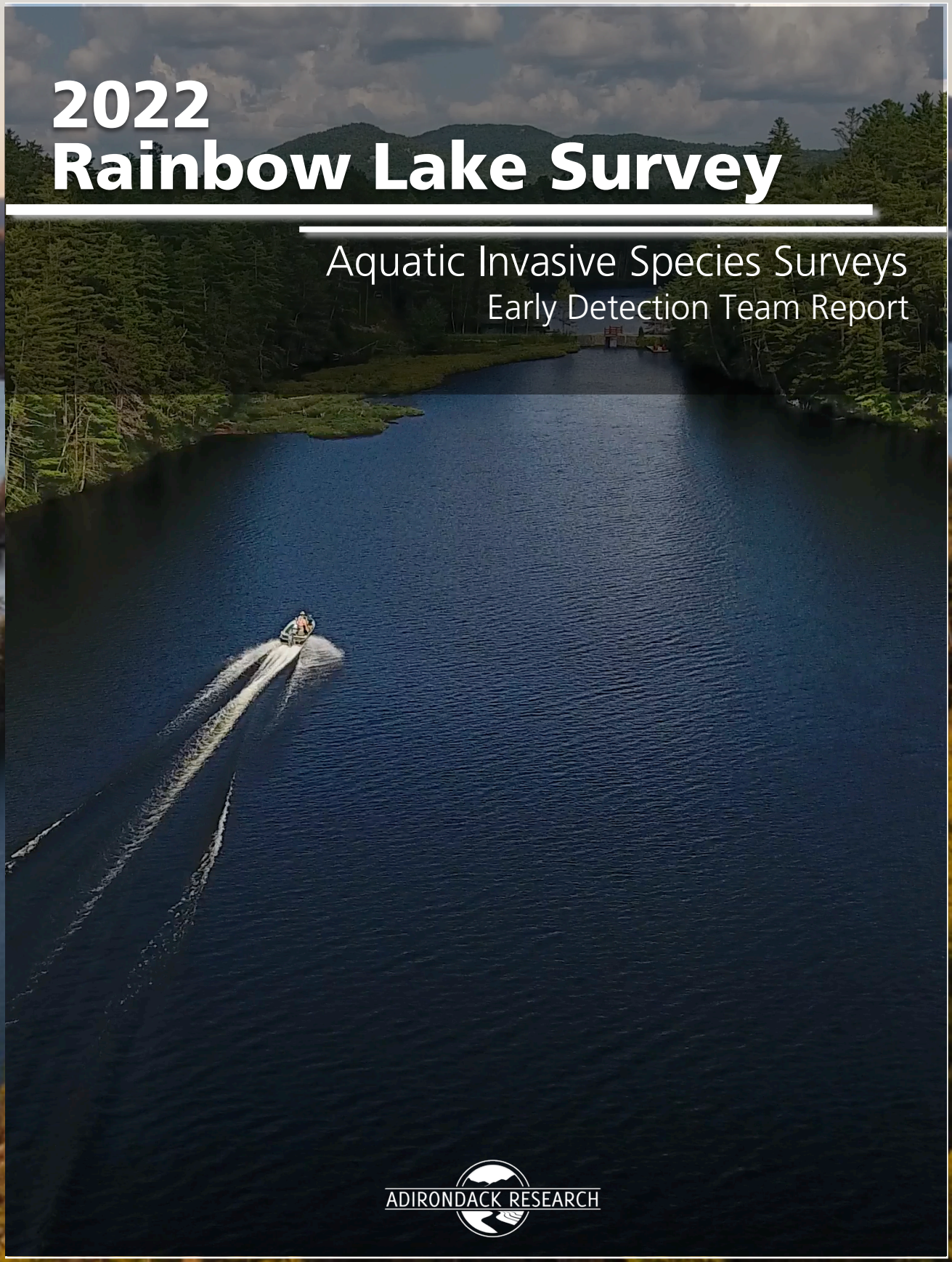
2022 Rainbow Lake Survey

Aquatic Invasive Species Surveys

Early Detection Team Report



ADIRONDACK RESEARCH

2022 Rainbow Lake Aquatic Invasive Species Early Detection Survey

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Adirondack Research
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Background Cover image: Ballston Lake, Saratoga County. Photo credit to Pat Bly.
Foreground Cover image: Rainbow Lake heading into the Narrows. Photo credit to Pat Bly.

