Fisheries and Oceans Canada | Pêches et Océans Canada

FIELDNOTES 2026 – 2027

Science field operations: Fact sheets
Ontario and Prairie Region

Canada

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Cover illustration: Zebra mussels can rapidly colonize underwater surfaces with dense clustering.

Photo credit: Fisheries and Oceans Canada

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Hydrographic Survey Supporting Navigation Safety

Kugluktuk to Cambridge Bay, Nunavut

UNIQUE ID
OP_CHSCHS_42

CATEGORY
Hydrographic and oceanographic surveys

DATES
August 4 to September 29, 2026

START YEAR
2026

RECURRENCE
Annually

LOCATIONS
Corridors around Victoria Island - Coronation Gulf to Franklin Strait

VESSEL
CCGS Sir Wilfrid Laurier

EMAIL
dana.gallant@dfo-mpo.gc.ca

CCGS Sir Wilfrid Laurier Survey.
© Canadian Coast Guard

Global Navigation Satellite System antenna.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Hydrographic surveys to inform the production of modern navigation charts which will support safe and efficient marine navigation, protect the marine environment, and also inform important activities such search and rescue within Low Impact Shipping Corridors surveys using ship-based sonar.

OBJECTIVES

1. Collect multi-beam bathymetry to improve navigational charts and products, as per CHS mandate.
2. Detect, classify and report subsurface navigational hazards.
3. Collect Global Navigation Satellite System data and tidal observations to improve chart datum and tide prediction accuracy.
4. Collect acoustic data to support seabed analysis for navigation and scientific research.
5. Contribute to the surveying and charting of the Proposed Low Impact Shipping Corridors in the Canadian Arctic.

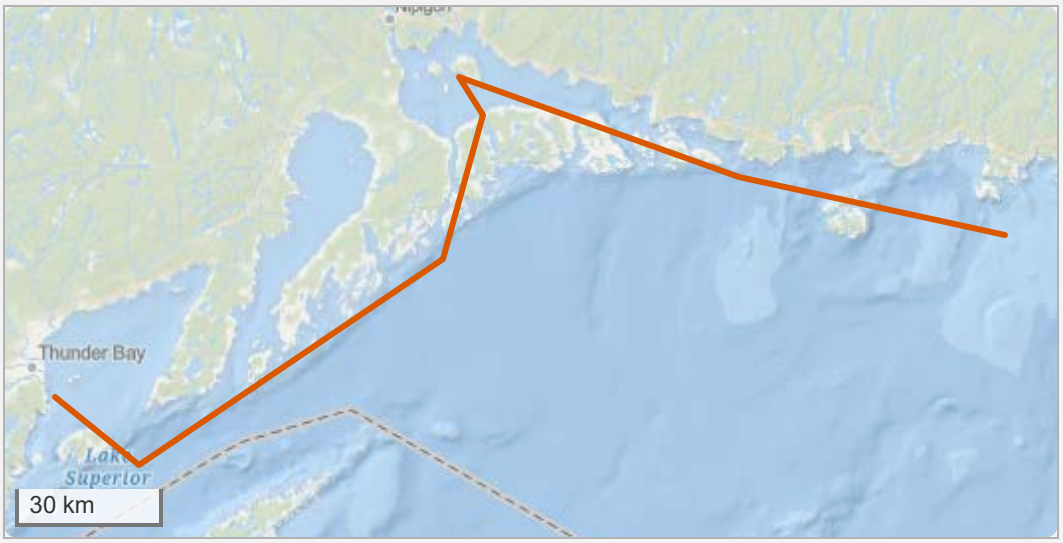
COLLABORATORS

Canadian Coast Guard

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey Supporting Navigation Safety
Lake Superior



UNIQUE ID
OP_CHSCHS_47

CATEGORY
Hydrographic and oceanographic surveys

DATES
July 8 to 22, 2026

START YEAR
2026

RECURRENCE
One-time

LOCATIONS
Lake Superior

VESSEL
CCGS Kelso

EMAIL
dana.gallant@dfo-mpo.gc.ca

CCGS Kelso.
© Canadian Coast Guard

Multibeam sonar survey.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. This hydrographic data improves marine safety, informs science advice and regulations, and supports environmental monitoring and coastal planning.

OBJECTIVES

1. Collect multi-beam bathymetry to improve navigational charts and products, as per CHS mandate.
2. Detect, classify and report subsurface navigational hazards.
3. Collect acoustic data to support seabed analysis for navigation and scientific research.

COLLABORATORS

Parks Canada

FOR MORE INFORMATION

CHS NONNA Data Portal

Great Lakes Interconnecting Waterways Survey

Great Lakes Connecting Waterways

UNIQUE ID
OP_CHSCHS_84

CATEGORY
Hydrographic and oceanographic surveys

DATES
May 8 to June 26, 2026

START YEAR
2026

RECURRENCE
Annually

LOCATIONS
Detroit River, Lake St. Clair, St. Clair River and St. Mary's River, Ontario

VESSEL
Whisky Jack, True North, Ushik

EMAIL
dana.gallant@dfo-mpo.gc.ca

CHS Hydrographic Survey Launch.
© Fisheries and Oceans Canada

Multibeam sonar survey.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. This hydrographic data improves marine safety, informs science advice and regulations, and supports environmental monitoring and coastal planning.

OBJECTIVES

1. Collect multi-beam bathymetry to improve navigational charts and products, as per CHS mandate.
2. Collect multi-beam bathymetry to support the Canadian Coast Guard Waterways Management Program.

COLLABORATORS

Canadian Coast Guard

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey Supporting Navigation Safety

Barrow Strait & Eureka, Nunavut

UNIQUE ID
OP_CHSCHS_85

CATEGORY
Hydrographic and oceanographic surveys

DATES
August 5 to September 2, 2026

START YEAR
2026

RECURRENCE
Annually

LOCATIONS
Corridors around Boothia Peninsula and Somerset Island

VESSEL
CCGS Des Groseilliers

EMAIL
dana.gallant@dfo-mpo.gc.ca

CCGS Des Groseilliers.
© Canadian Coast Guard

Multibeam sonar survey.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Hydrographic surveys to inform the production of modern navigation charts which will support safe and efficient marine navigation, protect the marine environment, and also inform important activities such search and rescue within Low Impact Shipping Corridors surveys using ship-based sonar.

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4. Collect acoustic data to support seabed analysis for navigation and scientific research.
5. Contribute to the surveying and charting of the Proposed Low Impact Shipping Corridors in the Canadian Arctic.

COLLABORATORS

Canadian Coast Guard

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey Supporting Navigation Safety

Corridors from Frobisher Bay to Hudson Bay

UNIQUE ID
OP_CHSCHS_86

CATEGORY
Hydrographic and oceanographic surveys

DATES
September 2 to November 11, 2026

START YEAR
2026

RECURRENCE
Annually

CCGS Henry Larsen.
© Canadian Coast Guard

Multibeam sonar survey.
© Fisheries and Oceans Canada

LOCATIONS
Corridors from Frobisher Bay, through Hudson Strait and northern Hudson Bay

VESSEL
CCGS Henry Larsen

EMAIL
dana.gallant@dfo-mpo.gc.ca

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Hydrographic surveys to inform the production of modern navigation charts which will support safe and efficient marine navigation, protect the marine environment, and also inform important activities such search and rescue within Low Impact Shipping Corridors surveys using ship-based sonar.

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5. Contribute to the surveying and charting of the Proposed Low Impact Shipping Corridors in the Canadian Arctic.

COLLABORATORS

Canadian Coast Guard

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey Supporting Navigation Safety - Chartered

East coast of Baffin Island

UNIQUE ID
OP_CHSCHS_87

CATEGORY
Hydrographic and oceanographic surveys

DATES
August 28 to October 7, 2026

START YEAR
2026

RECURRENCE
One-time

LOCATIONS
East coast of Baffin Island - Frobisher Bay, Cumberland Sound, Cape Dyer, Pond Inlet

VESSEL
M/V Polar Prince

EMAIL
dana.gallant@dfo-mpo.gc.ca

M/V Polar Prince.
© Fisheries and Oceans Canada

Multibeam sonar survey.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Hydrographic surveys to inform the production of modern navigation charts which will support safe and efficient marine navigation, protect the marine environment, and also inform important activities such search and rescue within Low Impact Shipping Corridors surveys using ship-based sonar.

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4. Collect acoustic data to support seabed analysis for navigation and scientific research.
5. Contribute to the surveying and charting of the Proposed Low Impact Shipping Corridors in the Canadian Arctic.

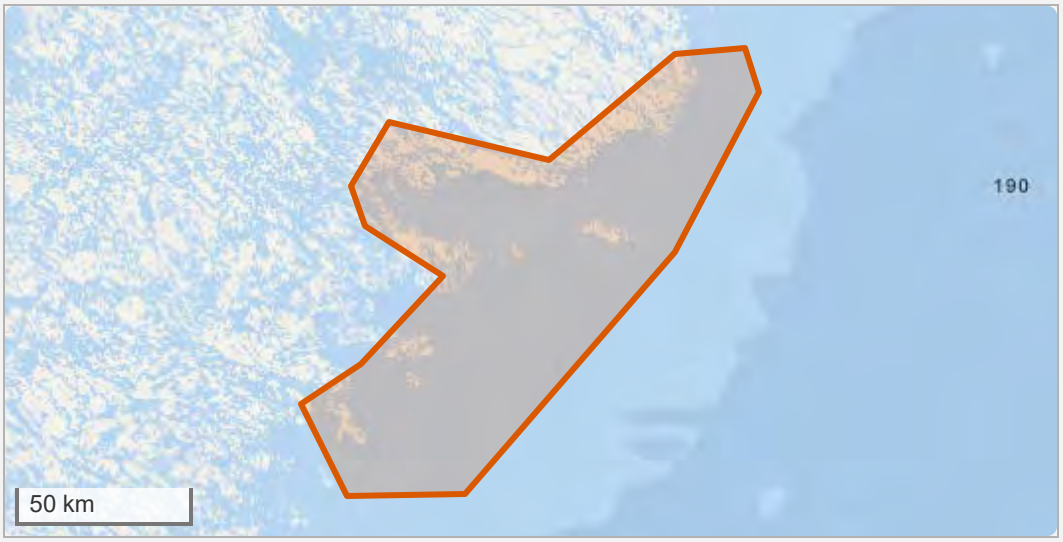
COLLABORATORS

Qikiqtaaluk Corporation

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey (Arctic - Portable Multibeam)
Rankin Inlet



UNIQUE ID
OP_CHSCHS_107

CATEGORY
Hydrographic and oceanographic surveys

DATES
July 1 to August 31, 2026

START YEAR
2026

RECURRENCE
One-time

LOCATIONS
Rankin Inlet

VESSEL
Rigid Hull Inflatable Boat Canadian Coast Guard Auxiliary

EMAIL
dana.gallant@dfo-mpo.gc.ca

Norbit Pole Mounted Sonar.

