*)	2	3	N/A	Very High
Quagga mussel (*Dreissena rostriformis bugensis*)	2	1	N/A	Very High
Zebra Mussel (*Dreissena polymorpha*)	4	3	N/A	Very High

Lake Selection and Prioritization

Lake selection was done by Kristopher Williams from Capital Region PRISM, along with recommendations from Adirondack Research. From the results this summer, researchers will be able to look at the data and prioritize lakes in the future for performing early detection surveying for AIS.

Methods

Equipment

Equipment used during this project consisted of double-sided rakes, Lowrance HDS Live Chartplotters, Bluetooth GPS antennas (Garmin GLO), and iPad 4 minis equipped with a cellular connection. Data and observations were recorded on iPad 4 mini using iMpaInvasive's iMMA and the Esri Field Maps application. Surveys were completed using console motorboats or canoes, depending on waterbody access. Since the team was accessing multiple waterbodies over the course of each week, specific precautionary measures were taken to guarantee all equipment was decontaminated between waterbodies. Equipment was decontaminated using the Adirondack AIS Prevention Program's free boat wash and decontamination services located throughout the Adirondack Park, as well as boat wash stations available in the Capital Region. The team visited several different decontamination stations, multiple times, over the course of the summer. High pressure and hot water were used to kill any organisms, native or invasive, present on equipment after surveys. The specific equipment that was decontaminated by professional decontamination technicians included: motorboat hulls, trailers, motor lower units and bilges; canoes and paddles; ropes and all jars and containers.

Photo 6: On of Adirondack Research's watercrafts and equipment used for surveys.

Littoral Zone Plant Surveys and Identification

The littoral zone of each lake was surveyed for aquatic plants by the Early Detection Team from shoreline to a depth of about 15 feet, although the littoral zone water depth and distance from shore varied between waterbodies. Some waterbodies were completely comprised of littoral zones; others contained little area that supported plant growth. The team surveyed in a zig-zag search pattern, using visual detection from the surface in combination with the sonar output from the Lowrance unit, to locate plant beds. Once a plant bed was located, rake tosses were conducted to retrieve and identify plants that could not be confirmed through visual detection alone.

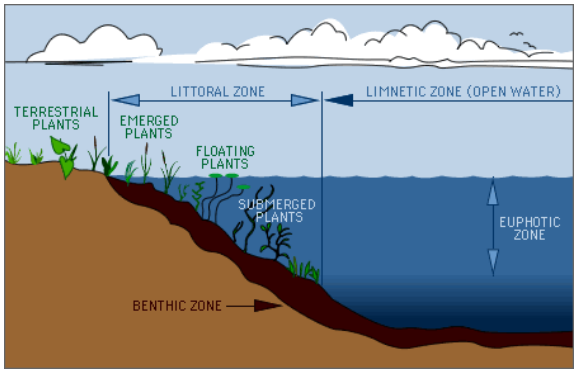


Figure 2: Illustration depicting the littoral zone on a waterbody.

Figure 3: *Example of AIS polygon delineated on a waterbody in the Capital Region.*

All plants retrieved, invasive and native, were identified using the field guides: "Aquatic Plants of the Upper Midwest" by Paul M. Skawinski and/ or "Maine Field

Guide to Invasive Aquatic Plants and Their Common Look A likes" by the Maine Center for Invasive Aquatic Plants and Maine Volunteer Lake Monitoring Program. If an AIS infestation was detected, an occurrence point was marked in its approximate center using the IPMMS. The occurrence feature classifies which species is present and contains unique naming and attribute information for the specific infestation. After an occurrence was entered, the team collected an assessment polygon for the infestation. An assessment polygon was mapped by circumnavigating the exterior boundary of the infestation. The percent cover of the invasive plant was documented for each assessment polygon. Since the polygon is marked with GPS points, changes in acreage and percent cover can be monitored over time. The most common native plants identified were also recorded and noted for this report. However, complete lists of native plants and their abundance in each lake were not recorded.

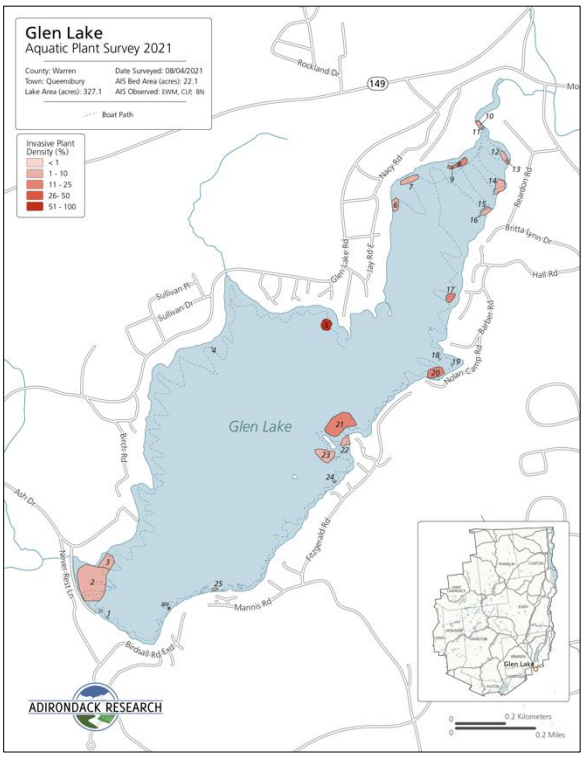


Figure 4: *Example of AIS polygon delineated on a waterbody in the Capital Region.*

Complete Lake Mapping

When conducting plant surveys, the AIS Early Detection Team focused efforts in the littoral zone of each waterbody. In the littoral zone, sunlight can penetrate through to the bottom of the lake, which allows for plant growth. Typically, the littoral zone of a lake is exclusively near shore. However, as advancements are made in underwater mapping and new technologies arrive, it's becoming more apparent that we are all still learning about what lies below the surface of many lakes and ponds. Sunken islands or ridges can arise in seemingly deep water, resulting in potential aquatic plant habitat in unexpected locations of the lake. Covering all acreage of a waterbody lessens that chance of missing a "hidden" area of plant growth.

On lakes or ponds where complete lake mapping/surveys were conducted, the Team generally split the waterbody in half and each team of two paddled or drove from shore to shore in their respective half. To ensure no gaps in coverage occurred, each pass was done about 120 feet apart. For the purposes of this report, complete lake mapping/surveys refer to this method of data collection from the entire acreage of a lake or pond. Surveys of the littoral zone are still considered "completed," but they do not typically include waterbodies in their entirety.

Photo 7: *Research vessel 'The Predator' cruising down the lake in July 2020 on a waterbody in the Capital Region.*

Data Management

To ensure all data collected in the field were safely stored, redundant copies were kept at multiple steps throughout the collection process. Following are the steps taken to store and organize data:

ESRI ArcGIS Field Maps App – iMMA

1. Esri ArcGIS Field Maps data were backed up on the Esri server weekly. All ArcGIS data were uploaded to Adirondack Research's cloud storage in the middle of the field season, then again at the end of the season.

GIS

1. Post processed GIS data (lake boundaries, invasive plant bed polygons and associated data were stored as GIS shapefiles in vector and raster format, depending on data source.
2. All GIS shapefiles and attribute tables were packaged and submitted to the Capital Region PRISM with this report and will be cross-walked to iMapInvasives for long-term storage and retrieval.

GIS Data Processing

AIS presence data were collected using Esri Field Maps for Arc GIS app, the original shapefiles recorded during each survey are stored in and are accessible through the GIS database accompanying this report.

