

# Bold, sustained action can revitalize wild Pacific salmon in the Fraser

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Dr Lia Chalifour checks water quality in the Fraser River estuary. Credit: Michael Snyder via UBC.

Nineteen major populations of wild Pacific salmon in the Fraser River are projected to decline over the next 25 years—but it's not too late to

boost their chances of recovery.

According to a new open-access study published today in the *Journal of Applied Ecology*, active interventions can lift these populations, known as conservation units (CUs), to "green status"—which means they are healthy and able to sustain fisheries under [Canada's Wild Salmon Policy](#).

"The Fraser is the largest [salmon](#)-bearing river in British Columbia, and 19 of 54 conservation units of wild Pacific salmon that it supports are on a declining trajectory over the next 25 years. We urgently need to take critical action to bring them back to a sustainable path," says lead author Dr. Lia Chalifour, who completed the research as part of her Ph.D. studies at UBC and University of Victoria.

The authors recommend implementing an integrated habitat strategy that includes barrier removal, estuarine and freshwater restoration, in order to protect the salmon, as well as improving policies for watershed management and protecting remaining habitat.

These actions can shift 14 CUs of wild Pacific salmon to green status at a cost of \$20 million per year for 25 years, or the equivalent of \$4.25 per person per year in B.C.

If the investment is doubled to around \$40 million per year over 25 years and invested in all strategies assessed in the study, up to 17 of these CUs can recover to green status.

Without intervention, the authors say none of the 19 CUs examined in the study are likely to be assessed as green status in 25 years.

"The Lower Fraser has been subject to extreme habitat loss since European colonization, resulting in devastation of the watersheds that wild salmon rely on, as we saw from the catastrophic damage caused by

last year's floods. Our study found that [direct investment](#) in restoring and conserving remaining habitat can benefit the most salmon populations for the least cost," notes senior author and principal investigator Dr. Tara Martin, a UBC professor who leads the Conservation Decisions Lab at the faculty of forestry.

The study evaluated 11 management strategies to lead the salmon to recovery. The authors also call for a co-governance framework for salmon management between Indigenous and Crown governments, which can increase the success of these management strategies.

The study comes on the heels of renewed provincial and federal commitments to funding for salmon recovery via the British Columbia Salmon Restoration and Innovation Fund. Dr. Chalifour notes that these investments must be targeted to regional challenges to achieve the best outcome for salmon.

"There is a political appetite to support the recovery of wild salmon, however without a road map to direct those recovery efforts, success is going to be limited. Applying decision-making tools such as Priority Threat Management facilitates strategic investments in management solutions that will have the greatest possible benefit to wild salmon."

Priority Threat Management is a conservation decision science framework developed by Dr. Tara Martin and her team that considers the predicted benefit, cost and feasibility of [management strategies](#) to rapidly identify which strategies will have the greatest impact on the largest number of populations.

**More information:** Lia Chalifour et al, Identifying a pathway towards recovery for depleted wild Pacific salmon populations in a large watershed under multiple stressors, *Journal of Applied Ecology* (2022). [DOI: 10.1111/1365-2664.14239](https://doi.org/10.1111/1365-2664.14239)

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