Land & Water Conservation Department

Sweeny Lake

Oneida County, Wisconsin

Land & Water Conservation Department

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Sweeny Lake AIS Boat Launch and Shoreline Surveillance Monitoring Report

WBIC:	1589600
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 Sweeny Lake boat landing located off of Sweeny Lake 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.

Sweeny Lake is a 191 acre drainage 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 Sweeny Lake boat landing is mainly sand, and it holds a variety of native plants.

Sweeny 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 plan to return to this site within the next couple of weeks to remove the purple loosestrife.

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

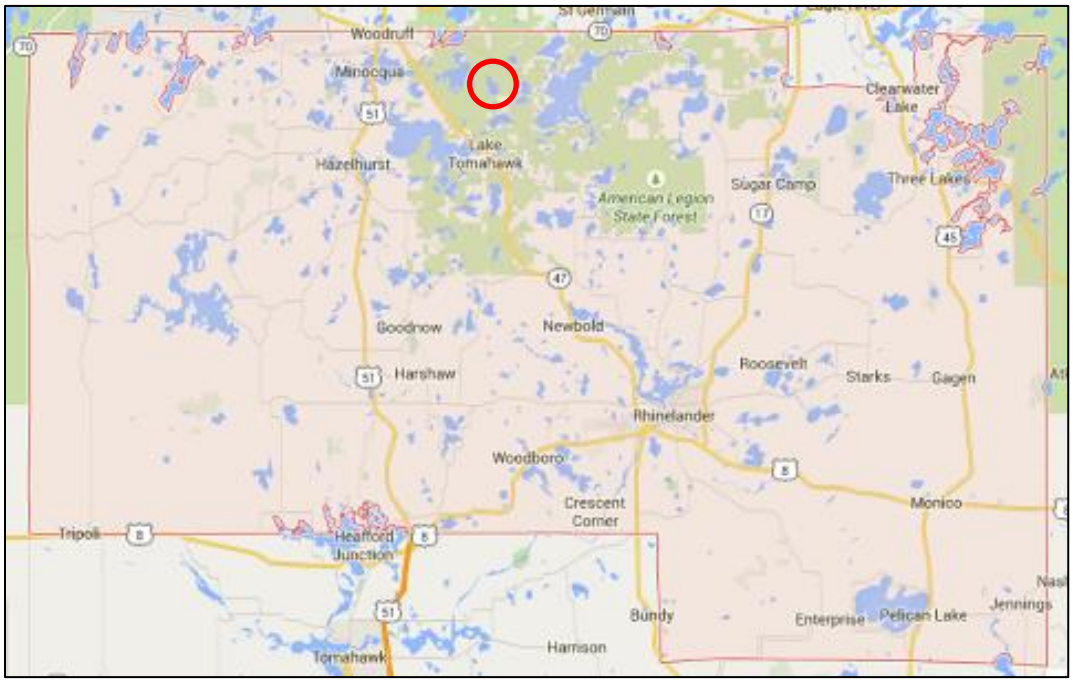
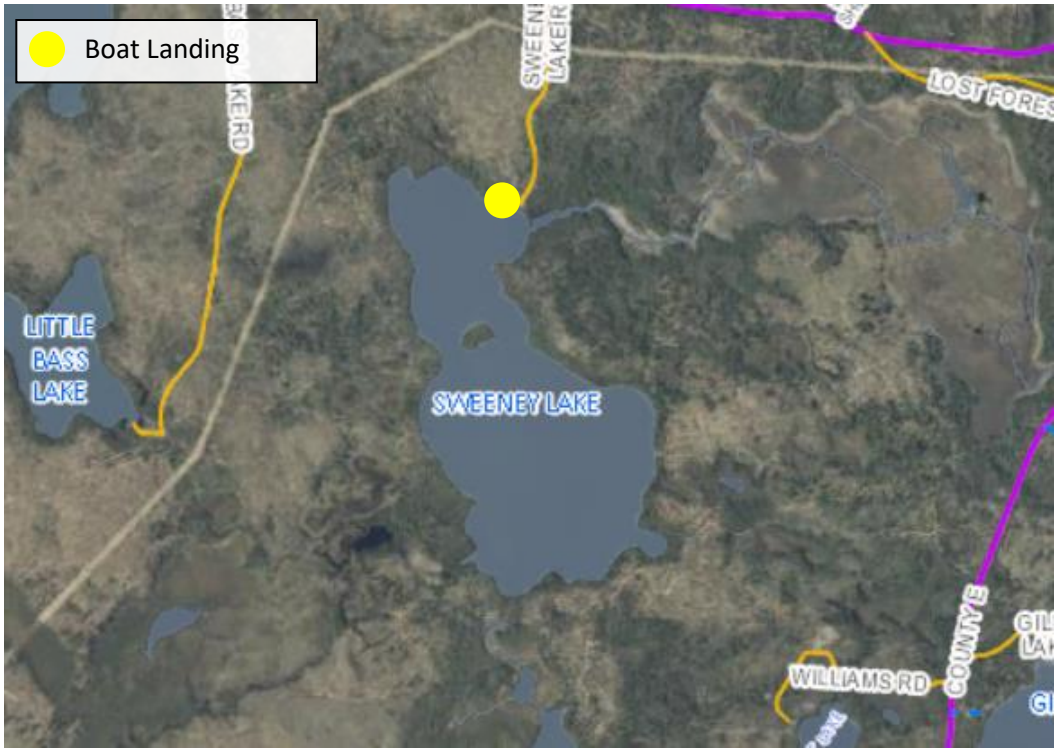