Scheduling and Travel

The team of six worked 40-hour weeks, spending the majority of time in the field and the rest in the office planning for the following week and uploading and processing data. To increase efficiency and reduce travel costs, lodging near clusters of lakes to be surveyed were selected each week. Lake survey order for the week was determined by distance to lodging, weather, and scheduling with lake associations.

Photo 8: *Research Technician Josh Young examining water chestnut on Ballston Lake, Saratoga Co., NY.*

Photo 9: *A rake toss sample with Eurasian watermilfoil.*

Results

Seven lakes and ponds were surveyed with the objective of AIS early detection. Of the seven lakes surveyed, four contained at least one AIS, with a total of six specific occurrences. The Four lakes where

AIS were detected in 2023 had been previously documented as invaded. *Myriophyllum spicatum* (Eurasian watermilfoil) was the most common AIS found in 2023. A total of three different AIS species were found this year, *Myriophyllum spicatum* (Eurasian watermilfoil), *Trapa natans (*water chestnut), and *Najas minor* (brittle naiad). The 2023 Early Detection Team surveyed a total of 468 acres and 16.5 miles of shoreline.

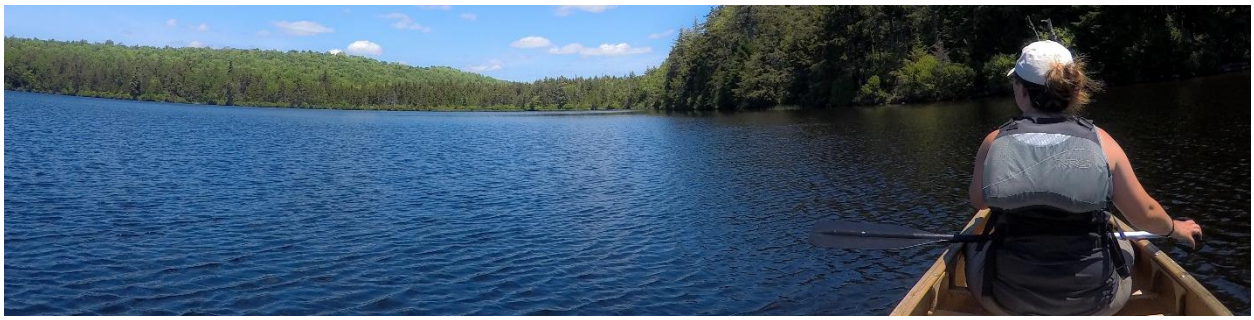


Photo 10: *Research Technician Sarah in 2019 on Horseshoe Lake, St Lawrence Co., NY.*

Invasive Species Presence

Water Body	Acres	Shoreline Miles	Invaded 2023	Invasives Present
Brown's Pond	40	1.5	Yes	EWM
Cork Center Reservoir	38	1.6	Yes	EWM
Dyken Pond	182	5	No	
Goose Egg Lake	30	1.5	No	
Lake Nancy	68	2.4	No	
Rensselear Lake	29	2.7	Yes	EWM, WC, BN
Summit Lake	81	1.8	Yes	EWM

Table 1: *AIS presence and size for each waterbody 2023.*

Data and Research Limitations

Project results were affected by various sources of data error, access limitations, time limitations, and equipment issues. Acknowledging these limitations provide a more prudent analysis of the data and assist with planning for future surveys.

Survey Accessibility

The team used either canoes or motorboats to complete surveys depending on the accessibility and size of each waterbody. The canoes allowed the team to access lakes with restrictions on motorized usage, whereas the motorboat gave the team opportunity to conduct field work on a sturdier platform. There were limitations associated with each mode of transportation. Lakes and ponds are not always comprised of unobstructed, open water. Many waterbodies surveyed contained downed trees, stumps, rocks, emergent tussocks, mats of floating and submerged plants, or human improvements, such as docks and blocked off swimming areas. These obstacles limited the team's accessibility by both canoe and motorized watercraft. When accessibility was limited, the team maneuvered the vessel as close to the obstacles as possible while ensuring their safety and that of other lake users. When not using canoes, shallow bottom low draft aluminum boats used for this project worked well for these situations, but an outboard motor with electric trim was critical. However, even with this setup some areas were still inaccessible by boat. As a result of these accessibility limitations, the maps produced for this report may not provide a complete representation of the aquatic vegetation in each lake or pond – especially for shallow areas near shore. Areas unable to be accessed have been identified by hatch marks and labeled "Not Surveyed" in each map's legend. Additionally, some of the seven lakes surveyed this summer required permission and scheduling in order to access the waterbody.

Photo 11: *Research technician Mark Privee with a rake of coontail and brittle naiad on a waterbody in the Capital Region, July 2020.*

Technology

Various technologies were deployed over the course of this project to improve survey effectiveness and efficiency. The Esri ArcGIS Field Maps App ran on a cellular iPad Mini 4 tablet with an internal GPS antenna. This set-up was used to map invasive plant beds and mark locations, but spatial accuracy was often limited to around 16 feet due to terrain and insufficient satellite signals. Therefore, spatial data collected over the course of the project is potentially affected by this 16-foot variance. The team did their best to hold the boat stationary and reduce any drifting of the canoe or motorboat while collecting GPS data. Even with this care, the team had difficulty mapping the area of smaller plant beds.

Survey Thoroughness

The zig-zag search pattern used by the team increased the total area surveyed per lake, but it is not the most comprehensive technique to identify every species in a waterbody. Since the main goal of this project was to detect and identify tiered aquatic invasive species, documenting overall abundance of native vegetation was not a priority, and therefore, the serpentine search pattern offered the most effective method to meet project goals. With the serpentine search pattern, not every section of water is covered, but the likelihood of missing invasive plant beds is minimized while significantly increasing survey efficiency and reducing cost. There is the possibility that some small invasive plant beds (or single plants) were missed using the serpentine search pattern, but future repeat surveys will help ensure any missed small or isolated infestations will be detected. Survey techniques aside, other factors can influence survey thoroughness including seasonal survey timing, water clarity, or weather conditions. Day to day and year to year changes in survey condition may result in minor variations in documented plant species and abundance.

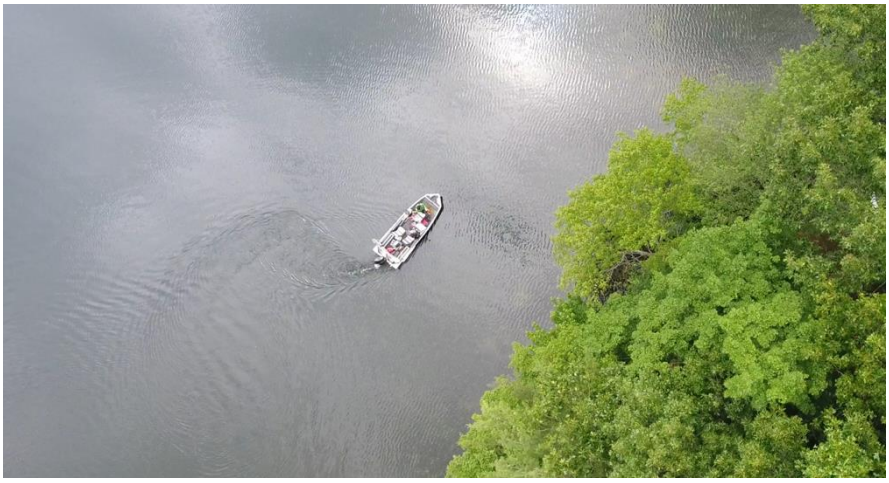


Photo 12: *Research vessel performing 'zig-zag' patterns on Lake Sunnyside, June 2020.*

Recommendations

Adirondack Research provides the following set of recommendations to improve future project effectiveness and techniques used to detect AIS infestations as they relate to informing management decisions.

