

Canada's Oceans Protection Plan Pan-Atlantic Report



Fisheries and Oceans
Canada
Canadian
Coast Guard

Pêches et Océans
Canada
Garde côtière
canadienne

Canada

This Report was prepared for the Fisheries and Oceans Canada/Canadian Coast Guard (DFO/CCG) Oceans Protection Plan (OPP) Atlantic Ocean Results Committee.

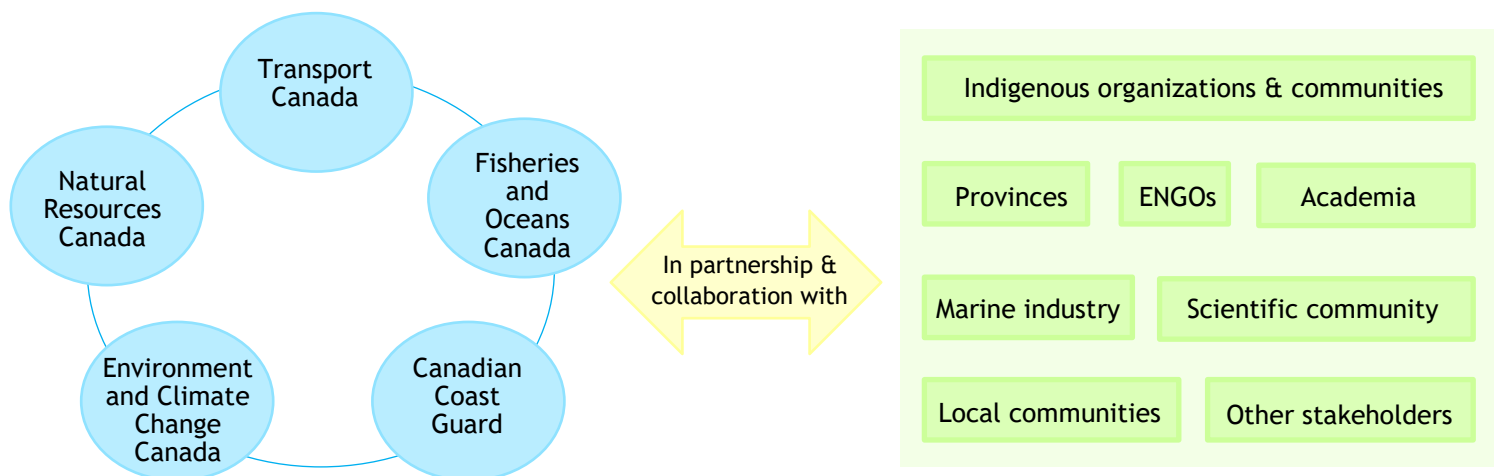
It was produced by the DFO Maritimes Region OPP Atlantic Hub in collaboration with regional OPP Coordinators and OPP project managers for the DFO/CCG sub-initiatives across Atlantic Canada and Quebec. It was designed by DFO Maritimes Region Communications.

© Her Majesty the Queen in Right of Canada, 2020. Cat. No.: Fs23-633/2020E-PDF ISBN: 978-0-660-36680-7

Canada's Oceans Protection Plan Pan-Atlantic Report

The Government of Canada launched the \$1.5 billion Oceans Protection Plan (OPP) in 2016. The Plan represents the largest investment the federal government has ever made to protect our coasts and waterways. The OPP is a national, whole-of-government plan to protect our oceans and coastlines from the potential impacts of marine shipping, and to ensure the health of our oceans. It further improves marine safety and responsible shipping, protects Canada's marine environment, and offers new possibilities for Indigenous and coastal communities. Ultimately, the OPP will help to keep Canadian waters and coasts safe and clean, for today's use and for future generations.

The OPP involves five federal departments, with Transport Canada (TC) as the designated lead department. Partnership and collaboration are the foundation of the Government of Canada's actions to protect our oceans. The OPP places a strong emphasis on collaboration with the Provinces, Indigenous organizations, marine industries, environmental organizations, coastal communities, and the public.



This Report provides an update on the status of the implementation of the OPP sub-initiatives across Atlantic Canada, including Quebec, up to March 31, 2020. It includes updates from the Canadian Coast Guard (CCG) Atlantic Region and CCG Central Region (with respect to regional activities in Quebec), as well as Fisheries and Oceans Canada (DFO) Maritimes Region, Gulf Region, Newfoundland and Labrador Region, and Quebec Region. The status of OPP sub-initiatives is continually evolving as the projects are being implemented.

Current as of March 31, 2020

Table of Contents

Page	Oceans Protection Plan Objectives and Sub-Initiatives
5	Overview of OPP Implementation, Fisheries and Oceans Canada
6	Overview of OPP Implementation, Canadian Coast Guard
Creating a State-of-the-Art Marine Safety System to Better Prevent and Respond to Spills from Vessels	
9	Operational Network (OpNet)
9	Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL)
10	Strengthen the National Marine Communications Traffic Services (MCTS) Radar Network
11	Risk Analysis of Maritime Search and Rescue Delivery (RAMSARD)
12	MCTS Staffing Factor
13	24/7 Regional Operations Centre (ROC) and National Command Centre (NCC)
14	Maritime Rescue Sub-Centre (MRSC)
15	CCG Environmental Response Equipment Modernization and Mobile Incident Command Equipment
16	CCG Environmental Response Training and Exercising Program / Leverage CCG Auxiliary for Environmental Response
17	Environmental Response Student Recruitment Program
17	New Search and Rescue Lifeboat Stations / New In-Shore Rescue Boats
18	Emergency Towing Needs Analysis / Installation and Operationalization of Tow Capacity
19	Regional Response Planning
22	Modern Hydrography and Charting in Key Areas
Making Decisions Based on Scientific Evidence - Strengthening Our Understanding of How Oil Products Behave in Water	
28	Improving Drift Prediction and Near-Shore Modelling
32	Expand Research on Fate, Behaviour and Biological Impact of Petroleum Products
33	Multi-Partner Research Initiative (DFO National Headquarters)
Preserving and Restoring Marine Ecosystems that are Vulnerable to Marine Activities	
35	Coastal Restoration Fund
40	Coastal Environmental Baseline Program
44	New Legislation / Consultations and Engagement / Risk-Based Strategy to Address Vessels of Concern
45	Small Craft Harbours' Abandoned and Wrecked Vessels Removal Program
47	Establish Marine Environmental Quality Regulatory and Non-Regulatory Measures
52	Reducing the Threat of Vessel Traffic on Marine Mammals Through Detection and Avoidance
53	Marine Mammal Response and Marine Protected Area Surveillance and Enforcement Program
Facilitating Indigenous Partnerships in the Marine Safety System	
59	Indigenous Relations and Partnerships
63	Indigenous Community Boats North and South of 60 (Incident Management) / Expansion of Arctic Auxiliaries

Overview of OPP Implementation

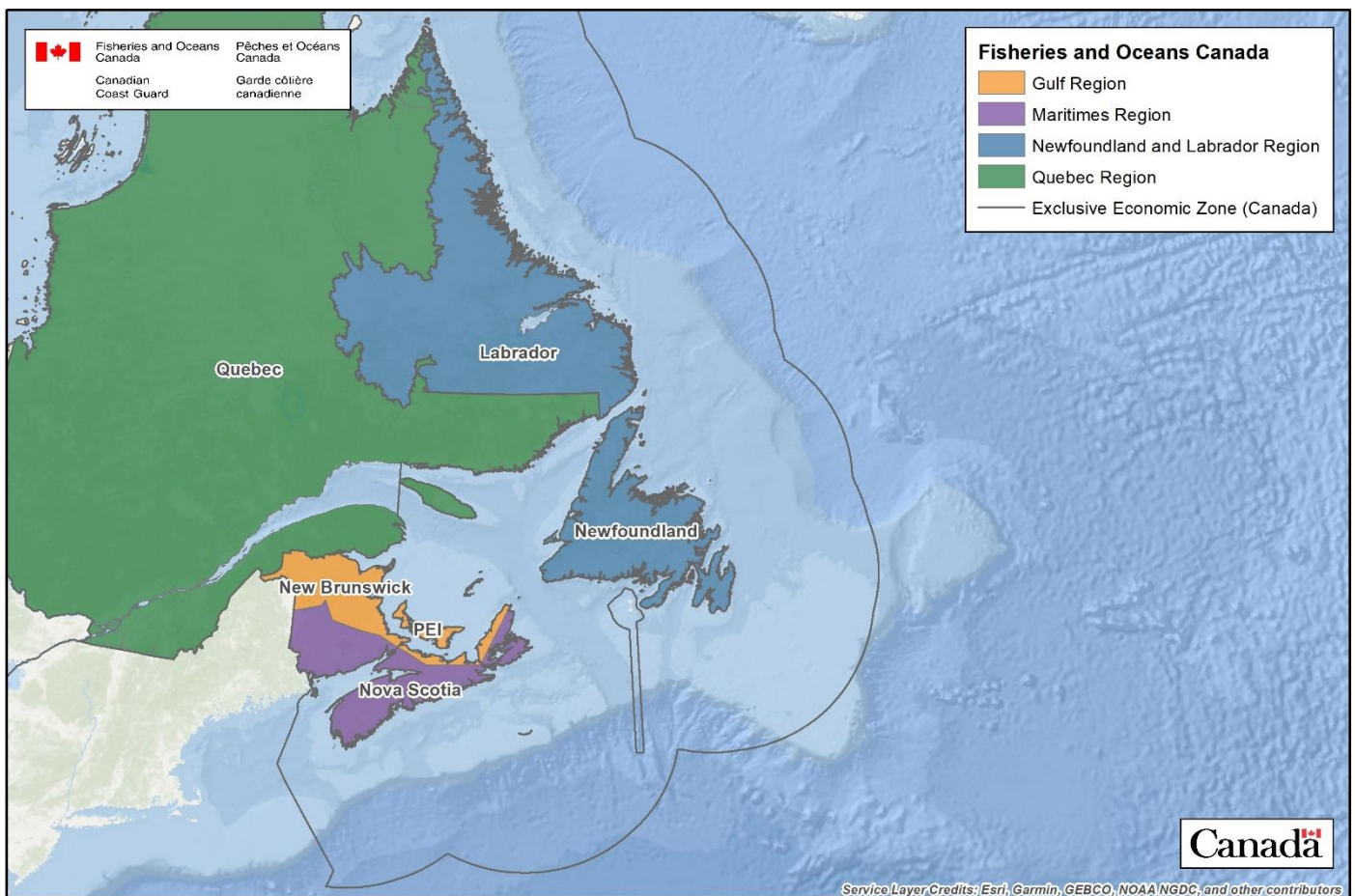
Fisheries and Oceans Canada

Canada has an abundance of freshwater and marine and coastal areas that are ecologically diverse and economically significant.

DFO has the mandated responsibilities of:

- Sustainably managing fisheries and aquaculture;
- Working with fishers, coastal and Indigenous communities to enable their continued prosperity from fish and seafood; and
- Ensuring that Canada's oceans and other aquatic ecosystems are protected from negative impacts.

Four DFO Regions in the Atlantic cover the provinces of Nova Scotia (NS), New Brunswick (NB), Prince Edward Island (PEI), Newfoundland and Labrador (NL), and Quebec (QC).



Together, these DFO Regions support the implementation of ten OPP sub-initiatives in the Atlantic.

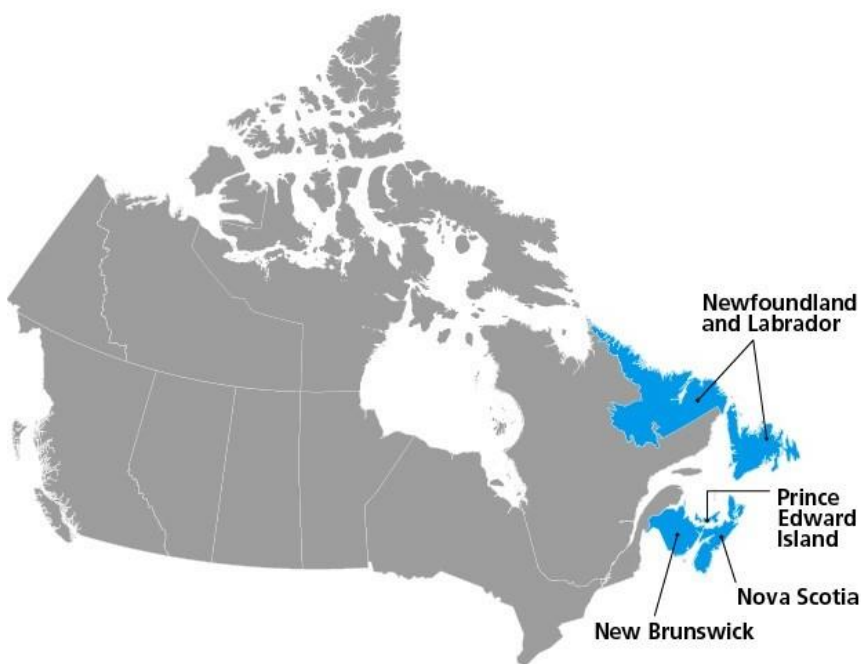
Overview of OPP Implementation

Canadian Coast Guard

Marine shipping has always been a part of Atlantic Canada's identity, which explains the region's strong history of, and commitment to, marine transportation safety.

The CCG has the mandated responsibilities of:

- Supporting the safety, security, and accessibility of Canada's waterways; and
- Ensuring effective response to all ship source and unknown pollution spills in Canadian waters.



CCG Atlantic Region includes Nova Scotia (NS), New Brunswick (NB), Prince Edward Island (PEI), and Newfoundland and Labrador (NL).

On June 1, 2020, Coast Guard Central and Arctic Region was renamed Central Region, and is comprised of most of Ontario (ON) and Quebec (QC). The exact boundaries of the Region are still being determined. Programs in the Arctic are now delivered by the Arctic Region, or through service delivery agreements with the other Regions.

Overview of OPP Implementation Canadian Coast Guard

Under the OPP, CCG Atlantic plays a role in 30 national projects with 15 Regional Project Managers. CCG Central Region manages approximately 26 projects under the OPP, and its recent deliverables in Quebec are the focus of this update.

In addition to the activities highlighted in this Report, CCG Atlantic supports other OPP sub-initiatives led nationally, by other CCG Regions (including CCG Central), or by TC, including:

- Increased Presence and Extended Season in the Arctic.
- Northern Marine Transportation Corridors and Governance for the Arctic Shipping Regime.
- Making Funds Easily Accessible for Response and Clean-Up.
- Establishing a National Framework to Respond to Hazardous and Noxious Substances.
- Strengthen CCG Authorities for Environmental Response (Marine Casualty Management).
- Engagement, Policy and Coordination for Seamless Response.
- Primary Environmental Response Teams (PERTs).
- Cumulative Effects of Marine Shipping.
- Improve Owner Identification and Create Vessel Remediation Funds.
- New Legislation (Amendments).
- Building Meaningful Partnerships with Indigenous Groups in Marine Safety.
- Alternative Response Measures (ARMs).
- Enhanced Maritime Situational Awareness (EMSA).

**Creating a State-of-the-Art
Marine Safety System to
Better Prevent and Respond
to Spills from Vessels**

Operational Network (OpNet)

Objective: To strengthen CCG Marine Communications Traffic Services (MCTS) Centres by modernizing its aging operational network infrastructure and implementing an MCTS business continuity plan in the event of a major failure of a Centre. Investments in modernizing lines and redundant connections will provide a back-up to the existing network and will allow MCTS to continue communicating with mariners when primary lines go down. The OpNet initiative will be comprised of three main activities: (1) the installation of new lines, (2) the installation of redundant connections, and (3) the development of MCTS Centre network plans.

CCG Atlantic Region

- Completed fibre installation at 27 sites in the Maritimes and 36 sites in Newfoundland and Labrador under Phase I of the project.
- Completed planning/engineering for cellular diversity at the new Army Hill Radar Site in Port Aux Basques, NL.
- Completed procurement for upcoming modernization to fibre for remote sites in Ramea, Cartwright, and Fox Harbour, NL.
- Completed replacement of operational network routers and switches at all MCTS Centres in the Atlantic Region.

Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL)

Objective: TERMPOL is a voluntary review process that focuses on the marine transportation components of a proposed marine terminal or transshipment site. It objectively reviews and provides recommendations and findings on vessel safety, route safety, and vessel cargo transfer operations. Although TERMPOL is not a mandatory requirement nor a regulatory instrument, it plays an integral part in the federal government review process of marine terminals and transshipment sites due to the technical nature of navigation and ship safety considerations for projects that may not be covered under a proponent's federal or provincial regulatory requirement.

