

COHO CONSERVATION & FIRST NATIONS' FISHERIES ACCESS THROUGH HEILTSUK MONITORING

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Introduction

The declining availability of preferred Pacific salmon species has limited Heiltsuk fishers' ability to meet their Food, Social, and Ceremonial (FSC) requirements in recent decades on the Central Coast of British Columbia. For over 14,000 years, all five species of Pacific salmon have been central to Heiltsuk lifeways, culture, diet, and economy, particularly sockeye and chum salmon¹. However, as access to these species has diminished, Heiltsuk FSC fishers have become more reliant upon Chinook and coho, often harvesting these species through fishing methods such as trolling. Coho populations on the Central Coast have fluctuated over the past century, but recent evidence indicates a sharp decline in many wild populations^{1,2}.

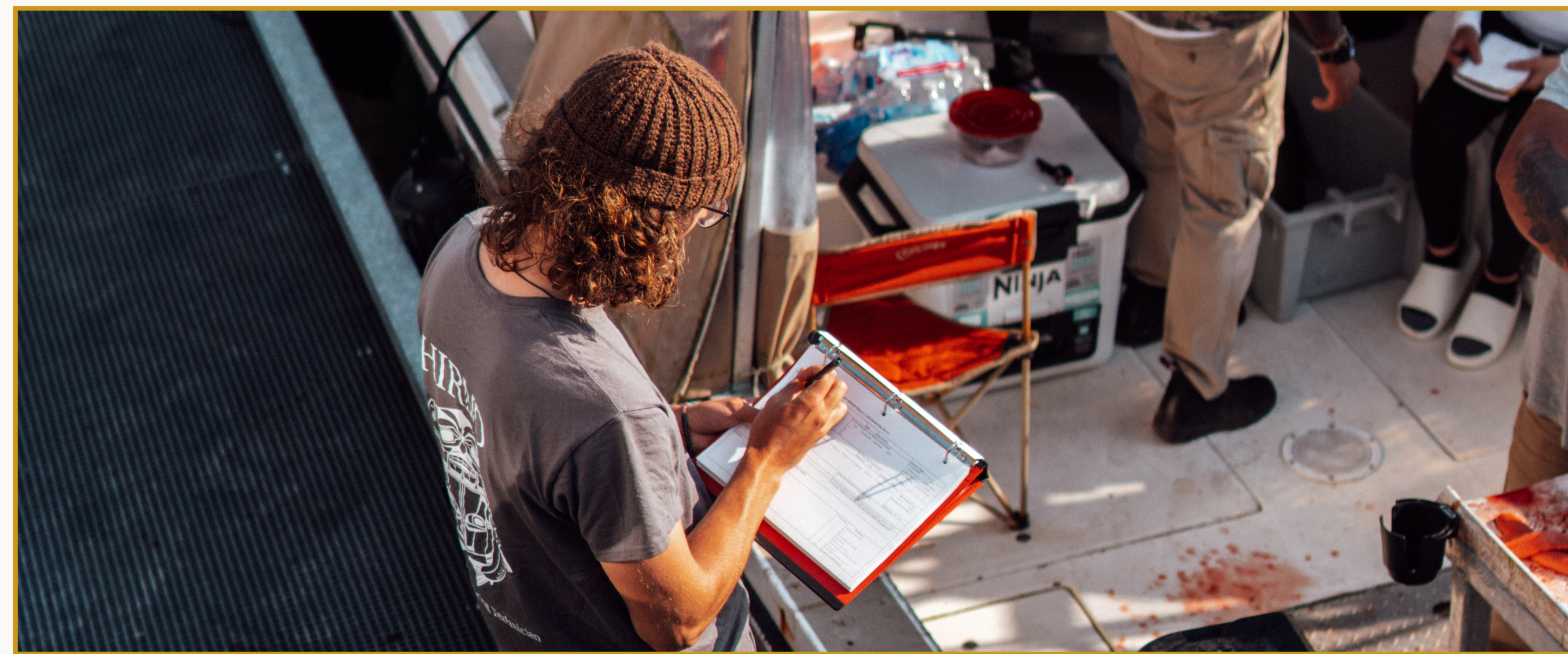


Figure 1. Heiltsuk monitoring technician conducting fishing survey with local fishers. Photographed by Kyri Peel (2025).