Levelling equipment.

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Community Hydrography is a five-year (2022 to 2027) CHS program supporting coastal communities to collect and use bathymetric data and information for their own community purposes. The projects are planned in collaboration with communities.

OBJECTIVES

1. Collect multi-beam bathymetry to improve navigational charts and products, as per CHS mandate.
2. Collect Global Navigation Satellite System data and tidal observations to improve chart datum and tide prediction accuracy.

COLLABORATORS

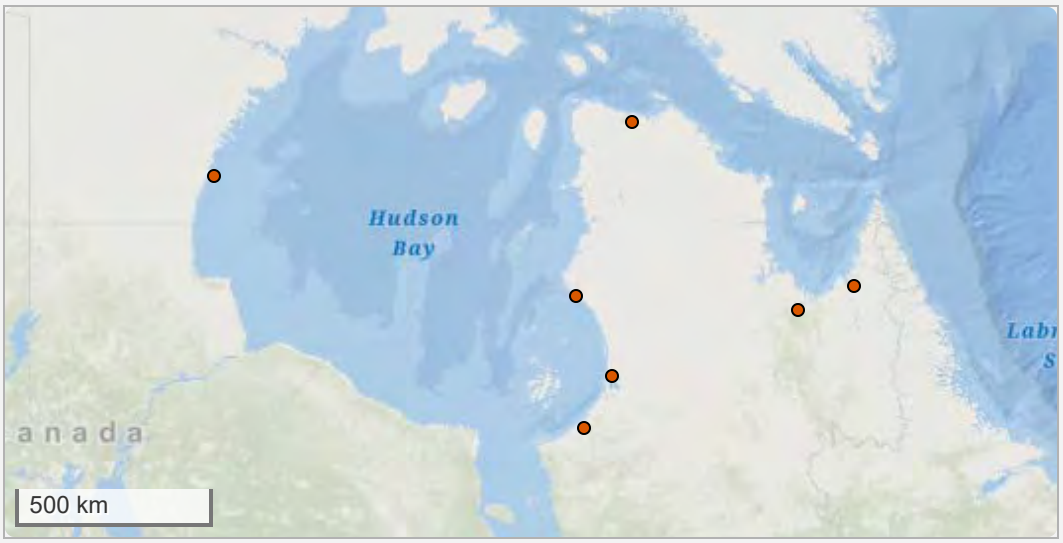
Canadian Coast Guard Auxiliary (CCGA)

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey (Arctic - Data Logger)

Various locations in Hudson Bay and Ungava Bay



UNIQUE ID
OP_CHSCHS_108

CATEGORY
Hydrographic and oceanographic surveys

DATES
June 1 to October 31, 2026

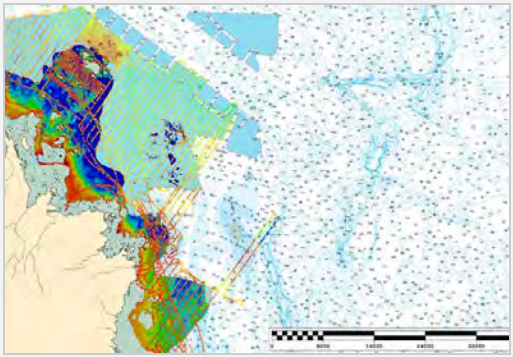
START YEAR
2026

RECURRENCE
One-time

LOCATIONS
Hudson Bay and Ungava Bay

EMAIL
dana.gallant@dfo-mpo.gc.ca

Data Logger.
© Fisheries and Oceans Canada



Data collected in Kuujjuaq.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Community Hydrography is a five-year (2022 to 2027) CHS program supporting coastal communities to collect and use bathymetric data and information for their own community purposes. The projects are planned in collaboration with communities.

OBJECTIVES

1. Data logging with community vessels.

COLLABORATORS

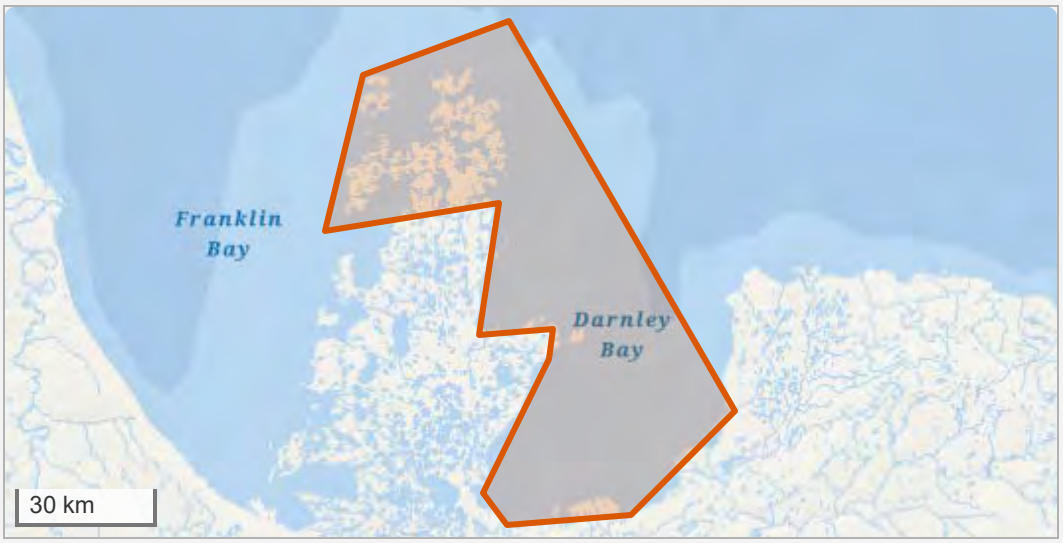
Paulatuk Hunters and Trappers Committee

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey Supporting Navigation Safety

Paulatuk, Northwest Territories



UNIQUE ID
OP_CHSCHS_109

CATEGORY
Hydrographic and oceanographic surveys

DATES
August 1 to September 30, 2026

START YEAR
2026

RECURRENCE
One-time

LOCATIONS
Paulatuk, Northwest Territories

VESSEL
F/V Frosti

EMAIL
dana.gallant@dfo-mpo.gc.ca

F/V Frosti.
© https://www.vesselfinder.com/vessels/details/7628473

Anguniaqvia Niqiqyuam Marine Protected Area.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Community Hydrography is a five-year (2022 to 2027) CHS program supporting coastal communities to collect and use bathymetric data and information for their own community purposes. The projects are planned in collaboration with communities.

This project will focus on the Anguniaqvia Niqiqyuam Marine Protected Area.

OBJECTIVES

1. Collect multi-beam bathymetry to improve navigational charts and products, as per CHS mandate.

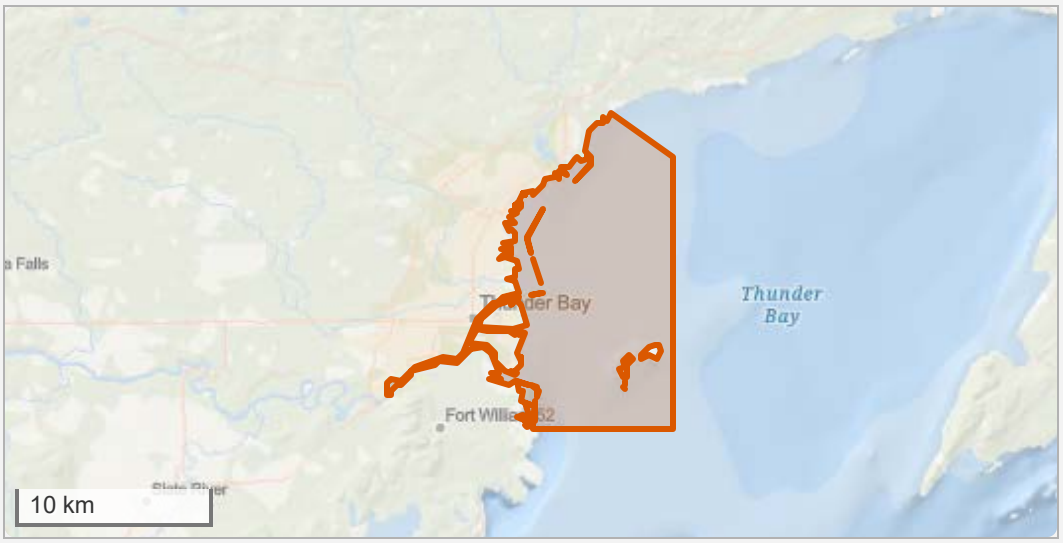
COLLABORATORS

Paulatuk Hunters and Trappers Committee

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey Supporting Navigation Safety
Port of Thunder Bay



UNIQUE ID
OP_CHSCHS_117

CATEGORY
Hydrographic and oceanographic surveys

DATES
June 28 to July 13, 2026

START YEAR
2026

RECURRENCE
One-time

LOCATIONS
Port of Thunder Bay

VESSEL
True North

EMAIL
dana.gallant@dfo-mpo.gc.ca

Multibeam sonar survey.
© Fisheries and Oceans Canada

CHS Hydrographic Survey Launch.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. This hydrographic data improves marine safety, informs science advice and regulations, and supports environmental monitoring and coastal planning.

