

Emma lake

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 Clarity Report of July 15, 2016



Land & Water Conservation Department

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Emma Lake AIS Monitoring and Water Clarity Report

WBIC: 983500

Previous AIS Findings: None

New AIS Findings: None

Field Date: July 15, 2016

Field Crew: Stephanie Boismenu, AIS Coordinator, and Aubrey Nycz, AIS Project Assistant, Oneida County Land and Water Conservation Department

Report By: Aubrey Nycz

Stephanie and I monitored Emma Lake on July 15, 2016. Emma Lake is located South-West of Rhinelander, WI in Oneida County, and the boat launch is located on Cook Drive. It is a seepage lake of 227 acres with a maximum depth of 17 feet. The substrate on the lake is 65% sand, 5% gravel, 5% rock, and 25% muck. The lake has musky, panfish, largemouth bass, smallmouth bass, and walleye. Emma Lake’s trophic state is mesotrophic. According to merriam-webster.com, mesotrophic lakes have a moderate amount of dissolved nutrients. No alga was found on this lake, but the water’s surface was covered with water shield, making it difficult to navigate through parts of the lake. Despite the fact that this lake has many homes around its perimeter, the lake did not appear to have much boat traffic.

There is only one public boat landing on Emma Lake, located on Cook Drive, so Stephanie and I launched our canoe at this landing. Before we began paddling around the lake’s perimeter, we used our aqua scopes to check the shoreline for any invasive species. We did find some snails, but fortunately, they were all native brown mystery snails. We visually monitored the entire perimeter of Emma Lake, and we stopped to do three AIS checks with the aqua scopes throughout the day. No invasive species were found during our aquatic invasive species checks.

The weather was fairly nice the entire day. The wind was blowing in from the north at six miles per hour, it was cloudy, and the air temperature was 64 degrees Fahrenheit. We used a contour map of Lake Emma to assist us in finding the deep hole, but we still had some difficulties finding it because the map had not been updated since January of 1940. After locating the deep hole, we took GPS coordinates, tested the water clarity using the Secchi disk, obtained the dissolved

oxygen levels using the dissolved oxygen meter, and obtained the water temperature levels (Table 1). The wind did make it difficult to obtain dissolved oxygen readings, but fortunately, we were still able to get six accurate readings.

Findings: All taken starting at 12:14 p.m.

Aquatic Invasive Species:

We did not find any new invasive species along the perimeter of Emma Lake.

Secchi:

The Secchi reading on this lake was 3.5 feet out of a 17 foot max depth. The water color was a dark tea color, so I was not surprised that we could not see very far into the water.

Dissolved Oxygen:

These measurements can be seen in Table 1 at two foot increments.

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



Figure 2. Map of Emma Lake; the red circle shows where we entered the lake, the yellow square shows where the deep hole can be found, the green triangle shows where we obtained our Secchi Disk coordinates.



WDNR Secchi Disk Readings: Emma Lake - Deep Hole LATITUDE 45.59 LONGITUDE -89.50

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

Depth (Feet)	Dissolved Oxygen Levels (mg/L)	Temperature (F)
2	7.09	73.1°
4	6.88	73.0°
6	6.77	72.9°
8	6.42	72.5°
10	6.40	72.4°
12	6.36	72.4°

Resources:

<http://dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=983500>

<https://oneida-county.maps.arcgis.com/apps/webappviewer/index.html?id=c0144697a23243d6beb981727c3e6e2b>