



White Iron Lake

Rainy River Headwaters



At a Glance: White Iron Lake is located three miles southeast of Ely, MN in the Lower Kawishiwi River subwatershed within the larger Rainy River Headwaters Basin. The majority of the watershed is composed of forest, wetlands and open water. Boulders, bedrock, and rubble make up much of the shoreline substrate, although some bays support diverse aquatic plant communities. Water flows in from the South branch of the Kawishiwi River and from Bear Island River, and discharge is through Garden Lake. Dams upstream and downstream of White Iron Lake are largely responsible for water levels. The water has a tea-stained appearance due to the abundance of wetlands in the watershed. For current water quality and invasive species data, see reverse side.

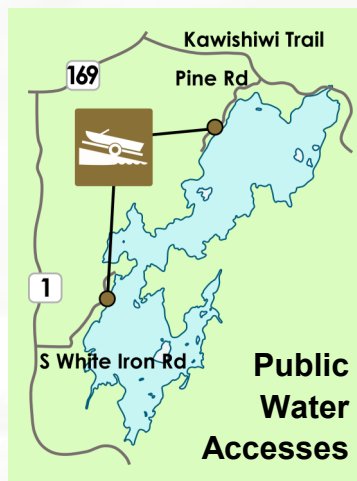
Good to Know:

White Iron is a “Sentinel Lake” The Minnesota DNR and Minnesota Pollution Control Agency are collaborating on a long-term, intensive study of 25 representative, or “sentinel” lakes in Minnesota to better understand and predict effects of climate and other environmental changes. White Iron represents well mixed, cold water, Canadian shield lakes.

Citizen scientists have been monitoring the water quality of White Iron Lake since 1993 with the support of the Minnesota Pollution Control Agency. See the reverse side for a summary of their findings.

A paleolimnological study was performed on the White Iron chain of lakes in 2013 by UMD’s Natural Resources Research institute. They used chemical and biological clues found in lake sediment to better understand conditions in the lakes and on land prior to European settlement.

White Iron Lake is home to a population of **Longear Sunfish**, a rare species of concern in Minnesota.



Stats:

- Max depth: 47 ft.
- Avg depth: 19 ft
- Area: 3,238 acres
- % littoral area: 47%
- Shoreline: 26 mi
- % public shoreline ownership: 20%
- Water residence time: 40 days
- Avg transparency: 5 ft
- Trophic State: mesotrophic
- Fish species include: black crappie, bluegill, burbot, lake whitefish, largemouth bass, northern pike, rock bass, smallmouth bass, tiger muskellunge, tullibee (cisco), walleye, yellow perch, white sucker, bluntnose minnow, golden shiner, Johnny darter, spottail shiner

Areas of Concern:

White Iron Lake has one confirmed aquatic invasive species: **Rusty Crayfish** (pictured left). Other threats in the area include: Spiny Waterflea, and Curly-leaf Pondweed. For more information on White Iron Lake invasive species, see reverse side.

As with many Minnesota lakes, fish in White Iron Lake have elevated levels of **mercury**. Refer to the Minnesota Department of Health guidelines for advice on how much fish can safely be eaten.

Climate change may present multiple challenges, including warming waters. Being a well-mixed lake, White Iron’s cool-water fish species may experience a disproportionate amount of stress leading to declining burbot, cisco, and lake whitefish populations.



Care about White Iron Lake? Get Involved!

There are many ways you can make a difference. Here are some resources for learning more and getting started:
White Iron Chain of Lakes Association (WICOLA): www.wicola.org
Lake County Soil and Water Conservation District: www.LakeCountySWCD.org/Volunteer.php

See reverse side

For water quality and invasive species data



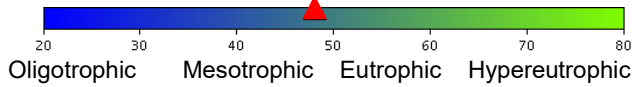
Water Quality

Updated July 18, 2018



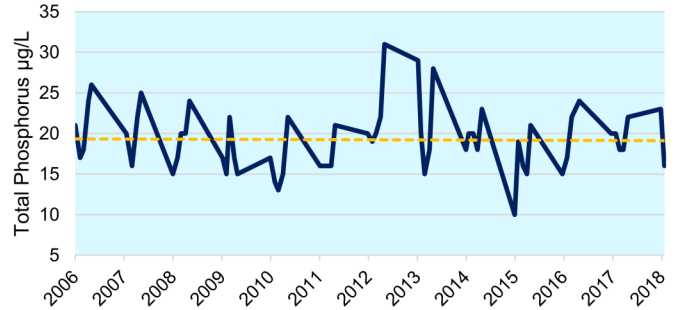
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 Get to Know:

White Iron Lake water quality has generally been holding steady over the 12 years in which volunteers have been sampling through Citizen Lake Monitoring Plus, a program of the Minnesota Pollution Control Agency (MPCA). Volunteer measurements for Total Phosphorus, Chlorophyll-a, and Secchi depth are shown at right. A slight downward trend in Chlorophyll-a concentration since 2006 indicates an improvement in one aspect of water quality. Total Phosphorus and Chlorophyll-a numbers are within expected ranges for lakes of the Northern Lakes and Forests (NLF) ecoregion. While Secchi depth is not, this is due to bog stained water, rather than an impairment. Total Phosphorus, Chlorophyll-a, and Secchi depth measurements are used to generate a Trophic State Index (TSI) number - a way of characterizing a lake's productivity. White Iron Lake's mean TSI over 12 years is **48.9**, which is in the mesotrophic range:

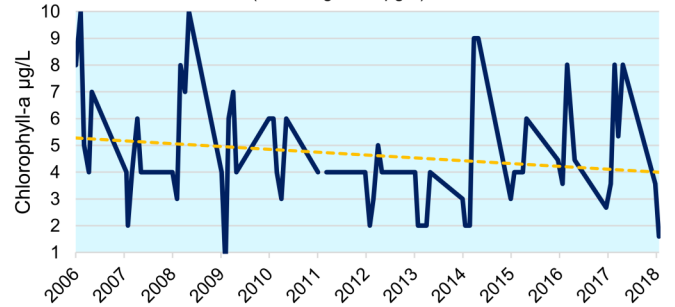


Find water quality data from Citizen Lake Monitoring here:
www.rmbel.info/data/

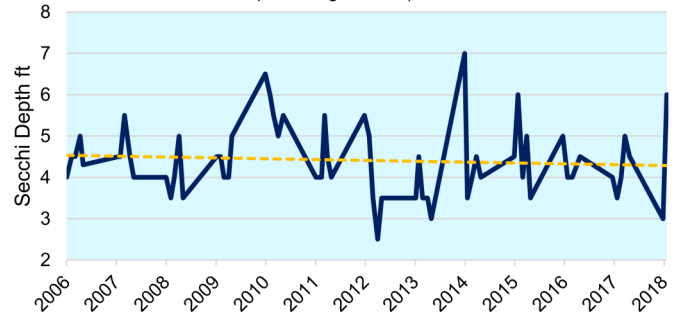
Total Phosphorus
 (NLF range 14-27 µg/L)



Chlorophyll-a
 (NLF range <10 µg/L)



Secchi Depth
 (NLF range 8-15 ft)



Invasive Species

Curly Leaf Pondweed



Spiny Waterflea

Eurasian Watermilfoil

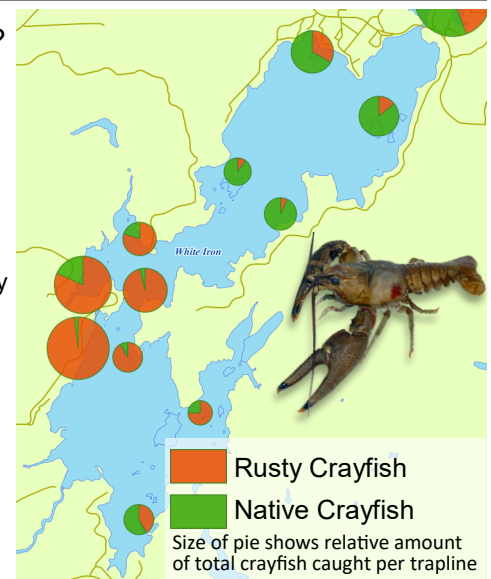


What is an aquatic invasive species (AIS)?

- Non-native: a species not normally found in an area
- Invasive: a non-native species which causes harm -environmental, economic, or to human health; generally threatens natural resources

White Iron Lake has one confirmed invasive species: Rusty Crayfish. Trapping by Lake County SWCD and WICOLA members shows the progression of the rusty crayfish infestation. In some areas of the lake, Rusty crayfish have completely replaced the native species. Some nearby AIS to watch out for are shown on the left.

Because of the potential for harm, prevention and early detection are essential to keep new invasive species from becoming established. Lake County SWCD is training citizen "sentries" to perform monthly surveys of lakes they frequent, and report on the plants and animals they observe. Five reports have been submitted from White Iron Lake since spring 2017, and there have been no new AIS observed.



White Iron Lake 2017 Rusty Crayfish distribution



Do you want to be trained as a citizen sentry? Do you live on White Iron Lake and want to participate in crayfish trapping? Visit wicola.org for the latest events and information on how you can get involved!