

Buffalo Lake

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Clarity Report of August 2nd,
2017



Land & Water Conservation Department

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Buffalo Lake AIS Monitoring and Water Clarity Report

Field Date: August 2nd, 2017
WBIC: 974200
Previous AIS Findings: Chinese Mystery Snail
New AIS Findings: Purple Loosestrife
Field Crew: Aubrey Nycz, AIS Project Leader, and Thomas Boisvert, AIS Project Assistant, Oneida County Land and Water Conservation Department
Report By: Thomas Boisvert

On August 2nd, 2017, Aubrey and I went to Buffalo Lake to implement AIS monitoring along with water clarity and quality assessments. Buffalo Lake is a small 105 acre oligotrophic lake located in Oneida County, and has one public boat launch located at the state campground. Besides the campground, Buffalo Lake's shoreline is composed of the American Legion State Forest, and a small number of homes along the Southern portion of the lake. The lake has a maximum depth of 27ft, and the substrate is reported to be 60% sand, 25% gravel, 10% rock, and 5% muck. Along with reporting the depth and substrate, the Wisconsin Department of Natural Resources also reports that the lake has largemouth bass, smallmouth bass, walleye, and panfish present. During our time on the lake though, very few fish were spotted.

The weather while conducting research on Buffalo Lake was not ideal. The outside temperature was 70 degrees Fahrenheit, the sky was overcast, there was moderate wind, and the water clarity was impaired due to waves. The weather at times proved difficult for maneuvering our canoe, and also keeping the secchi disk and Dissolved Oxygen meter vertical in the water column.

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 we had observed in the process.

To observe the water clarity and quality of Buffalo Lake, Aubrey and I went to the deep hole on the northeast side of the lake towards the middle. 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 as well. 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 water health on Buffalo Lake. The Secchi disk reading was 13 feet, and the dissolved oxygen readings can be found in table 2.

Aubrey and I did observe some Chinese Mystery Snails in Buffalo Lake, however, this invasive was already known to have been established here. Unfortunately we did find a new invasive species on Buffalo Lake. Aubrey and I noticed that Purple Loosestrife appeared to be taking over Buffalo Lake. Aubrey and I estimate that 80% of the shoreline is composed of Purple Loosestrife. This is very concerning, and the WDNR should consider high removal of Purple Loosestrife on the lake within the immediate years. While on the lake, Aubrey and I did clip all visible flowers and remove some of the larger patches.

Besides these two invasives being present, Buffalo Lake still had many native plants and animals present and thriving. The three most common plants we observed were Pickerel Weed, Broad-Leaf Cattail, and Purple Loosestrife. These plants can be seen below in table 1.

Findings: Taken 11:00 a.m. – 1 p.m. on August 2nd, 2017

Aquatic Invasive Species:

Purple Loosestrife was found along 80% of the shoreline on Buffalo Lake.

Secchi: The Secchi reading on this lake was 13 feet out of a 27 foot maximum depth. The water color was a grayish color, and was hard to see down with the waves on the lake.