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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 waterbody is currently free of invasive species. Our crew also collected generalized data on native species presence on the waterbody. 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 plan samples from under the water, an iPad 4 mini for data collection, a motor boat(s) or canoe(s), a Lowrance HDS 7 Live sonar unity with transducer, and Bluetooth GPS antennas (Garmin GLO) for increased accuracy of our travel path as well as any delineation of invasive plants beds (if found). All data and observations were recorded using ESRI's Collector for ArcGIS application. Surveys were attempted by motorboat(s) when possible, and when not possible, by canoe(s).

Cleaning

As our team is frequently moving from one water body to another, specific precautionary measures were taken to ensure that all equipment used was decontaminated and free of AIS. To ensure that all equipment was free of AIS, we thoroughly washed and decontaminated all of our equipment at one of the Adirondack AIS Prevention Program's free boat wash and decontamination stations. High pressure hot water was used at these sites to ensure that no AIS spread via equipment.

Monitoring Techniques

While out on the waterbody 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 rack tosses informed by sonar output. The sonar guidance allowed us to sample areas with plant growth more than 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). Both native and invasive plants found are identified using the "Maine Field Guide to Invasive Aquatic Plants and their common native look-alikes" By Lake Stewards of Maine.

If an AIS infestation was discovered an occurrence point was dropped in ESRI Collector 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, and the species. 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 waterbody 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

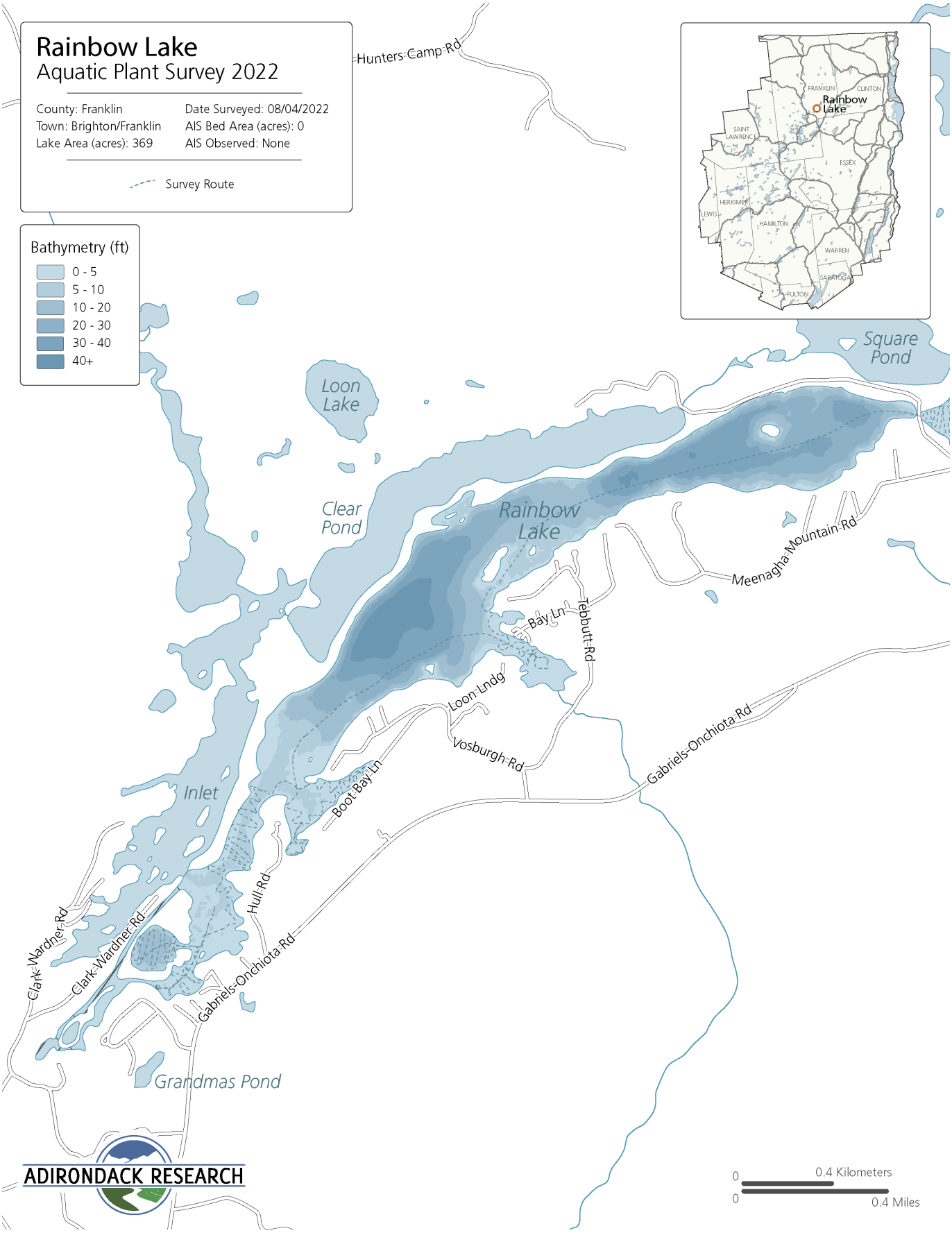
We recommend performing yearly early detection surveys. There are currently no invasive species present in the waterway. There are also beds present of a native milfoil, tentatively identified as lo water milfoil. These native species would likely be outcompeted by invasive milfoil species. Furthermore, the presence of native milfoils makes citizen science-based surveys of the waterway difficult due to the challenges of differentiating native from invasive milfoil species.