OBJECTIVES

1. Collect multi-beam bathymetry to improve navigational charts and products, as per CHS mandate.
2. Collect Global Navigation Satellite System data and water level observations to improve chart datum.

COLLABORATORS

Thunder Bay Port Authority

FOR MORE INFORMATION

CHS NONNA Data Portal

Hydrographic Survey Supporting Navigation Safety

Lancaster Sound, Foxe Basin, Hudson Strait

UNIQUE ID
OP_CHSCHS_118

CATEGORY
Hydrographic and oceanographic surveys

DATES
August 4 to August 21, 2026

START YEAR
2026

RECURRENCE
Annually

LOCATIONS
Resolute, Lancaster Sound, Foxe Basin, Hudson Strait

VESSEL
CCGS Pierre Radisson

EMAIL
dana.gallant@dfo-mpo.gc.ca

CCGS Pierre Radisson.
© Canadian Coast Guard

Multibeam sonar survey.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Hydrographic surveys to inform the production of modern navigation charts which will support safe and efficient marine navigation, protect the marine environment, and also inform important activities such search and rescue within Low Impact Shipping Corridors surveys using ship-based sonar.

OBJECTIVES

1. Collect multi-beam bathymetry to improve navigational charts and products, as per CHS mandate.
2. Detect, classify and report subsurface navigational hazards.
3. Collect Global Navigation Satellite System data and tidal observations to improve chart datum and tide prediction accuracy.
4. Collect acoustic data to support seabed analysis for navigation and scientific research.
5. Contribute to the surveying and charting of the Proposed Low Impact Shipping Corridors in the Canadian Arctic.

COLLABORATORS

Defense Research Development Canada

FOR MORE INFORMATION

CHS NONNA Data Portal

Tide Gauge Deployment
Foxe Basin - Cape Wilson

UNIQUE ID
OP_CHSCHS_119

CATEGORY
Hydrographic and oceanographic surveys

DATES
September 1 to 30

START YEAR
2026

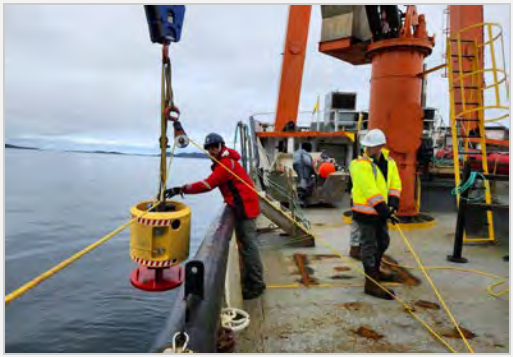
RECURRENCE
Annually

LOCATIONS
Foxe Basin - Cape Wilson

VESSEL
HMCS Frederick Rolette

EMAIL
dana.gallant@dfo-mpo.gc.ca

HMCS Frederick Rolette.
© Royal Canadian Navy



Tide gauge deployment.
© Fisheries and Oceans Canada

DESCRIPTION

The Canadian Hydrographic Service (CHS) maps the seabed, collects depth data (bathymetry), and monitors water levels by servicing tide gauges to support safe navigation. Hydrographic surveys to inform the production of modern navigation charts which will support safe and efficient marine navigation, protect the marine environment, and also inform important activities such search and rescue within Low Impact Shipping Corridors surveys using ship-based sonar.

OBJECTIVES

1. Collect Global Navigation Satellite System data and tidal observations to improve chart datum and tide predictions.

COLLABORATORS

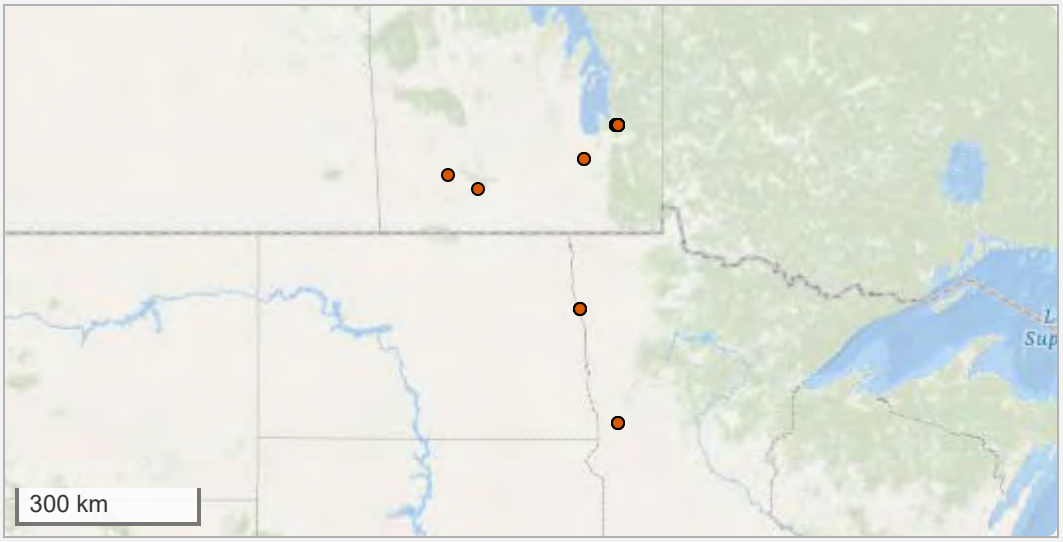
Royal Canadian Navy

FOR MORE INFORMATION

CHS NONNA Data Portal

Lake Sturgeon distribution, movement, and habitat use

Lake Winnipeg, Manitoba and Red River Basin



UNIQUE ID
OP_ESDFERS_37

CATEGORY
Population and ecosystem assessments

DATES
May 1 to October 31

START YEAR
2023

RECURRENCE
Annually

Field crew checking a net for Lake Sturgeon
© Doug Watkinson

Simon Wolf DePasquale with a Lake Sturgeon
© Doug Watkinson

LOCATIONS
Winnipeg River near Pine Falls Manitoba, Multiple sites in the Red River Basin (both in Manitoba and Minnesota), the Assiniboine River, and Lake Winnipeg.

EMAIL
Lee.Gutowsky@dfo-mpo.gc.ca

DESCRIPTION

This project tracks where Lake Sturgeon live, how they move, and the habitats they use in the Lake Winnipeg basin. Monitoring includes movement across the Canada–U.S. border and tracking Lake Sturgeon released into the Assiniboine River upstream of the Portage Diversion Dam. The project supports collaboration with partners through shared monitoring equipment and documents fish movement into Canadian waters. Collected data support summaries and analysis of Lake Sturgeon behaviour.

OBJECTIVES

1. Understand Lake Sturgeon distribution, movement, and habitat use in the Lake Winnipeg basin.
2. Assess the extent of Lake Sturgeon movement across the international border.

COLLABORATORS

Natural Resources and Indigenous Futures, Minnesota Department of Natural Resources, University of Nebraska-Lincoln, University of Winnipeg

Assessing low abundance Bull Trout populations

South-central Alberta

UNIQUE ID
OP_ESDFERS_122

CATEGORY
Population and ecosystem assessments

DATES
June 15 -22, 2025

START YEAR
2025

RECURRENCE
One-time

LOCATIONS
Saskatchewan-Nelson Rivers Designatable Unit, Alberta

EMAIL
neil.mochnacz@dfo-mpo.gc.ca

Sampling native trout in Lick Creek
© Sarah Glowa

Juvenile Bull Trout
© Valerie Powell

DESCRIPTION

Conduct strategic field work to reassess the status of a Bull Trout population in the Saskatchewan-Nelson Rivers Designatable Unit that has declined near eastern distributional boundary in south-central Alberta. The intention is to determine if recovery activities have been effective and guide prioritization of future recovery for low abundance populations.

OBJECTIVES

1. Resample a low abundance, low density Bull Trout population to assess status.

COLLABORATORS

Alberta Environment and Protected Areas

A model to predict and mitigate stranding risk of fishes

Eastern shore of Lake Superior

UNIQUE ID
OP_ESDFERS_123

CATEGORY
Population and ecosystem assessments

DATES
May 1 - October 15, 2023 and 2024.

START YEAR
2022

RECURRENCE
Complete

LOCATIONS
Wawa, ON; Batchawana, ON; Searchmont, ON

EMAIL
Karen.Smokorowski@dfo-mpo.gc.ca

Camera tower
© DFO

Stranded adult salmon
© DFO

DESCRIPTION

Some hydropower operations alter natural flow patterns in the river downstream by adjusting water released from the dam. These changes in discharge can cause fish to become stranded on dry substrate, often resulting in mortality. Time-lapse photography was used to remotely count fish stranding on rivers with altered and unaltered flows. Fish stranding was only documented on the hydropeaking rivers. We determined that fish stranding was more likely to occur on finer substrate types, early in the spring, and when the transition from wetted substrate to dry substrate was slow.

OBJECTIVES

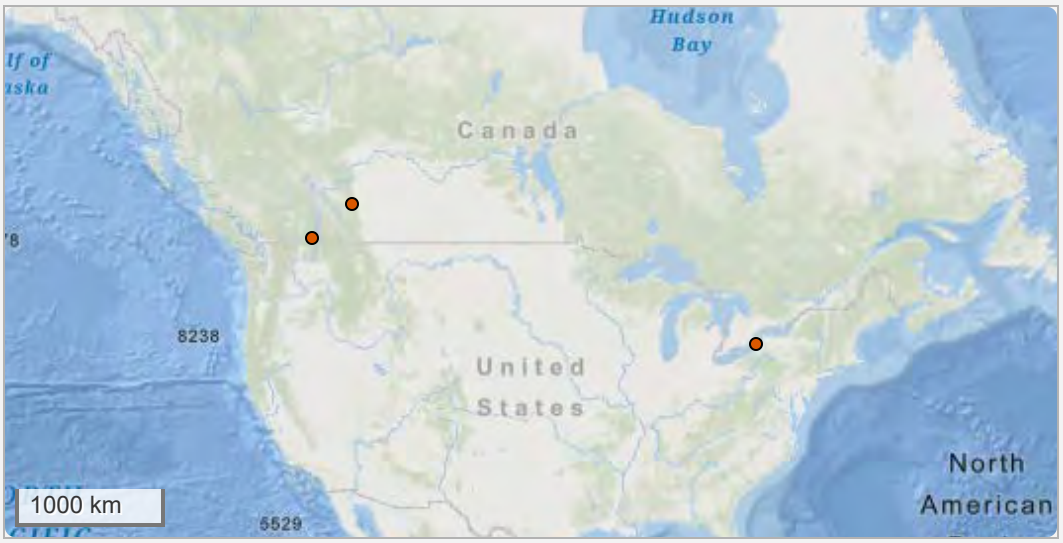
1. Quantify fish stranding on rivers with different flow regimes (unaltered - natural; altered hydropower).
2. Identify predictive factors of fish stranding in rivers with different flow regimes using modeling.
3. Assess fish stranding risk using historical flow data on rivers with different flow regimes.

