

How to Participate in the Adult Salmon Diet Program

What do you need to participate?

- Adult Chinook or Coho salmon
- Ziploc baggy (can be provided by ASDP)
- Data card (print at home or e-mail to request from us)
- A willingness to contribute to salmon science!

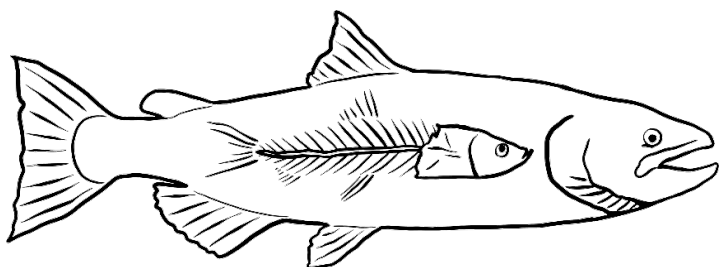
How?

- ✓ Complete a data card* for each catch
- ✓ When cleaning your catch, remove all internal organs
- ✓ Place organs in a Ziploc baggy with complete data card
- ✓ Freeze your samples ASAP!
- ✓ Drop off at participating depots* or contact us to pick up!

Why?

The ASDP aims to monitor the diets of Chinook and Coho salmon over time. We can use this information to track changes in forage fish population abundance and distribution, unravel seasonal differences in salmon diet, and much MUCH more!

When you contribute to the program, you will receive a personalised annual report summarising what your catches ate that year. Every sample submitted with a complete data card is an entry to win awesome gear prizes generously donated by our sponsors, AP Tackleworks, Islander Reels, and Island Fisherman Magazine!



*Data Card - Information Needed:

- Your e-mail address or name
- Catch date (yyyy-mm-dd)
- Species caught
- Hatchery or wild fish?
- Fork length (provide units)
- Site name of catch
- PFMA + sub-area of catch

If applicable:

- Genetic Sample Code
- Head Recovery Code

****Please do not guess! Leave the box blank if you are unsure of any details. ****

We provide waterproof data cards upon request, or you can print your own at home! If using regular paper, please wrap data card in separate bag or plastic wrap before placing in with the organs.

UVic Adult Salmon Diet Program – must include all BOLDED fields	
Contact email	
Catch date (yyyy-mm-dd)	
Catch time (hh:mm)	
Circle:	*Chinook or Coho*
	Hatchery or Wild
	Male or Female
Nose-to-fork length (units)	<input type="checkbox"/> cm <input type="checkbox"/> Inches
Weight (units)	<input type="checkbox"/> kg <input type="checkbox"/> lbs
Depth (units)	<input type="checkbox"/> m <input type="checkbox"/> ft
Genetic sample code (if applicable)	
Head recovery code (if applicable)	
Fishing site name	
Stat area – Sub-area	
Gear	
Comments (e.g., latitude and longitude)	

What goes in the bag?

- Stomach
- Intestines
- Gonads
- Any regurgitated prey
- Complete data card (waterproof or wrapped)

How to store?

- Freeze immediately to prevent further decomposition
- Drop off at a participating depot – listed in the information below
- If you cannot reach a depot, contact ASDP to organize a pick up

Continue reading below for more information! Have questions or want to take part? Contact us at uvicsalmondiet@gmail.com

How to Participate Continued...

If you are interested in getting involved in the program, please read through this document which outlines the protocol for collecting and submitting stomachs. Thank you for your contribution!

Which Stomachs to Submit:

- Adult Chinook and Coho salmon stomachs.
- Submit stomachs whether they look full or not; **decide if you will be submitting the stomach before you clean the fish, then go through with it whether empty or full.**

Collecting Stomachs:

- Cut the esophagus as close to the head/gills as possible. Attempt to make the cut from the anus to the collar as shallow as possible to avoid cutting open the digestive tract.
- **Remove and bag the entire digestive tract (esophagus, stomach, and intestine) as well as the gonads and other organs in a reseal-able plastic bag.** If possible, keep the intestine intact with the rest of the internal organs.
- If prey items are protruding from the mouth or are regurgitated, try to retain them in the bag.
- It would be preferable if the prey was left in the stomach; however, if you do open the stomach, ensure that you bag all the contents for submission, preferably in a separate baggy (or wrapped in cling wrap) from the rest of the internal organs and then placed together in a larger bag.

