FACT SHEET

AU SABLE LAKE
OGEMAW COUNTY, MI

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Image by: MDEQ

National Lake Assessment (NLA)

In the summer of 2012, Michigan participated in the U.S. Environmental Protection Agency's nationwide survey of the condition of inland lakes to help measure the health of our waters, take actions to prevent pollution, and evaluate restoration activities. Au Sable Lake was one of 53 Michigan inland lakes that were sampled as part of the National Lake Assessment. This fact sheet contains data collected from that study. Additional information from the 2007 NLA Study is also presented in Table 1. Au Sable Lake was sampled twice in 2007 according quality assurance procedures.

MI Lake Water Quality Assessment

From 2001 - 2010, 729 public access lakes were monitored for baseline lake condition. Water quality parameters monitored include nutrients (nitrogen and phosphorus), chlorophyll *a*, water clarity (Secchi depth), color, dissolved oxygen, water temperature, specific conductance, pH, alkalinity, hardness, and major ions such as calcium, magnesium, sodium and chloride. Au Sable Lake was sampled in 2007. This data as well as statewide data are also presented in Table 1 for comparison purposes with the NLA data.

What is a lake watershed?

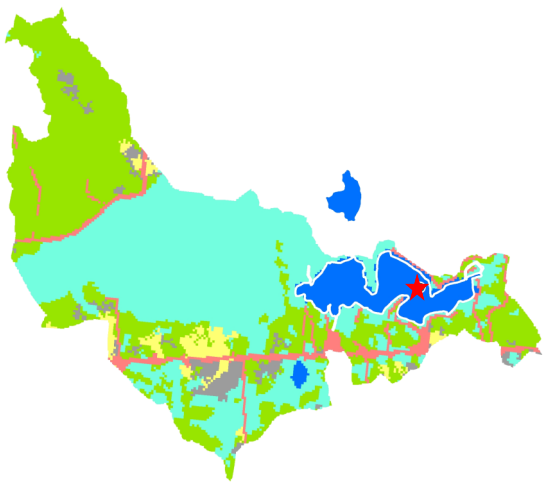
It is all of the land and water area that drains to the lake. Land use in the watershed impacts the water quality of the lake.

Watershed	Percentage
Agriculture	3%
Developed	6%
Forest	37%
Water	7%
Wetland	44%
Other	3%

Au Sable Lake Facts

- **Location**– Northwest Ogemaw County
  Lat: 44.42936, Long: -83.9151
- **Lake Area**– 261 acres
- **Watershed area**– 6 square miles
- **Maximum Depth**– 49 feet
- **Inlet**– Au Sable Creek
- **Outlet**– Channel to Little Au Sable Lake
- **Lake level control structure?** – YES
- **Legal lake levels set 1974**
  898.1 ft above sea level (summer)
  897.6 ft above sea level (winter)
- **Shoreline**– wetland and residential
- **Trophic Status**–mesotrophic
- **Microcystin**–detected, but low risk
- **Public boat ramp**
- **Invasive Species Observed (NLA)**
  - Eurasion watermilfoil
  - Glossy buckthorn
  - Purple Loosestrife
  - Zebra mussels

  www.mi.gov/deqaquaticinvasives



Trophic Status Index (TSI)

- A way to classify a lake. It describes the amount of nutrients and plant growth. The classification is based on three measurements:

Chlorophyll a concentration

- a measure of the amount of algae in the water

Total Phosphorus concentration

- a measure of a critical nutrient that allows algal and plant growth

Secchi Depth Transparency

- a measure of water clarity and the depth at which algae and plants can grow.

Lakes are often put into three classifications:

Oligotrophic-has low nutrient concentrations and low plant growth.
Mesotrophic– has moderate nutrient concentrations and plant growth.
Eutrophic-has high nutrients and high plant growth

The **water temperature** and **dissolved oxygen levels** at different water depths are also important for plants, fish, and other organisms in the lake. **See Figure 1** and **www.micorps.net** for more information.

What is Toxic Algae, and is it in this lake?

- **Algae and bluegreen algae are natural** and present in most lakes.
- A **harmful algal bloom** is when there are large amounts of blue-green algae present that have released algal toxins.
- We test the water for **microcystins**, which is a type of blue-green algae toxin. If levels are 20 micrograms per liter or larger, it is advised by the World Health Organization that no swimming or other recreation take place in the water

For More Information:

eat safe fish
michigan.gov/eatsafefish

www.deq.state.mi.us/beach/

BeachGuard

MiCorps
Monitoring Michigan's Water Quality
www.micorps.net

STATE OF MICHIGAN
DEQ
DEPARTMENT OF ENVIRONMENTAL QUALITY
DEQ Lake Water Quality Monitoring Information:
www.mi.gov/deqinlandlakes

DEPARTMENT OF NATURAL RESOURCES · DNR · MICHIGAN
http://.ifr.snre.umich.edu/MiFISH

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
http://water.epa.gov/type/lakes/

Figure 1. Dissolved Oxygen and Temperature Profile for Au Sable Lake, Ogemaw County, MI.

