

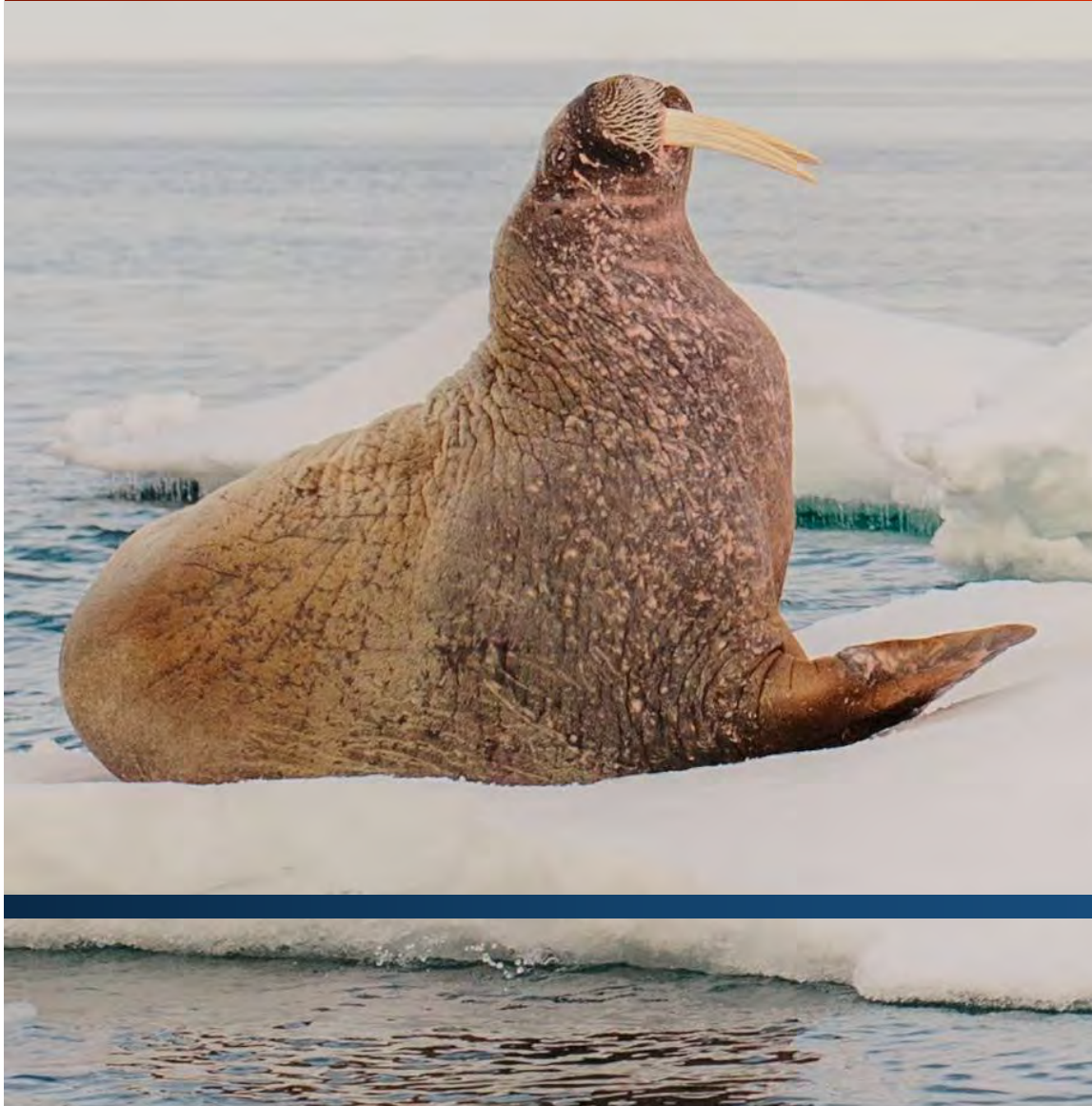


Fisheries and Oceans
Canada

Pêches et Océans
Canada

FIELDNOTES 2026 – 2027

Science field operations: Fact sheets
Arctic Region



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Cat. No. Fs141-7E-PDF

ISSN 2816-5268

Cover illustration: Atlantic walrus (*Odobenus rosmarus rosmarus*) on ice.


Photo credit: Maha Ghazal (Fisheries and Oceans Canada)



Correct citation:

Fisheries and Oceans Canada. 2026. Fieldnotes 2026-2027: Science field operations. Fact sheets.
Arctic Region. ii + 21 pp.

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Benthic invertebrates in Qikiqtait

Sanikiluaq and Belcher Islands



UNIQUE ID
ARC_AESDAES_49

CATEGORY
Population and Ecosystem Assessments

DATES
June to November

START YEAR
2023

RECURRENCE
Annually

LOCATIONS
Belcher Islands, Sanikiluaq, Nunavut

EMAIL
David.Yurkowski@dfo-mpo.gc.ca



Scallops sampling in Sanikiluaq, NU, summer 2024

© Paloma Carvalho



Benthic invertebrates collected in Sanikiluaq, NU

© Paloma Carvalho

DESCRIPTION

The research focus on scallops, urchins, and sea cucumbers in the proposed Qikiqtait protected area. These species are important for the local ecosystem and are part of the traditional diet in Sanikiluaq. By combining genetic and biotracer data, we can trace food sources and understand how energy flows through the system, and whether they can adapt to changing conditions, especially with more freshwater flowing in from James Bay and southeastern Hudson Bay. This work is being done in partnership with the Sanikiluaq community and will help guide monitoring, fisheries, and conservation efforts.

OBJECTIVES

1. Use biotracers to assess species' reliance on sea-ice vs phytoplankton during summer around the Belcher Islands
2. Quantify genetic diversity to see how much variation exists within populations around the Qikiqtait area
3. Combine genetic and biotracer data to evaluate species' resilience under environmental stress

COLLABORATORS

Arctic Eider Society, Sanikiluaq Hunter's and Trapper's Association





Baited Remote Underwater Camera Survey of Greenland Sharks

Cumberland Sound, Nunavut



UNIQUE ID
ARC_AFMMSAFMMS_36

CATEGORY
Population and Ecosystem Assessments

DATES
September to early October

START YEAR
2023

RECURRENCE
Annually

LOCATIONS
Cumberland Sound, Nunavut

VESSEL
MV Nuliajuk

EMAIL
Kevin.Hedges@dfo-mpo.gc.ca



MV Nuliajuk
© Alycia Chubaty



Baited Remote Underwater Video system
© Alycia Chubaty

DESCRIPTION

A Baited Remote Underwater Video system consisting of a camera, two white lights, paired lasers and instruments to measure water temperature, depth, salinity, and current direction and speed was used to survey Greenland Shark in Cumberland Sound. Data will be used to estimate the number of Greenland Sharks in the Sound and assess their use of different habitat types. Greenland Shark are caught unintentionally in Arctic fisheries; project data will aid fishery management to support conservation of Greenland Shark.

OBJECTIVES

1. Estimate annual abundance of Greenland Shark in Cumberland Sound.
2. Provide science advice to DFO Resource Management regarding impacts of commercial fishing on the Greenland Shark population.

