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FIELDNOTES
2025 – 2026

Pacific science field operations: Fact sheets

Canada

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Cover illustration: Chilcotin River, British Columbia.

Photo credit: Shane Kalyn (Fisheries and Oceans Canada)

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Table 1. Field operations sorted by category, then Unique ID.

Detection and tracking of whales and vessels

Unique ID:	ESDAEMMS_15
Category:	Human Impacts Research and Monitoring
Dates:	April 1, 2025 to March 31, 2026
Start year:	2020
Recurrence:	Annually - Ongoing
Vessel:	N/A
Email:	Harald.Yurk@dfo-mpo.gc.ca
Phone:	236-330-2257

Description

The Whale Detection and Collision Avoidance Initiative under the Ocean Protection Program aims to detect and track whales and vessels simultaneously to determine the risk of acoustic and physical disturbance—including ship strikes—and to support the development of timely alerts for mariners of whale presence and whale movements.

This project aims to test the effectiveness of thermal imaging (TI) technology in combination with Automatic Identification System (AIS) / RADAR receivers to automatically track whales and vessels.

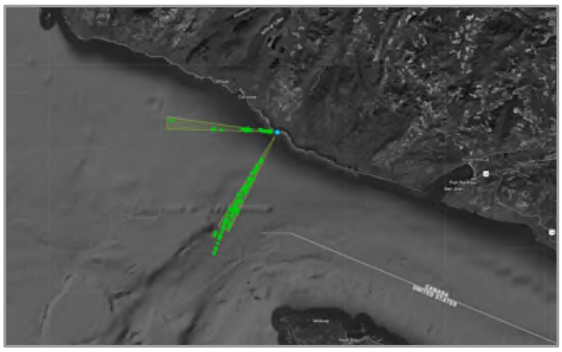
Objectives

1. Design and deploy tracking systems, i.e. infrared and video cameras, AIS signal receivers, and marine RADAR transmitters.
2. Monitor systems remotely.
3. Deploy underwater acoustic recording equipment to confirm whale presence in the area via alternate monitoring system.

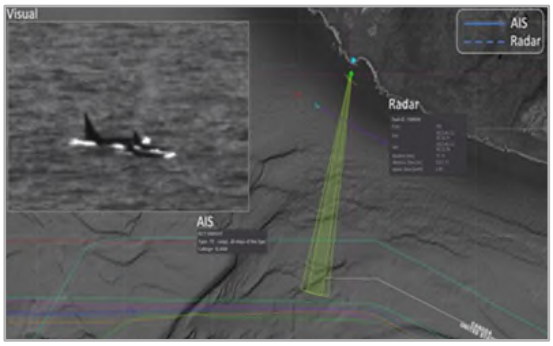
Collaborators

WhaleSpotter Inc. (Germany)

Locations: Carmanah Light Station (west coast of Vancouver Island)



Whale detections via TI system.
© Fisheries and Oceans Canada



Killer whale detections via TI system.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Harald.Yurk@dfo-mpo.gc.ca

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Canada

Sockeye salmon freshwater migratory stress

Unique ID: ESDFE_01
Category: Human Impacts Research and Monitoring
Dates: April 1 to November 30, 2025
Start year: 1997
Recurrence: Annually - Ongoing
Vessel: N/A
Email: David.Patterson@dfo-mpo.gc.ca
Phone: 604-666-5671

Description

Environmental conditions impact salmon migratory and reproductive success. This research on the migration biology of Pacific salmon under variable environmental conditions informs the science advice provided to fisheries and habitat managers.

Locations: Port Renfrew, Fraser River Basin, including the Stuart, Nechako, Quesnel, Chilcotin, Shuswap, Seton, Harrison, and Chilliwack watersheds

Objectives

1. Assess biological condition of juvenile and adult sockeye salmon in relation to migration conditions in the Fraser basin.
2. Research the impact of migratory stress on salmon survival (e.g., water temperature, fishing interactions, high discharge).
3. Generate quantitative models to forecast in-season estimates of loss for Fraser sockeye.
4. Apply research on migratory stress and environmental conditions to describe post-season estimates of mortality and predict in-season estimates of loss for proactive fisheries management.

Testing adult salmon on the Fraser River near Chilliwack.

© Fisheries and Oceans Canada

Collaborators

Lower Fraser Fisheries Alliance, Upper Fraser Fisheries Conservation Alliance, University of British Columbia, Simon Fraser University, Pacific Salmon Commission (Canada and USA)

Sockeye salmon (Oncorhynchus nerka) at the Adams River.

© Fisheries and Oceans Canada

FOR MORE INFORMATION

Environmental Watch Program

Long-term impacts of forestry on stream temperature

Unique ID: ESDFE_05
Category: Human Impacts Research and Monitoring
Dates: July 1 to September 15, 2025
Start year: 2019
Recurrence: Every 2 years
Vessel: N/A
Email: Douglas.Braun@dfo-mpo.gc.ca
Phone: 604-703-9069

Description

This project builds on forest harvest experiments conducted in the Baptiste watershed as part of the Stuart-Takla-Fish-Forestry Interaction Project (1990 - 2008), and will assess the long term impacts of forest harvest practices on headwater stream temperatures. This will improve our understanding of the interaction between forest harvesting and aquatic habitats in interior British Columbia.

Objectives

1. Replicate previous network of stream temperature monitoring.
2. Quantify the long-term impacts of forestry on stream temperature.
3. Evaluate the recovery of headwater stream temperatures following forest harvest.

Collaborators

Simon Fraser University

Locations: Baptiste Watershed (northwest of Prince George)

Aerial view of experimental harvest area.
© Fisheries and Oceans Canada

Study stream post-harvest.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Douglas.Braun@dfo-mpo.gc.ca

Land use impacts on interior juvenile coho salmon habitat

Unique ID:	ESDFE_06
Category:	Human Impacts Research and Monitoring
Dates:	April 1 to November 30, 2025
Start year:	2019
Recurrence:	Annually - Ongoing
Vessel:	N/A
Email:	Douglas.Braun@dfo-mpo.gc.ca
Phone:	604-703-9069

Description

This project will assess relationships between terrestrial land use and stream habitat used by juvenile coho salmon (*Oncorhynchus kisutch*) for rearing. Over twenty streams will be studied throughout the North Thompson watershed. This work has been developed in conversation with Secwepemc Fisheries Commission and Simpcw First Nation.

Objectives

1. Survey habitat characteristics including water quality, large woody debris, gradient and canopy cover in each study watershed.
2. Monitor streamflow, air and water temperature.
3. Quantify the relationship between terrestrial land use (e.g.,forestry and agriculture) and habitat characteristics.
4. Develop targets for habitat indicators that can be used for planning and management.

Collaborators

Simon Fraser University

Locations: North Thompson River Basin

Identifying juvenile salmonids in the field.
© Fisheries and Oceans Canada

Surveying large woody debris.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Forestry influences on salmonid habitat - North Thompson River watershed

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Canada

Developing stereo-baited video monitoring systems

Unique ID: ESDMSEA_11
Category: Human Impacts Research and Monitoring
Dates: August 5 to September 30, 2025
Start year: 2025
Recurrence: Not expected to recur
Vessel: R/V Rossia
Email: Lily.Burke@dfo-mpo.gc.ca
Phone: 236-464-1847

Description

This field work will use stereo-baited remote underwater video systems (BRUVS) to quantify the size, abundance, and biodiversity of fishes inside and outside of marine conservation areas. Results will be used to further develop BRUVS as a monitoring tool, and to assess the effectiveness of spatial protection measures. This work also encourages the uptake of BRUVS across organizations, and aims to provide knowledge sharing opportunities and collaboration for marine conservation and management applications.

Objectives

1. Develop stereo-BRUV techniques and technology that can be used to monitor marine conservation areas.
2. Conduct stereo-BRUV surveys inside and outside of Rockfish Conservation Areas in the Salish Sea.
3. Create a coordinated community of practice to monitor aquatic ecosystems using BRUVs, through the development of training materials, presentations, guidance documents, and field demonstrations.

Collaborators

Malahat Nation, Tsawout First Nation

Locations: Southern Gulf Islands and Howe Sound, Howe Sound

Example of vessel type used for stereo-video monitoring.
© Lily Burke (Fisheries and Oceans Canada)

Deploying the stereo-baited remote underwater video system.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Lily.Burke@dfo-mpo.gc.ca

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Aquaculture benthic recovery
South coast of British Columbia

Unique ID: ESDNE_12
Category: Human Impacts Research and Monitoring
Dates: August 19 to September 1, 2025
Start year: 2000
Recurrence: Annually - Ongoing
Vessel: CCGS Vector
Email: Terri.Sutherland@dfo-mpo.gc.ca
Phone: 604-775-8843

Locations: Nootka Sound and surrounding inlets, Nodales Channel, Carrie Bay

Description

Benthic recovery processes associated with seabed physical-chemical and macrofaunal indicators are not well known, since existing global studies are based on vastly different aquaculture, oceanographic, and seafloor settings. To date research in British Columbia has been limited to two recovery studies with contrasting outcomes. This project will provide recovery information based on vastly different aquaculture, oceanographic and seabed settings.

Objectives

1. Establish a time-series survey to determine the rate of change in seabed recovery processes of both physical, chemical and biological (fauna) variables following the removal of finfish aquaculture facilities.

CCGS Vector.
© Terri Sutherland (Fisheries and Oceans Canada)

Culture of Pacific oysters (Magallana gigas) in the intertidal zone.
© Terri Sutherland (Fisheries and Oceans Canada)

Collaborators

We Wai Kai First Nation, Wei Wai Kum First Nation, Canadian Coast Guard, Natural Resources Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Terri.Sutherland@dfo-mpo.gc.ca

Community stream monitoring project (CoSMo)

Unique ID:	ESDNE_14
Category:	Human Impacts Research and Monitoring
Dates:	April 1, 2025 to March 31, 2026
Start year:	2019
Recurrence:	Annually - Ongoing
Vessel:	N/A
Email:	Nikki.Kroetsch@dfo-mpo.gc.ca
Phone:	604-358-3055

Description

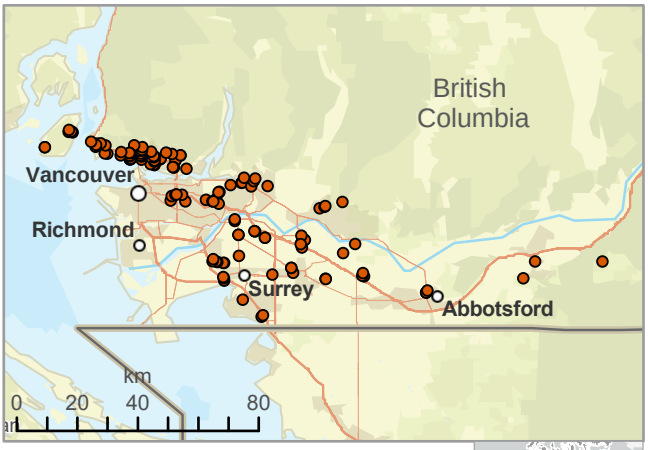
The Pacific Science Enterprise Centre's Community Stream Monitoring Project (CoSMo) aims to better understand and monitor temperatures and other factors in salmon-bearing urbanized watersheds across the Lower Mainland of British Columbia. CoSMo also aims to develop and foster relations with community groups and municipal governments, and improve collaboration with external partners.

Objectives

1. Monitor and better understand water temperatures, depths,and streamflow in Lower Mainland urbanized streams with the help of numerous community partners.
2. Collaborate with partners to understand factors influencing salmon in urban watersheds (e.g. via the collaborative 'Road Salt and Salmon Project').
3. Improve relationships with stewardship groups and municipal governments.
4. Facilitate public education and engagement.

Collaborators

BC Lower Mainland Municipalities, British Columbia Institute of Technology, Simon Fraser University, University of British Columbia, Streamkeeper organizations, other community partners



Locations: Lower Mainland (various watersheds from Howe Sound to Chilliwack)

Collecting data at Silver Creek with community volunteer.
© Alan James (Stoney Creek Environment Committee)

Cypress Creek, West Vancouver.
© Alan James (Stoney Creek Environment Committee)

FOR MORE INFORMATION

DFO PSEC community stream monitoring

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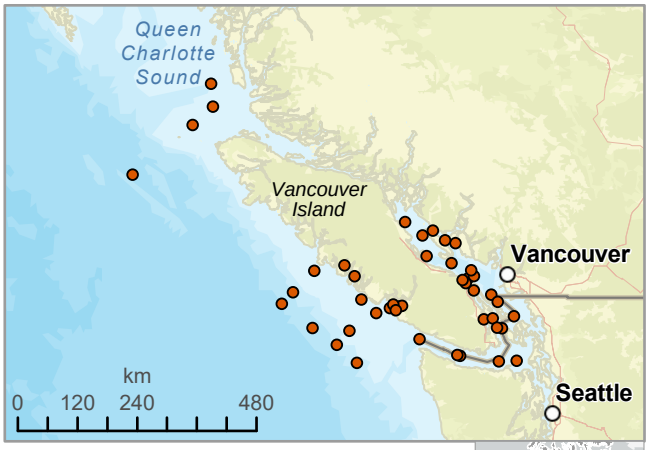
Marine biotoxin monitoring

Unique ID: OSDOEB_10
Category: Human Impacts Research and Monitoring
Dates: February 20 to December 19, 2025
Start year: 2020
Recurrence: Annually - Ongoing
Vessel: CCGS Vector, citizen scientists' and First Nations' small vessels
Email: Andrew.Ross@dfo-mpo.gc.ca
Phone: 431-330-0027



Locations: West coast of Vancouver Island, Juan De Fuca Strait, Strait of Georgia, Queen Charlotte Sound

Description

The goal of this field operation is to increase understanding of the dynamics and drivers of harmful algal blooms and associated biotoxins that can impact wild and farmed salmon and endangered marine mammals in British Columbia coastal waters.

Objectives

1. Collect sea water and environmental data (temperature, salinity, oxygen, nutrients) two or three times a year at up to 29 locations and monthly at up to 18 locations, including salmon farms and critical habitat for fish and marine mammals.
2. Filter sea water and analyze filters and filtered seawater for up to 26 biotoxins.
3. Identify and measure the amounts of harmful algae and the biotoxins that they produce.
4. Monitor seasonal and annual trends in the abundance of harmful algae and biotoxins.
5. Compare with temperature and other factors to help predict when toxic algal blooms may occur.

Citizen Science sampling.
© Nicole Frederickson (Pacific Salmon Foundation)

Filtering sea water for biotoxin analysis.
© Nicole Frederickson (Pacific Salmon Foundation)

Collaborators

Snuneymuxw First Nation, Canadian Coast Guard, Pacific Salmon Foundation (Citizen Science Program), Cermaq Canada

FOR MORE INFORMATION

Citizen Science Program
Collaboration with British Columbia salmon farmers

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Tire rubber-derived impacts on coho and chinook salmon

Unique ID:	OSDOEB_15
Category:	Human Impacts Research and Monitoring
Dates:	January 1 to March 31, 2025
Start year:	2021
Recurrence:	Not expected to recur
Vessel:	N/A
Email:	Lisa.Loseto@dfo-mpo.gc.ca
Phone:	204-983-5135

Description

Tire associated contaminants have recently been discovered to be the likely cause of toxic injury and death (40-90%) of adult coho salmon returning to urban and semi urban waterways in Puget Sound, Washington, USA. This research will investigate the impacts of the recently discovered ubiquitous tire rubber antioxidant 6PPD-quinone (N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine) in British Columbia freshwater.

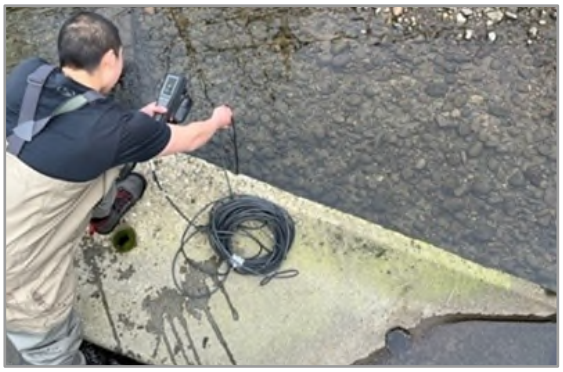
Objectives

1. Characterize the presence and associated risks of tire-derived contaminants in creeks close to semi-urban and urban areas that feed into British Columbia's salmon bearing rivers.
2. Assess the impacts of tired-derived contaminants, including 6PPD-quinone, on the survival of Coho and other Pacific salmon.

Collaborators

Cowichan Tribes, Musqueam Indian Band, Tsleil-Waututh Nation, Tsawwassen First Nation, Capital Regional District, University of British Columbia, Simon Fraser University, British Columbia Conservation Foundation, Millard Piercy Watershed Stewards, Pacific Streamkeepers, Redd Fish Restoration Society, Somenos Marsh Society, Stoney Creek Environmental Committee, Tsolum River Restoration Society, Tynehead Hatchery, World Fisheries Trust

Locations: Southern Vancouver Island, Metro Vancouver



Taking water quality measurements.
© Fisheries and Oceans Canada

Sampling site.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Marine Mammal Ecotoxicology Lab

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Anchorage impacts on seafloor ecosystems

Unique ID: OSDROPES_05
Category: Human Impacts Research and Monitoring
Dates: August 1, 2025 to March 30, 2026
Start year: 2021
Recurrence: Not expected to recur
Vessel: CCGS Otter Bay
Email: Cathryn.Murray@dfo-mpo.gc.ca
Phone: 250-363-3001

Description

With the expansion of the shipping industry, ships are spending more time at anchorages and expanding to previously little-used anchorage areas. This research aims to assess the impacts of commercial anchoring on significant benthic areas – including glass sponge reefs and areas of cultural, social, and ecological importance to First Nations – through remotely operated vehicle (ROV) surveys, multibeam bathymetry, and grab-and-core sampling.

Objectives

1. Investigate the footprint of physical disturbance from commercial anchoring activities, including anchor scour disturbance and changes in sediment resuspension.
2. Quantify the extent of overlap with anchorage footprints and sensitive benthic areas, such as sponge reefs and other seafloor species.
3. Provide a baseline for change detection in these areas.

Collaborators

Gitga'at First Nation, Kitselas First Nation, Kitsumkalum First Nation, Lax Kw'alaams Band, Canadian Coast Guard, Natural Resources Canada, Prince Rupert Port Authority

Locations: Port of Prince Rupert, Chatham Sound

Biologists conducting sediment grab sampling.
© Ashley Park (Fisheries and Oceans Canada)

"Blue ROV2" used to survey anchorage sites.
© Cathryn Murray (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Effects of commercial vessel anchorages

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Southern resident killer whale underwater noise impacts
Salish Sea

Unique ID: OSDSOTO_06
Category: Human Impacts Research and Monitoring
Dates: June 17 to 24, October 11 to 18, 2025; March 18 to 25, 2026
Start year: 2018
Recurrence: Annually - Ongoing
Vessel: CCGS Vector, R/V Richardson Point
Email: Caitlin.ONeill@dfo-mpo.gc.ca
Phone: 250-363-6339

Locations: Swiftsure Bank, La Perouse Bank, Juan de Fuca Strait, Haro Strait, Boundary Pass, Strait of Georgia, Dixon Entrance, Chatham Sound, Hecate Strait, Ursula Channel

Description
Monitor underwater noise in southern resident killer whale (SRKW) critical habitats to establish baselines, track changes, and evaluate impacts of human-generated noise on SRKW. Data is collected from small moorings equipped with continuously sampling hydrophone systems. Work along the north coast of British Columbia will be conducted in collaboration with the field operation "Recovery and deployment of oceanographic moorings" (Unique ID: OSDSOTO_10).

Objectives
1. Recover, service and re-deploy ten hydrophone moorings.
2. Collect water property data.
3. Perform sound propagation studies.
4. Monitor marine mammals.

Collaborators
Canadian Coast Guard

CCGS Vector.
© Fisheries and Oceans Canada

Recovering a mooring from the CCGS Vector.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Implications of wind and vessel noise Soundscape in parts of the Salish Sea 2018–2020

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Canada

Tailings pond monitoring
Quesnel Lake

Unique ID: OSDSOTO_11
Category: Human Impacts Research and Monitoring
Dates: October 1 to 6, 2025
Start year: 2014
Recurrence: Annually - Ongoing
Vessel: R/V Elvis
Email: Svein.Vagle@dfo-mpo.gc.ca
Phone: 250-363-6339

Description

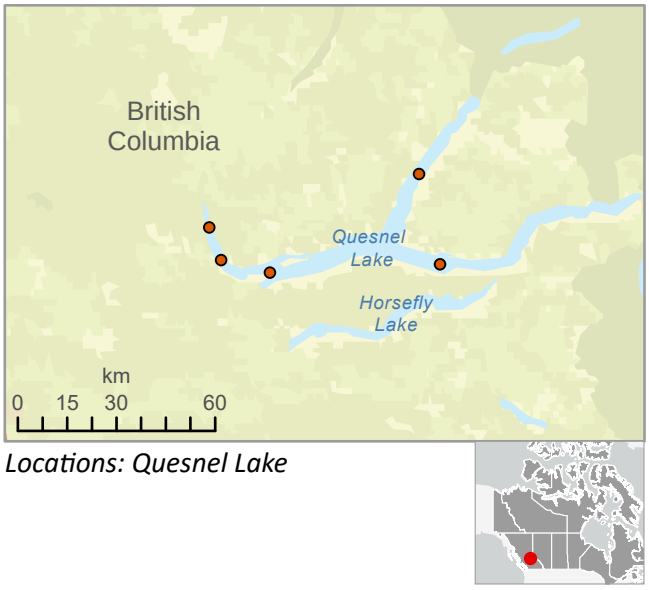
The 2014 breach of the Mount Polley mine tailings impoundment released 25 M m^3 of tailings and water into the West Basin of Quesnel Lake, an important sockeye salmon nursery lake. Five moorings are maintained in the lake to monitor turbidity, temperatures, and currents in support of research on ecosystem recovery.

Objectives

1. Understand water movement in Quesnel Lake and its three arms.
2. Track sediment transport in the lake.
3. Understand the influence of autumn and spring lake turnover on sediment resuspension.

Collaborators

University of British Columbia, University of Northern British Columbia



Locations: Quesnel Lake

R/V Elvis.
© Fisheries and Oceans Canada

Project crew preparing to deploy a mooring.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Svein.Vagle@dfo-mpo.gc.ca

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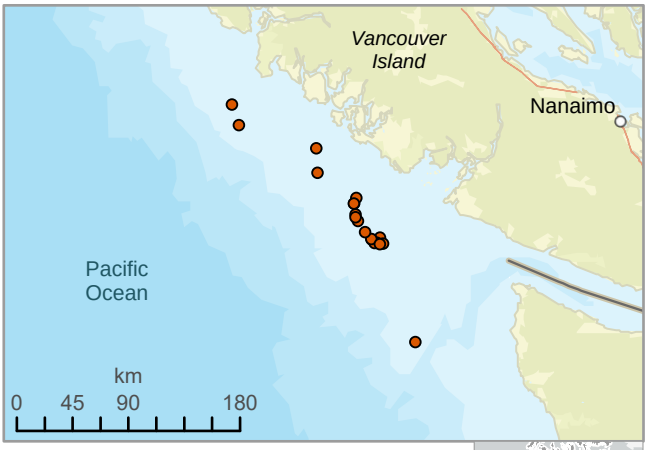
Pêches et Océans Canada
Canada

Biological impact and fate of shipping containers lost at sea

West coast of Vancouver Island and La Perouse Bank

Unique ID: SSICSAP_01
Category: Human Impacts Research and Monitoring
Dates: June 26 to July 7, 2025
Start year: 2023
Recurrence: Not expected to recur
Vessel: CCGS John P. Tully
Email: Matthias.Herborg@dfo-mpo.gc.ca
Phone: 250-580-5845



Locations: La Perouse Bank and the continental shelf (west coast of Vancouver Island)

Description

This survey will locate or re-visit shipping containers previously lost at sea, and their associated debris. Specifically, this survey will study their fate and behaviour over time, as well as their biological impacts, using remotely operated vehicle (ROV), side scan, or multibeam seabed imaging.