CCG Atlantic Region

- CCG Atlantic Region contributed to TC's policy options paper on the existing TERMPOL program, its challenges, and priorities.
- The Voluntary Goldboro TERMPOL Review Process is now complete.

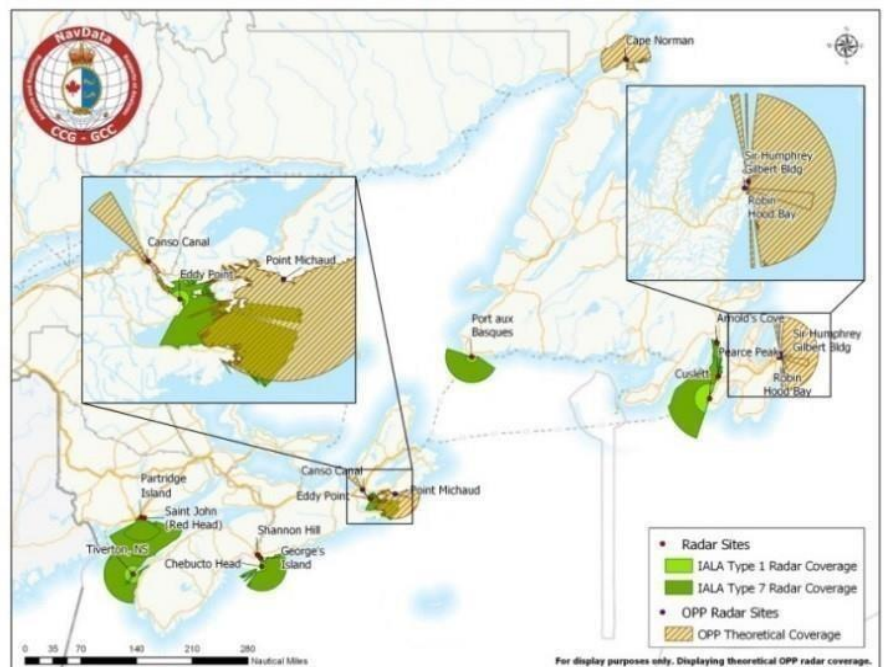
Strengthen the National Marine Communications Traffic Services (MCTS) Radar Network

Objectives: To ensure the reliability and accuracy of vessel traffic monitoring, contributing to a stronger and more robust marine safety system; to enhance marine situational awareness for CCG and other federal partners such as the Department of National Defence and Port Authorities; to address immediate gaps in radar coverage on Canada's coasts in support of marine safety activities; to enhance CCG's ability to identify vessels and to improve the common operating picture in the area; and to provide a back-up solution for MCTS Centres in the event of the loss of digital signals from vessels navigating in Canadian waters.

CCG Atlantic Region

- The scope for the Atlantic Region includes the Strait of Canso and the Strait of Belle Isle. The Strait of Canso employs a dual radar system consisting of one station at Canso Canal and the other in the Point Michaud area. The Cape Norman lighthouse area provides coverage through the Strait of Belle Isle. The St. John's radar will be a dual radar system with one low-power radar at the Sir Humphrey Gilbert Building in downtown St. John's, and a high-power radar at Robin Hood Bay.
- Completed the tower design, fabrication, and installation on-site at Robin Hood Bay. The location has been finalized in St. John's, and CCG is currently working on a design and lease agreement.
- Completed the engineering design for the tower at Canso Canal.
- Completed the design and fabrication for the tower at Cape Norman.
- Progressing the land acquisition process for Point Michaud.
- Awarded the radar contract to Felix Technology Inc. based in Concord, ON.
- Completed the microwave system design for the operational network link between L'Anse Aux Meadows and Cape Norman.

Existing coverage and new OPP Radar Sites in the Atlantic Region: Canso Canal, Point Michaud, Cape Norman, St. John's Harbour (Sir Humphrey Gilbert Building), and Robin Hood Bay



Risk Analysis of Maritime Search and Rescue Delivery (RAMSARD)

Objective: CCG has implemented the RAMSARD methodology nationally to assist in proactively identifying search and rescue (SAR) areas with new or emerging marine risks, and ultimately to ensure a more systematic approach to evaluating maritime SAR delivery in Canada. This review process is intended to be the SAR program planning tool and, once fully implemented, will result in improvements to SAR planning, decision-making, and ultimately marine safety. This will allow CCG to better understand marine risks, implement mitigation measures within its control, and recommend measures to other agencies responsible for carriage requirements and prevention activities.

CCG Atlantic Region

- Conducted risk-based analysis of maritime SAR delivery, including an environmental scan, review of maritime SAR incident data, and numerous face-to-face engagement sessions in the Bay of Fundy and Southwest Nova Scotia.
- Prepared two draft reports including recommendations to improve the delivery of maritime SAR in these areas.
- Held 64 face-to-face community engagement sessions with federal SAR partners, Indigenous communities, and community-level stakeholders to discuss maritime activities, marine risk, and existing SAR capacity in these areas.
- In 2020-21, RAMSARD reviews are scheduled to be conducted on the East and South Coasts of NL.

CCG Central Region

- Over the past year, the RAMSARD team has been testing the methodology in the Ontario areas of North Channel (St. Marys River) and Georgian Bay.
- For the year 2020-21, CCG plans to examine SAR Areas 107 (Lake Erie, ON) and 140 (from Cornwall, ON to Grondines, QC).

Marine Communications Traffic Services (MCTS) Staffing Factor

Objective: To meet its level of services, the MCTS program requires trained and certified officers. Under the OPP, CCG will update the staffing factor (i.e., the number of full-time equivalents required to staff a single position in a 24/7/365 operation) for the MCTS. The original factor of 5.5 was established in the early 1990s. It will be increased to six through the recruitment and training of officers.

CCG Atlantic Region

- Developed and implemented a targeted recruitment strategy. All MCTS OPP positions have been staffed indeterminately. MCTS has adjusted its Human Resources planning to meet the revised staffing factor on an ongoing basis.

CCG Central Region

- Developed an MCTS-targeted recruitment strategy to attract candidates from coastal communities, including Quebec's North Shore. This includes aptitude testing sessions open to the public and conducted in remote areas, as well as a new media strategy. As a result, the staffing factor is expected to be met in Fall 2020.

24/7 Regional Operations Centre (ROC) and National Command Centre (NCC)

Objective: To re-establish two 24/7 ROC operated by CCG personnel. The first is a Maritime Rescue Sub-Centre (MRSC) dedicated exclusively to coordinating the maritime SAR response to incidents occurring in the Newfoundland SAR Sub-Region, in support of Joint Rescue Coordination Centre Halifax. Embedding this capacity within the 24/7 Atlantic Regional Operations Centre in St. John's will improve CCG's ability to support provincial and municipal partners when they require a marine response capability. The second is the CCG Central ROC in Montreal, QC.

CCG Atlantic Region

- Filled all positions for 24/7/365 operations.
- Developed and implemented a training curriculum for ROC officers.
- Currently progressing the Concept of Operations and developing a 24/7 posture.

CCG Central Region

- The ROC in Montreal commenced 24/7 operations on April 1, 2019, and its facilities were refitted to accommodate the increase in staff numbers. One year later, on April 1, 2020, Full Operating Capability was achieved.
- CCG Central began the establishment of the ROC Bug-out site on December 19, 2019. A Bug-out site is an alternate site in which a ROC can be immediately set up in the event that the current Centre is shut down due to an emergency.
- The estimated completion date of long-term renovations to the CCG Central ROC is September 9, 2020.



Maritime Rescue Sub-Centre (MRSC)

Objective: Through amendments to the *Canada Shipping Act, 2001*, to strengthen CCG's authority as the federal lead when responding to major marine spills and provide directive powers for earlier intervention.

CCG Atlantic Region

- The MRSC reopened four months ahead of schedule and before the deadline announced in the Department's Mandate Letter.
- The one year anniversary of the MRSC reopening was on April 30, 2019.
- Successfully completed the move to the new CCG Atlantic Region Headquarters building in St. John's, NL.
- Successfully trained a total of 11 SAR Coordinators.
- The fully operational MRSC St. John's continues to coordinate the response to Maritime SAR incidents in the waters around Newfoundland and Labrador.

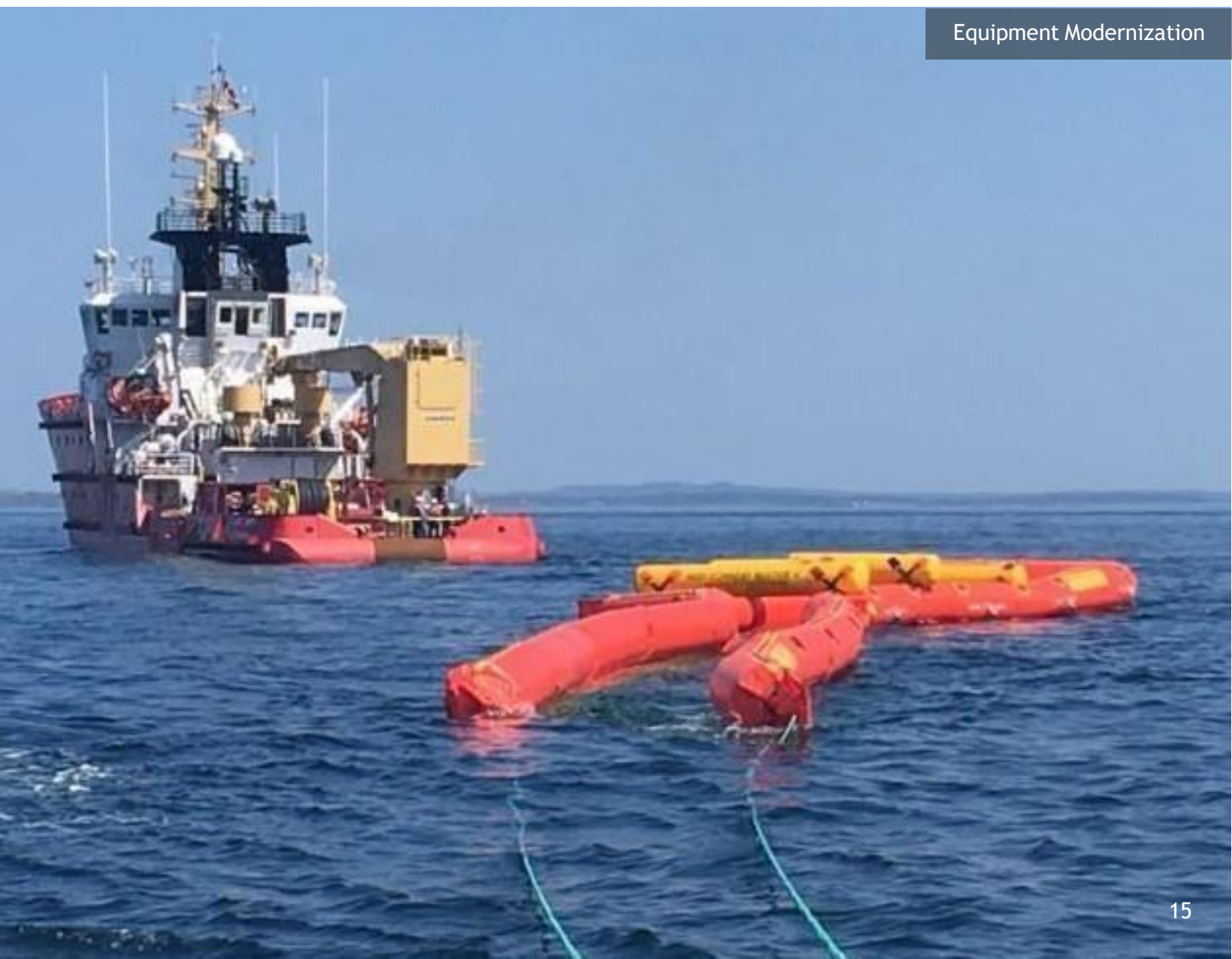


CCG Environmental Response Equipment Modernization and Mobile Incident Command Equipment

Objective: To modernize CCG Environmental Response assets. This re-investment will provide CCG with an operational response capacity that is consistent for all CCG regions relative to current industry standards. It supports and ensures CCG's mandated response capacity is maintained through effective lifecycle management of the equipment and supporting infrastructure.

CCG Atlantic Region

- Various equipment assets commissioned and received in the Region.
- Multiple contracts have been awarded and new Requests For Proposals posted.



Equipment Modernization

CCG Environmental Response Training and Exercising Program / Leverage CCG Auxiliary for Environmental Response

Objectives: To allow the CCG to strengthen its capacity to design and deliver standardized training for CCG personnel. Environmental Response exercises will be designed, planned, and executed, with a specific focus on ship-source spills. The immediate focus is on CCG participants with future exercises planned for industry and stakeholder participation. The CCG is also expanding the role of the CCG Auxiliary to include Environmental Response training, with a key target of at least 20% of CCG Auxiliary members completing the Basic Oil Spill Response course by 2022.

CCG Atlantic Region

- A total of 42 exercises were completed in 2019-20, including a large-scale exercise (CANUSLANT), a medium-scale exercise in Passamaquoddy Bay, and six small-scale exercises. There were also multiple Oil Handling Facilities and Response Organizations exercises conducted in the Region.
- The Region offered 21 training courses, with 176 participants.
- Continuation of the design, planning, and execution of standardized training and Environmental Response exercises in 2020-21.
- Seven courses were offered to the Canadian Coast Guard Auxiliary, with 88 members trained.

CCG Central Region

- CCG's Environmental Response program shares its extensive experience and expertise with fleet personnel by delivering the Essentials of Marine Oil Spills Training (EMOST) each summer at the CCG Base in Quebec City, QC.
- EMOST training provides comprehensive and accurate content to fleet personnel and increases their knowledge of oil behaviour and response techniques. It also allows them to exercise their skills in the deployment of specialized response equipment.
- The Environmental Response team is also working with fleet personnel to test specialized Environmental Response equipment onboard vessels. Last February, the kit for recovering high-viscosity oil from ice was tested under real-world conditions.



Environmental Response Student Recruitment Program

Objective: As a succession/retention planning strategy, CCG believes implementing a student recruitment initiative for the Environmental Response Program would meet CCG's need to fill the gap for properly trained and skilled Response Officers. Targeted areas of studies include marine pollution planning, policy development, and pollution response activities. A phased approach will enable CCG to add immediate capacity to the Environmental Response Program while enhancing a culture of employee professional development.

CCG Atlantic Region

- Successfully hired 10 students in 2019-20 across the Region.
- Work continues on a developmental program to transition students into full-time employment upon successful completion of an Environmental Response Student program.

New Search and Rescue Lifeboat Stations / New In-Shore Rescue Boats

Objective: To increase SAR capacity through construction of new, and refurbishment of existing, CCG buildings for SAR stations. Sites selected are Twillingate, Old Perlican, and St. Anthony, NL. These areas are based on identified gaps in CCG's maritime SAR capacity, as well as an anticipated increase in vessel traffic.

CCG Atlantic Region

- The Region accepted the delivery of three new Bay Class vessels: the CCGS Conception Bay in Twillingate, the CCGS Sacred Bay in Placentia Bay, and the CCGS Pennant Bay in St. Anthony.
- Old Perlican, Twillingate, and St. Anthony SAR stations are now fully operational. The official Twillingate SAR station commissioning and opening is scheduled for 2020.



Emergency Towing Needs Analysis / Installation and Operationalization of Tow Capacity

Objectives: To place emergency towing kits (ETK) on CCG vessels and establish gear caches across Canada, and to develop a long-term national strategy on emergency towing.

CCG National Headquarters

- Implemented procurement for ETK equipment.
- Currently developing training curriculum on the use of ETK.

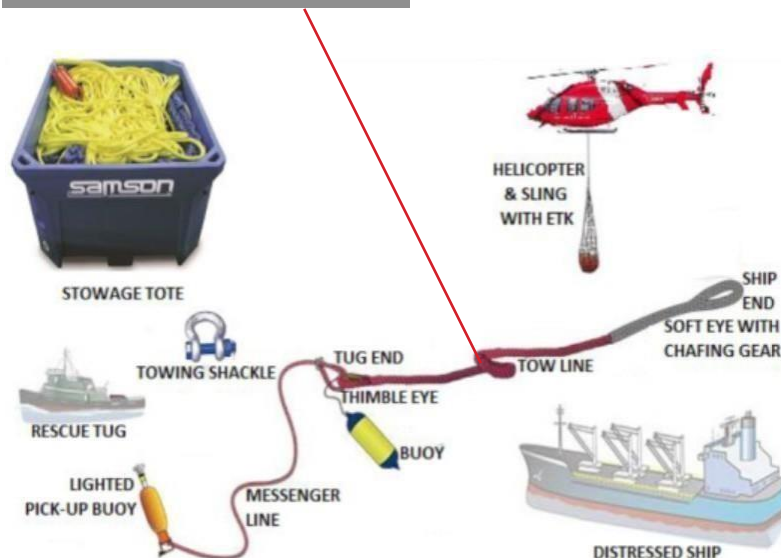
CCG Atlantic Region

- 25 emergency tow kits received; 14 deployed to vessels, nine to helicopter hangars, and two in storage for vessels not yet in service.

