

Canada Update: Increasing Ocean Science Capability 'The Balancing Act'



**International Research
Ship Operators**
October 7, 2018
Hobart, Australia

Jennifer Vollrath
Fisheries and Oceans Canada



Oh Canada!



Science At-Sea Program

Overview

Canada 



The mission of the **Science At-Sea** program is to collect key information necessary for the **sustainable management and safe navigation** of Canada's **oceans and aquatic resources** for the benefit of current and future generations.



14

Canadian Coast Guard ships
dedicated to DFO Science

130+

Missions at-sea annually

2900+

Days at-sea on board CCG
ships for the Science At-Sea
program



Research Streams



Fisheries

Gathering data to provide science-based advice for policy and regulatory decision making for sustainable fisheries.



Oceanography

Monitoring the state of the oceans to understand the changes in the health of marine ecosystems and to manage the existing and potential marine and coastal protected areas.



Hydrography

Conducting surveys to ensure the safety of mariners and to understand seabed dynamics for the sustainable management of Canada's natural resources.

International Commitments



Canada – USA Fisheries

Canada and the USA have developed a series of cooperative initiatives and bi-national treaties that address transboundary fisheries issues on the Atlantic and Pacific coasts.



Galway Statement

Under the Galway Statement, Canada, the U.S. and the European Union are collaborating and sharing resources as the Atlantic Ocean Research Alliance to better understand our shared Atlantic Ocean.



NAFO

Founded in 1979. NAFO's overall purpose is to help its members work together and share knowledge to effectively manage and conserve the high seas fishery resources of the Northwest Atlantic Ocean.

Science At-Sea Program

Key Outcomes



Canada's Fish and Seafood Exports

2017

www.sustainable-seafood.ca

top 10 exports to the United States

Last year, Canada exported \$4.3 billion in fish and seafood products to the **United States**.



Lobster
(\$1.5 billion)



Crab (other)
(\$71 million)



Atlantic Salmon
(\$896 million)



Perch
(\$55 million)



Snow/Queen Crab
(\$673 million)



Salmon (other)
(\$52 million)



Scallop
(\$120 million)



Herring
(\$52 million)



Atlantic Halibut
(\$73 million)



Mussel
(\$50 million)



Canada

A photograph of a narwhal in the water, with its long, dark tusk pointing upwards. The narwhal's body is white with dark spots. The background shows a wide, flat, snow-covered landscape under a clear blue sky. The text is overlaid on the left side of the image.

