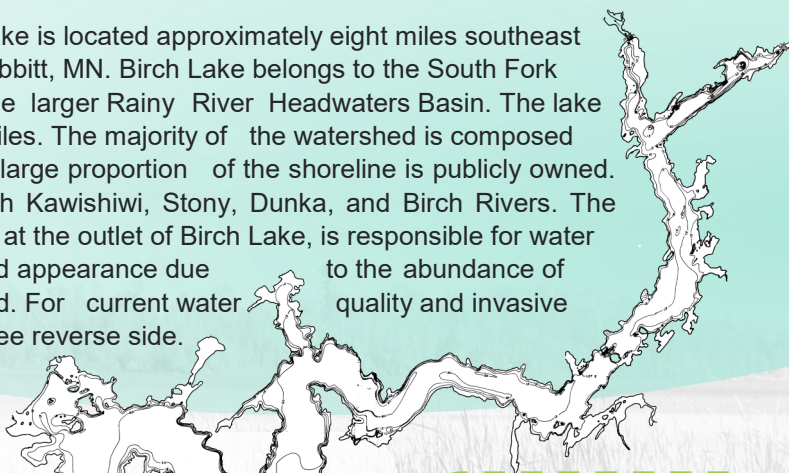




# Birch Lake

Get to Know:

**At a Glance:** Birch Lake is located approximately eight miles southeast of Ely, MN, and one mile northeast of Babbitt, MN. Birch Lake belongs to the South Fork Kawishiwi River subwatershed within the larger Rainy River Headwaters Basin. The lake itself has a watershed of 837 square miles. The majority of the watershed is composed of forest, wetlands, and open water. A large proportion of the shoreline is publicly owned. Water enters Birch Lake from the South Kawishiwi, Stony, Dunka, and Birch Rivers. The Minnesota Power dam on Highway One, at the outlet of Birch Lake, is 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.



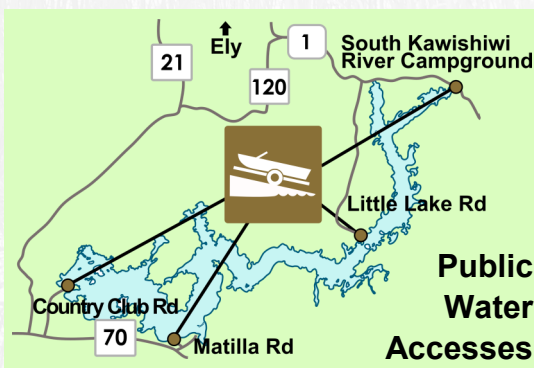
## Good to Know:

**Citizen scientists** have been monitoring the water quality of Birch Lake since 2011 with the support of the Minnesota Pollution Control Agency. See the reverse side for a summary of their findings.

We have historic, **impounded riverbeds** to thank for Birch Lake's irregular shape.

The US Forest Service operates two **campgrounds** and fourteen backcountry campsites on Birch Lake.

A **paleolimnological study** was performed on the White Iron chain of lakes, including Birch Lake, 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.



## Stats:

- Max depth: 25 ft
- Avg depth: 12.8 ft
- Area: 7,063 acres
- % Littoral area: 15%
- Shoreline: 90 mi
- % Public shoreline ownership: 75%
- Water level fluctuation: 5.7 ft
- Water residence time: 70 days
- Avg transparency: 4.3 ft
- Trophic State: Eutrophic
- Fish species include: black crappie, bluegill, burbot, cisco species, largemouth bass, northern pike, rock bass, smallmouth bass, tullibee (cisco), walleye, yellow perch, white sucker, bluntnose minnow, common shiner, emerald shiner, golden shiner, Johnny darter, logperch, spottail shiner, trout-perch

## Areas of Concern:

Birch 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 Birch 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 (polymictic) lake, Birch Lake's cool-water fish species may experience a disproportionate amount of stress leading to declining burbot, cisco, and lake whitefish populations.

