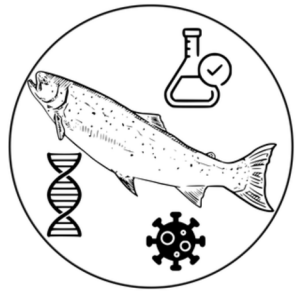
Characterizing and monitoring priority contaminants of concern in WCVI juvenile salmon



Conservation and Stewardship

West Coast Vancouver Island

Biosampling

Habitat Monitoring

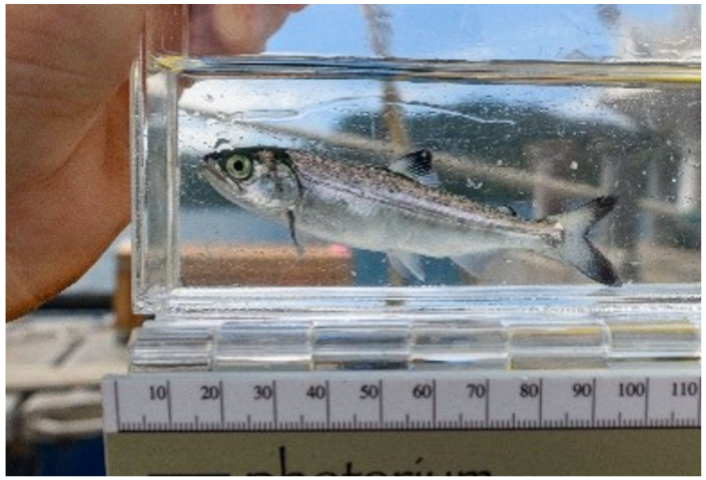


Photo credit: Jessy Bokvist, Follow the Fish.

A recent contaminant assessment of six priority contaminant classes in 10 adult Chinook stocks revealed that WCVI Chinook had moderate concentrations of PCBs and PBDEs (Holbert et al., 2024). The goal of the proposed project is to build on these findings by analyzing an expanded suite of contaminant classes in WCVI juvenile Chinook salmon, in order to evaluate and compare with their adult counterparts as well as juvenile and adult Fraser River Chinook to support a prioritization and ranking of contaminants of concern.

This project will also deliver new data on WCVI Chinook habitat by analyzing sediments and water to inform on contaminants sources and support local land use best practices and possible mitigation steps. Early results for the Robinson Creek stock revealed contaminant burdens are dominated by Pharmaceutical and Personal Care Products (PPCP) followed by polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl and polybrominated diphenyl ethers (PCBs and PBDEs).

Take-aways

- This project is focused on the contaminant component of the "Follow the Fish" program (FtF), which is also a PSSI project proposal focused on West Coast Vancouver Island (WCVI) Chinook salmon.
- The overall aim of the work described here is to characterize and rank contaminants of concern in WCVI juvenile Chinook salmon and assess contaminant-related health effects in WCVI juvenile Chinook salmon deemed to be of highest concern.

The last phase of this program will examine the health effects of priority contaminants on juvenile Chinook by carrying out a molecular / omics evaluation and assessment. Together this study will provide enabling information to PSSI and fisheries managers as they aim to curb historic declines in priority Pacific salmon stocks and enable their recovery.

Timeline

✓ to March 2024: Samples have been collected for this study and we are waiting for stock residency determination prior to sending samples off for contaminant analyses. Contaminant data is expected late March, with summary results to be prepared in April. Data will be stored to the Ecotox database.

🔄 to March 2025: Continue to generate contaminant data in juvenile Chinook and supporting habitat; compare contaminant results among WCVI stocks and to the Fraser River juvenile Chinook tissue and habitat concentrations; model linkages between contaminant sources, contaminant exposure and uptake in WCVI juvenile salmon.

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Locations
West Coast Vancouver Island

Species
Chinook

Follow the Fish

Project ID
2513

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