794,000 Km²
of Canadian oceans
and coastlines
are now protected

Safe and Accessible
Waterways



Canada 



Science At-Sea Program

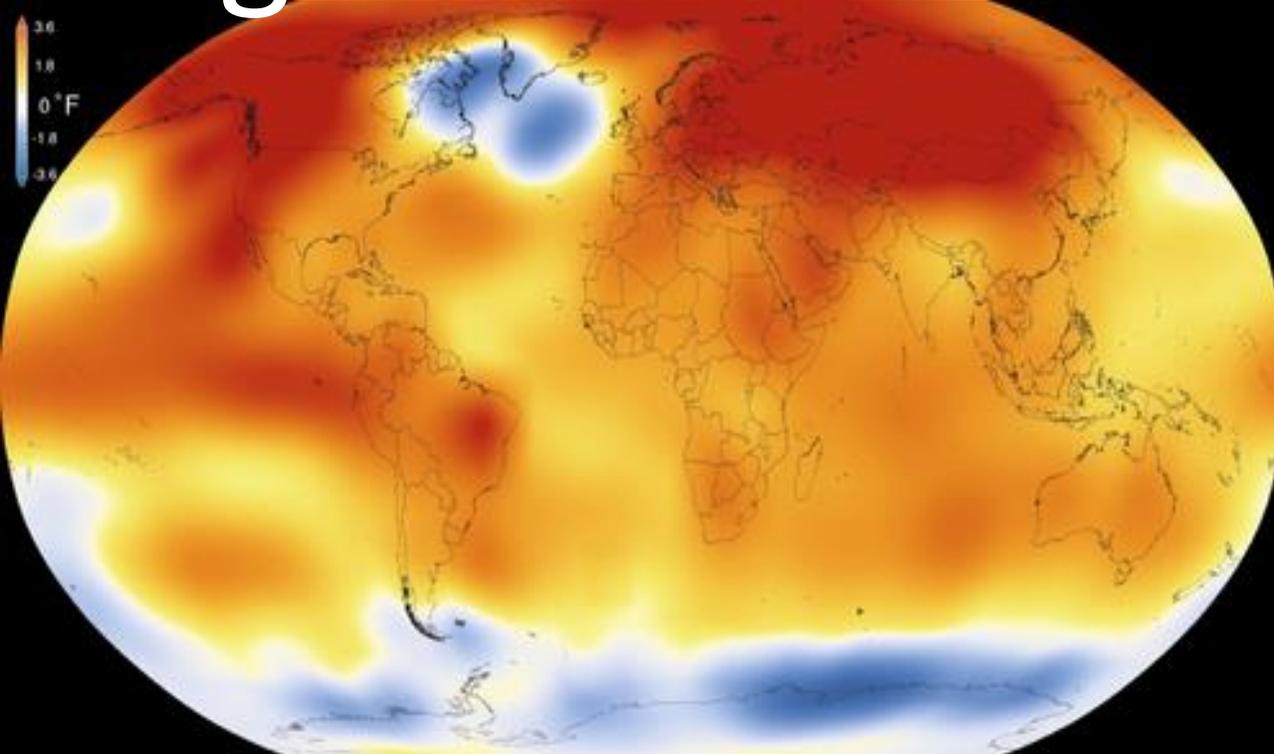
Growing
Demand
&
Emerging
Priorities

Canada 





#trending



A wide-angle photograph of a sunset over the ocean. The sun is low on the horizon, creating a bright orange and yellow glow that reflects on the water's surface. The sky is filled with soft, wispy clouds in shades of orange, pink, and blue. The water in the foreground shows gentle ripples and a slight wake, suggesting a boat's presence. The overall mood is serene and peaceful.