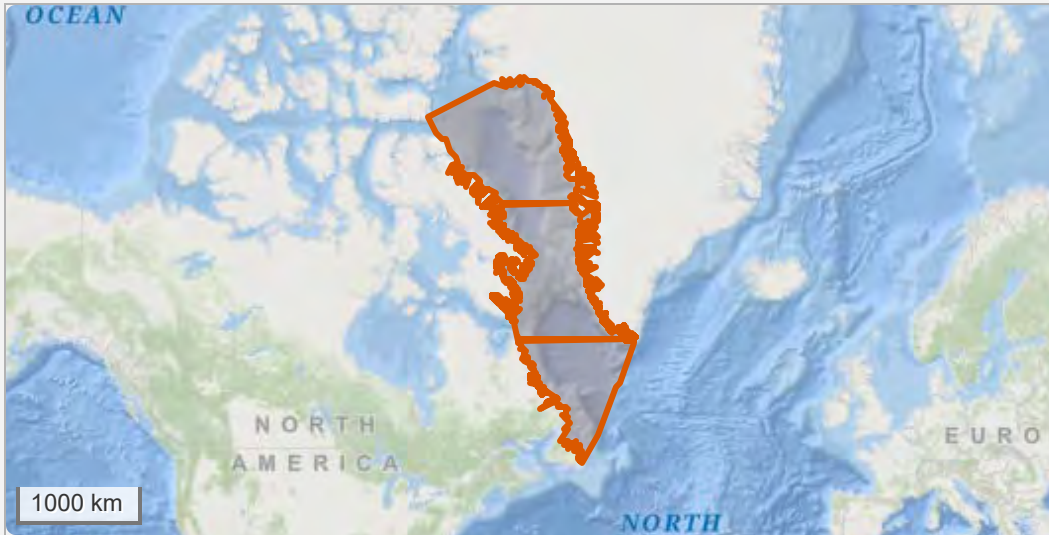
COLLABORATORS

University of Manitoba, Marine Institute, Memorial University of Newfoundland, University of Windsor, Oceans North



New Arctic Whales

Baffin Bay - Davis Strait - Labrador Sea corridor



UNIQUE ID

ARC_AFMM SAFMMS_43

CATEGORY

Population and ecosystem assessments

DATES

July - November

START YEAR

2018

RECURRENCE

Annually

LOCATIONS

Baffin Bay - Davis Strait - Labrador Sea

VESSEL

Kiviug II, Tarajoq, DFO RHIB

EMAIL

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PHONE

[204-229-3109](tel:204-229-3109)



Tagging whales off Newfoundland

© Research team



Kiviug II

© Arctic Fisheries Alliance

DESCRIPTION

Arctic endemic whales could be affected by the northward expansion of subarctic species such as humpback, sperm, and killer whales that have recently increased their presence in the Canadian eastern Arctic. Endemic Arctic whales, including narwhal, bowhead, and beluga, will be impacted by altered competitive and predatory interactions with these subarctic species. Our research into anthropogenic activities such as fishing, vessel traffic, and noise stressors and the interactions between subarctic and Arctic endemic whales proposes to provide conservation solutions.

OBJECTIVES

1. Document migration pathways and range extent of subarctic whales using satellite telemetry.
2. Quantify fishery depredation behaviour based on biologgers, passive acoustic recorders, and underwater cameras.
3. Assess impacts of active sonar and shipping on whale diving and surface behaviour.
4. Use biopsy samples to understand stock structure, life history, and feeding habits.
5. Reconstruct demographic history of whales in northwestern Atlantic Ocean and eastern Canadian Arctic using genomic methods.

COLLABORATORS

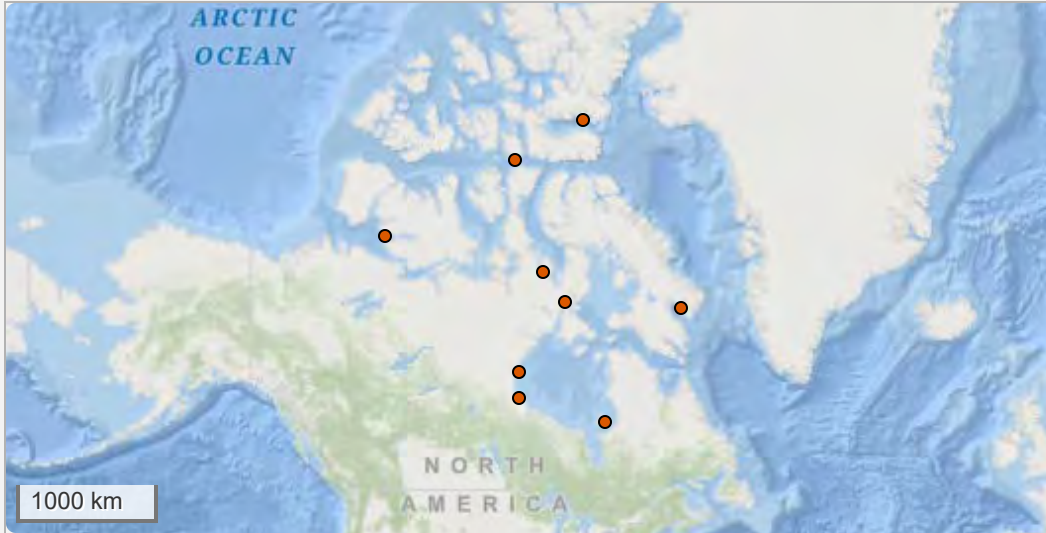
Dalhousie University, DFO, Newfoundland and Labrador Region, University of Windsor, Wildlife Conservation Society, McGill University





Seals in an ice-free Arctic

Manitoba, Northwest Territories, and Nunavut



UNIQUE ID
ARC_AFMMMSAFMMS_44

CATEGORY
Population and Ecosystem Assessments

DATES
May 1 to August 30, 2025, May 1 to August 30, 2026

START YEAR
2024

RECURRENCE
One-time

LOCATIONS
Various locations in Nunavut, Manitoba, and Northwest Territories

EMAIL
steve.ferguson@dfo-mpo.gc.ca



Collecting a swab at a ringed seal breathing hole

© C-Jae Breiter



Harbour Seal in Hudson's Bay

© Carlos Dominguez-Sanchez

DESCRIPTION

Our project delves into inter-seal competition for fisheries resources. Arctic pinnipeds confront unique challenges due to harsh conditions and ecological interactions. Our research addresses key knowledge gaps, forecasting seal range shifts, offering insight into adaptation under changing conditions. Assessing life-history traits, and diet indices provides a holistic grasp of life cycles. Investigating pinniped microbiomes, and parasites, elucidates potential vectors and population impacts. Merging range forecasts, life-history adaptations, diet, and current diseases evaluates future risks.

OBJECTIVES

1. Plain Language Report on pinniped microbiomes, and parasites, elucidating potential vectors and population impacts
2. 2-3 publications in primary journals on pinnipeds and microbiomes, pinnipeds and parasites, and forecasting seal range shifts
3. Compilation of a comprehensive overview of life-history traits for all seal species in Canada.
4. Model incorporating insights derived from life-history aiding in predicting future range shifts for Arctic seal species

COLLABORATORS

Parks Canada, Environment and Climate Change Canada, University of Alberta, University of Manitoba, Assiniboine Zoo, Arviat Hunters and Trappers Organization, Iviq Hunters and Trappers Association, Kurtairojuark Hunters and Trappers Association, Arviq Hunters and Trappers Organization, Pangnirtung Hunters and Trappers Organization, Resolute Bay Hunters and Trappers Organization, Sanikiluaq Hunters and Trappers Organization, Olokhaktomiut Hunters and Trappers Committee





Novel techniques for community-based whale research



UNIQUE ID
ARC_AFMM SAFMMS_56

CATEGORY
Population and Ecosystem Assessments

DATES
August to September, 2026

START YEAR
2025

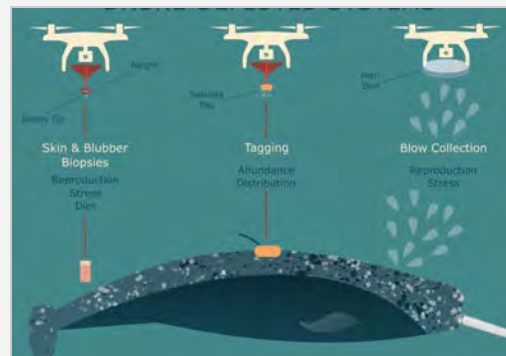
RECURRENCE
Annually

LOCATIONS
Lord Mayor Bay

EMAIL
courtney.watt@dfo-mpo.gc.ca



Drones for community-based research
© Justine Hudson



Drone-Deployed Systems
© Justine Hudson

DESCRIPTION

Sustainable management of culturally important marine mammal resources in the Canadian Arctic currently relies on western-based scientific methods, many of which involve invasive research (capture tagging, or boat pursuit), which is not in line with Inuit cultural beliefs and practices. To work collaboratively with Inuit research colleagues, we are developing innovative minimally invasive drone methods for collection of biological samples and for remotely deploying satellite transmitters. Co-developed methods will enhance data collection that supports sustainable management of Arctic whales.

