Session V: Towards Sustainable Stewardship: Sustainable Fishing, Livelihoods and Life Under Water (SDG 8 & 14)

Dr. Nancy Shackell,
Senior Research Scientist, Fisheries and Oceans Canada,
Bedford Institute of Oceanography
Member of the Independent Group of Scientists (IGS):

October 2024 SDTF

Outline:

1) Historical trade-offs between SDG 8 and 14

2) Global Status of SDG 14

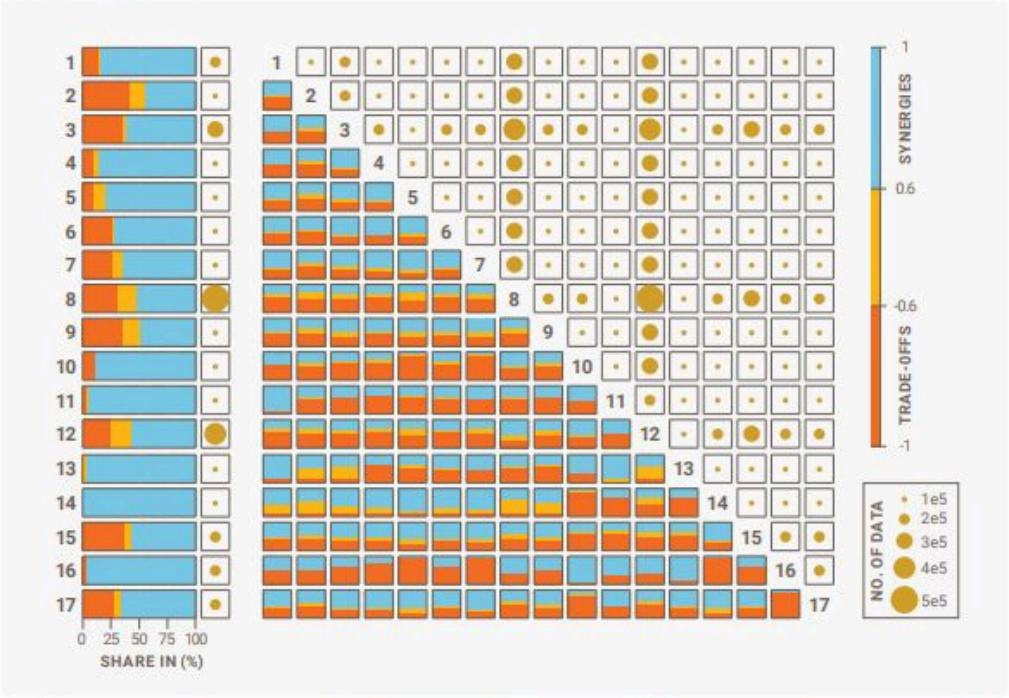
3) Recent Global Multilateral Agreements that may shift tides.

4) Global agreements are dependent upon national commitment, which in turn depend on depend on capacity and research

5) Canadian Government and Indigenous “30 by 30 “ efforts, and building sustainable fisheries for all.

FIGURE 2-8

INTERLINKAGES BETWEEN THE SUSTAINABLE DEVELOPMENT GOALS CREATE SYNERGIES AND TRADE-OFFS



Note: Results from an illustrative study of interlinkages between the Sustainable Development Goals. Note: Interactions within the 17 Goals (left) and among 136 pairs of Goals (right) based on data from 2018 (Department of Economic and Social Affairs, Statistics Division 2019). The shares of synergies (light blue), non-classifieds (yellow), and trade-offs (orange) are represented by the colour bars. The number of data pairs of Sustainable Development Goal indicators is depicted by the areas of the circle in the boxes. Here, 1e5, 2e5, 3e5, 4e5, and 5e5 are 100, 1,000, 10,000, 100,000, and 500,000, respectively.

Source: Anderson, C.C., Denich, M., Warchold, A. and others, 2022.

Synergistic goals=blue
Trade-offs=yellow and orange

Note the historical trade-off between SDG8 and 14
....people are working to change that.

How can get a rising tide to lift all boats?

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

- The ocean is in a state of emergency as increasing eutrophication, acidification, ocean warming and plastic pollution worsen its health. Additionally, the alarming trend of overfishing persists, leading to the depletion of over one third of global fish stocks.
- While there has been some progress in expanding marine protected areas, combating illegal, unreported and unregulated fishing, banning fishing subsidies and supporting small-scale fishers, action is not advancing at the speed or scale required to meet Goal 14.
- To counter these trends, swift and coordinated global action is imperative. This entails increasing funding for ocean science, intensifying conservation efforts, advancing nature- and ecosystem-based solutions, addressing the interconnections and impacts of human-induced pressures, and urgently turning the tide on climate change to safeguard the planet’s largest ecosystem.

https://unstats.un.org/sdgs/report/2023/goal-14/

Turning the tide: Recent marine agreements show promise for ocean protection

March 2022: Member States endorsed a resolution to end plastic pollution, including in marine environments, with plans to implement an international legally binding agreement by 2024. June 2022: World Trade Organization Agreement on Fisheries Subsidies adopted: ban harmful fisheries subsidies June 2022: More than 100 Member States commit to conserve or protect at least 30 per cent of the global ocean by 2030. March 2023: historic agreement on protecting marine biodiversity in international waters – referred to as the High Seas Treaty – after nearly two decades of negotiations. Given that the "high seas" make up two thirds of the ocean, this treaty, once ratified by countries, will help to provide vital protection against pollution, overfishing and habitat destruction in these critical areas.

...while these are merely agreement of principles, they provide a starting point for member states

- Multilateral agreements are dependent upon national pledges,
- National pledges depend on capacity and research

Balaras, Constantinos & Droutsa, Popi & Dascalaki, Elena & Kontogiannidis, Simon & Moro, Andrea & Bazzan, Elena. (2020). A transnational multicriteria assessment method and tool for sustainability rating of the built environment. IOP Conference Series Earth and Environmental Science. 410. 012068. 10.1088/1755-1315/410/1/012068.

Outline:

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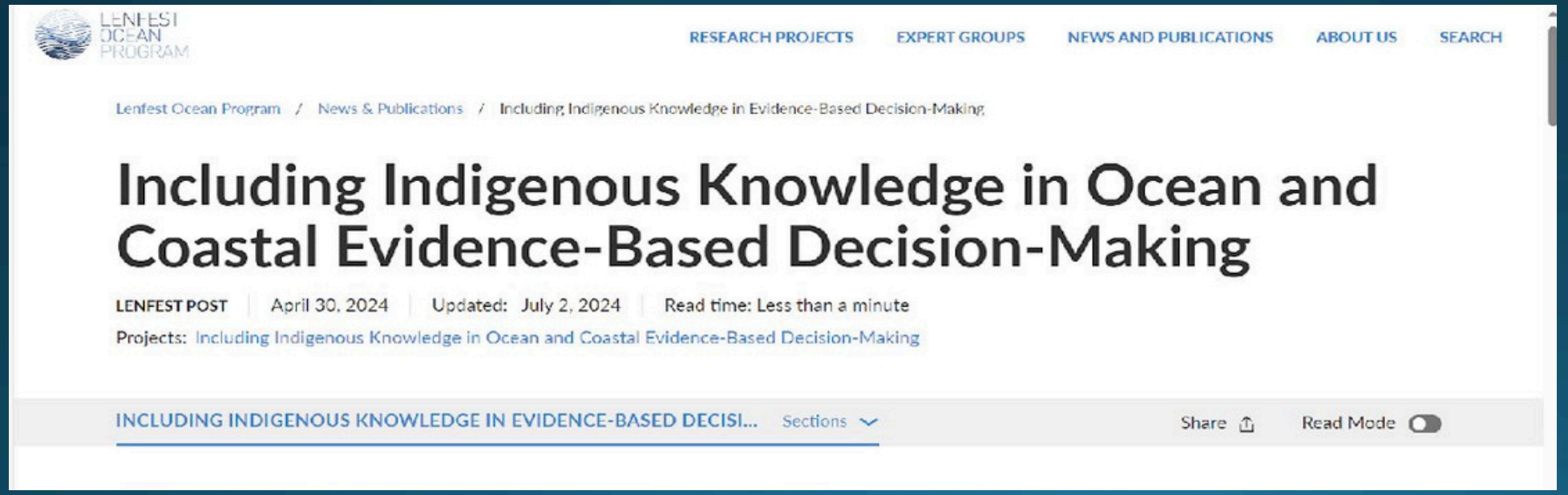
5) Canadian Government and Indigenous “30 by 30 “ efforts, and building sustainable fisheries for all.

Since 2015 Canada has made a collective commitment to Advance Reconciliation, Anti-Racism, Equity, Diversity and Inclusion and Accessibility. In terms of the Ocean, There have been efforts:
... in the Public Service
...in autonomous research
...in community processes.
...in Science-Policy Interface.



