

Mud Lake

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Clarity Report on July 25th, 2018



Land & Water Conservation Department

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Mud Lake AIS Monitoring and Water Clarity Report

Field Date: July 25th, 2018
WBIC: 1544000
Previous AIS Findings: None
New AIS Findings: Eurasian Water Milfoil, Chinese Mystery Snail
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 July 25th, 2018, Aubrey and I went to Mud Lake to implement AIS monitoring along with water clarity and quality assessments. Mud Lake is a 41 acre mesotrophic lake located in Oneida County with no public boat launches. Access can be obtained through the channel connecting Mud Lake to Little Lake Tomahawk. The shoreline along Mud Lake is composed of private owners and public land. The lake has a maximum depth of 26 feet, and the substrate is reported to be 40% sand, 0% gravel, 0% rock, and 60% muck. Along with reporting the depth and substrate, the Wisconsin Department of Natural Resources also reports that the lake has musky, northern pike, largemouth bass, and panfish present.

The weather while conducting research on Mud Lake was pleasant. The outside temperature was in the mid-70 degrees Fahrenheit, the sky was partly cloudy, the wind was fairly calm, and the water clarity was excellent. There was no adverse weather to impede our measurements in any way.

When conducting our AIS lake survey, the AIS team 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 Mud Lake, the AIS team went to the deep hole and 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 also 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. Both of

these measurements were relatively average in nature, and there should be no concern for the health of Mud Lake, other than the new invasive species we found. The Secchi disk reading was 10.5 feet, and the dissolved oxygen readings can be found in table 2.

The AIS team was disheartened to see that Chinese Mystery Snails and Eurasian Water Milfoil, new invasive species, were present at this time in small amounts on the southwest side of the lake. In addition, Purple Loosestrife was found in the channel that connects Mud Lake to Little Lake Tomahawk, although none was found within Mud Lake's boundaries. Despite this, a good variety of native plants were present and thriving. The most common aquatic plants present were White Water Lily, Spatterdock, Common Bladderwort, several varieties of small pondweeds, Coontail, Watershield, and blooming Water Smartweed. Some of the plants can be seen below in table 1.

Findings: Taken 12:00 pm – 1:30 p.m. on July 25th, 2018

Aquatic Invasive Species: We found Chinese Mystery Snails and Eurasian Water Milfoil in Mud Lake.

Secchi: The Secchi reading on this lake was 10.5 feet out of a 26 foot maximum depth. The water color was a yellowish color, and appeared clear when glancing across the lake.

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

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

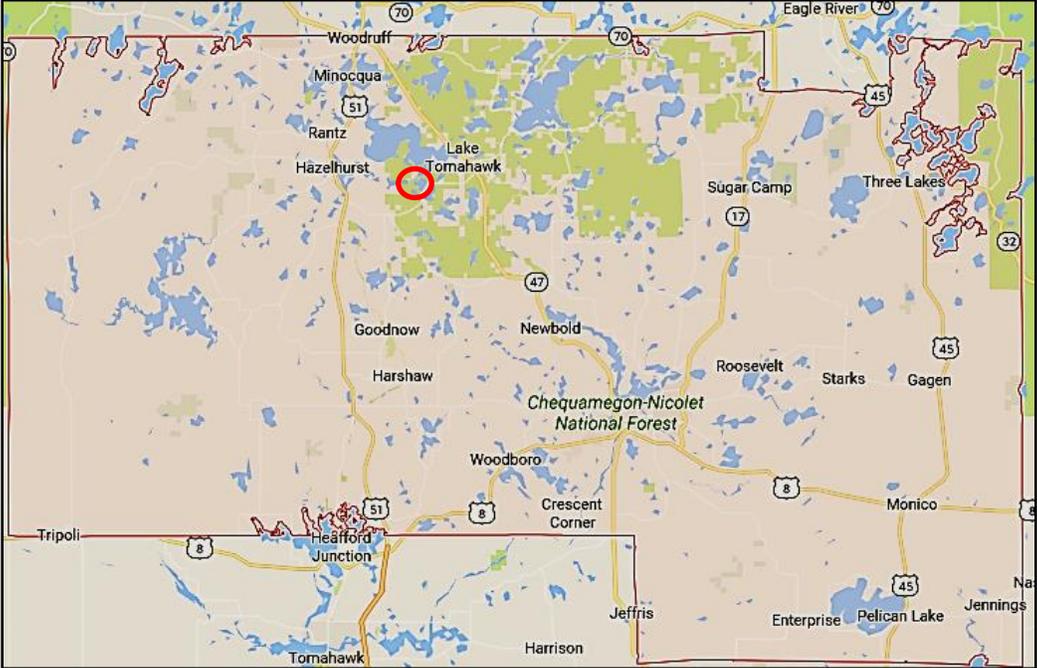


Figure 2. Map of Mud Lake with location of Secchi disk reading labeled.

 Deep hole & location of Secchi disk reading



Table 1. Plants found in Mud Lake when monitoring.

Common Plant Name Scientific Plant Name	Description	Image
<p>Water Shield</p> <p><i>Brasenia schreberi</i></p>	<p>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.</p>	 <p>Photo Credit: Shannon Sharp</p>
<p>Bullhead Pond Lily (Spatterdock)</p> <p><i>Nuphar variegata</i></p>	<p>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.</p>	
<p>Bladderwort</p> <p><i>Utricularia spp.</i></p>	<p>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.</p>	 <p>Photo Credit: frenchhill.org</p>
<p>White Water Lily</p> <p><i>Calla Palustris</i></p>	<p>A native pant common in more acidic, shallow water and bogs. They typically bloom between May and June, and can be identified by having waxy smooth, heart-shaped leaves, and nearly cylindrical white flowers called the spadix. This plant is native.</p>	 <p>Photo Credit: Joseph A. Marcus</p>

<p>Water Smartweed</p> <p><i>Persicaria amphibia</i></p>	<p>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.</p>	 <p>Photo Credit: Superior National Forest/CCSA</p>
<p>Pickerel 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>Coontail</p> <p><i>Ceratophyllum demersum</i></p>	<p>An aquatic plant that is often heavily branched and light green to brown in color. This plant typically grows to be 2 meters tall and has whorled leaves that branch once or twice. Coontail can appear to be bushy at the tip. This plant is native.</p>	 <p>Photo Credit: illinoiswildflowers.info</p>
<p>Eurasian Water Milfoil</p> <p><i>Myriophyllum Spicatum</i></p>	<p>An aquatic plant with 12 or more pairs of leaflets per leaf. Leaves are very fine and tend to resemble a feather. The stem on this plant is reddish in color. This plant is invasive!</p>	 <p>Photo Credit: Ian Shackleford</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	8.2	75.1	102.9%
4	8.08	74.9	101.9%
6	8.32	74.0	103.2%
8	7.79	72.4	95.2%
10	6.95	69.8	82.5%
12	6.65	63.7	73.7%
14	1.62	55.6	16.3%
16	0.11	50.4	1.0%