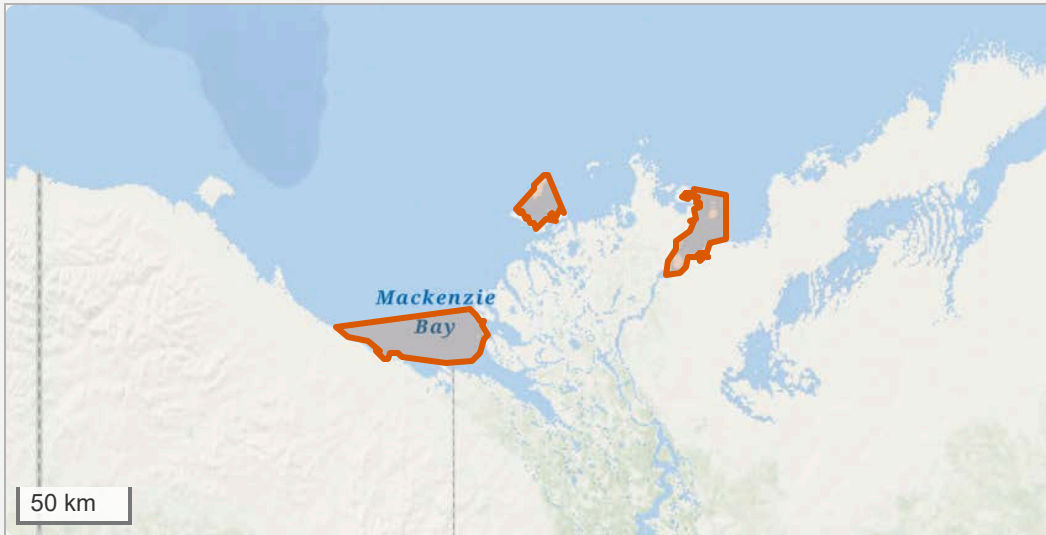
OBJECTIVES

1. Co-develop an innovative drone-released biopsy system to remotely collect biopsy samples from free-swimming Arctic whales
2. Co-develop a drone-released tagging system to remotely apply satellite telemetry tags on Arctic whales
3. Co-develop non-invasive methods for collection of blow samples from Arctic whales using drones
4. Update protocols for collection of drone imagery and video of whales, in consultation with the community
5. Train with community members on methods and data collection

COLLABORATORS

Taloyoak Umarulirigut Association, University of Manitoba





UNIQUE ID
ARC_AFMM SAFMMS_60

CATEGORY
Population and Ecosystem Assessments

DATES
Late June through July

START YEAR
2008

RECURRENCE
Annually

LOCATIONS
Hendrickson Island (near Tuktoyaktuk) in the Tarium Nirvutait Marine Protected Area, Mackenzie Estuary, Inuvialuit Settlement Region, Northwest Territories.

EMAIL
Shannon.MacPhee@dfo-mpo.gc.ca



Researchers sampling ears from a beluga whale.

© DFO



The Hendrickson Island field site.

© DFO

DESCRIPTION

The program was designed to characterize the health of the Eastern Beaufort Sea beluga (*Delphinapterus leucas*) (qilalugaq) population by analysing morphometric data and tissue samples collected from hunter harvested whales. The program supports core stock assessment, MPA monitoring, and population health assessment. The Beluga Health Program is one of the longest-running longitudinal studies of population status for an Arctic cetacean worldwide and is run in partnership between DFO and co-management partners in the Inuvialuit Settlement Region.

OBJECTIVES

1. Characterize and track the health of Eastern Beaufort Sea beluga whales.
2. Support stock assessment by providing age estimates and determining the sex of harvested whales.
3. Collect and analyse samples for ecological monitoring (e.g., hormones, dietary biomarkers, contaminants).
4. Use both western science and Indigenous Knowledge to understand beluga health and build local capacity for monitoring.

COLLABORATORS

Tuktoyaktuk Hunters and Trappers Committee, Fisheries Joint Management Committee, Northern Contaminants Program, Canadian Wildlife Health Cooperative, Environment and Climate Change Canada, Institute for Terrestrial and Aquatic Wildlife Research (Germany)



Eastern Canada-West Greenland Bowhead Whale Field Research

Ninginganiq National Wildlife Area



UNIQUE ID
ARC_AFMMSAFMMS_64

CATEGORY
Population and Ecosystem Assessments

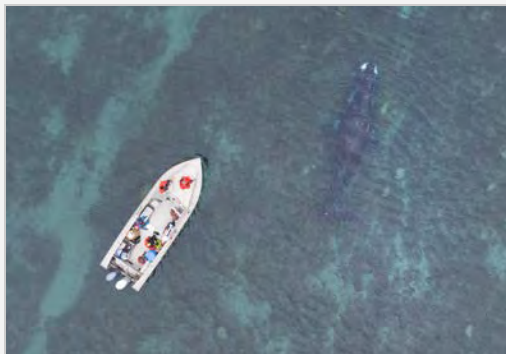
DATES
August 15 to September 5, 2026

START YEAR
2026

RECURRENCE
Unknown

LOCATIONS
Ninginganiq National Wildlife Area,
Nunavut

EMAIL
brent.young@dfp-mpo.gc.ca



Approaching a bowhead whale for biopsy collection

© Caila Kucheravy/Fisheries and Oceans Canada



A bowhead whale in Cumberland Sound in 2019

© Ricky Kilabuk/Fisheries and Oceans Canada

DESCRIPTION

Bowhead whale field research will occur in Isabella Bay, Ninginganiq National Wildlife Area, on the east coast of Baffin Island, in August and September 2026. Objectives are to collect biopsy samples for mark-recapture abundance estimates and use drones to capture aerial photographs for photo-identification studies. This work will support ECWG bowhead conservation by updating abundance estimates, informing population modeling through life history data, and contributing to a photo-ID catalogue to track body condition changes as population health indicators.

OBJECTIVES

1. Collect biopsy samples from bowhead whales for abundance estimation, diet studies, ageing, and hormone analysis.
2. Use a drone to collect aerial photographs of bowhead whales for use in photo-identification and body condition studies.
3. Record bowhead whale sounds using a small sound recording device (SoundTrap) over the duration of the field season.