## Care about Birch 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](http://www.wicola.org)  
 Lake County Soil and Water Conservation District:  
[www.LakeCountySWCD.org/Volunteer.php](http://www.LakeCountySWCD.org/Volunteer.php)

See reverse side

For water quality and invasive species data



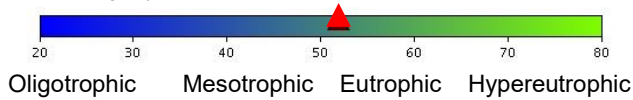
# Water Quality

Updated July 18, 2018



## Get to Know: Birch Lake

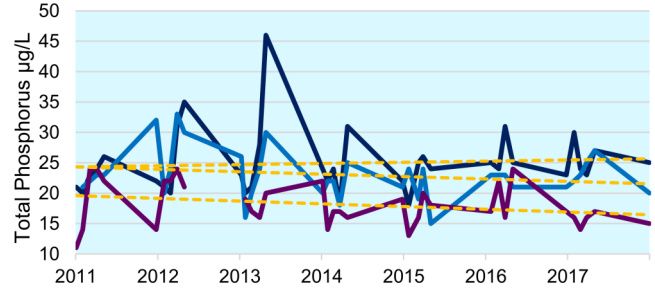
Birch Lake water quality has generally been holding steady over the seven years in which volunteers have been sampling through Citizen Lake Monitoring Plus, a program of the Minnesota Pollution Control Agency (MPCA). Volunteer measurements for Total Phosphorus, Chlorophyll-a, and Secchi depth are shown to the right for each of the three sites sampled. 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. A slight decrease in transparency as shown by Secchi depth without a corresponding increase in Chlorophyll-a suggests a culprit other than algae. 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. Birch Lake's mean TSI is **52**, which is slightly eutrophic:



Find water quality data from Citizen Lake Monitoring here: [www.rmbel.info/data/](http://www.rmbel.info/data/)

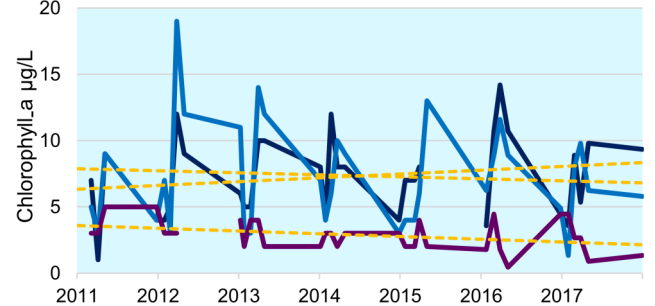
### Total Phosphorus

(NLF range 14-27 µg/L)



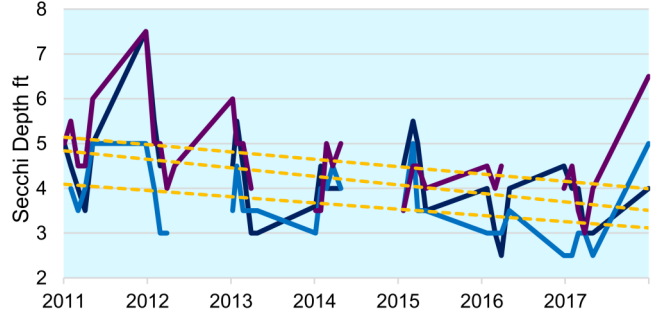
### Chlorophyll-a

(NLF range <10 µg/L)



### Secchi Depth

(NLF range 8 - 15 ft)



— Dunka — Stony — S. Kawishiwi

## Invasive Species

Curly Leaf Pondweed



Spiny Waterflea



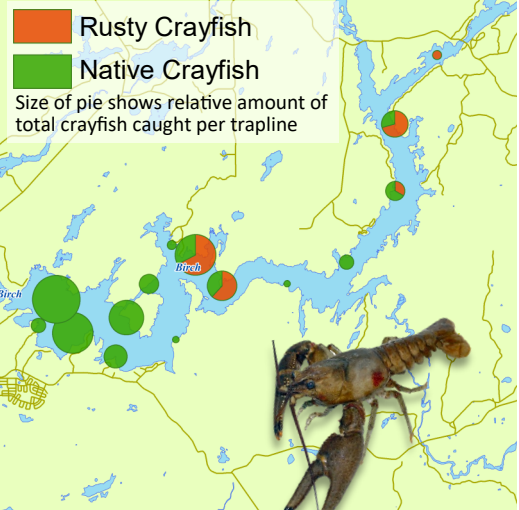
Eurasian Watermilfoil

### 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

Birch Lake has one confirmed invasive species: Rusty Crayfish. Trapping by Lake County SWCD and WICOLA members shows the progression of the rusty crayfish infestation. As of 2017, rusty crayfish are only prevalent in the northeast portion of the lake. 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. We are seeking more sentries for Birch Lake to provide timely knowledge of new invasions.



Birch Lake 2017 Rusty Crayfish distribution



Do you want to be trained as a citizen sentry? Do you live on Birch Lake and want to participate in crayfish trapping? Visit [wicola.org](http://wicola.org) for the latest events and information on how you can get involved!