ONEIDA COUNTY LAND AND WATER CONSERVATION DEPARTMENT

Long Lake

Land & Water Conservation Department

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Long Lake AIS Monitoring and Water Clarity Report

Field Date:	August 2nd, 2018
WBIC:	1001300
Previous AIS Findings:	None
New AIS Findings:	None
Field Crew:	Aubrey Nycz, AIS Project Leader, and Jody Partin, AIS Project Assistant, Oneida County Land and Water Conservation Department
Report By:	Jody Partin

On August 2nd, 2018, Aubrey and I went to Long Lake to implement AIS monitoring along with water clarity and quality assessments. Long Lake is a 113 acre oligotrophic lake located in Oneida County and has one public boat launch. The shoreline along Long Lake is composed of private owners and public land. The Germain Hemlocks State Natural Area abuts the northwest corner of the lake, and because of this, the shoreline in that area is in a natural state. Long Lake has a maximum depth of 58 feet, and the substrate is reported to be 70% sand, 15% gravel, 10% rock, and 5% muck. However, we observed quite a bit of rock and gravel. Along with reporting the depth and substrate, the Wisconsin Department of Natural Resources reports that the lake has musky, panfish, largemouth bass, and walleye present. On this day, however, we only observed one small fish in the entire littoral zone.

The weather while conducting research on Long Lake was not ideal. The outside temperature was 65 degrees Fahrenheit, the skies were overcast and gloomy, but there was no rain. There was little to no wind, and despite the darkness of the day, the water clarity was still good, and we are confident in the accuracy of the data gathered.

When conducting our AIS lake survey, Aubrey and I did a complete shoreline scan while meandering in and out between different depths. We looked on the shoreline itself and also in the water, noting the plants and animals that we observed in the process.

To observe the water clarity and quality of Long Lake, Aubrey and I went to the deep hole towards the south end of the lake. After locating the deep hole, we used a Secchi disk to measure clarity and a

dissolved oxygen meter to measure water health. Oxygen is needed for a healthy fish population, and also for plants to respire at night. The measurements from the dissolved oxygen meter can tell us if the organisms in the lake would be under stress. Thankfully, both of these measurements were relatively average in nature, and there should be no concern for the health of Long Lake. The Secchi disk reading was 9.5 feet, and the dissolved oxygen readings can be found in table 2.

Aubrey and I did not observe any new invasive species on Long Lake. We were glad to see that no invasive species were present at this time, and the lake seems to be healthy with several native plants present and thriving. The most common plants observed on Long Lake can be seen below in table 1.

Findings: Taken 12:00 p.m. – 2:30 p.m. on August 2nd, 2018

Aquatic Invasive Species: We did not find any new invasive species along the perimeter of Long Lake.

Secchi: The Secchi reading on this lake was 9.5 feet out of a 58 foot maximum depth. The water color was a bluish color, and was clear when glancing across the lake.

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

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

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

Deep hole & location of Secchi disk reading

Public Boat Landing

Table 1. Plants found in Long Lake when monitoring.

Common Name Scientific Plant Name	Description	Image
Water Smartweed *Persicaria amphibia*	An aquatic, floating plant with swollen leaf nodes. Leaves tend to be smooth and rounded. Water smartweed has pink flowers that are raised a few inches above the water. This plant is native.	 *Photo Credit: Superior National Forest/CCSA*
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*
Common Bladderwort *Utricularia macrorhiza*	An aquatic plant with leaves containing small sacks that trap small invertebrates. This plant usually has unrooted stems that easily tangle with other plants. In the water, this plant tends to look cloudy or slimy. This plant is native.	 *Photo Credit: frenchhill.org*
White Water Lily *Nymphaea odorata*	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: Joseph A. Marcus*

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: Jody Partin*

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

Depth (Feet)	Dissolved Oxygen Levels (mg/L)	Temperature (F)	Percent Dissolved Oxygen
2	7.88	72.3	95.8
4	7.81	72.6	95.2
6	7.78	72.6	94.9
8	7.73	72.6	94.3
10	7.71	72.7	94.2
12	7.67	72.7	93.7
14	6.78	68.9	79.5
16	8.70	60.2	92.3
18	8.38	55.7	84.2
20	6.59	50.7	62.1
22	4.33	47.3	39.0
24	2.88	45.5	25.3
26	1.29	44.4	11.2
28	0.5	43.6	4.3

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Long Lake AIS Monitoring and Water Clarity Report

WBIC:	1001300
Previous AIS Findings:	None
New AIS Findings:	None
Field Date:	June 18, 2014
Field Crew:	Stephanie Boismenue and Alyssa Nycz, AIS Project Assistants, Oneida County Land and Water Conservation Department
Report by:	Alyssa Nycz

Stephanie and I monitored Long Lake (#1001300) on Wednesday, June 18th. We used our canoe to navigate the lake (Figure 1). Our goals were to take Secchi disk and dissolved oxygen readings in the deepest parts of the lake, as well as perform a visual survey along the public boat landing and two other shoreline locations.