COLLABORATORS

Clyde River Hunters and Trappers Organization

FOR MORE INFORMATION

[Estimating abundance of bowhead whales using genetic mark-recapture analyses](#)





Fishery-independent Gillnet Survey, Great Slave Lake

Main basin of Great Slave Lake, NWT



UNIQUE ID
ARC_AFMMSAFMMS_70

CATEGORY
Population and Ecosystem Assessments

DATES
June 10 to August 15

START YEAR
2011

RECURRENCE
Annually

LOCATIONS
Great Slave Lake

EMAIL
xinhua.zhu@dfo-mpo.gc.ca



Fishing boat, summer 2025.
© Laura Alsip (DFO)



Recording water quality measurements, summer 2025.
© Laura Alsip (DFO)

DESCRIPTION

An annual scientific survey is conducted in collaboration with local Indigenous communities on the main basin of Great Slave Lake, supporting the largest freshwater fishery in the Canadian Arctic. All species and sizes of fish are caught using gillnets and water quality parameters are measured at depth. Biological data and samples are collected from the fish. The data collected is used to provide ecosystem-based science advice about the stocks to DFO Fisheries Management and establish baseline conditions to monitor changes over time.

OBJECTIVES

1. Develop and monitor relative abundances and biomass of major biological components.
2. Provide data to inform and update biological reference points for fish stocks.
3. Characterize the structure and relationships of the Great Slave Lake ecosystem.
4. Assess the cumulative impacts on the fisheries and ecosystem using fish and environmental data.

COLLABORATORS

K'at'l'odeeche First Nation, Hay River Métis Council, Deninu Kue First Nation, Fort Resolution Métis Council, West Point First Nation





Great Slave Lake Inconnu monitoring



UNIQUE ID
ARC_AFMMSAFMMS_83

CATEGORY
Population and Ecosystem Assessments

DATES
Spring and Fall

START YEAR
2018

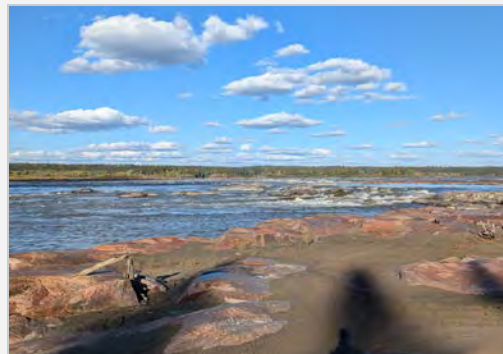
RECURRENCE
Annually

LOCATIONS
Buffalo River Mouth at Great Slave Lake, Slave River at Fort Smith

EMAIL
chelsey.lumb@dfo-mpo.gc.ca



Buffalo River Mouth
© Fisheries and Oceans Canada



Slave River at Fort Smith
© Fisheries and Oceans Canada

DESCRIPTION

Monitoring Great Slave Lake Inconnu stocks to support trend analysis and stock status assessments.

OBJECTIVES

1. Monitor Inconnu stocks at the Buffalo River in spring and the Slave River at Fort Smith in fall
2. Collect relative abundance and biological information about stocks to monitor trends and assess stock status

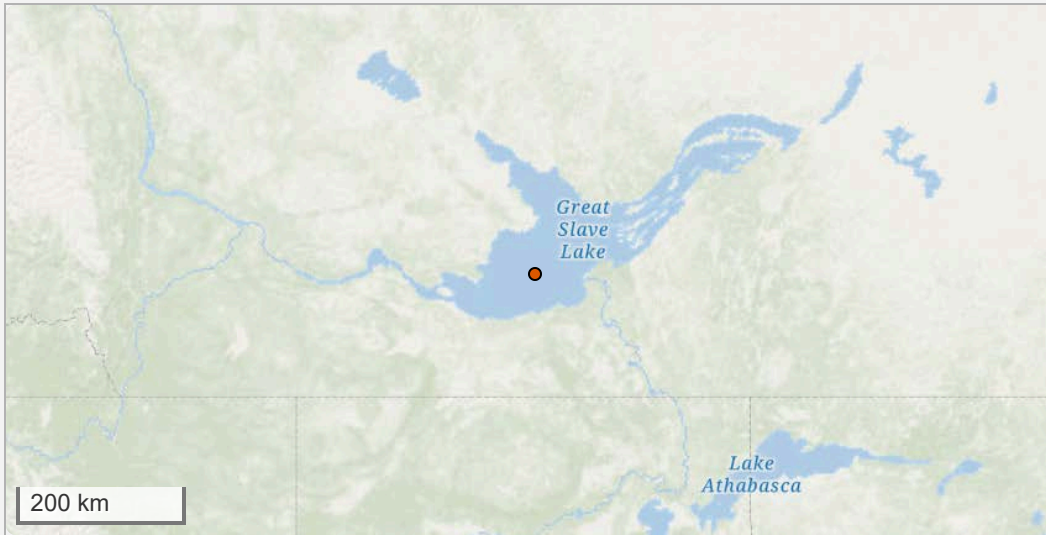
COLLABORATORS

Kát'òDeeche First Nation, Local domestic harvesters and Town of Fort Smith





Spatiotemporal movements of Great Slave Lake fishes



UNIQUE ID
ARC_AFMMSAFMMS_89

CATEGORY
Population and Ecosystem Assessments

DATES
Year-round

START YEAR
2021

RECURRENCE
Annually

LOCATIONS
Great Slave Lake and its major tributary systems

VESSEL
Stenodus

EMAIL
brendan.malley@dfo-mpo.gc.ca



Research Vessel "Stenodus"
© Brendan Malley



Catching Inconnu on the Slave River, NWT
© Brendan Malley

DESCRIPTION

Using acoustic telemetry, we collect information on movement, habitat use, and seasonal patterns to understand how fish populations are distributed across the lake. These data support fisheries science advice by helping define stock units and improve understanding of population size, productivity, growth, survival, and spawning. Results are used to inform sustainable catch limits and support fisheries management decisions.

OBJECTIVES

1. Track seasonal movements and habitat use of key fish species across Great Slave Lake.
2. Link fish movements to growth, survival, and spawning areas.
3. Provide science information to support sustainable catch limits and fisheries management decisions.

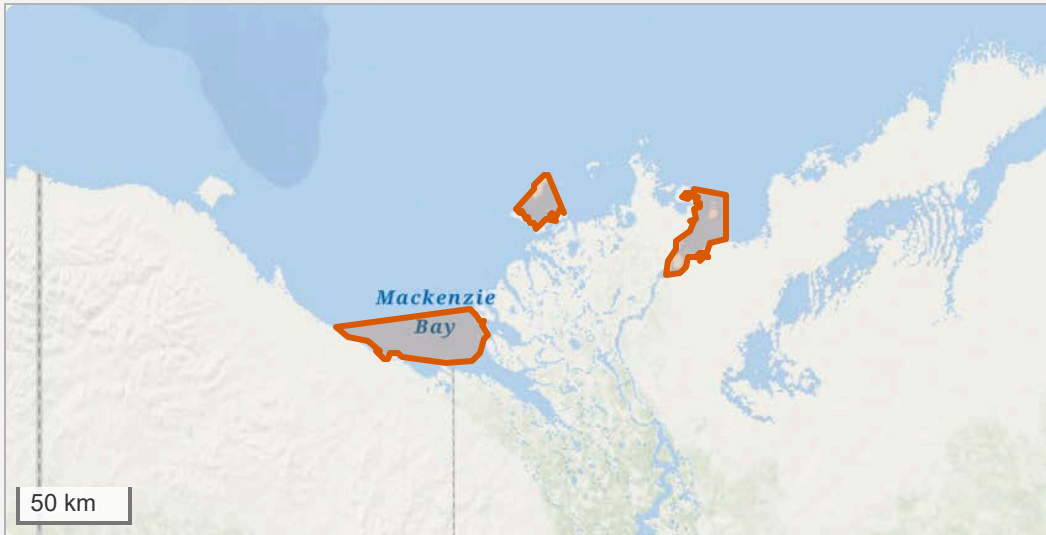
COLLABORATORS

K'at'l'odeeche First Nation, Hay River Métis Council, Deninu Kųé First Nation, Northwest Territory Métis Nation, Fort Smith Métis Council, West Point First Nation, Akaitcho Dene First Nations, Behchokò, Trent University, Laval University, University of Windsor



Beluga Habitat Use and Environmental Conditions

Tarium Niryutait Marine Protected Area



UNIQUE ID

ARC_AFMM SAFMMS_94

CATEGORY

Population and Ecosystem Assessments

DATES

June 15 to October 1st

START YEAR

2014

RECURRENCE

Annually

LOCATIONS

Tarium Niryutait Marine Protected Area, Mackenzie Estuary, Inuvialuit Settlement Region, Northwest Territories.