Objective

This research addresses critical gaps related to the impacts of marine mixed-stock fisheries on coho populations and fishing access for Heiltsuk fishers within Heiltsuk Territory^{3,4}. By better understanding when, where, and how many coho salmon from each Conservation Unit (CU) are intercepted in fisheries and combining this analysis with insights garnered from Heiltsuk FSC fishers, we aim to inform management approaches that prioritize salmon conservation and Heiltsuk FSC access, while allowing fishing opportunities for other sectors when coho abundance permits.

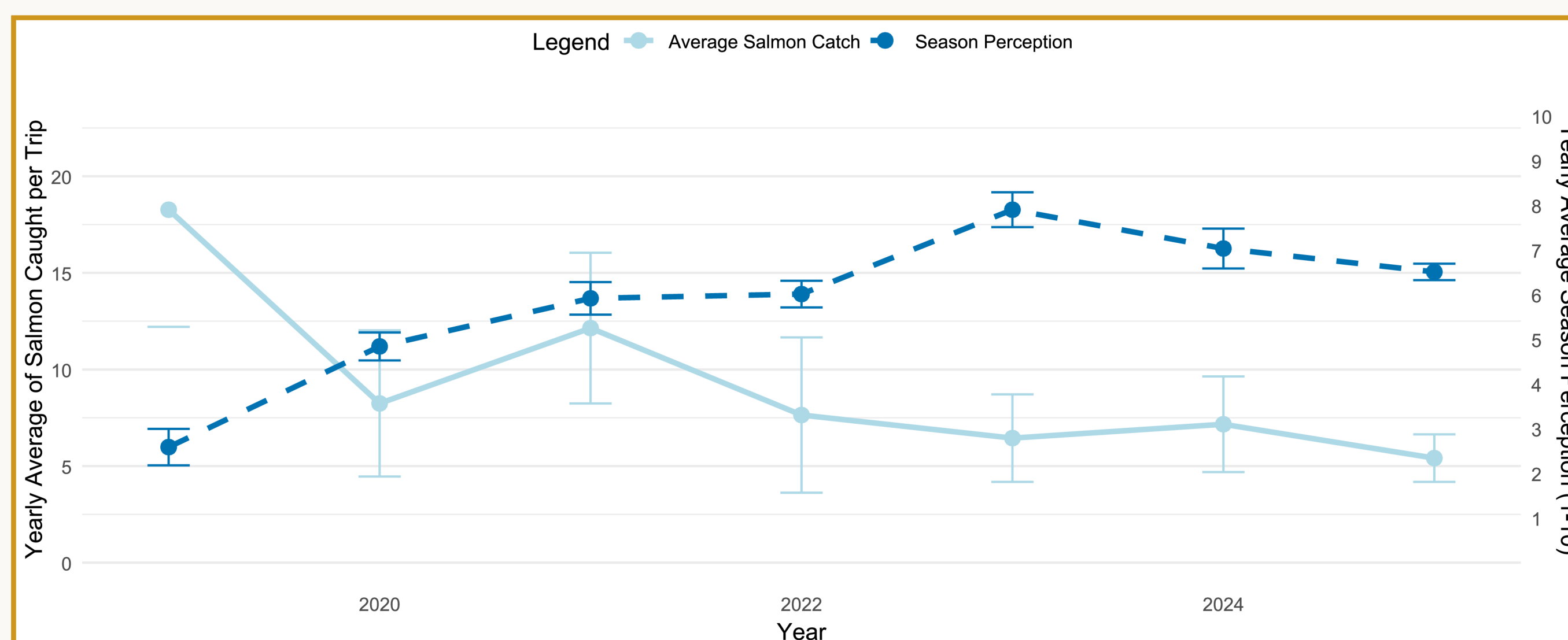
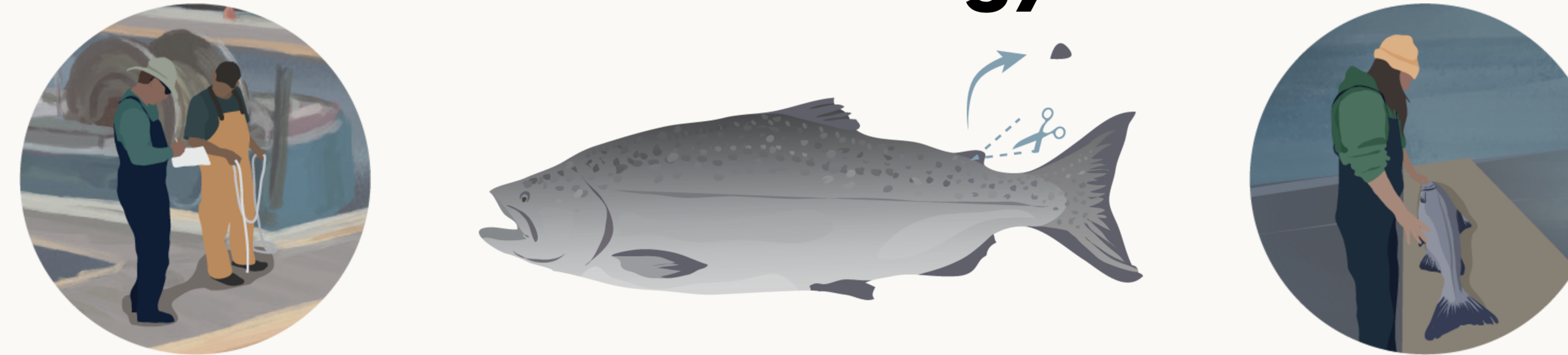