Protecting more nature in partnership with Indigenous Peoples | Prime Minister of Canada (pm.gc.ca)

Advancing Dialogue and Reconciliation between First Nations and non -Indigenous Fishing Communities in Atlantic Canada through Knowledge Exchange and Leadership Engagement

Jane McMillan
jmcmill@stfx.ca
Saint Francis Xavier University

John G. Paul
john.paul@apcfnc.ca
Atlantic Policy Congress of First Nation Chiefs Secretariat

Tyler Sack
tsack@cmmns.com
Confederacy of Mainland

Kerry Prosper
kprosper@stfx.ca
Pagtnkek Mi'kmaw Community
Saint Francis Xavier University

Dr. Shelley Denny
shelley.denny@unbc.ca
Unama'ki Institute of Natural Resources

Your audio is in listen-only mode.
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Use the Chat Box to type your comments and suggestions.

Moderated by Jason Landrum, Senior Officer, Lenfest Ocean Program

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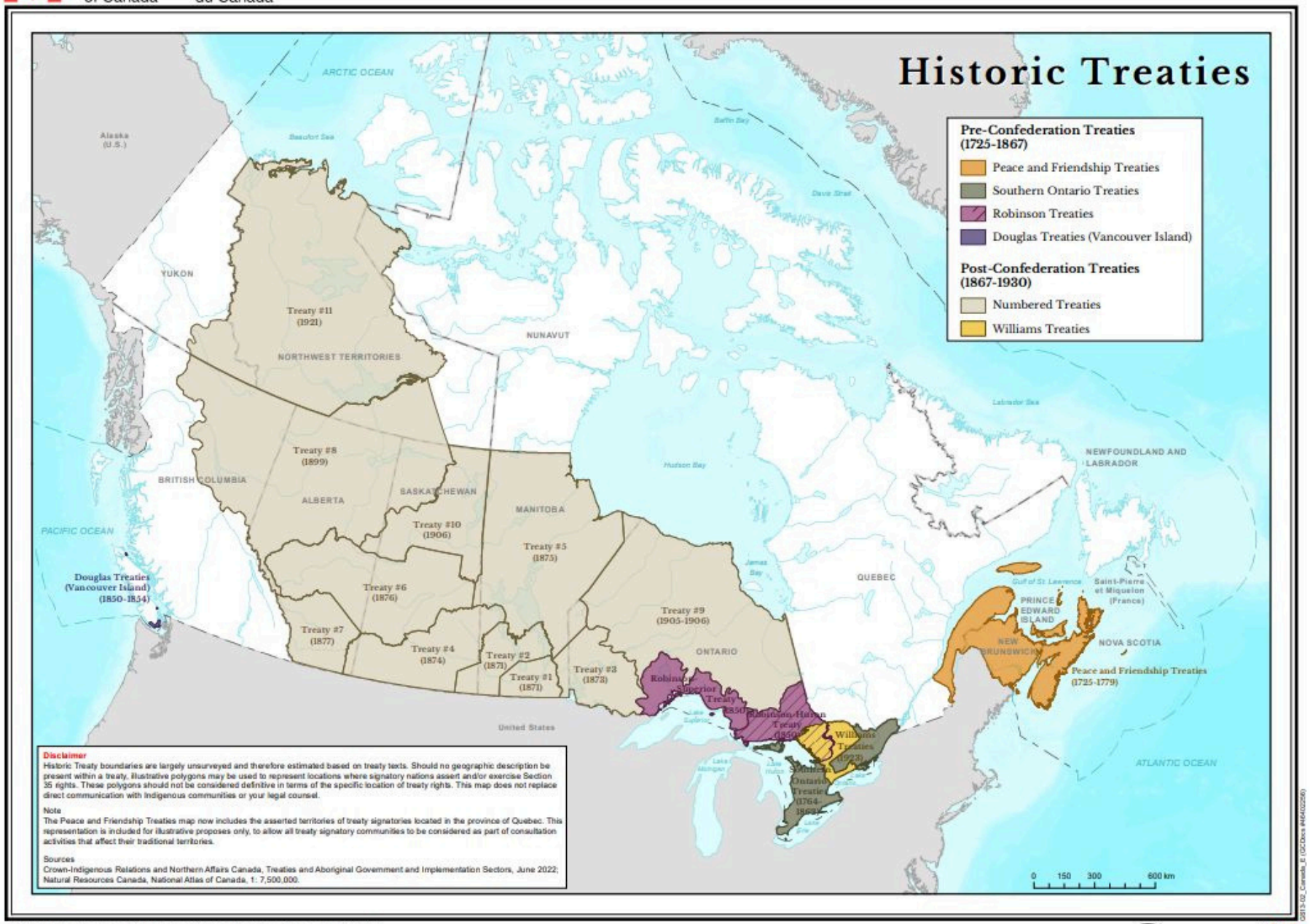
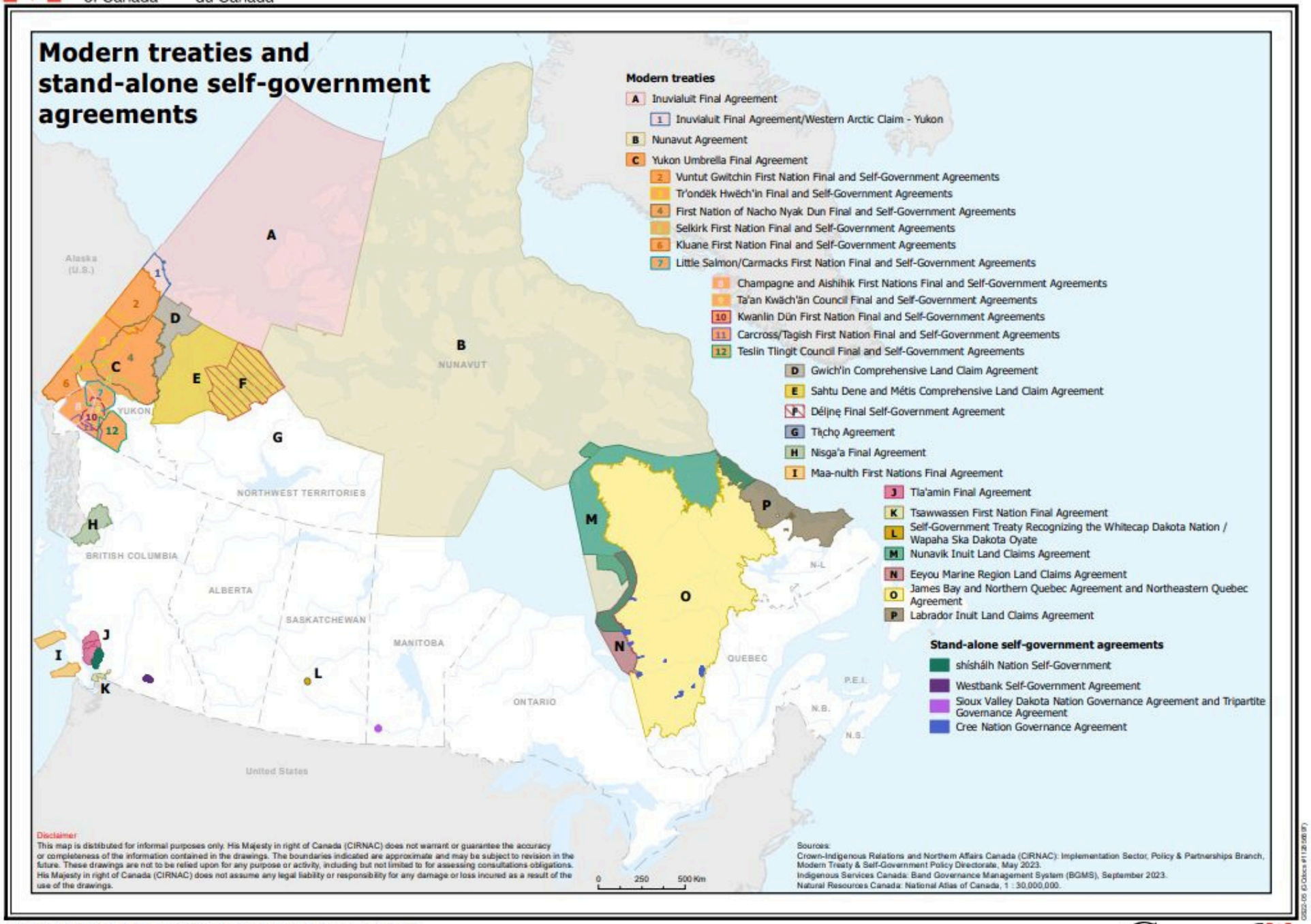


Indigenous Services Canada, Geomatics Services, June 2022.

Canada



Indigenous Services Canada, Geomatics Services, September 2023.

