Land & Water Conservation Department

Cunard Lake

Oneida County, Wisconsin

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Land & Water Conservation Department

Michele Sadauskas, County Conservationist
Stephanie Boismenue, AIS Coordinator
Jonna Stephens Jewell, Program Assistant

Oneida County Courthouse
P O Box 400, Rhinelander, Wisconsin 54501
Phone (715) 369-7835 Fax (715) 369-6268
www.oneidacountyais.com

Cunard Lake AIS Boat Launch and Shoreline Surveillance Monitoring Report

WBIC:	1590000
Previous AIS Findings:	Chinese Mystery Snails
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

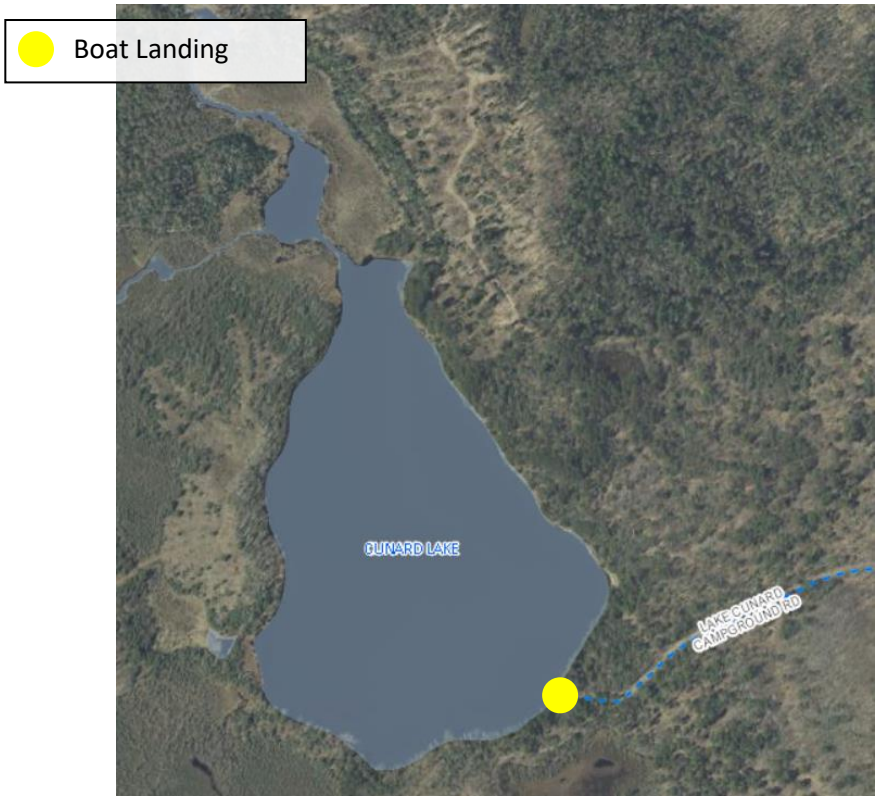
On May 31, 2020, Aubrey Nycz, AIS Lead Project Assistant, visited the Cunard Lake boat landing located at the end of Cunard Campground Road, in Oneida County, to perform and AIS landing check (Figure 1). The main duties performed at AIS landing checks are to inspect shoreline vegetation, shallow aquatic 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.

Cunard Lake is a 44 acre spring 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 Cunard Lake boat landing is mainly sand, and it holds a variety of native plants. I observed healthy populations of largeleaf pondweed and waterweed growing around the boat launch.

Cunard Lake contains one invasive species. According to the Wisconsin Department of Natural Resources, Chinese Mystery Snails are already present in the lake. While monitoring at the boat landing, I did not observe any Chinese Mystery Snails, or any other invasive species.

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

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



Resources: https://dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=1590000

Cunard Lake AIS Monitoring and Water Clarity Report

Field Date:	July 12th, 2017
WBIC:	1590000
Previous AIS Findings:	Chinese Mystery Snail
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 12th, 2017, Aubrey and I went to Cunard Lake to implement AIS monitoring along with water clarity and quality assessments. Cunard Lake is a small 44 acre mesotrophic lake located in Oneida County, and has one public boat launch. The entire shoreline of Cunard Lake is a part of the American Legion Sate Forest, and is widely open to the public. The lake has a maximum depth of 23 feet, and the substrate is reported by the WDNR to be 60% sand, 15% gravel, 5% rock, and 20% muck. Along with reporting the depth and substrate, the WDNR also reports that the lake has musky, largemouth bass, northern pike, walleye, and panfish present. While conducting our shoreline scan, we observed bluegill, crappie, and perch along the shoreline areas.

The weather while conducting research on Cunard Lake was fair. The outside temperature was 75 degrees Fahrenheit, the sky was partly cloudy, little to no wind, and the water clarity was very good. Overall, 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 Cunard Lake, Aubrey and I went to the deep hole towards the middle 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 also 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 Cunard Lake. The Secchi disk reading was 9 feet, and the dissolved oxygen readings can be found in table 2.

Aubrey and I had seen a few Chinese Mystery Snails, but these were already known to be established in Cunard Lake. We were glad to see that no new invasive species were present at this time, and that the lake seemed to be healthy with many native plants present and thriving. The 4 most common native plants that we observed were Pickerel Weed, White Water Lily, Bullhead Pond Lily, and Large Purple Bladderwort. These plants can be seen below in table 1.

Findings: Taken 11 a.m. – 1 p.m. on July 12, 2017

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

Secchi: The Secchi reading on this lake was 9 feet out of a 23 foot maximum depth. The water color was a bluish 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 Cunard Lake circled in red (approximate location)

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

Public boat landing

Deep hole & location of Secchi disk reading

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

Table 1. Plants found in Cunard Lake when monitoring.

Common Plant Name Scientific Plant Name	Description	Image
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.	
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.	

Bullhead Pond Lily (Spatterdock) *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 *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	8.34	75.3°	105.4%
4	8.37	74.7°	105.2%
6	8.45	73.9°	105.3%
8	8.36	69.7°	99.7%
10	6.50	62.1°	71.0%
12	4.88	56.3°	49.8%
14	3.52	52.8°	34.3%