ONEIDA COUNTY LAND AND WATER CONSERVATION DEPARTMENT

Indian Lake

Land & Water Conservation Department

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Indian Lake AIS Monitoring and Water Clarity Report

WBIC:	1598900
Previous AIS Findings:	Chinese Mystery Snails, Freshwater Jellyfish
New AIS Findings:	None
Field Date:	July 30, 2020
Field Crew:	Aubrey Nycz, AIS Project Leader, and Rachel Cook, AIS Project Assistant, Oneida County Land and Water Conservation Department
Report by:	Rachel Cook

On July 30th, 2020, Aubrey and I went to Indian Lake to conduct AIS monitoring and to assess water clarity and quality. Indian Lake is a 354-acre mesotrophic spring-fed lake in Oneida County. It has one public boat landing on the south-eastern side of the lake on Timber Lane (seen in Figure 2). The perimeter of Indian Lake is mostly occupied by private residents, so there are many piers and boat lifts along the shoreline. There are some wetland areas as well where docks were not present. The lake has a maximum depth of 26 feet, and the substrate is reported to be 55% sand, 15% gravel, 10% rock, and 20% muck. Along with reporting the depth and substrate, the Wisconsin Department of Natural Resources also reports that the lake has musky, largemouth bass, smallmouth bass, northern pike, panfish and walleye present.

The weather while conducting research on Indian Lake was not ideal. The outside temperature was 70 degrees Fahrenheit, the sky was partly cloudy, and there was some wind. This made maneuvering the canoe and visualizing things under the water's surface more difficult. We began monitoring the lake at the public boat landing, moving in a clockwise direction around the lake, meandering in and out of wetland areas as well. We looked on the shoreline itself and also in the water, noting the plants and animals we had observed in the process.

To observe the water clarity and quality of Indian Lake, Aubrey and I went to the deep hole towards the south-western side of the lake. After locating the deep hole with our sonar unit, we used a Secchi disk to measure water clarity and a dissolved oxygen meter to measure water health. Oxygen is needed for a healthy fish population, and for plants to respire at night. The measurements from the dissolved oxygen meter can tell us if the organisms in the lake are under stress. The secchi disk reading and dissolved oxygen readings were comparable to previous results, and there should be no concern for the water health on Indian Lake. The secchi disk reading was 10 feet, and the dissolved oxygen readings can be found in Table 2.

Aubrey and I did observe Chinese Mystery Snails in Indian Lake, however, this invasive was already known to have been established here. Besides the snails, Indian Lake still had many native plants and animals present and thriving. The most common plants we observed were White Water Lily, Bullhead Pond Lily, Pickerel Weed, and Watershield. These plants can be seen below in Table 1.

Findings: Taken 11:00 a.m. – 1:00 p.m. on July 30th, 2020

Aquatic Invasive Species:
Chinese Mystery Snails were seen on the shoreline.

Secchi Disk:
The Secchi reading on this lake was 10 feet out of a 26 foot maximum depth. The water looked clear and a dark blue color.

Dissolved Oxygen:
These measurements can be seen in Table 2.

Figure 1. Map of Oneida County, WI with Indian Lake circled in red (approximate location)

Figure 2. Map of Indian Lake with boat landing and location of Secchi disk reading labeled.

