

## Technical Report

# Lake Coleridge Summer Survey 2024/25

North Canterbury Fish & Game

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## Introduction

Lake Coleridge is a large high country lake supporting populations of both brown and rainbow trout as well as land-locked salmon, making it an important fishing area for anglers in North Canterbury. Data from the 2021/22 National Angler Survey indicates that fishing on Lake Coleridge makes up approximately 10% of the total angler effort in the region, and 40% of all lake fishing in the region (Stoffels & Unwin 2023).

Creel surveys (also known as angler surveys) are a type of in-person survey designed to gain insight about angler efforts, angler success, harvest, and fishery perceptions. Creel surveys can be a valuable tool for both on-going and periodic fisheries monitoring (Nieman et al. 2021), and have long been used by fisheries managers to assess the status of recreational fisheries and inform management.

The Lake Coleridge summer survey was initiated in 2024 by North Canterbury Fish & Game staff to monitor angler success and perceptions on this important lake fishery.

## Methods

Between 1 December 2024 and 31 March 2025, staff at North Canterbury Fish & Game included angler surveys as a part of their standard compliance efforts. When approached for routine licence checks, compliant anglers were asked about the fish they caught, the fishing methods they used, and how long they had been fishing that day. Anglers were also asked to rate their satisfaction with the quality of the fish they caught, their angling success (catch rate), and their overall fishing experience. The survey was designed to be consistent with similar creel surveys from Lake Taupō (DOC 2025) and the Otago Fish & Game region (Sowry 2023).

## Results

Staff at North Canterbury conducted 134 angler surveys on Lake Coleridge during the 2024/25 summer period.

### ***Estimated Catch Rate***

The estimated catch rate for the 2024/25 summer period on Lake Coleridge was 0.48 fish per hour (one fish every 2 hours 5 minutes; Fig. 1).

The estimated hit rate (including both fish that were landed and fish that were hooked but not landed) was 0.84 fish per hour (one fish every 1 hour 10 minutes).

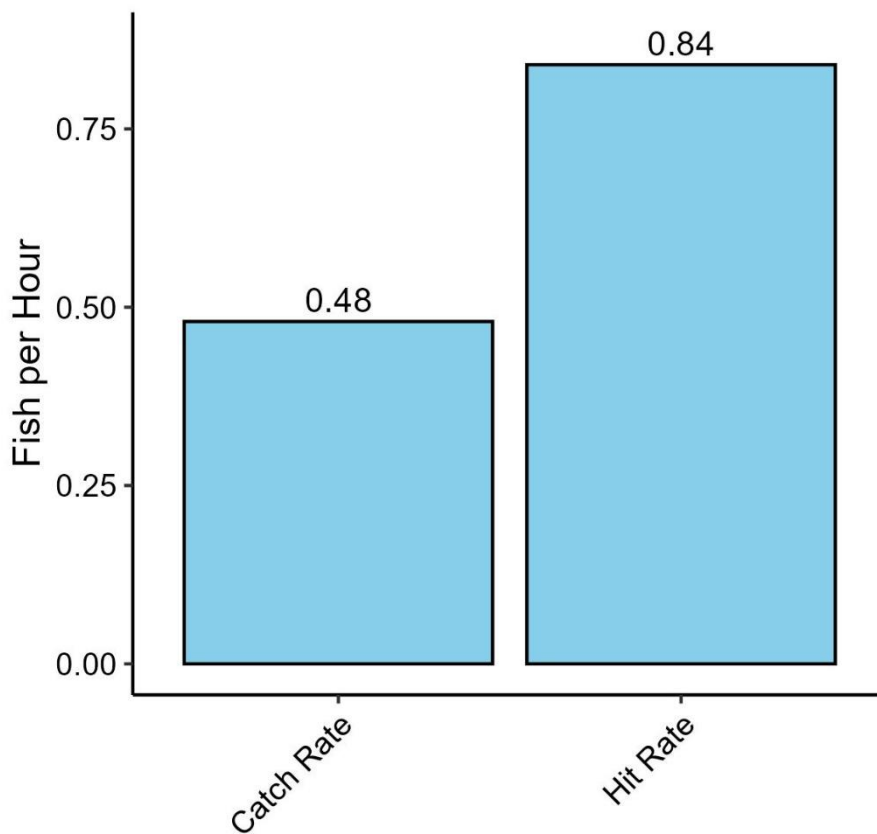


Figure 1. Average catch (fish hooked and landed) and hit rate (fish hooked, regardless of whether the fish was landed) for salmonids for the summer 2024/25 fishing period on Lake Coleridge.