COLLABORATORS

Carleton University, Brookfield Renewable Energy

Decision framework to assess at-risk riverine fishes

British Columbia, Alberta, Ontario



UNIQUE ID
OP_ESDFERS_124

CATEGORY
Population and ecosystem assessments

DATES
2023, 2024, 2025

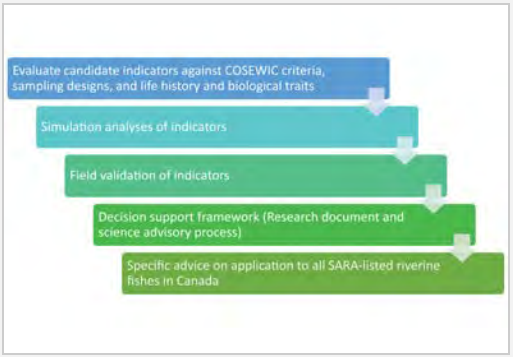
START YEAR
2023

RECURRENCE
Annually

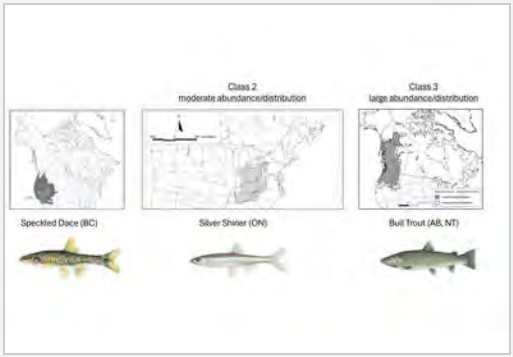
LOCATIONS
British Columbia, Alberta, Ontario

VESSEL
NA

EMAIL
neil.mochnacz@dfo-mpo.gc.ca



Workflow for assessing at-risk river fishes
© DFO



Three abundance classes for at-risk river fishes
© DFO

DESCRIPTION

An urgent need exists to design and implement efficient and statistically robust monitoring to accurately assess at-risk fishes. Status assessment is problematic for over 20 listed riverine fishes among several priority places (Fraser and Columbia, Rocky Mountains Eastern Slopes, Lower Great Lakes) because appropriate sampling methods that align with COSEWIC criteria are lacking or applied inappropriately. We will develop a decision support framework to guide assessments of at-risk riverine fishes in Canada.

OBJECTIVES

1. To determine the most effective monitoring indicators and sampling designs for assessing at-risk riverine fishes in Canada.
2. Identify candidate monitoring indicators that are best suited to reliably assess riverine fishes under COSEWIC framework.
3. Using case studies, conduct simulations to assess the reliability and efficacy of metrics for detecting species trends
4. Evaluate trend-detection metrics using field validation and improve existing methods.
5. Assess relevance of case study results for at-risk riverine fishes in Canada using simulation and field data.

COLLABORATORS

DFO Science (Andrew Drake, Paul Grant, Lee Gutowsky), Parks Canada Agency, Alberta Environment and Protected Areas, University of Toronto

Assessment of deepwater ciscoes in Lake Superior

Canadian waters of Lake Superior

UNIQUE ID
OP_ESDFERS_125

CATEGORY
Population and ecosystem assessments

DATES
Post-stratification - generally after July 1

START YEAR
2024

RECURRENCE
Annually

LOCATIONS
Whitefish Bay, Lake Superior, west of the Sandy Islands

VESSEL
CCGS Kelso

EMAIL
Thomas.Pratt@dfo-mpo.gc.ca

William Gardner aboard the CCGS Kelso
© DFO

Setting a gill net
© DFO

DESCRIPTION

Recent genomics research has identified Shortnose Cisco, which was previously thought to be extinct, as extant in Lake Superior. We completed a survey on the distribution of deepwater ciscoes of SARP interest, including Shortnose Cisco, Kiyi, Shortjaw Cisco and Blackfin Cisco, along the southeast shore of Lake Superior. Specimens were collected and provided to USGS collaborators for morphometric workup and genetic assignment.

OBJECTIVES

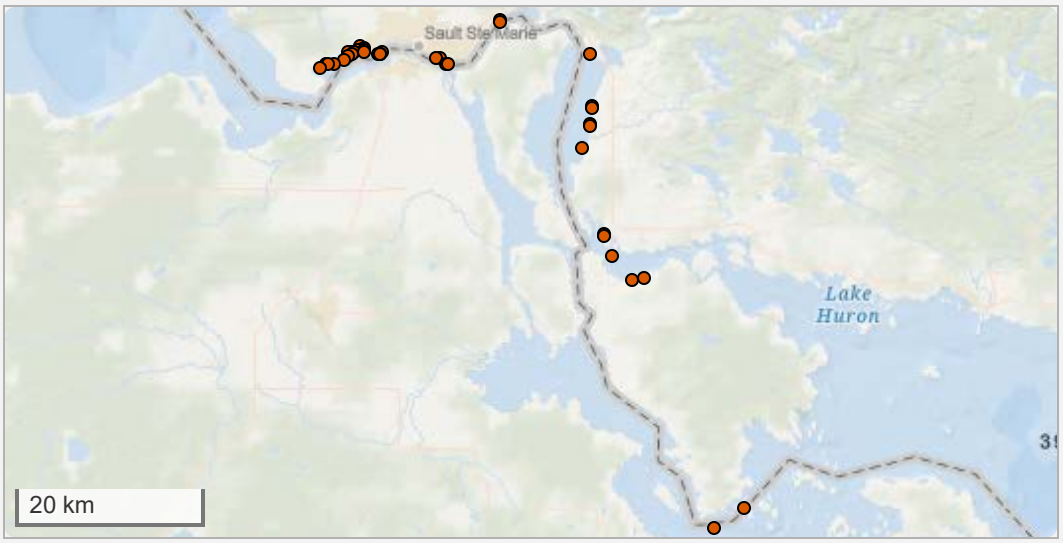
1. Sample deepwater ciscoes to resolve taxonomy using genomic and morphometric tools.

COLLABORATORS

United States Geological Survey

Early Detection and Monitoring of Aquatic Invasive Species

St. Marys River, Lake Huron, Lake Superior



UNIQUE ID
OP_ESDFERS_126

CATEGORY
Population and ecosystem assessments

DATES
July to September

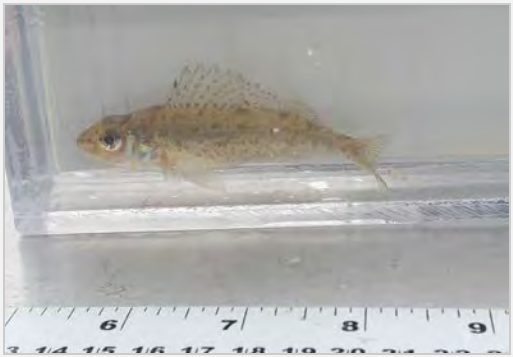
START YEAR
2017

RECURRENCE
Annually

LOCATIONS
Sampling sites along the St. Marys River, the connecting channel from the outflow of Lake Superior to the inflow of Lake Huron

EMAIL
lisa.oconnor@dfo-mpo.gc.ca

DFO field crew electrofishing
© DFO



Eurasian Ruffe collected during field sampling
© DFO

DESCRIPTION

Aquatic invasive species (AIS) remain the largest threat to Great Lakes ecosystems. These funds support a collaborative AIS early detection and monitoring survey in the St. Marys River, and sampling in tributaries along the north shore of Lake Huron and eastern Lake Superior.

OBJECTIVES

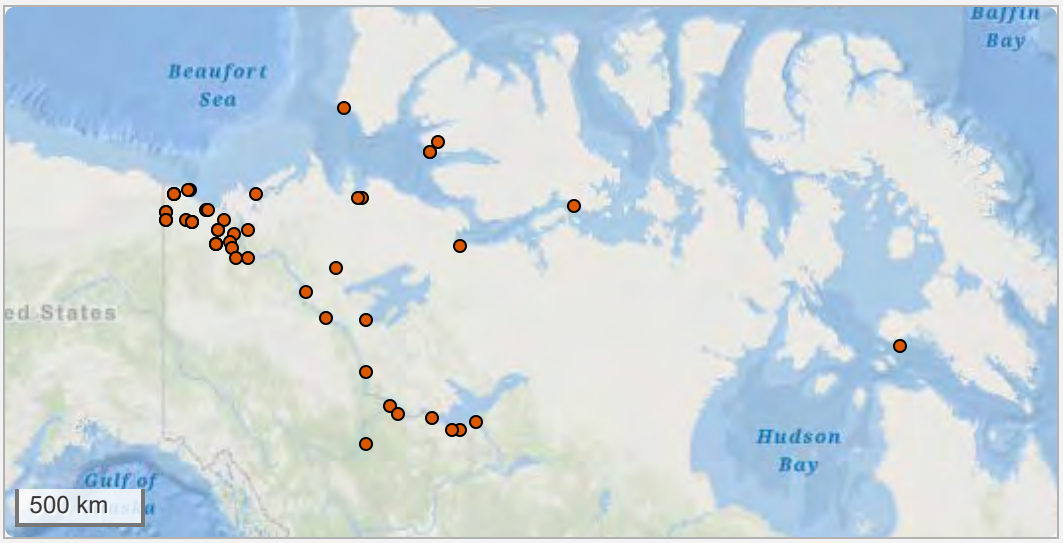
1. Early detect and monitor aquatic invasive species in the St. Marys River and nearby Great Lakes tributaries.