Figure 2. Average perception of overall fishing season success and salmon catch per trip from Heiltsuk FSC fishers from 2019 to 2025 (rated on a scale from 1 = worst to 10 = best). Error bars are 95% confidence intervals.

Methodology



1 The Heiltsuk Integrated Resource Management Department (HIRMD) Fisheries Monitoring Program employed a mixed-method sampling approach to better understand fisheries access and coho status throughout Heiltsuk territory. The HIRMD dockside technicians conducted dockside surveys (2019-2025) from May to September in Bella Bella to collect quantitative, qualitative, and genetic data.

2 Quantitative data collected during surveys included time spent fishing, number of salmon caught, released, and retained, fuel cost, and the number and type of other vessels observed. Qualitative data included fishers' perceptions of success, satisfaction with trips and the fishing season, intended use of the catch, fisher demographics, fishing conditions, fishing location, and gear types used.

3 Genetic Stock Identification (GSI) samples were also collected (2019-2024) by taking small clips from the adipose fin or tail fins of salmon catches. These samples are sent on Whatman sheets to the DFO Molecular Genetics Laboratory in Nanaimo, BC, to determine CUs of origin.

4 From 2019-2025, 2,980 dockside surveys were collected in Bella Bella. As a result, the data presented in this report represent a subset of fishers who land or transit through Bella Bella and agree to participate, rather than a fully proportional sample of the entire region's fisheries.

5 Statistical analysis was conducted using RStudio. To support consistent analysis of fishery trends, surveys included standardized and measurable responses.

