



Land & Water Conservation Department

# Buffalo Lake

## Oneida County, Wisconsin

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## Buffalo Lake AIS Boat Launch and Shoreline Surveillance Monitoring Report

WBIC: 974200  
Previous AIS Findings: Chinese Mystery Snails and Purple Loosestrife  
New AIS Findings: None  
Field Date: May 31, 2020  
Field Crew: Aubrey Nycz, Lead AIS Project Assistant, Oneida County Land and Water Conservation Department  
Report By: Aubrey Nycz

On May 31, 2020, Aubrey Nycz, AIS Lead Project Assistant, visited the Buffalo Lake boat landing located off of Buffalo Lake Road, in Oneida County, to perform an AIS landing check (Figure 1). The main duties performed at AIS landing checks are to inspect shoreline vegetation, shallow aquatic vegetation, deeper aquatic vegetation (via rake), look for invasive animals, and replace old signs if needed. A GPS unit can be used to mark where the AIS check is performed, and to also mark invasive organisms if found. For today's landing check, I used the GPS on my phone to gather coordinates.

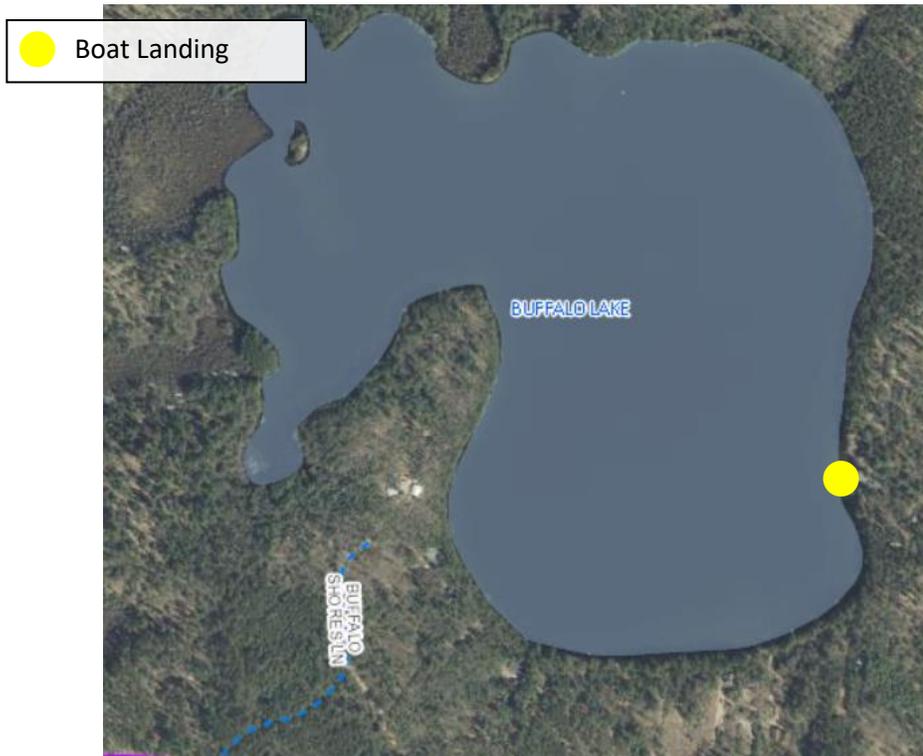
Buffalo Lake is a 105 acre seepage lake with one public boat landing. I chose to monitor this lake because it is located close to the Minocqua chain of lakes, which have many invasive species in them. Lake Minocqua is a "super spreader" for invasive species, so it is important to monitor lakes in the same area. The shoreline at the Buffalo Lake boat landing is a combination of sand and rock, and it holds a variety of native plants.

Buffalo Lake contains two kinds of invasive species. According to the Wisconsin Department of Natural Resources, Chinese Mystery Snails and Purple Loosestrife are already present in the lake. While monitoring at the boat landing, I observed three small purple loosestrife plants near the left-hand side of the boat landing. I noticed some beetle chew on these plants, so I left them there, and I plan to check on them in a couple of weeks.

**Figure 1.** Map of Oneida County, WI with Buffalo Lake circled in red.



**Figure 2.** AIS Boat Launch and Shoreline Surveillance Monitoring Location.



**Resources:** <https://dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=974200>

## Buffalo Lake AIS Monitoring and Water Clarity Report

Field Date: August 2<sup>nd</sup>, 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 2<sup>nd</sup>, 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 2<sup>nd</sup>, 2017