EMAIL

Kevin.scharffenberg@dfo-mpo.gc.ca



Seabed mooring equipped with sensors.

© Ashleigh Westphal (DFO)



Beluga whale in the TN MPA.

© Cara Rankin (University of Manitoba, DFO)

DESCRIPTION

Our project focuses on monitoring climate-driven environmental change in the Tarium Niryutait Marine Protected Area (TN MPA) and assessing associated impacts on the marine ecosystem. We use seabed moorings equipped with hydrophones, acoustic recorders, and environmental sensors to examine how beluga whales are responding to coastal and oceanographic change, while providing Inuvialuit community members and the public with observations of environmental conditions.

OBJECTIVES

1. Establish and continue to build a baseline description of oceanographic and acoustic conditions within the TN MPA.
2. Collect acoustic recordings to monitor the TN MPA soundscape, assess beluga whale activity, and sound pressure levels.
3. Collect environmental data to assess drivers of beluga movement and habitat use.
4. Provide datasets and findings to support on-going ecological monitoring and conservation goals within the TN MPA.

COLLABORATORS

Natural Resources Canada, Inuvik Hunters & Trappers Committee, Tuktoyaktuk Hunters & Trappers Committee, Aklavik Hunters & Trappers Committee

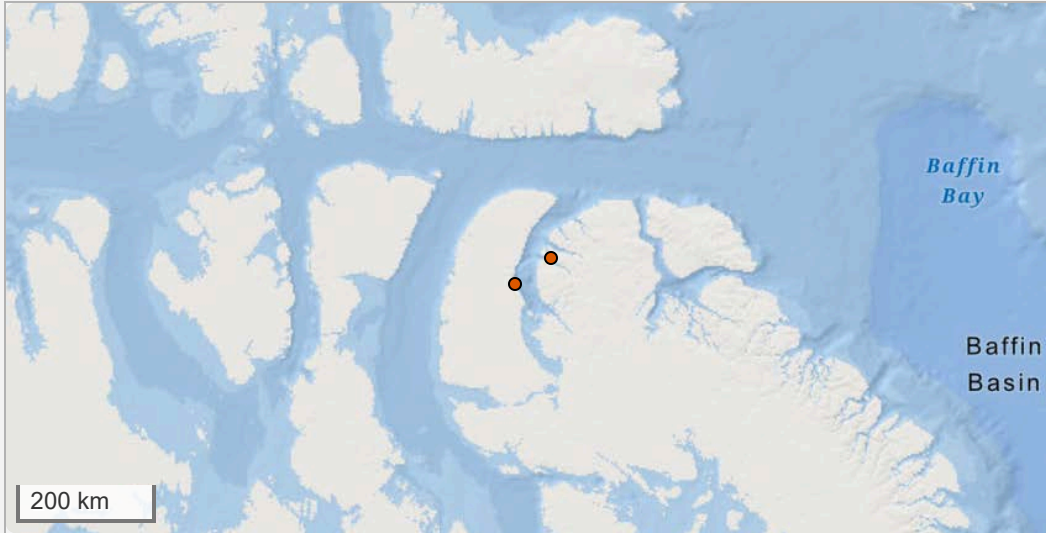
FOR MORE INFORMATION

[Open Data Portal: Seabed Mooring Deployments in the TN MPA](#)



Narwhal behaviour and movement in Admiralty Inlet

Admiralty Inlet



UNIQUE ID
ARC_AFMMSAFMMS_97

CATEGORY
Population and Ecosystem Assessments

DATES
July 25 to August 22, 2026

START YEAR
2023

RECURRENCE
Annually

LOCATIONS
Arctic Bay, Nunavut

EMAIL
marianne.marcoux@dfo-mpo.gc.ca



Narwhals in Admiralty Inlet, Nunavut
© Florence Lapierre Poulin



Camping at Qakkiq Akua, Admiralty Inlet, Nunavut
© Florence Lapierre Poulin

DESCRIPTION

In the last decade, shipping has increased in the eastern Canadian Arctic. Inuit have also observed a decline in narwhal abundance in the summering area of Eclipse Sound along with an increase of abundance in Admiralty Inlet. One hypothesis is a shift in the distribution of narwhal throughout their range in response to increased shipping traffic. In 2023, an aerial survey was conducted for the Baffin Bay narwhal population and at the same time (2023-2024), summer research was conducted in Admiralty Inlet to collect information on narwhal health, movements and dive behaviour.

OBJECTIVES

1. Explore the health of narwhals based on their body condition using drones
2. Measure stress levels in narwhals from collected skin and blubber biopsies
3. Investigate their movements to understand possible distributional changes using remotely deployed satellite tags
4. Understand their diving pattern using drone videos and satellite tags

COLLABORATORS

Ikajutit Hunters and Trappers Association



Walrus vulnerability to shipping disturbance

Foxe Basin, northern Hudson Bay, and Hudson Strait

**UNIQUE ID**

ARC_AFMMSAFMMS_98

CATEGORY

Population and Ecosystem Assessments

DATES

August 1 to November 30, 2026

START YEAR

2021

RECURRENCE

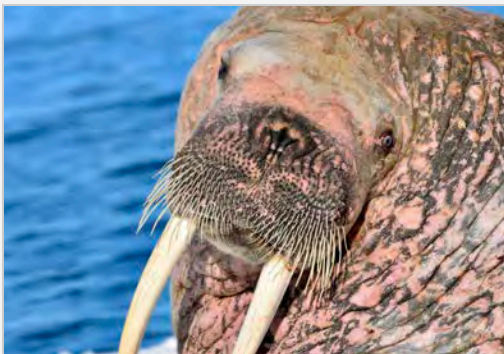
Annually

LOCATIONS

Foxe Basin, northern Hudson Bay, Hudson Strait

EMAIL

cory.matthews@dfo-mpo.gc.ca



Atlantic walrus with satellite tag

© Victorine Lambert



Time-lapse camera set up at Walrus Island, Nunavut

© Claire Hornby

DESCRIPTION

Walrus are highly sensitive to shipping disturbance and planned shipping expansion through Foxe Basin, northern Hudson Bay, and Hudson Strait could disproportionately affect Canada’s largest walrus population. In response to community-identified concerns and research requests, this project examines shipping disturbance impacts on walrus behaviour, distribution, and demographics using satellite telemetry, haul-out monitoring with stationary cameras and drones, hydrophone recordings of vocalizations and underwater noise, and tissue biopsies to assess stress hormones.

OBJECTIVES

1. Deploy satellite tags onto walrus to gain detailed movement, dive, and habitat use data.
2. Use automated stationary cameras and drone imagery to look at haul out patterns, proportions, and disturbance.
3. Deploy hydrophones to collect acoustics data of walrus calls and other underwater noise.
4. Collect tissue biopsies (skin and blubber) for genetics and to measure stress hormone concentrations.
5. Build science and research capacity in participating communities through project planning, training, and data collection.