Canada

Multiple Communities

Multiple Modes of Governance

Fisheries and Oceans Canada

Pêches et Océans Canada

2020 UN BIODIVERSITY CONFERENCE

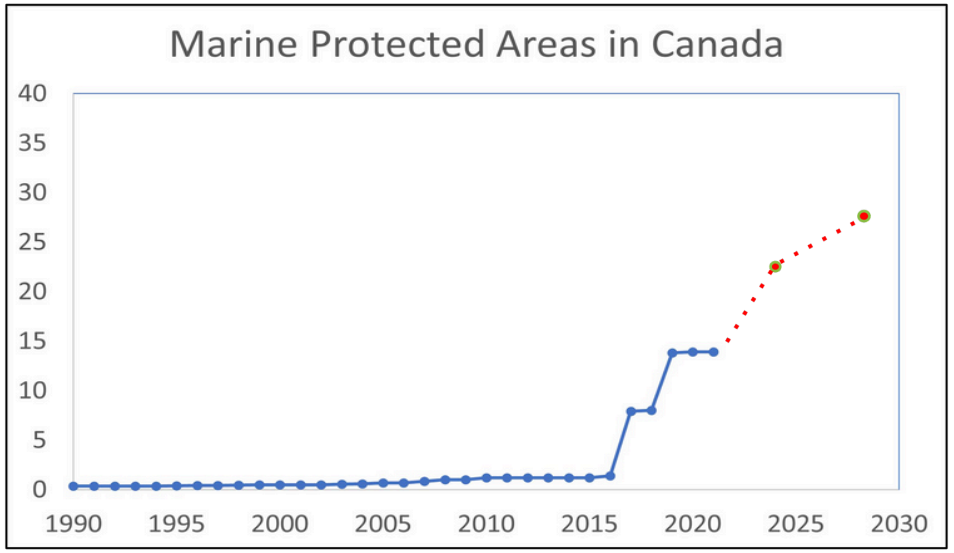
COP 15 / CP-MOP 10 / NP-MOP 4

Ecological Civilization-Building a Shared Future for All Life on Earth

KUNMING – MONTREAL

Kunming-Montreal Global Biodiversity Framework – Target 3

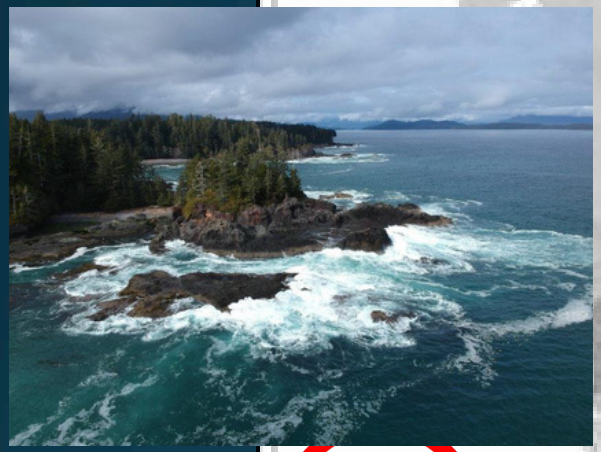
– “conserve 25 per cent of our lands and waters by 2025, and 30 per cent of each by 2030”;



plus 850,000 km2

From Emily.Rubidge@dfo-mpo.gc.ca


Arctic Ocean
Beaufort Sea
Baffin Bay
Labrador Sea
Hudson Bay
Pacific Ocean
Atlantic Ocean



Arctic Ocean
Beaufort Sea
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Labrador Sea
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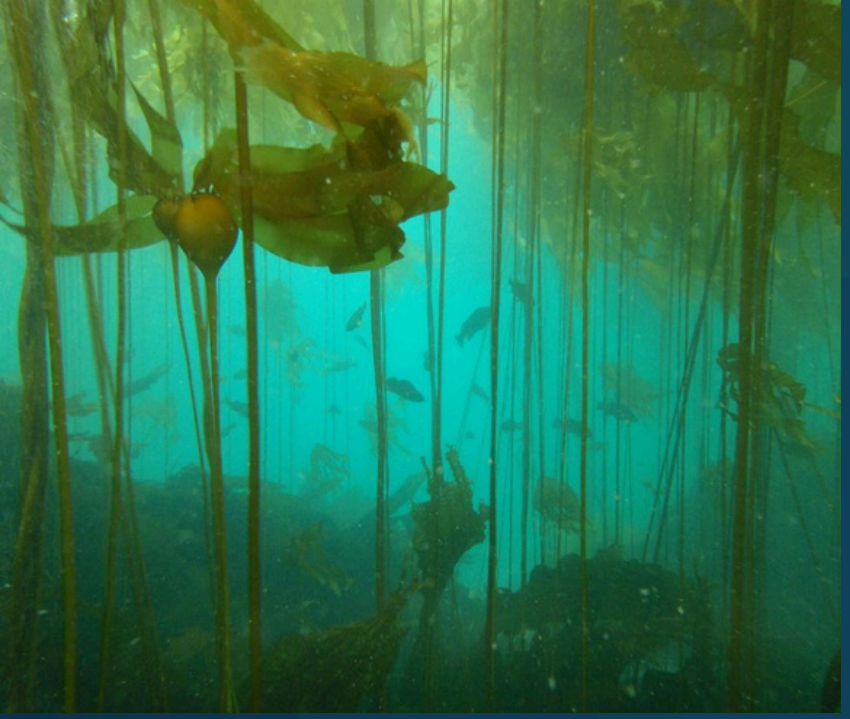
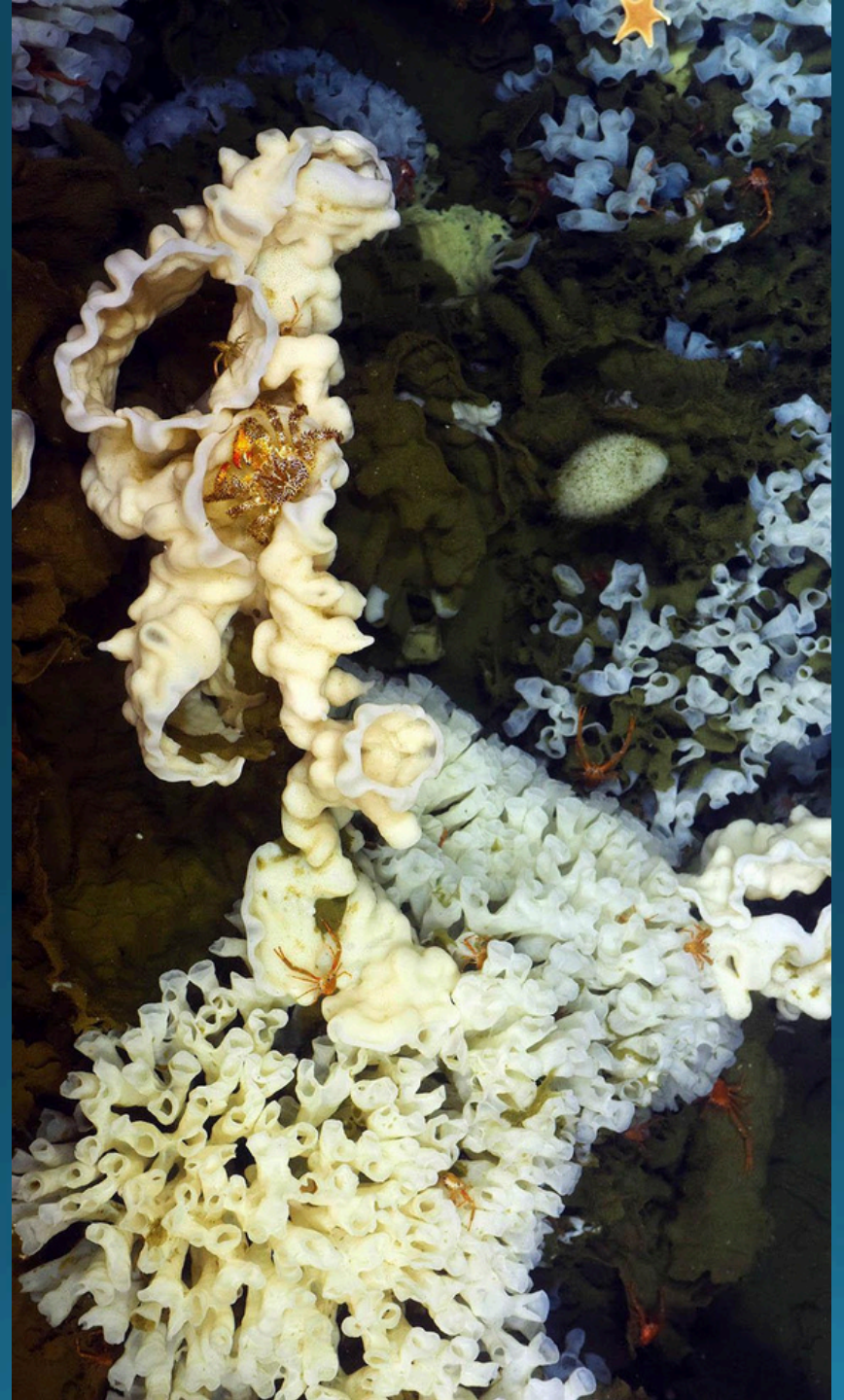
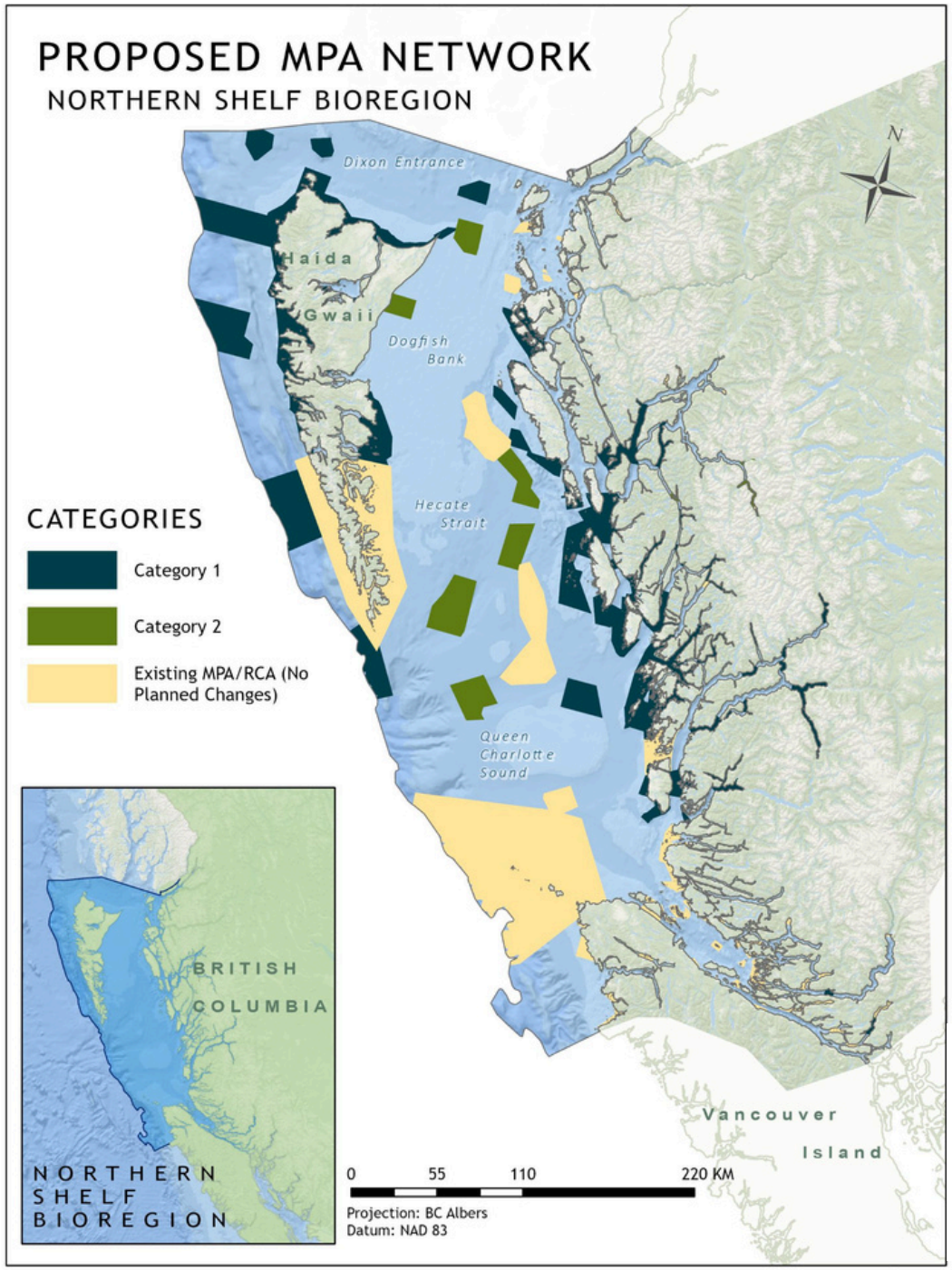
Atlantic Ocean