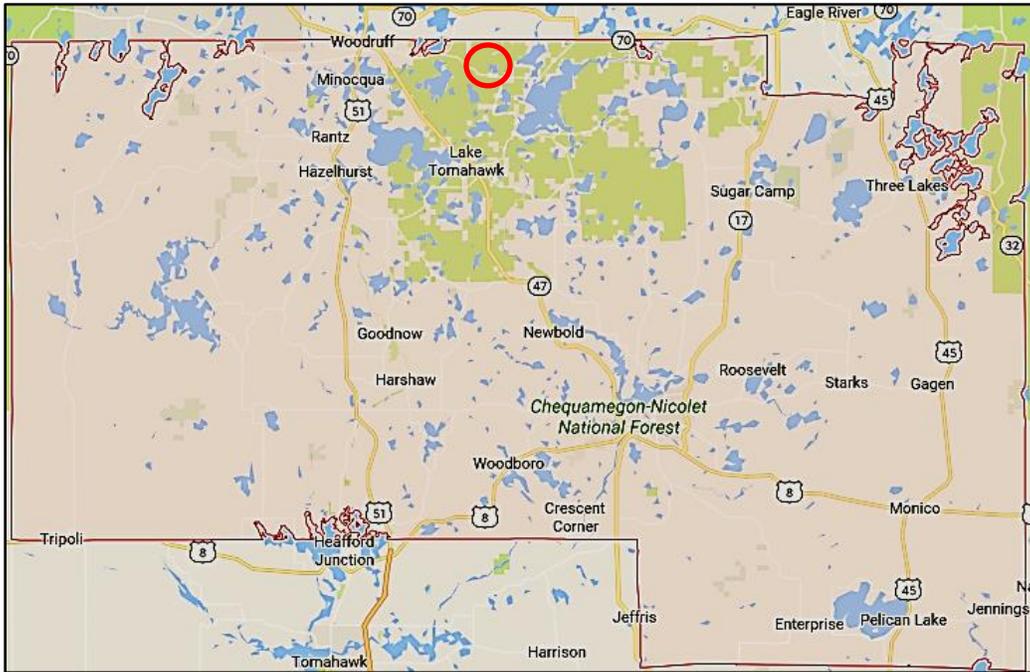
Aquatic Invasive Species:

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.

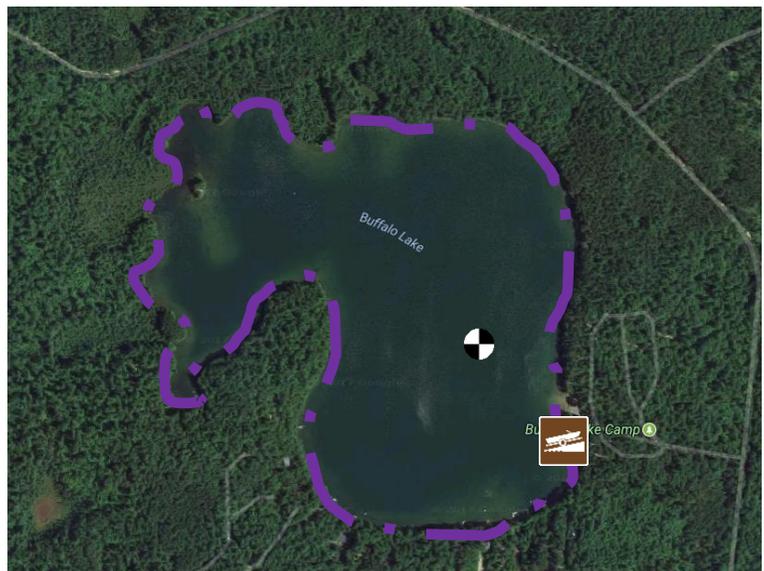
Dissolved Oxygen: These measurements can be seen in Table 2.

**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.

<p><b>Common Name</b> <b>Scientific Plant Name</b></p>	<p><b>Description</b></p>	<p><b>Image</b></p>
<p>Pickrel Weed <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 <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 <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.