COLLABORATORS

United States Fish and Wildlife Service, Ontario Ministry of Natural Resources, Michigan Department of Natural Resources, Sault Ste. Marie Tribe of Chippewa Indians, Bay Mills Indian Community, Batchewana First Nation, Garden River First Nation

Potential disease risk of salmon in the Arctic

Canadian western Arctic



UNIQUE ID
OP_ESDGAFHS_130

CATEGORY
Population and ecosystem assessments

DATES
July 1 to November 30

START YEAR
2022

RECURRENCE
Annually

LOCATIONS
Yukon north slope, Mackenzie River, Beaufort Sea (Amundsen Gulf)

EMAIL
sharon.clouthier@dfo-mpo.gc.ca

Frank Dillon, Chum salmon, Fish Creek, 2017
© Colin Gallagher

Sockeye salmon, Firth River, 2019
© Colin Gallagher

DESCRIPTION

Range-expanding Pacific salmon are a growing concern in the Arctic as they may affect the sustainability of northern fishes and potentially act as biological vectors for the introduction and transmission of viruses not yet present in the region. The overall goal is to develop an understanding of the viral disease threat posed by vagrant Pacific salmon. Knowledge generated will contribute to the management of char species used by northern communities for nutrition, food security and cultural well-being and inform regulatory decisions related to the National Aquatic Animal Health Program.

OBJECTIVES

1. Identify the viruses present in salmon and char from Canada's western Arctic.
2. Investigate disease dynamics within the context of current and projected climate change.

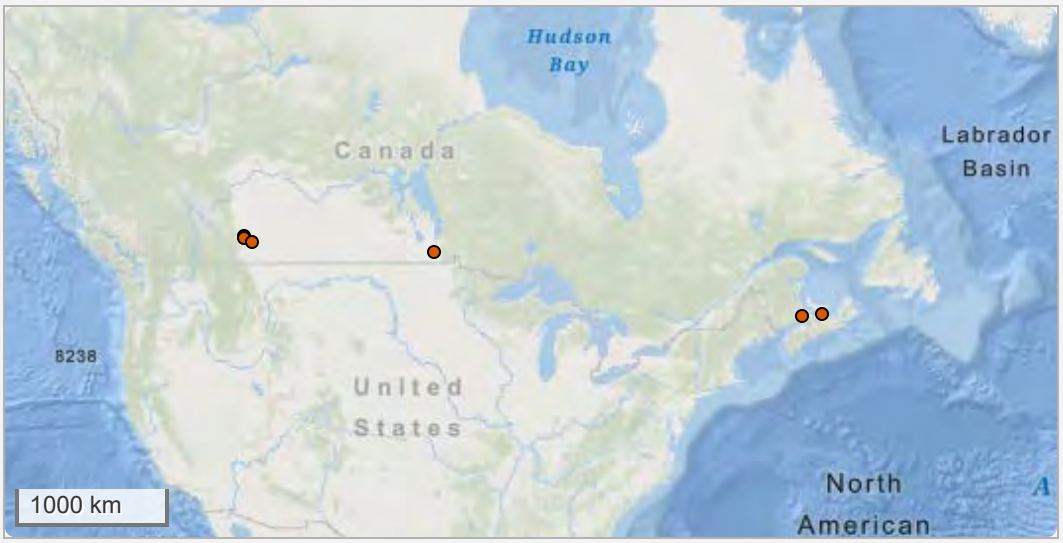
COLLABORATORS

DFO Arctic Region, Canadian Food Inspection Agency, NFADL (Winnipeg, MB), University of Manitoba (Winnipeg, MB), Gwich'in Renewable Resources Board, Fisheries Joint Management Committee, Paulatuk and Ulukhaktok Char Working Groups, Paulatuk and Ulukhaktok Hunters & Trappers Committees, West Side Working Group, Rat River Working Group, Edhiitat Renewable Resources Council, Aklavik Hunters & Trappers Committee, Tetlit Renewable Resources Council, Char monitors, Arctic salmon

FOR MORE INFORMATION

Genomic adaptation and resilience to climate change (GenARCC) project

Validating tests to detect a fish virus of concern



UNIQUE ID
OP_ESDGAFHS_131

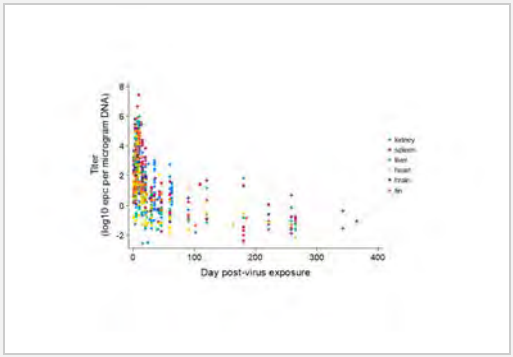
CATEGORY
Population and ecosystem assessments

DATES
January 1 to December 31

START YEAR
2025

RECURRENCE
Annually

Fish swimming in a research holding tank
© Phil Byrne



Viral load by tissue over time after exposure
© Sharon Clouthier

LOCATIONS
Alberta (High River, Okotoks, Vulcan); Winnipeg, MB; Charlottetown, PE; Moncton, NB

EMAIL
sharon.clouthier@dfo-mpo.gc.ca

DESCRIPTION

The National Aquatic Animal Health Program needs reliable tests to detect important fish viruses. This study evaluates three laboratory tests designed to detect a specific group of viruses of concern to fish health. Test accuracy and precision will be measured using tissue samples from infected Striped Bass and Nile Tilapia. Results will help identify which tests should be used in future disease diagnosis and virus monitoring activities.

OBJECTIVES

1. Conduct a precision study to compare diagnostic test results within and across three laboratories.
2. Conduct an accuracy study to determine the probability that a diagnostic test will produce the correct results.

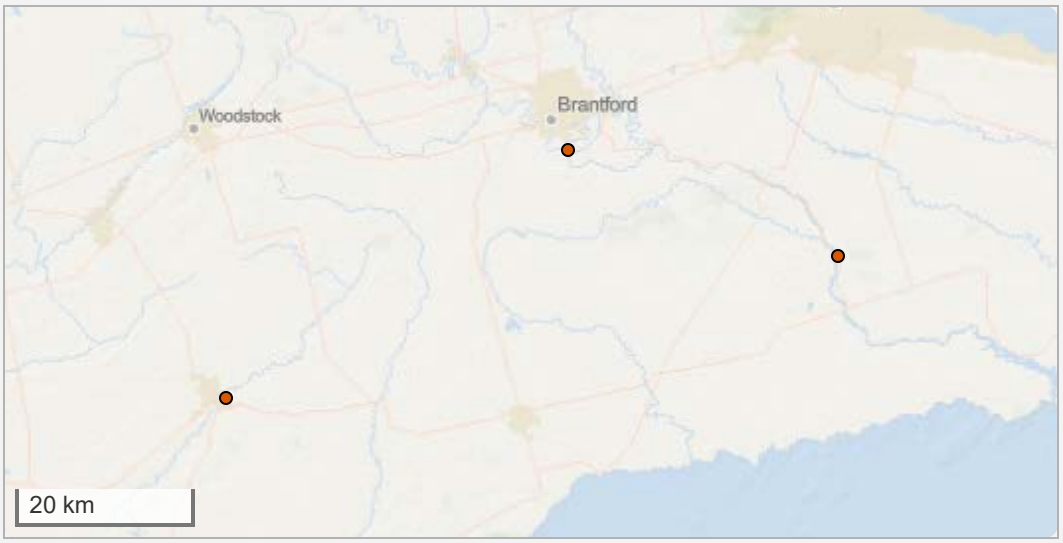
COLLABORATORS

AquaEpi Research, DFO - Gulf Region

FOR MORE INFORMATION

Development and analytical validation of a pan-specific MP1 qPCR assay

Experimental Translocation of Eastern Sand Darter
Big Otter Creek



UNIQUE ID
OP_GLLFASCB_95

CATEGORY
Population and ecosystem assessments

DATES
April 25 - September 30, 2025

START YEAR
2024

RECURRENCE
Annually

LOCATIONS
Field sampling occurred near Brantford and York on the Grand River, and near Tillsonburg on Big Otter Creek.

EMAIL
Andrew.Drake@dfo-mpo.gc.ca

Streamside gear for Eastern Sand Darter transfer
© Fisheries and Oceans Canada

E. Sand Darter before Big Otter transfer
© Fisheries and Oceans Canada

DESCRIPTION

This project involves conducting an experimental reintroduction of Eastern Sand Darter, a Threatened species under Canada's Species at Risk Act. The reintroduction was informed by past field and modelling research that assessed the ecological benefits, risks, and feasibility of implementing the reintroduction. The wild transfer of 500 adult fish was successfully performed in 2025, with monitoring of translocated fish demonstrating survival in the recipient ecosystem.

OBJECTIVES

1. Determine the probability of survival, reproduction, and recruitment of Eastern Sand Darter in BOC following translocation

COLLABORATORS

Long Point Region Conservation Authority, Ontario Ministry of Natural Resources

Environmental DNA (eDNA) Sampling in Thames River Watershed

Southwestern, Ontario

UNIQUE ID
OP_GLLFASCB_112

CATEGORY
Population and ecosystem assessments

DATES
July 2 to November 27, 2025

START YEAR
2025

RECURRENCE
Intermittent

LOCATIONS
Thames River - Medway Creek

EMAIL
Todd.Morris@dfo-mpo.gc.ca

Collecting a water sample in Medway Creek
© Fisheries and Oceans Canada

Kidneyshell, Ptychobranchus fasciolaris
© Fisheries and Oceans Canada

DESCRIPTION

Southwestern Ontario is the Canadian hot spot for freshwater mussels of the Unionidae Family. One of Ontario's 15 at-risk mussels is the Endangered Kidneyshell. It was last seen alive in Medway Creek in 2008, and since then, only shells have been collected. Water samples were collected 3 times in 2025 and tested for Kidneyshell environmental DNA (eDNA). Collections occurred before, during, and after removal of a captive-cultured Kidneyshell cage experiment. The purpose is to determine if Medway Creek is the appropriate candidate for Canada's first freshwater mussel reintroduction.