Survey Prioritization

We chose seven lakes in coordination with recommendations by the Capital Region PRISM staff based upon whether lakes have active management or whether they were in areas of high Ecological Significance Score as well as a high Comprehensive Score as determined by NYNHP in the NYSDEC Environmental Resource Mapper tool (https://gisservices.dec.ny.gov/gis/erm/). Additional selection criteria that can be used in subsequent years could include surveying lakes with requests by lake associations or by utilizing other criteria related to proximity of known invasive species infestations. In the Adirondacks, the regional PRISM is attempting to survey all publicly accessible lakes and ponds, so they have a prioritization plan that favors certain lakes over

Photo 13: *Research vessel, 'Predator' on Lake Sunnyside performing transects during June 2020.*

others based upon the last data of survey, whether it has public access, and whether it is surveyed by lake associations or citizen scientists. For the Capital Region, it makes more sense to use predictors of new infestations in a lake rather than access or survey history. I think a combination of Ecological Significance scores (mentioned above) combined with a GIS analysis of proximity to infested waterbodies by utilizing iMapInvasives data could yield a prioritized list of lakes in which to perform surveys in 2024.

Lake Access

Lake access is often a challenge to perform surveys. Some waterbodies required permissions from either municipal bodies or lake associations for access. Kyser Lake, which straddles the Fulton/Herkimer County line was contacted in 2021, 2022, and 2023 with no approval. In 2022 Goose-egg Lake, a lake on public land, the team could not find a location to launch that did not cross private property. In 2023 the team was successfully able to access Goose-egg Lake. Lastly the 2022 team unsuccessfully attempted to survey Lake Nancy. Lake Nancy was successfully surveyed in 2023. The amount of time needed to gain access to some lakes is long, and we recommend reaching out to lakes in February to gain access. For some lakes with difficulty, a letter from the PRISM Coordinator works well to explain the program and the scope and use of the AIS surveys. We have generally had good luck with this approach.

Conclusions

The 2022 AIS Early Detection Team surveyed seven waterbodies in the Capital Region PRISM and four contain presence of AIS, (Browns Pond, Cork Center Reservoir, Rensselaer Lake, and Summit Lake). The different species recorded were: *Myriophyllum spicatum* (Eurasian watermilfoil), *Trapa natan*s (water chestnut), and *Najas minor* (brittle naiad). Two of these species (atwer chestnut, and brittle naiad) were only found in Rensselaer Lake. Given the lakes extremely close proximity to a major highway interchange (I-90 and I-87), it is likely that this lake was and is more vulnerable to invasive species. Cork Center Reservoir, which is not a publicly accessible, has significant EWM growth. This was surprising since this waterbody does not see a lot of boat traffic.

Maps

The following section includes lake survey maps and description narratives of the seven waterbodies surveyed in 2023. Each lake map includes either invasive plant beds delineated using the Field Maps for Arc GIS app.

Invasive Species Maps

Each map, if aquatic invasive species were detected in the lake, shows presence of aquatic invasive species (AIS) beds and points. Points are labeled directly on the map and consist of individual plants. Polygons denote beds of invasive species. These polygons are labeled with numbers that correspond to a bed density and size in both acres and square feet in the facing table. The tables have only polygon data and do not include individual plant occurrences, which are denoted only with a point and acronym on the map. The acronym is listed in each map legend.

Aquatic Invasive Species Acronyms—The maps contain acronyms for invasive species occurrences. These occur when a polygon or point record for an invasive species are labeled directly on a map. The following acronyms and their full common names occur throughout.

Aquatic Invasive Species	*Acronym*
Curly Leaf Pondweed	CLP
Brittle Naiad	BN
Variable Leaf Milfoil	VLM
Eurasian Watermilfoil	EWM
Zebra Mussel	ZM
Water Chestnut	WC
Phragmites	Phrag

Brown's Pond

Survey Date:7/24/2023
Last Surveyed: N/A
Survey Team: J. Wolford, T. Wells

Lake Description

Brown's Pond is 40 acres with approximately 1.5 miles of shoreline. It is located in the Town of Whitehall in Washington County in the Upper Hudson River Watershed. The team launched a canoe from roadside public access on the eastern shore.

Aquatic Invasive Plant Presence

Beds of *Myriophyllum spicatum* (Eurasian watermilfoil) were detected.

Native Plant Biota

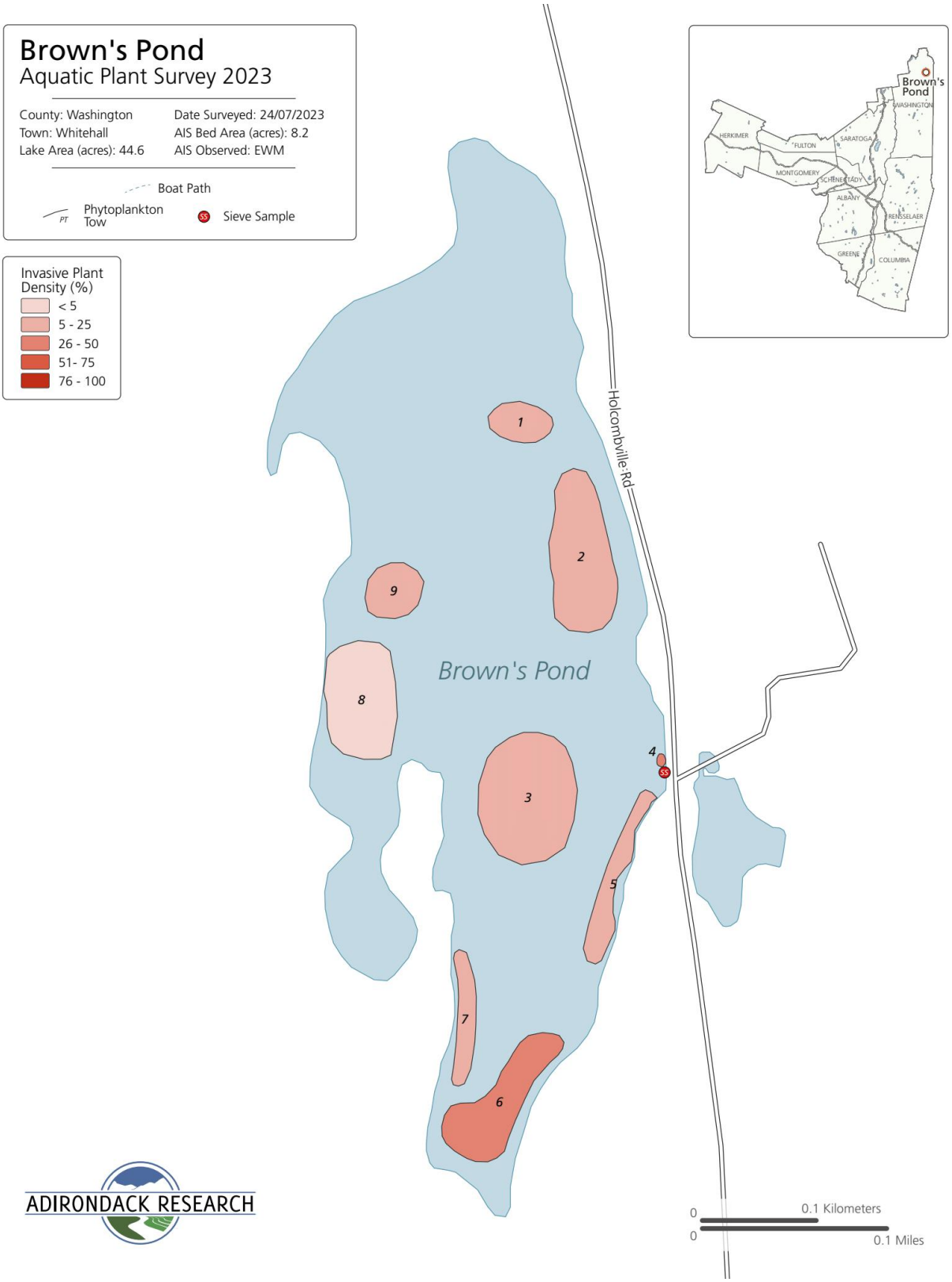
Comprehensive surveys were not prioritized in 2023as invasive species were the primary focus of the surveys. The following native plants were found: *Ceratophyllum demersum* (Coontail), *Vallisneria Americana* (Eelgrass), *Nymphaea odorata* (American white waterlily), Elodea spp. (Waterweed), *Najas flexilis* (Slender naiad), *Brasenia schreberi* (Watersheild), *Potamogeton amplifolius* (Large-leaf pondweed), *Potamogetone pihydrus* (Ribbon-leaved pondweed), *Rhionaeschna mutata* (Spatterdock).