For the past two decades, 17 partner First Nations have been working collaboratively with federal and provincial governments in long-term planning to advance conservation and ecosystem-based management throughout the North Pacific Coast.

Co-designed MPA network has been endorsed by all partners and is now in implementation phase. Link to MPA Network Action Plan below

NAP – MPA Network

Great Bear Sea Marine Protected Areas - Coastal First Nations

More info on funding model for Indigenous-led monitoring

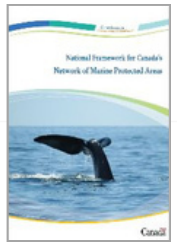
Our Great Bear Sea

Great Bear Sea (Northern Shelf Bioregion) (dfo-mpo.gc.ca)

Working Together - NSB MPA Network Planning History

2006 — First Nation Marine Use Planning

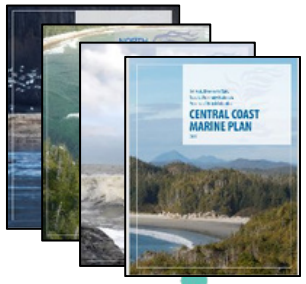
2011



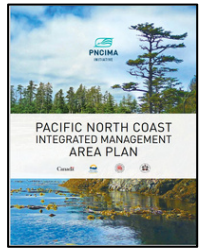
2014

2015 — START OF MPA NETWORK PROCESS (2015)

2015



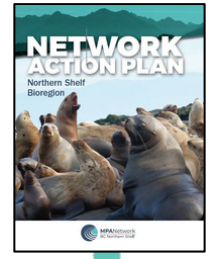
2017



2019 — Draft Network Scenario Released for Stakeholder Review

2020 — Initial Technical Review

2022



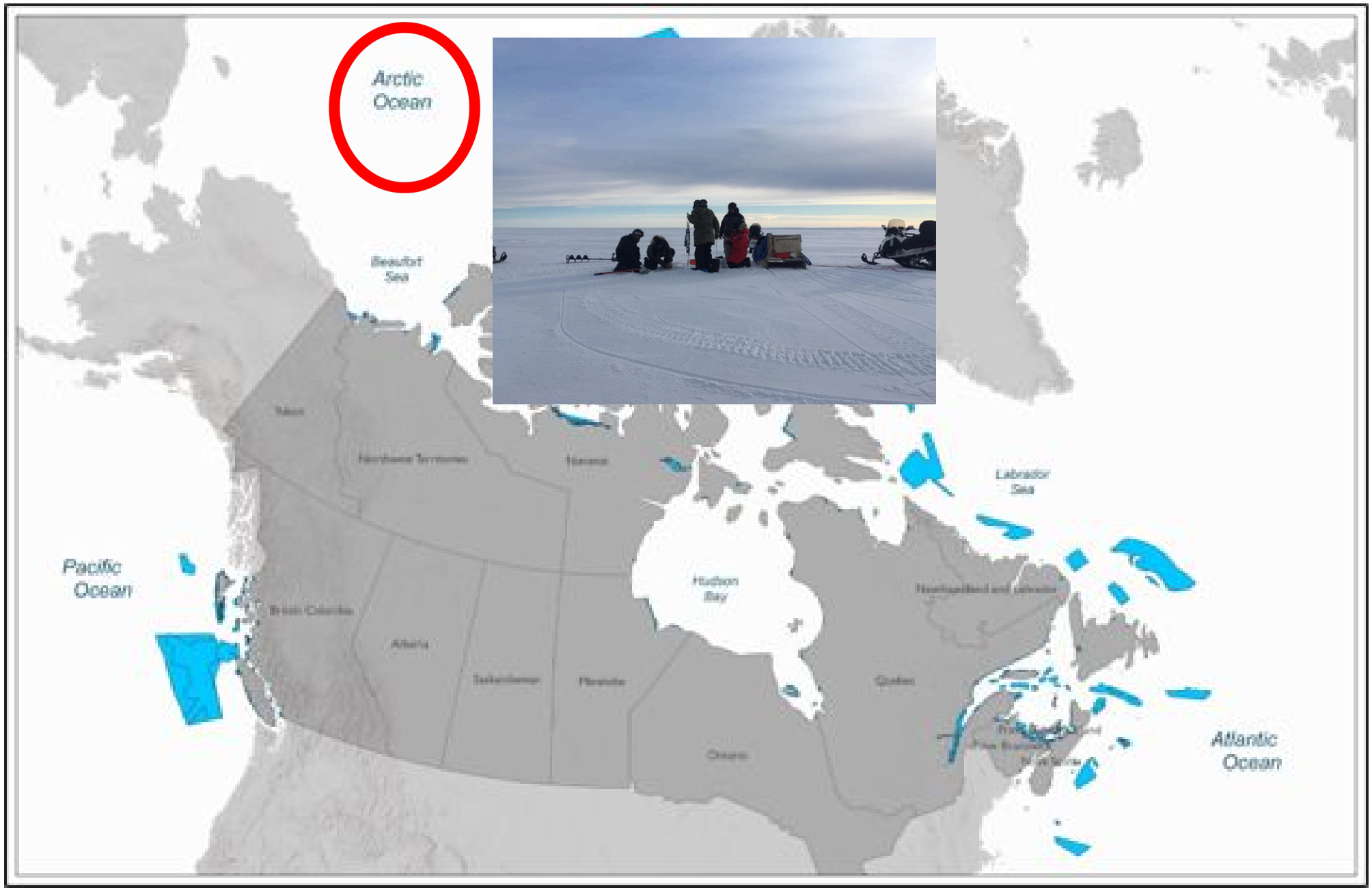
Early 2023 — Completion of the Network Action Plan

