



Why the Difference? Water Quality in the Boundary Waters

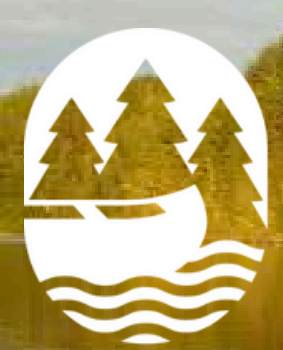
Background Information: Lakes within the BWCA (Boundary Waters Canoe Area), are protected under the Wilderness Act of 1964. Due to this, they are generally considered to have some of the highest water quality of any lakes in Minnesota. However, different lakes in the BWCA have different water quality, due to size, location, surrounding environment, and human activity.

Directions: Look at the different [Lake Factsheets](#). All of these lakes are found within the rainy river watershed. Use the fact sheets to answer the questions below. Then, discuss your ideas with your classmates.

- 1) What do you notice about the water quality in these lakes? How is it similar, how is it different?

- 2) WHY do you think there are differences in these lakes?

- 3) All of these lakes are located within the same watershed (Rainy River Watershed). How would you expect a change to one of these lakes to affect the others? Explain your thinking.



SAGANAGA LAKE

DESCRIPTION

Saganaga (often called Sag) is one of the largest lakes in the Boundary Waters. Parts of the lake allows for motor boats and it is a popular entry point into the Boundary Waters. The lake is known for strong winds that can lead to large waves. Saganaga is known for excellent fishing.

QUICK FACTS

- Location: Along the Gunflint Trail
- Size: 13,832 acres
- Max Depth: 280feet
- Saganaga is part of the BWCA



COMMON SPECIES

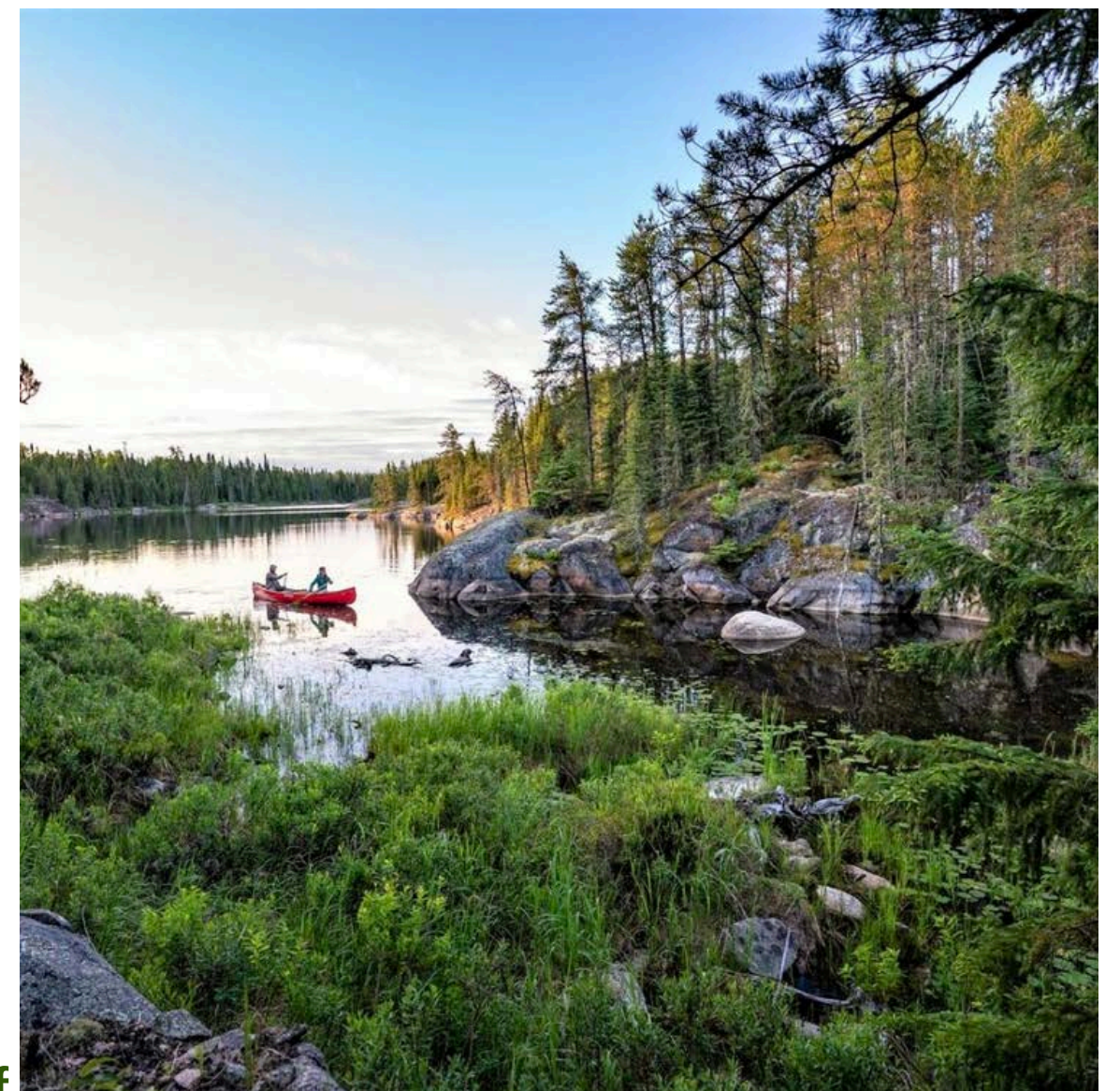
Walleye, Lake Trout, Smallmouth Bass, Northern Pike