COLLABORATORS

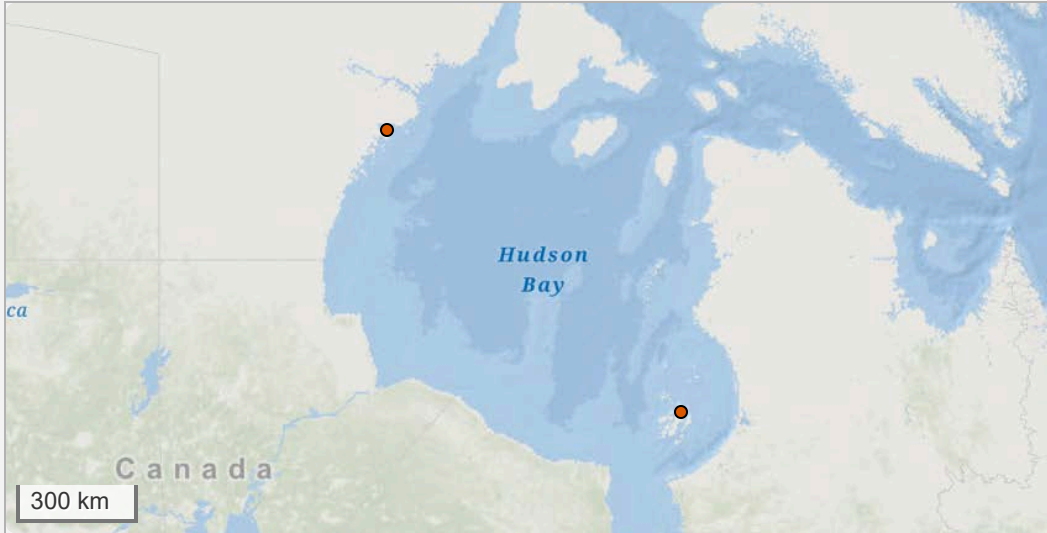
Igloolik Hunters and Trappers Association, Kinngait (Aiviq) Hunters and Trappers Association, Coral Harbour (Aiviit) Hunters and Trappers Association, Sanirajak Hunters and Trappers Association, Naujaat (Arviq) Hunters and Trappers Organization, University of Manitoba





Movement and chemical ecology of fishes in Hudson Bay

Using acoustic telemetry and analytical methods



UNIQUE ID
ARC_AFMMSAFMMS_100

CATEGORY
Population and Ecosystem Assessments

DATES
June to August of calendar year

START YEAR
2023

RECURRENCE
Annually

LOCATIONS
Rankin Inlet and Sanikiluaq, Nunavut

EMAIL
connor.faulkner@dfo-mpo.gc.ca



2025 Rankin Inlet field team.
© Connor Faulkner



Sanikiluaq team going to the next field station.
© Connor Faulkner

DESCRIPTION

This project aims to better understand the movement and chemical ecology of fish species of subsistence, economic, and ecological importance across Inuit Nunangat. We are using acoustic telemetry to examine Arctic char, Greenland cod, lumpfish, and capelin movements within Rankin Inlet, Nunavut to gain knowledge on their space use and timing of migratory movements. We are also collecting Arctic char, lake trout, Greenland cod, marine sculpins, capelin, and zooplankton to examine microplastic and contaminant loads within these fishes in Rankin Inlet and Sanikiluaq, Nunavut.

OBJECTIVES

1. Examine home ranges, areas of importance, and timing of migration using acoustic telemetry within Rankin Inlet.
2. Examine microplastic and contaminant loads in fishes of subsistence, economic, and ecological importance within Hudson Bay.

COLLABORATORS

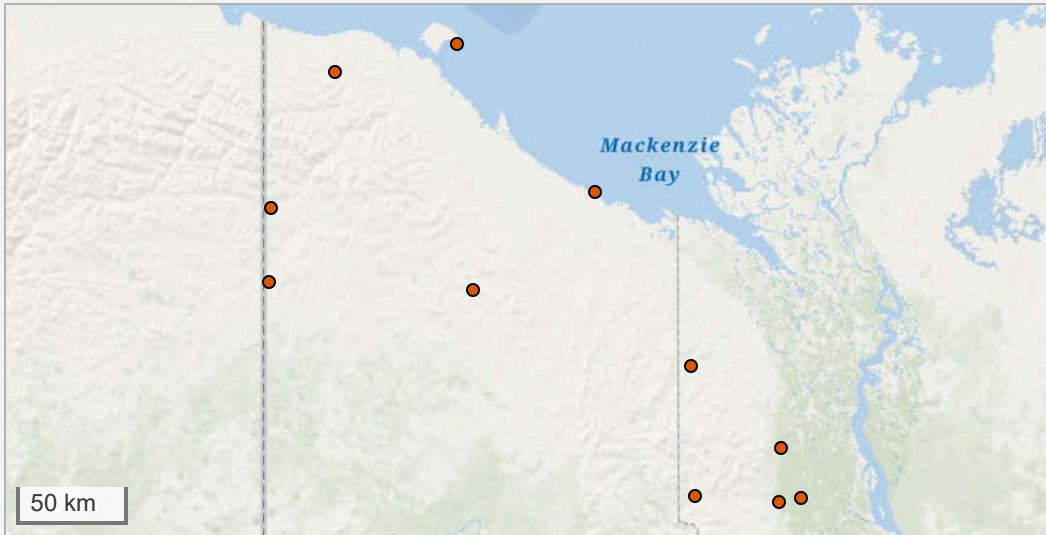
Kangiqliniq Hunters and Trappers Organization, Kivalliq Wildlife Board, Sanikiluaq Hunters and Trappers Association, Arctic Eider Society, University of Manitoba, University of Ottawa





Dolly Varden Population Research and Harvest Monitoring

Yukon North Slope and Mackenzie Delta



UNIQUE ID
ARC_AFMM SAFMMS_102

CATEGORY
Population and Ecosystem Assessments

DATES
July 15 to October 15, 2026

START YEAR
1995

RECURRENCE
Annually

LOCATIONS
Northwestern Canadian Arctic,
Inuvialuit Settlement Region,
Gwich'in Settlement Area

EMAIL
colin.gallagher@dfo-mpo.gc.ca

PHONE
[204-983-8893](tel:204-983-8893)



Char monitor checking net
© F. Carmichael



Dolly Varden
© C. Gallagher

DESCRIPTION

Dolly Varden (*Salvelinus malma*) (dhik'ii) (qalukpik) is an at-risk species that is important for the culture and subsistence of Indigenous people in the western Canadian Arctic. Fisheries-dependent and -independent sampling is performed annually to maintain a time series of data to research population dynamics to inform on the status of multiple populations of Dolly Varden. The data are used by co-management partners (Fisheries Joint Management Committee, Gwich'in Renewable Resources Board, Fisheries and Oceans Canada, and Parks Canada) to inform decision-making for voluntary harvest levels.

OBJECTIVES

1. Expert Gwich'in harvesters collect catch-effort and biological data from 3 traditional camps during the upstream migration.
2. Expert Inuvialuit harvesters collect data from coastal mixed-stock fisheries.
3. Conduct mark-recapture studies among multiple populations to estimate abundance and spawning frequency.
4. Seine Dolly Varden in natal streams during spawning to collect biological samples.