Network Implementation & Site Designation Process Begins

From Emily.Rubidge@dfo-mpo.gc.ca

MPANetwork BC Northern Shelf

NSB MPA Network - collaboratively led by 17 coastal First Nations, provincial and federal governments

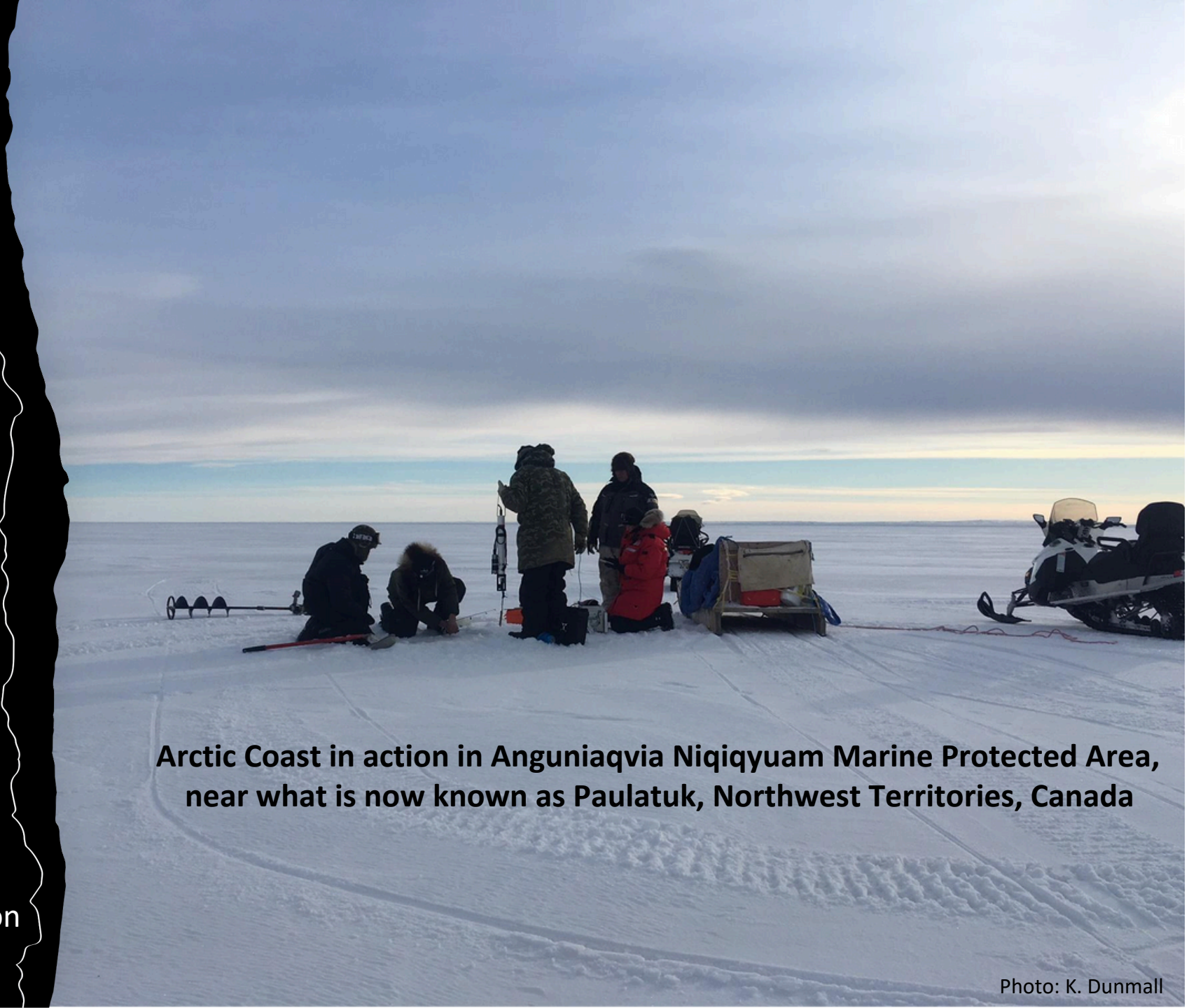

Arctic Ocean
Beaufort Sea
Yukon
Northwest Territories
Nunavut
Labrador Sea
Pacific Ocean
Hudson Bay
British Columbia
Alberta
Saskatchewan
Manitoba
Ontario
Quebec
Atlantic Ocean

Arctic Coast:

A transferrable coastal monitoring framework supporting Indigenous leadership in research and monitoring across the Canadian Arctic

Karen Dunmall (Program Lead)
Darcy McNicholl (Eastern Arctic lead)
Laurissa Christie (Western Arctic lead)

Fisheries and Oceans Canada, Arctic Region



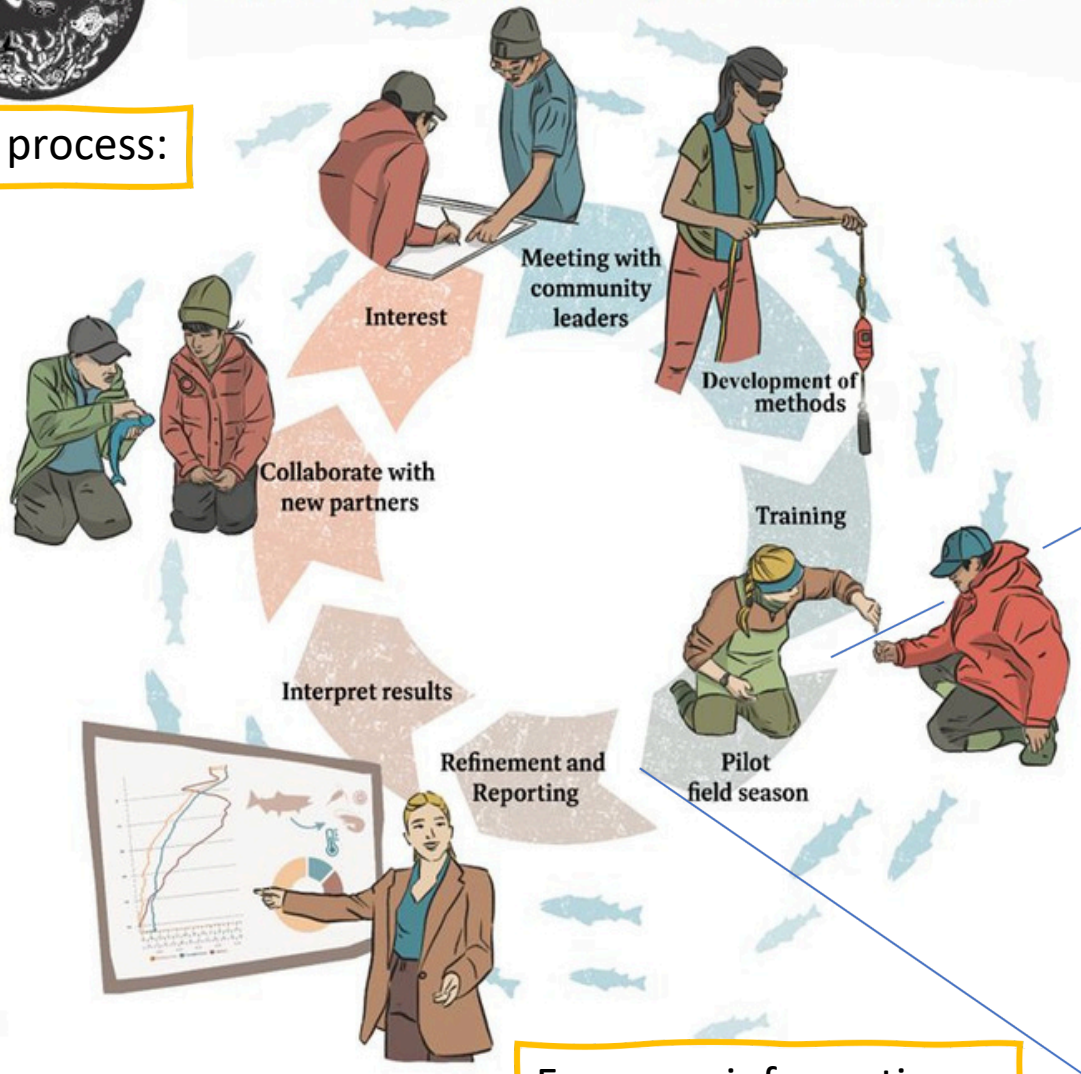
Arctic Coast in action in Anguniaqvia Niqiqyuam Marine Protected Area, near what is now known as Paulatuk, Northwest Territories, Canada

