



Arctic Salmon

@arcticsalmon on FB

December 3, 2024

Hello everyone,

We are pleased to share with you some results to help address a question we received from communities and harvesters: do salmon and char eat the same things in the ocean?

The short answer is: chum salmon and char diets do not seem to overlap in the ocean along the Beaufort Sea coast. Please see the summary on the next page for more information. We used diet markers analyzed from muscle tissue to determine where in the food chain these fish eat, if their prey comes from offshore or nearshore, and how much of their diet overlaps. These analyses were only possible because of the samples turned in by harvesters and provided to the Arctic Salmon program in 2017 and 2019. We also used samples collected by the Dolly Varden and Arctic char stock assessment programs.

We are very grateful for the support from so many people over many years across the Arctic Salmon and char stock assessment programs. Only through the efforts of many, we had the samples needed to address this community question. We have recognized the Aklavik HTC, Tuktoyaktuk HTC, Paulatuk HTC and Ehdiitat RRC in the acknowledgements for their support in collecting the samples used in this study. We also acknowledge the contributions of the harvesters in the acknowledgements, and can name specific individuals if permission is provided. We do recognize the community-based coordinators in the acknowledgements by name who helped process salmon samples during these years as well.

If you would prefer the HTC or RRC is recognized as a co-author on this paper, we welcome the discussion. Please let us know if this is your preference by January 3, 2025. We will then set up a meeting to provide more information and discuss how best to recognize your contribution.

The manuscript is nearly ready and, on January 6th, 2025, we intend to submit it for publication. A plain language summary is presented on the second page with the key highlights from the paper. We will happily attend (via phone or virtual means) a HTC or RRC meeting to explain the results further, if you wish. We can also send you the manuscript to review, if you would like.

Thank you again for all of your efforts and support for the Arctic Salmon and char stock assessment programs.

Sincerely,

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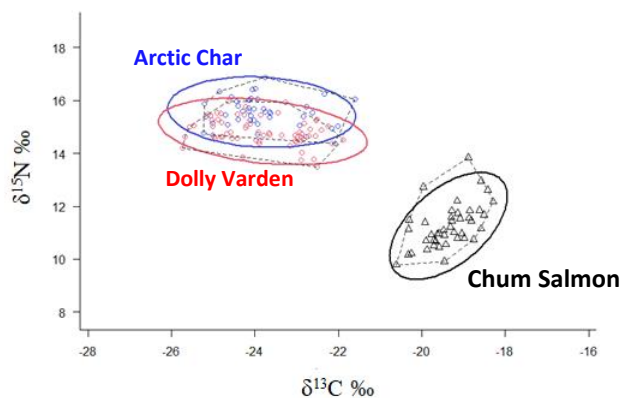


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Q: Do Dolly Varden, Arctic char and chum salmon eat the same things?

A: Muscle samples from Dolly Varden and Arctic Char collected from stock assessment programs during the summer, and chum salmon before they transitioned into their spawning phase were analyzed to study diet. The nitrogen and carbon stable isotopes found in fish muscle represent about 30 days of feeding, versus stomach contents that represent a few hours. The isotope results suggest that Dolly Varden and Arctic char eat higher in the food chain, and in more marine waters compared to chum salmon that appear to be eating more invertebrates, closer to shore. Based on these results, char and chum salmon appear to be using different prey sources between July and September.



$\delta^{13}\text{C}_{\text{lipid-free}}$ and $\delta^{15}\text{N}$ values among Arctic char (blue), Dolly Varden (red), and chum salmon (black). Standard ellipse areas (SEAs) are indicated by *solid lines* for each species. Fishes were collected between July-September in 2017 and 2019.