

2023

AIS Survey: Rainbow Lake, Kushaqua Lake, and Buck Pond

**Aquatic Invasive Species Surveys
Survey Team Report**



2023 Rainbow Lake Aquatic Invasive Species Survey

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Cover image: Survey technicians Justin Wolford and Gage Root, accompanied by Brian Greene, Aquatic Invasive Coordinator for Adirondack Park Invasive Plant Program (APIPP), tossing a rake off a research boat. Photo by Tucker Wells.

Executive Summary

The purpose of this monitoring effort was to fully inspect and survey the areas of the lake that are most at risk to invasive species establishment. By carrying out these surveys the crews ensured that the water body is currently free of invasive species. Our crew also collected generalized data on native species presence on the water body. In the case that any invasive species was found our crew would have mapped out any and all invasive plant beds.



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Photos



Photo: Our survey team on Rainbow Lake in 2019.

Methods

Below is a description of the survey methods used while surveying your lake. We've included a brief description of the equipment used, our cleaning procedure for all of our equipment before accessing your lake, and a description of our survey techniques.

Equipment

Equipment used while completing the Aquatic Invasive Species (AIS) survey of the lake consisted of double-sided rakes for collecting plant samples from under the water, an iPad 4 mini that is cellular-enabled for data collection and GPS tracking, a motor boat(s) or canoe(s), and a Lowrance HDS 7 Live sonar unit with transducer. All data and observations are recorded using ESRI's Field Maps – a mapping and data collection software. These tools allow us to accurately map our travel path and delineate any invasive plant beds (if found).

Cleaning

As our team is frequently moving from one water body to another, specific precautions were taken to ensure that all equipment used was decontaminated and free of AIS before and after entering your lake. This is done by thoroughly washing and decontaminating all of our equipment using a high-pressure washer with hot water (120-160 degrees Fahrenheit).

Monitoring Techniques

While out on the water body our crew focused on surveying the littoral zones around the lake for aquatic plants. The littoral zone typically encompasses the area from shoreline to a depth of about 15 feet. The team surveyed the littoral zone in a zig-zag pattern searching for plant beds employing both visual observation and regular rake tosses informed by sonar output. The sonar guidance allowed us to target sample areas with plant growth over more sandy or otherwise bare areas of lake bottom. All plants retrieved by rake toss or seen by visual inspection were identified to the best of our abilities (usually to the species level, but sometimes to genus). Our team is highly trained in identifying both native and invasive aquatic plants and survey to the standards up held by the Adirondack Park Invasive Plant Program (APIPP). In addition to this, we carry several aquatic plants guides such as, the "Maine Field Guide to Invasive Aquatic Plants and their common native look-a likes" by Lake Stewards of Maine for aiding in onsite identification.

Given our variety of mapping equipment, we are able to accurately map any AIS infestations immediately upon discovery. If an AIS infestation had been discovered an occurrence point would have been dropped in Field Maps and the entire bed would have been mapped out with an assessment polygon. The occurrence point contains information such as the date, who made the observation, species, and photos. After the occurrence point gets collected and assessment polygon would be mapped out by circumnavigating the exterior of the plant bed while recording our position with GPS. Based upon how much AIS was observed on the rake toss a percent cover of the invasive plant bed is assigned to each assessment polygon. As the

assessment polygon and occurrence points are marked with GPS points changes in acreage, percent cover and placement in the water body can be tracked over time.

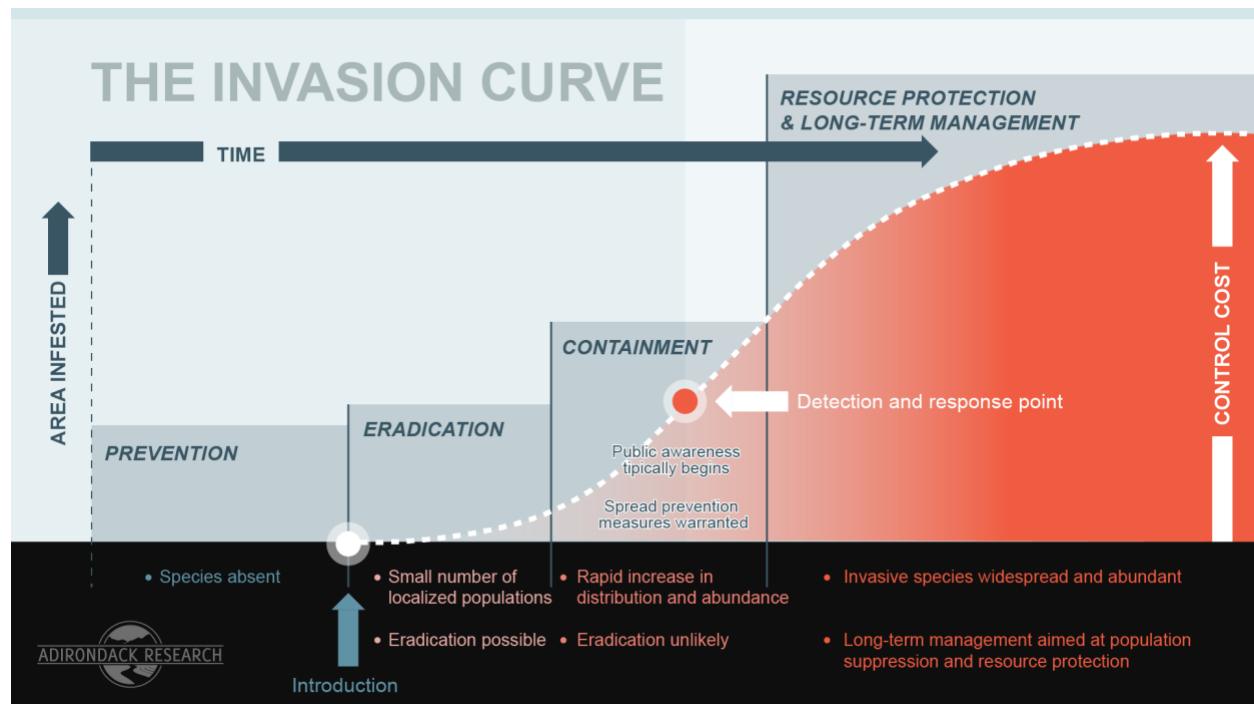
Invasive plant species (if found) and native species that were discovered over the course of the survey were identified, recorded and noted in the Results section of this report.