CCG Central Region

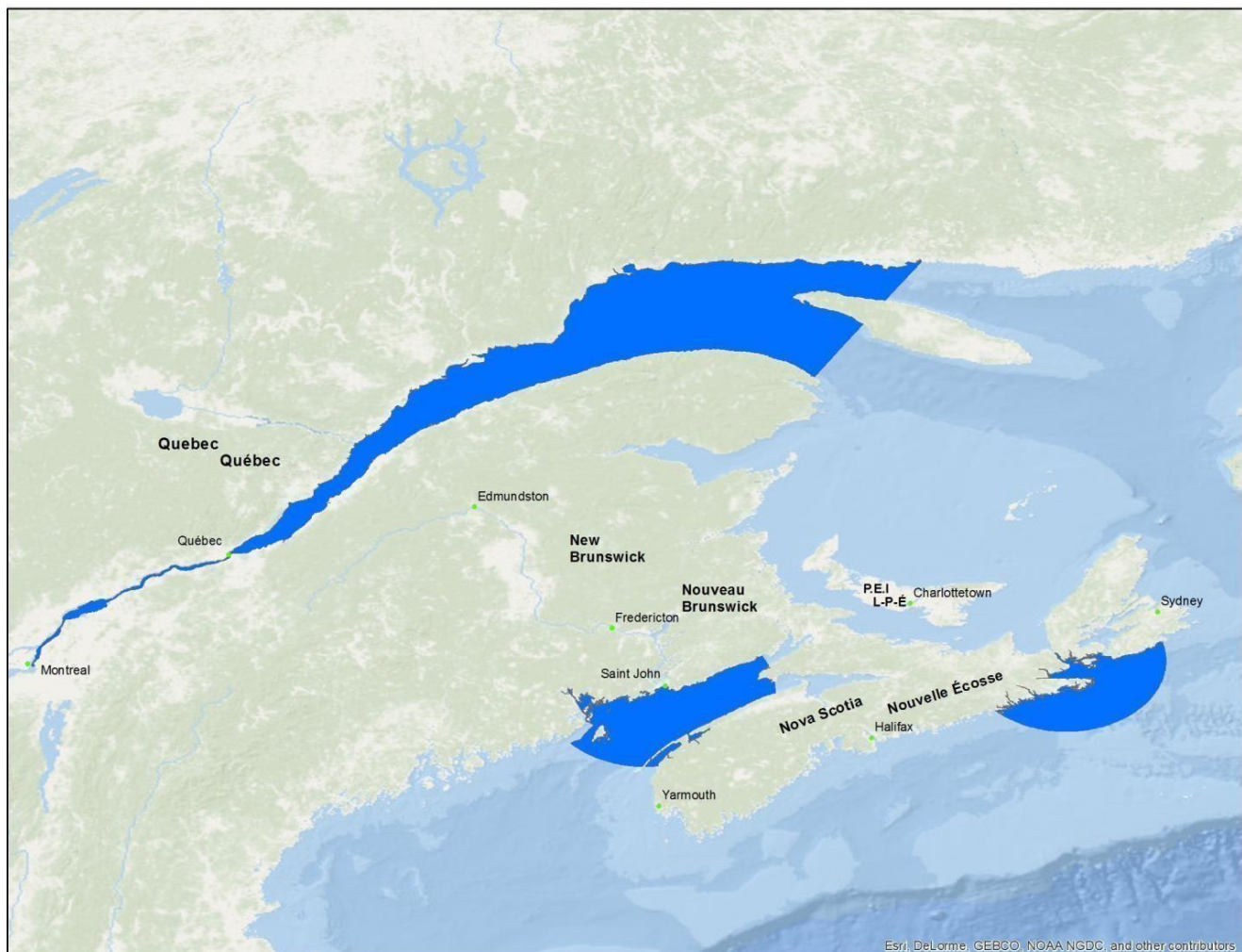
- Received 17 ETK and deployed 14 to ships (the remaining three were deployed to a shore site in Thunder Bay, ON).

Illustration of tow line asset



Regional Response Planning

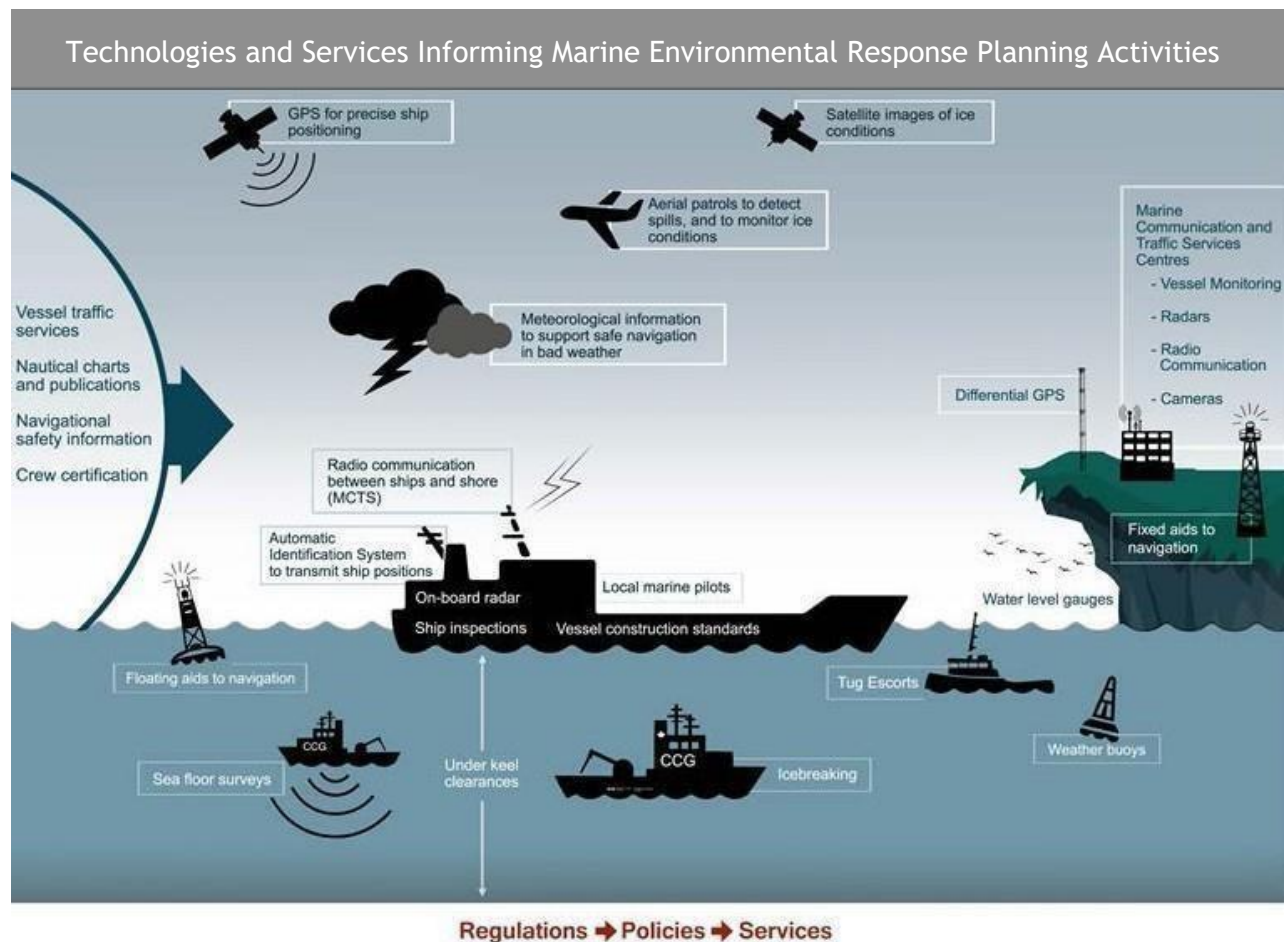
Objective: This project is led by CCG, working with TC, Environment and Climate Change Canada (ECCC), DFO Science, and DFO Aquatic Ecosystems. It will develop a Regional Response Plan for northern British Columbia using lessons learned from the pilots completed under the World Class Tanker Safety and Area Response Planning (ARP) initiatives. Response contingency planning continues across Canada while the Regional Response Plan pilot takes place in British Columbia. In eastern Canada, this sub-initiative focuses on completing three existing ARP projects in the St. Lawrence River (from Montreal to Anticosti Island), the Bay of Fundy (including the Port of Saint John), and Port Hawkesbury (including Chedabucto Bay), as indicated on the map below.



Regional Response Planning

CCG Atlantic Region

- Coastal Indigenous Knowledge, commercial fishing, and tourism data mapping, as well as research on the fate, behaviour, and biological impact of petroleum products spilled in aquatic conditions, will improve operational oil spill response and result in increased protection of the marine environment.



Quebec Region

- DFO Quebec Region is collaborating with the University of Quebec in Rimouski (UQAR) to finalize the creation of a database and to complete the mapping of coastal, intertidal, and infralittoral areas of the St. Lawrence maritime estuary to allow faster and more accurate identification of sensitive areas from an ecological point of view.
- DFO has completed a series of 28 fact sheets, in collaboration with CCG, that will serve as operational tools for planning and responding to environmental incidents.

Regional Response Planning


Maritimes Region

DFO Maritimes Region has collaborated with Indigenous partners and stakeholders to identify and map regions of high ecological sensitivity, as well as areas of cultural, social, and economic importance, to support response contingency planning for Port Hawkesbury, NS and for the Bay of Fundy, NB, including:

- **Indigenous Knowledge mapping** with the Unama'ki Institute of Natural Resources, the Confederacy of Mainland Mi'kmaq, and the Maritime Aboriginal Peoples Council.
- **Coastal fisheries mapping** with the Fundy North Fishermen's Association, the Guysborough County Inshore Fishermen's Association, and the Fishermen and Scientists Research Society.
- **Tourism data mapping** compiled from the Nova Scotia and New Brunswick Tourism Departments, Destination Cape Breton, and multiple tourism operators.
- **Oceanographic data collection** with Response Organizations including ALERT in Saint John, NB, and Point Tupper Marine Services in Port Hawkesbury, NS.

DFO Maritimes Region has also prepared three Technical Reports (covering 12 species in each project area), 24 fact sheets, and 12 species data layers (one for each species in the Technical Reports). The species data layers have been published on the Federal Geospatial Platform and provided to ECCC's National Environmental Emergencies Centre.

DFO's Centre for Offshore Oil, Gas and Energy Research (COOGER) also prepared a literature review on the *State of Knowledge on the Fate and Behaviour of Ship-Source Petroleum Product Spills*, plus four volumes focused on each of the regional pilot areas, which will be published as a DFO Technical Report.



Groundtruthing LiDAR data in Canso, NS

Modern Hydrography and Charting in Key Areas

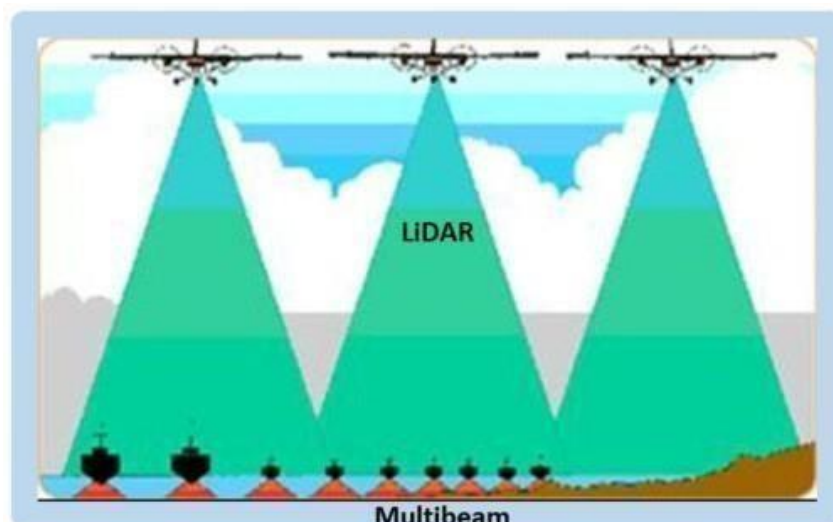
Objective: To fill gaps in hydrography and charting in areas with limited and outdated navigational information, including the Arctic, high risk coastal and near-shore areas, and 23 of Canada's highest traffic commercial ports and waterways.

Dynamic hydrographic products and services (such as surface currents and tides and water levels, from both observational and operational ocean modeling data sources, and under-keel and overhead information) will also be delivered in key areas. For more information, see the Drift Prediction and Near-shore Modeling sub-initiative, which outlines the collaborative work underway to existing electronic navigation (e-navigation) systems to provide for dynamic capacities.

Canadian Hydrographic Service, Atlantic Region and Quebec Region

DFO's Canadian Hydrographic Service (CHS), Atlantic Region, serves the areas covered by DFO Maritimes, Gulf, and Newfoundland and Labrador Regions. There are two offices located at the Bedford Institute of Oceanography, NS, and the Northwest Atlantic Fisheries Centre, NL. CHS Quebec Region is based in Mont-Joli, QC.

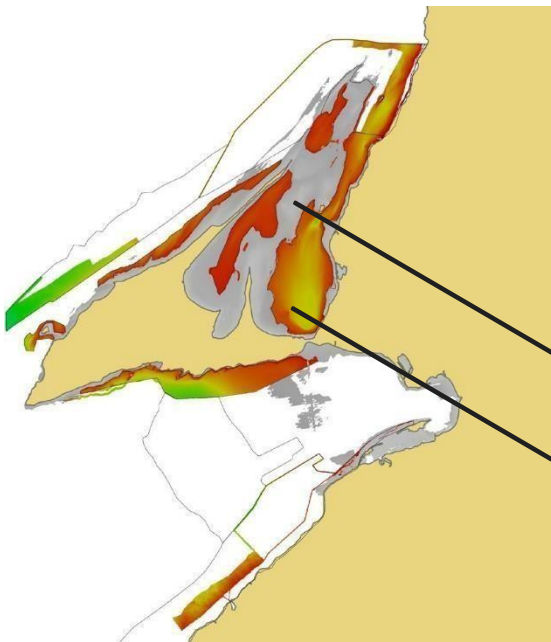
The CHS Atlantic and Quebec regional offices have completed Light Detection and Ranging (LiDAR) surveys of the Northumberland Strait, Eastern Nova Scotia, the West Coast of Newfoundland, and Quebec's Lower North Shore, as well as multi-beam surveys of the Northumberland Strait, the Cabot Strait, the Port of Saint John, the Port of Charlottetown, and a series of ports in Quebec (Port-cartier, Baie-Comeau, Sept-Îles, Havre St-Pierre, Natashquan, Tête-à-la-Baleine, and La Tabatière). High-resolution Electronic Navigation Charts (ENC) were completed for the Ports of Saint John, NB, and Charlottetown, PEI.



Modern Hydrography: Comparison of the coverage of two surveying technologies: LiDAR and multi-beam. (Graphic: InfoOceans, Vol. 16, No. 1, DFO Quebec)

Modern Hydrography and Charting in Key Areas

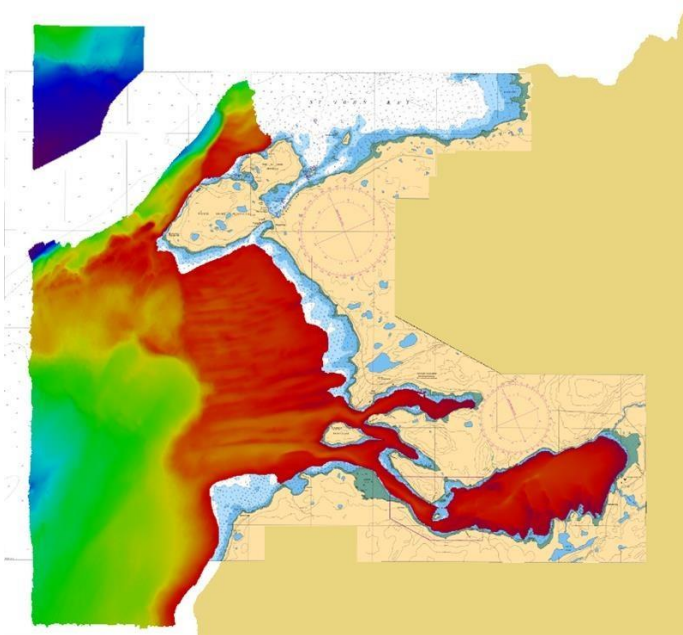
West Coast of Newfoundland



New Electronic charts providing coverage for the entire west coast

2017-2018 Airborne LiDAR coverage shown in black and white.