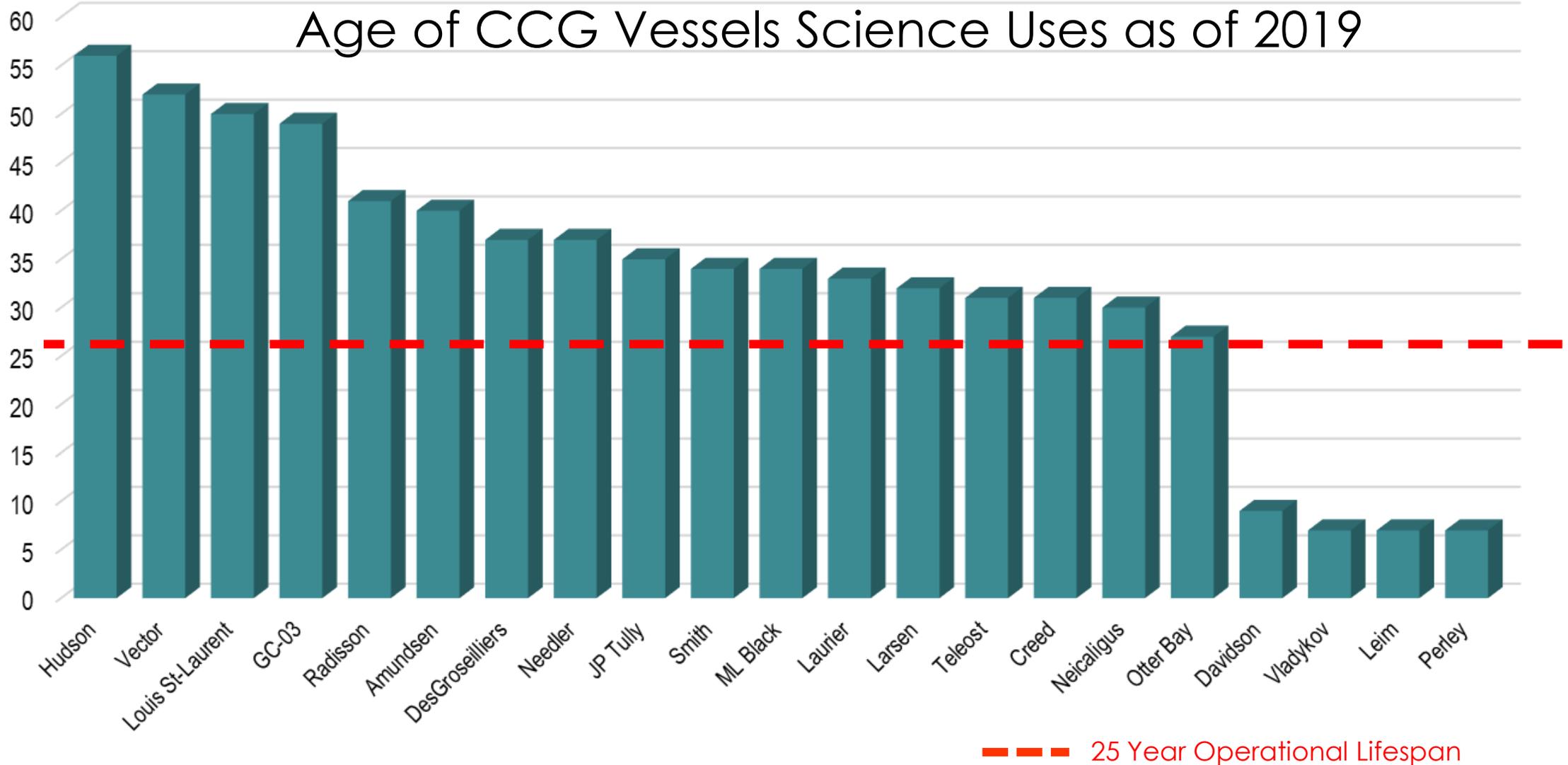
OCEANS PROTECTION PLAN

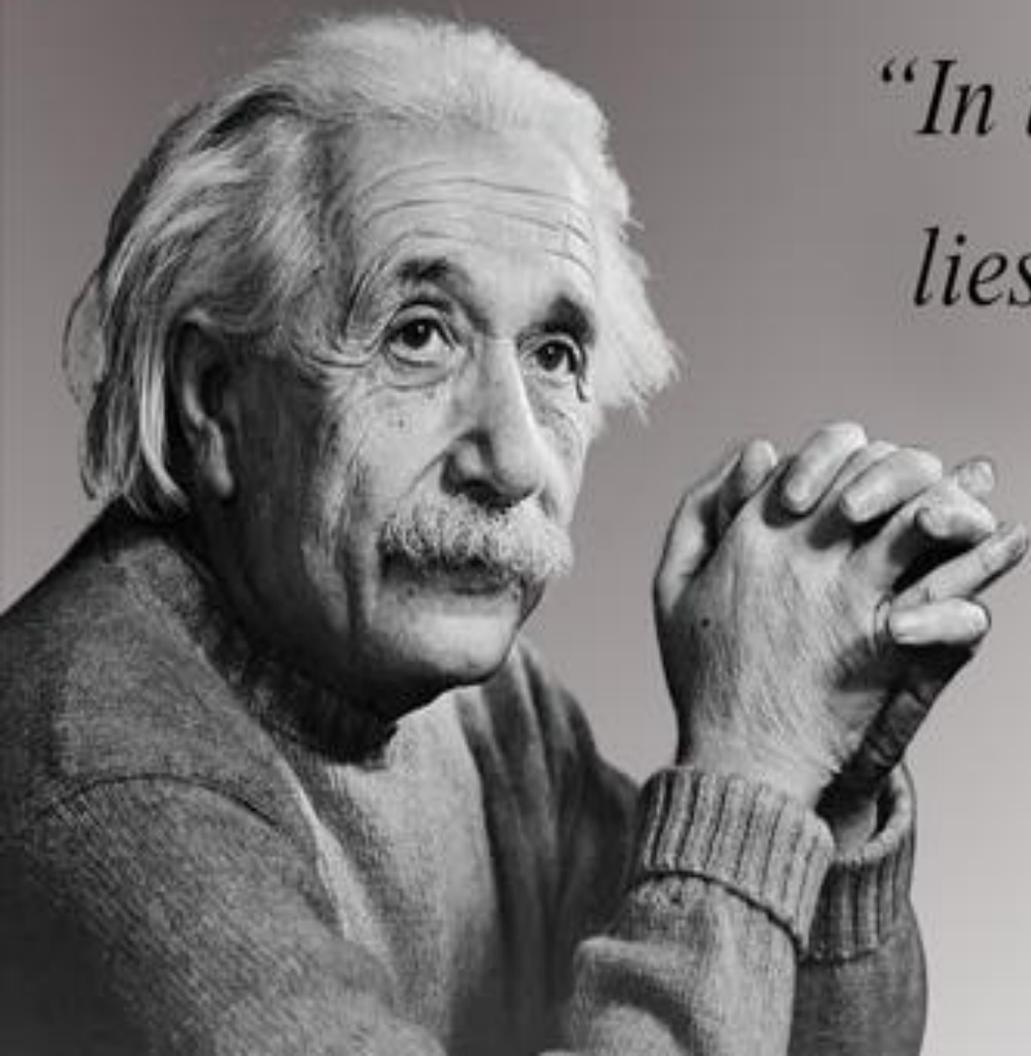
canada.ca/oceans-protection-plan



Age of CCG Vessels Science Uses as of 2019

Age of Vessel





*“In the middle of every difficulty
lies opportunity”*

- Albert Einstein

Increasing Ocean Science Capability:

1. New Research Ships!
2. Vessels of Opportunity
3. Collaboration and Partnerships
4. Industry and Stakeholder Engagement



Science At-Sea Program

National Shipbuilding Strategy

Canada





Offshore Fisheries Science Vessel x 3

Vessel Particulars:

- Length 63.4m; Beam 16m; Draft 6.1m
- Max speed 13 kts; Range 6000 NM; Endurance 31 days
- Berths 36 (Crew 23, 13 Program staff / supernumeraries)

Vessel Delivery:

- CCGS *Sir John Franklin* = June 2019
- CCGS *Captain Jacques Cartier* = Nov 2019
- CCGS *Sir John Cabot* = Aug 2020

Comparative Studies = Continuity of time series data

OFFSHORE OCEANOGRAPHIC SCIENCE VESSEL (Image provided by STX Canada Marine Inc.)



Offshore Oceanographic Science Vessel

Vessel Particulars:

- Length 85m; Beam 16m; Draft 6.05m
- Max speed 13.7 kts; Range 12000 NM; Endurance 42 days;
- Berths 56 (Crew 30, Program staff / supernumeraries 25)
- Definition phase and delivery of the vessel is scheduled for Summer 2024



Arctic and Offshore Patrol Ships (AOPS) x 2

- May 2019, announcement that Canadian Coast Guard would be procuring two new AOPS.
- Broad range of capabilities, including the ability to support scientific missions in the Arctic.