Data Cards:

- For each stomach, include a **complete data card**.
- Ensure that the information on the card corresponds to the correct fish!
- The most **essential information** we require is **bolded** on the data card. Any other information you would like us to know about the catch is up to you!
- **Please write in PENCIL (not ink):**
 - Your email address (in order to identify you and send you your annual report)
 - Catch date (yyyy-mm-dd)
 - Species (Chinook or Coho)
 - Hatchery or wild (clipped vs. unclipped)
 - Fork length (cm or inches)
 - Fishing site name, stat area, and sub-area
 - Genetic sample code (if a participant of the Avid Angler Program)
 - Head recovery code (if submitting the head of a hatchery fish for DFO)
 - **If it is not possible to collect any of this information with reasonable accuracy then either leave the field blank or indicate accuracy issues (e.g., state that length was guessed rather than measured, or just leave it blank).**
- **Please provide units for all measurements (kg/lbs; cm/inches; m/ft)**
- Optional information but greatly appreciated:
 - Catch time (hh:mm)
 - Sex (male or female)

- Weight (kg or lb)
 - Depth (m or ft)
 - Gear used
 - Any other comments (e.g., latitude and longitude, condition of the fish when captured, etc.)
- Data cards on the final page of this document can be printed on regular paper. If using regular paper, consider wrapping stomachs in cling wrap before bagging to prevent the paper from getting soaked. You can also request **waterproof data cards** from us!
 - Waterproof data cards (and sample bags) can be picked up at any of our supporting depots, or you can contact us at uvicsalmondiet@gmail.com to organize a pick up / have them mailed to you.
 - In the absence of any data card, information can also be written in pencil on scrap paper or with a waterproof felt pen on the outside of the sample bags.

Storage:

- **Freeze the samples as soon as possible to limit continuing digestion/decomposition. Where freezing immediately after cleaning is not possible, place samples on ice or in a cooler.**
- If it is not possible to freeze the samples within 12 hours, please still submit the stomach, but make a note of the time that elapsed prior to freezing (we can still obtain useful information from stomachs stored on ice for up to 3 days prior to freezing).

Submission:

- Drop off your samples at any one of our **supporting depots (see below)**. Please tell the staff that the stomach samples are for the UVic Adult Salmon Diet Program and that there is a tote for them in the main freezer (not all staff may be familiar with the program). Sample bags and waterproof data cards are also available at these locations.
- If you are unable to make it to a depot to drop off your samples and/or pick up sampling supplies, please contact us at uvicsalmondiet@gmail.com to arrange a pick-up, mailing, or drop-off at UVic.

Follow-up and draw prizes:

- In the spring (April/May) once all the stomachs are processed and the data is analyzed you will receive a personalized summary report of the stomach contents of the samples you submitted, as well as a summary report of the overall results for all fish collected that year!
- **Prize draws** take place once all stomachs are processed (typically April-May) and you will be contacted if you win!
- Those who contribute 10+ stomachs with an e-mail address included will receive a thank you gift from the program for all your hard work!

****Please note we DO NOT accept the heads of hatchery Chinook and Coho salmon.** This is a separate DFO program. Please follow this link for more information, including a list of drop-off depots: <https://www.pac.dfo-mpo.gc.ca/fm-gp/rec/salmon-saumon-eng.html>.

Please spread the word to get anglers involved!
For general inquiries, contact uvicsalmondiet@gmail.com.

Participating depots

Depot Name	Address	Phone Number
Island Outfitters	1681A Island Highway, Victoria, BC V9B 1H9	250-475-4969
Esquimalt Anglers' Association	1101 Munro Street, Victoria, BC V9A 5P2	250-385-9604
Home Hardware	2356 Beacon Avenue, Sidney, BC V8L 1X3	250-656-2712
Bucky's Sports Shop	171 Craig Street, Duncan, BC V9L 1V8	250-746-4923
Pacific Net & Twine	1380 Alberni Highway, Parksville, BC V9P 2C9	250-248-6953
Harbour Chandler	52 Esplanade, Nanaimo, BC V9R 4Y7	250-753-2425
Tyee Marine	880 Island Highway, Campbell River, BC V9W 2C3	250-287-2641
Bamfield Mercantile and Marine	81 Boardwalk, Bamfield, BC V0R 1B0	250-728-3351
Ucluelet Aquarium	180 Main Street, Ucluelet, BC V0R 3A0	250-726-2782
Bon Chovy Fishing Charters	1814 Mast Tower Road, Vancouver, BC V6H 4B6	604-763-5460
Pacific Angler	78 East Broadway, Vancouver, BC V5T 1V6	604-872-2204
Stillwater Sports	4849 Delta Street, Delta, BC V4K 2T9	604-946-9933
Chapman Creek Hatchery	4381 Parkway Drive, Sechelt, BC V0N 3A1	604-885-4136
Powell River Outdoors	4466 Marine Avenue, Powell River, BC V8A 2K2	604-485-4868

Background Information

University of Victoria Fisheries Ecology and Marine Conservation Group

The coastal ocean of Southern British Columbia is an important rearing and foraging area for migratory and resident Chinook and Coho salmon. These salmon support economically and socially valuable recreational and commercial fisheries and culturally important First Nations harvests. They also play an important role in the ecosystem; for example, as food for the endangered Southern Resident killer whale population. Feeding is critical at all stages of life as salmon grow, recruit to fisheries, and migrate back to their natal streams to spawn. While the diets of juvenile salmon in the marine environment have been extensively studied in recent years, data on adult diets in British Columbia are sparse. Improving understanding of how Chinook and Coho salmon diets vary by region, season, and year may help us understand factors limiting growth and survival of these valuable populations. Additionally, trends in salmon diets have the potential to provide us with a novel

and powerful perspective on changes in the ecosystem. Such information can contribute to management measures to promote recovery and sustainable use of multiple marine species.