Deep hole and location of Secchi disk reading

Boat Landing

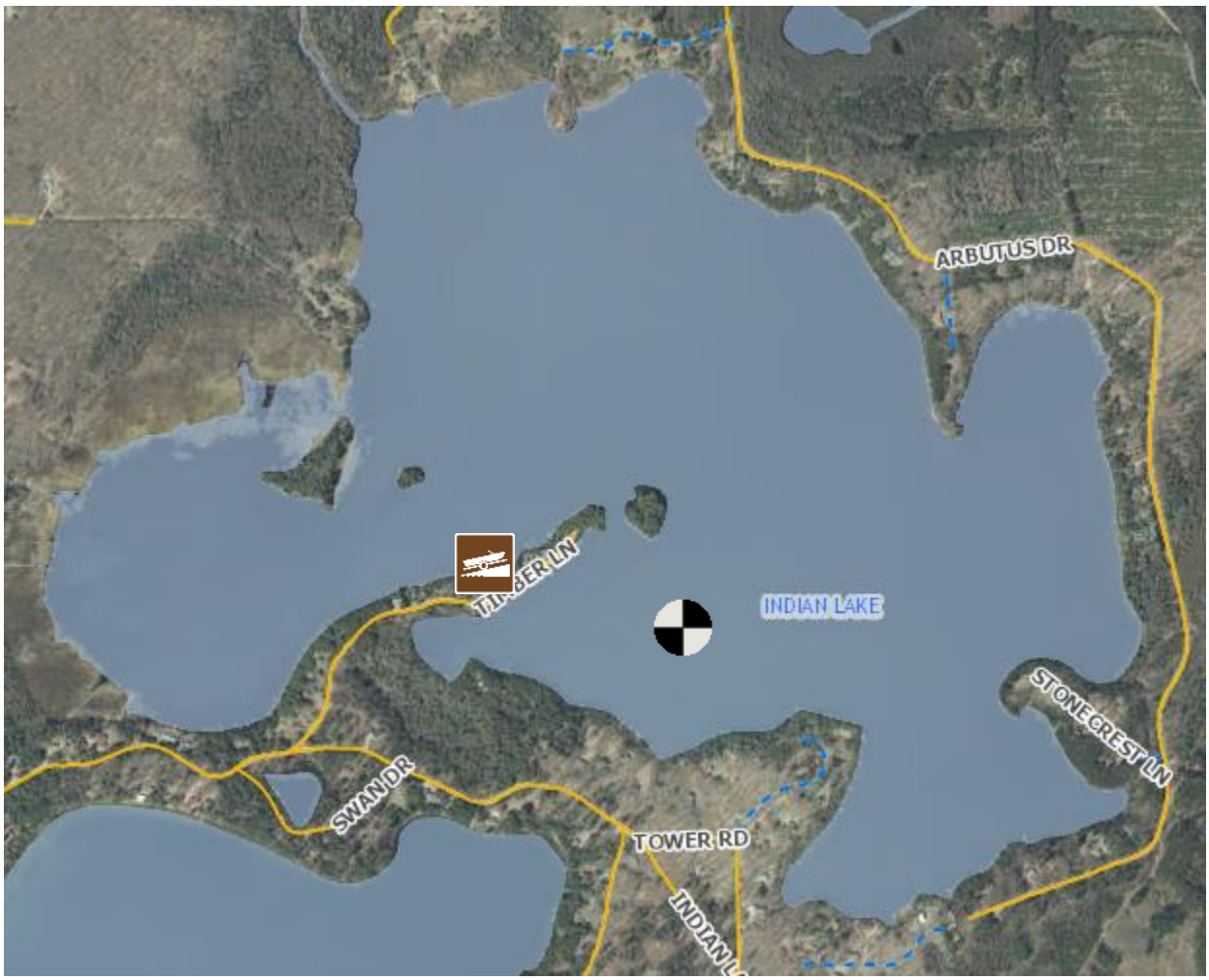

Table 1. Plants found in Indian Lake while monitoring.

Common Name Scientific Plant Name	Description	Image
Pickerel Weed *Pontederia cordata*	An aquatic plant with thin, bright green leaves. Emergent leaves tend to be arrow shaped with 6 parted, blue flowers. This plant is native.	 Photo Credit: ediblewildfood.com
White Water Lily *Nymphaea adorata*	An aquatic plant that has large, round leaves that can grow to be 12 inches in diameter. White water lilies also have large, white flowers with many petals. This plant is native.	 Photo Credit: Stephanie Boismenue
Water Shield *Brasenia schreberi*	An aquatic plant with stems up to 2 meters long. This plant has small floating leaves and reddish purple flowers that have 6-8 petals. This plant is native.	 Photo Credit: Shannon Sharp
Bullhead Pond Lily *Nuphar variegate*	An aquatic plant with heart-shaped leaves that can grow to be 15 inches long. This plant also has a yellow, cup-shaped flower. This plant is native.	 Photo Credit: Jomegat's Weblog

Table 2. Dissolved oxygen levels and temperatures at the deep hole in Indian Lake.