Aquatic Invasive Animal Presence

No plankton tows were conducted. Sediment sieves were taken to determine the presence of Corbicula fluminea (Asian clams). None were detected

Eurasian Watermilfoil			
Bed	Size (Ac.)	Size (Sq. Ft.)	% Cover
1	0.73	31983.22	5% - 25%
2	3.07	133930.23	5% - 25%
3	3.80	165604.01	5% - 25%
4	0.03	1435.19	26% - 50%
5	1.26	54669.34	5% - 25%
6	2.32	101176.39	26% - 50%
7	0.83	36047.74	5% - 25%
8	2.71	117942.70	less than 5%
9	0.93	40564.24	5% - 25%

Asian Clam	Spiny Waterflea
Present (Y/N)	Present (Y/N)
No	No


Brown's Pond
Aquatic Plant Survey 2023
County: Washington
Town: Whitehall
Lake Area (acres): 44.6
Date Surveyed: 24/07/2023
AIS Bed Area (acres): 8.2
AIS Observed: EWM
Boat Path
PT
Phytoplankton Tow
SS
Sieve Sample
Invasive Plant Density (%)
< 5
5 - 25
26 - 50
51- 75
76 - 100
Brown's Pond
WASHINGTON
HERKIMER
FULTON
SARATOGA
MONTGOMERY
SCHENECTADY
ALBANY
RENSSELAER
GREENE
COLUMBIA
Holcombville Rd
Brown's Pond
1
2
3
4
5
6
7
8
9
0
0
0.1 Kilometers
0.1 Miles
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Cork Center Reservoir

Survey Date: 7/25/23
Last Surveyed: N/A
Survey Team: T. Jakobe, J. Luna

Lake Description

Cork Center Reservoir is 38 acres with approximately 1.6 miles of shoreline. It is located in the Town of Johnstown in Fulton County in the Mohawk River watershed. The team was able to access the reservoir through permission of the town water supply office and surveyed using a canoe.

Aquatic Invasive Plant Presence

Beds of *Myriophyllum spicatam* (Eurasian watermilfoil) were located around most of the reservoir perimeter and dominating the northern end of the lake.

Native Plant Biota

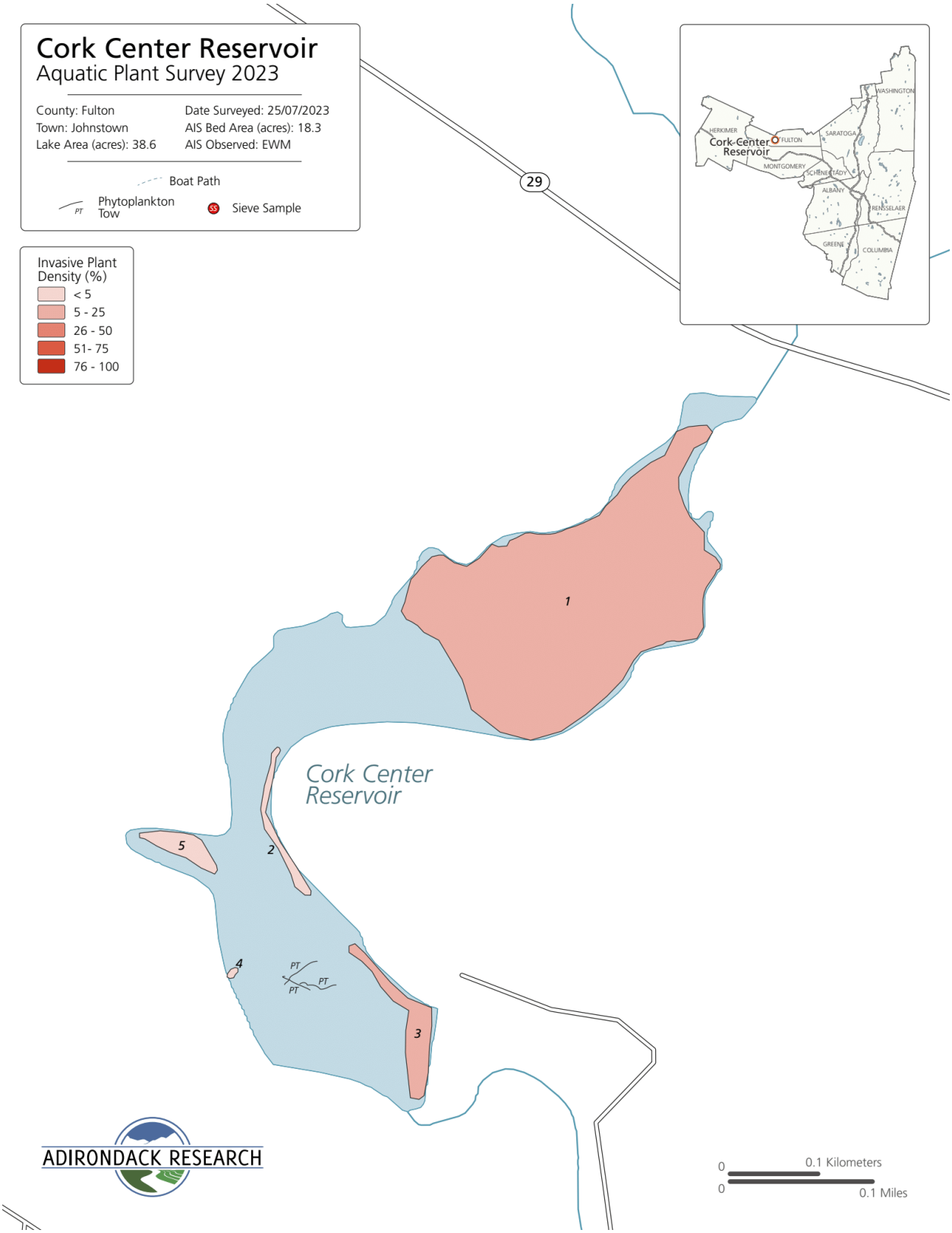
Comprehensive surveys were not prioritized in 2023 as invasive species were the primary focus of the surveys. The following native plants were found*: Brasenia schreberi* (Watershield) and *Potamogeton natans* (Floating leaf pondweed).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in no detection of invasive zooplankton. Sediment sieves were not performed to determine the presence of invasive snails or clams.