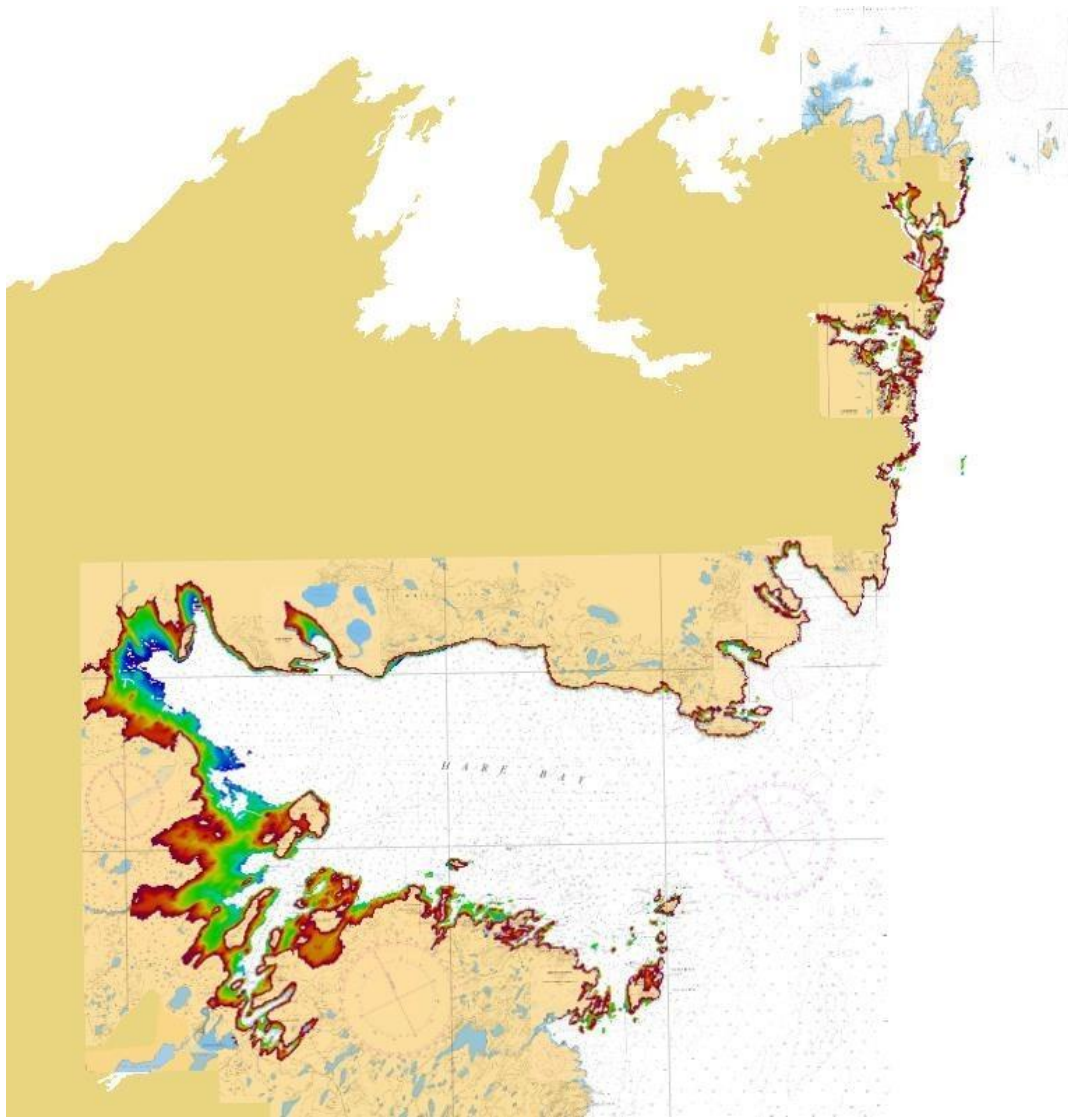
2018-2019 Multi-beam surveys are executed to fill in and expand on areas not covered by the LiDAR survey



2019 Multi-beam survey coverage

Modern Hydrography and Charting in Key Areas

East Coast of Newfoundland

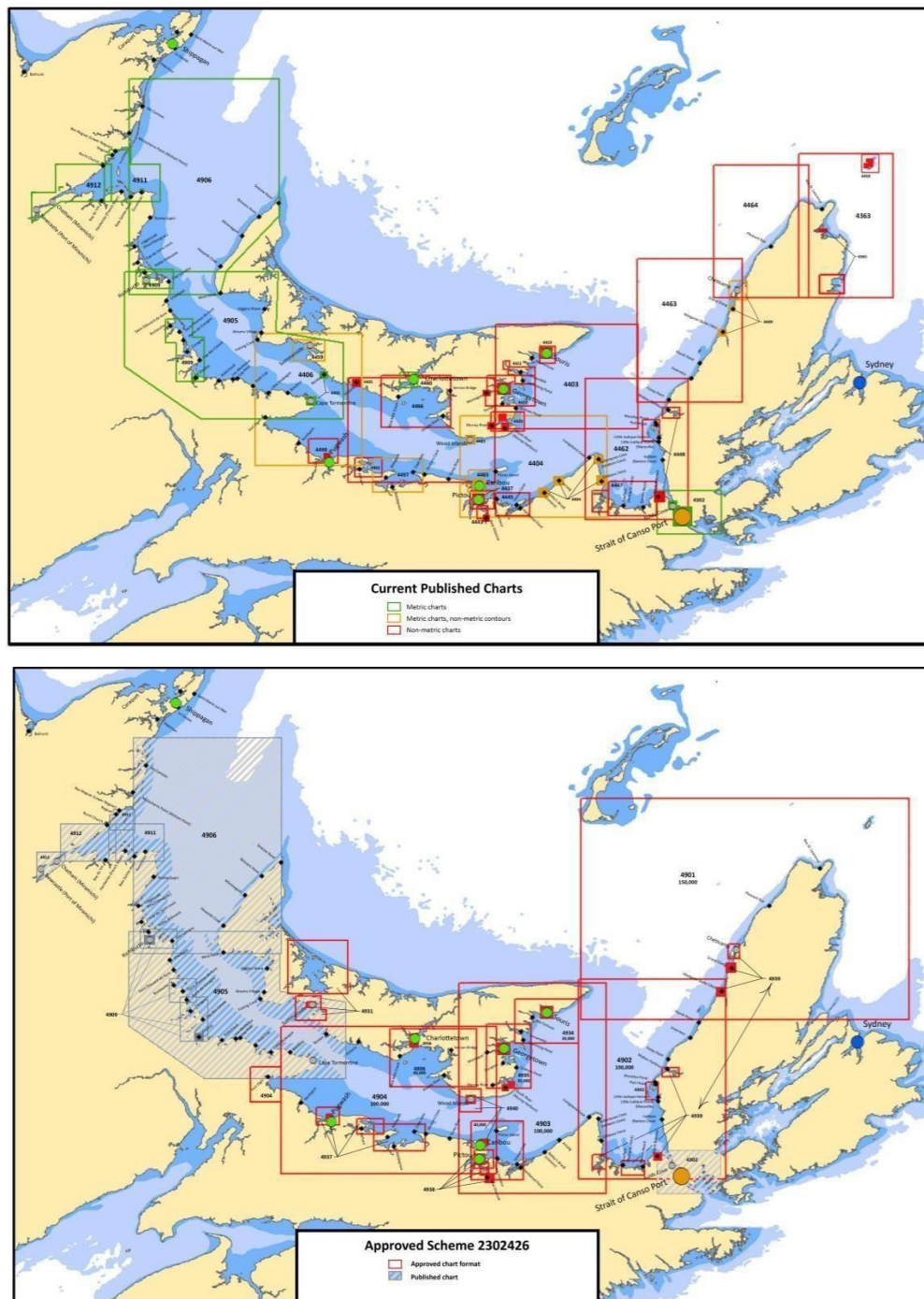


2019 LiDAR survey coverage

Modern Hydrography and Charting in Key Areas

Northumberland Strait

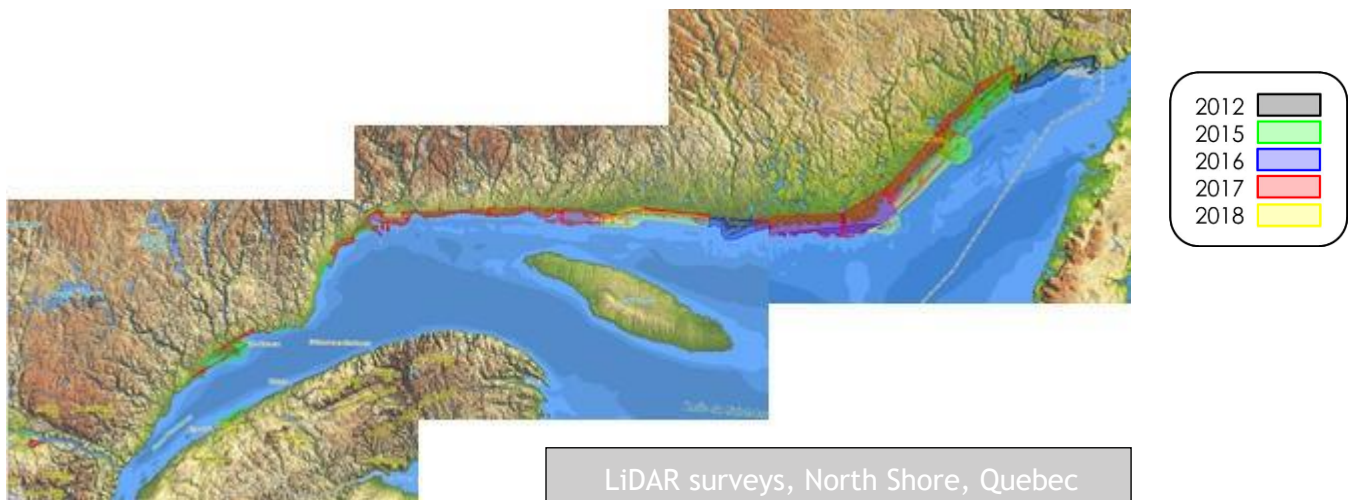
A comparison of the current published charts (top) with the approved scheme of charts for 2017-18 (bottom), which indicates the new LiDAR and multi-beam survey work underway or planned for the Northumberland Strait.



Modern Hydrography and Charting in Key Areas

Quebec

Since 2017, in addition to the seven ports in the Quebec Region for which surveys were completed and Electronic Navigation Charts were published, surveys were completed on most of the North Shore coast, Anticosti Island, Magdalen Islands, as well as part of the Lower St. Lawrence and Gaspé peninsula.



LiDAR surveys, North Shore, Quebec

**Making Decisions Based on
Scientific Evidence**

**Strengthening Our
Understanding of How Oil
Products Behave in Water**

Improve Drift Prediction and Near-Shore Modelling

Objective: To strengthen the Government of Canada's existing state-of-the-art ocean modelling system and broaden its operational client base by advancing its coastal ocean prediction systems to support 1) enhanced environmental protection and response applications (e.g. drift prediction for oil spills), and 2) improvements to safety for navigation and related marine activities through the development of new high-resolution port and waterway model system extensions, and new data delivery systems to provide operational dynamic e-navigation capability to mariners. All elements are expected to be in place by the end of the five-year initiative, and will include the attachment of enhancement capability to both existing ocean prediction systems and to the newer systems under development, including those for six high-risk ports/waterways and their approaches (three in the Atlantic Region, the Ports of Saint John and Canso, and the St. Lawrence Estuary).

National

- Through close collaboration across regions of DFO as well as with ECCC, an ocean forecasting model covering all of the coastal waters and adjacent deep ocean off the west coast of Canada has been developed and evaluated, and a similar model for the east coast is under development. These models will be used for both drift prediction and dynamic e-navigation in open waters, and for down-scaling to high-resolution near-shore port models (also under development as part of the project) to provide drift prediction and e-navigation capability at higher resolution in high-risk areas.
- A plan has been developed for collaborative work with ECCC to operationalize drift prediction models, as well as to both utilize existing larger-scale operational ocean model results, and to operationalize new high-resolution near-shore models, in order to supply dynamic e-navigation information for operational distribution to both the Canadian and international marine community.

Maritimes Region

- Continue to deploy instruments to observe the variations of ocean currents, temperature, salinity, and the drift of surface objects, for the purpose of model evaluation and improvement. Specifically, the horizontal structure of currents in the Port of Saint John, NB is observed with a new deployment method for Acoustic Doppler Current Profilers. Surface drifters have been purchased and are being deployed.
- The ocean circulation model developed for the Port of Saint John, NB is being further evaluated and analyzed, resulting in one paper published and one submitted. The Region has solved primary technical issues in applying a key software package (i.e. “maestro”) developed in ECCC for running the ocean models in an operational forecasting mode. The Region continues to refine the software package that is used for setting up and evaluating models for other ports.



Improve Drift Prediction and Near-Shore Modelling

Quebec Region

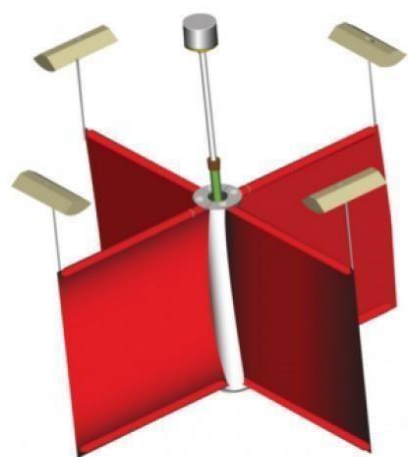
- DFO Quebec Region is working with ECCC to make the software environment developed by ECCC accessible to DFO researchers, so that they can develop the ocean models for the ports targeted in OPP for demonstration and operational purposes.
- The Region is also working to develop the ocean model for the St. Lawrence Estuary and to integrate it with other adjacent models of the St. Lawrence River and the Gulf of St. Lawrence.

Gulf Region

- Significant progress is being made on developing a coastal ocean circulation model for the Strait of Canso. This new model will also be used to support dynamic e-navigation capacity in, and around, the Port of Canso. Initial results are currently under evaluation. A scientific paper was published, describing the characteristics of internal tides in the port and vicinity based on a model developed in the initial stage of the OPP.

Newfoundland and Labrador Region

- Ocean prediction and modelling is being further advanced through the development of a drift projection tool suite for drift projection, characterization, visualization, and evaluation. This tool runs on the Government of Canada's Science Super Computer and on any Linux PC, to facilitate use by, and collaboration with, DFO's Operational Oceanography Service Desk, the ECCC aquatic emergency prediction group, as well as DFO and ECCC researchers.