Data and Research Limitations

We collected sonar data from this survey, but we did not process the data in a third-party lake characteristics mapping program such as C-Map BioBase or ReefMaster. Sonar has been processed in the past during surveys conducted for the Adirondack Park Invasive Plant Program. The bathymetry shown in the included maps are from those previous surveys.

Recommendations

We recommend performing yearly early detection surveys. There are currently no invasive species present in the waterway. However, data supports that the earlier a detection of AIS on a body of water, the quicker and most effectively a management strategy can be devised.



Conclusions

Rainbow Lake, the Rainbow Lake Narrows, Lake Kushaqua, and Buck Pond are free from aquatic invasive plants in the areas we searched. On Buck Pond, non-native Banded Mystery Snails were found in sieve collection.

Other services we offer

In addition to Early Detection Survey's, Adirondack Research also offers Pre and Post management surveys to determine the effectiveness and success of AIS management work conducted on a water body. Also offered is the ProcellaCOR Permitting Survey. ProcellaCOR is an herbicide used to treat AIS such as Eurasian Watermilfoil. A survey of aquatic species is required for a permit to be issued.



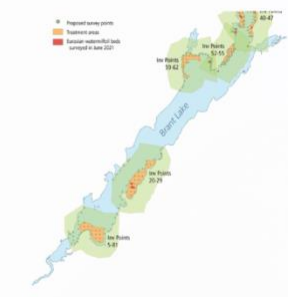
Early Detection Survey

We survey your lake and map any existing beds of aquatic invasive species.

Pre & Post Management Survey

We perform plant surveys before and after management activities.





ProcellaCOR Permitting

We work with you and the Adirondack Park Agency to meet their guidelines.

Maps

The map included in this report has been created using publicly accessible data showing roads and lake boundary. When available, we also include publicly accessible bathymetry data from the NYS DEC. If found, invasive plant beds are also shown on the included map. Raw sonar data files from our survey can be supplied to you if requested. The dotted line on the maps shows our survey path this year.

Note: We are missing some of the boat trace data from Clear Pond, the southern end of Rainbow Lake and the southern end of Kushaqua Lake. We did not survey Square Pond or Loon Lake.

Buck Pond

Survey Date: July 5, 2023

Last Surveyed: 2020

Survey Team: J. Wolford, J. Luna

Lake Description

Buck Pond is 129.4 acres with approximately 2.31 miles of shoreline. It is located in the Town of Franklin, located in Franklin County. One team launched a canoe from the launch at Buck Pond Campground onto the water body.

Aquatic Invasive Plant Presence

No aquatic invasive plants were found in the water body.

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: *Zostera* (eelgrass), *Elodea* (waterweed), *Potamogeton amplifolius* (large leaf pondweed), *Rhionaeschna mutata* (spatterdock), *Utricularia macrorhiza* (common bladderwort).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in no detection of invasive zooplankton. Sediment sieves were taken to determine the presence of *Corbicula fluminea* (Asian clams). None were detected. However, Banded mystery snail were detected.

Rainbow Lake

Survey Date: June 8, 2023

Last Surveyed: 2022

Survey Team: J. Luna, T. Wells, T. Jakobe, G. Root, J. Wolford, M. Hilliard

Lake Description

Rainbow Lake is 362 acres with approximately 11.7 miles of shoreline. It is located in the Town of Brighton in Franklin County in the St. Lawrence Watershed. The team launched 3 motorboats from the Buck Pond Campground launch.

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: *Utricularia macrorhiza* (common bladderwort), *Ceratophyllum demersum* (coontail), *Zostera sp.* (eelgrass), *Elodea spp.* (common waterweed), *Potamogeton natans* (floating-leaf pondweed), *Potamogeton amplifolius* (large leaf pondweed), *Myriophyllum spp.* (native milfoil), *Nitella spp.* (common stonewort), *Potamogeton robbinsii* (robins pondweed), *Nuphar advena* (spatterdock), *Brasenia schreberi* (watershield).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in no detection of invasive zooplankton. Sediment sieves were taken to determine the presence of *Corbicula fluminea* (Asian clams). None were detected.

Kushaqua Lake

Survey Date: July 12, 2023

Last Surveyed: 2022

Survey Team: T. Wells, J. Luna

Lake Description

«Lake_Name» is 379 acres with approximately 8.1 miles of shoreline. It is located in the Town of Brighton in Franklin County in the St. Lawrence. The team launched a motorboat from Buck Pond Campground Launch

Aquatic Invasive Plant Presence

No aquatic invasive plants were found in the water body.

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: *Utricularia macrorhiza* (common bladderwort), *Zostera sp.* (eelgrass), *Elodea spp.* (common waterweed), *Potamogeton amplifolius* (large leaf pondweed), *Brasenia schreberi* (watershield).

Aquatic Invasive Animal Presence

Plankton tows were conducted resulting in no detection of invasive zooplankton. Sediment sieves were taken to determine the presence of *Corbicula fluminea* (Asian clams). None were detected.