Eurasian Watermilfoil			
Bed	Size (Ac.)	Size (Sq. Ft.)	% Cover
1	30.82	1342563.83	5% - 25%
2	0.76	32950.42	less than 5%
3	1.72	74802.80	5% - 25%
4	0.05	2011.44	less than 5%
5	0.91	39765.93	less than 5%

Asian Clam	**Spiny Waterflea**
Present (Y/N)	Present (Y/N)
No	No


Cork Center Reservoir
Aquatic Plant Survey 2023
County: Fulton
Town: Johnstown
Lake Area (acres): 38.6
Date Surveyed: 25/07/2023
AIS Bed Area (acres): 18.3
AIS Observed: EWM
Boat Path
PT Phytoplankton Tow
SS Sieve Sample
Invasive Plant Density (%)
< 5
5 - 25
26 - 50
51- 75
76 - 100
29
Cork Center Reservoir
1
2
3
4
5
PT
PT
PT
ADIRONDACK RESEARCH
0
0
0.1 Kilometers
0.1 Miles

Dyken Pond

Survey Date: 7/25/2023
Last Surveyed: 6/24/2021
Survey Team: J. Wolford, T. Wells

Lake Description

Dyken Pond is 182 acres with approximately 5.0 miles of shoreline. It is located in the Town of Grafton in Rensselaer County in the Upper Hudson River Watershed. The team launched a canoe with trolling motor from the Dyken Pond Environmental Education Center.

Aquatic Invasive Plant Presence

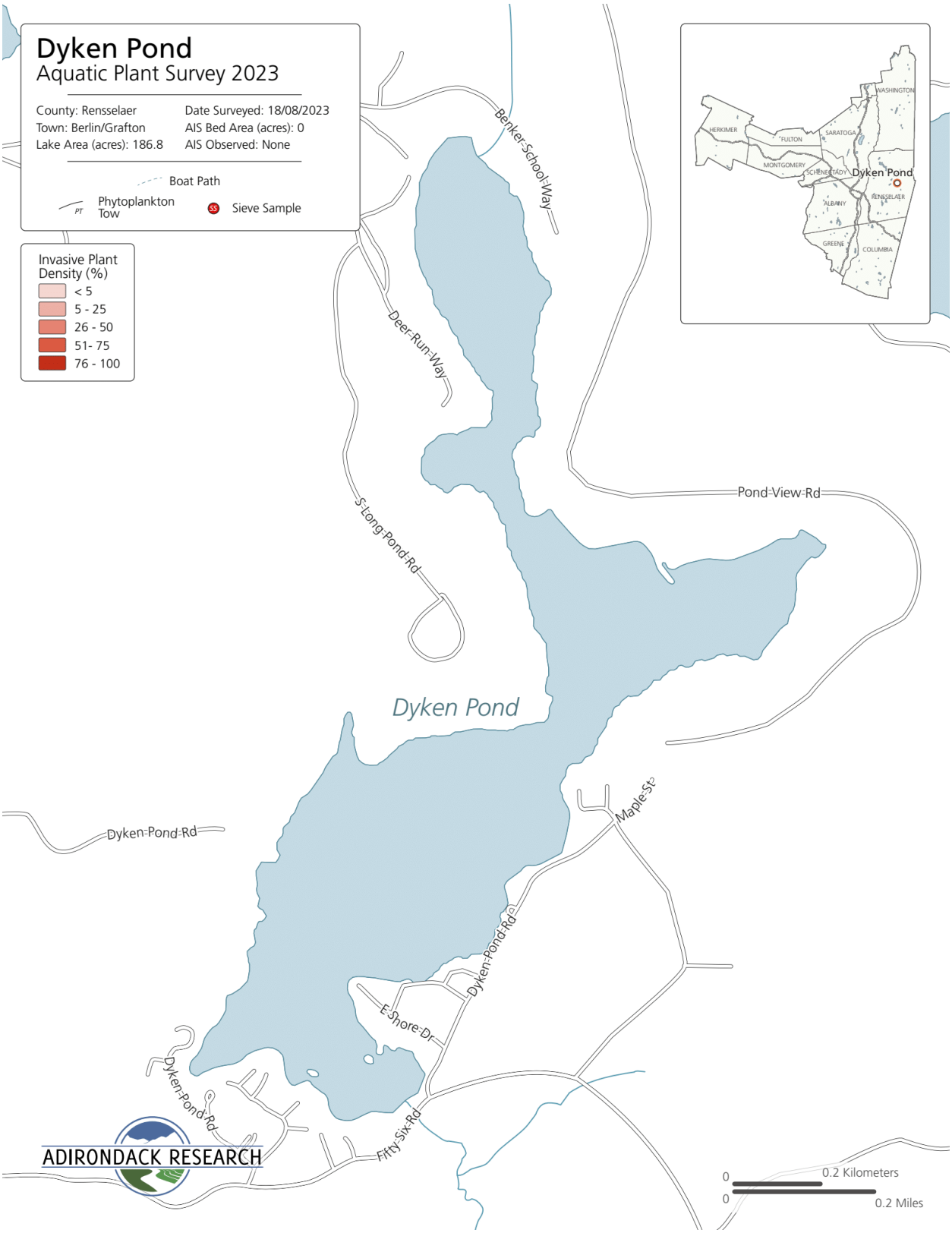
No aquatic invasive species were detected.

Native Plant Biota

Comprehensive surveys were not prioritized in 2022 as invasive species were the primary focus of the surveys. The following native plants were found: *Ceratophyllum demersum* (Coontail), *Vallisneria Americana* (Eelgrass), *Nymphaea odorata* (American white waterlily), *Elodea* (waterweed), *Nymphoides cordata* (Little floating heart), *Potamogeton epihydrus* (Ribbon leaved pondweed), *Rhionaeschna mutata* (Spatterdock), and *Myriophyllum* (Native milfoils).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in a «Zooplankton» detection of invasive zooplankton. Sediment sieves were taken to determine the presence of *Corbicula fluminea* (Asian clams). None were detected.


Dyken Pond
Aquatic Plant Survey 2023
County: Rensselaer
Town: Berlin/Grafton
Lake Area (acres): 186.8
Date Surveyed: 18/08/2023
AIS Bed Area (acres): 0
AIS Observed: None
Boat Path
PT Phytoplankton Tow
SS Sieve Sample
Invasive Plant Density (%)
< 5
5 - 25
26 - 50
51- 75
76 - 100
Benker School Way
Deer Run Way
S Long Pond Rd
Pond View Rd
Dyken Pond
Maple St
Dyken Pond Rd
E Shore Dr
Fifty Six Rd
ADIRONDACK RESEARCH
WASHINGTON
HERKIMER
FULTON
SARATOGA
MONTGOMERY
SCHENECTADY
Dyken Pond
ALBANY
RENSSELAER
GREENE
COLUMBIA
0
0.2 Kilometers
0
0.2 Miles

Goose Egg Lake (Garoga Pond)

Survey Date: 7/25/23
Last Surveyed: N/A
Survey Team: T. Jakobe, J. Luna

Lake Description

Goose Egg Lake is 30 acres with approximately 1.5 miles of shoreline. It is located in the Town of Ephratah in Fulton County in the Mohawk River watershed. The team surveyed the water body with a canoe.