Invasive Species: Rusty Crayfish, Spiny Water Flea

WATER CHEMISTRY

- Phosphorus: 0.01-0.03mg/L
- Chlorophyll-a: below 0.025 mg/L
- Secchi Depth: 2.3 meters
- pH: 6.8
- Dissolved Oxygen: 8mg/L
- Sources of Pollution: Saganaga Lake is part of the BWCA and so has many protections, however it does have high levels of mercury from air pollution, as well as potential impacts from proposed copper-sulfide mines. Motor boats also affect water chemistry.

Source: <https://www.pca.state.mn.us/sites/default/files/wq-lar3-01.pdf>



MANAGEMENT PLANS/PROTECTIONS

Saganaga is part of the Boundary Water Canoe Area Wilderness, this means it is protected under Wilderness Act of 1964. The Wilderness Act prohibits any activities that would alter the natural state of the wilderness. This includes logging, mining, road building, and permanent structures. Parts of Saganaga lake are limited by permits and groups of more than 9 are not allowed.

SEAGULL LAKE

DESCRIPTION

Seagull is a large lake in the Boundary Waters. It is a popular entry point for canoers and has an abundance of islands, peninsulas, and unique rock palisades. Most of Seagull lake is closed to motor boats, however a small area does have some motorized boats.

QUICK FACTS

- Location: End of the Gunflint Trail, 54 miles northwest of Grand Marais
- Size: 3,958 acres
- Max Depth: 145 feet
- Seagull is part of the BWCA



COMMON SPECIES

Walleye, Lake Trout, Smallmouth Bass, Northern Pike

Invasive Species: Rusty Crayfish, Spiny Water Flea

WATER CHEMISTRY

- Phosphorus: 0.01-0.03mg/L
- Chlorophyll-a: below 0.025 mg/L
- Secchi Depth: 4.6 meters
- pH: 7.1-7.6
- Dissolved Oxygen: 8mg/L
- Sources of Pollution: Seagull Lake is part of the BWCA and so has many protections, however it does have high levels of mercury from air pollution, as well as potential impacts from proposed copper-sulfide mines. Motor boats also affect water chemistry.