COLLABORATORS

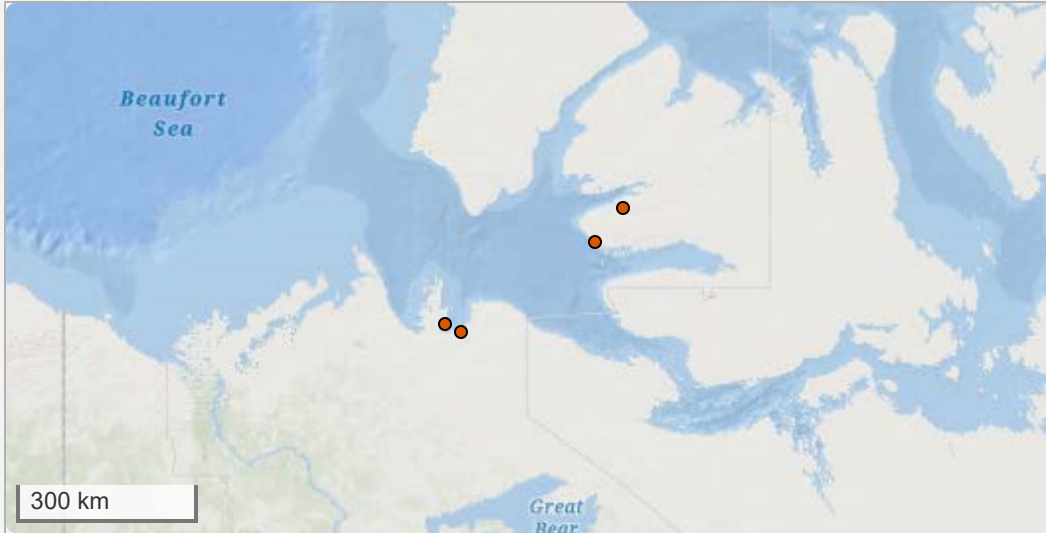
Aklavik Hunters and Trappers Committee, Ehdiiat Renewable Resources Committee, Tetlit Renewable Resources Committee, Fisheries Joint Management Committee, Gwich'in Renewable Resources Board, Parks Canada, Yukon Territorial Parks, University of Wilfred Laurier, Simon Fraser University





Arctic char population research and harvest monitoring

Beaufort Sea (Amundsen Gulf)



UNIQUE ID
ARC_AFMM SAFMMS_103

CATEGORY
Population and Ecosystem Assessments

DATES
July 1 to November 30, 2026

START YEAR
1990

RECURRENCE
Annually

LOCATIONS
Western Canadian Arctic, Inuvialuit Settlement Region, Amundsen Gulf

EMAIL
colin.gallagher@dfo-mpo.gc.ca



Sampling Arctic char
© I. Green



Arctic char
© C. Gallagher

DESCRIPTION

Arctic char (*Salvelinus alpinus*) (iqalukpik) is important for the culture and subsistence of Indigenous people in the western Canadian Arctic. Fisheries-dependent sampling is performed annually to maintain a time series of data to research population dynamics to inform on the status of populations that support fisheries in the Paulatuk (Darnley Bay) and Ulukhaktok (Victoria Island) area. The data are used by co-management partners (Fisheries Joint Management Committee and Fisheries and Oceans Canada) to inform decision-making for voluntary harvest levels and implement community fishing plans.

OBJECTIVES

1. Expert Inuvialuit harvesters collect data from coastal fishery in the Anguniaqvia Niqiyuam Marine Protected Area (ANMPA).
2. Expert Inuvialuit harvesters collect data from the Hornaday River stock during the upstream migration.
3. Expert Inuvialuit harvesters collect data from summer coastal mixed-stock fisheries near Ulukhaktok.
4. Expert Inuvialuit harvesters collect data from winter fishery in Tatik Lake (Fish Lake) near Ulukhaktok.

COLLABORATORS

Paulatuk Hunters and Trappers Committee, Olokhaktomiut Hunters and Trappers Committee, Fisheries Joint Management Committee



Great Bear Lake Fish and Aquatic Science Monitoring

Great Bear Lake (Sahtú), Northwest Territories



UNIQUE ID

ARC_AFMM SAFMMS_104

CATEGORY

Population and Ecosystem Assessments

DATES

July 1 to September 30, 2026

START YEAR

2000

RECURRENCE

Annually

LOCATIONS

Great Bear Lake (Sahtú), located on the northwestern side of the Northwest Territories.

EMAIL

Jacqueline.Twilley@dfo-mpo.gc.ca



Field personnel conducting water survey.

© Jesse Shirton



Travelling to Sahtú sampling sites.

© Cole Wolbaum

DESCRIPTION

The Fish and Aquatic Science Monitoring Project helps monitor the health of fish and the lake across the five arms of Great Bear Lake (Sahtú). By tracking changes in fish harvests and environmental patterns, the project brings together scientific information and Traditional Ecological Knowledge. This information supports community decision-making as the project becomes led by the people of Délı̨ne, NT.

OBJECTIVES

1. Collect fish and environmental data to track long-term changes through a community-led program.
2. Build local capacity to support ongoing community leadership in long-term fisheries and aquatic ecosystem monitoring.
3. Evaluate ongoing trends and changes in the lake ecosystem, including fish populations and water quality.

COLLABORATORS

Délı̨ne Renewable Resources Council, Délı̨ne Got'ı̨ne Government, Tsá Tué Biosphere Reserve Stewardship Council, Sahtú K'aowe Indigenous Protected and Conserved Area, Sahtú Renewable Resources Board, Environment and Climate Change Canada, Carleton University, University of Alberta, University of Manitoba, Queen's University, University of British Columbia, Great Lakes Fishery Commission, Community of Délı̨ne field personnel

FOR MORE INFORMATION

[Great Bear Lake \(Sahtú\) Surface water temperature monitoring: 2021 to 2024](#)

[Great Bear Lake \(Sahtú\) Surface water temperature monitoring](#)





Pond Inlet Arctic Char stock assessment

Development of commercial fishing near Pond Inlet



UNIQUE ID
ARC_AFMMSAFMMS_105

CATEGORY
Population and Ecosystem Assessments

DATES
July 15 to Sept 15, 2026

START YEAR
2016

RECURRENCE
Annually

LOCATIONS
Pond Inlet Area

EMAIL
Matthew.Guzzo@dfo-mpo.gc.ca



Arriving at Koluktoo Bay
© Simon Wiley



Arctic Char ready to be sampled
© Simon Wiley

DESCRIPTION

Pond Inlet has been trying to redevelop their Char fisheries. The local fishers have put in great efforts to collect biological samples in accordance with their exploratory fishing license. This Data will be used in a stock assessment analysis to provide managers, the HTO and the community with a stock status update. To support the fishers' data, fishery independent baseline biological data is required. This research aims to work with the community of Pond Inlet to collect baseline biological data from two (Koluktoo Bay and Satuut) Arctic Char stocks in the Pond Inlet Area.

OBJECTIVES

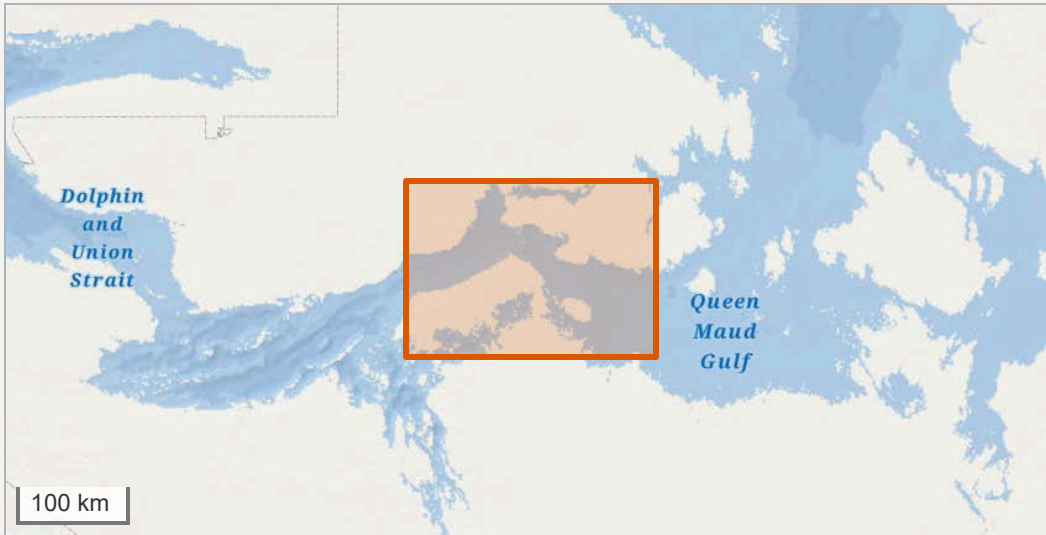
1. Meet with the MHTO regarding new stock assessment research in the Pond Inlet area.
2. Collect biological, CPUE, and environmental data for two stocks of Char at Koluktoo Bay and Satuut.
3. Continue gathering local knowledge on Char fisheries in the Pond Inlet Area including past research.