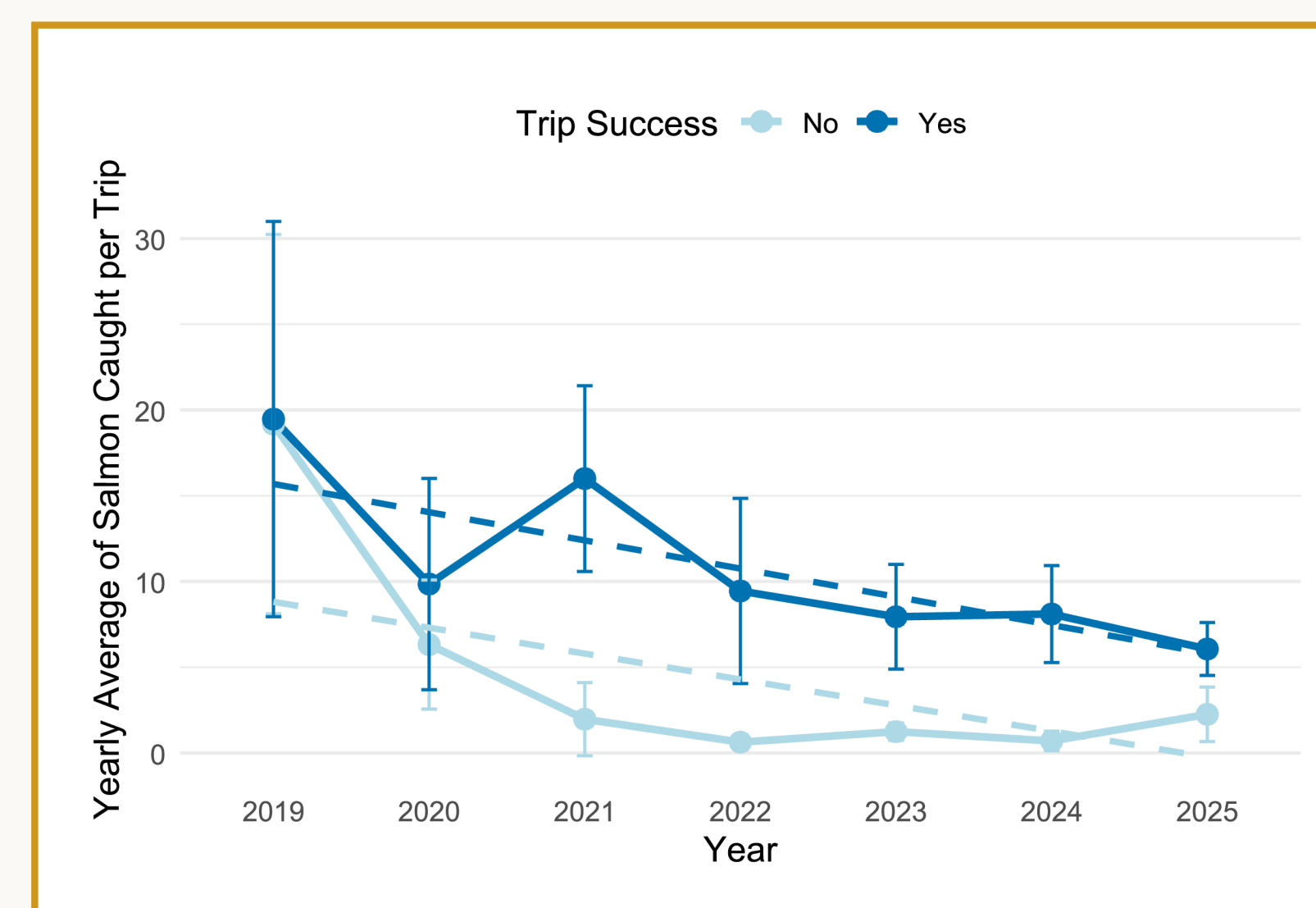


Figure 3. Heiltsuk fisher daily trip success perceptions and average salmon catch per trip from 2019-2025. Error bars are 95% confidence intervals.