Aquatic Invasive Plant Presence

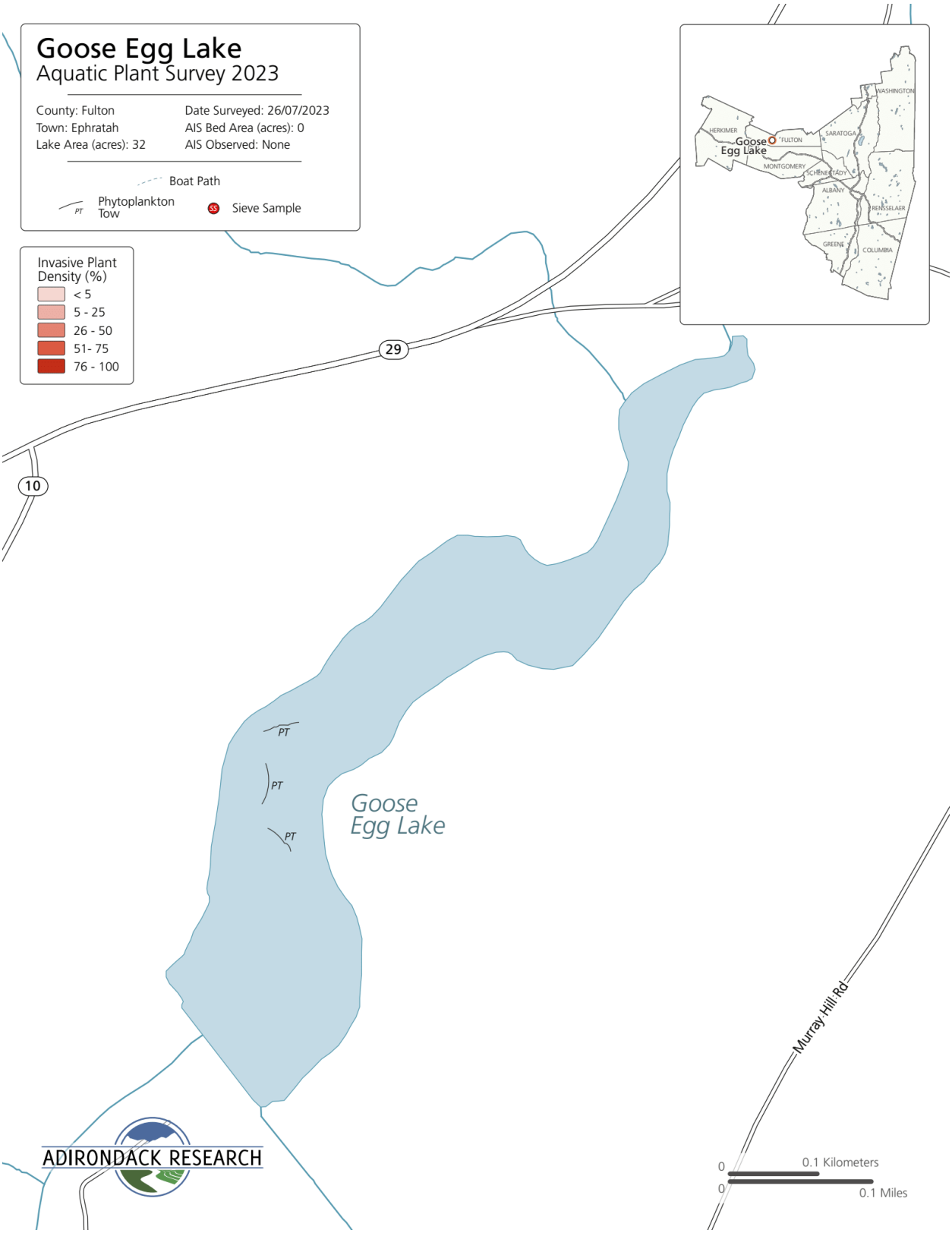
No invasive plant species were detected.

Native Plant Biota

Comprehensive surveys were not prioritized in 2023 as invasive species were the primary focus of the surveys. The following native plants were found: Slender naiad (*najas flexilis*), utricularia sp. (bladderwort).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in no detection of invasive zooplankton. Sediment sieves were not performed to determine the presence of invasive snails or clams.


Goose Egg Lake
Aquatic Plant Survey 2023
County: Fulton
Town: Ephratah
Lake Area (acres): 32
Date Surveyed: 26/07/2023
AIS Bed Area (acres): 0
AIS Observed: None
Boat Path
PT Phytoplankton Tow
SS Sieve Sample
Invasive Plant Density (%)
< 5
5 - 25
26 - 50
51- 75
76 - 100
29
10
PT
PT
PT
Goose Egg Lake
Murray Hill Rd
ADIRONDACK RESEARCH
0
0
0.1 Kilometers
0.1 Miles
HERKIMER
FULTON
SARATOGA
WASHINGTON
MONTGOMERY
SCHENECTADY
ALBANY
RENSSELAER
GREENE
COLUMBIA

Lake Nancy

Survey Date: 7/26/23
Last Surveyed: 2020
Survey Team: T. Jakobe, J. Luna

Lake Description

Lake Nancy is 68 acres with approximately 2.39 miles of shoreline. It is located in the Town of Providence in Fulton County in the Upper Hudson River watershed. The team launched a canoe off a private boat launch.

Aquatic Invasive Plant Presence

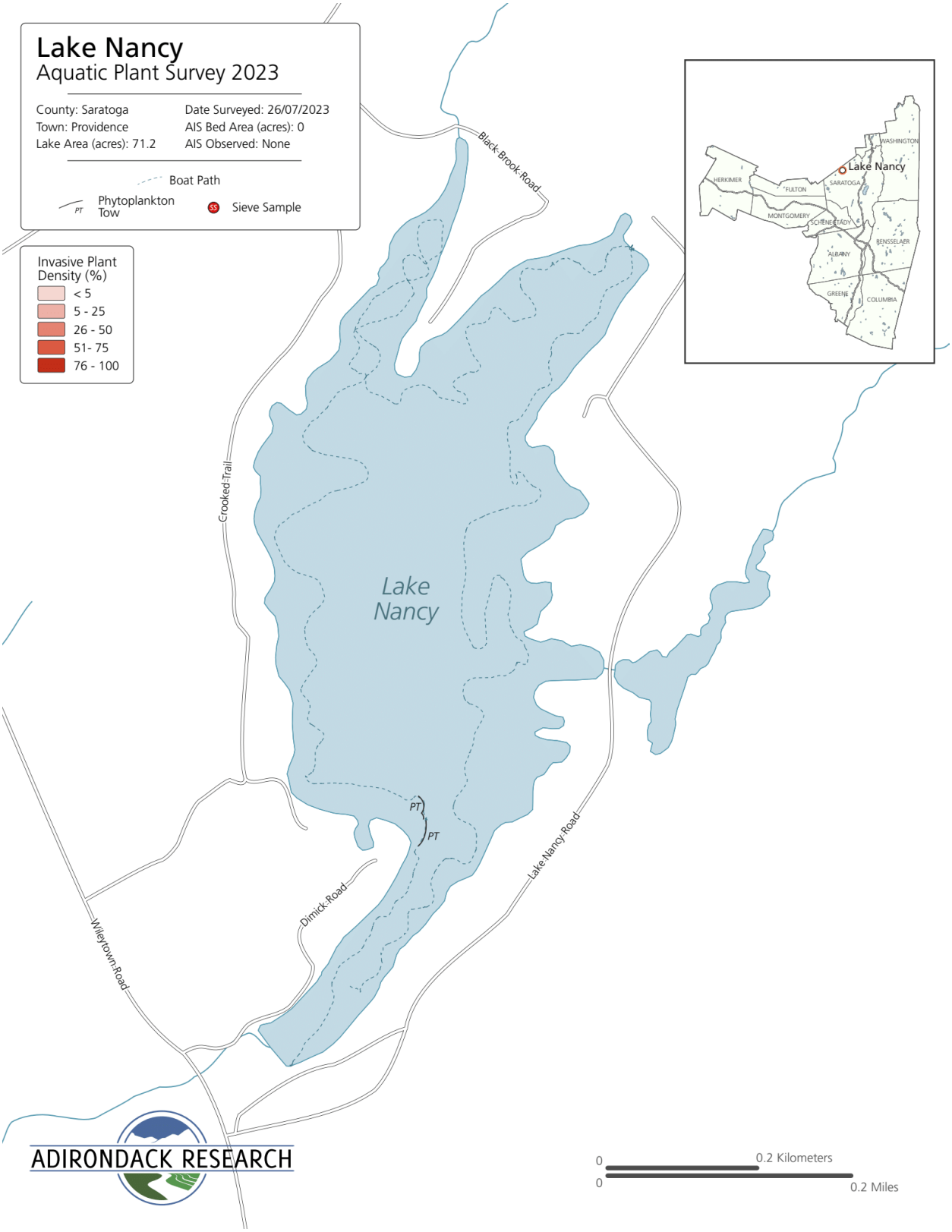
No aquatic invasive species were found.