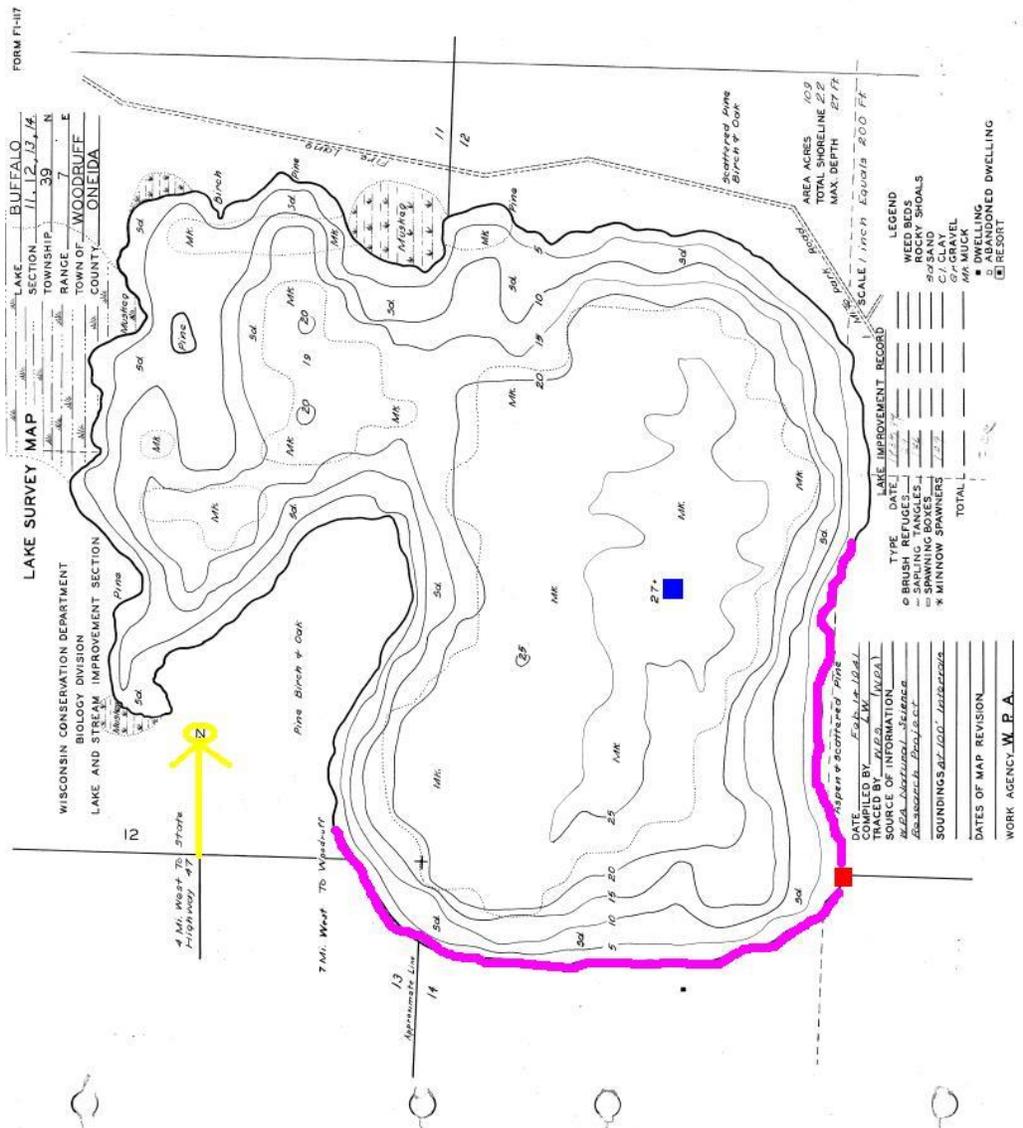
<b>Depth (Feet)</b>	<b>Dissolved Oxygen Levels (mg/L)</b>	<b>Temperature (F)</b>	<b>Percent Dissolved Oxygen</b>
2	8.11	75.9°	102.1%
4	8.18	76.5°	103.7%
6	7.93	76.6°	100.5%
8	7.91	76.7°	100.5%
10	7.89	76.8°	100.3%
12	7.64	73.9°	94.2%
14	7.85	66.9°	89.7%
16	4.86	60.9°	51.8%
18	0.14	56.2°	1.4%

## Buffalo Lake AIS Monitoring and Water Clarity Report

WBIC: 974200  
Previous AIS Findings: Chinese Mystery Snails  
New AIS Findings: None  
Field Date: August 13, 2014  
Field Crew: Stephanie Boismenu and Alyssa Nycz, AIS Project Assistants,  
Oneida County Land and Water Conservation Department  
Report by: Alyssa Nycz

Stephanie and I monitored Buffalo Lake on Wednesday, August 13<sup>th</sup>. We accessed this lake from the public boat landing located on the campground along the eastern side of the lake. We navigated to the lake's deep hole (Figure 1), where we anchored at a depth of 20 feet. We used our GPS to map the coordinates of this location, and we recorded a Secchi disk reading of 11 feet.

The wind speed picked up significantly while we were anchored at the lake's deep hole, so we decided to monitor one long stretch of the southern shoreline to avoid fighting the wind. We began to monitor the shoreline where a large stairway is cut into a hill on shore. We continued south along the shoreline, past a second set of stairs, the public beach, the boat launch, and most of the private residences along the south end of the lake. Once we had reached the end of our stretch, we canoed back the way we came, moving much closer into shore to better observe the presence/absence of AIS. Finally, we got out of the canoe and walked a short distance from either side of the boat landing, using Aquascopes to check for anything of concern. The entire stretch was very sandy. The only vegetation we observed was southwest of the boat landing, and even this vegetation was sparse. We found a few Chinese mystery snails in the same area, but we did not observe any other aquatic life. Chinese mystery snails were previously discovered on Buffalo Lake, so our findings are not surprising. What Stephanie and I found most surprising is the lack of vegetation and aquatic life in the areas of Buffalo Lake where we monitored.



**Figure 1.** Please note that we have flipped the Wisconsin Department of Natural Resources' contour map of Buffalo Lake so the north end of the lake is pointed upwards, as marked by the yellow arrow. Additionally, the red square marks the boat landing, the blue square marks the deep hole, and the pink lines represent areas of the shoreline where we visually monitored for the presence/absence of AIS.