Objectives

1. Re-survey shipping containers and debris fields studied in 2023 and document changes over time.
2. Locate additional containers and debris fields based on existing reports and observations.
3. Map the seabed using benthic imaging tools to document extend of debris field and changes since 2023.

CCGS John P. Tully.
© Jackson Chu (Fisheries and Oceans Canada)

Collaborators

Canadian Coast Guard

Shipping container and cargo on the seabed.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Matthias.Herborg@dfo-mpo.gc.ca

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Canada

Deep water remotely operated vehicle commissioning and testing

West and south coasts of Vancouver Island

Unique ID: ADGTAT_01
Category: Hydrographic and Oceanographic Surveys
Dates: April 5 to 15, 2025
Start year: 2024
Recurrence: Not expected to recur
Vessel: CCGS Sir John Franklin
Email: Benjamin.Snow@dfo-mpo.gc.ca
Phone: 250-327-4582

Description

Non-destructive survey tools (NDST) program staff will be conducting commissioning of deep water remotely operated vehicles (ROV) prior to official use in research.

This work will include training with Coast Guard crew members, testing launch, recovery, and handling equipment, and the completion of several test dives in depths of 100 to 1000 m.

This work will support future research associated with Canada's Marine Conservation Targets, and the establishment and ongoing monitoring of Marine Protected Areas on Canada's Pacific coast.

Objectives

1. Determine ideal deck configurations and operating procedure for ROV system components. Test launch and recovery systems in shallow water depths and to current maximum ROV depth (1000 m).
2. Conduct test ROV dives in nearshore areas, in water depths of 100 to 200 m. If successful, move offshore to nearest 1000 m isobath and take ROV down to 1000 m depth.
3. Test ROV sub-system including lights, cameras, pressure sensors, altimeters and acoustic tracking systems.
4. Begin the process of developing standard operating procedures for ROV operations with this new vehicle.
5. Determine if the CCGS Franklin is a suitable vessel for use in deploying ROVs.

Collaborators

Canadian Coast Guard

Locations: Saanich Inlet, Patricia Bay, west coast of Vancouver Island

CCGS Sir John Franklin.
© Fisheries and Oceans Canada

Accepting delivery of a new 2000 m rated ROV.
© Jackie Detering (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Benjamin.Snow@dfo-mpo.gc.ca

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Portable multibeam sonar bathymetry
Estero Basin

Unique ID: CHSCH_02
Category: Hydrographic and Oceanographic Surveys
Dates: July 1 to 15, 2025
Start year: 2025
Recurrence: Not expected to recur
Vessel: Community vessel
Email: Michel.Breton@dfo-mpo.gc.ca
Phone: 613-324-3066

Locations: Estero Basin

Description
Portable multibeam sonar surveys will be conducted in the Estero Basin to support Kwiakah First Nation in bathymetric data collection.

Objectives
1. Support Kwiakah First Nation in bathymetric data collection in Estero Basin.

Collaborators
Kwiakah First Nation

Portable multibeam echo sounder (Norbit) equipment.

Canadian Hydrographic Service badge (original created by Gordon B. Croll in 1954).

FOR MORE INFORMATION

Community Hydrography

Bathymetry, seabed classification and tide gauge servicing
Aboard the CCGS Vector

Unique ID: CHSDATS_01
Category: Hydrographic and Oceanographic Surveys
Dates: July 9 to August 12, 2025
Start year: 1891
Recurrence: Annually - Ongoing
Vessel: CCGS Vector
Email: Stacey.Verrin@dfo-mpo.gc.ca
Phone: 250-363-6377

Description
Mapping of the seabed and collection of bathymetry to enhance navigation safety with periodic tide gauge servicing.

Objectives
1. Collect multibeam bathymetry to improve navigational charts and products and aid scientific research.
2. Detect and classify subsurface shipping hazards.
3. Deploy and service tide gauges to support bathymetric surveying and the Canadian Hydrographic Services water levels network.
4. Collect acoustic data to determine seabed classification for navigation and scientific research.
5. Deploy autonomous surface vehicle (ASV) for additional inshore bathymetry capture.

Collaborators
Gitxaała Nation (Kitkatla), Heiltsuk Nation, Kitasoo/Xai'xais Nation, Kitselas First Nation, Kitsumkalum First Nation, Lax Kw'alaams Band, Nuxalk Nation, Central Coast Indigenous Resource Alliance, Council of the Haida Nation, Canadian Coast Guard, Environment and Climate Change Canada (Canadian Wildlife Service, Environmental Stewardship Branch), Natural Resources Canada (Geological Survey of Canada), Prince Rupert Port Authority

Locations: Bentinck Arm, Chatham Sound, North Pearse Island, Prince Rupert Harbour, Sea Otter Group (Queen Charlotte Sound), West coast of Haida Gwaii


CCGS Vector.
© Fisheries and Oceans Canada


Launching the Shoal Seeker off the CCGS Vector's deck.
© Fisheries and Oceans Canada

FOR MORE INFORMATION
CHS non-navigational bathymetric data - NONNA 10 and 100

Bathymetry, seabed classification and tide gauge servicing

Multi-vessel cruises

Unique ID:	CHSDATS_02
Category:	Hydrographic and Oceanographic Surveys
Dates:	April 1 to October 12, 2025
Start year:	1891
Recurrence:	Annually - Ongoing
Vessel:	CCGS Otter Bay, CSL Shoalseeker, CSL Kalman L. Czotter
Email:	Stacey.Verrin@dfo-mpo.gc.ca
Phone:	250-363-6377

Locations: Constance Bank, Esquimalt Harbour, Haro Strait, Nootka Sound, Chatham Sound, Masset Inlet, Prince Rupert Harbour

Description

Mapping of the seabed and collection of bathymetry to enhance navigation safety with periodic tide gauge servicing.

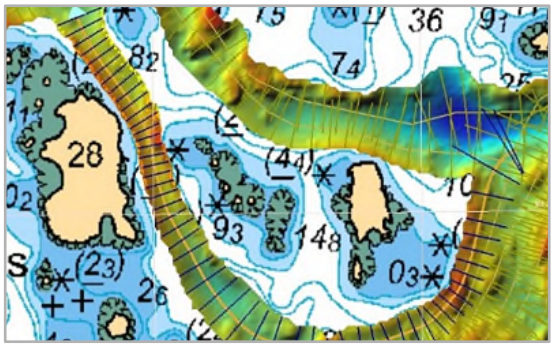
Objectives

1. Collect multibeam bathymetry to improve navigational charts and products and aid scientific research.
2. Detect and classify subsurface shipping hazards.
3. Deploy and service tide gauges to support bathymetric surveying and the Canadian Hydrographic Services water levels network.
4. Collect acoustic data to determine seabed classification for navigation and scientific research.
5. Capture laser scanner data for coastline delineation and shoreline features.

CCGS Otter Bay.
© Fisheries and Oceans Canada

Collaborators

Esquimalt Nation, Gitxaała Nation (Kitkatla), Heiltsuk Nation, Kitselas First Nation, Kitsumkalum First Nation, Lax Kw'alaams Band, Nuxalk Nation, Central Coast Indigenous Resource Alliance, Council of the Haida Nation, Canadian Coast Guard, Environment and Climate Change Canada, Natural Resources Canada (Geological Survey of Canada)



Survey data capture, McMullin Group (Queens Sound).
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FOR MORE INFORMATION

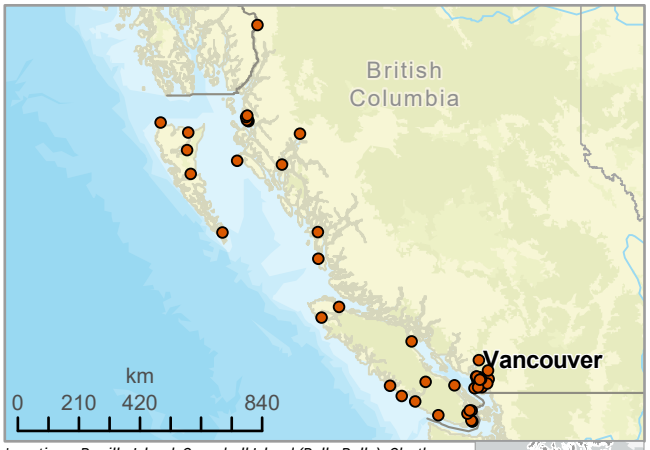
CHS non-navigational bathymetric data - NONNA 10 and 100

Tide, current and water level gauge servicing

Unique ID: CHSDATS_03
Category: Hydrographic and Oceanographic Surveys
Dates: April 1, 2025 to March 31, 2026
Start year: 1893
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Stacey.Verrin@dfo-mpo.gc.ca
Phone: 250-363-6377

Description

Installation and maintenance of temporary and permanent water level network and current meters in support of navigational safety, tsunami/storm surge response, and provision of real-time data to all clients.



Locations: Bonilla Island, Campbell Island (Bella Bella), Chatham Sound, Douglas Channel, Hartley Bay, Hecate Strait, Kitamat Arm, Masset Inlet, Porpoise Channel, Portland Canal, Prince Rupert Harbour, Pruth Bay (Calvert Island), Seaforth Channel, West coast of Haida Gwaii, Alberni Inlet, Bamfield, Campbell River, English Bay, Gorge Waters, Lower Fraser River, Nanaimo Harbour, Point Atkinson, Port Hardy, Port Renfrew, Saanich Inlet, Sandy Cove, səlilw̓ət (Burrard Inlet and Indian Arm), Sidney, Strait of Georgia (Sand Heads), Tofino, Ucluelet, Vancouver Harbour, Victoria Harbour, Winter Harbour

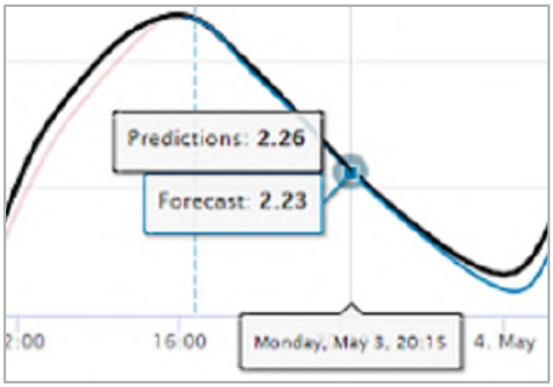
Objectives

1. Service existing permanent water level network infrastructure equipment to provide tidal predictions, observations, and forecasts, as well as monitor tsunami and storm surge events. This information is used to create Canadian Tide Table.
2. Establish or reoccupy temporary tide gauges to support bathymetric surveying and Canadian Hydrographic Service water levels network, including the continuous vertical datum (CVD) model.
3. Service existing current meters in Prince Rupert, Masset, and Vancouver to support safety of navigational and dynamic hydrographic products.
4. Deploy and service current meter in Victoria Harbour.

Campbell River permanent gauge station.
© Fisheries and Oceans Canada

Collaborators

Coastal Indigenous communities, Environment and Climate Change Canada, Natural Resources Canada, Transport Canada, municipalities and cities, Property owners, Port of Vancouver, Prince Rupert Port Authority, other port authorities



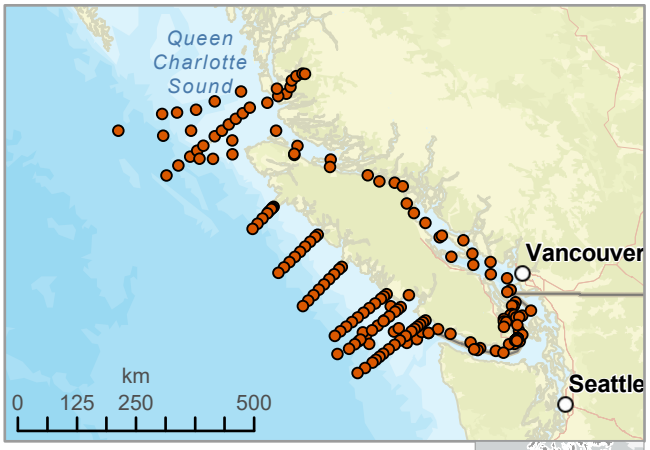
Water level tools.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Canadian Hydrographic Service tides, currents, and water levels

Oceanographic survey
Southern Canadian continental shelf

Unique ID: OSDOEB_04
Category: Hydrographic and Oceanographic Surveys
Dates: May 13 to 25, August 27 to September 8, 2025; March 17 to 25, 2026
Start year: 1979
Recurrence: Annually - Ongoing
Vessel: CCGS John P. Tully, CCGS Sir John Franklin
Email: Akash.Sastri@dfo-mpo.gc.ca
Phone: 250-363-8288



Locations: Johnstone Strait, Juan de Fuca Strait, Queen Charlotte Strait, Strait of Georgia, West coast of Vancouver Island, Queen Charlotte Sound

Description

This oceanographic survey - also known as La Perouse - examines water properties and plankton to identify changing ocean conditions, and to inform understanding of abundance and survival of fish populations.

Objectives

1. Identify changes in species composition and abundance of plankton.
2. Understand the causes of these changes.
3. To the extent possible, forecast the consequences of these changes in plankton to marine food webs.
4. Characterize and synthesize the large-scale changes to the marine ecosystems of British Columbia, including the development of ecosystem status indicator sets and trends useful for management.

CCGS John P. Tully.
© Jackson Chu (Fisheries and Oceans Canada)

Collaborators

Canadian Coast Guard, University of British Columbia, University of Victoria

"Bongo" nets used to sample the zooplankton.
© Kelly Young (Fisheries and Oceans Canada)

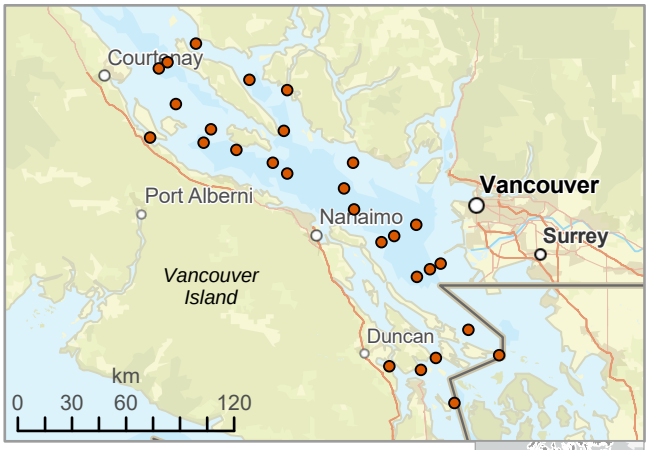
FOR MORE INFORMATION

State of the Pacific Ocean

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Plankton surveys
Strait of Georgia

Unique ID: OSDOEB_06
Category: Hydrographic and Oceanographic Surveys
Dates: February 15 to October 15, 2025
Start year: 2015
Recurrence: Annually - Ongoing
Vessel: CCGS Neocaligus, CCGS Sir John Franklin, CCGS John P. Tully, and CCGS Vector
Email: Kelly.Young@dfo-mpo.gc.ca
Phone: 250-363-6502



Locations: Strait of Georgia

Description

These surveys of biological and physical sampling at 28 stations throughout the Strait of Georgia aim to improve the understanding of seasonal plankton cycles and year-to-year variability.

This field operation also provides baseline prey data for fisheries research, including fine-scale variability in prey, and collects additional measurements of phytoplankton and zooplankton production rates. The latter is used to characterize how seasons,oceanographic conditions, and plankton compositions interact to regulate energy available to higher levels of the food-web.

Together with additional DFO surveys transiting through the Strait of Georgia (Unique IDs: ESDREEF_01, OSDOEB_04, OSDOEB_07B, OSDROPES_03, OSDROPES_04) plankton data are collected on an approximately monthly basis.


CCGS Neocaligus.
© Fisheries and Oceans Canada

Objectives

1. Conduct full depth conductivity, temperature, and depth (CTD) profile including light availability, oxygen and fluorometer.
2. Conduct full depth (10m off bottom to surface) zooplankton net tow; samples are preserved for taxonomy.
3. Collect water samples at selected stations for salinity,nutrients, and phytoplankton biomass/composition.
4. Collect biochemical measurements of zooplankton production rates, and photochemical measurements of phytoplankton production rates.


Zooplankton samples from the Strait of Georgia.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard, University of British Columbia, University of Victoria

FOR MORE INFORMATION

State of the Pacific Ocean

Zooplankton data collected during surveys conducted in the SoG

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Oceanographic monitoring of coastal inlets

Unique ID: OSDOEB_14
Category: Hydrographic and Oceanographic Surveys
Dates: March 10 to 18, 2026
Start year: 2022
Recurrence: Annually - Ongoing
Vessel: CCGS Vector
Email: David.Spear@dfo-mpo.gc.ca
Phone: 250-363-6616

Description

Oceanographic monitoring of coastal British Columbia inlets provides baseline measurements of their physical and bio-geochemical conditions. This information helps monitor the effects of climate change and other anthropogenic impacts on British Columbia's coastal waters. The cruise will cover one section of the coast each year.

Locations: Sechelt Inlet, Knight Inlet, British Columbia mainland inlets, Queen Charlotte Strait, Johnstone Strait, Strait of Georgia, Gulf Islands, west coast of Vancouver Island, Surf, Laredo, Portland, and Observatory inlets; Portland and Gardner canals; Hastings Arm; Hecate Strait, Prince Rupert Harbour, Burrard Inlet, Vancouver harbour

Objectives

1. Collect water samples for analysis of nutrients, oxygen, organic carbon and suspended particles.
2. Measure temperature and salinity to determine circulation and mixing patterns in the inlets.
3. Collect sediment cores to determine rates of sedimentation and burial of organic carbon.
4. Investigate long-term trends in primary production at the bottom of the food chain.

CCGS Vector.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard

Deployment of sampling equipment.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Water Properties

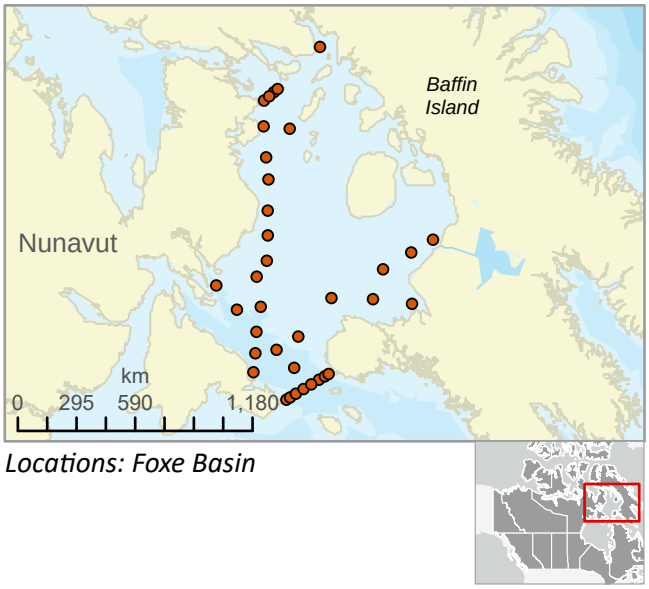
Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Sea-ice pump project
Foxe Basin

Unique ID: OSDOEB_16
Category: Hydrographic and Oceanographic Surveys
Dates: July 1 to October 31, 2025
Start year: 2022
Recurrence: Annually - Ongoing
Vessel: CCGS Amundsen
Email: Lisa.Miller@dfo-mpo.gc.ca
Phone: 431-330-0002

Description

Foxe Basin, a relatively enclosed basin with only one deep channel outlet, is one of three places in the Canadian Arctic where deep water forms and is an optimal site for observing the relationships between sea-ice formation, deepwater formation, and carbon dioxide sequestration. The Foxe Basin Sea Ice Pump Project (FoxSIPP) is a 3-year study to explore these interactions and improve our capacity to predict how the polar oceanic carbon sink is changing with climate and sea-ice conditions.



Locations: Foxe Basin

Objectives

1. Deploy a mooring instrumented with a full suite of physical and carbon sensors in the deepwater outflow channel in Foxe Basin.
2. Conduct a synoptic survey of Foxe Basin to document pre-conditioning of the surface waters for sea-ice and deepwater formation in the following winter.
3. Monitor sea-ice conditions throughout the winter by remote sensing to derive regional ice formation rates.


CCGS Amundsen.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard, University of Alberta, University of British Columbia, University of Calgary, University of Manitoba

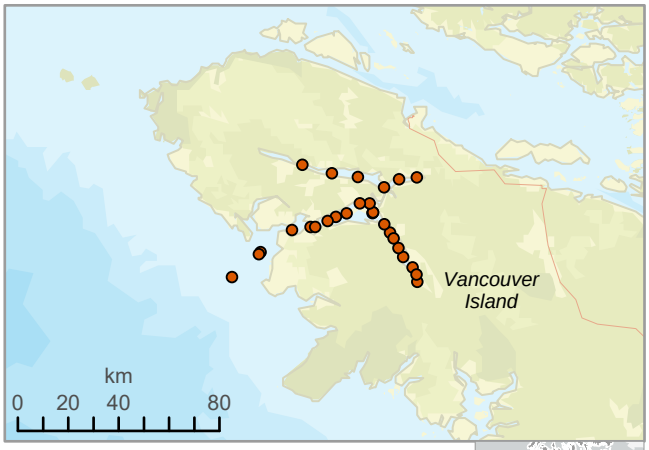

New ice formation in a polynya.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Amundsen Science

Oceanographic monitoring
Quatsino Sound

Unique ID: OSDOMAP_01
Category: Hydrographic and Oceanographic Surveys
Dates: April 1, 2025 to March 31, 2026
Start year: 2021
Recurrence: Annually for 5 years
Vessel: R/V Blackfish
Email: Laura.Bianucci@dfo-mpo.gc.ca
Phone: 250-363-6521



Locations: Quatsino Sound

Description
A numerical model is being developed to simulate physical and biogeochemical fields (e.g., temperature, salinity, circulation features, nutrients, oxygen, plankton, etc.) within Quatsino Sound to evaluate seasonal trends and analyze the effects of extreme events and climate change on the local communities and fisheries. A suite of observations, including velocity, temperature, salinity, and oxygen will be taken throughout the region to calibrate and validate the model.

Objectives
1. Support Quatsino First Nation to monitor temperature, salinity, and oxygen through regular conductivity, temperature, and depth (CTD) casts.
2. Recover, service, and redeploy moorings with CTD sensors and acoustic doppler current profilers.