Native Plant Biota

Comprehensive surveys were not prioritized in 2023 as invasive species were the primary focus of the surveys. The following native plants were found: *Nymphaea odorata* (White water lily), *Brasenia schreberi* (Watershield)*, myriophyllum sp.* (native milfoils), *Potamogeton amplifolius* (Large leaf pondweed), *Utricularia sp.* (bladderworts), and *Potamogeton natans* (Floating leaf pondweed).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in no detection of invasive zooplankton. Sediment sieves were not performed to determine the presence of


Lake Nancy
Aquatic Plant Survey 2023
County: Saratoga
Town: Providence
Lake Area (acres): 71.2
Date Surveyed: 26/07/2023
AIS Bed Area (acres): 0
AIS Observed: None
Boat Path
PT Phytoplankton Tow
SS Sieve Sample
Invasive Plant Density (%)
< 5
5 - 25
26 - 50
51- 75
76 - 100
Black Brook Road
Crooked Trail
Lake Nancy
PT
PT
Dimick Road
Wileytown Road
Lake Nancy Road
Lake Nancy
WASHINGTON
HERKIMER
FULTON
SARATOGA
MONTGOMERY
SCHENECTADY
RENSSELAER
ALBANY
GREENE
COLUMBIA
ADIRONDACK RESEARCH
0
0
0.2 Kilometers
0.2 Miles

Rensselaer Lake

Survey Date: 7/25/2023
Last Surveyed: 8/20/2020
Survey Team: J. Wolford, T. Wells

Lake Description

Rensselaer Lake is 29 acres with approximately 2.7 miles of shoreline. It is located in the Town of Colonie in Albany County in the Lower Hudson River Watershed. The team launched a canoe from Six Mile Waterworks Park.

Aquatic Invasive Plant Presence

Myriophyllum spicatum (Eurasian watermilfoil), *Najas minor* (Brittle naiad), and *Trapa natans* (Water chestnut) were detected.

Native Plant Biota

Comprehensive surveys were not prioritized in 2022 as invasive species were the primary focus of the surveys. The following native plants were found: *Ceratophyllum demersum* (Coontail), *Vallisneria Americana* (Eelgrass), *Elodea* (Waterweed), *Rhionaeschna mutata* (Spatterdock), *Potamogeton amplifolius* (Large-leaf pondweed), and *Brasenia schreberi* (Watershield).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in a «Zooplankton» detection of invasive zooplankton. Sediment sieves were taken to determine the presence of *Corbicula fluminea* (Asian clams). None were detected.

Eurasian Watermilfoil

Bed	Size (Ac.)	Size (Sq. Ft.)	% Cover
1	0.47	20280.34	5% - 25%
4	0.77	33453.72	26% - 50%
5	4.32	188132.35	5% - 25%