Various models of drifters are deployed to represent drifting objects with different geometry, and experiencing different impacts of ocean currents and surface winds. This image is of a CODE/Davis drifter
- Credit: MetOcean Telematics



Improve Drift Prediction and Near-Shore Modelling

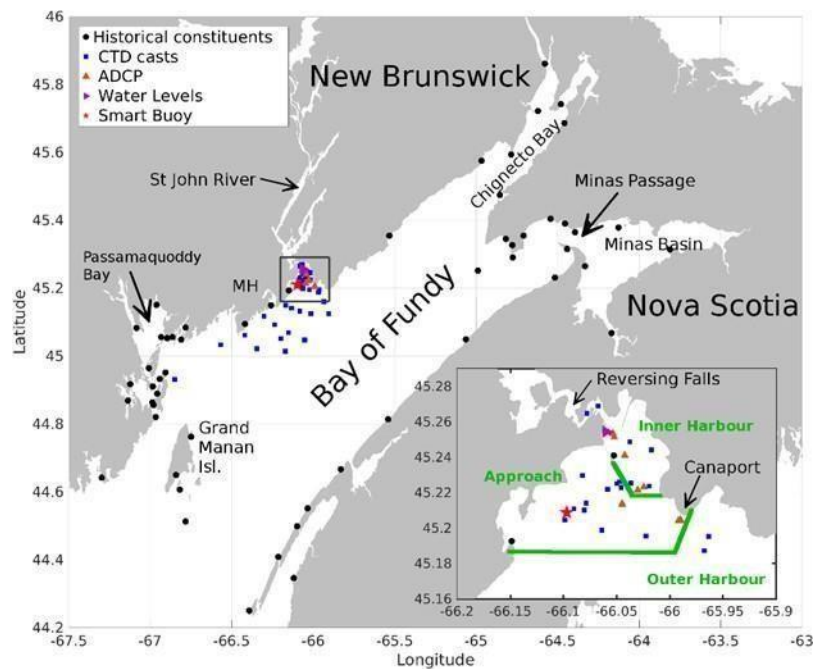


Figure 1: Location of various types of observations in the Bay of Fundy used for model evaluation. Inset shows detailed map of the Saint John Harbour, NB area

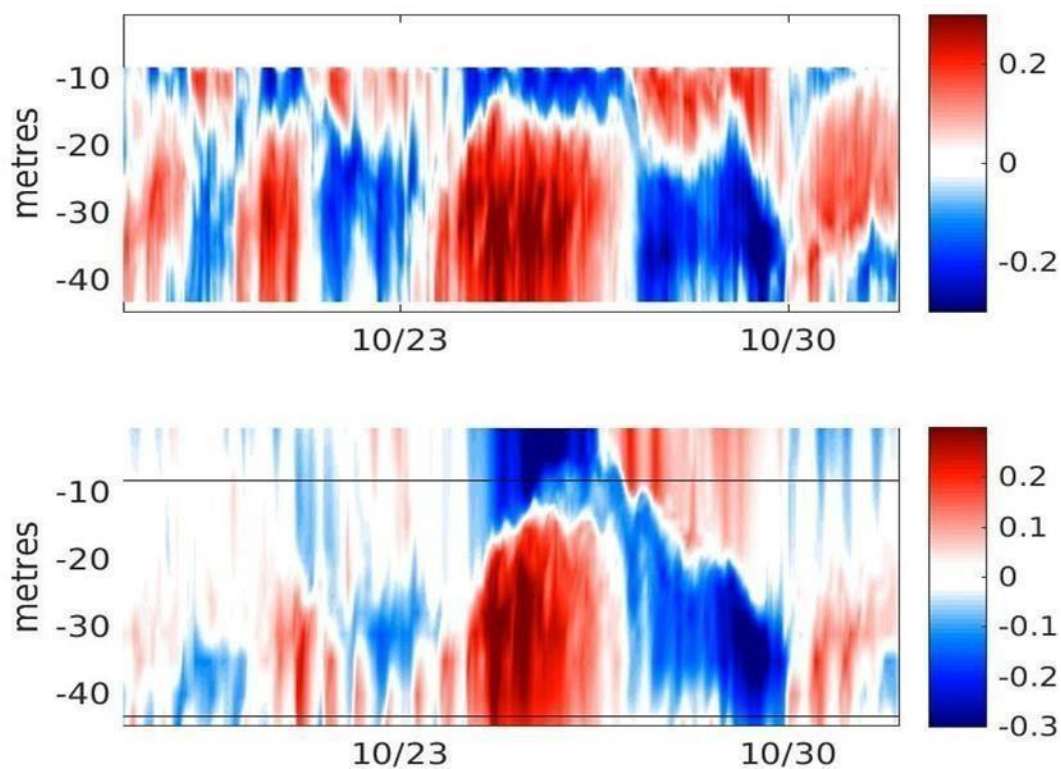


Figure 2: Depth and time variations of ocean currents (color scale in m/s) in the Port of Canso, NS from (upper) observations and (lower) model simulation

Expand Research on Fate, Behaviour and Biological Impact of Petroleum Products

Objective: To enhance preparedness and response measures by expanding our ability to predict the fate, behaviour, and biological impacts of petroleum products spilled in a range of aquatic conditions representative of Canadian environments.

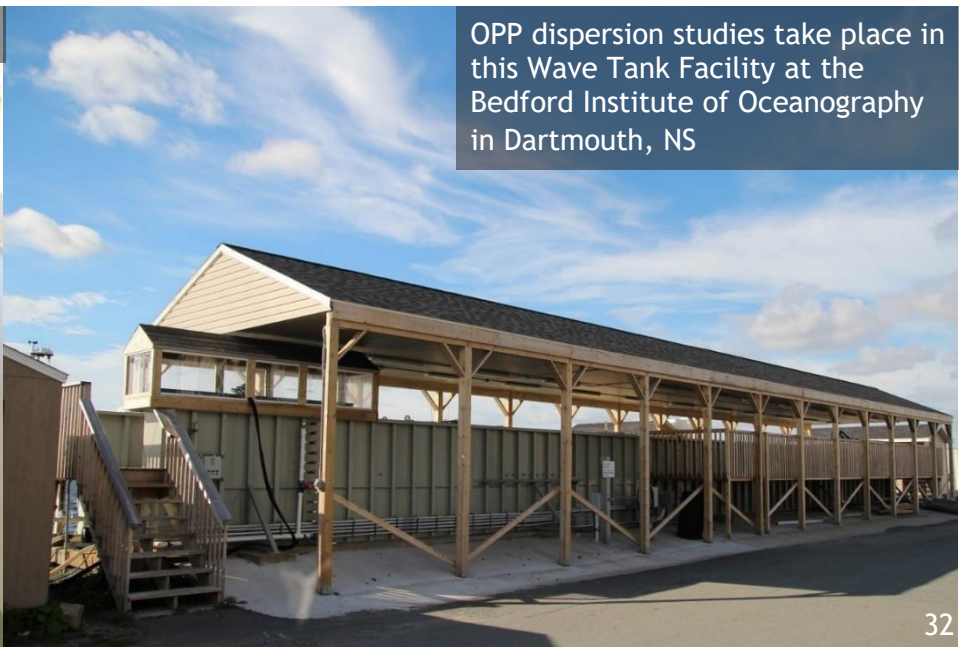
Maritimes Region

The Centre for Offshore Oil, Gas and Energy Research (COOGER), located at the Bedford Institute of Oceanography in Dartmouth, NS, conducts scientific research on the fate, behaviour, transport, and treatment of oil spills in aquatic environments. The purpose of this research is to improve scientific knowledge and understanding of risks presented by oil spills; to provide science-based evidence for use in the development and implementation of regulatory guidelines and policies for oil spill prevention, preparedness, and response; and to increase the Department's capacity to provide information and advice for response operations in the event of oil spills.

COOGER is conducting research on five petroleum products spilled in a range of conditions representative of Canadian environments. The team has completed a number of meso-scale studies to evaluate the physical, chemical, and biological processes that naturally degrade petroleum products spilled in aquatic environments. In addition, they completed a two-week mission in the Gulf of St. Lawrence in August 2019 to examine microbial response to oil spilled along a salinity gradient.

Preliminary research findings are available in fact sheets on each product and in over 20 published peer-reviewed journal articles. The team presented research findings at the 7th International Symposium on Applied Microbiology and Molecular Biology in Oil Systems in June 2019 in Halifax, NS, as well as at the 41st and 42nd Arctic and Marine Oil Spill Technical Seminars in October 2018 in Victoria, BC, and in June 2019 in Halifax, NS, respectively.

The biological impact studies are led by DFO's National Contaminants Advisory Group in Ottawa, ON, which funds external partners (e.g. academia) to determine the biological effects on fish exposed to oil spills.





Multi-Partner Research Initiative (DFO National Headquarters)

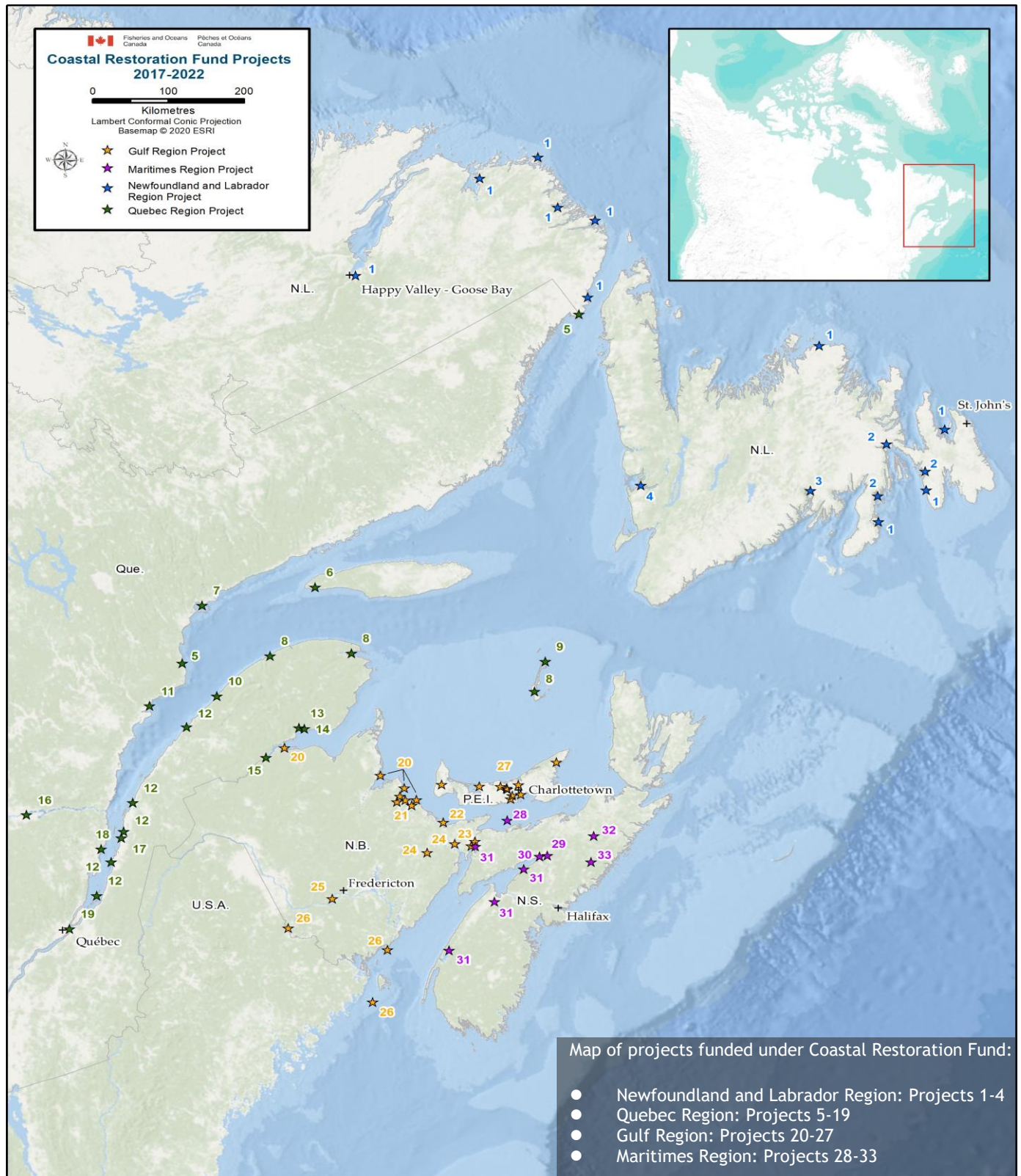
National

Objective: To provide \$45.5 million over five years to draw on the expertise and experience of oil spill experts in Canada and abroad, leveraging collaboration to ensure Canada has the capability to provide the best scientific advice and tools to respond to oil spills in Canadian waters. This Initiative will provide funding to academic institutions across Canada, as well as foreign institutions, and a number of secondary partner institutions. It will build on the previous work of DFO's COOGER, located in Dartmouth, NS, as well as other Government of Canada research facilities. The Initiative is led from DFO's National Headquarters. More information can be found on the Multi-Partner Research Initiative website:

<https://www.dfo-mpo.gc.ca/science/environmental-environnement/mpri/index-eng.html>

Preserving and Restoring Marine Ecosystems that are Vulnerable to Marine Activities

Coastal Restoration Fund



Coastal Restoration Fund

Objective: To support coastal communities undertaking coastal habitat restoration projects and contribute to mitigating marine stressors. To facilitate collaboration that contributes to the development and implementation of coastal restoration plans, identify restoration priorities, implement projects, and address threats to marine species. Summaries of the approved projects are available online at: <http://www.dfo-mpo.gc.ca/oceans/crf-frc/overview-apercu-eng.html>.

Newfoundland and Labrador Region

\$3.7 million

1) Recipient: *World Wildlife Fund (WWF) Canada*

WWF-Canada is leveraging traditional and scientific knowledge to address data deficiencies on near-shore and fresh water habitats for priority species in Newfoundland and Labrador. This knowledge will guide the strategic planning and restoration of key coastal habitats including capelin spawning beaches, as well as riverine and estuarine habitat identified as important to Atlantic salmon and Arctic char.

\$4.7 million

2) Recipient: *Marine Institute*

The Marine Institute is contributing to a healthy coastal ecosystem in Placentia Bay through re-establishment of eelgrass meadows in five locations, and deployment of reef balls to enhance habitat productivity of commercially important fish and shellfish species, such as Atlantic cod and American lobster. They are also facilitating the re-colonization of the restored eelgrass beds by mitigating freshwater migratory barriers, in respect to Atlantic salmon, southern Newfoundland population, to improve longitudinal connectivity between freshwater habitats and Placentia Bay.

\$0.4 million

3) Recipient: *Mi'kmaq Alsumk Mowimsikik Koqoey Association (MAMKA)*

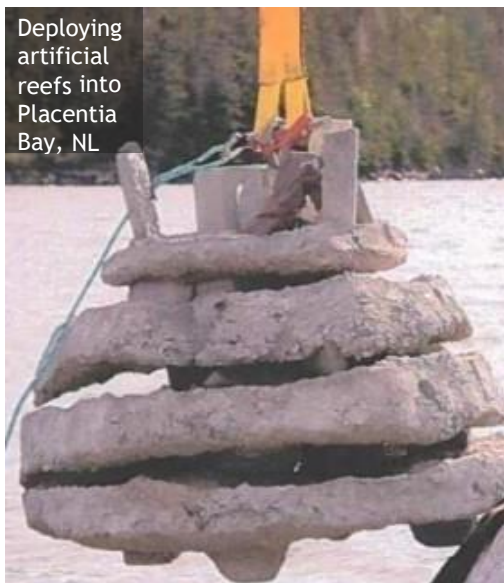
MAMKA partnered with the Miawpukek First Nation to undertake the stabilization of 620 meters of eroding and destabilized clay bank at the McDonald's Family and Culture Area located on the shores of the Conne River estuary. The Conne River has an annual Atlantic salmon run that is important to the Miawpukek First Nation from a food, cultural, and ceremonial perspective.

\$0.8 million

4) Recipient: *Humber Arm Environmental Association*

Humber Arm Environmental Association is partnering with the Qalipu First Nation in the protection and restoration of the coastal habitat of Elmastukwek (Bay of Islands). This multi-faceted project involves the identification and restoration of eelgrass meadows and areas of erosion susceptibility, as well as Banded killifish and American eel presence and abundance throughout the area. All information collected, including reported areas of cultural significance to the Qalipu First Nation, will be captured in a GIS database to be used for prioritization of fish habitat restoration planning and development of Coastal Habitat Management Plans for Elmastukwek.

Deploying
artificial
reefs into
Placentia
Bay, NL



CLAY BANK
NOW

MAMKA shoreline stabilization
site, 2019

Coastal Restoration Fund

Quebec Region

\$0.76 million

5) Recipient: *Comité ZIP de la Côte-Nord du Golfe*

To improve knowledge and restoration of the capelin breeding areas on the North Shore of the Gulf of St. Lawrence, which are subject to ever-increasing sources of disturbance.

\$0.5 million

6) Recipient: *Comité ZIP de la Côte-Nord du Golfe*

To restore salmon and eel habitat connectivity in the Saint-Georges Canal at Port-Menier, Anticosti Island.

\$1.2 million

7) Recipient: *Agence Mamu Innu Kaikuseht (AMIK)*

To restore coastal habitats that are important for the Innu communities of the North Shore. The project will contribute to the maintenance of traditional activities and increase the capacity of several stakeholders on key fish habitat restoration.

\$0.715 million

8) Recipient: *Merinov*

To restore coastal habitats in Gaspésie and Îles-de-la-Madeleine.

\$0.55 million

9) Recipient: *Université du Québec à Rimouski (UQAR)*

To restore habitats that present a coastal continuum and show degradation in the Magdalen Islands.

\$0.37 million

10) Recipient: *Groupe environnemental Uni-Vert*

To complete a project that will contribute to the restoration of coastal habitats in the Matane region.

\$0.05 million

11) Recipient: *Comité ZIP de la Rive Nord de l'Estuaire*

To collect data that will be used to develop a restoration plan for the Comeau Creek estuary salt marsh near Baie-Comeau.

\$2.4 million

12) Recipient: *Comité ZIP du Sud-de-l'Estuaire*

To carry out a project that will contribute to the restoration of coastal habitats in five sectors on the south shore of the St. Lawrence Estuary.