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

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

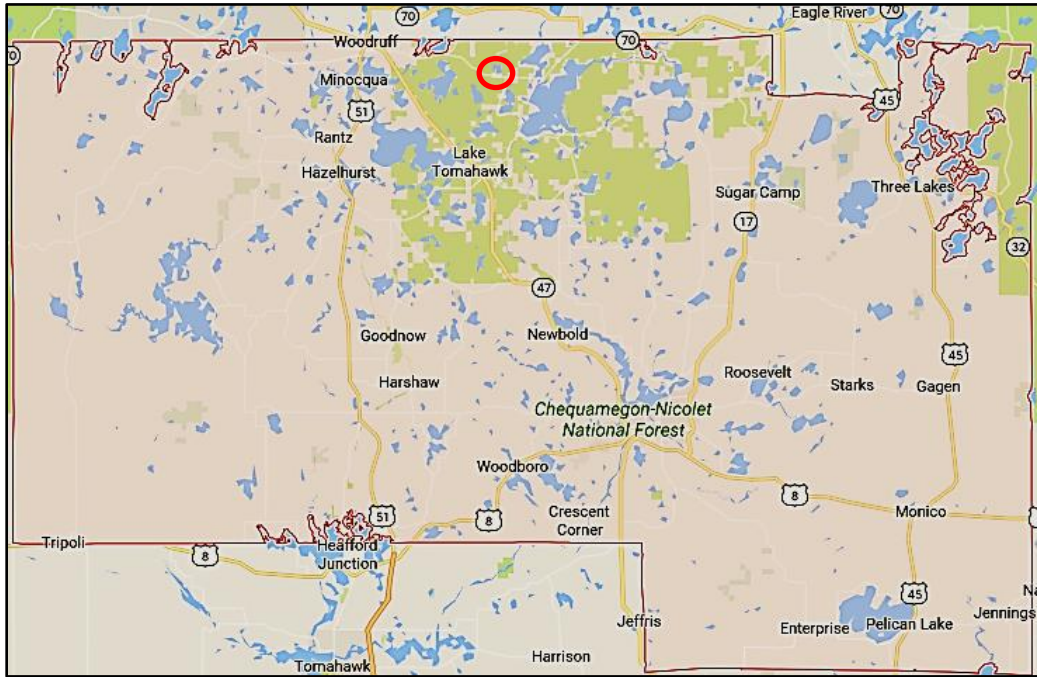


Figure 2. Map of Buffalo Lake with boat landing and location of Secchi disk reading labeled.



Deep hole & location of Secchi disk reading

Secchi Disk Readings:
Buffalo Lake - Deep Hole
Coordinates - Not Available

Boat Landing

Purple Loosestrife

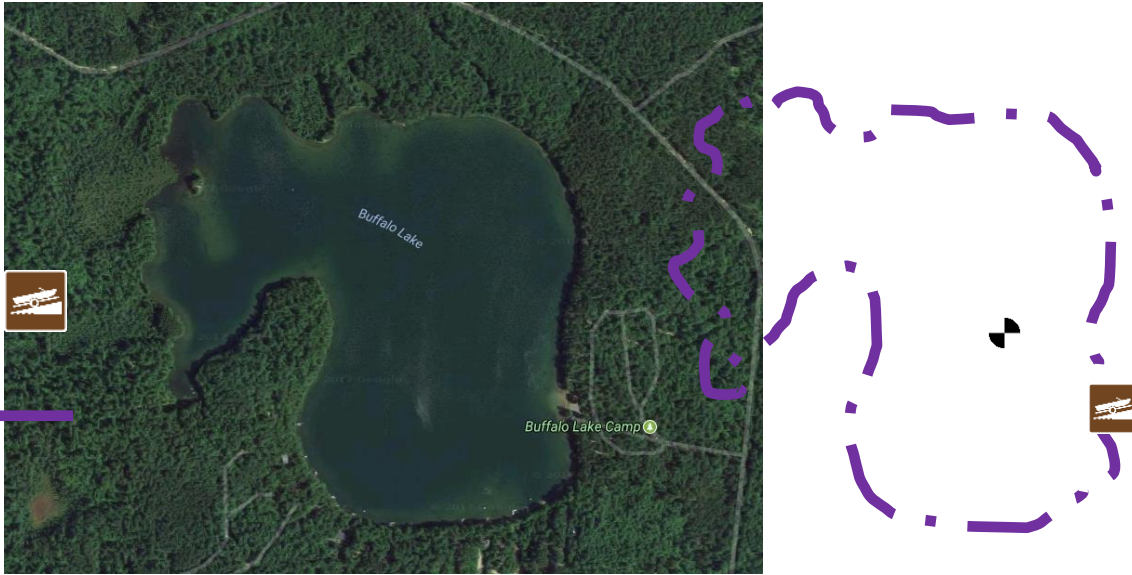


Table 1. Plants found in Buffalo Lake when monitoring.




Common Name Scientific Plant Name	Description	Image
<p>Pickereel Weed</p> <p><i>Pontederia cordata</i></p>	<p>An aquatic plant with thin, bright green leaves. Emergent leaves tend to be arrow shaped with 6 parted, blue flowers. This plant is native.</p>	 <p>Photo Credit: ediblewildfood.com</p>
<p>Broad-Leaf Cattail</p> <p><i>Typha latifolia</i></p>	<p>An herbaceous plant with leaves greater than 12 mm wide. The pollen that this plant contains is shed in clusters of four grains. This plant is native.</p>	 <p>Photo Credit: www.nwplants.com</p>
<p>Purple Loosestrife</p> <p><i>Lythrum salicaria</i></p>	<p>A flowering plant with a square or 6-sided stem and smooth leaves. Flowers tend to be a pinkish purple with 6 petals. This plant is invasive!</p>	 <p>Photo Credit: Dave Britton</p>

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

Depth (Feet)	Dissolved Oxygen Levels (mg/L)	Temperature (F)	Percent Dissolved Oxygen
2	8.11	75.9°	102.1%
4	8.18	76.5°	103.7%
6	7.93	76.6°	100.5%
8	7.91	76.7°	100.5%
10	7.89	76.8°	100.3%
12	7.64	73.9°	94.2%
14	7.85	66.9°	89.7%
16	4.86	60.9°	51.8%
18	0.14	56.2°	1.4%