Collaborators
Quatsino First Nation, Canadian Coast Guard, Environment and Climate Change Canada, Vancouver Island University, Mowi Canada West

R/V Blackfish.
© Glenn Cooper (Fisheries and Oceans Canada)

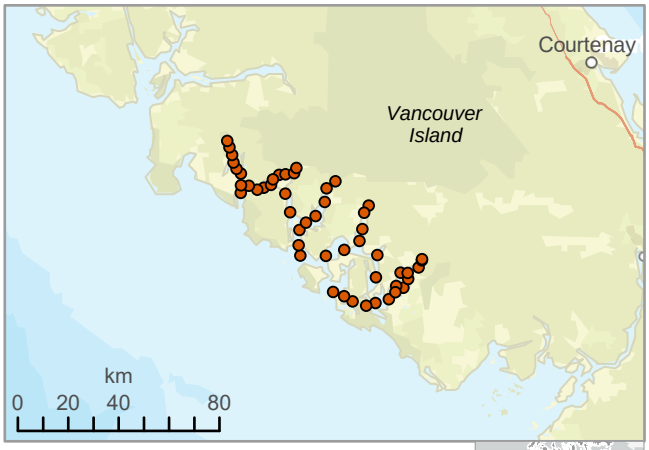

CTD deployment.
© Fisheries and Oceans Canada

FOR MORE INFORMATION
Development of the Quatsino Sound physical ocean model

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Oceanographic monitoring
Clayoquot Sound

Unique ID: OSDOMAP_02
Category: Hydrographic and Oceanographic Surveys
Dates: April 1, 2025 to March 31, 2026
Start year: 2023
Recurrence: Annually - Ongoing
Vessel: Commercial vessel, Indigenous partner vessels
Email: Laura.Bianucci@dfo-mpo.gc.ca
Phone: 250-363-6521

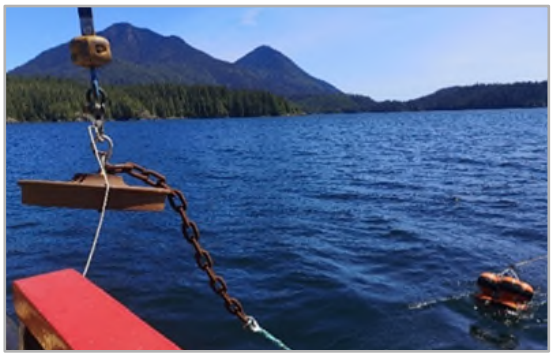


Locations: Clayoquot Sound

Description
Moorings and monthly oceanographic monitoring of Clayoquot Sound provide baseline measurements of physical and biogeochemical conditions and their seasonal changes. Data will help improve understanding of circulation patterns, seasonality of hypoxic conditions, and physical-biogeochemical differences between fjords in a changing climate.

Objectives
1. Train and support local Nations to monitor temperature, salinity, and dissolved oxygen via monthly casts throughout the Sound.
2. Use moorings to measure ocean currents, temperature, and salinity time series at the mouth of Herbert Inlet.
3. Combine all the observations with numerical modelling efforts to improve the understanding of physical and biogeochemical mechanisms leading to hypoxia in different fjords and how these mechanisms can change in the future.

R/V Doug Anderson.
© Lucie Hannah (Fisheries and Oceans Canada)


Mooring deployment.
© Fisheries and Oceans Canada

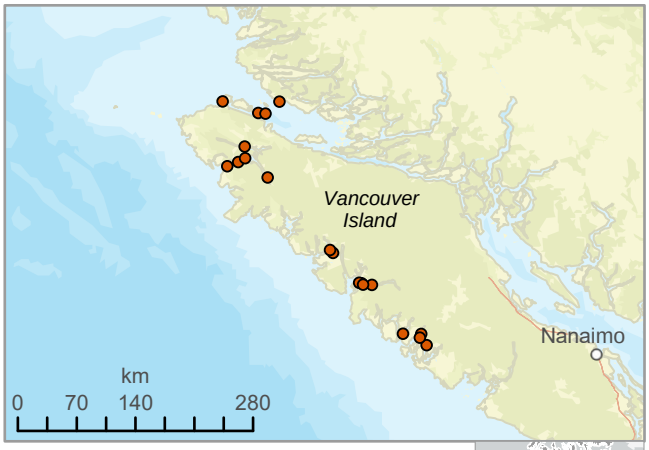
Collaborators
Ahousaht, Hesquiaht First Nation, Tla-o-qui-aht First Nation, Maaqutusiis Hahoulthee Stewardship Society, Uu-a-thluk Nuu-chah-nulth Fisheries, Canadian Coast Guard, Nature Trust of British Columbia

FOR MORE INFORMATION
Contact the Lead Scientist at Laura.Bianucci@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Coastal weather station monitoring
West and northeast coasts of Vancouver Island

Unique ID: OSDOMAP_03
Category: Hydrographic and Oceanographic Surveys
Dates: April 1, 2025 to March 31, 2026
Start year: 2009
Recurrence: Annually - Ongoing
Vessel: R/V Doug Anderson
Email: Laura.Bianucci@dfo-mpo.gc.ca
Phone: 250-363-6521



Locations: Queen Charlotte Strait, west coast of Vancouver Island

Description

Numerical models used to simulate coastal water circulation require the specification of a wind field to force the movement of the surface layer of the ocean, and the heat flux to balance the transfer of heat into and out of the ocean. Models have been developed for the major aquaculture regions in British Columbia and a network of weather stations has been maintained to contribute to the wind forcing for these models.

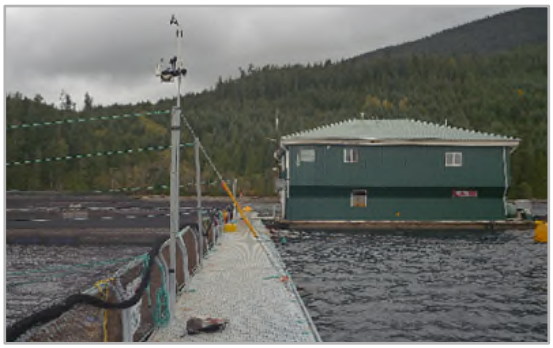
Objectives

1. Maintain the weather stations installed at remote locations that require manual downloading of stored data.
2. Maintain the weather stations installed on fish farms that provide data via the internet.
3. Take opportunistic measurements of salinity and temperature in pre-determined locations near the weather stations, using a conductivity, temperature, and depth (CTD) instrument.

Collaborators

Grieg Seafood BC Ltd., Cermaq Canada, Mowi Canada West

Weather station at remote site.
© Glenn Cooper (Fisheries and Oceans Canada)



Weather station at fish farm.
© Glenn Cooper (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Laura.Bianucci@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Drift prediction and nearshore modelling

Unique ID: OSDOMAP_04
Category: Hydrographic and Oceanographic Surveys
Dates: July 1 to August 31, and October 1 to 31, 2025; February 16 to 20, 2026
Start year: 2018
Recurrence: Annually - Ongoing
Vessel: R/V Doug Anderson
Email: Hauke.Blanken@dfo-mpo.gc.ca
Phone: 250-661-8478

Description

Improving drift prediction and nearshore modelling is an initiative of the Oceans Protection Plan and involves collecting physical water property data to: a) enhance environmental protection and marine safety applications (e.g., drift prediction for oil spills); and b) enhance safety for navigation and related activities (hydrographic e-navigation).

Objectives

1. Measure physical water properties such as temperature and salinity.
2. Deploy and recover surface current tracking drifters.
3. Deploy sensors to provide measurements of currents and water properties.
4. Deploy sensors to measure wind velocity, air temperature, and related variables needed to develop and validate models for ocean currents and object drift.

Collaborators

Canadian Coast Guard, Environment and Climate Change Canada, Royal Vancouver Yacht Club, Port of Vancouver

Locations: Port of Vancouver (Burrard Inlet), Douglas Channel and adjacent fjords, Port of Vancouver (Fraser River)

R/V Doug Anderson.
© Lucie Hannah (Fisheries and Oceans Canada)

Deployment of a current tracking drifter.
© Roy Hourston (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Oceans Protection Plan

Canadian Operational Network of Coupled Environmental PredicTion Systems (CONCEPTS)

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

BC Shore Station Oceanographic Program

Unique ID:	OSDROPES_01
Category:	Hydrographic and Oceanographic Surveys
Dates:	April 1, 2025 to March 31, 2026
Start year:	1914
Recurrence:	Annually - Ongoing
Vessel:	N/A
Email:	Jennifer.Jackson@dfo-mpo.gc.ca
Phone:	250-706-8549

Description

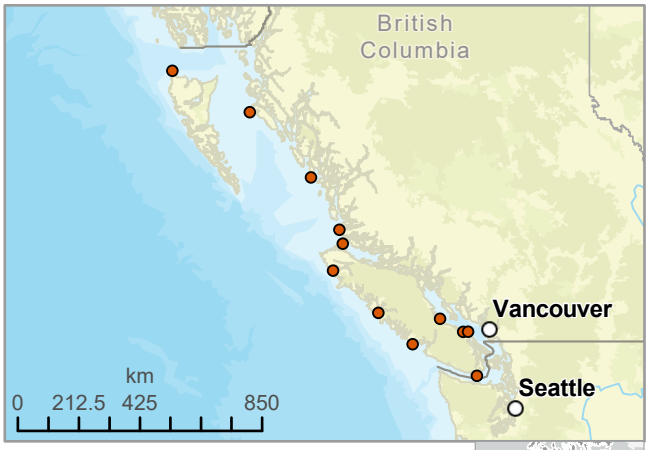
The British Columbia Shore Station Oceanographic Program collects daily sea surface temperature and salinity data at 12 shore stations on the coast of British Columbia. This is a long-term dataset with over 100 years of data from some stations. All shore stations are staffed by Fisheries and Oceans Canada, except Race Rocks and Amphitrite Point which are sampled by contracted observers.

Objectives

1. Continue the time series of observations to use as an indicator of changes, including warming associated with climate change in the physical environment as part of Fisheries and Oceans Canada's State of the Ocean reporting.
2. Continue the time series of observations in support of fisheries and ecosystems management programs.
3. Acquire continuous, automated, gap-free, high resolution (daily) timeseries of sea surface temperature and salinity at key sites along the coast of British Columbia.

Collaborators

Canadian Coast Guard, Environment and Climate Change Canada, multiple coastal lightkeepers



Locations: Queen Charlotte Strait, Strait of Georgia, Juan de Fuca Strait, west coast of Vancouver Island, Dixon Entrance, Hecate Strait, Queen Charlotte Sound

Lightstation at Chrome Island.
© Fisheries and Oceans Canada

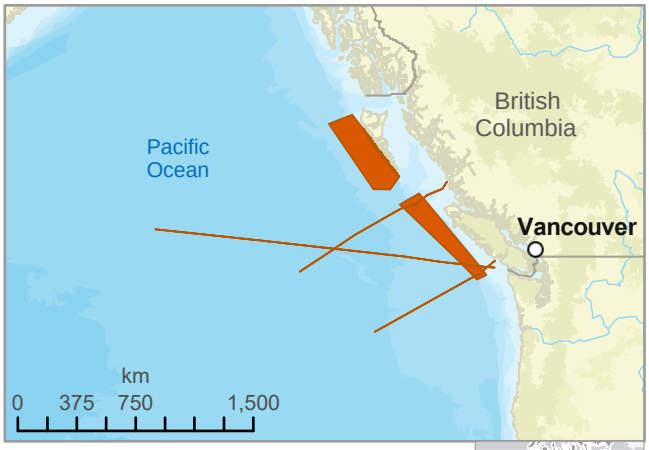
Sampling water at Amphitrite Point.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

BC lightstation sea-surface temperature

Underwater glider monitoring

Unique ID: OSDROPES_02
Category: Hydrographic and Oceanographic Surveys
Dates: April 1, 2025 to March 31, 2026
Start year: 2019
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Tetjana.Ross@dfo-mpo.gc.ca
Phone: 250-363-6438



Locations: West coast of Vancouver Island, West coast of Haida Gwaii, Queen Charlotte Sound

Description

Fisheries and Oceans Canada uses underwater glider technology to collect continuous, high-resolution data for ocean monitoring, prediction and other research purposes. Gliders can be operated without vessels and in all weather conditions. Data are collected continuously along three glider monitoring lines in collaboration with the Canadian-Pacific Robotic Ocean Observing Facility (C-PROOF) and are available in real-time.

Objectives

1. Improve understanding of understudied medium-scale flows and boundary currents along the coast of British Columbia.
2. Improve understanding of coastal currents and hypoxia in Queen Charlotte Sound.
3. Fill in gaps in oceanographic monitoring during the stormy winter season.

Glider fleet.
© James Pegg (Fisheries and Oceans Canada)

Collaborators

Council of the Haida Nation, Canadian Coast Guard (Tofino), Parks Canada (Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site), University of British Columbia, University of Victoria, Hakai Institute

Underwater photo of glider Mike sampling.
© Hakai Magazine

FOR MORE INFORMATION

Canadian-Pacific Robotic Ocean Observing Facility (C-PROOF)

Hakai glider video

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Line P Monitoring Program

Unique ID:	OSDROPES_03
Category:	Hydrographic and Oceanographic Surveys
Dates:	April 26 to May 13, and September 8 to 23, 2025; January 20 to February 1, 2026
Start year:	1956
Recurrence:	Annually - Ongoing
Vessel:	CCGS John P. Tully, CCGS Sir Wilfrid Laurier
Email:	Marie.Robert@dfo-mpo.gc.ca
Phone:	236-464-2074

Description

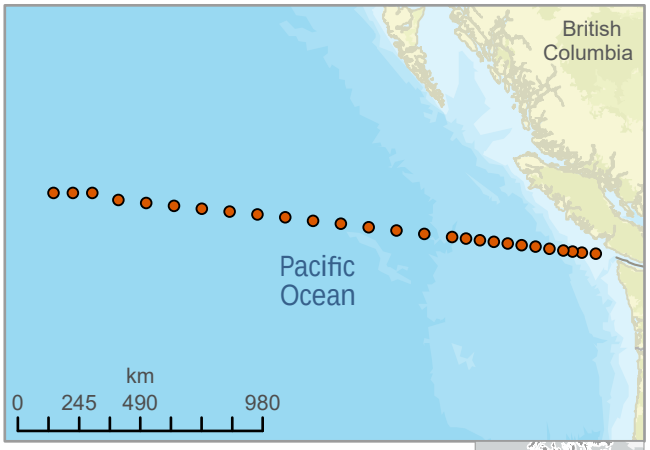
Line P – a long standing program that surveys a 1,425 km long section three times per year – is the longest time series of oceanographic data in the Northeast Pacific, and DFO's furthest offshore reaching program on the west coast. Data collected since 1956 show evidence of the impact of climate variability on ocean productivity.

Objectives

1. Collect water property data and samples for carbon, oxygen, pH, chlorophyll, pigments, nutrients, salinity, cesium, and dimethyl sulfide.
2. Collect zooplankton and phytoplankton samples.
3. Deploy Argo floats (an array of over 4,000 free-drifting floats that collect data, such as temperature, salinity, oxygen, pH, nitrates, optics).
4. Deploy and/or recover gliders.

Collaborators

Canadian Coast Guard, Memorial University of Newfoundland, University of British Columbia, University of Victoria



Locations: Northeast Pacific Ocean, mainly offshore

CCGS John P. Tully.
© Jackson Chu (Fisheries and Oceans Canada)

Deployment of a rosette, a deep water sampling apparatus.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

State of the Pacific Ocean

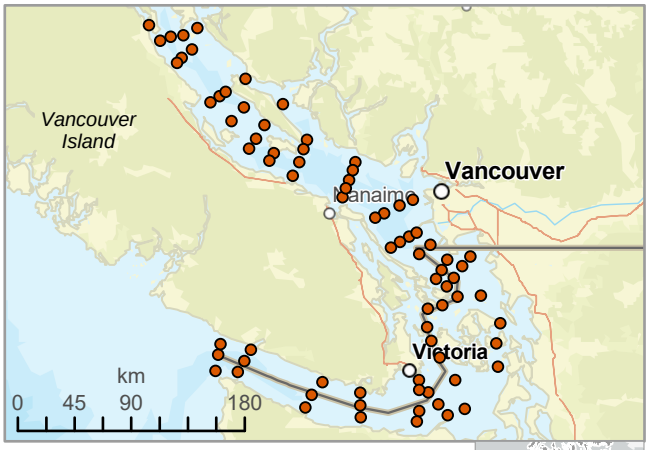
Line P Website (Water Properties)

Fisheries and Oceans Canada | Pêches et Océans Canada

Canada

Biophysical survey
Salish Sea

Unique ID:	OSDROPES_04
Category:	Hydrographic and Oceanographic Surveys
Dates:	June 11 to 17, October 5 to 11, 2025; March 25 to 31, 2026
Start year:	1999
Recurrence:	Annually - Ongoing
Vessel:	CCGS Vector
Email:	Jennifer.Jackson@dfo-mpo.gc.ca
Phone:	250-706-8549



Locations: Strait of Georgia, Juan de Fuca Strait

Description

A water properties survey first introduced in 1999 and carried out three to four times per year to collect oceanographic data in the Strait of Georgia and Juan de Fuca Strait (zooplankton, nutrients, dissolved oxygen, dissolved inorganic carbon, temperature, and salinity).

The information collected is used to monitor the seasonal cycle and year to year variability in the properties of the environment and their impact on the ecosystem, and to contribute to an archive of oceanographic information for the region upon which scientific advice can be based.

CCGS Vector.
© Fisheries and Oceans Canada

Objectives

1. Continue the time series of observations at over 80 stations.
2. Conduct long-term monitoring of the physical, chemical and biological characteristics of the region.
3. Examine changes to the water column in the context of climate change (warming, deoxygenation, ocean acidification).

Deployment of a rosette, a deep water sampling apparatus.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard

FOR MORE INFORMATION

Salish Sea water quality

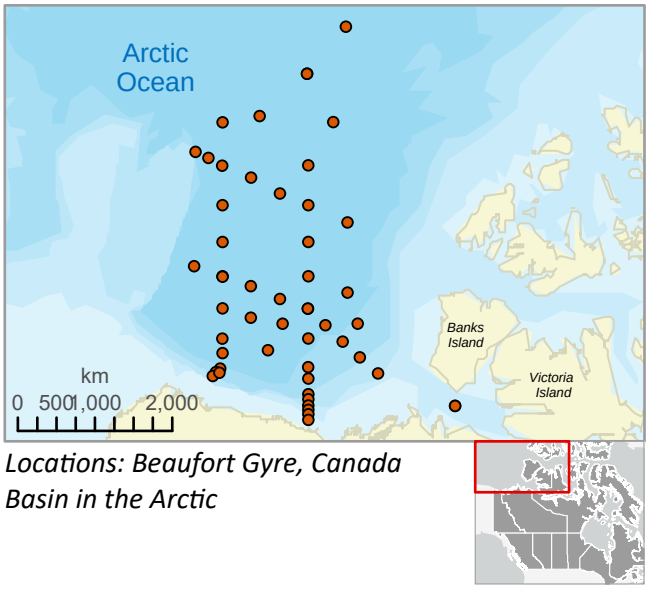
Monitoring British Columbia southern coastal waters

Fisheries and Oceans Canada | Pêches et Océans Canada

Canada

Joint ocean ice study
Beaufort Gyre

Unique ID:	OSDSOTO_01
Category:	Hydrographic and Oceanographic Surveys
Dates:	September 18 to October 23, 2025
Start year:	2003
Recurrence:	Annually - Ongoing
Vessel:	CCGS Louis S. St-Laurent
Email:	Bill.Williams@dfo-mpo.gc.ca
Phone:	250-858-3699



Locations: Beaufort Gyre, Canada Basin in the Arctic

Description

The Beaufort Gyre is one of the Arctic Ocean's primary circulation features, storing and transporting freshwater, sea ice, and heat across the Canadian Basin. The Joint Ocean Ice Study Program collects biogeochemical water samples and deploys moorings and ice buoys to monitor the response of the Beaufort Gyre to climate change.

Objectives

1. Monitor ocean acidification due to sea-ice retreat and melt.
2. Monitor the wind-forced freshwater accumulation in the gyre from Arctic rivers sea ice melt.
3. Monitor the changing contributions of Pacific- and Atlantic-origin water in the gyre.
4. Monitor the increasing summertime melt and loss of old ice.

CCGS Louis S. St-Laurent.
© Fisheries and Oceans Canada

Deployment of a rosette, a deep water sampling apparatus.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard, Japan Agency for Marine-Earth Science and Technology, United States National Science Foundation, Concordia University, ETH Zürich (Switzerland), Kitami Institute of Technology (Japan), Oregon State University (USA), Tokyo University of Marine Science and Technology (Japan), University of British Columbia, Université Laval, University of Montana (USA)

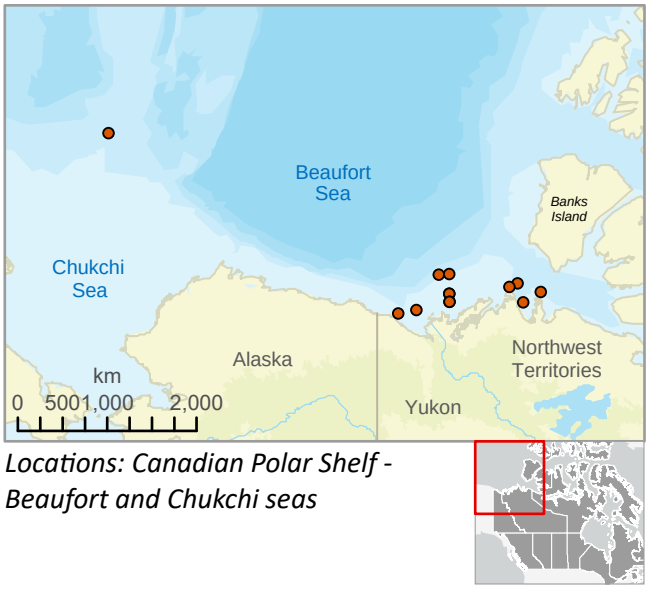
FOR MORE INFORMATION

Beaufort Gyre exploration project

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Beaufort Shelf moored observatory
Canadian Polar Shelf

Unique ID: OSDSOTO_02
Category: Hydrographic and Oceanographic Surveys
Dates: September 30 to October 13, 2025
Start year: 1990
Recurrence: Annually - Ongoing
Vessel: CCGS Sir Wilfrid Laurier
Email: Bill.Williams@dfo-mpo.gc.ca
Phone: 250-858-3699



Locations: Canadian Polar Shelf - Beaufort and Chukchi seas

Description

An initiative to document conditions related to sea ice, waves and storm surge that are hazardous to coastal infrastructure, ships and offshore structures in the Arctic Ocean; as well as the progressive impacts of climate change on the marine Arctic.

Objectives

1. Recover and service recording instruments from 10 to 20 submerged moorings, retrieve data, and redeploy the observing array.
2. Collect marine mammal sound recordings, sea-surface temperature, salinity, fluorescence, water and airborne contaminants, and mapping of the seabed.
3. Establish estimates of the recurrence intervals for rare extreme marine hazards of high severity, and reliable projections of the future state of the marine Arctic under the influence of climate change.