\$0.8 million

13) Recipient: *The Mi'gmaq Maliseet Aboriginal Fisheries Management Association (MMAFMA)*

To restore the connectivity of habitats of the American eel in watersheds located within three communities.

\$0.58 million

14) Recipient: *Comité ZIP Gaspésie*

To restore the natural channel of two branch lines of the estuary of Petite Cascapédia River in New Richmond.

\$0.23 million

15) Recipient: *Listuguj Mi'gmaq Government*

To conduct wetlands restoration and monitoring in the Restigouche River estuary, Listuguj.

\$0.05 million

16) Recipient: *Comité ZIP Saguenay-Charlevoix*

To develop a restoration plan for the coastal ecosystems of the Saguenay, the shores and the intertidal marshes.

\$0.4 million

17) Recipient: *Comité ZIP Sud-de-l'Estuaire*

To conduct a restoration project of a dyked coastal marsh, Saint-André-de-Kamouraska, in order to mitigate the impacts of coastal "squeezing".

\$0.045 million

18) Recipient: *Fondation de la faune du Québec*

To collect data that will be used to develop a fish habitat restoration plan for the Charlevoix coastal zone.

\$1.47 million

19) Recipient: *Conseil de la Nation Huronne-Wendat*

To restore the habitat of the American eel in several watersheds flowing into the St. Lawrence.



Obstacle studied to evaluate the restoration of the free passage of the American eel - Conseil de la Nation Huronne-Wendat

Coastal Restoration Fund

Gulf Region (projects in New Brunswick and Prince Edward Island)

\$1.7 million

20) Recipient:

Anqotum Resource Management

To install 40,000 artificial reefs in Miramichi Bay, NB, to enhance coastal habitats and increase shelter for benthic species, as well as build the technical capacity of the group.

\$0.9 million

21) Recipient: *Kopit Lodge*

To restore habitat connectivity and quality, and monitor population and water quality changes during the project. To rehabilitate the salmon habitat through restoration work and bring the salmon population to a sustainable level in all four rivers in North Kent County, namely the Richibucto, Kouchibouguacis, Kouchibouguac, and Black.

\$0.7 million

22) Recipient:

Université de Moncton

To repair a breach in a coastal spit of land, restoring ecological processes in salt marsh habitat behind the spit and transforming it back to its original state in Grande-Digue, NB, on the Gulf coast.

\$1.0 million

23) Recipient: *Ducks Unlimited Canada*

To improve fish passage through fish ladders and tidal gates on the Tantramar and Missaquash rivers, NB.

\$0.7 million

24) Recipient:

Fort Folly Habitat Recovery Program

To advance the recovery of the inner Bay of Fundy coastal ecosystem by restoring aquatic habitats for key species within Fort Folly's traditional territory, in the Petitcodiac and Memramcook watersheds on the Gulf coast.

\$0.4 million

25) Recipient: *Maliseet Nation Conservation Council*

To conduct a fish passage study for the lower Wolastoq (St. John) River. The project will also include some fish habitat restoration.

\$1.6 million

26) Recipient:

Passamaquoddy Recognition Group Inc.

To restore fish habitat and re-establish fish passage on the Skutik, Waweig, Magaguadavic, Letang, and Lepreau rivers in New Brunswick, as well as build the technical capacity of the Peskotomuhkati people.

\$2.0 million

27) Recipient: *PEI Watershed Alliance*

To improve coastal and estuarine fish habitat and improve fish passage for anadromous species in 250 km² throughout eight watersheds in PEI.



A degraded salt marsh in Kensington, PEI, one of the sites identified for restoration Photo Credit: Kensington

Coastal Restoration Fund

Maritimes Region (projects in Nova Scotia)

Aboiteaux at the Chiganois River, NS - Maritime Aboriginal Peoples Council



Artificial reef construction - Confederacy of Mainland Mi'kmaq



\$2.4 million

28) Recipient: *Clean Foundation*

To identify, restore, and monitor 1.5 hectares of tidal wetland in various areas of the Northumberland Strait in collaboration with local Mi'kmaq and coastal communities.

\$1.2 million

29) Recipient: *Confederacy of Mainland Mi'kmaq*

To help restore coastal habitats through tidal barrier restoration activities in the Bay of Fundy and creation of artificial reefs in the Northumberland Strait.

\$1.2 million

30) Recipient: *Maritime Aboriginal Peoples Council*

To remove fish passage obstructions in river watershed systems of the Cobequid Bay, which will also contribute to the recovery strategy for the endangered inner Bay of Fundy Atlantic salmon.

\$1.8 million

31) Recipient: *Saint Mary's University*

To restore 75 hectares of tidal wetland habitat by realigning and decommissioning dyke infrastructures in the Bay of Fundy, the Minas Basin, and the Annapolis River.

\$1.2 million

32) Recipient: *St. Mary's River Association*

To conduct physical restoration of St. Mary's River, acid mitigation (aerial liming), and effects monitoring.

\$0.7 million

33) Recipient: *Nova Scotia Salmon Association*

To conduct physical restoration of West River Sheet Harbour, continued acid mitigation (lime dosers), and estuary habitat enhancement.

St. Mary's River Association



Marshal's crossing bridge replacement - Clean Nova Scotia Foundation

Coastal Environmental Baseline Program

Objective: To initiate a pilot coastal environmental baseline data collection program in six high-use areas to record baseline ecosystem status and detect changes in the ecosystem to protect sensitive marine habitat and species. Partnerships with Indigenous and coastal communities are key to the success of this Program.

Quebec Region

Eight agreements to collect baseline data for the Lower St. Lawrence Estuary, Quebec.

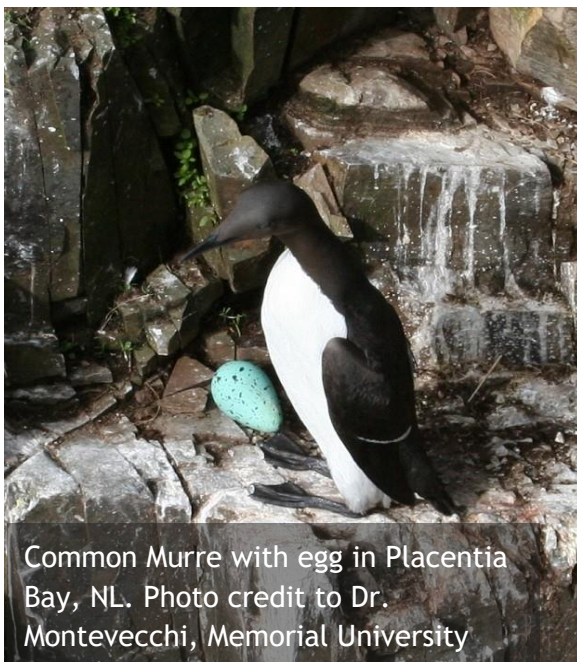
Organization	To establish / study baseline data regarding:
Explos-Nature	<ul style="list-style-type: none">• Characterization of the benthic macrofauna of rocky infralittoral habitat and increased awareness of the state of the marine ecosystem in the Upper North Coastal sector and of the Manicouagan
Université du Québec à Rimouski	<ul style="list-style-type: none">• Characterization of important habitats for juvenile fish in coastal habitats• Hyperspectral remote sensing of shallow coastal waters with the WISE (WaterSat Imaging Spectrometer Experiment) Sensor - Project WISE-Man• Biodiversity, richness and abundance patterns of the zooplankton in the shallow coastal zone of the Ecologically and Biologically Significant Marine Area (EBSMA) of the lower St. Lawrence Estuary
Comité Zone d'Intervention Prioritaire de la Rive Nord de l'Estuaire	<ul style="list-style-type: none">• Characterization of important littoral habitats on the north shore of the St. Lawrence Estuary
Centre Interdisciplinaire de Développement en Cartographie des Océans (CIDCO)	<ul style="list-style-type: none">• Characterization of the marine seafloor between Tadoussac and Baie-Comeau from LIDAR readings acquired from the Canadian Hydrographic Service
Université du Québec à Chicoutimi	<ul style="list-style-type: none">• Temporal dynamics of intertidal macroalgal productivity of the St. Lawrence
Agence Mamu Innu Kaikusseht (AMIK)	<ul style="list-style-type: none">• Bivalves survey around Pessamit First Nation community; Green urchins survey at the mouth of the Saguenay Fjord

Coastal Environmental Baseline Program

Newfoundland and Labrador Region

Ten agreements to collect baseline data for Placentia Bay, NL.

Organization	To establish / study baseline data regarding:
Newfoundland & Labrador Environmental Association Incorporated	<ul style="list-style-type: none"> Seabirds in Placentia Bay: abundance, distribution, phenology and mortality as indicators of status and trends in a coastal ecosystem
University of Manitoba	<ul style="list-style-type: none"> Capelin spawning sites and multi-species aggregations in Placentia Bay
Memorial University of Newfoundland	<ul style="list-style-type: none"> Distribution and relative abundance of diadromous fishes in Placentia Bay Coastal habitat mapping of Placentia Bay Chemical and biological baseline to inform primary productivity along the land-sea continuum of Placentia Bay Temporal and spatial presence, abundance and composition of micro and macro debris across various Placentia Bay habitats
Humber Arm Environmental Association Inc.	<ul style="list-style-type: none"> Characterization of eelgrass sites in Placentia Bay
Northeast Avalon Atlantic Coastal Action Program (ACAP) Inc.	<ul style="list-style-type: none"> Shoreline Environmental Baseline Surveys in Placentia Bay: a shoreline characterization and assessment of biogeochemistry, nutrients, coliforms, and hydrocarbons
Conservation Corps Newfoundland and Labrador	<ul style="list-style-type: none"> Investigating the distribution and abundance of <i>Mytilus edulis</i>, <i>Belanus balanus</i>, and <i>Semibalanus balanus</i> in Placentia Bay
Fish, Food and Allied Workers/Unifor	<ul style="list-style-type: none"> Improving knowledge of lobster populations and change in Placentia Bay



Coastal Environmental Baseline Program

Maritimes Region

12 agreements to collect baseline data for the Port of Saint John, NB.

Organization	To establish / study baseline data regarding:
Atlantic Coastal Action Program (ACAP) Saint John Inc.	<ul style="list-style-type: none"> Community-based monitoring in Saint John Harbour Characterizing Harbour seal (<i>Phoca vitulina</i>) populations in Saint John Harbour
Eastern Charlotte Waterways Inc.	<ul style="list-style-type: none"> Establishing Nekton biodiversity baseline for estuarine environments in southwestern New Brunswick Establishing baselines for the sources and impacts of underwater noise at Saint John Harbour
Fundy North Fishermen's Association	<ul style="list-style-type: none"> Mapping and ground-truthing fishermen's knowledge of surface currents in the Bay of Fundy area
Huntsman Marine Science Centre	<ul style="list-style-type: none"> A quantitative baseline survey of the ichthyoplankton, invertebrate zooplankton and microplastics in Saint John Harbour
Maliseet Nation Conservation Council	<ul style="list-style-type: none"> Diversity and abundance of Aquatic Invasive Species (AIS) and linkage to feeding ecology of Wolffish in the Bay of Fundy
Nature Conservancy of Canada	<ul style="list-style-type: none"> Characterizing conserved and priority coastal and tidal wetlands in and around the Port of Saint John
New Brunswick Federation of Naturalists Inc.	<ul style="list-style-type: none"> Assessing baseline shorebird and seabird data in the Port of Saint John Area
Anqotum Resource Management (ARM)	<ul style="list-style-type: none"> Characterizing invasive parasites occurrence and pathways in threatened migratory fish species in Saint John Harbour
Peskotomuhkati Nation	<ul style="list-style-type: none"> Quantifying the presence of microplastics in the digestive tract of American lobster sampled in around Saint John Harbour
Wolastoqey Nation in New Brunswick	<ul style="list-style-type: none"> Collection of baseline information on water column conditions and contaminants using caged blue mussels in Saint John Harbour

Coastal Environmental Baseline Program

Maritimes Region

Four additional projects to collect baseline data for the Port of Saint John, NB:

St. Andrews Biological Station

- Physical Baseline of the Lower Saint John River Region.
- Near shore surveying of bathymetry, habitat, and water characteristics of the Saint John Harbour, NB.

University of New Brunswick

- Benthic Invertebrate Abundance and Sediment Contaminants Analysis from grab samples in the Saint John Harbour, NB.
- Saint John Harbour Macroalgal & Phytoplankton Monitoring Project.



ACAP Saint John will develop a baseline for seal populations

New Legislation / Consultations and Engagement / Risk-Based Strategy to Address Vessels of Concern

Objective: TC, CCG, and DFO to implement a comprehensive strategy that will see the Government of Canada taking a highly visible leadership role in preventing the occurrence of new vessels of concern and in cleaning up existing ones. The proposed strategy would address key gaps including: an absence of authorities to act directly on vessels that pose additional long-term economic or cumulative risks beyond navigational or pollution; lack of an inventory and risk assessment of vessels of concern in Canadian waters; inability to identify the owners of a vessel; and follow-up on at-risk vessels and support remediation.

National

- The *Wrecked, Abandoned or Hazardous Vessels Act* (WAHVA) came into force in July 2019. It authorizes the Government of Canada to take action on new and existing vessels of concern (VOC).

CCG Central Region

- Numerous field missions to ascertain the presence and status of VOC throughout the region have resulted in an enhanced inventory (over 200 VOC under the CCG mandate) and the completion of multiple evaluations and remediation projects. In the province of Quebec, five vessel remediations and eight preliminary hazard assessments were completed in 2019-20, including on the legacy wrecks *Corfu Island* and *Duke of Connaught* in the ecologically and culturally important Magdalen Islands.
- The VOC Program in Central Region has also continued to build important relationships with maritime partners and stakeholders throughout Quebec, including with coastal Indigenous communities and industry partners.

CCG Atlantic Region

- Developed Standard Operating Procedures and safety procedures/task hazard analysis, and progressed inter-program and branch engagement and cooperation.
- Developed a CCG national WAHVA course, with five officers trained.
- Established a baseline inventory. Coordination with TC and DFO Small Craft Harbours (SCH) for regional inventory development.
- Conducted interim risk assessments on several vessels transferred from the Environmental Response program.
- Supported Public Services and Procurement Canada (PSPC) with development of national-level Supply Arrangement frameworks for regional use.
- Worked with Environmental Response and PSPC regional procurement specialists to establish contracts for several successful vessel remediations.

Small Craft Harbours' Abandoned and Wrecked Vessels Removal Program

Objective: To reduce the number of existing abandoned and/or wrecked vessels located in federally owned small craft harbours that pose a risk to the environment, the health and safety of harbour workers and users, and the efficient and effective operation of the harbour. Contribution funding of \$1.325 million over five years will be available to harbour authorities and other eligible recipients to undertake the removal and disposal of abandoned and wrecked vessels in harbours owned by DFO.

Newfoundland and Labrador Region

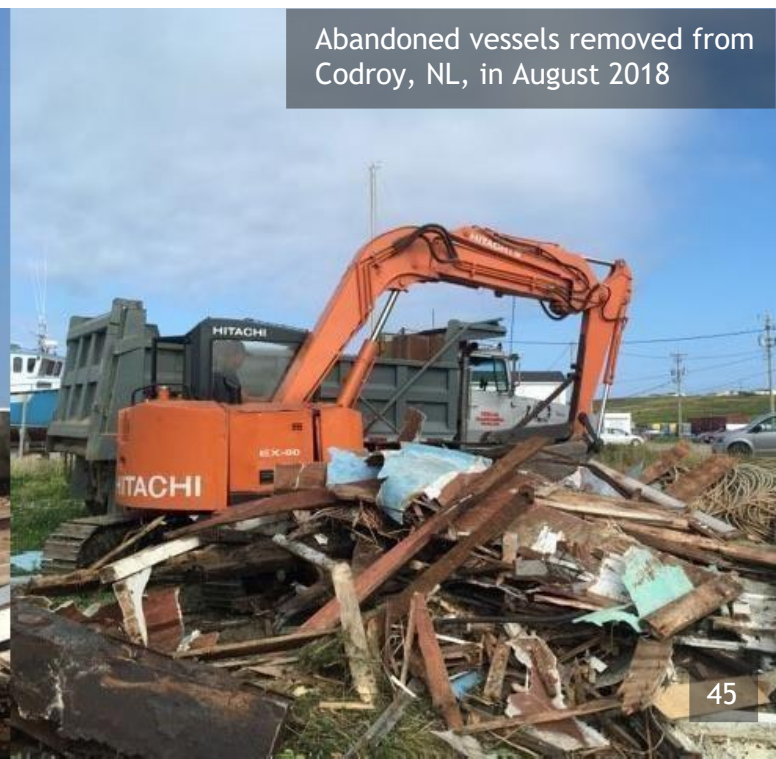
In 2017-18, DFO's NL SCH Branch entered into a Contribution Agreement with the Harbour Authority of Port Saunders to remove one derelict vessel. It was the first vessel of the Program to be removed nationally, in November 2017.

