# Madeline Lake

Land & Water Conservation Department

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**Madeline Lake AIS Monitoring and Water Clarity Report**

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|---|---|
| Field Date: | June 19th, 2017 |
| WBIC: | 1544700 |
| Previous AIS Findings: | Banded Mystery Snail, Chinese Mystery Snail, Purple Loosestrife, Rusty Crawfish |
| New AIS Findings: | None |
| 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 July 19th, 2017, Aubrey and I went to Madeline Lake to implement AIS monitoring along with water clarity and quality assessments. Madeline Lake is a 172 acre eutrophic lake located in both Oneida and Vilas Counties, and has one public boat launch. The shoreline along Madeline Lake is composed of private owners, the Northern Highland State Forest, the American Legion State Forest, and the WDNR's Art Oehmcke Fish Hatchery. Since most of the lake is open to the public, many recreational opportunities are available year round, and many people take advantage of this opportunity. The lake has a maximum depth of 17 feet, and the substrate is reported to be 65% sand, 15% gravel, 5% rock, and 15% 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, walleye, and panfish present. We observed this firsthand as bluegill and largemouth bass were seen in moderate quantities along the shoreline.

The weather while conducting research on Madeline Lake was ideal. The outside temperature was 80 degrees Fahrenheit, the sky was sunny, no wind, and the water clarity was good. There was no adverse weather to impede our measurements in any way.

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. When possible we got in the water and used the aquascopes to have a closer look at the bottom composition.

To observe the water clarity and quality of Madeline Lake, Aubrey and I went to the deep hole towards the eastern 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 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. Thankfully, both of these measurements were relatively average in nature, and there should be no concern for the health of Madeline Lake. The Secchi disk reading was 10.5 feet, and the dissolved oxygen readings can be found in table 2.

Aubrey and I had noticed copious amounts of both the Chinese and Banded Mystery Snails while out on Madeline Lake, and both of these invasives were already known to be established in Madeline Lake. However, we were glad to see that no new invasive species were present at this time. The lake seems to be healthy, and many native plants were present and thriving. The three most common native plants we observed were Pickerel Weed, Bullhead Pond Lily, and Large Purple Bladderwort. These plants can be seen below in table 1.

**Findings:** Taken 2:00 p.m. – 4:00 p.m. on July 19th, 2017

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

Secchi: The Secchi reading on this lake was 10.5 feet out of a 17 foot maximum depth. The water color was a greenish color, and appeared murky when glancing across the lake.