## **Fishing Method**

Trolling is the most popular fishing method for anglers at Lake Coleridge, with 51% of anglers surveyed trolling the lake. Spin fishing is also popular, and was used by 34% of anglers surveyed. Nine anglers reported using a combination of multiple fishing methods.

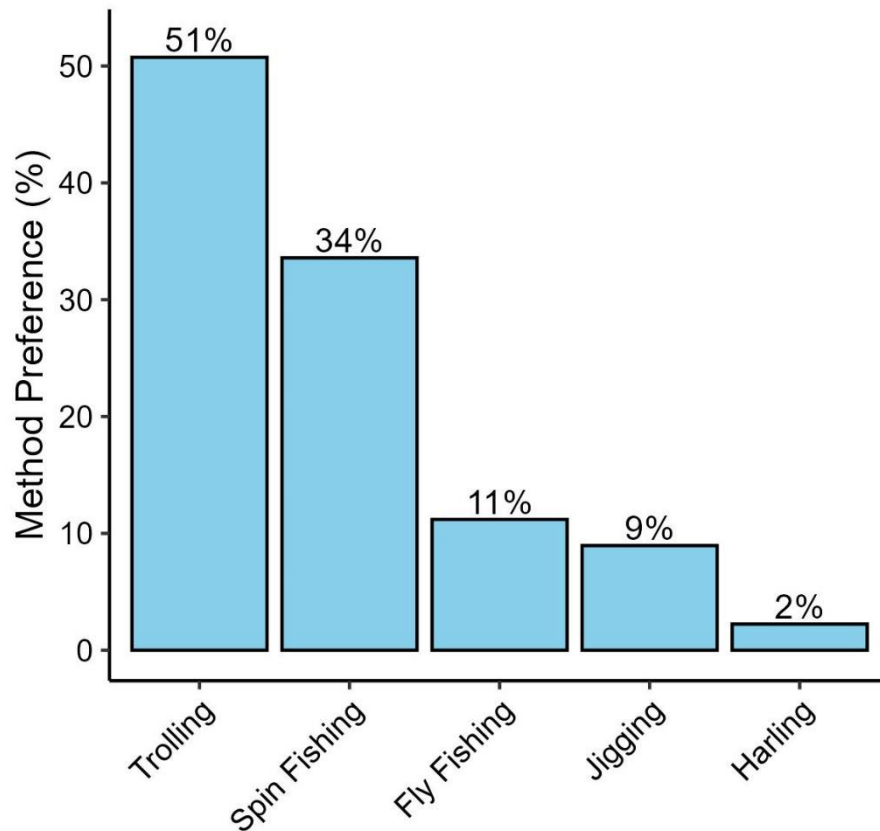


Figure 2. Preferred fishing method for anglers fishing Lake Coleridge during the 2024/25 summer period. Because some anglers reported using multiple fishing methods, percents add up to more than 100.

Anglers who used harling or jigging had the highest catch rates (0.79-0.8 fish per hour), followed by trolling (0.59 fish per hour). Anglers who used spin fishing had the lowest catch rate (0.19 fish per hour).