Depth (Feet)	Dissolved Oxygen Levels (mg/L)	Temperature (F)	Percent Dissolved Oxygen
2	8.06	76.5	102.8
4	8.05	76.0	102.1
6	8.06	75.7	101.8
8	8.05	75.3	101.2
10	8.04	75.1	100.9
12	7.98	74.9	99.9
14	7.59	74.5	94.6
16	5.21	72.9	64.0
18	0.24	67.1	2.7

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WBIC:	1598900
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New AIS Findings:	None
Field Date:	July 23, 2014
Field Crew:	Stephanie Boismenue and Sara Mills, AIS Project Assistants, Oneida County Land and Water Conservation Department
Report by:	Sara Mills

Stephanie Boismenue and I monitored Indian Lake (#1598900) on Wednesday, July 23, 2014. We were accompanied by members of the Indian Lake Association. They were kind enough to provide a pontoon boat so all of us could monitor together. Our purpose for monitoring Indian Lake was to measure water clarity and dissolved oxygen in the lake, check for the possible presence of invasive species, and provide an example for the members of the lake association to follow when they do their own lake monitoring.

The deep hole site where we measured water clarity and dissolved oxygen ranged between 27 and 28 feet in depth. Our secchi disk reading for water clarity was in between 2 and 3 meters or approximately 8.2 feet. Additionally we measured dissolved oxygen in the lake, starting at 1 foot below the water surface and continuing at 3 foot intervals. Table 1 presents the dissolved oxygen levels and temperature readings at the various depths measured in Indian Lake.

We visually inspected the lake's shoreline at three sites labeled one, two, and three on Figure 1. Indian Lake is listed only to have freshwater jellyfish and Chinese mystery snails. We did not find any indication of any other invasive species being in the lake. Our first location (site one on figure 1) was located on the northeast side of the lake near a bay. It was sandy with a lot of pickerel weed, Chinese mystery snails, and some native snails.

Our second site (site two on figure 1) was at the boat landing. The boat landing does not have a dock. It had more weeds there than our previous site with most of the weeds being pondweeds. There was no indication of Eurasian water-milfoil or curly leaf pondweed mixed in with the native weeds. There were less Chinese mystery snails at this site.

Our third site (site three on figure 1) was across from the boat landing at the entrance to an island that can be used for one night overnight camping. It was less sandy than the other sites and had more pondweed. There were Chinese mystery snails but no other indication of any other invasive species there. The vegetation seemed to be very healthy.

We also attached a zebra mussel plate to the dock of Martin and Joyce Haavisto at 7154 Timber Lane that is to be removed in about 2 weeks to check for the presence or absence of zebra mussels in Indian Lake. This dock is located right after the boat landing.

