

Enhancing Estuary Resilience:
An Innovative Approach to Sustaining Fish and Fish Habitat in a Changing Climate

A BC Salmon Restoration and Innovation Fund (BCSRIF) Project

Quick Facts

The Enhancing Estuary Resilience PROJECT – In 2019, The Nature Trust of British Columbia was awarded funding for a five-year project to increase knowledge and capacity of all project partners to make informed estuary management, conservation, restoration and enhancement decisions for these important coastal ecosystems.

The project will monitor, research and assess estuary resilience to sea-level rise at 15 sites on Vancouver Island, the central coast and Haida Gwaii. It will also undertake restoration projects to restore estuary processes. This project builds on years of estuary restoration and maintenance work conducted by The Nature Trust of BC and its partners. This project builds upon a pilot project started in 2017 that sought to see whether or not there was the capacity and ability to create partnerships with First Nation communities to implement a system wide monitoring program following the methods developed by the National Estuary Research Reserve system in the United States.

METRICS – Data will be collected for five categories of resilience: the distribution of marsh elevation, change in elevation, sediment levels, tidal change and the rate of sea-level rise. These metrics will provide baseline information to inform management, restoration and securement decisions. Each category will be scored on a scale of 1 to 5, indicating resilience from low to high. These scores will be used to calculate an overall score that will indicate the level of resilience to sea-level rise at each site.

FUNDING – The project budget of \$8,552,415 is funded by the BC Salmon Restoration and Innovation Fund, a contribution program jointly funded by Fisheries and Oceans Canada and the Province of B.C.

PARTNERS - Partners in the project are the West Coast Conservation Land Management Program, Cowichan Tribes, Snuneymuxw First Nation, K'omoks First Nation, Da'naxda'xw-Awaetlala First Nation, Tlowitsis First Nation, Kwakiutl First Nation, Ahousaht First Nation, Ka:'yu:'k't'h'/Che:k'tles7et'h' First Nations, Nuxalk First Nation, Heiltsuk First Nation, the Council of the Haida Nation, the Hakai Institute, Simon Fraser University and Marine Plan Partnership.

The West Coast Conservation Land Management Program is a multi-partner program that includes Environment and Climate Change Canada, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Ducks Unlimited Canada, the Habitat Conservation Trust Foundation and The Nature Trust of BC.

MARS – The Marsh Resilience to Sea-Level Rise multi-metric index tool was developed by the U.S. National Estuarine Research Reserve System (NERRS). The Nature Trust of BC uses this powerful system-wide monitoring approach to evaluate and compare the ability of estuary tidal marshes to persist and thrive as sea levels rise.

With the support of the BC Salmon Restoration and Innovation Fund (BCSCRIF), the MARS tool will be fully implemented at 15 estuary sites in B.C., building on the NERRS U.S. Pacific Coast research and providing a Canadian context.

DATA LOGGING EQUIPMENT – RBR solo3 Tu and RBR maestro3 data logging equipment will be used in the monitoring program. The RBR solo3 Tu will be moored at two locations at each site to measure turbidity. The RBR maestro3 sensors will be anchored to collect water quality data. The data will be fed into the MARS index tool. Data management, quality assurance and quality control will be provided in partnership with the Hakai Institute, a scientific research institution.

ESTUARY SITES – The 15 estuaries sites included in the BCSRIF project are located in the Salmon River, Fulmore/Shoal River, Cowichan River, Nanaimo River, Englishman River, Glendale River, Cluxewe River, Quatse River, Asseek River, Koeve River, , Bella Coola River, Kaouk River, Moyeha River and the Kumdis and Naden-Davidson estuaries. Nine of these estuaries are located on land conserved by The Nature Trust of BC.

PROJECT TIMELINE – In Years 1 to 3 (2019 – 2021) the BCSRIF project will focus on the creation of baseline data sets and resilience scoring of the estuaries. In years 4 to 5, The Nature Trust of BC will begin to deliver transformative projects that restore core natural estuary processes. This will include the collection of pre and post-restoration monitoring metrics.

ENHANCING ESTUARY RESILIENCE PROGRAM MANAGEMENT – Tom Reid, West Coast Program Manager for The Nature Trust of BC is the Project Manager. He is responsible for meeting the goals and objectives of the project and directly oversees all components of the project's operations. Tom will be supported by a Technical Advisory Committee to strengthen and improve the scientific robustness of the project.