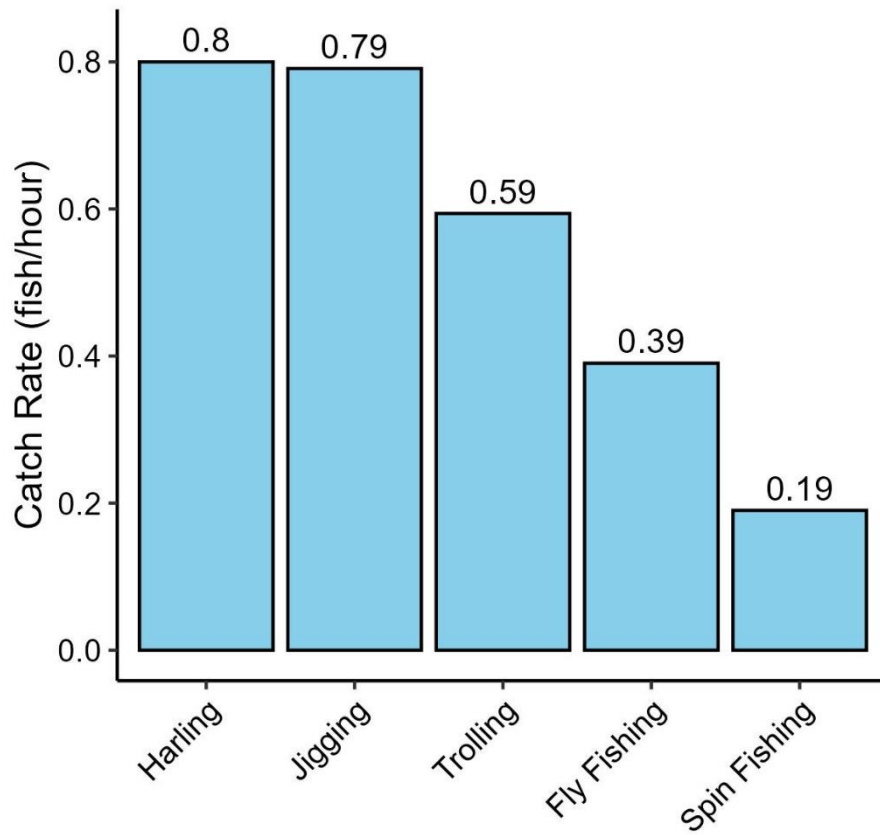


Figure 3. Average catch rate by fishing method reported by anglers for the summer 2024/25 fishing period on Lake Coleridge.

Breakdown of hit rates (including both fish that were caught and fish that were hooked but not landed) by fishing method was similar to catch rates. Anglers who used harling, jigging, or trolling had the highest hit rates (1.08-1.24 fish per hour), while anglers who used spin fishing had the lowest hit rates (0.38 fish per hour).