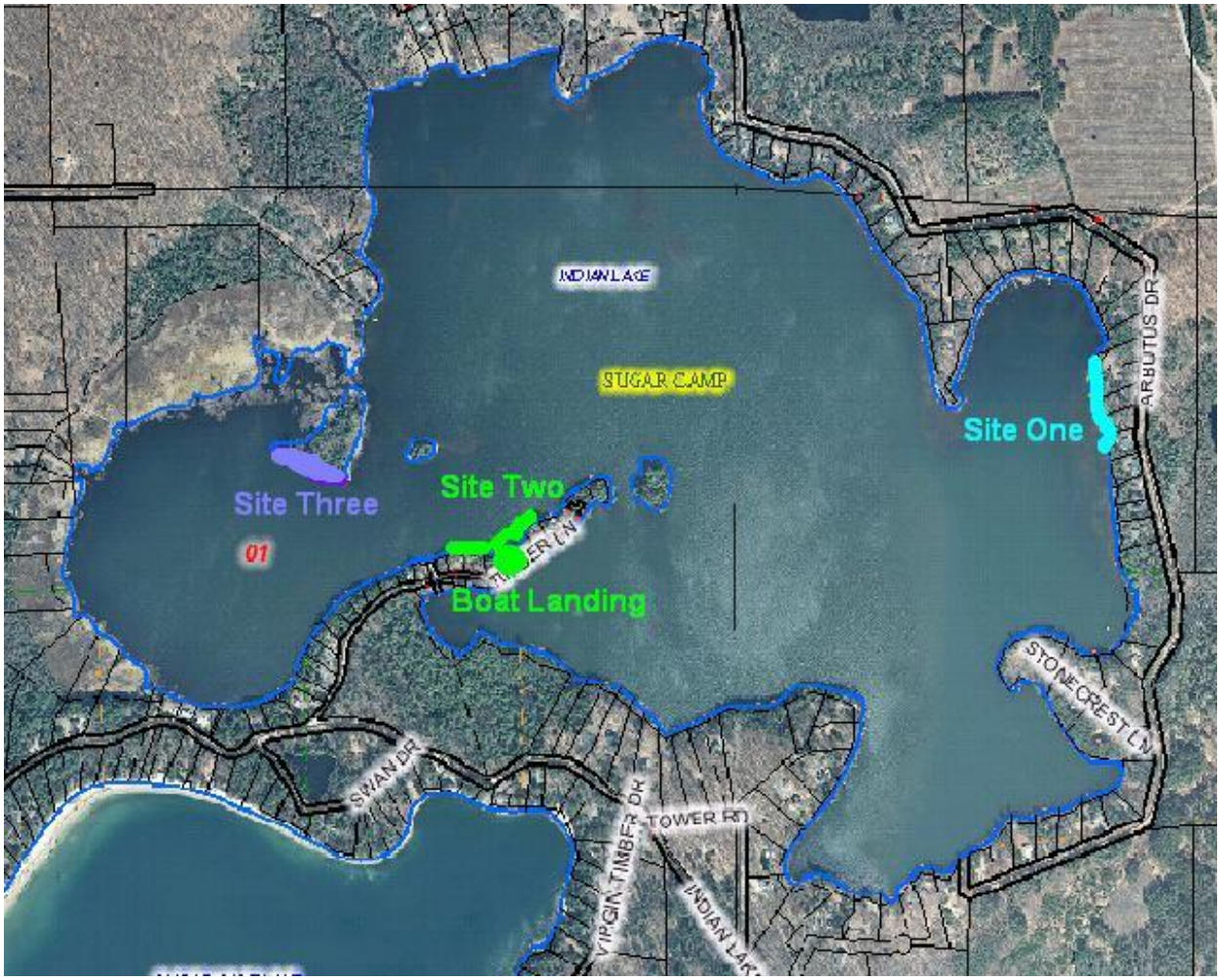

Figure 1. A map of Indian Lake with lines representing the approximate locations of our visual surveys and a pink dot representing the deep hole site.

Table 1. The dissolved oxygen levels and temperature readings in Indian Lake at deep hole site.

Depth	Dissolved Oxygen Level	Temperature Reading
1’	8.50 mg/L	72.3°F
4’	8.46 mg/L	72.3°F
7’	8.46 mg/L	72.3°F
10’	8.43 mg/L	72.2°F
13’	8.41 mg/L	72.2°F
16’	5.84 mg/L	69.0°F
19’	2.78 mg/L	66.9°F
22’	0.26 mg/L	62.5°F
25’	0.08 mg/L	58.7°F
27’	0.05 mg/L	55.2°F