

Pier Lake

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Clarity Report of August 12,
2015



Land & Water Conservation Department

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Pier Lake AIS Monitoring and Water Clarity Report

WBIC: 1529700
Previous AIS Findings: None
New AIS Findings: Chinese Mystery Snail and Unconfirmed Yellow Iris
Field Date: August 12, 2015
Field Crew: Stephanie Boismenu and Sara Mills, AIS Project Assistants,
Oneida County Land and Water Conservation Department
Report by: Sara Mills

Stephanie and I monitored Pier Lake on August 12, 2015. It is a 262 acre lake located in the towns of Lynn and Minocqua (Figure 1). It is a drainage lake connecting with Bootjack Creek on the north and south ends. It has a maximum depth of 15 feet. There is one public boat landing. The WDNR lists Pier Lake's trophic state index as eutrophic and substrates as 55% sand, 7% gravel, 3% rock, and 35% muck. Eutrophic lakes are characterized by an excessive amount of nutrients, allowing the lake to support an abundance of plants and algae. The lake had large amounts of algae, native pondweeds, and pickerel weed.

The conditions for the lake monitoring were hot and humid. It was a very sunny day with a 4 mph wind. The temperature was 82 degrees F with 50% humidity. We entered the lake from the public boat landing (Figure 3). Using the bathymetric map (Figures 2a and 2b) and the depth finder, Stephanie and I navigated the canoe to the approximate location of the deep hole of the lake. We dropped the anchor to prevent the canoe from drifting while taking the measurements. I collected a GPS location for our measurements, a Secchi disk reading for water clarity, and dissolved oxygen and temperatures for water quality (Table 1).

After data collection, we paddled to five locations on the lake shore to perform an AIS presence/absence check. The protocol for this process is to complete a visual inspection of the littoral zone along 100 feet of the shoreline in each area. We chose five areas around private docks with motorized watercrafts, inlets and outlets, and the public boat landing (Figure 3). For the five locations of AIS presence/absence checks, we meandered the shoreline via walking along the shoreline, using an aquascope to eliminate the glare on the water surface, looking through vegetation, and checking around and under solid surfaces. In addition to the five presence/absence checks, we also visually inspected from the canoe for the entire shoreline of the lake.

Findings:

Aquatic Invasive Species:

We discovered Chinese mystery snails during one of our presence/absence checks (Figure 4). We found three live specimens and brought them to the DNR station in Rhinelander for proper identification since it was not listed as an invasive in the lake. We also found many yellow iris plants on the shoreline of much of the lake (Figure 4). We obtained a sample from a private shoreline and brought it to the DNR station in Rhinelander for identification because they are not listed as an invasive in the lake as well. The homeowner was present and confirmed to us that the flowers bloom yellow. However, when we got the results back from the DNR, they reported it to be native iris. It is possible that there was a mistake in identification or that Stephanie and I accidentally obtained a native plant growing within the invasive stand. Another sample will need to be obtained and brought to the DNR station to confirm that the iris is the invasive yellow iris.

Secchi Disk:

Pier Lake was slightly tan/brown colored with very high algae levels which resulted in a Secchi disk reading of 3 feet.

Dissolved Oxygen and Temperature:

See Table 1.



Figure 1. Map of Oneida County, WI with Pier Lake circled.