OBJECTIVES

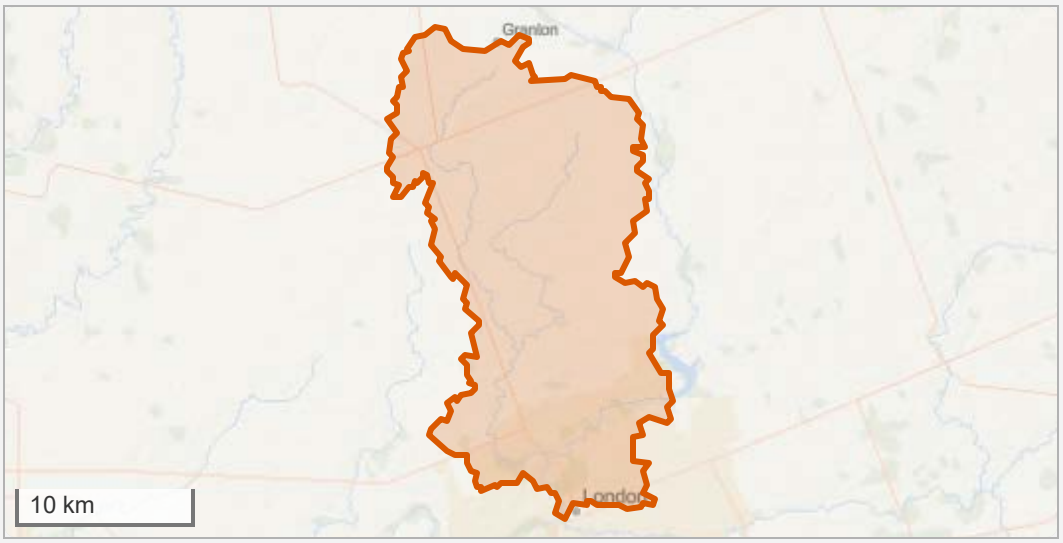
1. Collect water samples to test for Kidneyshell eDNA before, during, and after cage trial experiments in Medway Creek.

COLLABORATORS

Ministry of Natural Resources, University of Windsor - Healthy Headwaters Lab, Upper Thames River Conservation Authority

Feasibility of Kidneyshell Relocation in Thames River, ON

Southwestern, Ontario.



UNIQUE ID
OP_GLLFASCB_113

CATEGORY
Population and ecosystem assessments

DATES
June 10 to July 30, 2024, June 1 to November 27, 2025

START YEAR
2024

RECURRENCE
Unknown

LOCATIONS
Thames River - Medway Creek

EMAIL
Todd.Morris@dfo-mpo.gc.ca

Kidneyshell
© Fisheries and Oceans Canada

Staff conducting freshwater mussel surveys
© Fisheries and Oceans Canada

DESCRIPTION

Southwestern Ontario is the Canadian hot spot for freshwater mussels of the Unionidae Family. One of Ontario's 15 at-risk mussels is the Endangered Kidneyshell. It was last seen alive in Medway Creek in 2008, and since then, only shells have been found. Traditional mussel surveys, fish community assessments, and cage experiments were completed to determine if Medway Creek is the appropriate candidate for Canada's first freshwater mussel reintroduction. Re-establishing Kidneyshell in historically occupied habitats is one of the long-term recovery goals for the species.

OBJECTIVES

1. Collect mussel assemblage information throughout the Medway Creek watershed
2. Collect fish community information throughout the Medway Creek watershed
3. Conduct cage experiments in Medway Creek, using captive-cultured Kidneyshell

COLLABORATORS

Ministry of Natural Resources, University of Windsor – Healthy Headwaters Lab, Upper Thames River Conservation Authority

Protocol for Deepwater Mussel Relocations
Canada-wide

Freshwater mussels
© Fisheries and Oceans Canada

Different species of freshwater mussels
© Fisheries and Oceans Canada

UNIQUE ID
OP_GLLFASCB_114

CATEGORY
Population and ecosystem assessments

DATES
No field season associated with project

START YEAR
2024

RECURRENCE
Intermittent

LOCATIONS
Applicable to deep-water environments

EMAIL
Kelly.McNichols-ORourke@dfo-mpo.gc.ca

DESCRIPTION

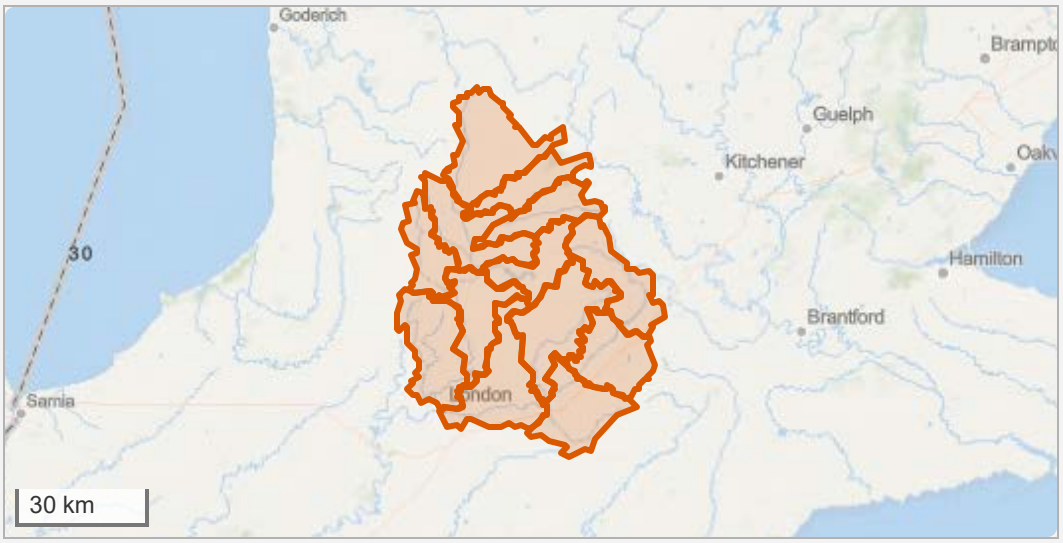
Native freshwater mussels in Canadian waters play important ecological and engineering roles in aquatic ecosystems. They are also considered globally imperiled and must be included in mitigation measures when projects require in-water works. In 2008, Mackie et al. (2008) provided survey protocols and guidance for determining the presence and relocation of mussel species at risk (SAR) in Ontario. This report is an addendum to Mackie et al. (2008) that includes detailed methods to consider when freshwater mussel relocations are required in areas that are deep and turbid.

OBJECTIVES

1. Provide guidance on the methods used for deep water mussel relocations

Freshwater Mussel Monitoring in the Thames River Watershed

Southwestern, Ontario



UNIQUE ID
OP_GLLFASCB_115

CATEGORY
Population and ecosystem assessments

DATES
July 2 to August 27, 2025

START YEAR
2025

RECURRENCE
Intermittent

LOCATIONS
upper Thames River watershed

EMAIL
Todd.Morris@dfo-mpo.gc.ca

Freshwater mussel sampling
© Fisheries and Oceans Canada

Mussels found in within a 1 square metre area
© Fisheries and Oceans Canada

DESCRIPTION

Southwestern Ontario is the Canadian hot spot for freshwater mussels of the Unionidae Family. As such the Unionid Monitoring and Biodiversity Observation network (UMBO) has been tracking mussel populations across 54 sites in seven watersheds in southwestern, Ontario since 1999. The 2025 monitoring represent the 2nd monitoring event for four sites on the Upper Thames River watershed. This long-term monitoring dataset is essential to understanding freshwater mussel populations and will be used to protect and conserve mussel species at risk.

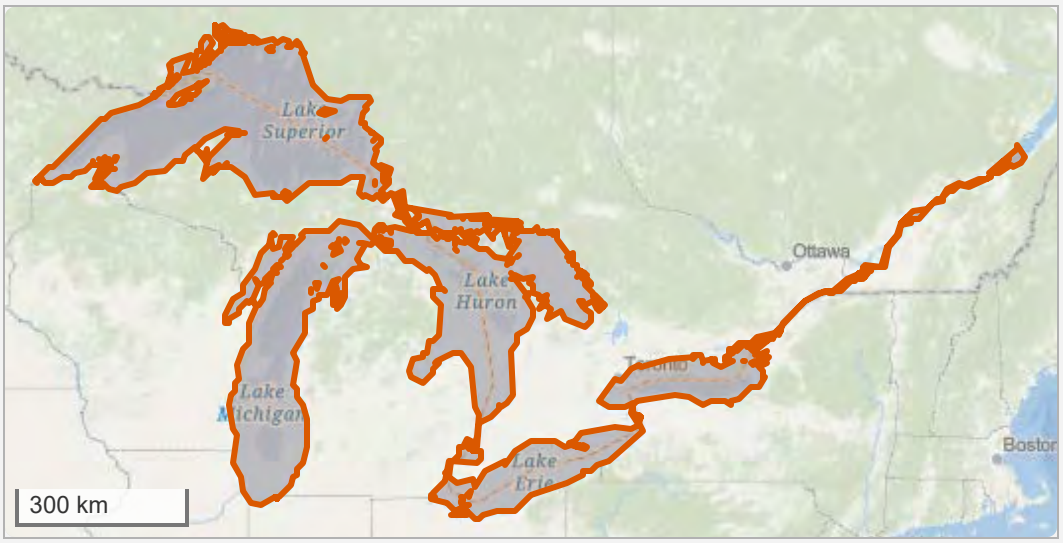
OBJECTIVES

1. Collect mussel assemblage information throughout four sites in the upper Thames River watershed
2. Calculate mussel densities for each species and at the site level
3. Track mussel density changes through time
4. Collect fish community information throughout four sites in the upper Thames River watershed

COLLABORATORS

Upper Thames River Conservation Authority

Nearshore vegetation and shoreline fish habitat surveys
Great lakes



UNIQUE ID
OP_GLLFASFE_21

CATEGORY
Population and ecosystem assessments

DATES
June to August

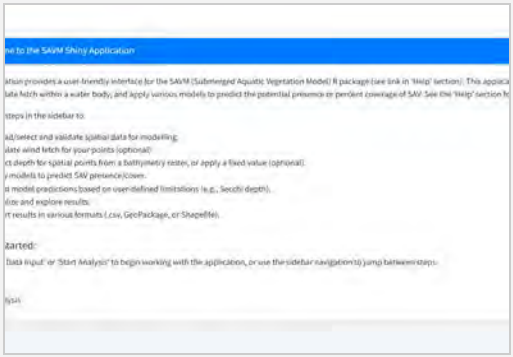
START YEAR
2024

RECURRENCE
One-time

LOCATIONS
Great Lakes

EMAIL
Jesse.GardnerCosta@dfo-mpo.gc.ca

Vegetation survey crew
© Mel Croft-White



Submerged Aquatic Vegetation Model online webtool
© Jesse Gardner Costa

DESCRIPTION

The integrated marine response planning (IMRP) program needs to characterize fish habitat through shoreline and submerged aquatic vegetation (SAV) surveys to aid in spill response.