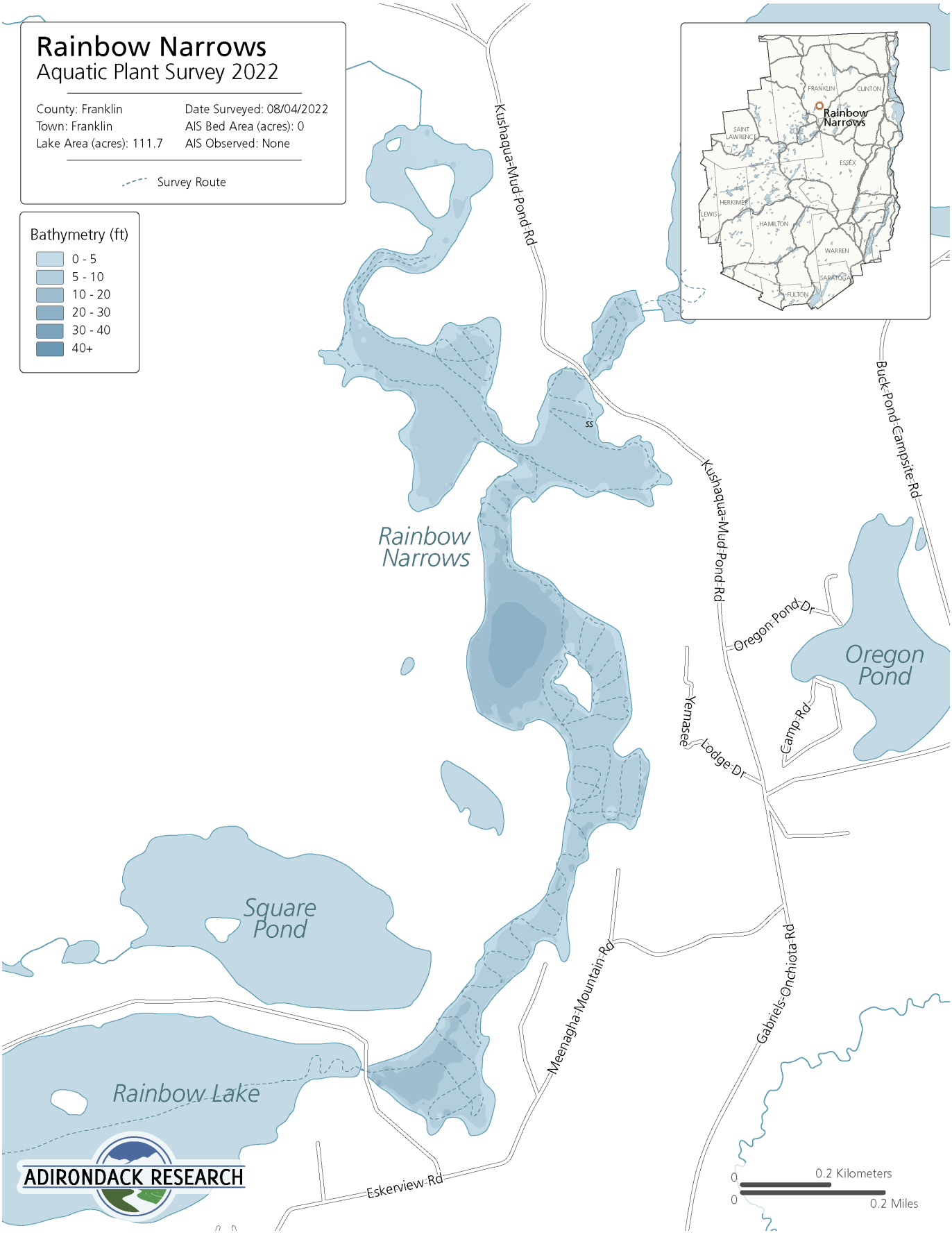
Conclusions

Rainbow Lake and the Rainbow Lake Narrows are free from aquatic invasive plants in the areas we searched.

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.


Rainbow Lake
Aquatic Plant Survey 2022
County: Franklin
Town: Brighton/Franklin
Lake Area (acres): 369
Date Surveyed: 08/04/2022
AIS Bed Area (acres): 0
AIS Observed: None
Survey Route
Bathymetry (ft)
0 - 5
5 - 10
10 - 20
20 - 30
30 - 40
40+
Hunters Camp Rd
Square Pond
Loon Lake
Clear Pond
Rainbow Lake
Meenagha Mountain Rd
Bay Ln
Tebbutt Rd
Loon Lndg
Vosburgh Rd
Gabriels-Onchiota Rd
Boot Bay Ln
Inlet
Hull Rd
Clark Wardner Rd
Clark Wardner Rd
Gabriels-Onchiota Rd
Grandmas Pond
FRANKLIN
CLINTON
Rainbow Lake
SAINT LAWRENCE
ESSEX
HERKIMER
LEWIS
HAMILTON
WARREN
SARATOGA
FULTON
ADIRONDACK RESEARCH
0
0.4 Kilometers
0
0.4 Miles


Rainbow Narrows
Aquatic Plant Survey 2022
County: Franklin
Town: Franklin
Lake Area (acres): 111.7
Date Surveyed: 08/04/2022
AIS Bed Area (acres): 0
AIS Observed: None
Survey Route
Bathymetry (ft)
0 - 5
5 - 10
10 - 20
20 - 30
30 - 40
40+
FRANKLIN
CLINTON
Rainbow Narrows
SAINT LAWRENCE
ESSEX
HERKIMER
LEWIS
HAMILTON
WARREN
SARATOGA
FULTON
Kushaqua-Mud-Pond-Rd
Buck-Pond-Campsite-Rd
Rainbow Narrows
Oregon-Pond-Dr
Oregon Pond
Yemasee
Lodge-Dr
Camp-Rd
Square Pond
Meenagha-Mountain-Rd
Gabriels-Onchiota-Rd
Rainbow Lake
Eskerview-Rd
ADIRONDACK RESEARCH
0
0.2 Kilometers
0
0.2 Miles

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