Photo: K. Dunmall

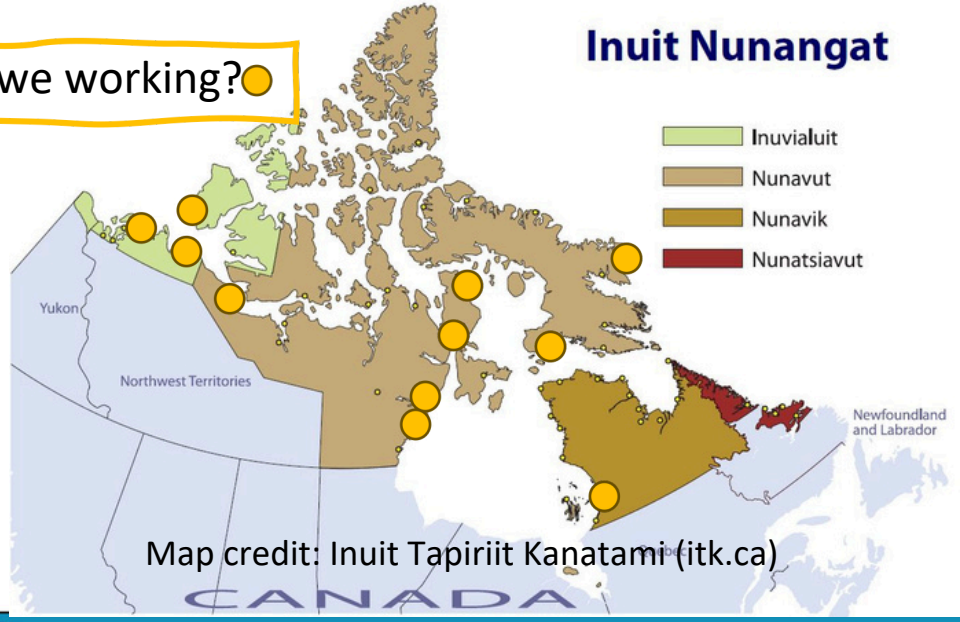
Arctic Coast

Our collaborative process to support Indigenous leadership in research and monitoring of coastal ecosystems in the Canadian Arctic

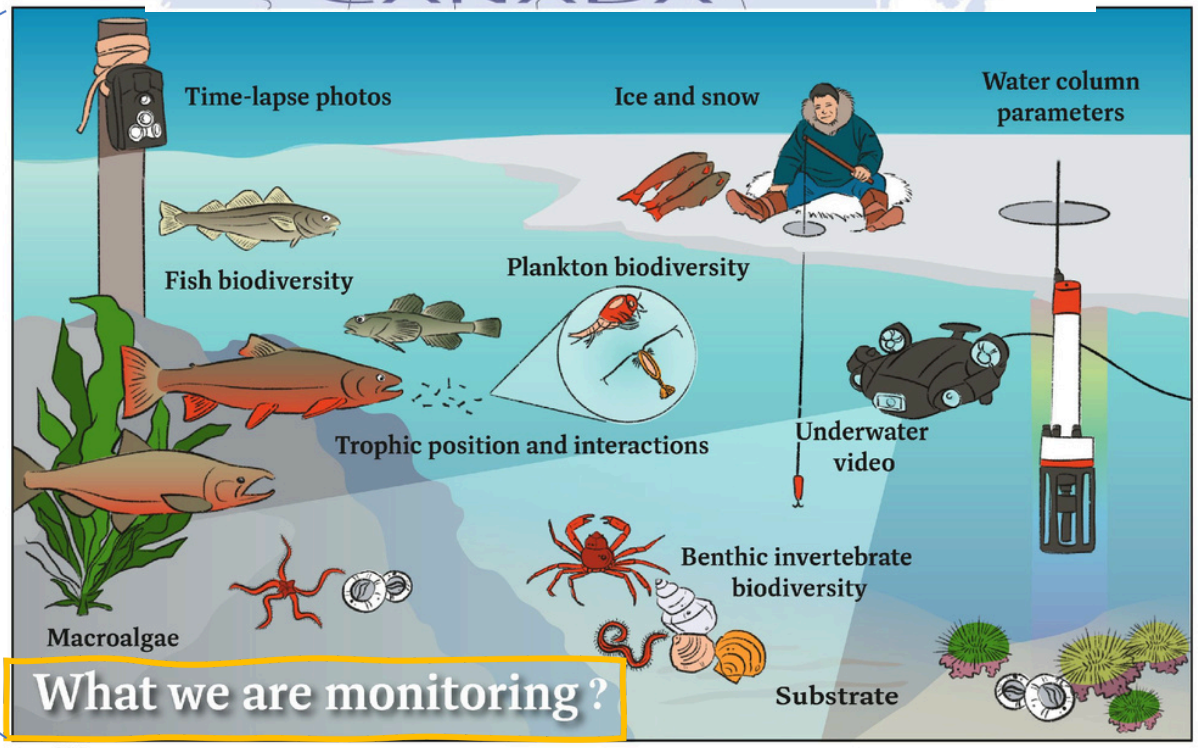
The process:



Where are we working?



Map credit: Inuit Tapiriit Kanatami (itk.ca)



For more information:

Karen.Dunmall@dfo-mpo.gc.ca
Darcy.McNicholl@dfo-mpo.gc.ca
Laurissa Christie@dfo-mpo.gc.ca

Fisheries and Oceans Canada | Pêches et Océans Canada

Arctic Coast
Karen Dunmall - karen.dunmall@dfo-mpo.gc.ca
Darcy McNicholl - darcy.mcnicholl@dfo-mpo.gc.ca
Laurissa Christie - laurissa.christie@dfo-mpo.gc.ca
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Arctic Ocean
Beaufort Sea
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Atlantic Ocean

A Mosaic of Conservation in Kespukwitk

The Indigenous-led vision of Pemsɨk within the Kespukwitk district of Mi'kma'ki is a coordinated and collaborative conservation area that brings together existing initiatives and works to fill gaps in terrestrial and marine protection. This mosaic of conservation proposes to connect the Tobeatic Wilderness Area to the lands, watersheds, and marine waters adjacent to Port Mouton, Port Joli, and Port l'Hebert, as well as the Broad and Sable Rivers. Partners of the Pemsɨk project are working towards safeguarding the cultural and natural values that are critical to the identity and livelihoods of the Mi'kmaq and rural communities throughout South West Nova Scotia.

Indigenous-led vision of Pemsɨk

- Using multiple legislative tools and departments.