Collaborative Agreement Canada & United Kingdom RRS James Cook



Atlantic Zone Monitoring Program
Galway Accord supporting multibeam data collection
Ocean sampling technical expertise exchange
Workshops to examine other areas for potential collaboration

Increasing Ocean Science Vessel Capacity

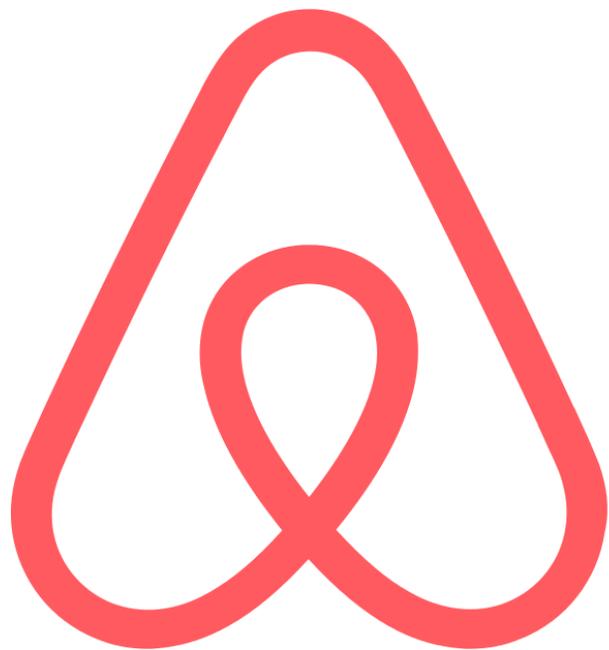


Platforms

Alliances



U B E R



airbnb



Connecting users and providers to increase the sharing and utilization of assets



Canadian Ocean Infrastructure Portal

1



Schedule Optimization

Phase 1: Develop an online scheduling optimization tool for access to Canadian Coast Guard Ships to promote efficiencies in the coordination of access to ships and planning of science missions at sea.

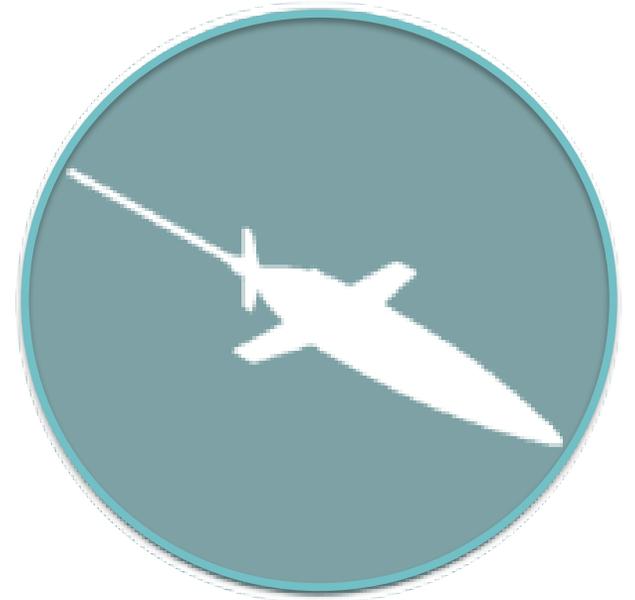
2



Research Vessel Database

Phase 2: Build a searchable online database of research vessels in Canada (Govt, Academia, Private Sector), featuring vessel specifications, associated science equipment and current and future cruise plans of participating vessels/organizations.

3



Transferrable Equipment

Phase 3: Expand the searchable online database to include large transferrable ocean science equipment such as remotely operated vehicles, autonomous underwater vehicles and other observing equipment.



2019 Industry Information Session

Goals:

- Help build an understanding of DFO's ocean science requirements
- Understand the Government of Canada Procurement Process
- Increase the science at-sea capacity

Engagement:

- 59 people attended representing 46 organizations/operators (Domestic and International)

Leadership

Canada is at the forefront of ocean research and must continue to be a reliable partner in the stewardship of the Global Ocean

Collaboration

Strengthening our culture of collaboration across all research teams and organizations

Coordination

Develop tools to share information and better coordinate access to research vessels and the sharing of infrastructure

Questions?

Jennifer Vollrath
National Manager, Science Assets & Infrastructure
Fisheries and Oceans Canada



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canada