In 2018-19, DFO's NL SCH Branch entered into Contribution Agreements with four harbour authorities to remove five abandoned and derelict vessels from the following harbour locations:

- Musgrave Harbour, NL - one vessel removed August 2018
- Burgeo, NL - one vessel removed November 2018
- Codroy, NL - two vessels removed August 2018
- Branch, NL - one vessel removed November 2018

In 2019-20, DFO's NL SCH Branch entered into Contribution Agreements with five harbour authorities to remove 13 abandoned and derelict vessels from the following harbour locations:

- Princeton, NL - two vessels removed June 2019
- Foxtrap, NL - two vessels removed July 2019
- St. Bride's, NL - seven vessels removed July 2019
- Mary's Harbour, NL - one vessel removed August 2019
- St. Bernard's, NL - one vessel removed September 2019



Abandoned vessels removed from Codroy, NL, in August 2018

Small Craft Harbours' Abandoned and Wrecked Vessels Removal Program

Quebec Region

In 2018-19, DFO's Quebec SCH Branch entered into a Contribution Agreement to remove one derelict vessel from the following harbour location:

- Newport, QC - one vessel removed

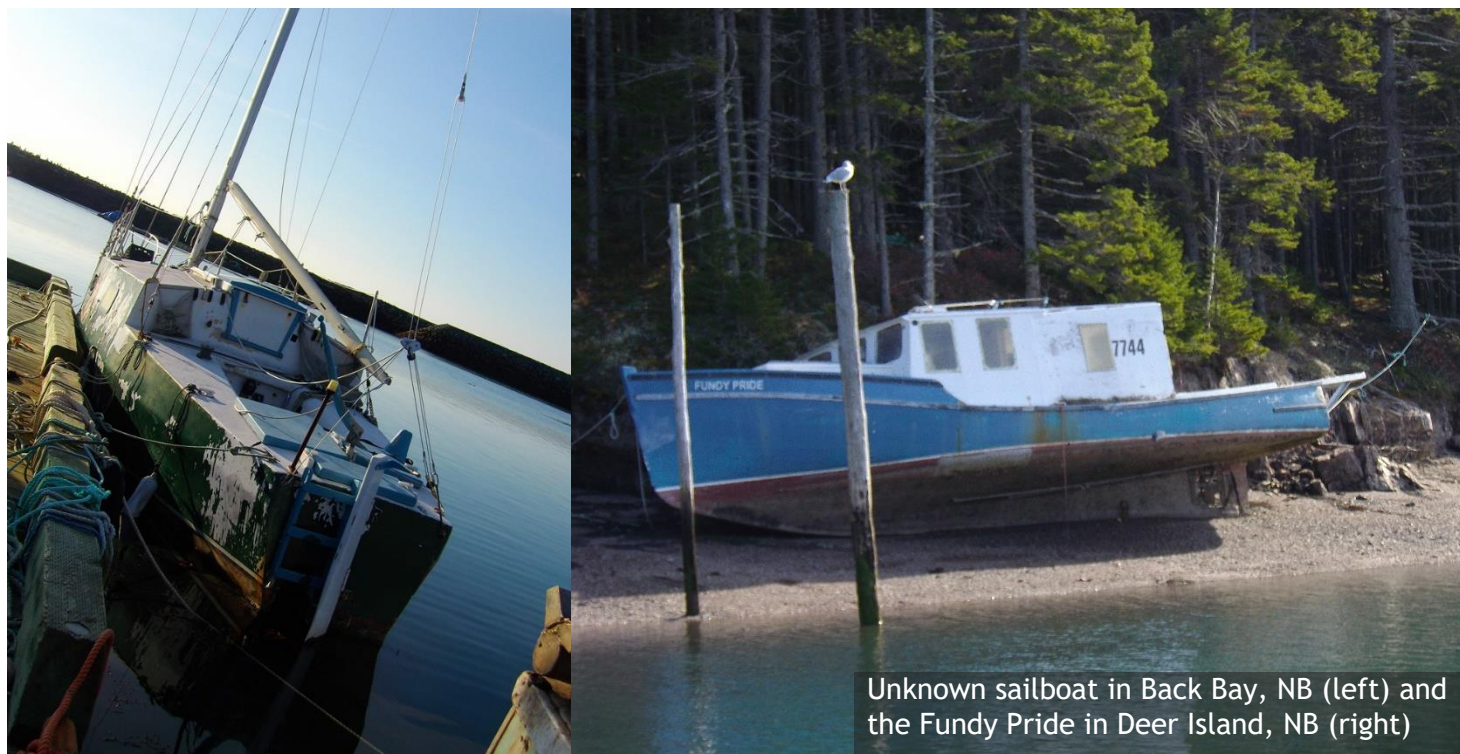
In 2019-2020, DFO's Quebec SCH Branch entered into Contribution Agreements with three harbour authorities to remove 12 derelict vessels from the following harbour locations:

- Tourelle, QC - eight vessels removed
- St-Godefroi, QC - three vessels removed
- Cap-Chat, QC - one vessel removed

Maritimes Region

In 2019-20, DFO's Maritimes SCH Branch entered into Contribution Agreements with four harbour authorities to remove 13 abandoned and wrecked vessels from the following harbour locations in southwest New Brunswick:

- Grand Manan, NB - four vessels removed
- Deer Island, NB - one vessel removed
- Back Bay, NB - seven vessels removed
- Campobello, NB - one vessel removed



Unknown sailboat in Back Bay, NB (left) and the Fundy Pride in Deer Island, NB (right)

Establish Marine Environmental Quality Regulatory and Non-Regulatory Measures

Objective: To undertake a range of activities to increase our understanding of, and address, pressing issues affecting the quality of the marine environment. On the Science front, the initial focus is to better understand the impact of shipping-related noise on whales, specifically the endangered North Atlantic right whale, Southern Resident killer whale, and St. Lawrence Estuary beluga. This important research will help inform measures aimed at reducing noise levels. On the management side, the Marine Planning and Conservation Marine Environmental Quality (MEQ) program works with partners and stakeholders to establish non-regulatory and regulatory measures under the *Oceans Act*. The initial emphasis of this work is on underwater ocean noise from various human sources, such as marine vessels and seismic surveys. Specific actions will include an analysis of existing mitigation strategies, identification of potential management gaps, and the possible development of new regulatory or non-regulatory management measures (e.g. codes of practice) to address critical and/or ongoing management concerns.

Maritimes Region

DFO Aquatic Ecosystems published a literature review “*Marine Environmental Contaminants in the Scotian Shelf Bioregion: Scotian Shelf, Bay of Fundy and Adjacent Coastal and Offshore Waters - 1995-present*” as a DFO Technical Report. The Aquatic Ecosystems and Science Branches also co-hosted a workshop to examine the characteristics of underwater noise that may be negatively impacting North Atlantic right whales, and the metrics that should be used to describe and quantify those sounds. To help further advance other initiatives related to MEQ, Aquatic Ecosystems has established contracts and developed agreements with:

- **Various organizations:** to implement a Coastal Acoustic Monitoring Project to characterize the soundscape of coastal areas and help assess potential noise impacts of vessel traffic on marine life. There are currently five sites where acoustic data is being collected, fulfilling the target number of locations initially identified for the project.
- **Huntsman Marine Science Centre:** to coordinate the review and implementation of a Southwest New Brunswick Marine Debris Strategy with federal and New Brunswick agencies, industry, and stakeholders.
- **University of New Brunswick:** to conduct research on micro-plastics in marine biota over two years.
- **Clean Foundation:** to host two Regional Marine Debris Summits with additional support from the provinces of Prince Edward Island, Nova Scotia, and New Brunswick; other federal departments; Indigenous organizations; and industry. The Summits were held on November 26-27, 2018, in St. Andrews, NB, and on November 18-19, 2019 in Halifax, NS, with a spotlight on various sources of marine pollution including micro-plastics. Work is ongoing to develop action plans related to fishing gear and single-use plastics.

Establish Marine Environmental Quality Regulatory and Non-Regulatory Measures

DFO's Science Program is examining the severity and extent of the threat posed by ship noise on marine mammals, especially North Atlantic right whales, and is undertaking acoustic monitoring to improve our knowledge of the overlap between shipping and North Atlantic right whales.

Maritimes Region Science has:

- Developed noise modelling methods to increase understanding of shipping noise impacts on North Atlantic right whales.
- Developed Contribution Agreements and contracts with academic institutions for collaborative research; for example, with Dalhousie University to deploy acoustic and behavioural logging tags on North Atlantic right whales, and on environmental ocean noise modelling with the Ocean Research & Conservation Association to determine how acoustic data can be incorporated into habitat and population models.
- Established a drone-based photogrammetry and blow collection program (with hormone analyses undertaken by Dalhousie University) to complement efforts by the New England Aquarium and others to assess health and well-being in North Atlantic right whales to explore physiological responses to noise exposure and better interpret any behavioural changes.
- Deployed acoustic recording systems in the Grand Manan, Emerald, Roseway, and Jordan Basins to collect data on North Atlantic right whales occurrence and ship noise.
- Deployed a vertical line array recording system near the Laurentian Channel for vessel source characterization.
- Completed a dedicated North Atlantic right whales, *Calanus* prey study, and oil spill cruise involving tagging, photogrammetry, blow collection, and photo identification work in the Gulf of St. Lawrence in August/September 2019 with collaborators across Maritimes and Quebec Regions, plus those external to DFO.



MP Darren Fisher announced the Science portion of the MEQ initiative at the Bedford Institute of Oceanography in July 2018

Establish Marine Environmental Quality Regulatory and Non-Regulatory Measures

Gulf Region

DFO Gulf Region's Oceans Management Program is coordinating the departmental response for nutrient management. The objective of the project is to develop an MEQ guideline by 2022 to promote efforts to reduce nutrient loading in estuaries of the Northumberland Strait.

Since 2018, the MEQ Program has supported DFO Science and collaborated with the province of Prince Edward Island to collect monitoring indicators, primarily dissolved oxygen, to support the development of an MEQ guideline. A Canadian Science Advisory Secretariat (CSAS) process will take place in 2021 to validate the use of dissolved oxygen to characterize the trophic status of estuaries and establish a dissolved oxygen threshold to be included as the Gulf Region's MEQ guideline.

Gulf Region has also initiated and participated in other collaborative efforts, including:

- Holding a Federal-Provincial Workshop in February 2018 to foster collaboration among federal and provincial departments to implement an MEQ Program in the Gulf Region.
- Participating in Agriculture and Agri-Food Canada (AAFC)'s Living Laboratory initiative. DFO's role is to assess the effectiveness of agricultural beneficial management practices developed by AAFC and the local farming community on estuarine water quality in Prince Edward Island.
- Developing agreements with the University of Prince Edward Island to collect nutrient loading data and estimate benthic nutrient flux within estuaries to refine a regional nutrient model.

Establish Marine Environmental Quality Regulatory and Non-Regulatory Measures

Quebec Region

Under DFO Quebec Region's MEQ Program:

- A training session on underwater noise was held in January 2018. The training was offered to federal departments (DFO, TC, and Parks Canada), as well as external stakeholders from industry, specialized consultant businesses, and research organizations, among others.
- A contract for a literature review on the shipping industry as a source of marine noise was finalized in February 2018.
- In collaboration with DFO Science, acoustic measurements of the “sound signature” of selected marine mammals excursion boats operating in the Saguenay-St. Lawrence Marine Park and St. Lawrence Estuary were completed in 2018.

Quebec Region Science is also conducting a research project on the effect of shipping noise on the St. Lawrence Estuary beluga. Specifically:

- The team completed a 16-month continuous recording of underwater noise and beluga sounds over a network of 10 stations in essential beluga summer habitat. The analysis of this big data ensemble will facilitate establishment of the space-time distribution of noise, beluga, and their interactions.
- An article was published on the analysis of a 10-year acoustic recording time-series of beluga calls at the downstream end of their summer habitat, evidencing their year-round use of the area.
- Twenty-five belugas were tagged with acoustic tags to track their dive behavior, sound emission, hunting and feeding activities, and their exposure to shipping noise and its effects.
- Aerial surveys were conducted to map the distribution of belugas, notably for their Winter and Spring distribution in the Western Gulf of St. Lawrence, where a set of acoustic monitoring stations were deployed.
- The underwater soundscape characteristics in relation to shipping traffic is the object of 3-D acoustic modeling work, to produce an interactive Soundscape Atlas of the Estuary and Gulf of St. Lawrence in collaboration with UQAR/Institut des sciences de la mer de Rimouski (ISMER) within the Marine Environmental Research Infrastructure for Data Integration and Application Network (MERIDIAN) consortium. The Soundscape Atlas includes several tools to browse the soundscape for mapping the 3-D risk of impact on whales through time using various metrics.

Establish Marine Environmental Quality Regulatory and Non-Regulatory Measures

Newfoundland and Labrador Region

The DFO NL Region Ecosystems Management MEQ Program has partnered with DFO Science and Memorial University of Newfoundland (MUN) academia to undertake ocean noise and marine debris studies to help understand these ecosystem stressors within the Region, and to determine if mitigation measures are required. This includes:

- Completion of a multi-year Contribution Agreement with MUN to document the State of the Knowledge of marine debris/plastics on the island of Newfoundland, and conduct a loading/off-loading model to demonstrate potential sources and collector areas (beaches) for marine debris/plastics.
- DFO Science collection of marine mammal habitat utilization and underwater sound (acoustic) monitoring data in Placentia Bay. This information will be used to understand the underwater sound conditions within the Bay and help to determine if mitigation measures are required to protect marine species within the Bay. Program components include:
 - Monthly, seasonal, multi-day visual boat-based marine mammal and sea turtle surveys.
 - Underwater acoustic (noise) recording stations retrieved, downloaded, and redeployed throughout the Bay to collect seasonal and over-winter sound data.
 - Acoustic data processing to detect marine mammal species presence.
 - Contribution Agreement with MUN to collect multiple sources of oceanographic, biological, and anthropogenic (i.e. Vessel Automatic Identification System) sound source data and create soundscape GIS models. These models will be used to assess the potential effects of anthropogenic noise on marine mammals within the Bay.



Deployment of an
Autonomous Multichannel
Acoustic Recorder (AMAR)

Reduce the Threat of Vessel Traffic on Marine Mammals Through Detection and Avoidance

Objective: To develop and test technologies for a Large Mammal Collision Prevention System in response to demands from mariners to prevent collisions and protect sensitive marine mammals.

Maritimes Region

An ocean glider equipped with hydrophones to acoustically detect North Atlantic right whales in near real time



DFO Maritimes Region provided support to Dalhousie University to deploy ocean gliders equipped with hydrophones in North Atlantic right whale high-use areas and critical habitats. These are able to acoustically detect North Atlantic right whales in near-real time.

In the summer of 2018, DFO Maritimes and Gulf Regions participated in a two-day intensive survey of North Atlantic right whales in the southern Gulf of St. Lawrence in collaboration with partners including Dalhousie University, the Department of National Defence, the U.S. National Oceanic and Atmospheric Administration (NOAA), the Canadian Whale Institute, and the New England Aquarium. Sonobuoys, gliders, ship observations, and aerial surveillance were used to evaluate the detection capabilities of the gliders and improve localization techniques.

DFO Maritimes Region also evaluated other technologies for real-time whale detection, including moored and drifting buoys. For example, the team deployed a 3-axis sensor system (M20 directional hydrophone) in the St. Anns Bank Marine Protected Area (MPA) in early June 2019 to test North Atlantic right whale detection capability in noisy, high-traffic areas, and retrieved it in October 2019. The team also deployed drifting acoustic buoys in the North Atlantic right whale aggregation in the Gulf of St. Lawrence in August 2019, in order to test buoys as real-time monitoring devices in North Atlantic right whale aggregation areas and to improve marine mammal localization. Testing of the buoys continued locally through Fall 2019.

Initial feasibility studies have also been completed for a possible deployment of a seabed listening array for North Atlantic right whale detection in the Cabot Strait.