CCGS Sir Wilfrid Laurier.
© Fisheries and Oceans Canada

Collaborators

Inuit communities via the Inuvialuit Environmental Impact Screening Committee, Canadian Coast Guard, Environment and Climate Change Canada, National Oceanographic and Atmospheric Administration (USA)

Crew retrieves ocean mooring among ice floes.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Bill.Williams@dfo-mpo.gc.ca

Canadian Ranger Ocean Watch winter ocean sampling
Northwest Passage

Unique ID: OSDSOTO_03
Category: Hydrographic and Oceanographic Surveys
Dates: March 1, 2025 to March 31, 2026
Start year: 2009
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Mike.Dempsey@dfo-mpo.gc.ca
Phone: 250-363-6452

Description

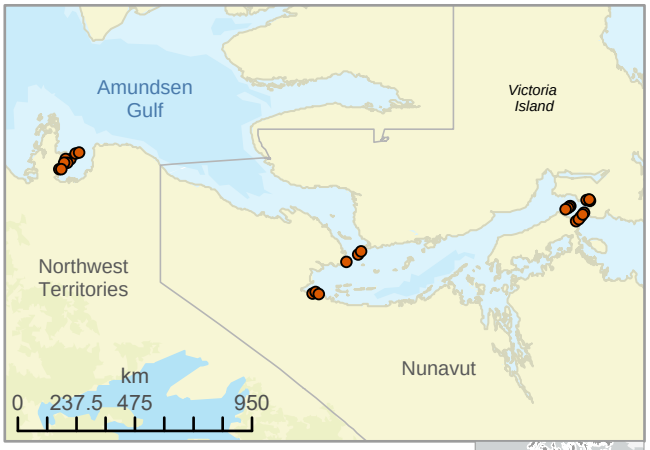
The Canadian Ranger Ocean Watch (CROW) started as a partnership between DFO and the Canadian Rangers, but now includes community-based monitoring to collect winter oceanographic sampling data in frozen conditions in the Canadian Arctic Archipelago. The results add seasonality to over 30 years of summer ship-based observations. Snow and ice data are shared with the Canadian Ice Service.

Objectives

1. Monitor wintertime oceanographic conditions at standard locations by collecting full depth conductivity, temperature, and depth (CTD) profiles, ice thickness, snow depth measurements, and geochemical (nutrients/dissolved inorganic carbon/alkalinity) and zooplankton samples.
2. Describe the seasonal cycle across the region, by combining winter and summer data.
3. Engage local residents in an exchange of information about the ocean.

Collaborators

Canadian Rangers from the Inuit communities of Kugluktuk, Cambridge Bay, and Paulatuk; Environment and Climate Change Canada, Department of National Defence



Locations: Northwest Passage (Cambridge Bay, Kugluktuk, Paulatuk)

Ranger snowmobile patrol.
© Fisheries and Oceans Canada

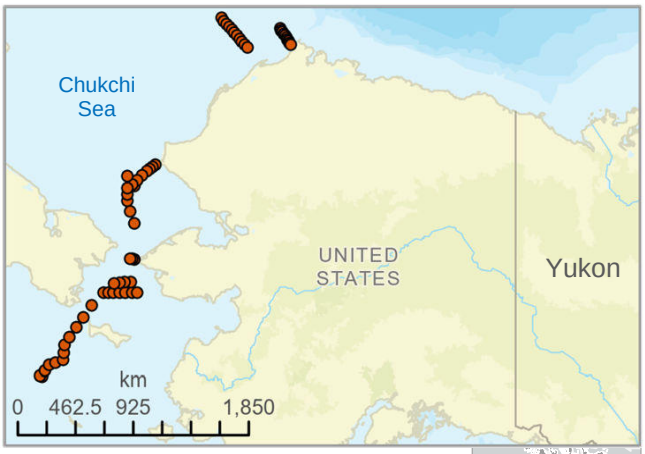
Kugluktuk Rangers take water samples through the ice.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Mike.Dempsey@dfo-mpo.gc.ca

Ocean and benthos monitoring
Bering and Chukchi Seas

Unique ID: OSDSOTO_05
Category: Hydrographic and Oceanographic Surveys
Dates: July 19 to 30, 2025
Start year: 1998
Recurrence: Annually - Ongoing
Vessel: CCGS Sir Wilfrid Laurier
Email: Bill.Williams@dfo-mpo.gc.ca
Phone: 250-858-3699



Locations: Northeast Pacific Ocean, Bering Sea and Chukchi seas

Description

The Distributed Biological Observatory (DBO) program is an international effort studying impacts of climate change and variability on ecosystems of the sub-arctic and Arctic. The expedition collects oceanographic, geochemical and biological data to monitor ocean conditions, and the distribution and abundance of benthic organisms.

Objectives

1. Monitor the impacts of ocean warming and sea-ice retreat on benthic organisms, that are a critical food source for walrus, grey whales, and eider ducks.
2. Monitor the Bering Sea's winter-formed "cold pool" that forms the southern boundary of the Arctic ecosystem.
3. Monitor the northward flow of nutrient-rich Pacific Ocean water, which plays a critical role in the ecology of the Canadian Arctic.
4. Monitor the northward transport and potential establishment of Pacific plankton into the Arctic Ocean.

CCGS Sir Wilfrid Laurier.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard, National Oceanic and Atmospheric Administration (USA), Fish and Wildlife Service (USA), University of Victoria, Clark University (USA), University of Maryland (USA)

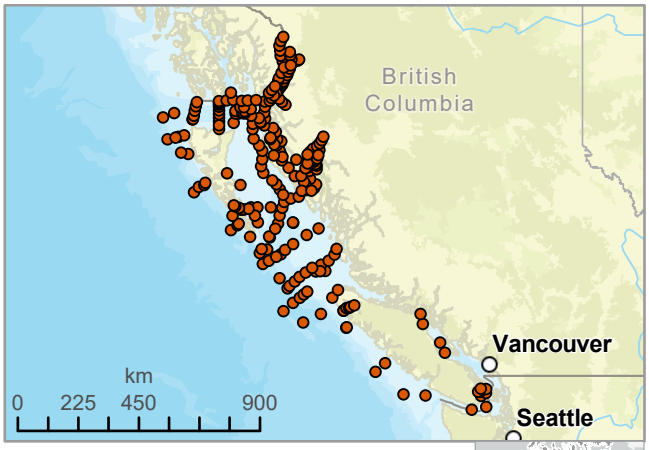
A Chukchi Sea walrus (Odobenus rosmarus).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Distributed Biological Observatory

Deployment and recovery of oceanographic moorings

Unique ID: OSDSOTO_10
Category: Hydrographic and Oceanographic Surveys
Dates: July 19 to August 4, 2025
Start year: 1976
Recurrence: Annually - Ongoing
Vessel: CCGS John P. Tully
Email: David.Spear@dfo-mpo.gc.ca
Phone: 236-464-2073



Locations: Juan de Fuca Strait, Johnstone Strait, Strait of Georgia, west coast of Vancouver Island, Queen Charlotte Strait, Haida Gwaii, Dixon Entrance, Chatham Sound, Hecate Strait, Douglas Channel, Queen Charlotte Sound, Ursula Channel, Juan Perez Sound, Principe Channel

Description

This cruise is responsible for the deployment, recovery and servicing of oceanographic moorings, as well as other oceanographic sampling. These moorings record tides, currents and water properties in support of long-term environmental monitoring programs.

Objectives

1. Recover, service and deploy oceanographic moorings.
2. Collect water property data and biogeochemical samples.
3. Collect zooplankton, phytoplankton, and sediments.
4. Deploy surface current tracking drifters.

Collaborators

Council of the Haida Nation, Canadian Coast Guard, Environment and Climate Change Canada (Scott Islands National Wildlife Area), Parks Canada (Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site)

CCGS John P. Tully.
© Jackson Chu (Fisheries and Oceans Canada)

Mooring preparations.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

State of the Pacific Ocean

Water Properties Data

Fisheries and Oceans Canada | Pêches et Océans Canada

Canada

Oceanographic exploration
Kitikmeot Sea Moorings

Unique ID:	OSDSOTO_21
Category:	Hydrographic and Oceanographic Surveys
Dates:	September 23 to 30, 2025
Start year:	2022
Recurrence:	Annually - Ongoing
Vessel:	CCGS Sir Wilfrid Laurier
Email:	Bill.Williams@dfo-mpo.gc.ca
Phone:	250-858-3699

Locations: Kitikmeot Sea

Description

The Kitikmeot Sea Science Study deploys oceanographic moorings from the CCGS Sir Wilfrid Laurier to evaluate wind-driven seasonal and interannual oceanographic processes in the Kitikmeot Sea in the Northwest Passage.

Objectives

1. Evaluate large-scale circulation and nutrient balances in the Kitikmeot Sea.
2. Evaluate tidal-mixing of ocean nutrients in narrow straits with rapid tides.
3. Explore the remote and little-studied Bathurst Inlet.
4. Investigate seasonal variation of oceans and rivers through year-round moorings and Community Based Monitoring.

CCGS Sir Wilfrid Laurier.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard, University of Manitoba, The Arctic University of Norway, University of Alaska Fairbanks (USA)

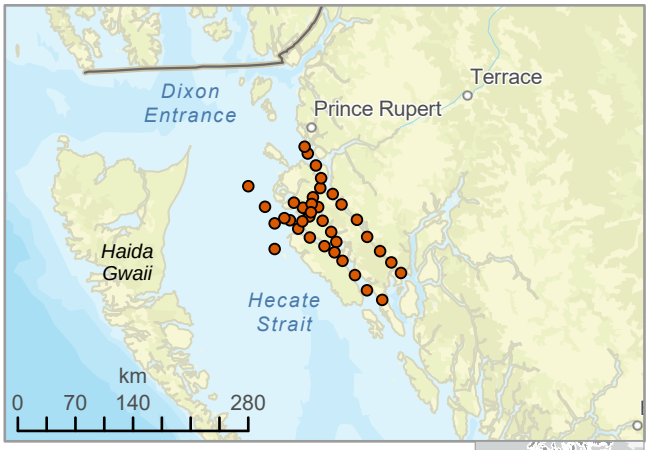
Mooring deployment.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Bill.Williams@dfo-mpo.gc.ca

Water exchanges and oceanographic survey
North Coast of British Columbia

Unique ID: OSDSOTO_22
Category: Hydrographic and Oceanographic Surveys
Dates: April 1 to 8, 2025
Start year: 2025
Recurrence: Other
Vessel: CCGS Vector
Email: Cynthia.Bluteau@dfo-mpo.gc.ca
Phone: 778-553-8659



Locations: Grenville, Petrel, Principe, Ogden, and Kitkatla channels; Hecate Strait; Beaver Passage

Description

This survey will collect conductivity, temperature, and depth (CTD) profiles and water samples to address knowledge gaps about the water exchanges around the Kitkatla Inlet Area of Interest (AOI), which is under consideration for long-term protection as a Marine Protected Area (MPA) under the *Oceans Act*. The observations include subsurface temperature, salinity, nutrients, chlorophyll A and dissolved oxygen.

This work will assist with quantifying the connectivity of Kitkatla AOI with adjoining waterways. This sampling is part of a larger project on identifying key indicator sites across the Northern Shelf Bioregion that can be used to infer water properties across the MPA network.

Beaver Passage, British Columbia.
© David Spear (Fisheries and Oceans Canada)

Objectives

1. Collect subsurface CTD and water samples to measure temperature, salinity, nutrients and dissolved oxygen.
2. Collect surface water to characterize microplastics concentrations.
3. Identify and characterize water sources entering the AOI.

CTD rosette equipment.
© Fisheries and Oceans Canada

Collaborators

Gitga'at, Gitxaała (Kitkatla), Coastal First Nations - Great Bear Initiative, Canadian Coast Guard

FOR MORE INFORMATION

Contact the Lead Scientist at Cynthia.Bluteau@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Follow the fish juvenile chinook assessment
West coast of Vancouver Island

Unique ID: ADGTMG_02
Category: Population and Ecosystem Assessments
Dates: April 1, 2025 to March 31, 2026
Start year: 2020
Recurrence: Not expected to recur
Vessel: CCGS Vector, citizen scientists and First Nations small vessels, R/Vs Alta and Doug Anderson, small inshore, rigid inflatable, and charter vessels
Email: Jessy.Bokvist@dfo-mpo.gc.ca
Phone: 250-327-8734

Description

West coast of Vancouver Island (WCVI) chinook salmon face significant challenges early in their lifecycle, including: changing ocean conditions,habitat loss and degradation, inadequate nutrition, harmful substances, pathogens, poor water quality,and predation. The Follow the Fish suite of projects under the Pacific Salmon Strategy Initiative study juvenile WCVI chinook as they migrate from rivers in the spring into estuaries,and to nearshore marine habitats where they rear in summer, fall, and winter. Data collected from the comprehensive assessment of the physical, biological, and environmental threats facing WCVI Chinook salmon will inform the Rebuilding Plan under the Fish Stock Provisions of the Fisheries Act.

Objectives

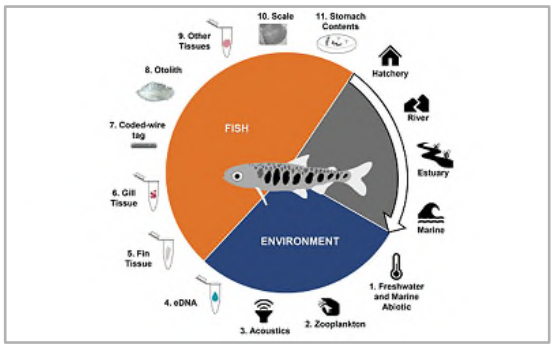
1. Sample juvenile chinook using a variety of methods: rotary screw traps in rivers, beach seining in estuaries, and purse seining in nearshore marine environments.
2. Sample and document ecological conditions, such as: water quality, plankton and other food availability, incidence of parasites/pathogens and contaminants,predators, and more. See related field operations under these Unique IDs: OSDOEB_10, OSDOEB_15, OSDOEB_17, OSDOMAP_02.
3. Perform laboratory analysis of data collected, such as: otolith micro-chemistry of spawned adults, and the use of salmon 'Fit-Chips' and environmental DNA for genetic analysis of cumulative stressors.

Collaborators

Ahousaht, Ditidaht First Nation, Ehattesaht/Chinehkint, Hupacasath First Nation Tseshaht First Nation, Huu-ay-aht First Nations, Ka:'yu:'k't'h'/Che:k'tles7et'h' First Nations, Mowachaht/Muchalaht First Nations, Nuchatlaht First Nation, Pacheedaht First Nation, Quatsino First Nation, Tla-o-qui-aht First Nation, Toquaht Nation, Uchucklesaht Tribe, Yuułuʔiłʔatḥ Government, Ha'oom Fisheries Society, Maaqutusiis Hahoulthee Stewardship Society, Uu-a-thluk Nuu-chah-nulth Fisheries, Canadian Coast Guard, University of British Columbia, Nootka Sound Watershed Society, Pacific Salmon Foundation

Locations: Nitinat Lake, Port of San Juan, Sooke Basin; Barkley, Clayoquot, Kyuquot, Nootka, and Quatsino sounds; Bedwell, San Juan, Sarita, and Somass/Stamp watersheds

Nita Maria vessel.
© Fisheries and Oceans Canada



Follow the Fish program components.
© Jessy Bokvist (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Chinook salmon COSEWIC assessment and status report
Information about Pacific salmon

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Northern resident killer whale annual census

Unique ID:	ESDAEMMS_01
Category:	Population and Ecosystem Assessments
Dates:	May 1 to August 31, 2025
Start year:	1973
Recurrence:	Annually - Ongoing
Vessel:	M/V Roller Bay
Email:	Thomas.Doniol-Valcroze@dfo-mpo.gc.ca
Phone:	250-739-2168

Description

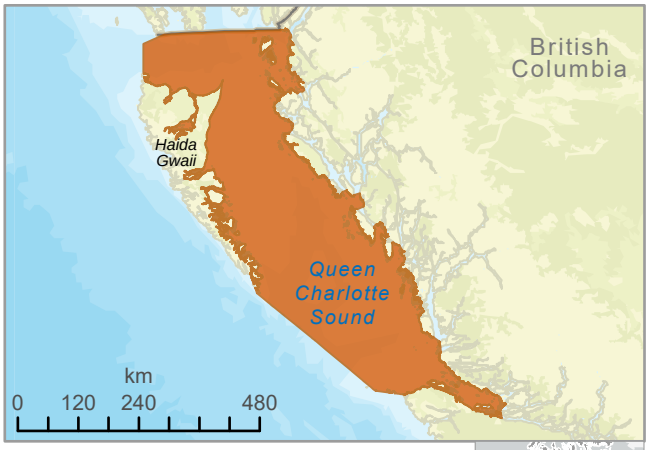
The Cetacean Research Program has been conducting an annual census of the northern resident killer whale (NRKW) population since 1973, making it one of the longest time series of data for any marine mammal. This information is important to monitor changes in abundance, population structure, and life-history parameters.

Objectives

1. Using visual and acoustic methods, locate NRKW and collect photo identifications of all members of group present.
2. Deploy and recover acoustic devices.
3. Collect prey samples from sharing events during encounters where whales are foraging.
4. Document each animal in the population.
5. Document new offspring since the previous year's census, and identify the mother.

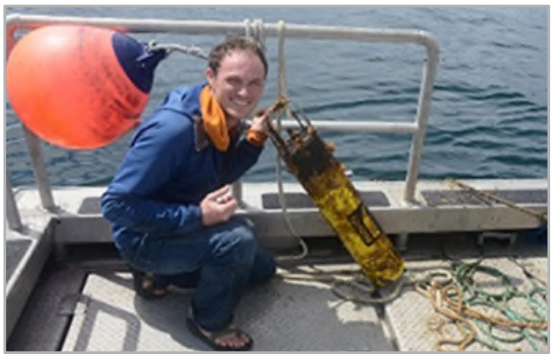
Collaborators

Gitga'at First Nation, Canadian Coast Guard, Parks Canada , Bay Cetology, CetaceaLab, OrcaLab, North Coast Cetacean Society, Ocean Wise Conservation Association, Coastal and Ocean Resources



Locations: Queen Charlotte Strait, Johnstone Strait, Dixon Entrance, Chatham Sound, Hecate Strait, Queen Charlotte Sound

M/V Roller Bay.
© Fisheries and Oceans Canada



Recovering acoustic recorder.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Population status update for the northern resident killer whale - 2022

Harbour seal and sea lion diet analysis

Unique ID: ESDAEMMS_05
Category: Population and Ecosystem Assessments
Dates: April 1 to November 30, 2025
Start year: 2015
Recurrence: Annually - Ongoing
Vessel: Small vessels
Email: Strahan.Tucker@dfo-mpo.gc.ca
Phone: 250-616-2867

Description

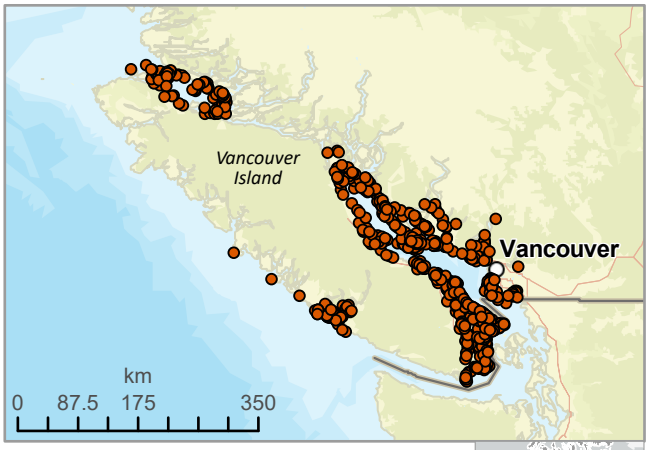
Diets can be estimated from an analysis of scats through both hard-part (bones) identification and genetic DNA analysis, as well as from biochemical analysis of blubber and skin samples obtained through biopsying of live animals. This survey will collect biopsies and scats from harbour seals, Steller sea lions and California sea lions on a seasonal basis from spring through fall at key locations and along salmon migratory pathways. The goal is to estimate competition between pinnipeds and southern and northern resident killer whales for salmon prey.

Objectives

1. Approach select harbour seal and sea lion haulouts slowly by small vessel, and obtain biopsy using a light weight dart fired from a crossbow.
2. Carefully move animals off their haulouts in an orderly fashion and collect and freeze scats individually.
3. In the laboratory, separate hard parts from the scat matrix and extract the remaining material for DNA analysis; undertake stable isotope and fatty acid analysis of biopsy.
4. Estimate the fish and invertebrate composition of the diet for each scat and each sample.

Collaborators

N/A.



Locations: Queen Charlotte Strait, Strait of Georgia, southwest coast of Vancouver Island

M/V Kellehan.
© Fisheries and Oceans Canada

Preparation of scat for hard part analysis.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Strahan.Tucker@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Southern resident killer whale physiology and habitat use

Unique ID:	ESDAEMMS_06
Category:	Population and Ecosystem Assessments
Dates:	June 1 to September 30, 2025, and opportunistically throughout the year
Start year:	2018
Recurrence:	Annually - Ongoing
Vessel:	Charley C (Zodiac 753), Great Northern (7m rigid hull inflatable boat)
Email:	Sheila.Thornton@dfo-mpo.gc.ca
Phone:	604-364-5917

Description

Behavioural assessment of southern resident killer whales (SRKW) to improve understanding of habitat use patterns and identify key foraging areas. Prey sampling, fecal sampling, breath sampling, and drone imaging inform foraging efficiency, prey selection and physiological parameters.

Objectives

1. Using visual and acoustic methods to locate SRKW, identify behavioural state and collect photo-identifications of individuals encountered.
2. Collect prey samples from sharing events during encounters where whales are foraging.
3. Collect information on vessel presence in the vicinity of whales.
4. Collect fecal and breath samples from SRKW.
5. Collect overhead images of the whales using drones.

Collaborators

National Oceanic and Atmospheric Administration (USA)

Locations: Gulf Islands, Juan de Fuca Strait, Swiftsure / La Perouse Bank, Fraser River delta

Zodiacs.
© Fisheries and Oceans Canada

Field crew on southern resident killer whale habitat use project.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Areas of elevated risk for vessel-related physical and acoustic impacts

Delineating important killer whale foraging areas

Fisheries and Oceans Canada | Pêches et Océans Canada

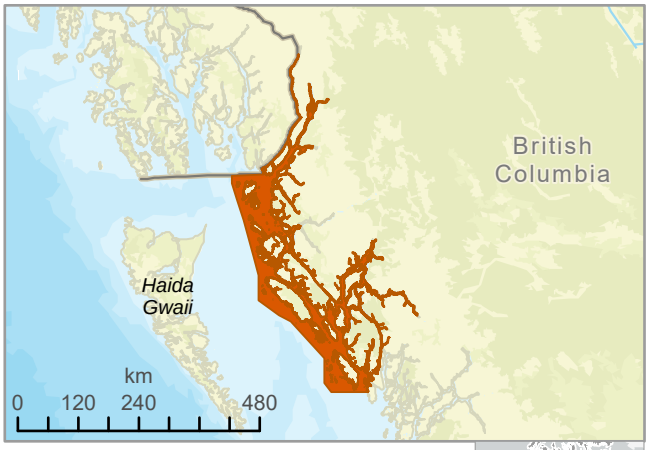
Canada

Harbour seal aerial survey
Northern coast of British Columbia

Unique ID:	ESDAEMMS_08
Category:	Population and Ecosystem Assessments
Dates:	June 1 to 31, 2025
Start year:	1976
Recurrence:	Every 5 years
Vessel:	N/A
Email:	Strahan.Tucker@dfo-mpo.gc.ca
Phone:	250-616-2867

Description

Rotating aerial survey to estimate the regional abundance of harbour seals in British Columbia waters. Data will contribute to long-term monitoring of abundance and distribution trends, support potential pressures on fisheries resources, and support marine conservation and impact assessment initiatives.



Locations: Caamaño Sound, Chatham Sound, Douglas Channel, Edye Passage, Hecate Strait, Malacca Passage, Portland Inlet, Prince Rupert Harbour, Steamer Channel, Work Channel

Objectives

1. Survey all known haul outs via aircraft.
2. Opportunistically scan the shoreline and waters for harbour seals between known haul out sites.
3. Photograph individuals and groups of seals with a hand held camera.
4. Count seals from the photographs and compile a final total estimate of abundance.

