Birch Lake

Page 1: AIS Monitoring and Water Clarity Report on August 15th, 2018

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

Birch Lake AIS Monitoring and Water Clarity Report

Field Date:	August 15th, 2018
WBIC:	1523800
Previous AIS Findings:	None
New AIS Findings:	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 August 15th, 2018, Aubrey and I went to Birch Lake to implement AIS monitoring along with water clarity and quality assessments. Birch Lake is a 198 acre mesotrophic lake located in Oneida County with no public access aside from resorts. The shoreline along Birch Lake is composed of private owners and American Legion State Forest. The lake has a maximum depth of 27 feet, and the substrate is reported to be 55% sand, 15% gravel, 5% rock, and 25% muck. Along with reporting the depth and substrate, the Wisconsin Department of Natural Resources also reports that the lake has musky, walleye, largemouth bass, northern pike, and panfish present.

The weather while conducting research on Birch Lake was pleasant. The outside temperature was in the low 70s degrees Fahrenheit, the sky was cloudy, the wind was fairly calm, and the water clarity was good. 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 Birch 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. 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 Birch Lake. The Secchi disk reading was 7 feet, and the dissolved oxygen readings can be found in table 2.

The AIS team was disheartened to discover that Chinese Mystery Snails, a new invasive species, were present at this time in the bay on the west side of the lake between Lakewood Road and West Birch Lake Road. This bay was extremely mucky and filled with algae and vegetation. Despite this, the remainder of the lake seems to be healthy, and native plants were present and thriving. Common plants found in Birch Lake can be seen below in table 1.

Findings: Taken 11:00 a.m. – 2:00 p.m. on August 15th, 2018

Aquatic Invasive Species: We found Chinese Mystery Snails in Birch Lake.

Secchi: The Secchi reading on this lake was 7 feet out of a 27 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 Birch Lake circled in red (approximate location).

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

Deep hole & location of Secchi disk reading

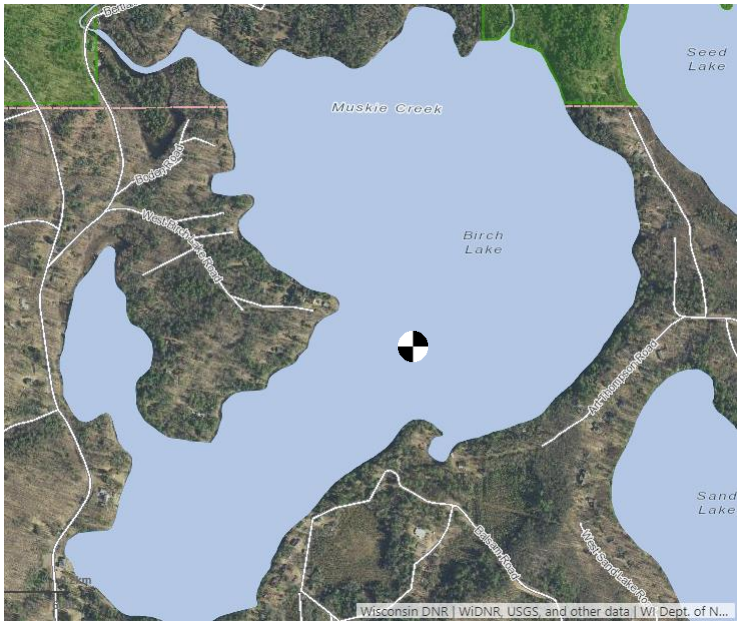

Table 1. Common plants found in Birch Lake when monitoring.

Common Plant Name Scientific Plant Name	Description	Image
Water Shield *Brasenia schreberi*	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.	 *Photo Credit: Shannon Sharp*

Bullhead Pond Lily (Spatterdock) *Nuphar variegata*	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.	 *Photo Credit: Jomegat's Weblog*
Large Leaf Pondweed *Potamogeton amplifolius*	An aquatic plant with sickle-shaped submergent leaves. Leaves ten to be 4-7cm wide and 8-20cm long. This plant is native.	 *Photo Credit: Dan Busemeyer*
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.	 *Photo Credit: Jody Partin*
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.	 *Photo Credit: Joseph A. Marcus*

Coontail *Ceratophyllum demersum*	An aquatic plant that is often heavily branched and light green to brown in color. This plant typically grows to be 2 m tall and has whorled leaves that branch once or twice. Coontail can appear to be bushy at the tip. This plant is native.	 *Photo Credit: illinoiswildflowers.info*
Common Waterweed *Elodea canadensis*	An aquatic plant that has rings of 3 leaves around its stem. Leaf edges are smooth. This plant is native.	 *Photo Credit: Christian Fischer*

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

Depth (Feet)	Dissolved Oxygen Levels (mg/L)	Temperature (F)	Percent Dissolved Oxygen
2	8.52	79.1	111.5%
4	8.46	78.8	110.4%
6	8.45	78.7	110.0%
8	8.47	78.3	109.9%
10	8.5	76.1	107.7%
12	6.38	73.1	78.5%
14	2.27	69.1	26.8%
16	0.18	64.1	2.0%
18	0.05	59.2	0.5%