This project's objective is to collect nearshore habitat information with aerial drones and collect SAV information to enhance a model that can be applied to the entire Great Lakes. This project was intended to serve as the scientific background to support the development of a tool to provide users with estimates of potential SAV presence and % cover.

OBJECTIVES

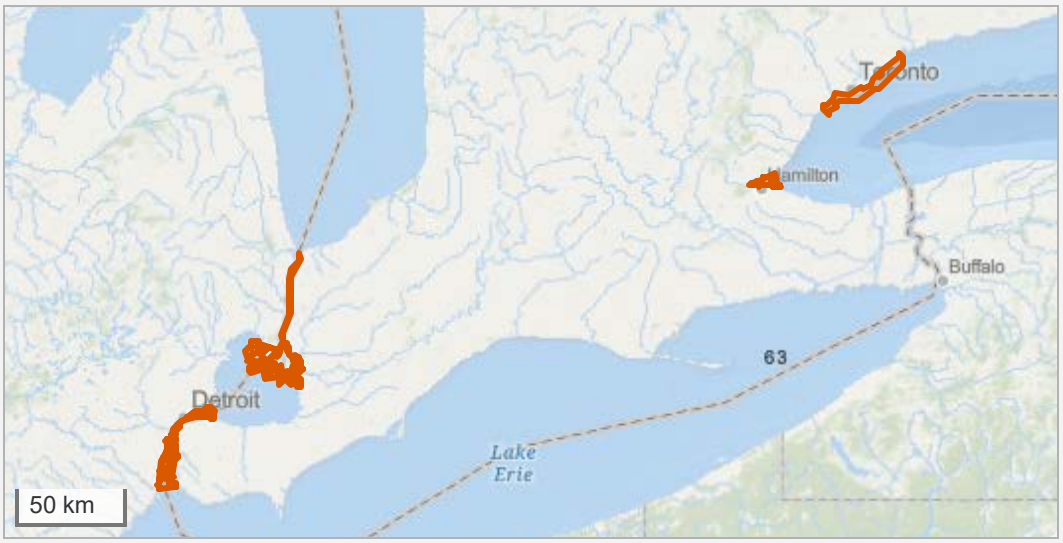
1. Collect vegetation data for model testing and validation.
2. Update shoreline maps with images collected from our drone.

COLLABORATORS

Credit Valley Conservation Authority, St. Lawrence River Institute, Toronto and Region Conservation Authority

Fish Habitat Assessments in Areas of Concern (AOCs)

5 AOCs:Toronto, Quinte, Hamilton, St Clair-Detroit



UNIQUE ID
OP_GLLFASFE_23

CATEGORY
Population and ecosystem assessments

DATES
Year-round spatial modelling; field work April–November as needed

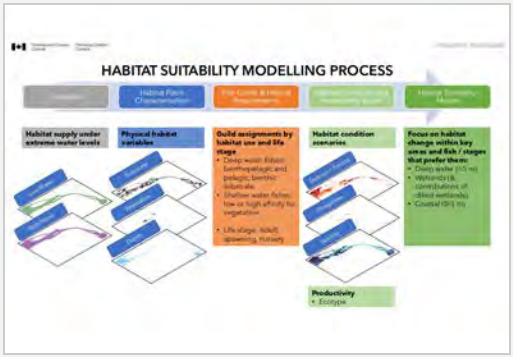
START YEAR
2010

RECURRENCE
Annually

LOCATIONS
Detroit River, Hamilton Harbour, St Clair River, and Toronto Region

EMAIL
Susan.Doka@dfo-mpo.gc.ca

DFO Trawling in Toronto Harbour Nearshore Surveys
© S. Doka, GLLFAS, DFO



Fish Habitat Modelling for Landscape Assessments
© DFO

DESCRIPTION

Project and landscape assessments of fish and fish habitat for delisting Areas of Concern that are impaired:
1) St Clair River – sediment remediation, restoration, Walpole Island engagement, federal/municipal habitat planning, and delisting status
2) Detroit River – restoration advice, habitat planning, delisting status
3) Toronto Region – restoration tools, Aquatic Habitat Toronto habitat planning, delisting status
4) Hamilton Harbour – restoration project advice, habitat planning, delisting criteria development, and status determination
5) Bay of Quinte – all above completed

OBJECTIVES

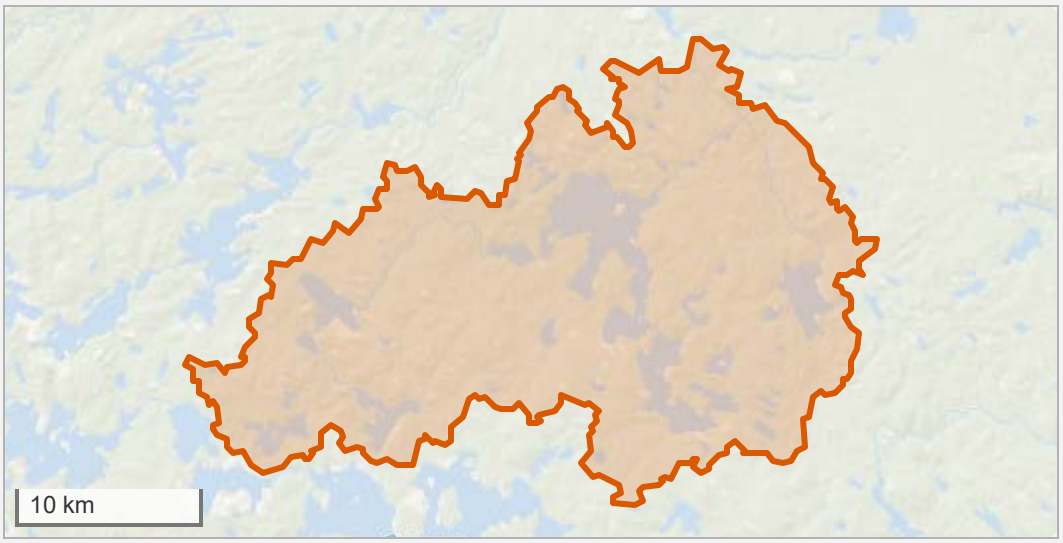
1. To map habitat variables of importance to fish and fish habitat assessments
2. To develop models to predict habitat variables of importance, spatially and temporally
3. To track habitat variables of importance with loggers, field surveys, and remote sensing information
4. To evaluate habitat changes using a spatial assessment of fish habitat status to inform delisting of AOCs
5. To inform on best options for improvement of fish habitat in select AOCs given multiple stressors

COLLABORATORS

Environment and Climate Change Canada, Ontario Ministry of Natural Resources, Ontario Ministry of Environment, Conservation and Parks, Ontario Ministry of Agriculture, Food and Agribusiness, Lower Trent, Quinte, Cataraqui Region, Toronto and Region, Halton, Hamilton, Essex Region, St. Clair region Conservations, City of Toronto - Water, Aquatic Habitat Toronto, Walpole Island First Nation, St. Clair - Detroit River System Initiative, Aamjiwnaang First Nation

Fish habitat use and movement in the Crow River Watershed

Algonquin Park



UNIQUE ID
OP_GLLFASFE_59

CATEGORY
Population and ecosystem assessments

DATES
April - November

START YEAR
2021

RECURRENCE
Annually

LOCATIONS
Crow River Watershed, Algonquin Park

EMAIL
Cindy.Chu@dfo-mpo.gc.ca

School of Brook Trout
© Darren Smith

Field site in the Crow River Watershed
© Cindy Chu

DESCRIPTION

Fisheries and Oceans Canada is responsible for fish and fish habitat management in Canada. Understanding how fishes use habitats and move throughout watersheds is necessary to determine how human activities such as natural resource development, may disrupt those processes. The Crow River watershed in Algonquin Park was selected for this study because it is minimally impacted by human activities, which makes it easier to understand movement and habitat use under naturally varying environmental conditions.