Source: <https://www.pca.state.mn.us/sites/default/files/wq-lar3-01.pdf>



MANAGEMENT PLANS/PROTECTIONS

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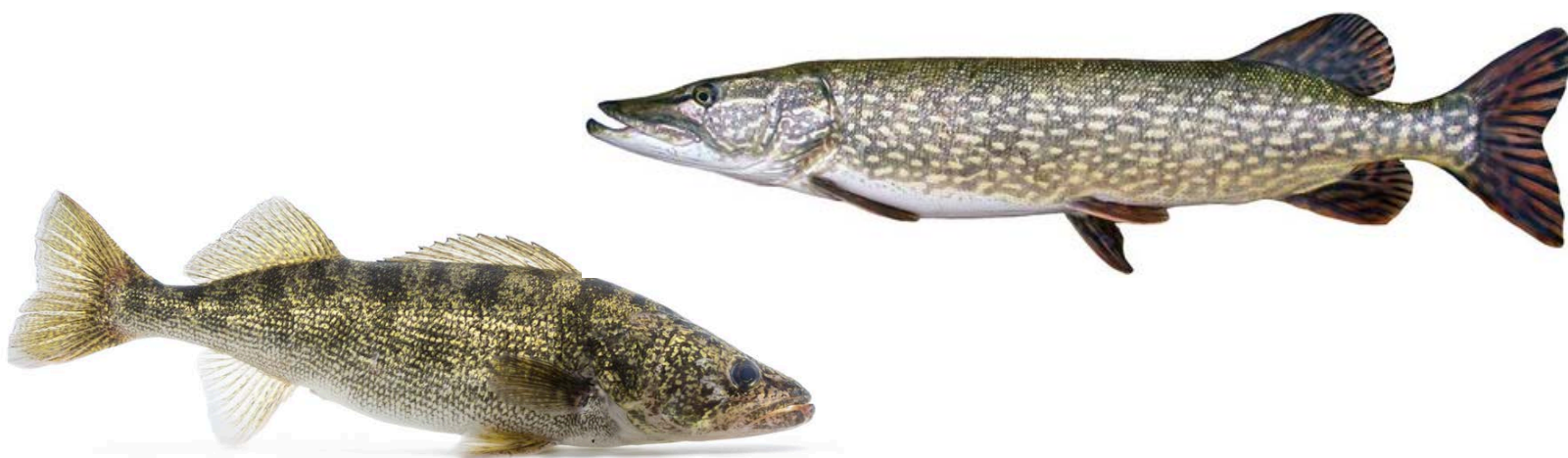
SAWBILL LAKE

DESCRIPTION

Sawbill lake is a popular entry point to the Boundary Waters Canoe Area Wilderness. It is part of the Superior National Forest. There is very little development around the lake, a few outfitters are based near it.

QUICK FACTS

- Location: Cook County, MN, closest town is Tofte, MN
- Size: 765 acres
- Max Depth: 45 Feet
- Sawbill is part of the BWCA



COMMON SPECIES

Walleye, smallmouth bass, northern pike, and lake trout

Invasive Species: Spiny Waterflea

WATER CHEMISTRY

- Phosphorus: 0.03 mg/L or lower
- Chlorophyll-a:
- Secchi Depth: average of 2.5 meters, max of 80m
- pH: ~7
- Sources of Pollution: Currently Sawbill classifies as a high quality lake and supports a diverse community of life. Fish in the lake have been identified as having mercury contamination.

Source: <https://webapp.pca.state.mn.us/surface-water/station/16-0496-00-100>



MANAGEMENT PLANS/PROTECTIONS

Sawbill is part of the Boundary Water Canoe Area Wilderness, this means it is protected under Wilderness Act of 1964. The Wilderness Act prohibits any activities that would alter the natural state of the wilderness. This includes logging, mining, road building, and permanent structures. Access to Sawbill lake is limited by permits and groups of more than 9 are not allowed.