Aerial view of Pacific harbour seals at a haul out site.

© Fisheries and Oceans Canada

Collaborators

N/A.

Harbour seal (Phoca vitulina).

© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scentist at Strahan.Tucker@dfo-mpo.gc.ca

Large whales assessment surveys

Unique ID:	ESDAEMMS_09
Category:	Population and Ecosystem Assessments
Dates:	June 11 to 25, 2025
Start year:	2002
Recurrence:	Annually - Ongoing
Vessel:	CCGS John P. Tully
Email:	Thomas.Doniol-Valcroze@dfo-mpo.gc.ca
Phone:	250-739-2168

Description

The Cetacean Research Program assesses population abundance and critical habitat of species-at-risk, including several species of large whales. Dedicated surveys have been conducted since 2002 to improve understanding of the distribution of cetaceans and their use of habitats such as sea mounts and troughs.

Locations: Dixon Entrance, Chatham Sound, Hecate Strait, West coast of Haida Gwaii

Objectives

1. Obtain data on distribution and abundance of cetacean species.
   Deploy and recover acoustic recorders.
2. Increase the number of confirmed sightings of sei whales and North Pacific right whales.
3. Obtain photo identification data on several species (e.g., killer whales, fin whales, North Pacific right whales).
4. Obtain biopsy samples from several species (e.g., killer whales, fin whales, North Pacific right whales).

CCGS John P. Tully.
© Jackson Chu (Fisheries and Oceans Canada)

Collaborators

Canadian Coast Guard, Parks Canada

Cetacean observers at work.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Spatial density models of cetaceans in the Canadian Pacific

Northern resident and Bigg's killer whale physiology and body condition

Unique ID:	ESDAEMMS_10
Category:	Population and Ecosystem Assessments
Dates:	June 1 to September 30, 2025 and opportunistically throughout the year
Start year:	2018
Recurrence:	Annually - Ongoing
Vessel:	R/V Merlin (7 m), Charley C. (7.5 m), Great Northern (7 m rigid hull inflatable boat)
Email:	Sheila.Thornton@dfo-mpo.gc.ca
Phone:	604-364-5917

Description

Physiological assessment of individual northern resident and Bigg's killer whales to improve our understanding of physiological parameters and how they relate to nutritional and reproductive state, and body condition. Prey sampling, fecal and breath sampling, biopsies and drone imaging inform foraging efficiency, prey selection and define physiological parameters of whales.

Objectives

1. Collect prey samples from sharing events during encounters where whales are foraging.
2. Collect breath, fecal, and biopsy samples from individuals.
3. Collect data on body condition from drone imaging to correlate with physiological parameters.
4. Build upon our understanding of foraging behaviour from previous tagging studies.

Collaborators

National Oceanic and Atmospheric Administration (USA)

Locations: Queen Charlotte Strait, Johnstone Strait; Beauchemin, Finlayson, Fisher, Laredo, and Seaforth channels; Gunboat, Hakai, Lama, Lillooet, Raymond, and Wright passages; Caamaño, Fitz Hugh, Laredo, Milbanke, Queen Charlotte, and Queens sounds; Hecate Strait

R/V Merlin.
© Fisheries and Oceans Canada

Killer whale (Orcinus orca) with suction cup tag.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Fine scale foraging research

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Cetacean monitoring and research
Southern Salish Sea

Unique ID: ESDAEMMS_13
Category: Population and Ecosystem Assessments
Dates: April 1, 2025 to March 31, 2026
Start year: 2020
Recurrence: Annually - Ongoing
Vessel: M/V Manyberries
Email: Christie.McMillan@dfo-mpo.gc.ca
Phone: 236-330-1435

Description

This field operation addresses data gaps on the seasonal abundance, distribution, and behaviour of whales, dolphins, and porpoises. Data collected will lead to an improved understanding of seasonal habitat use and vessel strike risk to these populations.

Objectives

1. Collect abundance and distribution data every two months through boat based cetacean surveys.
2. Deploy and recover data-logging tags on humpback whales to gain insight into dive behaviour and habitat use.
3. Deploy and recover passive acoustic recorders to supplement visual survey efforts and inform porpoise distribution and habitat use.
4. Obtain photo-identification data and genetic samples from humpback whales.

Collaborators

Cascadia Research Collective (USA)

Locations: Strait of Georgia, Boundary Pass, Haro Strait, Juan de Fuca Strait, Swiftsure Bank, Strait of Georgia

M/V Manyberries.
© CeMoRe Team (Fisheries and Oceans Canada)

Humpback whale (Megaptera novaeangliae) with data logging tag.
© CeMoRe Team (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Seasonal abundance and distribution of cetaceans - southern Salish Sea

Spatial patterns in migratory destinations of humpback whales

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Steller sea lion haulout monitoring

Unique ID: ESDAEMMS_16
Category: Population and Ecosystem Assessments
Dates: April 1, 2025 to March 31, 2026
Start year: 2022
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Strahan.Tucker@dfo-mpo.gc.ca
Phone: 250-616-2867

Description

A multi-year deployment of autonomous cameras at Seabird Rocks, Pacific Rim National Park Reserve, will collect photos to assess the daily variation in haulout numbers as well as to identify branded animals in support of an ongoing National Oceanic and Atmospheric Administration (NOAA) led Steller sea lion program.

The photos will also capture the seasonal presence and abundance of California sea lions in British Columbia waters and gauge species interactions.

Finally, the photos will be used to test and refine computer automated counting software with mixed Steller and California sea lion species.

Objectives

1. Service cameras and swap memory cards one year after deployment, and undertake image analysis.
2. Obtain daily counts of Steller and California sea lions.
3. Generate a list of branded animals.

Collaborators

Parks Canada, North Pacific Wildlife Consulting (USA)

Locations: Seabird Rocks (Pacific Rim National Park)

Seabird Rocks.
© Fisheries and Oceans Canada

Steller sea lion (Eumetopias jubatus) haulout.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Strahan.Tucker@dfo-mpo.gc.ca

North Pacific humpback whale physiology and metabolic rate

Unique ID:	ESDAEMMS_17
Category:	Population and Ecosystem Assessments
Dates:	June 1 to September 30, 2025 and opportunistically throughout the year
Start year:	2022
Recurrence:	Annually - Ongoing
Vessel:	R/V Merlin (7 m), Great Northern, and Charley C. (7.5 m)
Email:	Sheila.Thornton@dfo-mpo.gc.ca
Phone:	604-364-5917

Locations: Queen Charlotte Strait, Johnstone Strait, Strait of Georgia, Juan de Fuca Strait, West Coast Vancouver Island, Swiftsure / La Perouse Bank, Strait of Georgia

Description

Physiological biomarkers, body condition and metabolic rate of humpback whales (*Megaptera novaeangliae*) are measured to improve understanding of physiological processes and how they relate to nutritional and reproductive states of humpback whales. Breath samples are collected with drones, biopsies with a crossbow, and fecal samples with fine-mesh nets. These samples allow for a comprehensive assessment of metabolic needs and reproductive state of the whales.

Objectives

1. Collect breath, fecal, and biopsy samples from individuals for a comprehensive assessment of physiological parameters.
2. Collect body and breath photos from a drone to evaluate body condition and estimate metabolic rate and energy needs.

Collaborators

Marine Education and Research Society

Drone launching from Zodiac.
© Fisheries and Oceans Canada

Humpback whale (Megaptera novaeangliae).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Sheila.Thornton@dfo-mpo.gc.ca

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Canada

Cetacean abundance and distribution survey

Unique ID: ESDAEMMS_18
Category: Population and Ecosystem Assessments
Dates: April 15 to 30, July 1 to 15, and November 1 to 15, 2025
Start year: 2023
Recurrence: Annually - Ongoing
Vessel: R/V Tiriarnaq
Email: Janet.Mossman@dfo-mpo.gc.ca
Phone: 778-269-3458

Description

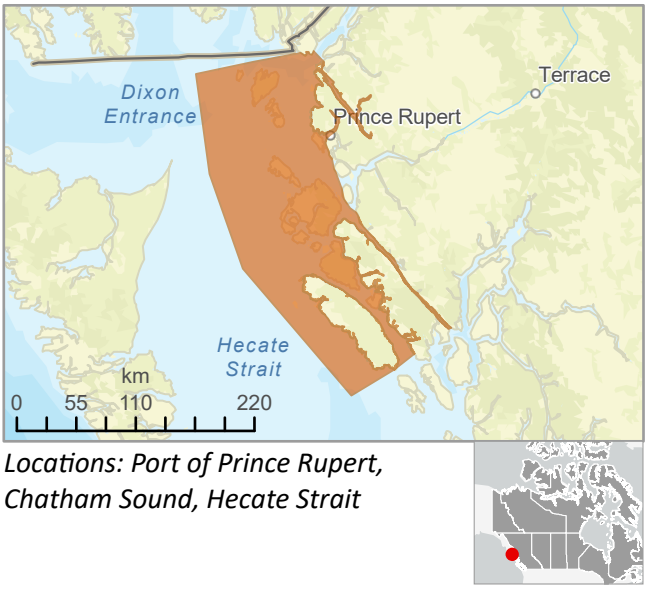
The collection of multi-year, seasonal data to provide abundance and distribution estimates of cetaceans (whales, porpoises and dolphins) will support the assessment of the impacts of marine shipping traffic on cetacean populations in areas of high or increasing marine traffic on the North Coast of British Columbia.

Objectives

1. Complete vessel-based line transect surveys to estimate the abundance and distribution of whales, dolphins and porpoises off the North Coast of British Columbia.
2. Characterize seasonal and annual variation in abundance and distribution of whales, dolphins and porpoises as well as potential implications for ship strike risk with marine traffic.
3. Provide high-quality, open data to all Canadians to inform science-based decision making.

Collaborators

Arctic Research Foundation



Locations: Port of Prince Rupert, Chatham Sound, Hecate Strait

R/V Tiriarnaq.
© Arctic Research Foundation

Harbour porpoise (Phocoena phocoena).
© Christie McMillan (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Janet.Mossman@dfo-mpo.gc.ca

Grey whale foraging habitat

Unique ID:	ESDAEMMS_19
Category:	Population and Ecosystem Assessments
Dates:	April 1 to November 30, 2025
Start year:	2022
Recurrence:	Annually - Ongoing
Vessel:	Small vessels
Email:	Linda.Nichol@dfo-mpo.gc.ca
Phone:	250-616-1706

Description

This operation proposes boat surveys to photo-identify known Pacific coast feeding group (PCFG) grey whales (*Eschrichtius robustus*), document their habitat use in Canadian waters, investigate their diet, and develop body condition measurement methods using drone technology.

PCFG's use of diverse foraging strategies and habitats may have provided resilience to past climate change. Understanding this plasticity will provide key information about how future ecosystem changes (e.g., climate, prey) may affect grey whales.

Objectives

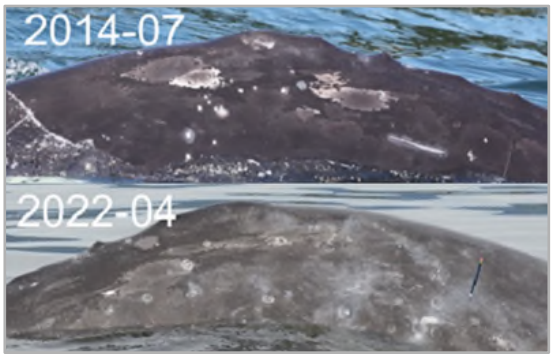
1. Photo-identify whales beginning in the spring, during the herring spawn.
2. Collect biopsy skin samples to investigate diet.
3. Develop drone techniques for measuring body condition.

Collaborators

Cascadia Research Collective (USA), Pacific Coast Feeding Group Consortium

Locations: West coast of Vancouver Island

M/V Michelle Diana.
© Fisheries and Oceans Canada



Grey whale (Eschrichtius robustus) photo ID left and right.

© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Linda.Nichol@dfo-mpo.gc.ca

Steller sea lion satellite telemetry deployment

Unique ID:	ESDAEMMS_21
Category:	Population and Ecosystem Assessments
Dates:	May 1 to June 30, 2025
Start year:	2024
Recurrence:	Not expected to recur
Vessel:	N/A
Email:	Strahan.Tucker@dfo-mpo.gc.ca
Phone:	250-616-2868

Description

Steller sea lion population estimates generated from counts taken during aerial surveys need to be corrected for the proportion of animals in the water and not counted. A correction factor is developed by following the behavior of a sample of satellite tagged seals. The last tags were deployed in the 2000's. This project will update correction factors by deploying satellite tags and tracking sea lions' behavior over several months.

Objectives

1. Capture adult and sub-adult animals of mixed sex and age, and immobilize them using a Pneu-Dart remote delivery system.
2. Temporarily attach 10 satellite tags to fur of sea lions; these tags will relay summaries of the wet/dry sensor during their deployment.
3. Calculate correction.
4. Using sea lion dives and movements, assess the amount of time sea lions spent foraging, and model foraging movements to reveal sea lion predation hotspots.

Collaborators

Vancouver Aquarium

Locations: Triangle Island

Triangle Island, British Columbia.
© Fisheries and Oceans Canada

Steller sea lion (Eumetopias jubatus).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Trends in abundance and distribution of Steller sea lions - 2021

Trends in abundance of Steller sea lions - 2018

Fisheries and Oceans Canada | Pêches et Océans Canada

Canada

Grey whale and sea otter population assessment

West coast of Vancouver Island

Unique ID: ESDAEMMS_22
Category: Population and Ecosystem Assessments
Dates: June 24 to July 8, 2025
Start year: 2024
Recurrence: Other
Vessel: CCGS Vector, rigid-hull inflatable vessel (7m)
Email: Linda.Nichol@dfo-mpo.gc.ca
Phone: 250-616-1706

Description

This field operation will consist of vessel-based surveys of sea otters and Pacific Coast Feeding Group (PCFG) Grey whales along exposed coastal areas, utilizing visual survey techniques and photo-identification techniques.

Objectives

1. Contribute to a range-wide survey of PCFG grey whales by undertaking a photo-identification survey of grey whales along Vancouver Island.
2. Undertake sea otter surveys along the west coast of Vancouver Island.

Collaborators

Canadian Coast Guard

Locations: West coast of Vancouver Island, Queen Charlotte Strait

CCGS Vector.
© Fisheries and Oceans Canada

Grey whale (Eschrichtius robustus) foraging in nearshore waters.
© B. Gisborne (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Linda.Nichol@dfo-mpo.gc.ca

Juvenile sockeye salmon acoustic and trawl surveys

Unique ID:	ESDFE_02
Category:	Population and Ecosystem Assessments
Dates:	July 15 to November 15, 2025
Start year:	1974
Recurrence:	Annually - Ongoing
Vessel:	R/V Night Echo
Email:	Lucas.Pon@dfo-mpo.gc.ca
Phone:	604-824-4707

Description

Rotational surveys of juvenile sockeye salmon (*Oncorhynchus nerka*) abundance, diet, and condition in Fraser River nursery lake ecosystems. Data and outputs support the assessment and recovery of aquatic species at risk, as well as fisheries forecasting and management decisions.

Objectives

1. Estimate abundances and densities of juvenile sockeye salmon populations in key nursery lake ecosystems.
2. Evaluate growth and survival during lake rearing life stages.
3. Evaluate juvenile sockeye salmon diets in relation to lake food webs.
4. Evaluate juvenile sockeye salmon population condition and stock status.

Collaborators

Lhtako Dene Nation

Locations: Bowron, Chilliwack, Cultus, Francois, and Fraser lakes

R/V Night Echo.
© Fisheries and Oceans Canada

Hauling a catch of pelagic fish onboard.
© Janvier Doire (Skeena Fisheries Commission)

FOR MORE INFORMATION

Hydroacoustic enumerations and trawl surveys in Quesnel Lake

Juvenile sockeye salmon nursery lake ecosystem and environmental assessments

Unique ID: ESDFE_03
Category: Population and Ecosystem Assessments
Dates: April 1 to November 30, 2025
Start year: 1985
Recurrence: Annually - Ongoing
Vessel: G.E. Hutchinson, K.R.S. Shortreed
Email: Daniel.Selbie@dfo-mpo.gc.ca
Phone: 604-824-4702

Description

Limnological assessments of juvenile sockeye salmon (*Oncorhynchus nerka*) nursery lake food webs and productive capacity modeling. Data and outputs support fisheries productive capacity estimates, defining conservation objectives, and research into limitations on Pacific salmon populations and changing resources under environmental change.

Objectives

1. Evaluate the structure and functioning of sockeye salmon food webs in key nursery lake ecosystems.
2. Establish habitat and population-based ecosystem productive capacities for juvenile sockeye salmon.
3. Define freshwater limitations for sockeye salmon and their marine and freshwater fisheries.
4. Evaluate anthropogenic and natural habitat drivers on sockeye salmon important habitat and fisheries production.
5. Model nursery lake ecosystems in relation to climate variability, environmental change, and cumulative stressors.

Collaborators

Takla Nation, Lake Babine Nation, Upper Fraser Fisheries Conservation Alliance, Lower Fraser Fisheries Alliance, Ts'elxwéyeqw Tribe, Province of British Columbia (Ministry of Water, Land and Resource Stewardship, Ministry of Environment and Parks), University of the Fraser Valley, McGill University, University of Northern British Columbia, Queen's University, Simon Fraser University, British Columbia Lake Stewardship Society

Locations: Babine, Cultus, Chilliwack (Sxótsaqel), Takla, and Trembleur lakes

G.E. Hutchinson vessel.
© Dr. Daniel Selbie (Fisheries and Oceans Canada)

Limnological sampling.
© Dr. Daniel Selbie (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Daniel.Selbie@dfo-mpo.gc.ca

Pacific salmon water temperature monitoring

Unique ID: ESDFE_04
Category: Population and Ecosystem Assessments
Dates: April 1, 2025 to March 31, 2026
Start year: 1950
Recurrence: Annually - Ongoing
Vessel: N/A
Email: David.Patterson@dfo-mpo.gc.ca
Phone: 604-666-5671

Description

Monitoring and forecasting of water temperatures in salmon migratory corridors of the Fraser River to inform fisheries and habitat management.

Locations: Fraser River basin, including the Upper Fraser, Stuart, Nechako, Quesnel, Chilcotin, Thompson, Seton, Harrison, and Chilliwack watersheds

Objectives

1. Provide water temperature information on migratory conditions for Pacific salmon in the Fraser River watershed.
2. Monitor water temperatures in select migratory corridors for Pacific salmon.
3. Analyze water temperature information in relation to changes associated with climate and land use activities
4. Forecast water temperatures to predict likelihood of adult sockeye salmon exposure to adverse migration conditions.
5. Input data into mortality models.

Chilcotin River, a migration corridor monitored for temperature.

© Fisheries and Oceans Canada

Collaborators

Environment and Climate Change Canada, Simon Fraser University

Real time water temperature logger installation on Stuart River.

© Fisheries and Oceans Canada

FOR MORE INFORMATION

Environmental Watch Program

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Juvenile coho salmon habitat productivity

Unique ID: ESDFE_07
Category: Population and Ecosystem Assessments
Dates: April 1 to November 30, 2025
Start year: 2020
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Douglas.Braun@dfo-mpo.gc.ca
Phone: 604-703-9069

Description

This project will assess the availability and productivity of tributary and wetland habitats for juvenile coho salmon (*Oncorhynchus kisutch*) in the North Thompson watershed. This work has been developed in conversation with Secwepemc Fisheries Commission and Simpcw First Nation.

Locations: North Thompson River Basin

Objectives

1. Estimate habitat availability and coho salmon productivity (population density, age composition, growth and condition)within tributary and off-channel systems.
2. Model the relationship between mainstem flow in the North Thompson and wetland habitat availability.
3. Develop models of salmon productivity at the watershed scale.


Minnow traps set to sample juvenile coho salmon.
© Fisheries and Oceans Canada

Collaborators

Simon Fraser University


Juvenile coho salmon (Oncorhynchus kisutch) with a visible implant elastomer.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Douglas.Braun@dfo-mpo.gc.ca

Chinook and coho salmon environmental DNA development and application

Unique ID:	ESDFE_11
Category:	Population and Ecosystem Assessments
Dates:	April 1 to November 15, 2025
Start year:	2022
Recurrence:	Annually - Ongoing
Vessel:	N/A
Email:	Josephine.Iacarella@dfo-mpo.gc.ca
Phone:	236-380-0955

Description

Successful management of critically declining Pacific salmon populations is severely hampered by the persistent lack of vital freshwater habitat use information. This research aims to develop and test environmental DNA methods to determine presence and relative abundance of chinook and coho salmon in the Fraser River basin, and to assess habitat use for threatened and endangered populations across life cycle stages.

Objectives

1. Develop relationships between environmental DNA (eDNA) concentrations, adult and juvenile counts, and stream flow characteristics for a full cycle of life history stages at three study locations.
2. Develop relationships between eDNA concentrations of spawning salmon and counts at 50 additional study locations.
3. Evaluate eDNA lab methodologies for relative abundance estimation.
4. Compare eDNA presence and relative abundance to environmental suitability and landscape stressors, to identify priority areas for habitat restoration and conservation.
5. Develop end-user guide for monitoring salmon in freshwater using eDNA.

Collaborators

N/A.

Locations: Lower Mainland watersheds

Sampling with eDNA backpack.
© Richard Chea (Fisheries and Oceans Canada)

Sampling for eDNA.
© Richard Chea (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Josephine.Iacarella@dfo-mpo.gc.ca

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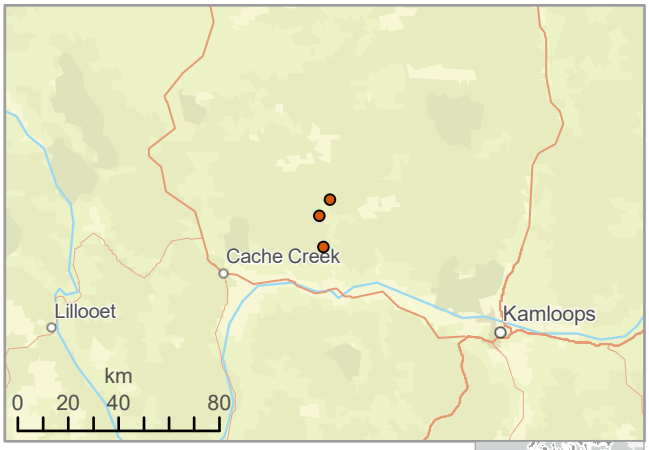
Canada

Constructed off-channel habitat research
Deadman Watershed

Unique ID: ESDFE_14
Category: Population and Ecosystem Assessments
Dates: April 1 to October 31, 2025
Start year: 2024
Recurrence: Not expected to recur
Vessel: N/A
Email: Sean.Naman@dfo-mpo.gc.ca
Phone: 236-330-6263



Locations: Deadman River

Description

There are numerous constructed off-channel habitats across British Columbia. Yet, how these are functioning as fish habitat is not always clear. There is a need to evaluate these habitats to determine whether improvement or even decommissioning is needed. In the Deadman Watershed, traditional Skeetchestn Territory, there are numerous constructed off-channel habitats that range in their age and condition. This project aims to monitor abiotic (temperature, dissolved oxygen) and biotic (salmon abundance and growth) function in these habitats. Data will help inform potential actions by Skeetchestn and DFO Area Restoration teams to manage these habitats, as well as our general understanding of how these habitats are used by salmon and contribute to productivity.