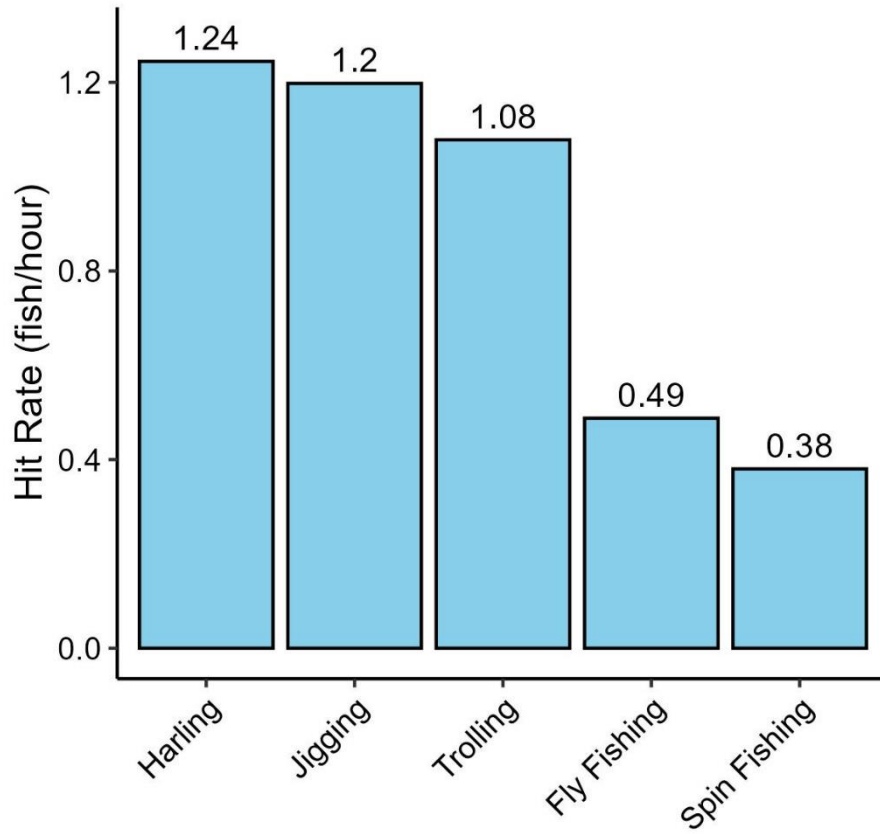


Figure 4. Average catch rate by fishing method reported by anglers for the summer 2024/25 fishing period on Lake Coleridge.

### Catch and release percentages

Anglers provided details for 140 caught fish. Only 7 of those fish were not of legal size. Catch and release varied by species; 91% of caught salmon, 73% of rainbow trout, and 63% of brown trout were harvested.

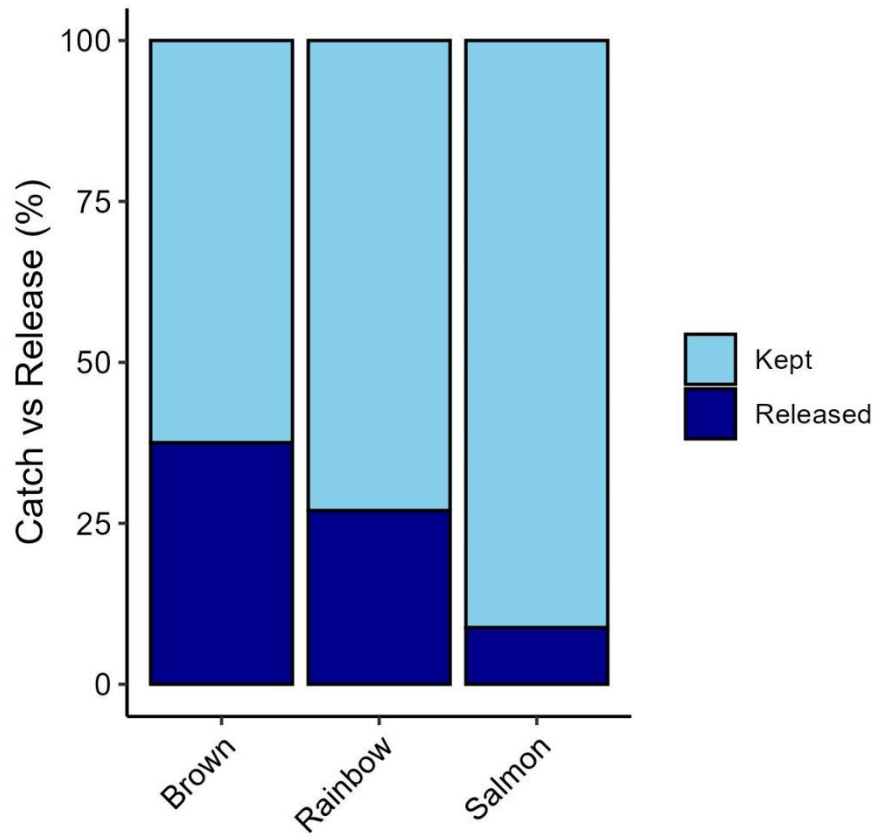


Figure 5. Proportion of fish caught that were kept vs released for each species on Lake Coleridge during the summer period 2024/25.

### ***Fish Size and Condition***

Mean length of reported fish was 52 cm for brown trout, 46 cm for rainbow trout, and 36 cm for salmon. While smaller in size, salmon on Lake Coleridge had a higher average body condition score (44.2) than rainbow (41.3) or brown trout (40.9).

A fish's condition factor is calculated using the length and weight of a salmon or trout to reflect its body condition. Typically, salmon or trout with a condition factor of 40+ are considered to have a high body condition, while fish with a condition factor of <30 are considered to be in poor condition.