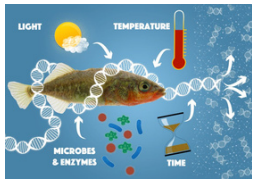
For more information:
Melissa Labrador
pemsikproject@gmail.com

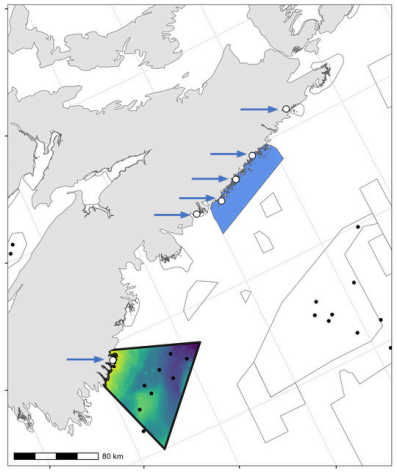
Pemsɨk Mawa'tasikl Anko'tmu'kl (pemsik.org)

https://youtu.be/NRwmM8d4Kes

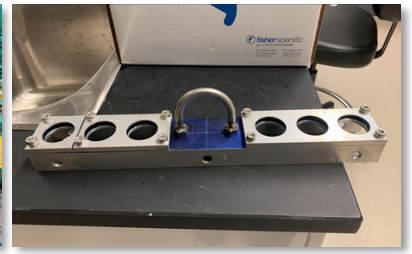
Baseline biodiversity sampling using environmental DNA - Pemsik Mawa'tasikl Anko'tmu'kl

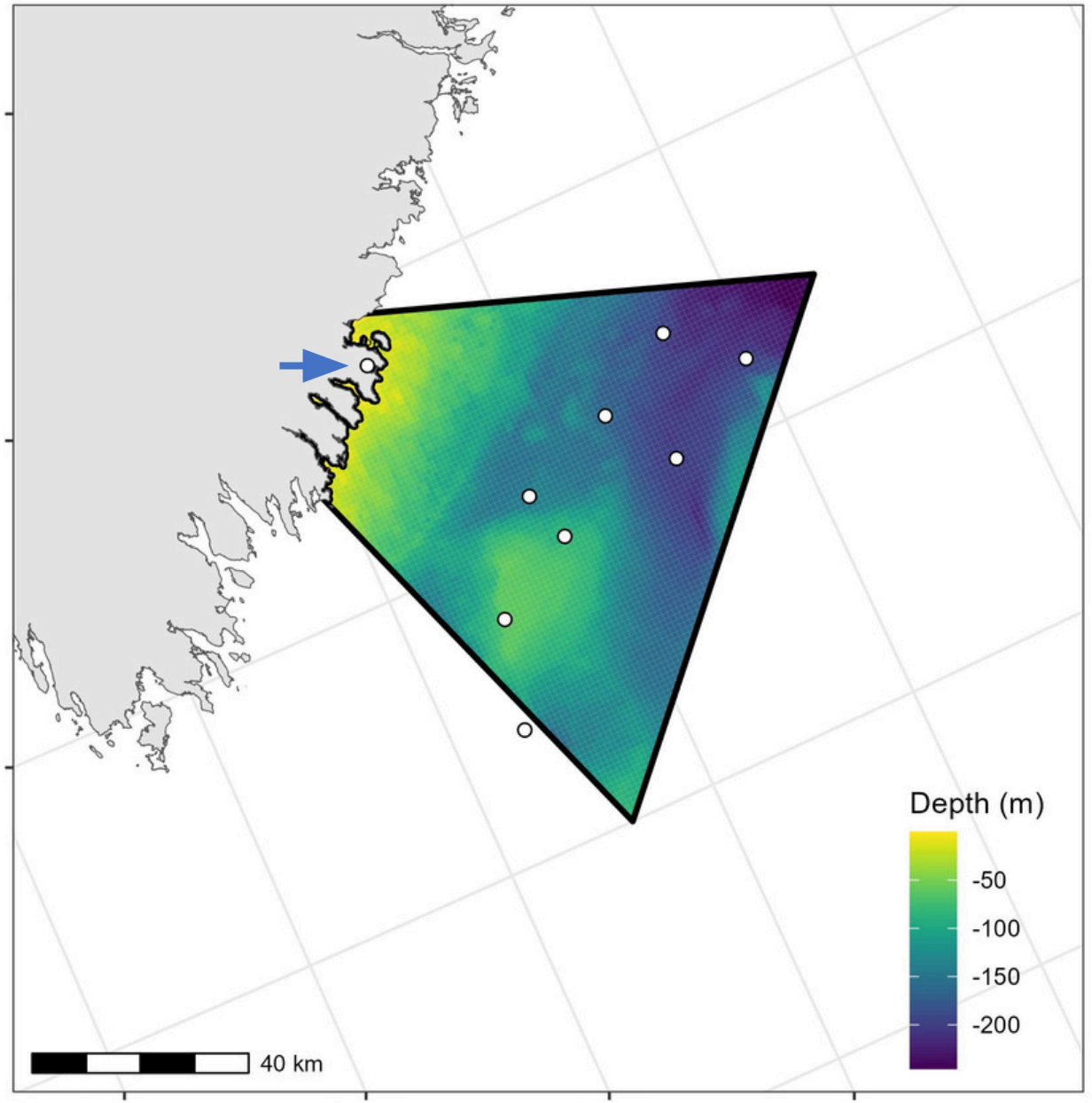
- Environmental DNA (eDNA) samples were collected in two areas within the Pemsik project area in 2024.
- In July, eDNA samples were collected from Basin Lake, a long-term eelgrass monitoring site in Keji Seaside. This expanded the Pemsik project area into a coastal biodiversity program initiated by DFO in 2019.

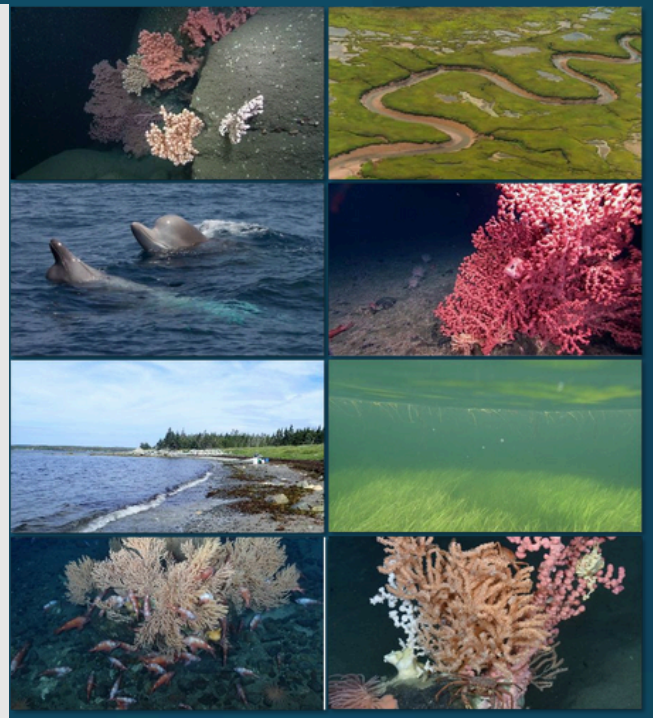


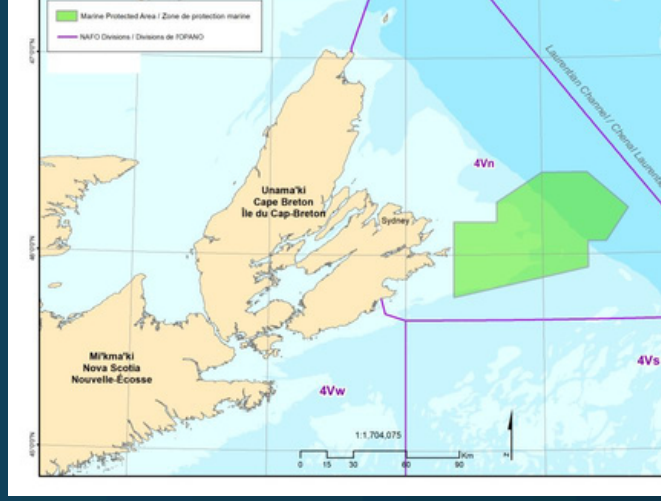


- Offshore eDNA samples were collected during the summer 2024 Research Vessel survey, using Rosettes at depth and a new passive collection eDNA filters attached to the trawl gear.