Off-channel pond in the Deadman River.
© Julian Gan (Fisheries and Oceans Canada)

Monitoring station for water temperature, dissolved oxygen, and water level in the Deadman River.
© Julian Gan (Fisheries and Oceans Canada)

Objectives

1. Assess habitat conditions and fish performance in constructed off-channel habitats across the Deadman watershed.

Collaborators

Secwepemc Fisheries Commission, Skeetchestn Natural Resources Corporation, Simon Fraser University

FOR MORE INFORMATION

Contact the Lead Scientist at Sean.Naman@dfo-mpo.gc.ca

Coastal biodiversity survey

Unique ID: ESDMSEA_01
Category: Population and Ecosystem Assessments
Dates: May 15 to September 15, 2025
Start year: 2016
Recurrence: Annually - Ongoing
Vessel: Dive skiff
Email: Sarah.Dudas@dfo-mpo.gc.ca
Phone: 250-327-3501

Description

This collaborative survey will assess coastal habitats and species within and near conservation areas in British Columbia. Findings will support marine conservation initiatives and contribute to long-term monitoring.

Objectives

1. Conduct coastal surveys – which may include fish and invertebrates and aquatic invasive species – using standard and novel technologies such as environmental DNA and drones.

Collaborators

N/A.

Locations: Bute Inlet, Discovery Passage, Knight Inlet, Loughborough Inlet, northern Strait of Georgia, Queen Charlotte Strait, Toba Inlet

Sampling the fish community using a beach seine net,as part of coastal biodiversity monitoring.

© Michelle Paleczny (Fisheries and Oceans Canada)

Surveying biodiversity in intertidal zones, as part of coastal biodiversity monitoring.

© Michelle Paleczny (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Sarah.Dudas@dfo-mpo.gc.ca

Kelp ecosystem monitoring survey

Unique ID: ESDMSEA_07
Category: Population and Ecosystem Assessments
Dates: August 5 to 18, 2025
Start year: 2021
Recurrence: Annually - Ongoing
Vessel: R/V Palmira (7 m)
Email: Sandie.Hankewich@dfo-mpo.gc.ca
Phone: 778-229-8199

Description

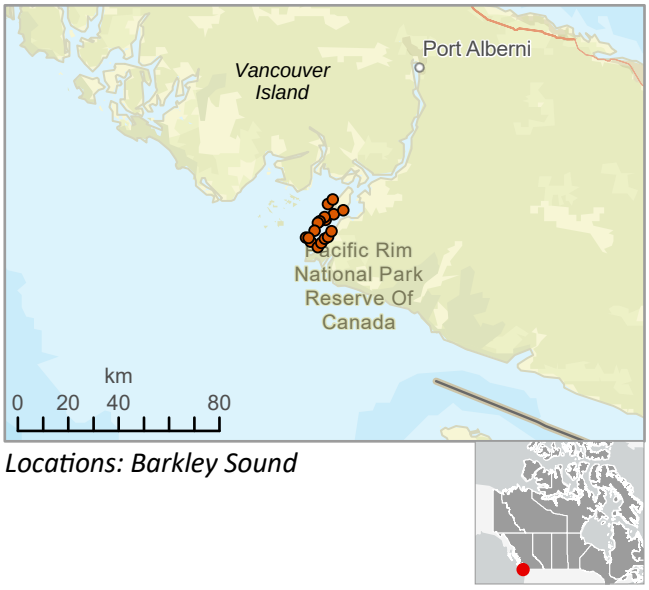
This kelp monitoring project is part of a collaborative effort in British Columbia aimed at improving understanding the drivers of changes in kelp forests. This dive survey provides the under the surface data that cannot be collected by remote sensing and kayaks/boats. Subtidal and intertidal surveys will be conducted at 15 permanent sites.

Objectives

1. Identify annual changes in understory kelp bed extent.
2. Monitor annual changes in the density and abundance of algae, invertebrate and fish species associated with rocky reefs.
3. Examine the influence of environmental variables on kelp density, diversity, and possibly productivity.
4. Survey the intertidal algae and invertebrate communities at each site.

Collaborators

Bamfield Marine Sciences Centre



Locations: Barkley Sound

R/V Palmira.
© Fisheries and Oceans Canada

Luscious kelp forest.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Marine Plan Partnership for the North Pacific Coast

Kelp Node

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Northeast Pacific deep-sea expedition
West coast of Vancouver Island

Unique ID: ESDMSEA_09
Category: Population and Ecosystem Assessments
Dates: July 7 to 14, 2025
Start year: 2017
Recurrence: Annually - Ongoing
Vessel: CCGS John P. Tully
Email: Cherisse.DuPreez@dfo-mpo.gc.ca
Phone: 250-709-8603

Description

This survey will visually explore the habitats and sample the waters in and around Ecologically and Biologically Significant Areas (EBSAs) in existing, planned, and potential Marine Protected Areas (MPAs). Findings will support marine conservation initiatives and contribute to long-term monitoring.

Objectives

1. Characterize benthic habitats and fauna via visual surveys, collection of specimens, bathymetric mapping, and oceanographic sampling (e.g., environmental DNA)
2. Re-visit long term monitoring sites.
3. Conduct science outreach and communication.

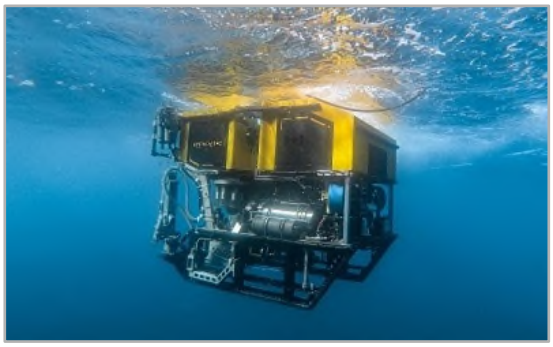
Collaborators

Uu-a-thluk Nuu-chah-nulth Fisheries, Canadian Coast Guard, University of Victoria, Challenger 150, Ocean Networks Canada, United Nations Oceans Decade, Royal British Columbia Museum

Locations: Cold seeps on the Continental Shelf and Slope, offshore of Vancouver Island

CCGS John P. Tully.

© Shelton Du Preez (Fisheries and Oceans Canada)



ROPOS deployment.

© Nicole Holman and Northeast Pacific Deep Sea Expedition partners

FOR MORE INFORMATION

Northeast Pacific deep-sea exploration project

Live and recorded underwater survey videos

Fisheries and Oceans Canada | Pêches et Océans Canada

Canada

Intertidal biodiversity survey

Unique ID: ESDMSEA_10
Category: Population and Ecosystem Assessments
Dates: May 1 to September 30, 2025
Start year: 2024
Recurrence: Other
Vessel: N/A
Email: Sarah.Dudas@dfo-mpo.gc.ca
Phone: 250-327-3501

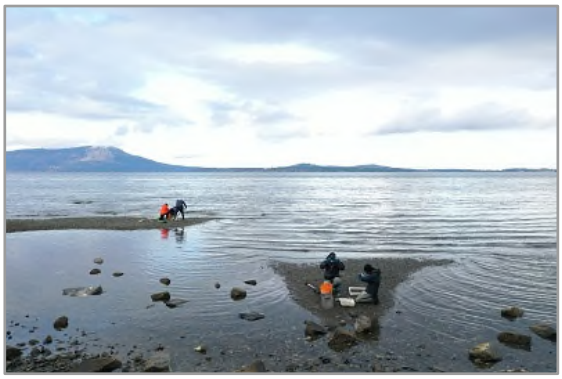
Description

This collaborative biodiversity survey will assess intertidal habitats and species. These data will help support Marine Conservation Targets, Integrated Marine Response Planning, Marine Spatial Planning, and the Malahat Nation.

Locations: Saanich Inlet, Vancouver Island

Objectives

1. Conduct an intertidal invertebrate survey.
2. Assess intertidal invertebrate biodiversity and abundance.
3. Assess intertidal habitat.
4. Share knowledge.



Conducting a biodiversity assessment.
© Fisheries and Oceans Canada

Collaborators

Malahat Nation

Malahat Nation and DFO staff collaborating on intertidal biodiversity surveys.
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FOR MORE INFORMATION

Contact the Lead Scientist at Sarah.Dudas@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Remotely operated vehicle surveys for corals, sponges, and rockfish
Agamemnon Channel

Unique ID: ESDMSEA_12
Category: Population and Ecosystem Assessments
Dates: June 15 to September 15, 2025
Start year: 2025
Recurrence: Not expected to recur
Vessel: M/V Manyberries or similar leased vessel
Email: Sharon.Jeffery@dfo-mpo.gc.ca
Phone: 250-686-9964

Locations: Agamemnon Channel

Description

This field work will use remotely operated vehicles (ROVs) to explore the distribution and abundance of corals and sponges within the northern portion of Agamemnon channel, as well as look for areas of high rockfish abundance. The data collected will support the Government of Canada's Marine Conservation Target commitment to protect 30 percent of its oceans by 2030.

Objectives

1. Identify areas with high densities of corals, sponges and rockfishes.
2. Look for evidence of damage to coral and sponge habitat from bottom-contact fishing or log storage.

Delta ROV.
© Fisheries and Oceans Canada

Collaborators

N/A.

Bubble gum coral (Paragorgia pacifica).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Sharon.Jeffery@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Rockfish Conservation Area coastwide monitoring

Queen Charlotte Strait, Strait of Georgia, and Southern Shelf

Unique ID: ESDMSEA_13
Category: Population and Ecosystem Assessments
Dates: November 1, 2025 to March 31, 2026
Start year: 2025
Recurrence: Annually - Ongoing
Vessel: CCGS Vector, M/V Manyberries
Email: Sharon.Jeffery@dfo-mpo.gc.ca
Phone: 250-686-9964

Description

Rockfish Conservation Areas (RCAs) were established throughout British Columbia between 2003-2007. This work will implement coastwide RCA monitoring advice using a remotely operated vehicle (ROV), and ultimately help inform the effectiveness of RCAs.

Locations: Queen Charlotte Strait, upper Strait of Georgia, Southern Shelf Bioregion

Objectives

1. Assess the abundance of rockfish and lingcod inside RCAs, and in comparable areas outside RCAs.
2. Assess the quality and quantity of rockfish habitat inside RCAs, and in comparable areas outside RCAs.
3. If possible, assess the size of rockfish and lingcod inside RCAs,and in comparable areas outside RCAs.
4. Conduct water sampling for environmental DNA and oceanographic variables.
5. If possible, collect video footage using both DFO and Washington Department of Fish & Wildlife equipment/methods to determine if the data are comparable.

CCGS Vector.
© Sharon Jeffery (Fisheries and Oceans Canada)

M/V Manyberries.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard

FOR MORE INFORMATION

Contact the Lead Scientist at Sharon.Jeffery@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Rocky intertidal survey

Unique ID:	ESDMSEA_15
Category:	Population and Ecosystem Assessments
Dates:	June 1 to July 31, 2025
Start year:	2024
Recurrence:	Annually - Ongoing
Vessel:	Dive skiff
Email:	Sarah.Dudas@dfo-mpo.gc.ca
Phone:	250-327-3501

Description

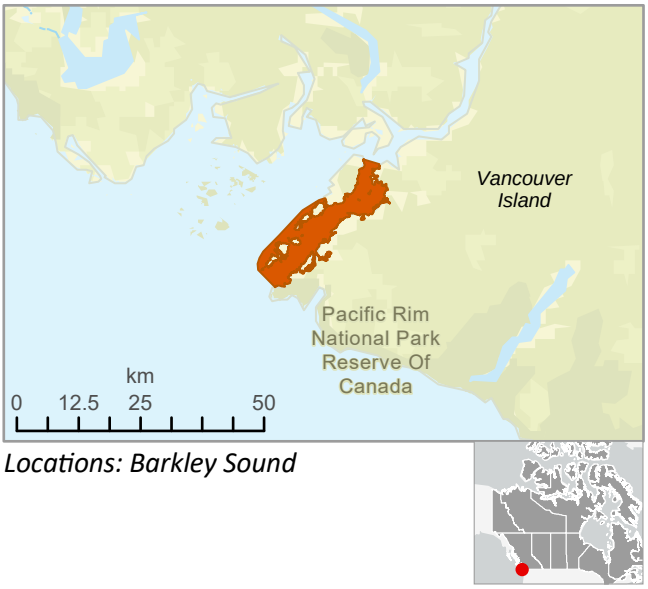
This field work will monitor target species (mussels, anemones, barnacles) and biodiversity at a subset of sites for which intertidal algae and subtidal kelp forests are currently monitored.

Objectives

1. Monitor target species in rocky intertidal zones.
2. Assess biodiversity in rocky intertidal zones.

Collaborators

N/A.



Locations: Barkley Sound

Setting up a quadrat for long-term monitoring of mussels in the rocky intertidal.

© Michelle Paleczny (Fisheries and Oceans Canada)

Setting up a quadrat for long-term monitoring of anemones in the rocky intertidal.

© Michelle Paleczny (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Sarah.Dudas@dfo-mpo.gc.ca

Nearshore species distribution dive surveys

Unique ID:	ESDMSEA_16
Category:	Population and Ecosystem Assessments
Dates:	April 7 to 13, May 1 to 4 and 20 to 26, June 9 to 15, July, and August 27 to September 24, 2025
Start year:	2025
Recurrence:	Annually for 2 years
Vessel:	CCGS Vector, and the Rossia (7 m), Red Ape (7 m), and Palmira (7 m)
Email:	Michelle.Bigg@dfo-mpo.gc.ca
Phone:	250-756-7310

Description

Predictions from species distribution models (SDMs) serve as valuable guides for management and conservation decisions. However, SDM predictions entail uncertainties, particularly hen extrapolating to novel environmental conditions or geographic areas. These dive surveys will help evaluate the reliability and utility of species distribution models by gathering independent presence-absence and relative abundance data for red, green, and purple sea urchins, red sea cucumber, as well as kelp and seagrass species (e.g., Pterygophora, Phyllospadix, Zostera). Work on the north coast of British Columbia will be conducted in conjunction with the "Multispecies benthic invertebrate monitoring" field operation (Unique ID: StARMI_09).

Objectives

1. Collect qualitative data on shallow benthic habitat up to a 20 metre depth, for several invertebrate and algae species, as well as other habitat information (e.g., substrate).
2. Refine and reduce uncertainty in predictive distribution maps for several nearshore invertebrate and algae species.
3. Refine and reduce uncertainty in predictive nearshore substrate maps.

Collaborators

Canadian Coast Guard, University of British Columbia

Locations: Queen Charlotte Strait, Strait of Georgia, west coast of Vancouver Island, Haida Gwaii, Queen Charlotte Sound, Hecate Strait

Aluminum dive skiff vessel.
© Fisheries and Oceans Canada

Divers collecting invertebrate, algae, and substrate data.
© Pauline Ridings (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Michelle.Bigg@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Aquatic invasive species settlement plate survey

Unique ID: ESDNE_04
Category: Population and Ecosystem Assessments
Dates: April 1, 2025 to March 31, 2026
Start year: 2007
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Thomas.Therriault@dfo-mpo.gc.ca
Phone: 250-713-5484

Description

The biofouling on commercial and recreational vessels by aquatic invasive species (AIS) is a major contributor to their coast wide spread. Through the rotational deployment of settlement plates at both new and long-term sites, this survey seeks to identify the current distribution of sessile AIS in British Columbia waters. Priority areas include the ports of Prince Rupert and Vancouver as they are potential invasion hot spots. Understanding their distribution supports the development of effective management strategies.

Objectives

1. Early detection of new AIS.
2. Track changes over time in AIS and native sessile species to identify possible impacts of AIS or climate change.

Collaborators

Lax Kw'alaams Band, Metlakatla First Nation, Musqueam Indian Band, Tsawwassen First Nation, Tsleil-Waututh, Squamish Nation, Council of the Haida Nation, Coast Mountain College, Prince Rupert Port Authority, Port of Vancouver

Locations: Prince Rupert harbour, Vancouver harbour

Settlement plate with native and invasive species.

© Fisheries and Oceans Canada

Identifying AIS specimens.

© Fisheries and Oceans Canada

FOR MORE INFORMATION

Ocean Biodiversity Information System - AIS settlement plate

Invasive European green crab monitoring

Unique ID: ESDNE_05
Category: Population and Ecosystem Assessments
Dates: April 1 to November 30, 2025
Start year: 2005
Recurrence: Annually - Ongoing
Vessel: R/V Styela
Email: Thomas.Therriault@dfo-mpo.gc.ca
Phone: 250-713-5484

Description

This monitoring informs efforts to prevent the spread of the highly invasive European green crab throughout coastal British Columbia. Using folding Fukui fish traps deployed in the intertidal zone, crab populations are tracked, both at sites where European green crabs have become established and at new sites where they could establish in the future. This data will provide insights into the types of habitats and possible impacts of green crab.

Objectives

1. Use knowledge of green crab habitat preferences to improve early detection in the Salish Sea and the Central and North coasts of British Columbia.
2. Advise management/partners about the spread and potential impacts of European green crab.
3. Understand European green crab changes over time (e.g., distribution, population, demographics).

Collaborators

Ahousaht, Lax Kw'alaams Band, Metlakatla First Nation, T'Sou-ke First Nation, Tla-o-qui-aht First Nation, Toquaht Nation, Council of the Haida Nation, Parks Canada, Washington Department of Fish and Wildlife (USA), University of Washington (USA), Coastal Restoration Society, Puget Sound Partnership (USA), Washington Sea Grant Crab Team (USA), Prince Rupert Port Authority

Locations: Queen Charlotte Strait, Strait of Georgia, Juan de Fuca Strait, Sooke, west coast of Vancouver Island, Haida Gwaii, Chatham Sound, Hecate Strait, Queen Charlotte Sound, Strait of Georgia

R/V Styela.
© Fisheries and Oceans Canada

Green crabs (Carcinus maenas) caught using Fukui fish traps.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Ocean Biodiversity Information System - European green crab
Pacific Salmon Foundation - European green crab

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Pacific oyster and Pacific razor clam stress response

Unique ID: ESDNE_13
Category: Population and Ecosystem Assessments
Dates: April 1, 2025 to March 31, 2026
Start year: 2023
Recurrence: Not expected to recur
Vessel: N/A
Email: Chris.Pearce@dfo-mpo.gc.ca
Phone: 250-756-3352

Description

Field trials will assess candidate gene sets as means of monitoring stress responses of Pacific oysters and Pacific razor clams during acute warming and low oxygen events (e.g., heatwaves, hypoxia). Findings will support the development of an early warning system to aid managers and industry in mitigating such events.

Objectives

1. Carry out laboratory heatwave and hypoxia experiments to identify candidate gene sets for monitoring stress responses of Pacific oysters and Pacific razor clams in the field.
2. Track stress response of Pacific oysters (Departure Bay, Strait of Georgia) and Pacific razor clams (North Beach, Haida Gwaii) during summer months.
3. Monitor temperature and dissolved oxygen conditions at both sites during summer months.

Collaborators

Council of the Haida Nation

Locations: Strait of Georgia (Departure Bay), Haida Gwaii (North Beach)

Pacific oyster bed.
© Claire Mackenzie (Fisheries and Oceans Canada)

Pacific razor clam (Siliqua patula).
© Rick Harbo (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Contact the Lead Scientist at Chris.Pearce@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Juvenile salmon survey
Strait of Georgia

Unique ID: ESDREEF_01
Category: Population and Ecosystem Assessments
Dates: June 13 to July 1, September 15 to September 30, 2025
Start year: 1998
Recurrence: Annually - Ongoing
Vessel: CCGS Sir John Franklin
Email: Jackie.King@dfo-mpo.gc.ca
Phone: 250-756-7176

Locations: Johnstone Strait, Strait of Georgia, Juan de Fuca Strait, British Columbia mainland inlets, Strait of Georgia

Description

Early summer and fall surveys examine the abundance, distribution and condition of juvenile Pacific salmon in order to improve understanding of factors regulating their early marine survival.

Objectives

1. Improve understanding of factors regulating the early marine survival of Pacific salmon (early marine growth and energetics,interactions with salmon farms or other industry, changes in climate, etc.).
2. Determine the relationship between the growth and condition of juvenile salmon that rear in this area and their subsequent total marine survival.
3. Develop forecast methods to identify changes in trends of salmon production and/or provide early return forecasts for specific stock groups.
4. Enumerate and sample all species collected in the surface 75m to improve our understanding of species interactions and competition, as well as changes in marine productivity driven by changes in ocean climate.

CCGS Sir John Franklin.
© Fisheries and Oceans Canada

Crew shaking down a modified trawl net.
© Fisheries and Oceans Canada

Collaborators

Canadian Coast Guard

FOR MORE INFORMATION

State of the Pacific Ocean
Juvenile Pacific salmon survey

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Integrated pelagic ecosystem science survey
West coast of Vancouver Island

Unique ID: ESDREEF_02
Category: Population and Ecosystem Assessments
Dates: July 2 to July 30, 2025
Start year: 2017
Recurrence: Annually - Ongoing
Vessel: CCGS Sir John Franklin
Email: Jackie.King@dfo-mpo.gc.ca
Phone: 250-756-7176

Locations: West and northwest coasts of Vancouver Island

Description

This survey is part of an integrated project designed to study the structure and function of the pelagic ecosystem on the Vancouver Island continental shelf (< 200 m bottom depth). The main goal of the survey is to understand factors affecting the distribution, abundance, and food web linkages of pelagic fish species, such as Pacific herring and juvenile salmon. Stations from randomly selected blocks in each stratum will be sampled with a midwater trawl net towed at the surface or 15 m depth during daylight and night time hours.

Objectives

1. Examine species distribution, composition, and abundance.
2. Collect biological and diet data, as well as biological samples.
3. Examine the prey environment by sampling zooplankton (vertical bongo net hauls) and conducting oceanographic monitoring (temperature, salinity, fluorescence).

Collaborators

Canadian Coast Guard

CCGS Sir John Franklin.
© Fisheries and Oceans Canada

Survey participants collecting biological data from fish.

© Fisheries and Oceans Canada

FOR MORE INFORMATION

Integrated pelagic ecosystem survey - Vancouver Island continental shelf 2023

Integrated pelagic ecosystem survey - Vancouver Island continental shelf 2019

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Juvenile salmon survey
West coast of Vancouver Island

Unique ID: ESDREEF_03
Category: Population and Ecosystem Assessments
Dates: October 1 to 15, 2025
Start year: 1998
Recurrence: Annually - Ongoing
Vessel: CCGS Sir John Franklin
Email: Jackie.King@dfo-mpo.gc.ca
Phone: 250-756-7176

Description

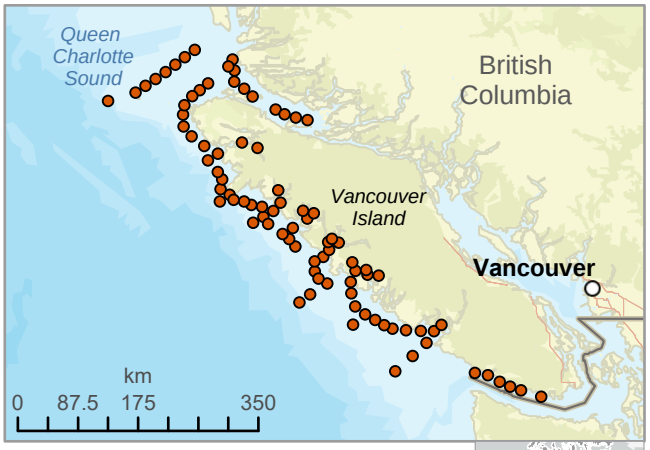
This survey will be used to estimate the condition and stock composition of Pacific salmon on the west coast of Vancouver Island. Oceanographic sampling will allow us to relate salmon abundance and condition to physical sea conditions, and presence and quality of prey (zooplankton). This survey will align with First Nations microtrolling for juvenile chinook within west coast of Vancouver Island inlets (conducted under Unique ID ADGTMG_02).