FRIENDS OF THE
BOUNDARY
WATERS

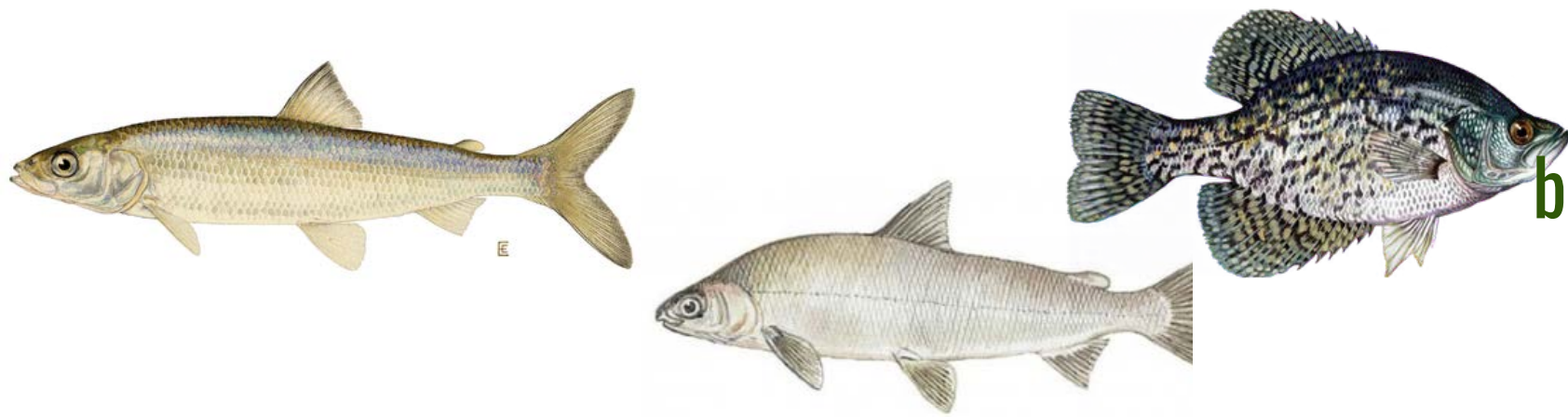
BASSWOOD LAKE

DESCRIPTION

Basswood Lake is a popular entry point to the Boundary Waters Canoe Area Wilderness. It is a large lake on the border of Minnesota and Canada. The lake has a diverse population of fish species. Motorized boats are allowed on part of the lake

QUICK FACTS

- Location: NorthEast of Ely, Minesota
- Size: 25,953 acres
- Max Depth: 111 feet
- Basswood lake is part of the BWCA



COMMON SPECIES

black crappie, bluegill, cisco, burbot, lake whitefish, walleye, yellow perch
Invasive Species: Spiny Waterflea

WATER CHEMISTRY

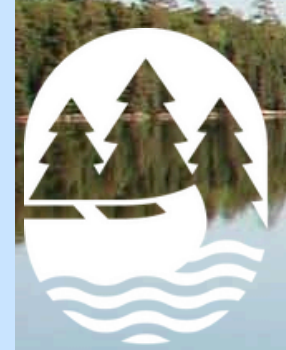
- Phosphorus: 0.03 mg/L or less, changes seasonally
- Chlorophyll-a: 0-17ug/L
- Secchi Depth: 2.5- 4 meters
- pH: 6.5-8.5
- Dissolved Oxygen: 10.29 mg/L
- Sources of Pollution: Basswood lake is considered to have high water quality and is protected as part of the BWCA. However runoff from logging and mining activities as well as the invasive spiny waterflea are lowering overall water quality.

Source: <https://www.dnr.state.mn.us/lakefind/lake.html?id=38064500>



MANAGEMENT PLANS/PROTECTIONS

Basswood is part of the Boundary Water Canoe Area Wilderness, this means it is protected under Wilderness Act of 1964. The Wilderness Act prohibits any activities that would alter the natural state of the wilderness. This includes logging, mining, road building, and permanent structures. Access to Basswood lake is limited by permits and groups of more than 9 are not allowed.