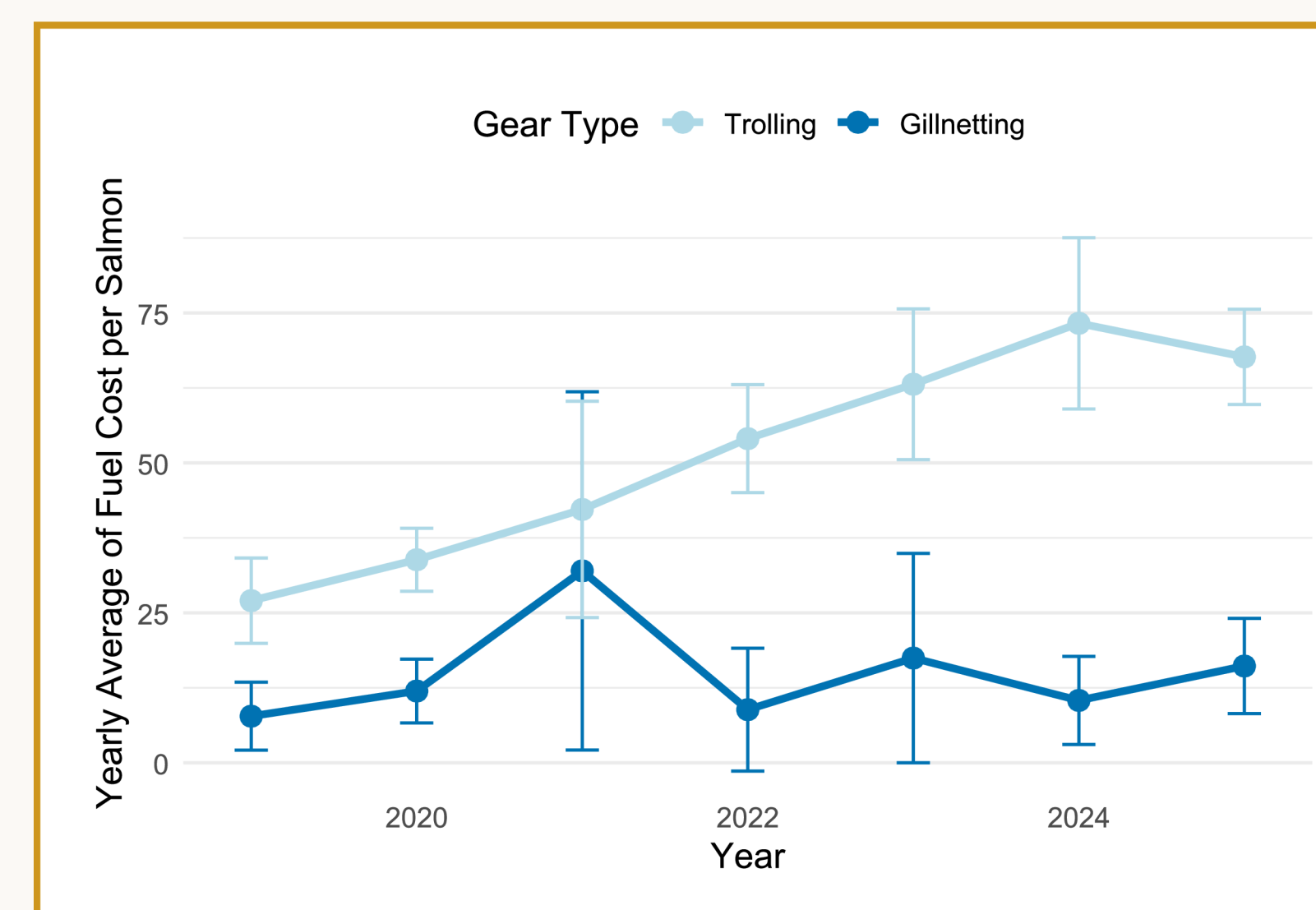


Figure 4. Heiltsuk fisher fuel cost estimates per salmon based on gear types across years. Error bars are 95% confidence intervals.

Results

1. Positive perceptions of fishing seasons (success) are increasing, while landed salmon catch per trip is decreasing (Figure 2).
2. Trips considered successful with increasingly fewer salmon caught per trip (Figure 3).
3. Fuel cost per salmon is increasing, tripling in six years for trips utilizing trolling fishing gear (Figure 4).
4. Coho lengths (size) are estimated to be decreasing in local CUs (Figure 5).
5. The distribution of coho catch is shifting within Heiltsuk Territory, with increasing proportions from Bella Coola - Dean Rivers CU (Figure 6).