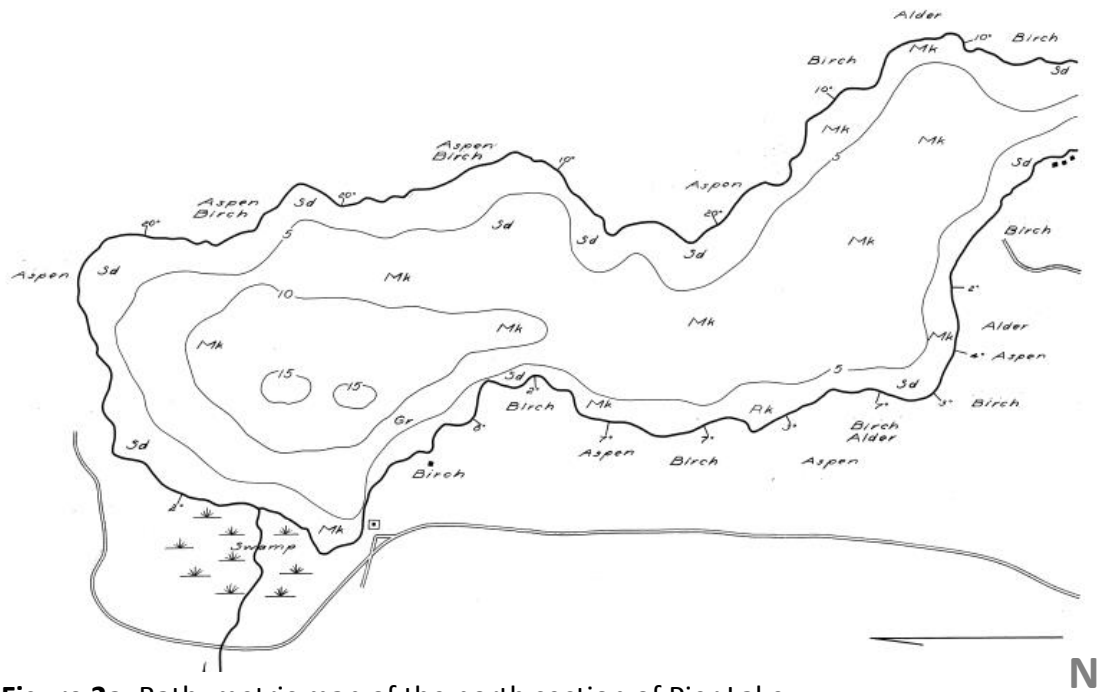


Figure 2a. Bathymetric map of the north section of Pier Lake.

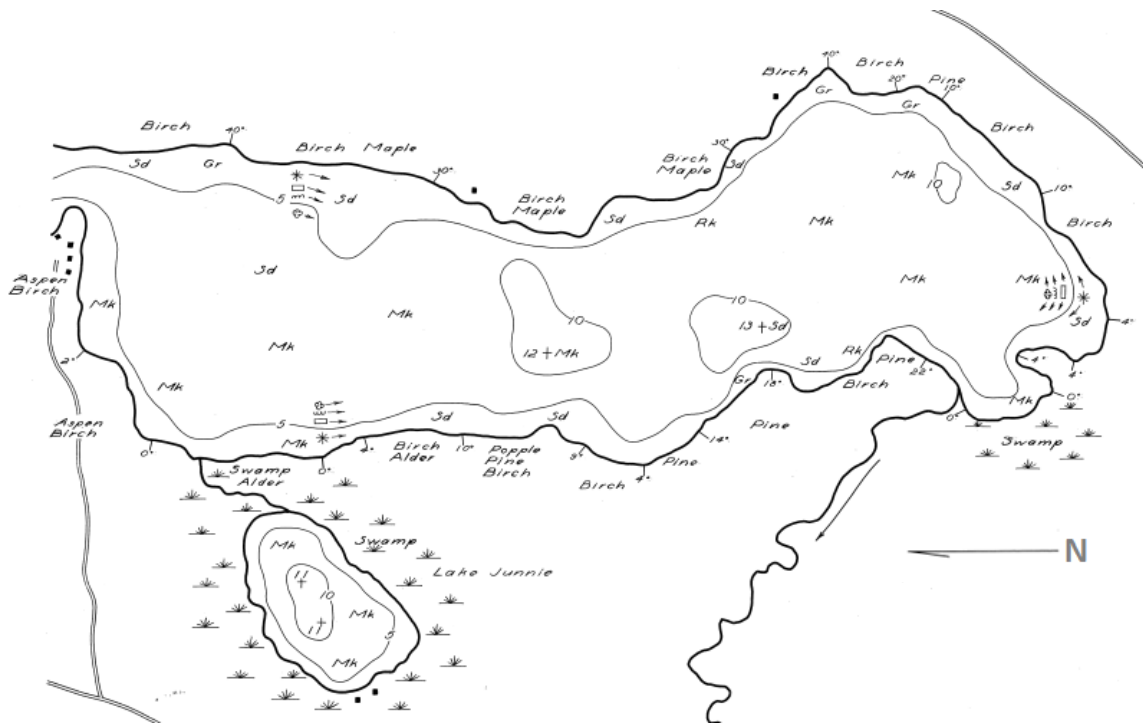


Figure 2b. Bathymetric map of the south section of Pier Lake.

Map source: Wisconsin Department of Natural Resources (608) 266-2621, Pier Lake – Oneida County, Wisconsin – DNR Lake Map, Date – January 29, 1940 – Historical Lake Map.

<http://dnr.wi.gov/lakes/maps/DNR/1529700a.pdf>



Figure 3. Map of Pier Lake. The deep hole site, locations monitored for AIS presence/absence checks, and public boat landing are labeled.

Deep Hole GPS Coordinates: 45.74528367, -89.98303852



Figure 4. Map of Pier Lake with new AIS discoveries.

Chinese Mystery Snail GPS Coordinates: 45.73245620, -89.97570670

Unconfirmed Yellow Iris #1 GPS Coordinates: 45.73538392, -89.97762004

Unconfirmed Yellow Iris #2 GPS Coordinates: 45.74538447, -89.98535267

Unconfirmed Yellow Iris #3 GPS Coordinates: 45.74655714, -89.98495989

Unconfirmed Yellow Iris #4-6 GPS Coordinates: 45.74547543, -89.97865859 (entire bay)

Table 1. Dissolved oxygen levels and temperature readings at the deep hole site.

Depth	Temperature	Dissolved Oxygen Level
1'	74.0°F	7.92 mg/L
3'	73.4°F	7.96 mg/L
5'	72.6°F	7.89 mg/L
7'	71.4°F	7.34 mg/L
9'	70.8°F	6.73 mg/L
11'	69.6°F	5.33 mg/L
13'	68.2°F	3.02 mg/L

Resources: <http://dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=1529700&page=facts>