OBJECTIVES

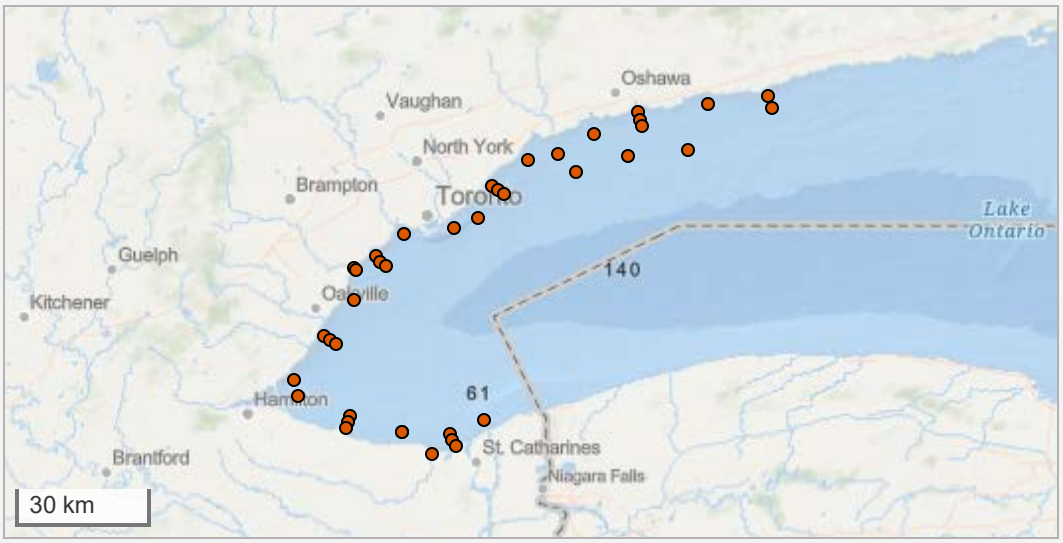
1. Watershed-scale ecological monitoring.
2. Understand seasonal and inter-annual fish movement and habitat use in response to environmental variation.

COLLABORATORS

Ontario Ministry of Natural Resources, Ontario Ministry of Environment Conservation and Parks, University of Waterloo

Western Lake Ontario Acoustic Telemetry

Western Lake Ontario



UNIQUE ID
OP_GLLFASFE_71

CATEGORY
Population and ecosystem assessments

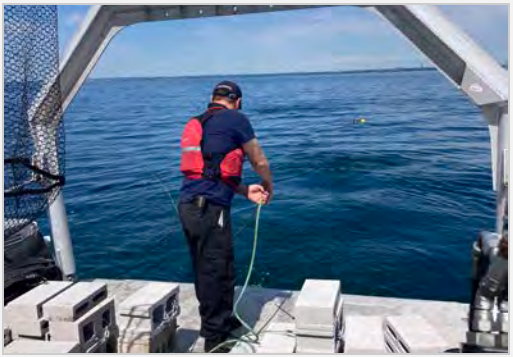
DATES
1 June - 31 August 2026

START YEAR
2018

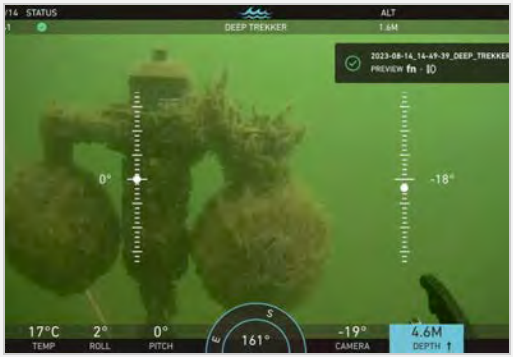
RECURRENCE
Annually

LOCATIONS
Lake Ontario

EMAIL
Jon.Midwood@dfo-mpo.gc.ca



Receiver being deployed off the R.V. Cisco
© Dave Reddick



Receiver deployed underwater
© Sarah Larocque

DESCRIPTION

Acoustic telemetry data support fish habitat management by examining species–habitat associations, delineating aquatic protected areas, quantifying how environmental factors drive fish movements and mortality, developing active and passive controls for aquatic invasive species, and defining discrete stocks for better management. In Lake Ontario, DFO works with collaborative groups to maintain a receiver array and tag fishes to track movement, habitat selection, and habitat condition. The current focus is servicing receivers in the west and north-central lake.

OBJECTIVES

1. Maintain portions of the acoustic telemetry array in Lake Ontario.

COLLABORATORS

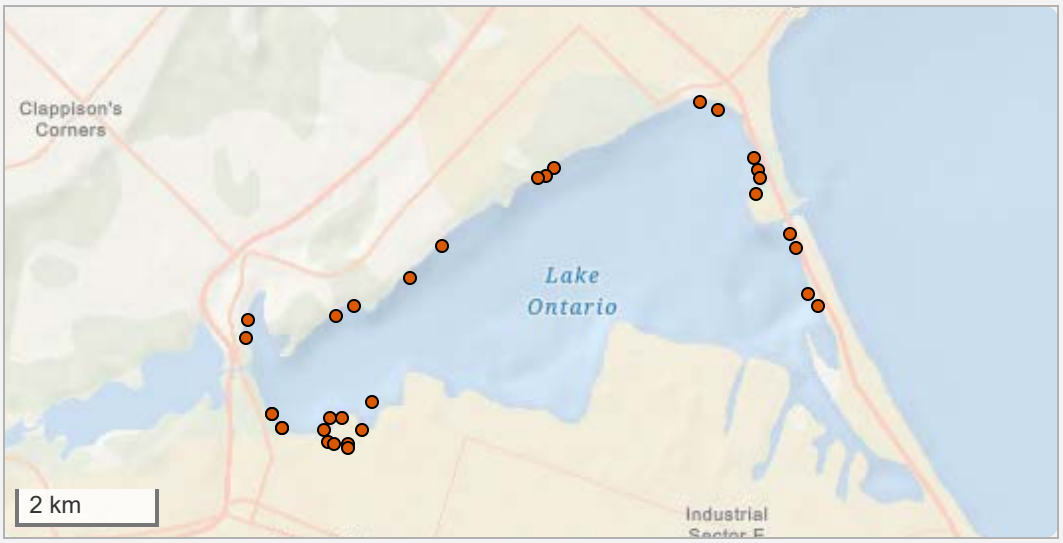
Great Lakes Acoustic Telemetry Observation System (GLATOS)

FOR MORE INFORMATION

Great Lakes Acoustic Telemetry Observation System

Hamilton and Toronto AOC Fish Populations

Nearshore areas of Lake Ontario



UNIQUE ID
OP_GLLFASFE_74

CATEGORY
Population and ecosystem assessments

DATES
1 May - 31 October

START YEAR
1988

RECURRENCE
Intermittent

LOCATIONS
Nearshore areas of Lake Ontario with particular focus on Hamilton Harbour.

EMAIL
Jon.Midwood@dfo-mpo.gc.ca

Walleye caught in Hamilton Harbour
© Jon Midwood

Night electrofishing in the Bay of Quinte
© Jon Midwood

DESCRIPTION

The Fish Ecology Science Lab is tasked with supporting the assessment and recovery of fish populations in the Hamilton Harbour (HH) and Toronto and Region (TR) Areas of Concern. This project covers field work related to the assessment of fish populations with surveys conducted at locations within Lake Ontario that can serve as regional reference locations. Surveys involve boat electrofishing as well as detailed evaluations of the physical habitat and temperature profiles.

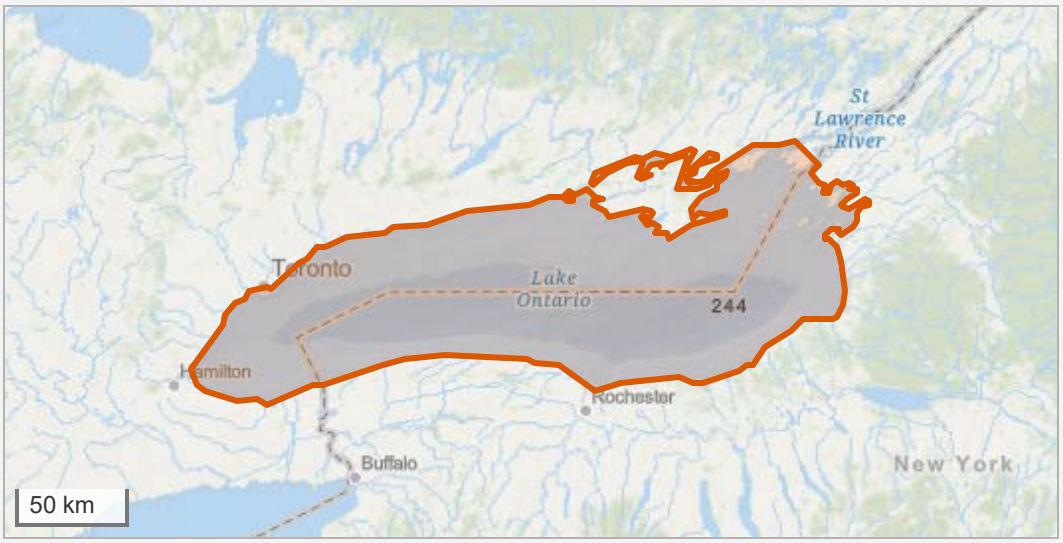
OBJECTIVES

1. Sampling fish communities in nearshore areas to inform assessment of status and recovery of fish populations.

COLLABORATORS

Ontario Ministry of Natural Resources, Royal Botanical Gardens

Understanding key fish spatial use
Lake Ontario of the Great Lakes



UNIQUE ID
OP_GLLFASFE_90

CATEGORY
Population and ecosystem assessments

DATES
April to October

START YEAR
2025

RECURRENCE
Unknown

LOCATIONS
Lake Ontario

EMAIL
Sarah.Larocque@dfo-mpo.gc.ca

Angling for alewife in western Lake Ontario
© Sarah Larocque

Alewife in the Aquatic Life Research Facility
© Sarah Larocque

DESCRIPTION

The Integrated Marine Response Planning (IMRP) program in Ontario and Prairie Region needs to understand when and where key fish species (ecologically and economically important species) tend to inhabit throughout the year in various parts of the Great Lakes. This is critical for providing accurate and informative advice in a spill response and aid in mitigating impacts to important fish stocks.

This project aims to determine key fish spatial use using acoustic telemetry and other tools (e.g., available monitoring data, loggers) throughout the Great Lakes region – starting in Lake Ontario.

OBJECTIVES

1. Determine spatial ecology of important fish species in the Great Lakes
2. 2025 Objective - Determine spatial ecology of alewife - a key forage fish in the Great Lakes

COLLABORATORS

Ontario MNR, University of Windsor, USGS