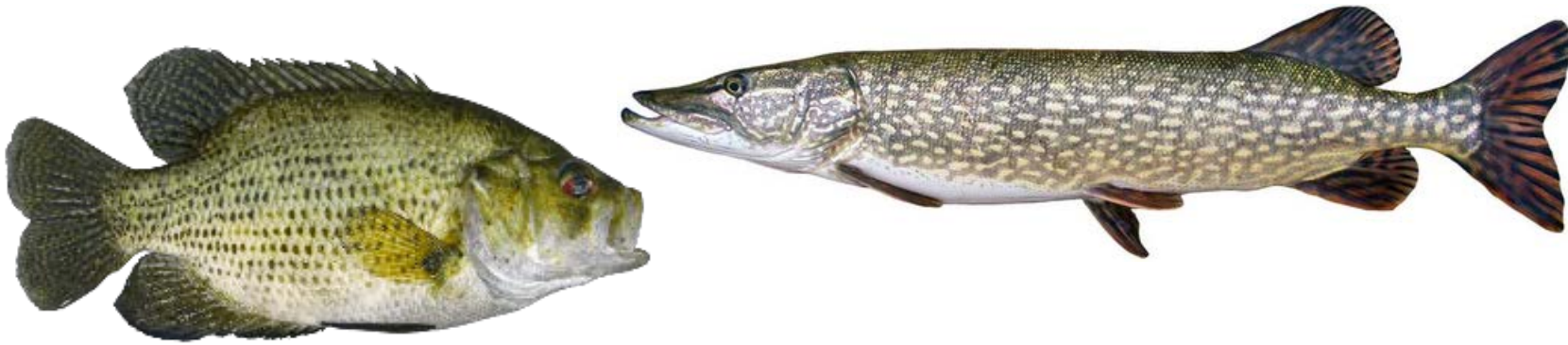
MOOSE LAKE

DESCRIPTION

Moose Lake is home to the busiest entry point to the Boundary Waters Canoe Area Wilderness. Located at the southern end of the BWCA. The lake is long (almost 5 miles) and narrow. It is known for good fishing and has several outfitters along its shores.

QUICK FACTS

- Location: Northeast of Ely, Minnesota
- Size: 1,025 acres
- Max Depth: 65 feet
- Moose Lake is part of the BWCA



COMMON SPECIES

northern pike, rock bass, smallmouth bass, walleye, yellow perch, white sucker
Invasive Species: Spiny Waterflea

WATER CHEMISTRY

- Phosphorus: 0.0128mg/L
- Chlorophyll-a: 2.4 ug/L
- Secchi Depth: 3.1 m
- pH: 7.9
- Dissolved Oxygen: variable
- Sources of Pollution: Moose Lake is part of the BWCA and so is protected, however it is susceptible to non-point pollution from industrial and agricultural runoff as well as stormwater runoff.

Source: <https://www.pca.state.mn.us/sites/default/files/wq-lar3-13.pdf>



MANAGEMENT PLANS/PROTECTIONS

Moose Lake is part of the Boundary Water Canoe Area Wilderness, this means it is protected under Wilderness Act of 1964. The Wilderness Act prohibits any activities that would alter the natural state of the wilderness. This includes logging, mining, road building, and permanent structures. Access to Moose Lake is limited by permits and groups of more than 9 are not allowed.

SNOWBANK LAKE

DESCRIPTION

Snowbank is one of the deepest lakes in the Boundary Water Canoe Area Wilderness. The lake has several islands and is a popular entry point for canoers. Snowbank's large size means that it often experiences strong and dangerous winds which have effected trees and other flora on shorelines.

QUICK FACTS

- Location: East of Ely, Minnesota
- Size: 4,655 acres
- Max Depth: 150 feet
- Snowbank is part of the BWCA



COMMON SPECIES

Burbot, Cisco, Lake Trout, Largemouth Bass, Northern Pike, Rock Bass, White Sucker, Mimic Shiner

Invasive Species: Rusty Crayfish, Spiny Water Flea

WATER CHEMISTRY

- Phosphorus: 0.035mg/L
- Chlorophyll-a: 2-4ug/L
- Secchi Depth: 5.25 meters
- pH: 6.8
- Dissolved Oxygen: 8mg/L
- Sources of Pollution: Snowbank lake is part of the BWCA and so is protected, however it is susceptible to non-point pollution from industrial and agricultural runoff as well as stormwater runoff. Parts of Snowbank allow motor boats which also effects water quality.



Source: <https://www.pca.state.mn.us/sites/default/files/wq-lar3-01.pdf>

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