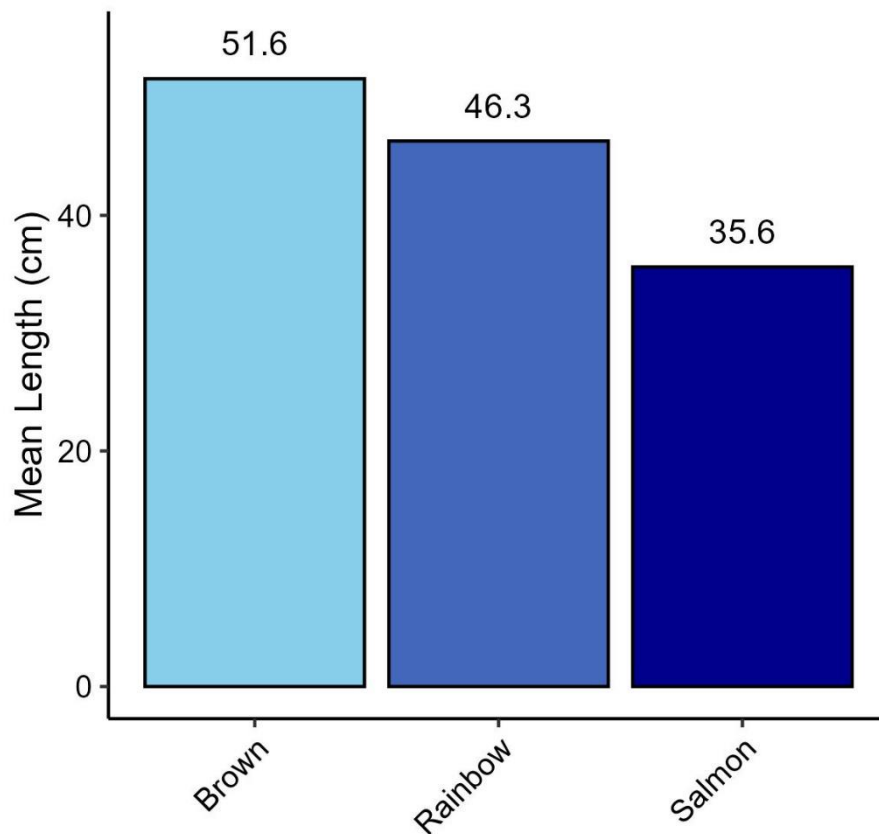


Figure 6. Average length of fish harvested for each species during the summer 2024/25 fishing period on Lake Coleridge.

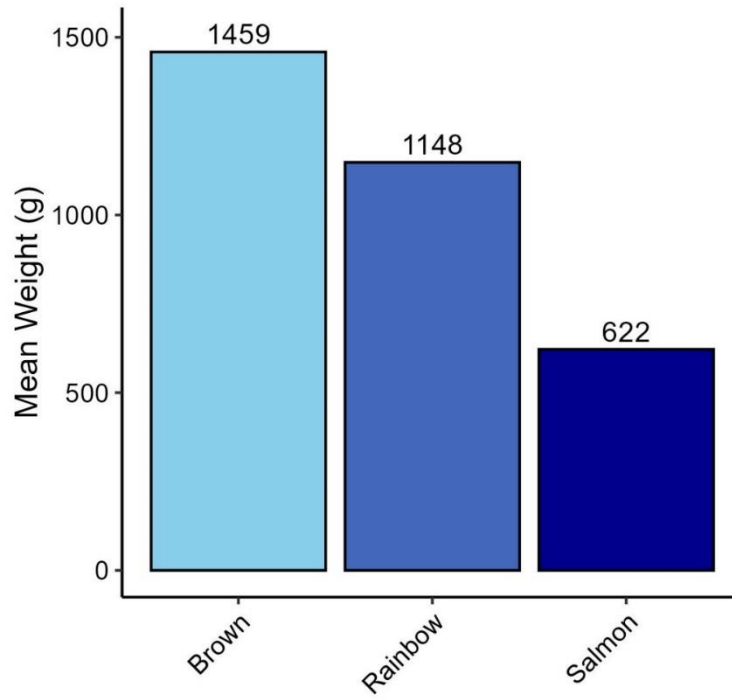


Figure 7. Average weight of fish harvested for each species during the summer 2024/25 fishing period on Lake Coleridge.