COLLABORATORS

Mittimatilik Hunters and Trapper Organization



Arctic char research in the Cambridge Bay region, Nunavut



UNIQUE ID
ARC_AFMMSAFMMS_106

CATEGORY
Population and Ecosystem Assessments

DATES
May-September Annually

START YEAR
2013

RECURRENCE
Annually

LOCATIONS
Cambridge Bay study area

EMAIL
Les.Harris@dfo-mpo.gc.ca



Satellite tagged char being released
© Matt Gilbert



Inuit field guides going to check a net
© Matt Gilbert

DESCRIPTION

Fisheries and Oceans Canada leads an integrated, fishery-independent research program in Cambridge Bay to advance understanding of the ecology, health, and sustainability of Arctic char. Using genomics, acoustic telemetry, contaminant analyses, eDNA, and temperature modelling, this work resolves mixed-stock fisheries, quantifies habitat use, and assesses emerging stressors such as climate warming and shipping. Together, these efforts strengthen stock assessments and further our understanding of Arctic char in the region.

OBJECTIVES

1. Telemetry: Assess habitat use, survival, stock mixing, and migration timing of Arctic char
2. Genomics: Resolve mixed-stock fisheries, population structure, and management units.
3. Physiology: Determine how warming temperatures affect Arctic char health and performance.
4. Contaminants & microplastics: Quantify contaminant burdens and assess fish health risks.
5. Stock assessment sampling: Support reference points and evaluate impacts of harvest.

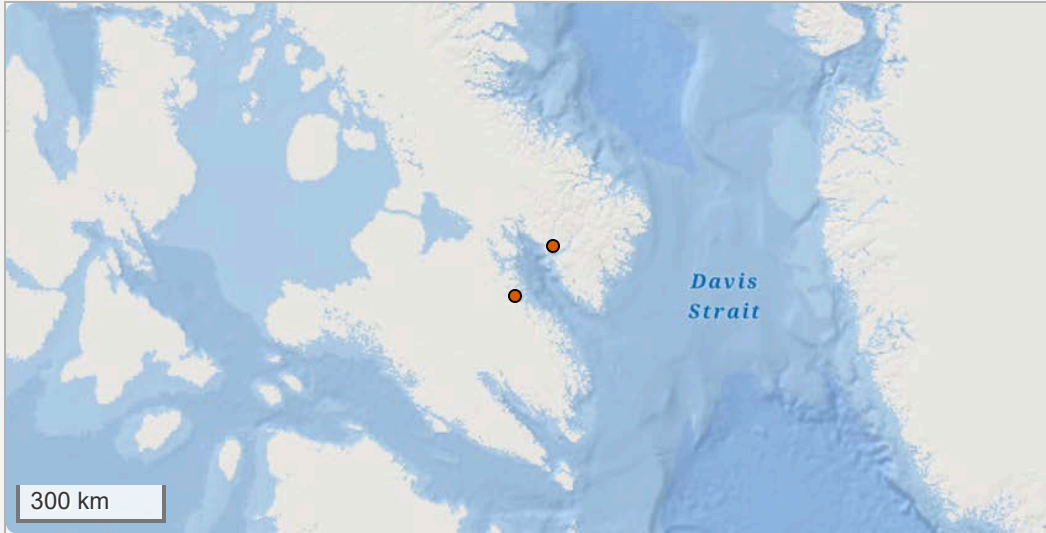
COLLABORATORS

Laval University, University of Alaska, University of Ottawa, Ekaluktutiak Hunters and Trappers Organization



Emerging fisheries research in Cumberland Sound

Arctic char stock assessment research



UNIQUE ID
ARC_AFMMSAFMMS_110

CATEGORY
Population and Ecosystem Assessments

DATES
July 15 - September 15

START YEAR
2024

RECURRENCE
Annually

LOCATIONS
Pangnirtung community & study site in the Cumberland Sound region of Nunavut

EMAIL
Hailey.Chymy@dfo-mpo.gc.ca



Opingivik Lake field site
© Hailey Chymy

River leading to Opingivik Lake
© Hailey Chymy

DESCRIPTION

Arctic Char is an abundant, accessible and predictable resource in Arctic environments, with fisheries playing an important role in Nunavut food security and market economics due to numerous exploratory and commercial stocks. The goal of this work is to advance Arctic Char research in the Cumberland Sound region of Nunavut to complete stock assessments and monitor stock health. This is done through collaboration with the Pangnirtung HTO to gather local knowledge & collect data on priority stocks, with commercial lake Opingivik as the current research focus.

OBJECTIVES

1. Engage with Pangnirtung HTO to provide updates and seek input and advice on priority fish stocks and concerns
2. Collect biological, catch-per-unit-effort, and environmental data to support Cumberland Sound Arctic char fisheries
3. Gather local knowledge on Arctic Char in the Pangnirtung area in order to collate all available data

COLLABORATORS

Pangnirtung Hunters and Trappers Organization, Community of Pangnirtung





Paulatuk Drone Project

Beluga activity in the Anguniaqvia Niqiqyuam MPA



UNIQUE ID

ARC_AFMMSAFMMS_111

CATEGORY

Population and Ecosystem Assessments

DATES

June 20 to August 31

START YEAR

2021

RECURRENCE

Annually

LOCATIONS

Anguniaqvia niqiqyuam Marine Protected Area (ANMPA)

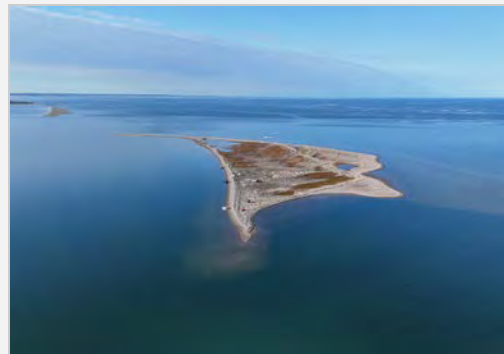
EMAIL

Kevin.scharffenberg@dfo-mpo.gc.ca



Belugas during a drone survey in Darnley Bay, NT

© K. Scharffenberg



Egg Island, a field site in Darnley Bay, NT

© K. Scharffenberg

DESCRIPTION

The Paulatuk Drone Project is a partnership between the Paulatuk Hunters and Trappers Committee and Fisheries and Oceans, the University of Manitoba and Natural Resources Canada. Our transdisciplinary team uses drone surveys in tandem with interviews and acoustic monitoring to explore nearshore beluga activity in Darnley Bay and the Anguniaqvia Niqiqyuam Marine Protected Area. The project is a collaborative, community-based effort to co-produce knowledge on beluga from the Eastern Beaufort Sea. Research provides insight on nearshore beluga activity informing monitoring and management.

OBJECTIVES

1. Document beluga behaviour to assess importance of key areas in Darnley Bay and the ANMPA
2. Monitor beluga body condition
3. Work collaboratively to co-produce knowledge of beluga activity using Inuvialuit Knowledge and emerging technologies

COLLABORATORS

Natural Resources Canada, Paulatuk Hunters and Trappers Committee, University of Manitoba

