



Lake information

WATERSHED	LAKE CLASS
Yukon Headwaters	E
SURFACE AREA	ELEVATION
9,554 ha	660 m
MAXIMUM DEPTH	AVERAGE DEPTH
51.5 m	12.8 m
SURFACE TEMP	REGULATIONS
15.2°C	Conservation Waters
SAMPLING DATES	NET SETS
July 13-18	128

Location

Marsh Lake is located 50 km south of Whitehorse, along the Alaska Highway in the southern Yukon. Marsh Lake is within the Traditional Territories of the Carcross/Tagish First Nation and the Kwanlin Dün First Nation.

Access and use

Marsh Lake is accessed along the Alaska Highway, with three accessible boat ramps along the lake. The lake also has a government campground at the northern end, along with a high number of residences along the lake, when compared to all other Yukon lakes.

Marsh Lake 2024

Overall status

Lake trout

Based on the 2024 survey, the lake trout population in Marsh Lake remains consistent with findings from the 2015 survey. The population remains small in comparison to Yukon lakes of similar size. However, Marsh Lake has limited available habitat below 20 m, where optimal summer temperatures typically occur. Additionally, lake trout telemetry surveys conducted by the Government of Yukon between 2016 and 2019 indicate that Marsh Lake may serve as important overwintering habitat, with some lake trout vacating the lake during the warmer, summer months.

Lake whitefish

The 2024 Marsh Lake survey indicated a sustainable population of lake whitefish, characterized by a broad range of age cohorts. However, cohort strength has fluctuated over the past 10 years.

Recommendation

Marsh Lake's water levels are partially regulated by the Whitehorse Rapids Generating Station. Fluctuating water levels have the potential to impact the lake trout population, particularly during critical life stages. Therefore, long-term monitoring of this population should continue with comparative analyses conducted to detect any changes over time. Monitoring efforts should focus on catch-per-unit effort, age and growth patterns and stock structure analysis.

Lake trout

Overview

A total of 60 lake trout were sampled during this survey.

Population estimate and density

The population of lake trout within Marsh Lake was estimated at **15,800** (estimate range: 2,200 – 46,268). This equates to a density of 1.65 lake trout per hectare.

Length and weight

The sampled fish ranged in fork length from 415 mm to 656 mm. The average fork length was 537 mm, and the average weight was 1,911 g.

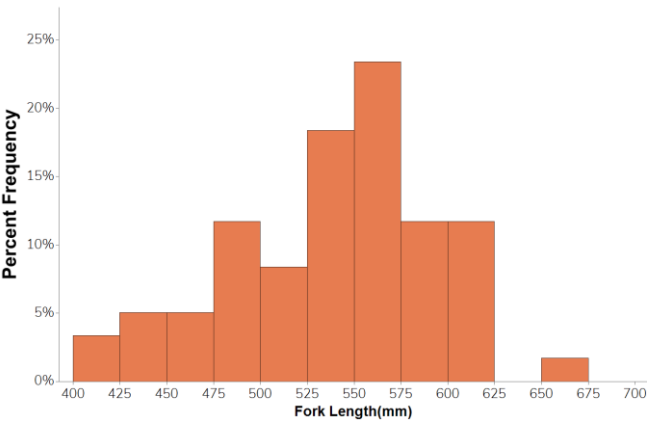


Figure 1. Length frequency distribution of sampled lake trout in Marsh Lake (2024), n = 60.

Age and Growth

Age structures were obtained from 57 lake trout. Ages ranged from 6 to 25 years.

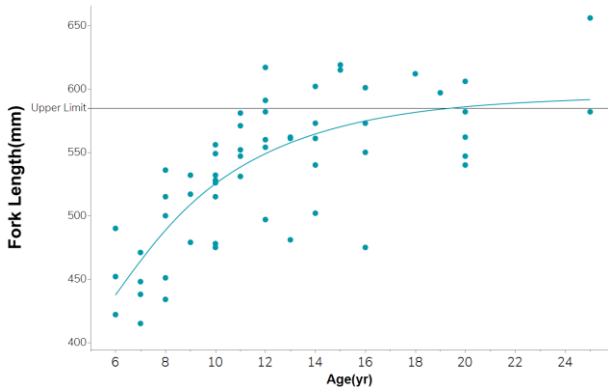


Figure 2. Von Bertalanffy growth curve of age-analyzed lake trout sampled in Marsh Lake (2024), n = 57.

Suggested citation:

Government of Yukon. 2025. Lake Trout and Lake Whitefish Monitoring Program: Marsh Lake 2024. Government of Yukon, Whitehorse, Yukon, Canada.

Lake whitefish

Overview

A total of 214 lake whitefish were captured during the survey. They ranged in size from 218 mm to 574 mm in length, with an average fork length of 394 mm and an average weight of 917 g. Age structures were obtained from 108 lake whitefish. Ages ranged from 3 to 21 years.

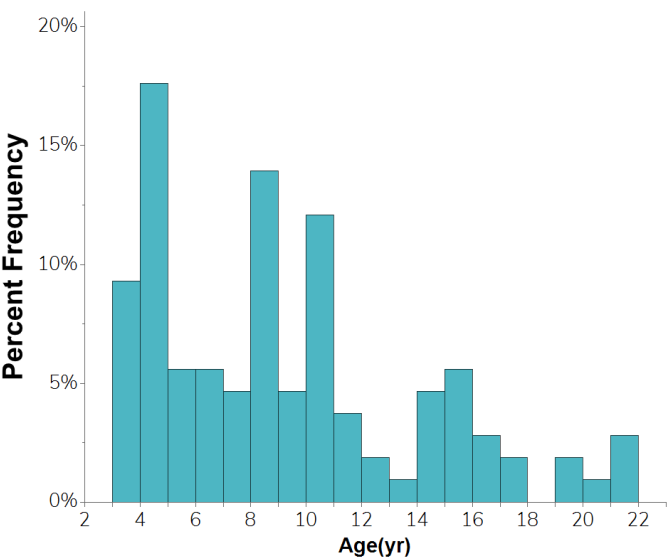


Figure 3. Age frequency distribution of sampled lake whitefish in Marsh Lake (2024), n = 108.

Temperature and Dissolved Oxygen

The temperature profile showed a sharp thermocline between 12 m and 22 m.

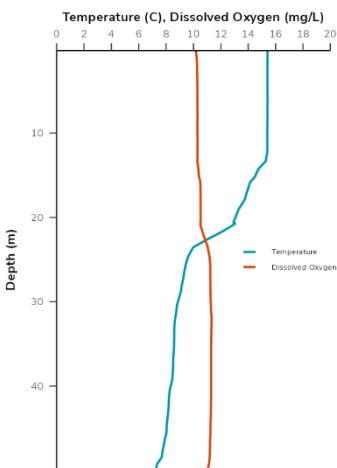


Figure 4. Temperature (C) and dissolved oxygen (mg/L) were measured in Marsh Lake on July 25, 2024.