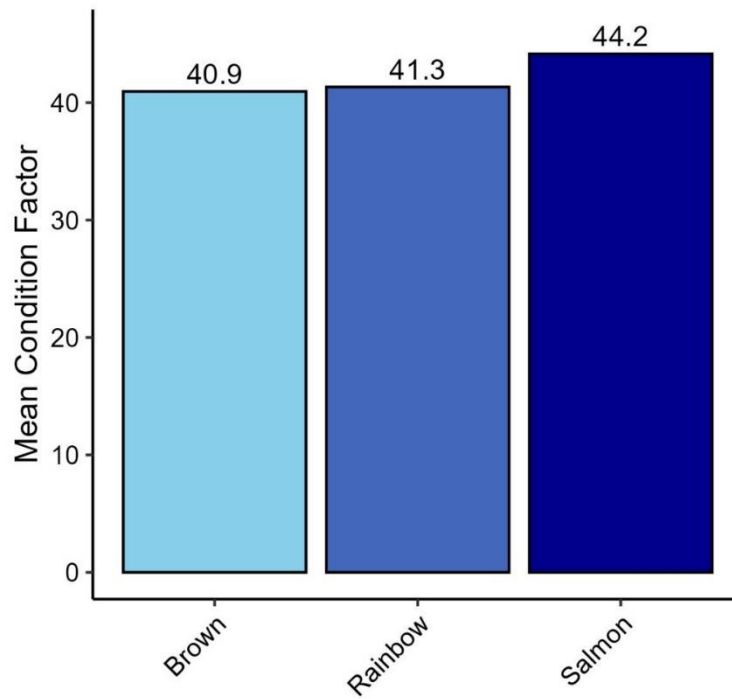


Figure 8. Average condition factor of fish harvested for each species during the summer 2024/25 fishing period on Lake Coleridge.

## Angler Satisfaction

When it came to angler satisfaction, 86% of anglers reported they were satisfied or very satisfied with the condition of fish they caught. Only 55% of anglers reported they were satisfied or very satisfied with their angling success; 5% reported they were dissatisfied and 13% reported they were very dissatisfied with their angling success. Finally, 90% of anglers reported they were satisfied or very satisfied with their overall fishing experience.

Anglers on average rated the condition of fish they caught at 8.1, their angling success at 6.5, and their overall fishing experience at 8.6.

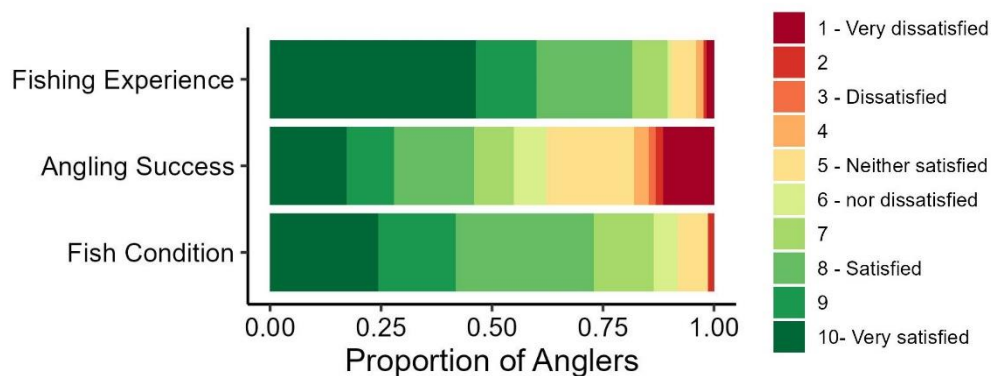


Figure 9. Angler satisfaction with the overall fishing experience, angling success, and condition of fish caught during the summer 2024/25 fishing period on Lake Coleridge.