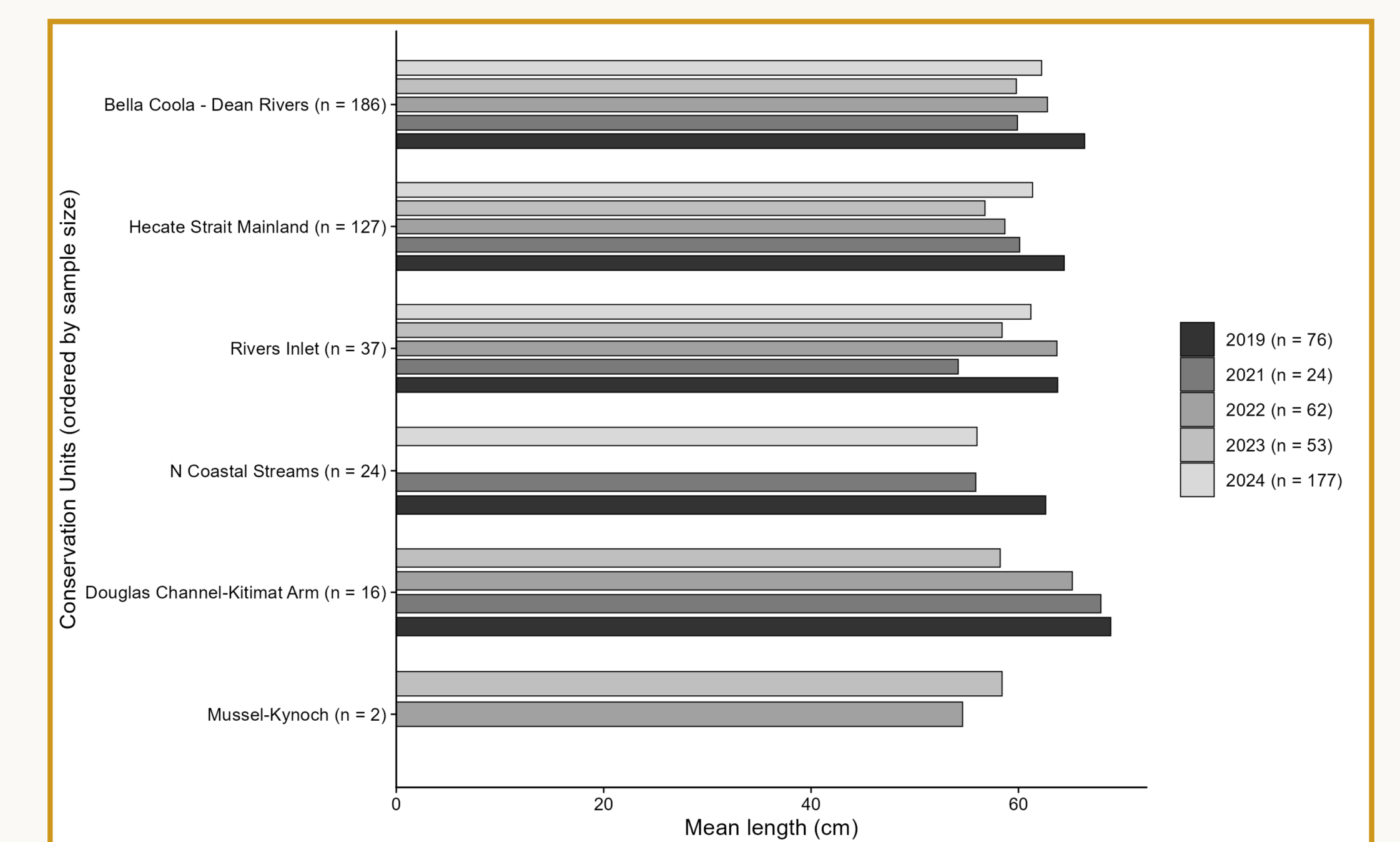


Figure 5. Mean fork length (cm) of coho salmon by Central Coast Conservation Units (CUs) and year (2019-2024). Bars show annual mean lengths, with shading indicating year. The total number of recorded length observations across all years, ordered by CUs.