Figure 2. AIS Boat Launch and Shoreline Surveillance Monitoring Location.



Resources: https://dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=1589600

Sweeny Lake AIS Monitoring and Water Clarity Report

Field Date:	July 12th, 2017
WBIC:	1589600
Previous AIS Findings:	Chinese Mystery Snail, Purple Loosestrife
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 Sweeny Lake to implement AIS monitoring along with water clarity and quality assessments. Sweeny Lake is a medium sized, 191 acre eutrophic lake located in Oneida County, and has one public boat launch. Besides the public boat launch, the entire shoreline around the lake belongs to the American Legion State forest, and it is widely open to the public as well. The lake has a maximum depth of 18 feet, and the substrate is reported to be 80% sand, 5% 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 musky, northern pike, walleye, largemouth bass, and panfish present. We observed many bluegill along the shoreline, but no other fish during the monitoring.

The weather while conducting research on Sweeny Lake was fair. The outside temperature was 80 degrees Fahrenheit, the sky was partly cloudy, little to no wind, and the water clarity was fair. 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 Sweeny Lake, Aubrey and I went to the deep hole on the backside of the island, 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 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 Sweeny Lake. The Secchi disk reading was 8 feet, and the dissolved oxygen readings can be found in table 2.

Aubrey and I did observe some Chinese Mystery Snails in Sweeny Lake, however, this invasive was already known to have been established in the lake. That being said, we were glad to see that no new invasives were present at this time. The lake seems to be healthy, and many native plants were present and thriving. The four most common native plants 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 2:00 p.m. – 4:00 p.m. on July 12th, 2017

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

Secchi: The Secchi reading on this lake was 8 feet out of an 18 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 Sweeny Lake circled in red (approximate location)

Figure 2. Map of Sweeny Lake with the boat landing and location of Secchi disk readings labeled.

Public boat landing

Deep hole & location of Secchi disk reading

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

Table 1. Plants found in Sweeny 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	8.95	78.9°	117.6%
4	9.05	78.2°	118.1%
6	9.30	75.4°	117.9%
8	9.11	74.3°	114.2%
10	6.32	70.4°	76.0%
12	0.81	66.7°	9.4%

Sweeny Lake AIS Monitoring and Water Clarity Report

WBIC:	1589600
Previous AIS Findings:	Chinese Mystery Snails
New AIS Findings:	Purple Loosestrife
Field Date:	August 13, 2014
Field Crew:	Stephanie Boismenue and Alyssa Nycz, AIS Project Assistants, Oneida County Land and Water Conservation Department
Report by:	Alyssa Nycz

Stephanie and I monitored Sweeny Lake on Wednesday, August 13th. After launching our canoe at the lake's public access, we discovered a purple loosestrife colony to the west of the boat landing. We estimate that the colony extends about 25 feet down the shoreline. We originally planned to clip these plants, just as we have clipped other purple loosestrife plants in Oneida County. However, a closer look revealed that we need waders to clip the purple loosestrife at this location.

As Stephanie and I were navigating to the lake's deep hole, we noticed that the depth finder was reading depths greater than 5.7 feet, so the Wisconsin Department of Natural Resources' contour map (Figure 1) is no longer accurate with regards to depth. We anchored the canoe at a depth of 12 feet and mapped GPS coordinates of our location. At the deep hole, we recorded a Secchi disk reading of only 3 feet. Our dissolved oxygen measurements are represented in Table 1.

The first area of shoreline we visually monitored was northeast of our deep hole. We did not observe anything of concern along this stretch of shoreline. There is native vegetation at this location, which we mapped with the GPS. Stephanie and I wanted to canoe the northern shoreline of the island for our second location, but due to the wind speed, this would have been difficult. Instead, we began monitoring the southern shoreline of the island, working westward from a large white pine that has fallen sideways over the water. We observed lots of vegetation here that provides for good fish habitats. We continued canoeing around the northwest side of the island, and then made our way back to the boat landing to monitor along this shoreline, as well. At the boat landing, we observed two Chinese mystery snails, but since these have been previously identified on the lake, our finding is not new.