## Discussion

As this is the first year of the survey, we are unable to draw conclusions about how the state of the fishery has changed over time. However, we can compare our results to similar surveys from other lakes, for example the 2024/25 survey of Lake Taupō (DOC 2025).

We found that compared to Lake Taupō, the average length and weight of rainbow trout was similar on Lake Coleridge. Additionally, the condition of rainbow trout was slightly lower at Lake Coleridge than Lake Taupō. However, the condition of salmon at Lake Coleridge was higher than the condition of rainbow trout at Lake Taupō. The mean condition factor for both lakes met the threshold for “high” condition fish (> 40). Analysis of data from the annual Coleridge Competition indicates an increasing trend in body condition for all three species (Craig 2024).

Rates of harvest (percent of fish caught that were kept) were higher on Lake Coleridge than Lake Taupō. Anglers at Lake Taupō harvested around 65% of legal rainbow trout caught, which is similar to the harvest rate of brown trout on Lake Coleridge. However, rainbow trout had a higher rate of harvest on Lake Coleridge and nearly all legal sized salmon caught by anglers at Lake Coleridge were harvested.

Catch rate (fish landed/hr) was lower on Lake Coleridge, about half the reported catch rate at Lake Taupō. However, jigging is far more popular at Lake Taupō than Lake Coleridge, used by 45% of anglers compared to 9% of Coleridge anglers. When we break down catch rate by fishing method, we find that anglers that used jigging and harling had catch rates that were more similar to catch rates on Lake Taupō.

Different fishing methods had different rates of angler success. In particular, the catch rates for boat fishing methods (trolling, harling, and jigging) are much higher than the catch rates for shore fishing methods. Additionally, the hit rates for trolling and spin fishing are nearly twice the catch rates. High hit rates associated with low catch rates indicate fish that are an engaging challenge to catch once on the line, and may contribute to an angler's perception of success.

Finally, satisfaction scores between the two lakes were largely similar. Anglers reported they were slightly more satisfied with fish condition at Lake Coleridge relative to Lake Taupō. Anglers reported they were slightly more satisfied with their overall fishing experience at Lake Taupō than Lake Coleridge. Both lakes had nearly identical mean satisfaction with angling success.

In future years, continued creel surveys will allow us to monitor changes to the lake, including changes in fish condition, angler success, and angler satisfaction. Further, additional creel surveys conducted at other high country lakes will allow us to create a baseline for comparing between North Canterbury lakes, and ensure Fish & Game provides an adequate range of angling experiences to meet angler needs.

## References

- Craig, E. 2024. Graphical summary of Lake Coleridge Fishing Competition fish data 2008-2024. North Canterbury Fish & Game.
- Department of Conservation (DOC). 2025. Creel survey snapshot 2024/25. [Creel survey snapshot 2024-25: Taupō Trout Fishery](#)
- Nieman, Chelsey L., Carolyn Iwicki, Abigail J. Lynch, Greg G. Sass, Christopher T. Solomon, Ashley Trudeau & Brett van Poorten. 2021. Creel Surveys for Social Ecological-Systems Focused Fisheries Management, Reviews in Fisheries Science & Aquaculture. doi.org/10.1080/23308249.2020.1869696
- Sowry, Ben. 2023. Project 1122 – Creel Surveys of Lake Hawea. Otago Fish & Game. [Hawea-Angler-Survey-Report-2023.pdf](#)
- Stoffels, Rick, & Martin Unwin. 2023. Angler usage of New Zealand lake and river fisheries: Results from the 2021/22 National Angler Survey. National Institute of Water & Atmospheric Research Ltd. [NIWA Client report](#)



How would you rate the size and condition of fish you were catching? (1 being extremely dissatisfied and 10 being extremely satisfied)

**1      2      3      4      5      6      7      8      9      10      NA**

How would you rate your angling success? (1 being extremely dissatisfied and 10 being extremely satisfied)

**1      2      3      4      5      6      7      8      9      10      NA**

How would you rate your fishing experience? (1 being extremely dissatisfied and 10 being extremely satisfied)

**1      2      3      4      5      6      7      8      9      10      NA**