Early attempts to understand regional diet trends and the importance of Pacific herring to Chinook and Coho salmon began with the work of Pritchard and Tester (1944). They enlisted the help of recreational and commercial fishermen to obtain stomachs from Coho and Chinook salmon caught throughout British Columbia between 1939 and 1941. Subsequent diet studies have generally relied on catches from commercial fishing vessels, providing only snapshots of diet in particular regions and seasons. No adult Chinook and Coho salmon diet studies have occurred in Southern B.C. since the late 1960s. Additionally, there are no published studies on diets during the less productive winter months; representing a significant basic knowledge gap.

The year-round recreational fishery in Southern B.C. provides an opportunity to address these limitations. This includes gaining an understanding of winter diets, facilitating comparisons between contemporary Chinook and Coho salmon diets and those reported in historical studies, and conducting ongoing ecosystem monitoring from the perspective of the salmon themselves. Long-term diet analysis of predators such as harbour seals and seabirds has been used successfully as a tool for monitoring forage fish population dynamics and the effects of climate change on marine ecosystems. Such predator diet analysis can be an inexpensive and unbiased complement and/or alternative to fishery-dependent assessment of prey species and sampling using research vessels. Through the interest and support of the recreational fishing community and First Nations anglers, we aim to enlist the salmon to provide information on the health and trajectory of the ecosystem on which they depend.

Our specific goals (timelines in parentheses) are to:

1. Collect and publish the first year-round data on Chinook diets in Southern B.C. and compare contemporary summer diets to those documented in historical studies (short-term, 2-3 years).
2. Develop Chinook and Coho salmon diets as an ongoing ecosystem monitoring tool (long-term, indefinite).
3. Develop a new avenue for engagement of recreational anglers in fisheries science (long-term, indefinite).

As of 2022 this program is developing into a long-term monitoring effort that will yield a unique dataset for understanding trends in the health of the marine ecosystem and its ability to support economically and socially valuable salmon stocks. We are currently enlisting private anglers, guides, and First Nations anglers to collect stomachs and working with derby organizers to conduct sampling at cleaning stations. We are particularly interested in talking with anglers who fish year-round. Anglers who participate in this program will receive updates on results that should be both interesting and informative for their future fishing success.

Our laboratory data collection includes identifying all prey items in the stomach and recording lengths and weights. We also record parasite presence and extract the otoliths (ear bones) of prey fish for age and growth rate analyses. In addition, we are analyzing intestinal contents for the presence/absence of common prey groups, allowing data to be collected for fish with empty stomachs. We also archive tissue samples from the salmon stomach itself for future genetic (stock identification) and/or stable isotope analyses. We are also developing collaborations with multiple external research groups to investigate forage fish ecology and toxicology. We will email an annual summary of the data collected to all program participants as well as

personalized reports of the stomach contents of the fish submitted by each angler. It is our intention that all data collected for this program be made publicly available through the Strait of Georgia Data Center.

Media and Publications

Island Fisherman

[Using Chinook Salmon Diets to Understand Herring Biology by Wesley Greentree \(UVIC\)](#)

[Winter Salmon Fishing: Mapping the Salish Sea through Salmon Diets by Wesley Greentree \(UVIC\)](#)

[UVic Salmon Diet Study Going Strong but Needs your Help! by Will Duguid \(UVIC/PSF\)](#)

[The UVic Chinook and Coho Diet Study by Will Duguid \(UVIC/PSF\)](#)

Islander

[Save your Stomachs – BC Adult Salmon Diet Program](#)

PSF

[Coho & Chinook Adult Diet Study](#)

[Story Map: The Diet of Adult Chinook and Coho Salmon](#)

National Observer

[Anglers and researchers delve into fish guts to save salmon by Rochelle Baker](#)

Scientific Papers

- Duguid, W.D.P., B. Maher, W. Greentree, J. Qualley, M. Quindazzi, K. Innes, and F. Juanes. 2022. **British Columbia coastal ecosystem structure through the lens of adult Chinook Salmon diets.** In Boldt, J.L., E. Joyce, S. Tucker, and S. Gauthier. (Eds.). State of the physical, biological and selected fishery resources of Pacific Canadian marine ecosystems in 2021. Can. Tech. Rep. Fish. Aquat. Sci. 3482: 189-192. [\[PDF\]](#)
- Quindazzi, M., K. Innes, J. Qualley, W. Duguid, and F. Juanes. 2020. **Engaging recreational salmon anglers in fisheries ecology.** Fisheries 45: 492-494. [\[PDF\]](#)
- Duguid, W., J.L. Boldt, L. Chalifour, C.M. Greene, M. Galbraith, D. Hay, D. Lowry, S. McKinnell, C. Neville, J. Qualley, T. Sandell, M. Thompson, M. Trudel, K. Young, F. Juanes. 2019. **Historical fluctuations and recent observations of Northern anchovy *Engraulis mordax* in the Salish Sea.** Deep Sea Research II 159: 22-41. [\[PDF\]](#)



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Stat area – Sub-area	
Gear	
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Head recovery code (if applicable)	
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