Objectives

1. Determine the fall abundance, condition, distribution, and genetic stock composition of juvenile salmon, especially chinook.
2. Collect physical oceanographic and zooplankton data to relate back to salmon ecology.
3. Record biological information from all species caught, including other fish species, sharks (live release) and invertebrates (e.g. jellyfish).

Collaborators

Huu-ay-aht First Nations, Ka:'yu:'k't'h'/Che:k:tles7et'h' First Nations, Quatsino First Nation, Ha'oom Fisheries Society, Uu-a-thluk Nuu-chah-nulth Fisheries, Canadian Coast Guard



Locations: Queen Charlotte Strait, west coast of Vancouver Island, Queen Charlotte Sound

CCGS Sir John Franklin.
© Fisheries and Oceans Canada

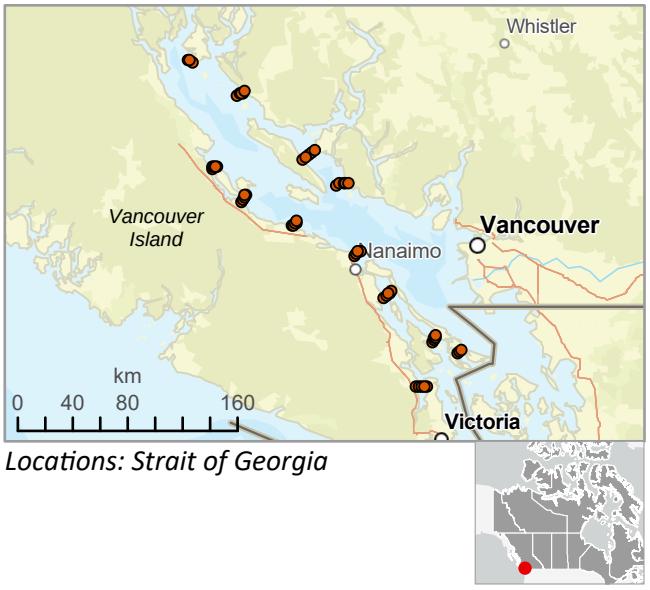
Sorting salmon, sablefish (Anoplopoma fimbria), and jellyfish.
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Ecosystem-based juvenile Pacific salmon trawl survey

Juvenile Pacific herring survey
Strait of Georgia

Unique ID: ESDREEF_06
Category: Population and Ecosystem Assessments
Dates: September 1 to 30, 2025
Start year: 1992
Recurrence: Annually - Ongoing
Vessel: R/V Walker Rock
Email: Jennifer.Boldt@dfo-mpo.gc.ca
Phone: 250-734-3224



Locations: Strait of Georgia

Description
This annual survey aims to improve understanding of Pacific herring (*Clupea pallasii*) recruitment and distribution. Samples will be collected after dusk with a small purse seine at 56 stations along 12 transects in the Strait of Georgia. Acoustic data will be collected along transects. This information informs stock assessment, state of the ocean reporting, and research publications.

Objectives
1. Estimate relative biomass of juvenile herring as an indicator of recruitment.
2. Collect biological data and estimate the relative condition of juvenile herring.
3. Examine the prey environment by sampling zooplankton and conducting oceanographic monitoring.


R/V Walker Rock.
© Jennifer Boldt (Fisheries and Oceans Canada)

Collaborators
Environment and Climate Change Canada, Pacific Salmon Foundation


Skipper alongside a purse seine net.
© Fisheries and Oceans Canada

FOR MORE INFORMATION
Strait of Georgia juvenile Pacific herring survey - September 2021
State of the physical, biological and selected fishery resources - 2022

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Fraser sockeye return migration mortality

Unique ID:	ESDREEF_07
Category:	Population and Ecosystem Assessments
Dates:	July 20 to August 10, 2025
Start year:	2024
Recurrence:	Annually for 2 years
Vessel:	F/V Ocean Achiever
Email:	Cameron.Freshwater@dfo-mpo.gc.ca
Phone:	778-268-0865

Description

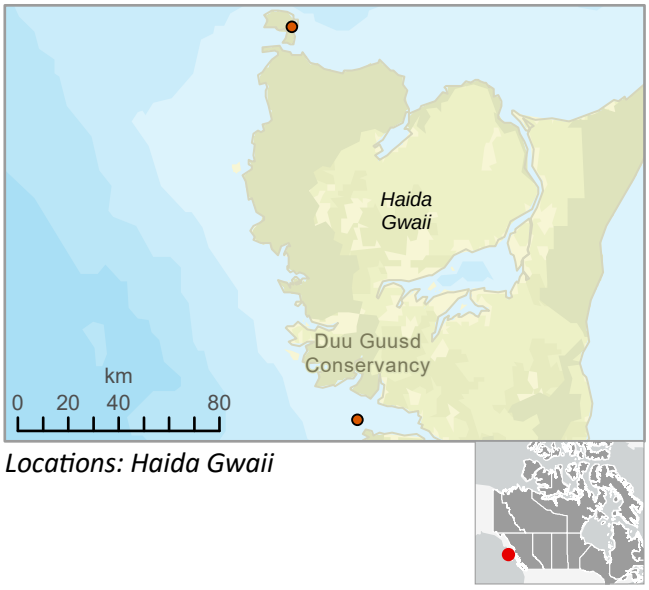
The Applied Salmon Ecology Program tags adult sockeye salmon to estimate mortality rates during return migrations, with a particular emphasis on pinniped predation. This work informs recovery planning for at risk Fraser River sockeye salmon assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Objectives

1. Estimate mortality rates for Fraser sockeye salmon during adult marine migrations.
2. Identify mechanisms of mortality (e.g. predation rates by different species).

Collaborators

University of Alaska Fairbanks (USA)



Locations: Haida Gwaii

F/V Ocean Achiever.
© Fisheries and Oceans Canada

Sockeye salmon (Oncorhynchus nerka).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Contact the Lead Scientist at Cameron.Freshwater@dfo-mpo.gc.ca

Pacific hake assessment survey

Unique ID:	OSDOEB_07B
Category:	Population and Ecosystem Assessments
Dates:	August 18 to September 14, 2025
Start year:	1995
Recurrence:	Annually - Ongoing
Vessel:	CCGS Sir John Franklin, R/V Bell M. Shimada (National Oceanic and Atmospheric Administration)
Email:	Stephane.Gauthier@dfo-mpo.gc.ca
Phone:	250-363-6587

Description

The fisheries acoustic trawl survey is the primary source of fishery-independent data informing the stock assessment of Pacific hake along the west coast of Canada and the U.S. This stock is jointly managed by these two countries under the international Pacific Hake / Whiting Treaty. The survey occurs coastwide in odd years and at select locations only (for research purposes) in even years.

Objectives

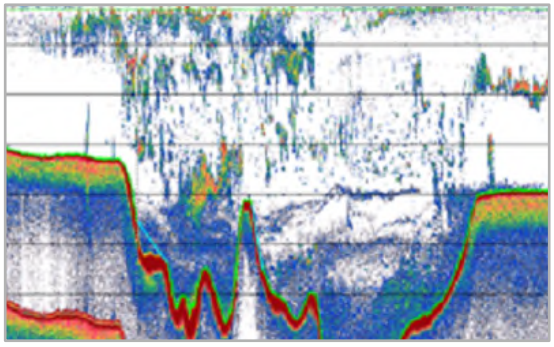
1. Estimate the abundance and distribution of Pacific hake along the west coast using fisheries acoustics techniques.
2. Collect midwater trawl samples to verify species composition of acoustic marks, collect biological samples to estimate fish size and conditions, and collect oceanographic data to better understand distribution and movements.
3. Collect information on prey species, such as krill and mesopelagic fishes.

Collaborators

Canadian Coast Guard, National Oceanographic and Atmospheric Administration (National Marine Fisheries Service - USA), University of Victoria

Locations: West coast of Vancouver Island, Queen Charlotte Strait, Haida Gwaii, Dixon Entrance, Hecate Strait, Queen Charlotte Sound

CCGS Sir John Franklin.
© Fisheries and Oceans Canada



Echogram of detected fish schools in the water column.
© Stéphane Gauthier (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Pacific Hake / Whiting Treaty

Pelagic ecosystem acoustic survey
Strait of Georgia

Unique ID: OSDOEB_12
Category: Population and Ecosystem Assessments
Dates: February 18 to March 4, 2026
Start year: 1995
Recurrence: Annually - Ongoing
Vessel: CCGS Sir John Franklin
Email: Stephane.Gauthier@dfo-mpo.gc.ca
Phone: 250-363-6587

Description

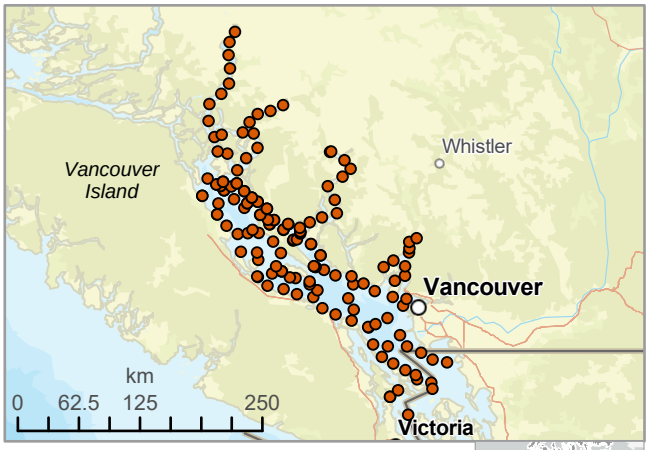
Acoustic trawl survey within the Salish Sea to assess the pelagic ecosystem. The survey particularly assesses the distribution and abundance of local stocks of Pacific hake and walleye pollock, as well as Pacific herring and other pelagic species within the open waters of the Strait of Georgia and Jervis, Toba, and Bute inlets.

Objectives

1. Estimate the abundance and distribution of pelagic and demersal species using fisheries acoustics techniques.
2. Collect midwater trawl samples to verify species composition of acoustic marks, and collect biological samples to estimate fish size and conditions.
3. Collect oceanographic data using a CTD (conductivity, temperature, and depth) rosette and plankton nets to better understand distribution and movements.

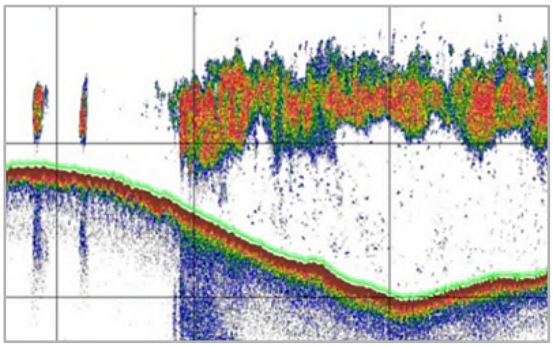
Collaborators

Canadian Coast Guard, National Oceanographic and Atmospheric Administration (National Marine Fisheries Service - USA), University of Victoria, Canadian Groundfish Research and Conservation Society, Pacific Salmon Foundation



Locations: Strait of Georgia; Saanich, Bute, Toba, and Jervis inlets; Howe Sound

CCGS Sir John Franklin.
© Fisheries and Oceans Canada



Echogram of detected fish schools in the water column.
© Stéphane Gauthier (Fisheries and Oceans Canada)

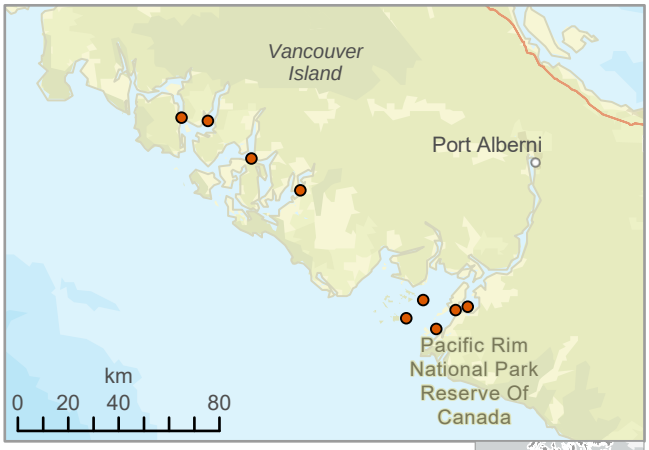
FOR MORE INFORMATION

State of the Pacific Ocean

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Euphausiid Monitoring Program
Barkley and Clayoquot Sounds

Unique ID: OSDOEB_17
Category: Population and Ecosystem Assessments
Dates: The first Thursday of each month, from April to November, 2025
Start year: 2022
Recurrence: Annually - Ongoing
Vessel: R/V Alta and charter
Email: Kelly.Young@dfo-mpo.gc.ca
Phone: 250-363-6502



Locations: Barkley and Clayoquot Sounds

Description

The DFO euphausiid monitoring program aims to characterize seasonal, inter-annual, and long-term variability of euphausiid production dynamics in Barkley (five stations) and Clayoquot (four stations) Sounds. Euphausiids, in particular the species *Thysanoessa spinifera*, are of particular importance to marine food webs and are an essential prey item of juvenile salmon and herring.

Objectives

1. Conduct monthly surveys at night, when euphausiids are active in surface waters.
2. Conduct double oblique bongo tows (335µm mesh) or ring net (200µm) plankton sampling.
3. Conduct full water column CTD (conductivity, temperature, and depth) profiles (temperature, salinity, dissolved oxygen, and chlorophyll fluorescence).
4. Conduct surface water sampling for salinity, nutrients, chlorophyll-a and phytoplankton taxonomy (Barkley Sound only).

R/V Alta.
© Fisheries and Oceans Canada

Evening sampling on back deck of R/V Alta.
© Fisheries and Oceans Canada

Collaborators

Ha'oom Fisheries Society, Bamfield Marine Sciences Centre, University of British Columbia, University of Victoria

FOR MORE INFORMATION

Population biology and productivity of Thysanoessa spinifera

Pacific Salmon Strategy Initiative

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Researching the research stations
Hammond Bay and Patricia Bay

Unique ID: OSDROPES_06
Category: Population and Ecosystem Assessments
Dates: April 1 to May 31, 2025
Start year: 2024
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Jocelyn.Nelson@dfo-mpo.gc.ca
Phone: 250-616-1879

Description

This annual survey will track ecological and biophysical properties of areas surrounding the Pacific Biological Station (PBS) and the Institute of Ocean Sciences (IOS) over time.

Findings will be incorporated into established survey data streams to support marine conservation initiatives and contribute to long-term monitoring.

Objectives

1. Track ecological and biophysical properties of areas surrounding each site over time, using established protocols.
2. Map topography, substratum, and biogenic habitat over time.
3. Conduct invertebrate and fish surveys using standard methodologies.
4. Monitor for sessile aquatic invasive species using settlement plates.
5. Conduct marine debris surveys and clean-ups.

Collaborators

N/A.

Locations: Hammond Bay and Patricia Bay

Intertidal biodiversity survey.

© Dr. Lucie Hannah (Fisheries and Oceans Canada)

Conducting a drone survey.

© Georgia Clyde (Fisheries and Oceans Canada)

FOR MORE INFORMATION

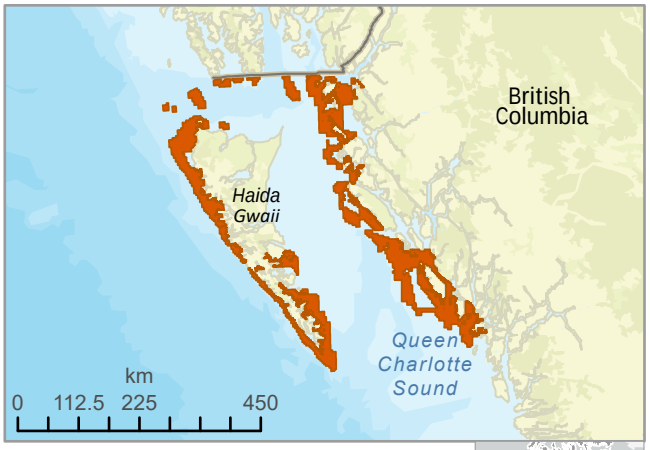
Contact the Lead Scientist at Jocelyn.Nelson@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Hard bottom longline hook survey

Outside Area (Hecate Strait, Dixon Entrance, Haida Gwaii)

Unique ID:	StARGF_01B
Category:	Population and Ecosystem Assessments
Dates:	July 15 to August 30, 2025
Start year:	2006
Recurrence:	Every 2 years
Vessel:	Chartered commercial longline vessels
Email:	Matthew.Siegle@dfo-mpo.gc.ca
Phone:	250-327-1398



Locations: Hecate Strait, Dixon Entrance, Chatham Sound, Haida Gwaii

Description

This fishing survey uses standardized longline fishing gear to provide relative abundance indices for commonly caught species, distributional and occurrence data for all other species, and detailed biological data for inshore groundfish species. These data are incorporated into stock assessments, status reports, and research publications. Each year, approximately 200 randomly selected locations are fished in the northern Outside Area (Hecate Strait, Dixon Entrance, Haida Gwaii). In even years, this survey is conducted further south in the Outside Area (Queen Charlotte Sound, west coast of Vancouver Island, with Unique ID: StARGF_01a).

Objectives

1. Collect detailed species composition data from each set.
2. Collect detailed size and sex composition data as well as ageing structures and tissue samples from inshore rockfish species and Lingcod.
3. Collect environmental data using temperature-depth recorders attached to the fishing gear.

A yelloweye rockfish hiding behind anemones.
© Fisheries and Oceans Canada

Quillback Rockfish (Sebastes maliger).
© Fisheries and Oceans Canada

Collaborators

Pacific Halibut Management Association of BC

FOR MORE INFORMATION

Groundfish hard bottom longline surveys

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Synoptic bottom trawl survey
Hecate Strait

Unique ID: StARGF_02
Category: Population and Ecosystem Assessments
Dates: May 14 to June 12, 2025
Start year: 2005
Recurrence: Every 2 years
Vessel: CCGS Sir John Franklin
Email: Malcolm.Wyeth@dfo-mpo.gc.ca
Phone: 778-268-1184

Description

This fishing survey uses bottom trawl gear to provide relative abundance indices for commonly caught species, distributional and occurrence data for all other species, and detailed biological data from groundfish species. These data are incorporated into stock assessments, status reports, and research publications. Approximately 175 randomly selected locations are fished in the Hecate Strait Area.

Objectives

1. Collect detailed species composition data from each set.
2. Collect detailed size and sex composition for all species. Collect ageing structures and tissue samples from selected species.
3. Collect environmental data including temperature, conductivity, and dissolved oxygen from recorders attached to the fishing gear.

Collaborators

Canadian Coast Guard, Canadian Groundfish Research and Conservation Society

Locations: Hecate Strait, eastern Dixon Entrance

CCGS Sir John Franklin.
© Fisheries and Oceans Canada

Tope shark (Galeorhinus galeus).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Groundfish synoptic bottom trawl surveys

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Hard bottom longline hook survey
Inside Area (Johnstone Strait)

Unique ID: StARGF_03B
Category: Population and Ecosystem Assessments
Dates: July 31 to August 25, 2025
Start year: 2003
Recurrence: Every 2 years
Vessel: CCGS Neocaligus
Email: Matthew.Siegle@dfo-mpo.gc.ca
Phone: 250-327-1398

Locations: Johnstone Strait, Queen Charlotte Strait, Strait of Georgia

Description

This fishing survey uses standardized longline hook gear to provide relative abundance indices for commonly caught species, distributional and occurrence data for all other species, and detailed biological data for inshore groundfish species. These data are incorporated into stock assessments, status reports, and research publications. Approximately 70 randomly selected locations are fished in the Johnstone Strait in odd years. In even years, this survey is conducted further south in the Inside Area (Strait of Georgia, with Unique ID: StARGF_03a).

Objectives

1. Collect detailed species composition data from each set.
2. Collect detailed size and sex composition for all species.
3. Collect ageing structures and tissue samples from inshore rockfish species and lingcod.
4. Collect environmental data using temperature-depth recorders attached to the fishing gear as well as vertical conductivity, temperature, and depth (CTD) casts.

Collaborators

Canadian Coast Guard

CCGS Neocaligus.
© Fisheries and Oceans Canada

Tiger rockfish (Sebastes nigrocinctus), a nearshore groundfish species.

© Fisheries and Oceans Canada

FOR MORE INFORMATION

Groundfish hard bottom longline surveys

British Columbia hard bottom longline inside surveys - 2021 summary

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Sablefish research and assessment survey

Unique ID: StARGF_06
Category: Population and Ecosystem Assessments
Dates: September 29 to November 19, 2025
Start year: 2003
Recurrence: Annually - Ongoing
Vessel: Chartered commercial trap vessel
Email: Malcolm.Wyeth@dfo-mpo.gc.ca
Phone: 778-268-1184

Description

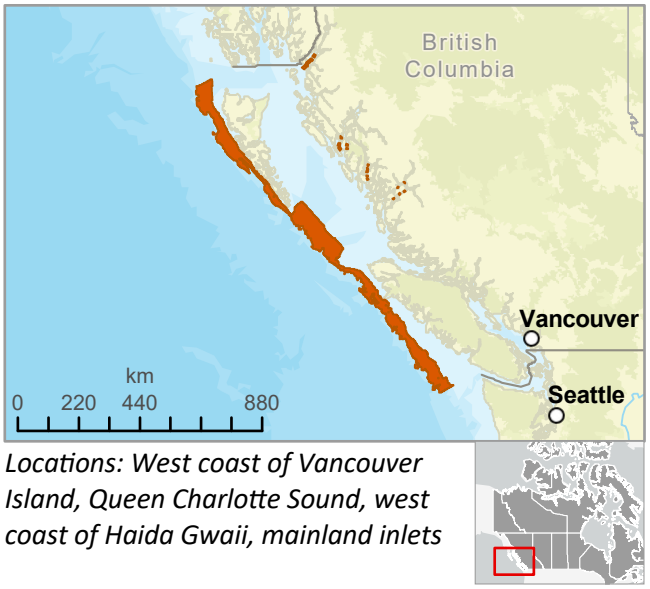
This fishing survey uses standardized longline trap gear to capture Sablefish for tag and release, and to provide a stock abundance index. Detailed biological data are also collected from sablefish and selected rockfish species. Each year, approximately 90 randomly selected offshore locations and 5 specific sites in mainland inlets are fished. These data provide annual estimates of harvestable biomass that inform the fishery, and are incorporated into stock assessments, status reports, and research publications. An additional 17 sets are conducted to study the selectivity of different gear configurations.

