

# Echo Lake

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Clarity Report of August 18,  
2016



Land & Water Conservation Department

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## Echo Lake AIS Monitoring and Water Clarity Report

WBIC: 1597800  
Previous AIS Findings: Purple Loosestrife (not verified) and Rusty Crayfish  
New AIS Findings: Purple Loosestrife (verified)  
Field Date: August 18, 2016  
Field Crew: Stephanie Boismenu, AIS Coordinator, and Abbi Bowman, AIS Project Assistant, Oneida County Land and Water Conservation Department  
Report By: Abbi Bowman

Stephanie and I monitored Echo Lake on August 18, 2016. Echo Lake is located just outside of Rhinelander, WI in Sugar Camp, WI, which is part of Oneida County (Figure 1). It is a drainage lake of 93 acres with a maximum depth of 18 feet. The substrate on the lake is 60% sand, 25% muck, and 15% gravel. There are plenty of fish species that dominate this lake, however, the most common species are Panfish, Musky, Large and Smallmouth Bass, Northern Pike, and Walleye. Echo Lake's trophic state is listed as eutrophic. Eutrophic lakes are characterized by having an excessive amount of dissolved nutrients in the water, frequently caused by runoff of surrounding land, and negatively can lead to dense plant growth and death of wildlife due to low oxygen levels in the water. Several small clusters of algae were found on the lake, but none that were harmful. The native plants were rather plentiful surrounding the shoreline. Echo Lake has numerous homes/cabins placed around its perimeter and seems to be a somewhat frequented lake; likely due to being connected with Chain Lake and Stone Lake on opposite ends. Being an active waterbody, large quantities of human and boat activity can lead to high amounts of land and wildlife disruption if not cared for properly.

Since there aren't any public boat landings on all of Echo Lake, we launched from a family's home who we had permission to do so from. There is a very small kayak/canoe entrance that runs through the woods near where we entered; however, I wouldn't consider it an actual landing because it would be difficult to enter even a small watercraft from this spot. We observed the family's property shoreline for any possible invasives, and then continued on their small 1950's wooden motorboat where we outlined the perimeter of most of the lake, checked several private landings, and a few residence shorelines. The weather was fairly cooperative in

that it was warm but cloudy. It was slightly windy, but not enough to have affected our dissolved oxygen (D.O.) readings. We visually monitored the rest of Echo Lake to the best of our ability in the couple hours we were given to observe and document our findings.

We used an already existing contour map of Echo Lake to assist us in finding the deep hole, and then further used the depth finder along with the family's existing knowledge to bring us out to 15 feet to gather the most accurate data. The deep hole for Echo Lake is 18 feet but we were unable to find its exact location, so we used the 15 foot mark as our point. We navigated the small motorboat until we found a good anchoring point. At this anchoring point, we would normally take the GPS coordinates of our deep hole location, but we forgot our GPS for the day so we simply marked everything on our contour map to the best of our ability. We also did measurements on water clarity using the Secchi disk, dissolved oxygen using the dissolved oxygen meter, and temperature (Table 1).

After data collection, we continued boating the shoreline of Echo Lake. The lake itself is medium sized in acreage, so we were easily able to cover the majority of Echo Lake's perimeter within a few hours by motorboat. We did visual inspections from the boat in the time we monitored, and were able to verify that there indeed is Purple Loosestrife on Echo Lake and it is vastly spread around the entire shoreline. We additionally stopped numerous times to get out of the boat and search along the shore for snails, mussels, crayfish, and any other potential invasives. We also found (but does not limit the entire plant/animal species of Echo Lake to our findings) a very thriving and diverse native plant community spread across the lake's shoreline that included Clasp Leaf Pondweed, Watershield, Water Celery, Cattails, Wild Rice, Spatterdock, Bladderwort, Coontail Milfoil, Horsetail, and Water Lillies.

**Findings:** All taken starting at 2:10 p.m.

Aquatic Invasive Species:

Purple Loosestrife is now verified on Echo Lake; small to medium sized colonies are scattered along the entire shoreline.

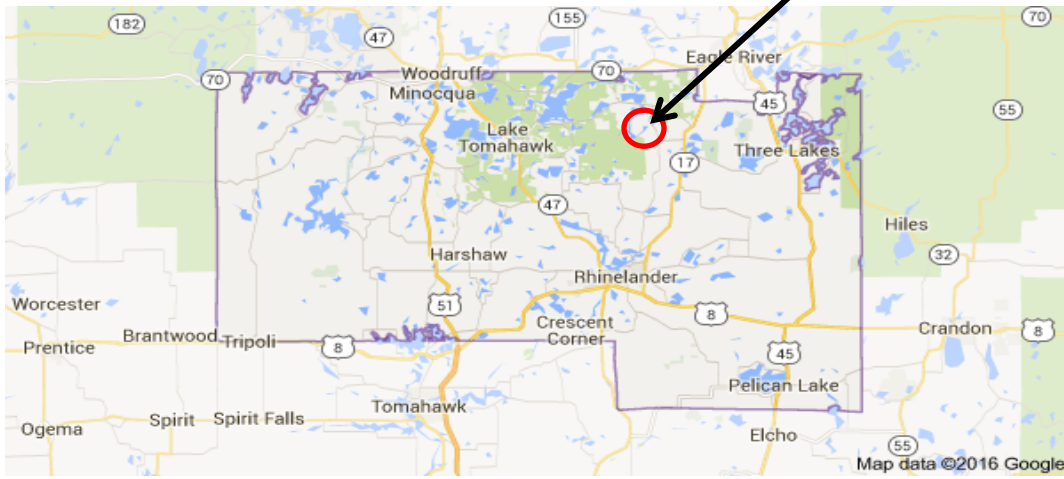
Secchi:

The Secchi reading on this lake was 3 feet out of an 18 foot max depth. The water color was a very dark brown, so the Secchi reading was consistent with the water color.

Dissolved Oxygen:

These measurements were taken in two foot increments and can be seen in Table 1.

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



**Figure 2.** Map of Echo Lake with where we entered and the spot we took our deep hole data.



Echo Lake - Deep Hole

Latitude 45.83

Longitude -89.38

**Table 1.** Dissolved oxygen levels and temperatures at the “deep hole”.

<b>Depth (Feet)</b>	<b>Dissolved Oxygen Levels (mg/L)</b>	<b>Temperature (F)</b>
<b>2</b>	8.08	80.1
<b>4</b>	5.99	75.9
<b>6</b>	3.22	73.6
<b>8</b>	0.25	71.5
<b>10</b>	0.08	67.2
<b>12</b>	0.04	64.1
<b>14</b>	0.02	58.9

Resources: <http://dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=1617200&page=facts>