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

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

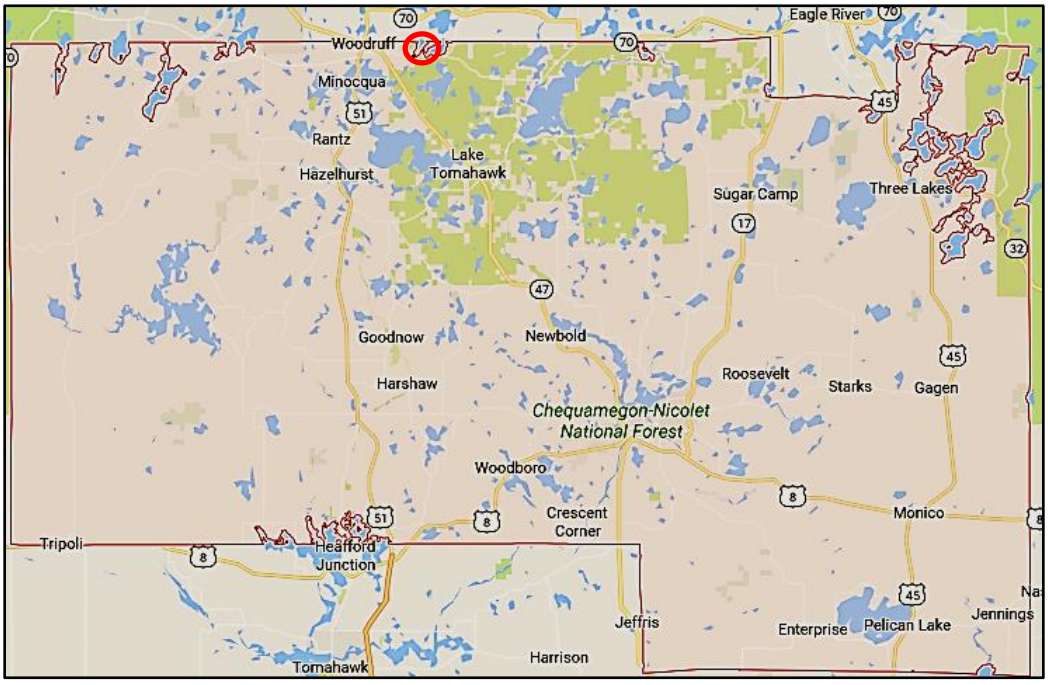



**Figure 2.** Map of Madeline Lake with boat landing and location of Secchi disk reading labeled.

Public boat landing

Deep hole & location of Secchi disk reading

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

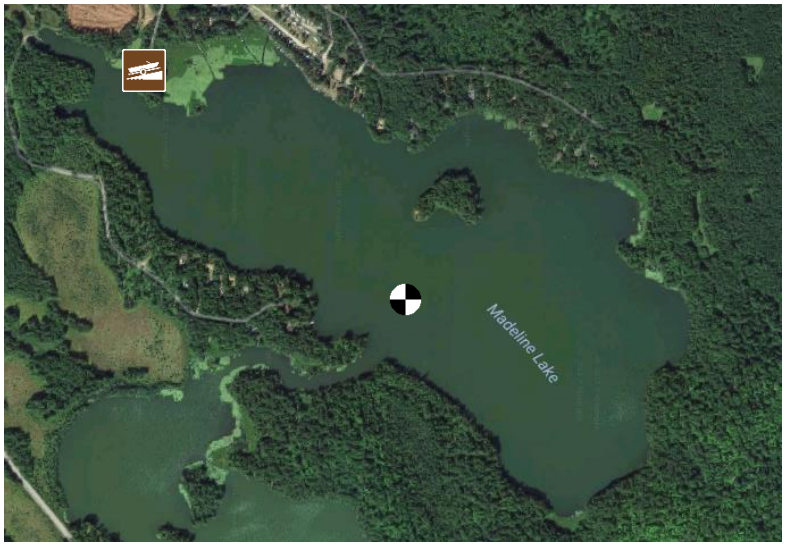


**Table 1.** Plants found in Madeline Lake when monitoring.

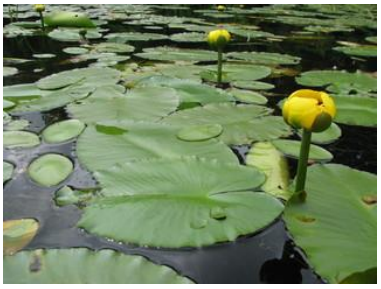
| Common Plant Name<br>Scientific Plant Name | Description | Image |
|---|---|---|
| Pickerel Weed<br><br>*Pontederia cordata* | An aquatic plant with thin, bright green leaves. Emergent leaves tend to be arrow shaped with 6 parted, blue flowers. This plant is native. |  |
| Bullhead Pond Lily (Spatterdock)<br><br>*Nuphar variegata* | An aquatic plant with heart-shaped leaves that can grow to be 15inches long. This plant also has a yellow, cup-shaped flower. This plant is native. |  |
| Large Purple Bladderwort<br><br>*Utricularia purpurea* | 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. |  |

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

| Depth (Feet) | Dissolved Oxygen Levels (mg/L) | Temperature (F) | Percent Dissolved Oxygen |
|---|---|---|---|
| 2 | 9.86 | 78.2° | 127.5% |
| 4 | 10.14 | 77.2° | 129.9% |
| 6 | 10.85 | 76.2° | 137.6% |
| 8 | 11.04 | 75.9° | 139.5% |
| 10 | 12.26 | 74.8° | 153.0% |