Objectives

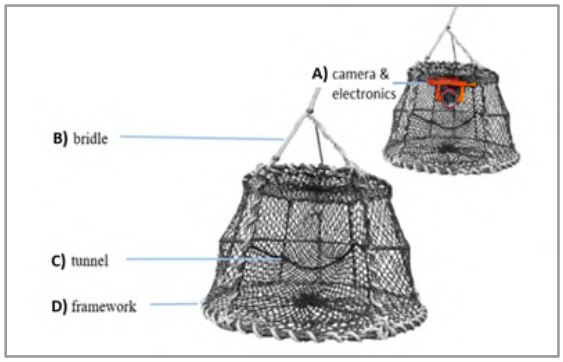
1. Collect detailed species composition data from each set.
2. Collect detailed size and sex composition data, as well as ageing structures and tissue samples from sablefish and selected offshore rockfish species.
3. Collect environmental data from temperature-depth recorders attached to the fishing gear.
4. Evaluate the selectivity of several different escape ring gear configurations

Collaborators

Wild Canadian Sablefish Ltd.



Locations: West coast of Vancouver Island, Queen Charlotte Sound, west coast of Haida Gwaii, mainland inlets



Longline trap gear elements: A) camera and electronics, B) bridle, C) tunnel, and D) framework.
© Fisheries and Oceans Canada

Sablefish (Anoplopoma fimbria).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Sablefish offshore survey data
Sablefish Inlet survey data

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Synoptic bottom trawl survey
Queen Charlotte Sound

Unique ID: StARGF_07
Category: Population and Ecosystem Assessments
Dates: July 7 to August 10, 2025
Start year: 2004
Recurrence: Every 2 years
Vessel: Chartered commercial trawl vessel
Email: Malcolm.Wyeth@dfo-mpo.gc.ca
Phone: 778-268-1184

Locations: Queen Charlotte Sound and Southern Hecate Strait

Description

This fishing survey uses bottom trawl gear to provide relative abundance indices for commonly caught species, distributional and occurrence data for all other species, and detailed biological data from groundfish species. These data are incorporated into stock assessments, status reports, and research publications. Approximately 240 randomly selected locations are fished in the Queen Charlotte Sound Area.

Objectives

1. Collect detailed species composition data from each set.
2. Collect detailed size and sex composition for all species.
3. Collect ageing structures and tissue samples from selected species.
4. Collect environmental data including temperature, conductivity, and dissolved oxygen from recorders attached to the fishing gear.

Collaborators

Canadian Groundfish Research and Conservation Society

Red Irish Lord (Hemilepidotus hemilepidotus), a type of sculpin.
© Fisheries and Oceans Canada

Longnose Skate (Raja rhina).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Groundfish synoptic bottom trawl surveys

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Winter groundfish biological sampling

Unique ID: StARGF_11
Category: Population and Ecosystem Assessments
Dates: February 6 to 17, 2026
Start year: 2026
Recurrence: Annually - Ongoing
Vessel: CCGS Sir John Franklin
Email: Malcolm.Wyeth@dfo-mpo.gc.ca
Phone: 778-268-1184

Description

A critical input for fisheries stock assessments is age-at-maturity data. Current surveys for Pacific groundfish occur during summer months when many species are at a resting stage in their annual spawning and maturation cycle. This means that distinguishing between mature and immature fish is difficult and unreliable. Collecting samples during winter spawning results in more accurate discrimination between mature and immature fish. Further, genetic samples collected from spawning aggregations allow for stock structure analyses that rely on samples from the same stock. This survey will fish targeted locations to collect biological samples from selected groundfish species.

Objectives

1. Conduct targeted bottom trawl tows at various locations throughout the British Columbia coast.
2. Collect biological samples from select species during winter spawning periods.
3. Collect environmental data using oceanographic data recorders attached to the fishing gear.

Collaborators

Canadian Coast Guard

Locations: West coast of Vancouver Island, Dixon Entrance, Hecate Strait, Queen Charlotte Sound

CCGS Sir John Franklin.
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Greenspotted Rockfish (Sebastes chlorostictus).
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FOR MORE INFORMATION

Contact the Lead Scientist at Malcolm.Wyeth@dfo-mpo.gc.ca

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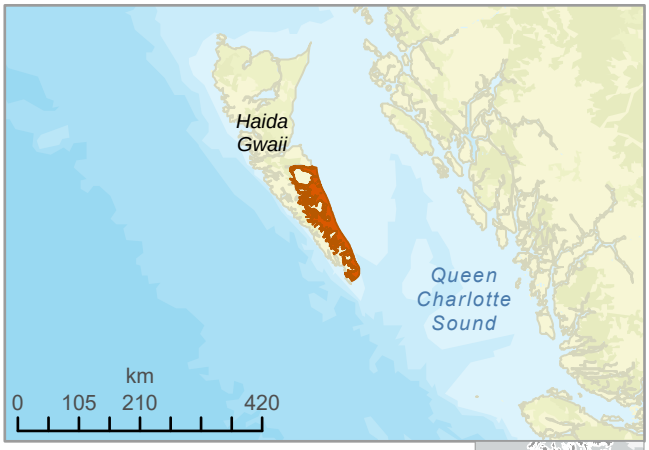
Northern abalone index sites survey
East coast of Haida Gwaii

Unique ID: StARMI_01B
Category: Population and Ecosystem Assessments
Dates: May 4 to May 27, 2025
Start year: 1978
Recurrence: Every 5 years
Vessel: CCGS Vector
Email: Erin.Herder@dfo-mpo.gc.ca
Phone: 250-327-9711



Locations: East coast of Haida Gwaii

Description

Northern abalone index sites survey on the east coast of Haida Gwaii. Northern abalone (*Haliotis kamtschatkana*) are listed as endangered under the *Species at Risk Act* and the survey results will be used in the assessment of northern abalone in British Columbia. This survey has a five year rotation: field work occurs in years one (Central Coast - Unique ID StARMI_01a), two (East Coast of Haida Gwaii - Unique ID StARMI_01b), three (West coasts of Haida Gwaii and Vancouver Island - Unique ID StARMI_01c), and four (Strait of Georgia - Unique ID StARMI_01d), while report writing occurs in the fifth year.

Objectives

1. SCUBA dive survey of northern abalone index sites to collect information on density, size, recruitment, genetics, and habitat.

Collaborators

Council of the Haida Nation, Canadian Coast Guard

CCGS Vector.
© Fisheries and Oceans Canada

Northern abalone (Haliotis kamtschatkana).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Pre-COSEWIC review of DFO information on northern abalone

Green sea urchin assessment survey
Haro Strait (Fulford Reef)

Unique ID: StARMI_02B
Category: Population and Ecosystem Assessments
Dates: February 1 to March 31, 2026
Start year: 2008
Recurrence: Every 3 years
Vessel: CCGS Vector, R/V Palmira (7 m), Red Ape
Email: Lyanne.Curtis@dfo-mpo.gc.ca
Phone: 778-268-3374

Locations: Haro Strait (Fulford Reef)

Description

This assessment survey aims to gather data at green sea urchin (*Strongylocentrotus droebachiensis*) index sites, in order to update the assessment models and stock status, and also to inform the Integrated Fishery Management Plan. This survey has a three year rotation: field work occurs in years one and two in Queen Charlotte Strait (Unique ID StARMI_02A) and Haro Strait (Unique ID StARMI_02B) respectively, while report writing occurs in the third year.

Objectives

1. Collect size distribution and abundance data for green sea urchins to assess stock status and to provide harvest options for the commercial fishery.
2. Gather a quantitative description of habitat characteristics, including substrate and algae.
3. Gather abundance data for other commercially harvested invertebrate species, including red sea urchins, sea cucumbers and geoduck.
4. Gather size and abundance data for northern abalone, a species listed under the *Species at Risk Act*.

Collaborators

Canadian Coast Guard, Pacific Urchin Harvester Association

CCGS Vector.
© Fisheries and Oceans Canada

Biologist surveying quadrat for green sea urchins.
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FOR MORE INFORMATION

Green sea urchin

Green sea urchin stock status update and harvest options - 2021 to 2024

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Canada

Intertidal clam monitoring

Unique ID: StARMI_03
Category: Population and Ecosystem Assessments
Dates: April 28 to July 13, 2025
Start year: 2021
Recurrence: Annually - Ongoing
Vessel: Small vessels
Email: Alexander.Dalton@dfo-mpo.gc.ca
Phone: 250-327-8724

Description

Under the revised *Fisheries Act*, some component of the intertidal clams (manila, butter, and littleneck) fishery in the south coast of British Columbia may require biological reference points to ensure they can be maintained at sustainable levels. These surveys collect data at select indicator beaches to establish biological reference points and measure clam abundance. Survey locations rotate through Clam Management Areas A through G in southern British Columbia.

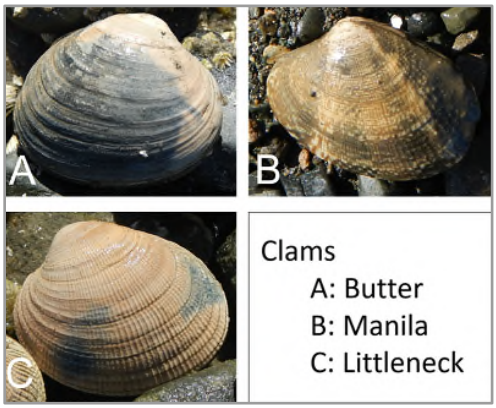
Objectives

1. Collect population dynamics data (for example, counts, weights, lengths, ages, etc.) at indicator beaches.
2. Establish a time series of abundance.
3. In the next few years, develop limit reference points and monitor the abundance of clam stocks.

Collaborators

Ahousaht, Homalco First Nation, K'ómoks First Nation, Yuułuʔiłʔatḥ Government, We Wai Kai First Nation, Island Marine Aquatic Working Group, Uu-a-thluk Nuu-chah-nulth Fisheries

Locations: West coast of Vancouver Island, Queen Charlotte Strait, Johnstone Strait, Strait of Georgia, Juan de Fuca Strait, Queen Charlotte Sound



Clams - A: Butter, B: Manila, C: Littleneck.
© Amy Ganton (Fisheries and Oceans Canada)

Digging for clams in a quadrat.
© Amy Ganton (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Development of the Intertidal Clam Monitoring Program

Pacific Region Intertidal Clam Fisheries

Fisheries and Oceans Canada | Pêches et Océans Canada
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Olympia oyster monitoring
East and west coasts of Vancouver Island

Unique ID: StARMI_04
Category: Population and Ecosystem Assessments
Dates: April 1 to August 31, 2025
Start year: 2010
Recurrence: Annually - Ongoing
Vessel: N/A
Email: Erin.Herder@dfo-mpo.gc.ca
Phone: 250-327-9711

Locations: Transfer Beach (Ladysmith), Swy-a-lana Lagoon (Nanaimo), Hillier Island, Harris Point, and Joes Bay (Barkley Sound), and Port Eliza (Nootka Sound)

Description

The Olympia oyster (*Ostrea lurida*) is one of two oyster species found on the British Columbia coast. The only native oyster on the west coast of North America, the Olympia oyster is listed under the federal *Species at Risk Act* as a species of special concern and is protected under the federal *Fisheries Act*.

Objectives

1. Index the relative abundance of Olympia oysters using a standardized survey protocol.

Collaborators

Cowichan Tribes, Ehattesaht/Chinehkint, Nuchatlaht Tribe, Stz'uminus First Nation, Toquaht Nation, Yuułuʔiłʔatḥ Government, Uu-a-thluk Nuu-chah-nulth Fisheries, Q'ul-lhanumutsun Aquatic Resources Society, Parks Canada

Olympia oyster at Hillier Island, Barkley Sound.
© Erin Herder (Fisheries and Oceans Canada)

Surveying a quadrat for Olympia oysters at Hillier Island, Barkley Sound.
© Erin Herder (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Olympia oyster surveys - 2010 to 2021

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Crab assessment survey
Strait of Georgia

Unique ID: StARMI_05
Category: Population and Ecosystem Assessments
Dates: May 7 to 18, October 7 to 18, 2025
Start year: 1988
Recurrence: Annually - Ongoing
Vessel: CCGS Neocaligus
Email: Brendan.Aulthouse@dfo-mpo.gc.ca
Phone: 250-327-3209

Description

This field operation conducts pre- and post-commercial fishery Dungeness crab (*Cancer magister*) surveys in Crab Management Areas I (Fraser River delta) and J (Boundary Bay) to continue the long term historic record of crab catch per unit effort (CPUE). The survey also collects data on population structure between years by documenting variability in moult times, breeding times, egg extrusion and release, mortality rates, and provides an accurate record of trap bycatch.

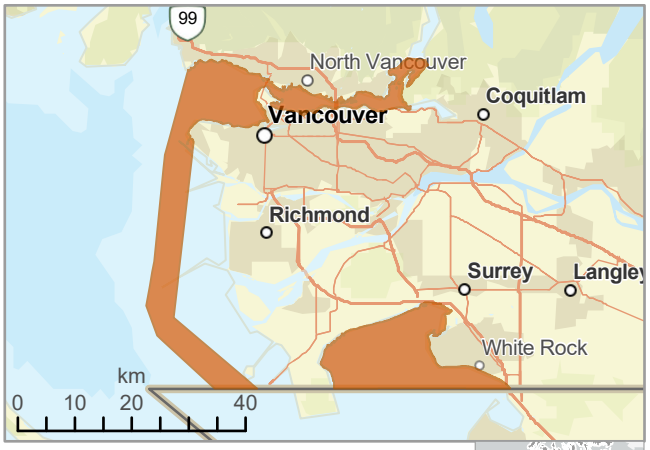
These surveys have been used to investigate the effects of soak duration, bait and trap type, escape port efficiency, and provide tissue samples for toxicological and genetic analyses.

Objectives

1. Collect pre- and post-fishery Dungeness crab biological information, including stock structure, sex ratios, shell condition, injuries, size, CPUE, tissue samples for DNA analysis,and distribution.

Collaborators

Canadian Coast Guard



Locations: Strait of Georgia, Boundary Bay, Burrard Inlet

CCGS Neocaligus.
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Adult male Dungeness crab (Cancer magister).
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FOR MORE INFORMATION

Pacific Region crab fishery

Biological reference points and precautionary approach framework

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Prawn assessment survey
Howe Sound

Unique ID:	StARMI_06
Category:	Population and Ecosystem Assessments
Dates:	November 4 to 13, 2025; February 2 to 11, 2026
Start year:	2001
Recurrence:	Annually - Ongoing
Vessel:	CCGS Neocaligus
Email:	Kyle.Krumsick@dfo-mpo.gc.ca
Phone:	778-268-6017

Locations: Howe Sound

Description

Prawn assessment trap surveys provide estimates of key biological parameters (e.g., natural morality, recruitment, spawner abundance), which are used in the development and refinement of the spawner escapement index for prawns.

This index forms the basis of the assessment and management of prawn stocks. The prawn survey in Howe Sound is an ongoing assessment program that provides data necessary to assess and manage all prawn stocks along the British Columbia coast.

CCGS Neocaligus.
© Fisheries and Oceans Canada

Objectives

1. Collect detailed catch, size, and sex data for estimating recruitment parameters.
2. Monitor stock response of escapement-based thresholds.

Collaborators

Squamish Nation, Canadian Coast Guard, Simon Fraser University

Spot prawns (Pandalus platyceros).
© Fisheries and Oceans Canada

FOR MORE INFORMATION

Pacific prawn and shrimp fisheries

Shrimp assessment survey
Strait of Georgia

Unique ID: StARMI_07
Category: Population and Ecosystem Assessments
Dates: June 3 to 16, and July 3 to 17, 2025
Start year: 1998
Recurrence: Annually - Ongoing
Vessel: CCGS Neocaligus
Email: Virginia.Noble@dfo-mpo.gc.ca
Phone: N/A

Locations: Strait of Georgia

Description
Shrimp assessment surveys estimate the abundance of shrimp stocks (smooth and spiny pink shrimp, and sidestripe shrimp) in select areas. The results from these surveys are used to track long-term trends in abundance of shrimp stocks, and to set annual quotas for the commercial shrimp trawl fishery.


CCGS Neocaligus.
© Fisheries and Oceans Canada

Objectives
1. Conduct fishery independent surveys of shrimp grounds using bottom trawl gear to determine stock status of pink and sidestripe shrimp in Shrimp Management Areas: Fraser, Comox, GSTE and Statistical Areas 16, 18, and 19.
2. Maintain pink shrimp and sidestripe shrimp abundance index time series for monitoring trends in abundance.
3. Collect species distribution and abundance information on other fish and invertebrate species.

Collaborators
Canadian Coast Guard


Smooth pink shrimp (Pandalus jordani).
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FOR MORE INFORMATION
Pacific Region shrimp trawl fishery

Small-mesh multispecies bottom trawl survey
West coast of Vancouver Island

Unique ID: StARMI_08
Category: Population and Ecosystem Assessments
Dates: April 21 to May 13, 2025
Start year: 1973
Recurrence: Annually - Ongoing
Vessel: CCGS Sir John Franklin
Email: Andres.Araujo@dfo-mpo.gc.ca
Phone: 250-327-3209

Locations: West coast of Vancouver Island

Description

The west coast of Vancouver Island (WCVI) small-mesh multispecies survey was implemented in 1973 and now serves as one of the longest continuous bottom trawl time series for monitoring a diversity of fish and invertebrate species on the west coast of British Columbia.

Data gathered from this survey provide pink shrimp stock status for management of the commercial shrimp trawl fishery, inform the annual State of the Oceans report, as well as inform stock assessments for groundfish and pelagic fish species.

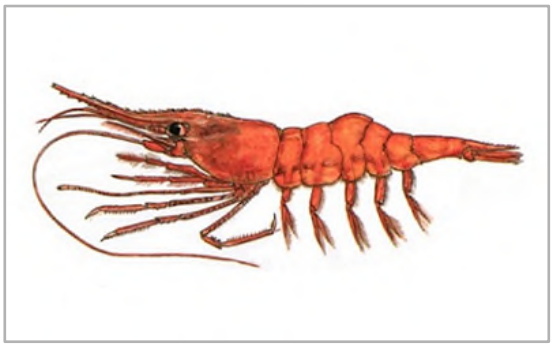

CCGS Sir John Franklin.
© Fisheries and Oceans Canada

Objectives

1. Index the abundance of pink shrimp off WCVI using a fishery independent trawl survey.
2. Multispecies indexing of other invertebrates, pelagic fish, and groundfish species.

Collaborators

Canadian Coast Guard


Smooth pink shrimp (Pandalus jordani).
© A. Denbigh

FOR MORE INFORMATION

State of the Pacific Ocean

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Multispecies benthic invertebrate monitoring

Unique ID: StARMI_09
Category: Population and Ecosystem Assessments
Dates: September 2 to October 5, 2025
Start year: 2016
Recurrence: Annually - Ongoing
Vessel: CCGS Vector
Email: Christine.Hansen@dfo-mpo.gc.ca
Phone: 778-268-2079

Description

These multispecies benthic invertebrate SCUBA surveys collect size and abundance data on sea urchins, sea cucumbers, pycnopodia sea stars and northern abalone (a species at risk), as well as benthic habitat data on algae and substrate. The data are used for invertebrate stock assessments, habitat mapping, species distribution modeling, emergency response planning and Marine Protected Areas monitoring.

Objectives

1. Collect the data necessary to evaluate stock status relative to reference points for selected benthic invertebrate species.
2. Collect long-term data to monitor benthic invertebrate populations and their habitats over time.

Collaborators

Council of the Haida Nation, Canadian Coast Guard

Locations: Queen Charlotte Sound, Hecate Strait, Haida Gwaii

CCGS Vector.
© Fisheries and Oceans Canada

Divers collecting invertebrate, algae, and substrate data.
© Erin Herder (Fisheries and Oceans Canada)

FOR MORE INFORMATION

Multispecies Benthic Marine Invertebrate Dive Survey Program

Multispecies Benthic Invertebrate Dive Survey Pilot Data

Fisheries and Oceans Canada | Pêches et Océans Canada
Canada

Pacific herring biological sampling surveys

Unique ID:	StARQAM_01
Category:	Population and Ecosystem Assessments
Dates:	April 1 to 30, 2025; February 15 to March 31, 2026
Start year:	1951
Recurrence:	Annually - Ongoing
Vessel:	Commercial seine vessels, dive skiffs, float planes
Email:	Jaclyn.Cleary@dfo-mpo.gc.ca
Phone:	250-616-7009

Description

These surveys aim to collect biological samples from pre-spawning aggregations of Pacific herring in nearshore habitats throughout the British Columbia coast. Monitoring of herring biology helps track changes in age and growth, which informs stock status.

Objectives

1. Identify pre-spawning aggregations of herring in each stock area using vessel based sounders.
2. Use a purse seine to hold herring and collect herring samples (~100 fish) using a hoop net; or use a cast net to sample herring in nearshore habitats.
3. Transport herring samples to laboratory where data on age, length, weight, sex, and maturity is gathered.
4. Use equations to estimate the size and age distribution of herring for each area.
5. Provide data for stock assessment.

Collaborators

Ehattesaht/Chinehkint, Heiltsuk Nation, Hesquiaht First Nation, Huu-ay-aht First Nations, Kitasoo/Xai'xais Nation, Lax Kw'alaams Band, Mowachaht/Muchalaht First Nation, Nuchatlaht Tribe, Tla'amin Nation, Toquaht Nation, Wuikinuxv Nation, A-Tlegay Fisheries Society, Uu-a-thluk Nuu-chah-nulth Fisheries, Herring Conservation and Research Society

Locations: Strait of Georgia, west coast of Vancouver Island, West coast of Haida Gwaii, Chatham Sound, Hecate Strait, Queen Charlotte Sound, Strait of Georgia

Seine vessel.
© Fisheries and Oceans Canada

Removing Pacific herring (Clupea pallasii) scales for age sampling.
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FOR MORE INFORMATION

Pacific herring survey data summaries

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Canada

Pacific herring spawn surveys

Unique ID:	StARQAM_02
Category:	Population and Ecosystem Assessments
Dates:	April 1 to 30, 2025; March 1 to 31, 2026
Start year:	1951
Recurrence:	Annually - Ongoing
Vessel:	Seine vessels, dive skiffs, small charter vessels, float planes
Email:	Jaclyn.Cleary@dfo-mpo.gc.ca
Phone:	250-616-7009

Locations: Strait of Georgia, west coast of Vancouver Island, West coast of Haida Gwaii, Chatham Sound, Hecate Strait, Queen Charlotte Sound

Description

Monitoring of Pacific herring spawn (egg deposition) helps to track changes in stock abundance. These surveys aim to measure herring spawn on kelps and eelgrasses in intertidal / subtidal habitats using SCUBA surveys.

Objectives

1. Identify herring spawning activity from float planes and from small First Nation vessel charters.
2. Use dive surveys to confirm the presence of herring eggs and measure egg layers, substrate type, and coverage within quadrats placed along transects that are perpendicular to shore.
3. Calculate egg biomass for each spawn, and from that, use equations to estimate the number of adult spawners for each area.
4. Map herring spawning and provide data for stock assessment.

SCUBA divers measuring herring spawn.
© Fisheries and Oceans Canada

Pacific herring (Clupea pallasii) spawn.
© Fisheries and Oceans Canada

Collaborators

Ehattesaht/Chinehkint, Gwa'sala Nakwaxda'xw Nations, Heiltsuk Nation, Hesquiaht First Nation, Huu-ay-aht First Nations, Kitasoo/Xai'xais Nation, Lax Kw'alaams Band, Mowachaht/Muchalaht First Nation, Nuchatlaht Tribe, Toquaht Nation, A-Tlegay Fisheries Society, Council of the Haida Nation, Musgamagw Dzawada'enuxw Tribal Council, Uu-a-thluk Nuu-chah-nulth Fisheries, Herring Conservation and Research Society

FOR MORE INFORMATION

Pacific herring survey data summaries

Fisheries and Oceans Canada | Pêches et Océans Canada
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