Overall, the only cause for concern that we observed on Sweeny Lake is the cluster of purple loosestrife plants growing to the west of the boat launch.

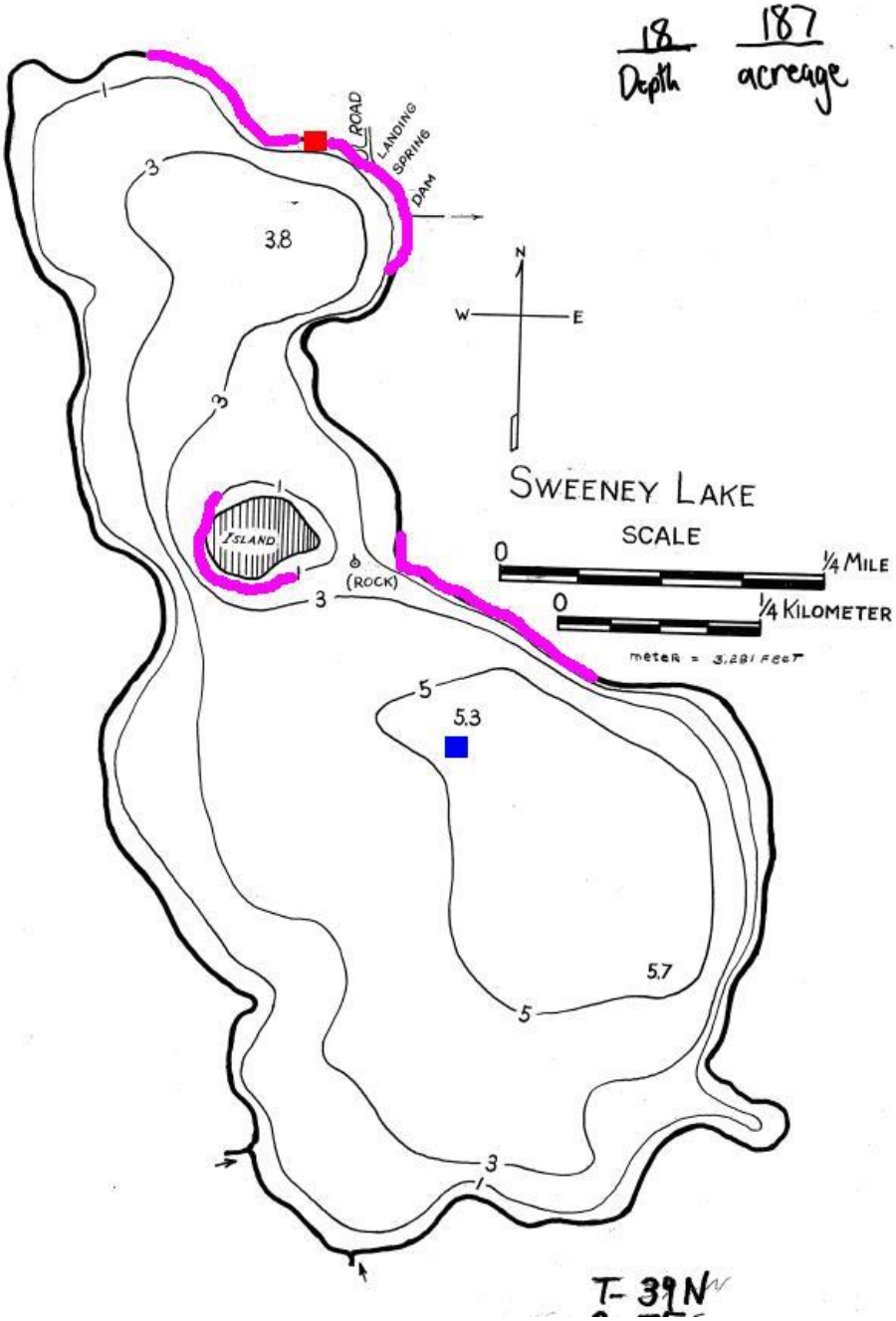


Figure 1. A map of Sweeney Lake: the red square is the approximate location of the public boat landing, the blue square is the approximate location of our deep site, and the pink lines represent areas where we visually monitored the shoreline for the presence/absence of AIS.

Table 1. Dissolved oxygen and temperature readings were taken at our deep hole site, where the depth was approximately 12 feet.

Depth	Dissolved Oxygen Level	Temperature Reading
1’	7.37 mg/L	71.2°F
4’	7.05 mg/L	71.3°F
7’	6.91 mg/L	71.2°F
10’	6.82 mg/L	71.1°F