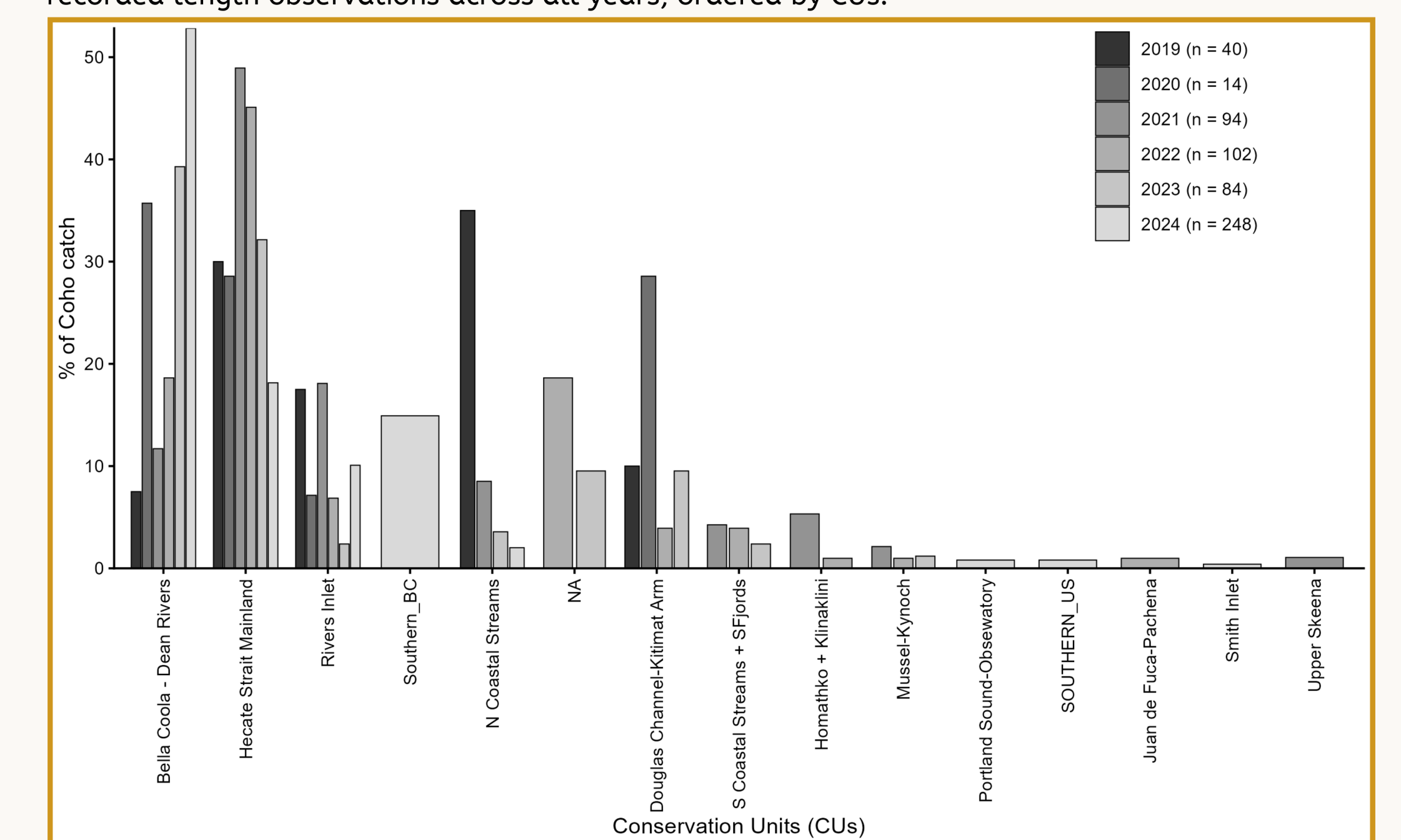


Figure 6. Estimated contributions (represented as a percentage of the total sampled catch) of British Columbia coho salmon Conservation Units (CUs) to mixed-stock catches landed in Bella Bella between May and September from 2019 to 2024, representing only what is captured in dockside surveys. Bars show the percent of catch, with shading indicating the year.

Conclusions

The perception results suggest a potential shift in how Heiltsuk FSC fishers define a "successful" fishing trip and fishing season. While the average number of salmon caught per FSC trip has seemingly declined over the years, FSC fishers' perceptions of overall season success have increased. Increasing costs of fuel and use of trolling gear over gillnets reflects both changing access to equipment and specific salmon species, as well as declining expertise in gillnet fishing as older fishers who formerly fished in the commercial fleet age and participate less in salmon fishing. Changes in coho CU composition in recorded catch suggest there is a need for continued fisheries monitoring and GSI sampling to inform spatial and temporal management decisions, especially for Central Coast coho populations. The trends shown highlight potential shifts in access, effort, and outcomes for local Heiltsuk FSC fishers that may warrant further investigation and have management implications for local coho populations.

Acknowledgements

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