Site A marks the first deep hole that we collected data from. Our Secchi disk reading was eighteen feet. Additionally, we measured dissolved oxygen levels one foot below the water's surface, and at three foot intervals below that. We were not able to obtain accurate readings below a thirteen foot depth. Table 1 presents dissolved oxygen levels and temperature at various depths. We repeated the same process at Site B, which had a Secchi disk reading of twenty feet. Our notes are listed in Table 2.

After collecting data at our deep hole sites, we beached the canoe along the shoreline of the southern end of the lake. We walked knee-deep about one hundred feet from our canoe in either direction along the shoreline. The property owner happens to be the president of the lake association, and he said that while there appears to be a private launch on his waterfront, this is currently not in use. We did not find any suspicious plant or animal matter along the shoreline at this location.

We continued our visual survey in the loon nesting bay located at the southeast end of the lake. We also inspected a portion of the southwestern shoreline. On our way back to the boat landing at the northern end of the lake, we inspected a portion of shoreline along the northeast shoreline. Finally, we canoed about one hundred feet on either side of the boat landing. In each of the locations we inspected, we found nothing of concern. Much of the lake's shoreline consisted of healthy, native vegetation, and all snails that we observed were also native.

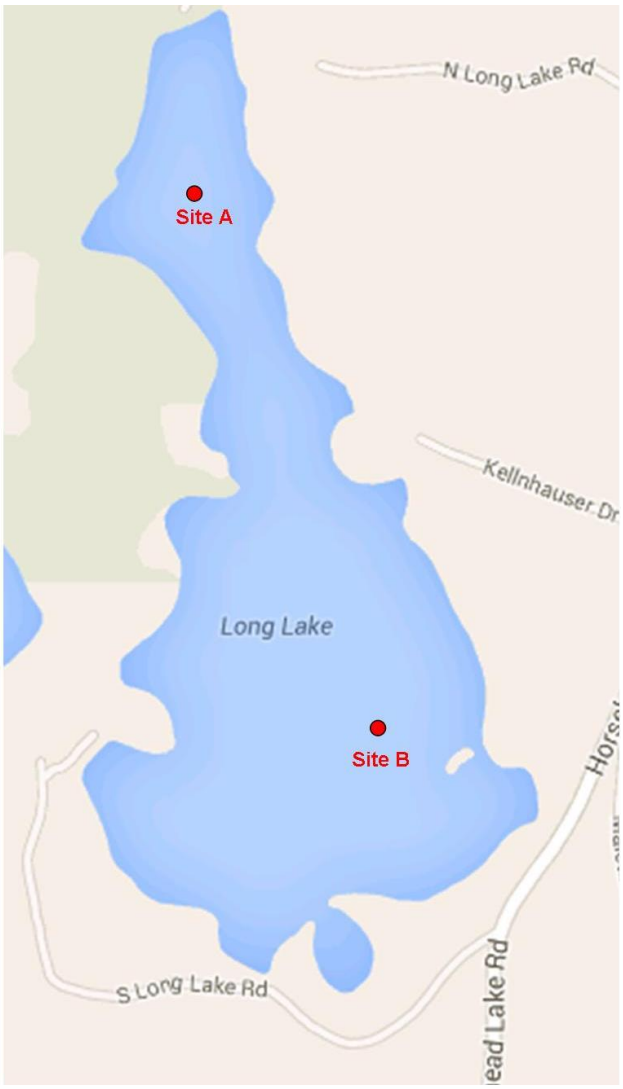

Figure 1. A map of Long Lake #1001300 including the deep hole sites A and B.

Table 1. Dissolved oxygen levels and temperature readings at deep hole site A.

Depth	Dissolved Oxygen Level	Temperature Reading
1’	8.72mg/L	69.9°F
4’	8.74mg/L	69.4°F
7’	8.79mg/L	69.2°F
10’	8.89mg/L	68.6°F
13’	8.92mg/L	67.5°F

Table 2. Dissolved oxygen levels and temperature readings at deep hole site B.

Depth	Dissolved Oxygen Level	Temperature Reading
1’	8.73mg/L	70.3°F
4’	8.77mg/L	69.9°F
7’	8.79mg/L	69.7°F
10’	8.88mg/L	68.9°F
13’	9.12mg/L	67.1°F