Marine Mammal Response and Marine Protected Area Surveillance and Enforcement Program

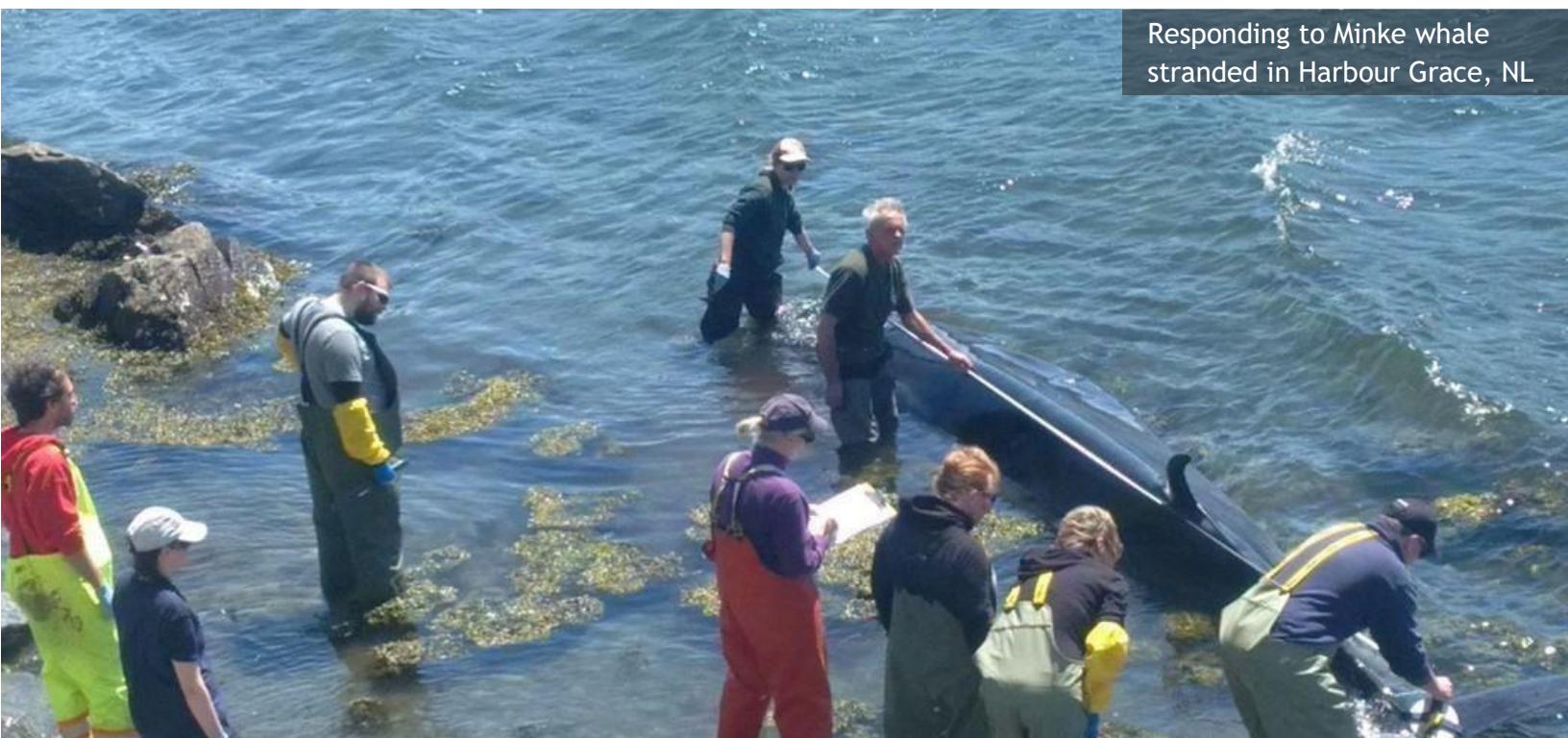
Objective: The Conservation & Protection Program to develop a national approach and capacity, in line with international best practices, to respond to marine mammal incidents such as collisions, entanglements, and strandings. This new capacity will bring with it the added benefit of enhancing compliance, enforcement, and surveillance of Marine Protected Areas (MPAs).

National

Since April 2017, DFO's Conservation and Protection Branch has increased its capacity by:

- Implementing training to enhance the expertise and safety of fishery officers who support experts responding to marine mammal incidents.
- Improving data collection and reporting on incidents involving marine mammals.
- Purchasing equipment for fishery officers to assist experts who are responding to marine mammal incidents.
- Developing and implementing enforcement plans for all MPAs.

From April 2017 to March 31, 2020, fishery officers have spent approximately 32,000 hours supporting marine mammal response across Canada, about 2,200 hours related to air surveillance and nearly 14,000 hours dedicated to the surveillance and enforcement of MPAs.



Responding to Minke whale stranded in Harbour Grace, NL

In addition to the cross-cutting project activities listed above, each DFO Region has built up its capacity and responded to different types of incidents involving marine mammals.

Marine Mammal Response and Marine Protected Area Surveillance and Enforcement Program

Newfoundland and Labrador Region

- A significant portion of Conservation and Protection's involvement with the Marine Mammal Response Program (MMRP) is through monitoring and surveillance, including:
 - Assisting lead responders with disentanglements and strandings of marine mammals.
 - Surveillance for entangled whales.
 - Surveillance to verify compliance with, and enforce, fisheries management measures and locate/monitor North Atlantic right whale movements where necessary.
 - Responding to dead whales.
- Trained fishery officers have assisted lead responders (Tangly Whales) during various marine mammal response incidents, including:
 - March 18-22, 2018 - assisted in the rescue of seven dolphins trapped in sea ice for five days in Heart's Delight, NL.
 - July 5, 2019 - assisted in the successful disentanglement of a humpback whale from whelk pots near the community of Renews, NL.
 - June 23, 2020 - assisted as the stand-by safety vessel in the successful disentanglement of a humpback whale from a herring net off Long Island, Notre Dame Bay.
- Fishery officers have received various marine mammal response training and equipment, and all coastal detachments within the regions have at least one trained fishery officer.
- Fishery officers have been engaged in compliance promotion and education by using various educational tools, including infographics of the amended *Marine Mammal Regulations*.
- Fishery officers also provide assistance to DFO Science in the collection of samples from deceased marine mammals, as well as assist in necropsies.
- Conservation and Protection ensures compliance within the Gilbert Bay, Eastport, and Laurentian Channel MPAs through monitoring and surveillance.



Infographic of the amended *Marine Mammal Regulations* being posted near St. Vincent's Beach, NL

Fishery officers assisted Tangly Whales in the community effort to rescue seven White-Beaked dolphins trapped in sea ice for five days in Heart's Delight, NL, in March 2018



While on patrol of the St. Anns Bank MPA in June 2018, fishery officers came across a pod of seven orcas off Cape Breton, NS. An OPP patrol once again spotted orcas near the St. Anns Bank MPA in the summer of 2019. Since 1963, there have only been about 40 sightings of orcas in this area



Marine Mammal Response and Marine Protected Area Surveillance and Enforcement Program

Maritimes Region

- In July 2018, fishery officers supported the Campobello Whale Rescue Team during the successful disentangling of a North Atlantic right whale.
- When Belugas visited Ingonish, NS, in 2018, fishery officers partnered with the Whale Stewardship Project and Marine Animal Response Society to educate the public on the dangers of whale socialization and to collect scientific data.
- Fishery officers conducted media interviews and handed out educational material to inform the public and whale watching tour operators about the new minimum distances to maintain from whales in the amended *Marine Mammal Regulations*.
- In July of 2019, a North Atlantic right whale was spotted entangled in the Gulf of St. Lawrence. A team from the New England Aquarium was in the area and succeeded in attaching a telemetry buoy to the whale to track its movements for disentanglement. DFO Maritimes Region Conservation and Protection assisted members of the Newfoundland and Labrador-based Whale Release and Strandings group to intercept the whale when it reached the coast of Cape Breton. The disentanglement experts were able to make a series of cuts, but the whale was not entirely freed and it moved offshore beyond the reach of rescuers. It continued to U.S. waters, where members of the Center for Coastal Studies were able to successfully cut the rest of the gear off of the whale.
- Conservation and Protection officers from the Sydney and Lennox Passage detachments, with the aid of the CCG, were able to retrieve a sample from a North Atlantic right whale carcass at sea in Summer 2019. This sample will be used to perform genetic analysis.
- Conservation and Protection officers worked with the Canadian Sea Turtle Network to disentangle and retrieve samples of two leatherback sea turtles in Summer 2019.
- Conservation and Protection continued to train fishery officers who are equipped to respond and support lead experts during marine mammal incidents, including marine medic satellite tag attachment, disentanglement response, stranding response, and marine mammal training.

Marine Mammal Response and Marine Protected Area Surveillance and Enforcement Program

Quebec Region

- Since April 2018, Conservation and Protection has increased its capacity by staffing at least one fishery officer in each area office in the Region, providing training to enhance the expertise and safety of fishery officers, and purchasing equipment for fishery officers to support experts in responding to marine mammal incidents.
- Compliance monitoring efforts under the aerial and at-sea surveillance program were partially redirected to the North Atlantic right whale situation in the southern Gulf of St. Lawrence.

Gulf Region

- Late one night in October 2018, fishery officers responded to a stranded Atlantic white-sided dolphin in the area of Port Elgin, NB. The officers were able to re-float the dolphin; it swam off and was not seen in the area again.



- In November 2018, fishery officers responded to two stranded common dolphins in the Dunk River, Bedeque, PEI. They re-floated the smaller dolphin and pointed the larger one in the right direction. Both dolphins swam away without any issues, and were last seen swimming together back towards the Northumberland Strait.
- The local DFO Conservation and Protection officers in Souris, PEI, patrol the Basin Head MPA regularly to ensure compliance with the Management of Contaminated Fishery Regulations, the Basin Head Marine Protected Area Regulations, and the Maritime Provinces Fishery Regulations.

Facilitating Indigenous Partnerships in the Marine Safety System

Indigenous Relations and Partnerships

Objective: To build and strengthen partnerships and relationships with First Nations and Indigenous communities. CCG Indigenous Relations and Partnerships (IRP) units, in collaboration with CCG programs, support, coordinate, and facilitate external engagement sessions, training, and meetings with Indigenous partners in Atlantic Canada and Quebec. These relationships are key for the successful implementation of numerous OPP projects.

CCG Atlantic Region

- **Cultural awareness:** in keeping with the Truth and Reconciliation Commission Recommendation #57, IRP provided cultural awareness training to approximately 100 CCG staff. The training is designed to give an overview of the Indigenous population within the Atlantic region, and to also provide a general understanding of treaties and the associated rights and obligations. CCG staff have participated in cultural day activities as invited guest in communities. Elders have also been invited guests to the CCG Dartmouth Base to provide cultural teachings to staff.
- **CCG/Atlantic Policy Congress (APC) Advisory/Working Group:** this Group is co-chaired by CCG and APC, the purpose of which is to bring members of DFO/CCG together with representatives from the Indigenous communities and organizations to have an open dialogue on recruitment and retention of Indigenous people within the CCG. The Advisory Group will also work with CCG to identify ways to work collaboratively in order to overcome barriers to employment within DFO/CCG as identified by the communities themselves. The APC also hosts an annual fisheries conference that includes representatives of First Nations from across the Atlantic Region, and at this conference the CCG is given an opportunity to present on topics of interest, primarily OPP focused projects, as well as to have a booth display.
- **Training of Indigenous community members:** IRP staff have worked extensively with Indigenous communities and organizations on multiple training opportunities related to numerous CCG programs and OPP projects. IRP continues to work with the CCGA and SAR in order to coordinate training for new CCGA members (Miawpukek First Nation, Labrador Innu, Labrador Inuit, NunatuKavut Community Council, and We'komaq First Nation). This training includes courses such as Restricted Operator Certificate - Maritime, Marine Basic First Aid, and Small Vessel Operator Proficiency. IRP Staff also work with Environmental Response in coordinating training for Indigenous community members on Introduction to Oil Spills. This training was completed by staff of Nunatukavut Community Council, Peskotomuhkati Nation, and the Maliseet Nation Conservation Council this past fiscal year, bringing to a total of over 29 First Nations and Inuit communities having been provided the training since the implementation of OPP. As well, the Peskotomuhkati and Wolastoqey participated in a CANSULANT exercise held in the Passamaquoddy Bay with the United States Coast Guard, providing Indigenous Knowledge input into the response exercise and with respect to incorporating Indigenous participation into response management within Indigenous territories. Finally, the Mi'kmaq of Unama'ki participated in an Environmental Response Tabletop Exercise with Eastern Canada Response Corporation and other industry participants, providing a great opportunity to incorporate Indigenous Knowledge into response planning.

Indigenous Relations and Partnerships

CCG Atlantic Region

- **Indigenous Community Boats Program:** a Ministerial Announcement of the first Indigenous community boat was made last year for the Miawpukek First Nation, as well as the unveiling of their community boat. Lennox Island (one boat) and the Innu Nation (two boats) were successful in their applications for a community boat. There were also several meetings and discussion with Indigenous communities on the Community Boat Program that were identified in SAR gap areas. To date, there are now nine approved Indigenous community boats in total for Indigenous communities within the Atlantic Region, with over 75 new Indigenous members being added to the CCGA.
- **Community engagement sessions:** CCG staff were invited to present as well as to attend multiple community engagement sessions such as career fairs, annual workshops, fisheries conferences, and emergency management gatherings. Some of the areas within the CCG that were also engaged during these sessions included the Joint Rescue Coordination Centre, Environmental Response, SAR, VOC, CCGA, and the CCG College. Collectively the CCG has conducted more than 175 external engagements for the first three years of OPP, with more “conference style” engagements being planned for future events.

Indigenous Relations and Partnerships

CCG Central Region

- In 2018-2019 and in 2019-2020, CCG Central Region participated in more than 15 introductory meeting sessions with communities in Ontario and Quebec to engage in a dialogue on existing relations with CCG operational programs and future partnership opportunities. OPP was also discussed at over 25 additional engagement sessions with Indigenous communities and organizations.
- In addition to the IRP team's regular operations in the Central Region, it also negotiated 12 Contribution Agreements with Indigenous communities and organizations in Quebec and Ontario. Through these agreements, Grants and Contributions funds are being transferred to communities using existing agreements with DFO and Indigenous Services Canada for Quebec and Ontario, respectively.
- These agreements create Indigenous Marine Liaison Officer (IMLO) positions in the communities to promote CCG programs and services, as well as OPP projects, and to identify marine safety priority areas for their respective communities.
- The first working sessions with the appointed IMLOs included visits to a CCG base and icebreakers, workshops with CCG program representatives, and information sessions with the CCG Auxiliary, among other activities.
- CCG Central Region continues to organize and implement training on Indigenous cultural awareness, history, engagement, and legal obligations surrounding the duty to consult. In the last year, 15 learning sessions were held through Indigenous service providers or subject matter experts.

Indigenous Relations and Partnerships

CCG Central Region

On September 19, 2019, 10 members of the Innu Unamen-Shipu community on Quebec's Lower North Shore, experts of the SAR program, and a member of the IRP team took part in a training exercise (pictured below) on procedures to follow in the event of an emergency at sea in an effort to improve the response time and communications with the MRSC Quebec City, QC. Thanks to this exercise, the community was able to acquire essential tools to better protect its population in the marine environment.



The Mamu Innu Kaikuseth Agency (AMIK) and CCG Central Region successfully organized a workshop in Uashat, QC on March 10-11, 2020, the purpose of which was to allow communities and organizations present to learn more about CCG programs and services as well as OPP initiatives, including the Aids to Navigation, Fleet, Environmental Response and SAR programs; Risk Analysis of Maritime Search and Rescue Delivery (RAMSARD); and Emergency Towing.

CCG representatives and First Nations partners were able to identify opportunities for collaboration, recruitment, and strengthening of ties, which are essential to the well-being of coastal communities.

Indigenous Community Boats North and South of 60 (Incident Management) / Expansion of Arctic Auxiliaries

Objective: The Indigenous Community Boat Pilot Program was created to provide funding in the form of contributions for the purchase of SAR capable boats and/or associated equipment to strengthen the capacity of coastal Indigenous communities to participate in maritime SAR response activities within their communities as members of the CCG Auxiliary. The Program was initially approved for implementation south of the 60th parallel. Expansion of the program to include the Arctic (north of 60, Atlantic) was approved through the OPP with two funding streams: communities south of 60, and northern and Arctic communities.

CCG Atlantic Region

- Continues to engage with Indigenous communities to inform them about membership in the CCG Auxiliary and the Indigenous Community Boat Program.
- With respect to new operational boats, to date there has been:
 - One new community boat in We'koqma'q First Nation, NS (this was a former DFO Conservation and Protection vessel that was refurbished).
 - A newly built community boat in Miawpukek First Nation, NL.
 - All other community boats are under construction with some being delivered in the summer of 2020.

CCG Central Region

- A number of Indigenous communities have expressed interest in the Indigenous Community Boat Program and discussions have begun to support their applications for the CCG Auxiliary in support of this goal.

Protecting our coasts	Healthier coasts	Safer coasts	Working together
-----------------------	------------------	--------------	------------------