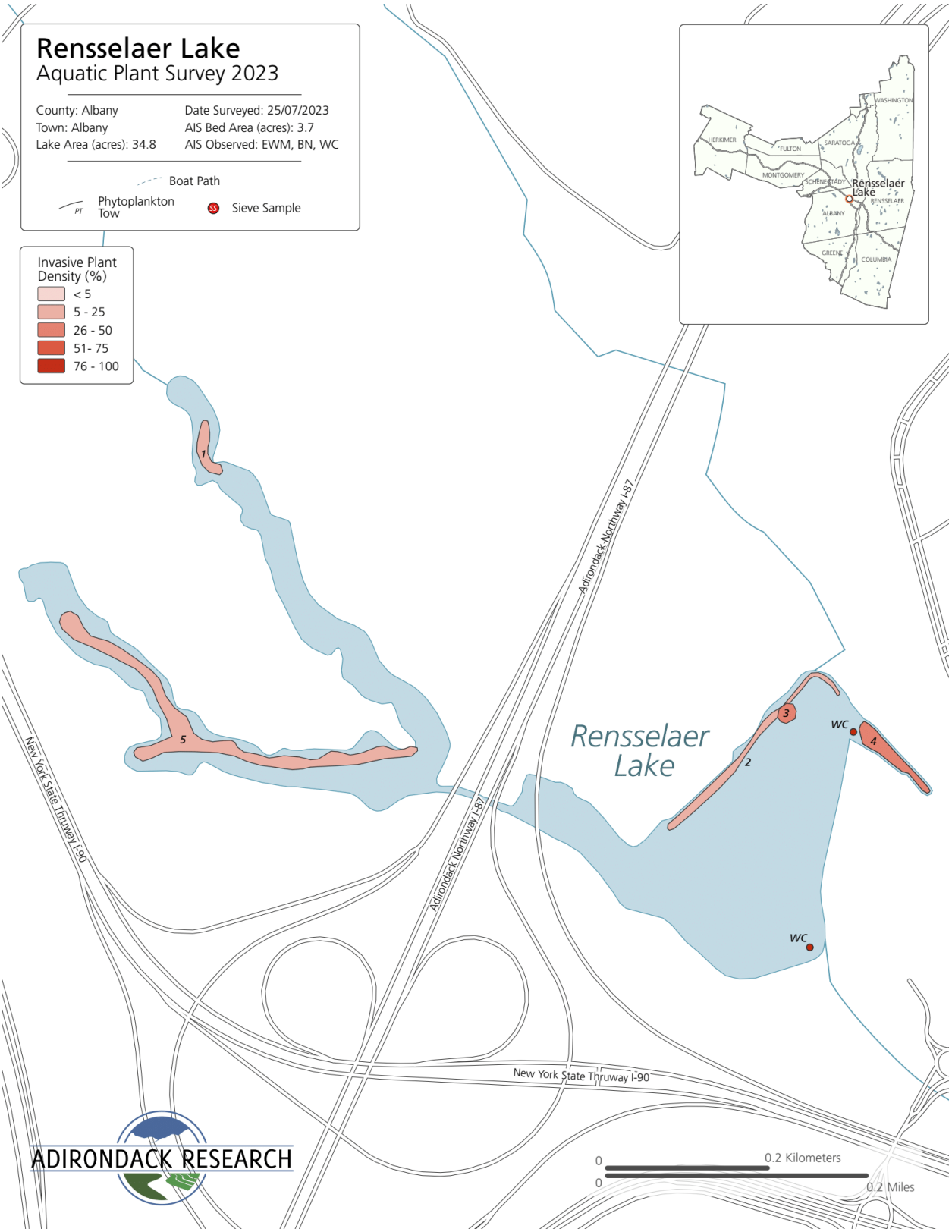
Water Chestnut

Bed	Size (Ac.)	Size (Sq. Ft.)	% Cover
2	1.13	49211.89	5% - 25%

Brittle Naiad

Bed	Size (Ac.)	Size (Sq.Ft.)	% Cover
3	0.22	9417.52	26% - 50%

Asian Clam	Spiny Waterflea
Present (Y/N)	Present (Y/N)
No	No


Rensselaer Lake
Aquatic Plant Survey 2023
County: Albany
Town: Albany
Lake Area (acres): 34.8
Date Surveyed: 25/07/2023
AIS Bed Area (acres): 3.7
AIS Observed: EWM, BN, WC
Boat Path
PT Phytoplankton Tow
SS Sieve Sample
Invasive Plant Density (%)
< 5
5 - 25
26 - 50
51- 75
76 - 100
WASHINGTON
HERKIMER
FULTON
SARATOGA
MONTGOMERY
SCHENECTADY
Rensselaer Lake
RENSSELAER
ALBANY
GREENE
COLUMBIA
Adirondack Northway I-87
New York State Thruway I-90
Rensselaer Lake
1
2
3
4
5
WC
WC
ADIRONDACK RESEARCH
0
0.2 Kilometers
0
0.2 Miles

Summit Lake

Survey Date: 7/26/2023
Last Surveyed: N/A
Survey Team: T. Wells, J. Wolford

Lake Description

Summit Lake is 81 acres with approximately 1.8 miles of shoreline. It is located in the Town of Argyle in Washington County in the Upper Hudson River Watershed. The team launched a canoe from the road on the East side of the lake.

Aquatic Invasive Plant Presence

Myriophyllum spicatum (Eurasian watermilfoil) was detected.

Native Plant Biota

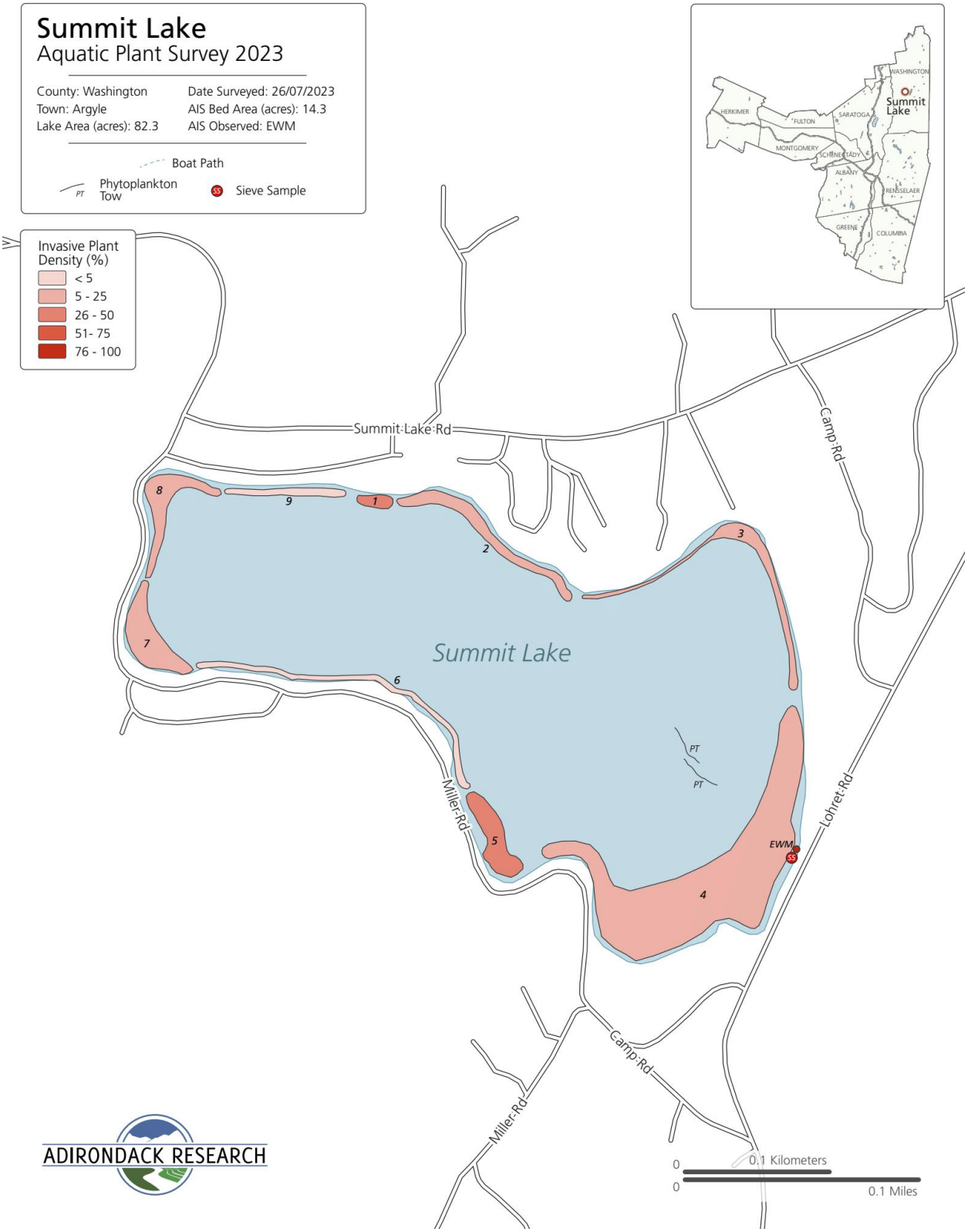
Comprehensive surveys were not prioritized in 2022 as invasive species were the primary focus of the surveys. The following native plants were found: *Ceratophyllum demersum* (Coontail), *Vallisneria Americana* (Eelgrass), *Elodea* (Waterweed), *Rhionaeschna mutata* (Spatterdock), *Potamogeton amplifolius* (Large-leaf pondweed), and *Brasenia schreberi* (Watershield).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in a «Zooplankton» detection of invasive zooplankton. Sediment sieves were taken to determine the presence of *Corbicula fluminea* (Asian clams). None were detected.

Eurasian Watermilfoil			
Bed	Size (Ac.)	Size (Sq. Ft.)	% Cover
1	0.34	14643.43	26% - 50%
2	1.83	79561.80	5% - 25%
3	1.84	80003.39	5% - 25%
4	15.25	664477.60	5% - 25%
5	1.61	70065.64	26% - 50%
6	1.52	66033.70	less than 5%
7	2.18	94771.65	5% - 25%
8	1.66	72299.27	5% - 25%
9	0.71	30724.03	less than 5%

Asian Clam	Spiny Waterflea
Present (Y/N)	Present (Y/N)
No	No


Summit Lake
Aquatic Plant Survey 2023
County: Washington
Town: Argyle
Lake Area (acres): 82.3
Date Surveyed: 26/07/2023
AIS Bed Area (acres): 14.3
AIS Observed: EWM
Boat Path
PT Phytoplankton Tow
SS Sieve Sample
Invasive Plant Density (%)
< 5
5 - 25
26 - 50
51- 75
76 - 100
WASHINGTON
Summit Lake
HERKIMER
FULTON
SARATOGA
MONTGOMERY
SCHENECTADY
ALBANY
RENSSELAER
GREENE
COLUMBIA
Summit Lake Rd
Camp Rd
Miller Rd
Lohret Rd
Summit Lake
1
2
3
4
5
6
7
8
9
PT
PT
EWM
SS
ADIRONDACK RESEARCH
0
0
0.1 Kilometers
0.1 Miles

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