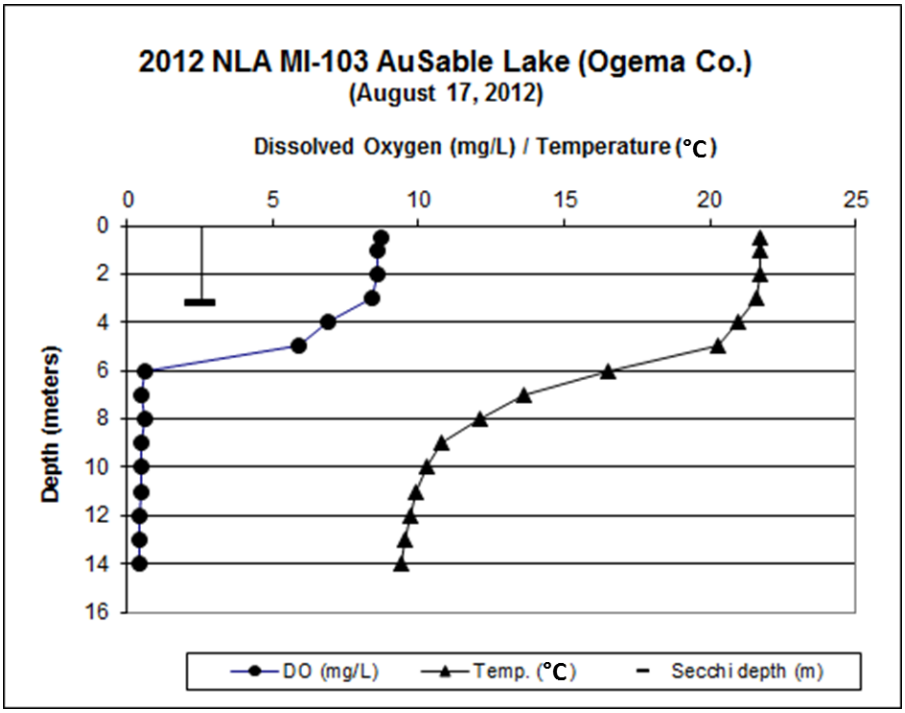


Table 1. Water quality parameters collected as part of National Lake Assessment (NLA) 2007, 2012, or as part of Michigan's Lake Water Quality Assessment (LWQA)

Parameter	LWQA (9/6/2007)	NLA (9/6/2007)	NLA (8/17/2012)	Average LWQA 2001-2010 (± Standard Deviation)
Surface temperature (°C)	23.5	23.4	21.7	23.9 (2.2)
Surface dissolved oxygen (mg/l)	8.2	8.3	8.6	8.1 (1.0)
Total phosphorus (µg/l)	11.0	8.0	29.0	16 (16)
Total Nitrogen (mg/l)	0.6	0.5	0.6	0.6 (0.4)
Chlorophyll-a (µg/l)	4.0	3.1	2.5	6.1 (10.0)
Secchi depth transparency (m)	3.2	3.5	3.2	3.1 (1.5)
pH	8.0	8.0	8.4	8.2 (0.5)
Conductivity (µS/cm)	270.0	279.0	245.0	271.1 (157.8)
Calcium (mg/l)	.	34.8	29.1	34.2 (19.0)
Magnesium (mg/l)	.	13.1	12.4	11.1 (6.6)
Sodium (mg/l)	.	3.0	3.0	8.3 (13.0)
Potassium (mg/l)	.	0.7	0.7	1.2 (0.8)
Sulfate (mg/l)	.	8.9	10.0	10.5 (12.6)
Chloride (mg/l)	.	5.5	4.6	16.7 (25.1)
Acid Neutralizing capacity (mg/l CaCO3)	.	256.0	112.8	109.5 (58.2)
Dissolved Organic Carbon (mg/l)	.	9.3	8.5	.
Turbidity (NTU)	.	0.9	1.2	.
Trophic State Index	42	39	45	45
Trophic State	mesotrophic	mesotrophic	mesotrophic	mesotrophic
Atrazine (µg/l)	.	.	0.0	.
Microcystin (µg/l; algae toxin) World Health Organization Risk Category: <10 Low risk, 10-20 Moderate risk, >20 High risk	.	0.5	1.3	.