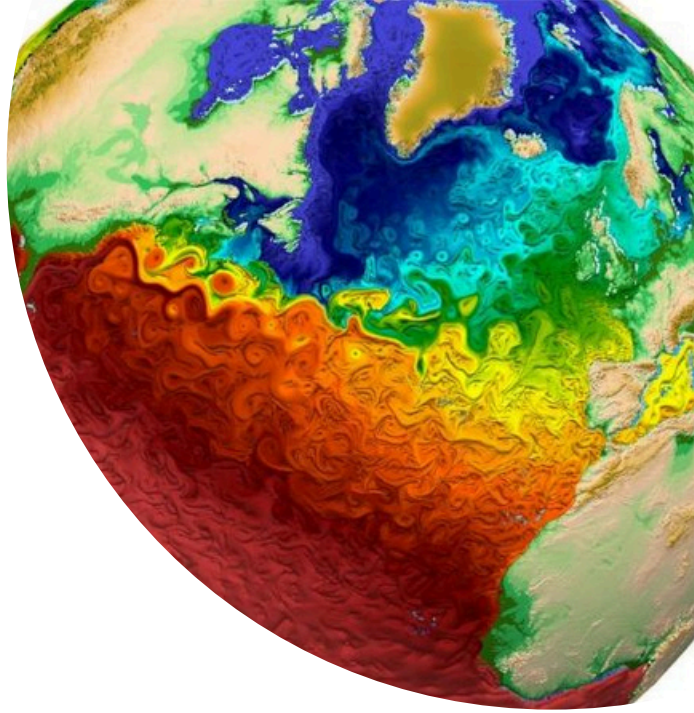


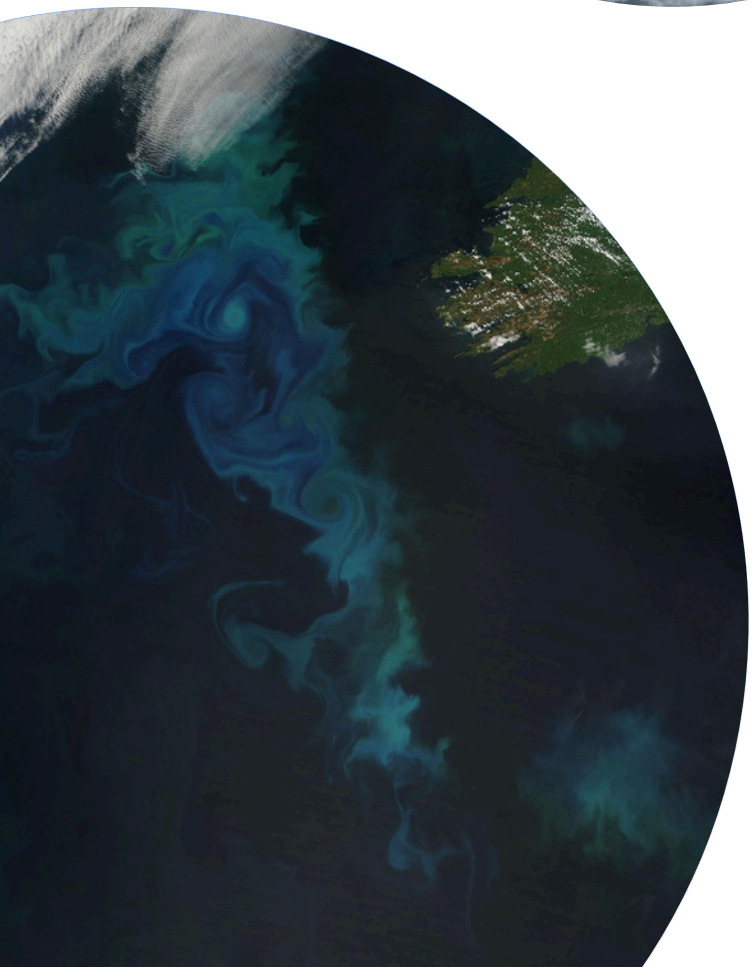




In another Atlantic example, we are entering a co-governance agreement, the first in Atlantic Canada surrounding an MPA...it's unchartered waters and the group has to figure out how to frame a joint decision making governance structure..not an easy task

For more information:
Leah.Mcconney@dfo-mpo.gc.ca and or
Catherine.Schram@dfo-mpo.gc.ca



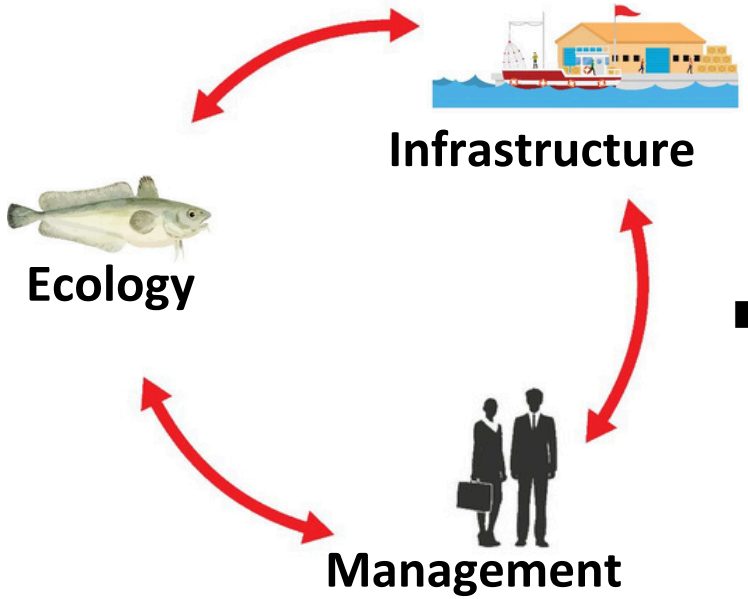


A Climate Adaptation Framework for Fisheries

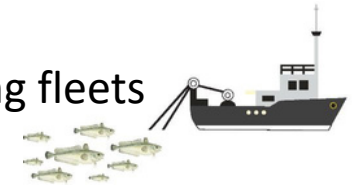
Daniel G. Boyce
Blair Greenan
Nancy Shackell
Bedford Institute of Oceanography

Fisheries and Oceans Canada | Pêches et Océans Canada

Climate Adaptation Framework for Fisheries



Outputs

1. Species 
2. Fish stocks 
3. Fishing fleets 
4. Harbours 

Potential users

- Strategic planners
- Fishery scientists
- Researchers
- Conservation planners
- Municipal planners
- Fishing industry
- Non-governmental organizations

The end.

“The ocean is not too big to fail, and it is not too big to fix.
But is too big to ignore.” - Jane Lubchenco

Thanks for your attention

BOX 1-1

CHALLENGES OF MANAGING TRANSBOUNDARY OCEAN RESOURCES IN AN ERA OF CLIMATE CHANGE[6]

Indirect effects of climate shifts can be felt across borders through disruptions in supply chains, markets and the movement of natural resources. Transboundary risks to the water, energy and food sectors have been projected as a result of extreme weather and climate events.[7] Globally, 633 (68 per cent) of assessed commercial marine stocks are estimated to be transboundary resources.[8] By 2030, it is predicted that about 23 per cent of transboundary stocks of marine fish and invertebrates will shift due to climate change.[9] Changes in species distribution across borders introduces challenges for biodiversity governance,[10] with implications for security and stability.[11] Further complications are introduced by a lack of sufficient data and institutional mechanisms to accurately track these shifts.[12]

For example, in South Eastern Asia, there are transboundary concerns about fisheries and marine area management. Prior to the establishment of exclusive economic zones, the shallower areas within archipelagic waters of what is now known as the Coral Triangle were accessible to all South East Asian fishers. Each country had traditional fishing grounds, shaped by local and indigenous knowledge, some of which extended outside boundaries of exclusive economic zones. The establishment of exclusive economic zones resulted in overlapping claims and tensions among fishing communities in Southeast Asian nations. There has also been a large number of illegal, unreported and unregulated fisheries, which contribute to the loss of biodiversity, mismanagement and in some cases the deployment of military units to secure contested territorial claims. Climate change can be expected to exacerbate existing tensions. Regional mechanisms for fisheries management could help alleviate these challenges; for instance, the establishment of an Association of Southeast Asian Nations nations regional fisheries management organization, focusing on shallow waters that host commercially important and exploited demersal species.

BOX 4-13

FOOD SECURITY, AND CREATING AN ENABLING ENVIRONMENT TO FINANCE A SUSTAINABLE OCEAN ECONOMY

When the value of natural capital and assets are rarely included in economic indices of progress, what is the transformation path forward? The ocean is a global commons that underlies culture and history through both its intrinsic value, as well as its provision of coastal livelihoods. Globally, in 2020, around 58.5 million people were directly employed in the fisheries and aquaculture sector, and an estimated 600 million people were dependent on fisheries for their livelihoods.[574] Despite efforts, anthropogenic threats to ocean health are deepening.[575] An international research group have come up with a conceptual framework towards creating an enabling environment to attract financial investment in sustainable activities. The goal is a sustainable ocean economy.[576]

In the last decade, less than 1 per cent of the estimated $1.5 trillion economy[577] was of philanthropic and official development assistance origin.[578] One of the major barriers to attracting investment in sustainability is that the majority of public sector subsidies are directed to unsustainable activities, like oil and gas development. Public sector "capacity-enhancing" subsidization of fisheries, which can lead to over-capacity, accounted for 63 per cent of $35.5 billion in public subsidies in 2018.[579] Redirecting public sector subsidies towards social equity, sustainability and food security would align public financing with Agenda 2030 goals. There are signs of progress. Since the early 2000s, the World Trade Organization (WTO) had been negotiating an agreement to end subsidies for illegal, unreported and unregulated fishing and limit harmful "capacity-enhancing" subsidies that lead to overfishing. An agreement was reached in July 2022. Progress is evident, but input is still necessary.[580]

What is a true valuation of the ocean's ecosystems goods and services? The ocean provides food, regulates habitat and climate, sequesters carbon, controls erosion and so much more. When goods and services are not factored into economic decisions, their subsequent degradation increases our risk of failure, especially in an era of climate change. Ecosystem goods and services can be evaluated and used in policy and planning.[581] Admittedly, there is much work to be done but there has been progress and the Global South is leading the way through a range of initiatives, including its prominent role on the High-Level Panel for Sustainable Ocean Economy (The Ocean Panel).[582]