



Platforms of Opportunity - Supporting Biodiversity Observations with The Ocean Tracking Network

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ABOUT OTN



Global aquatic research, data management and partnership platform headquartered at Dalhousie University in Nova Scotia, Canada.



Since 2008, OTN has been deploying ocean monitoring equipment and marine autonomous vehicles in key aquatic locations globally.



OTN has established partnerships with a global community of stakeholders to document the movements and survival of aquatic animals.

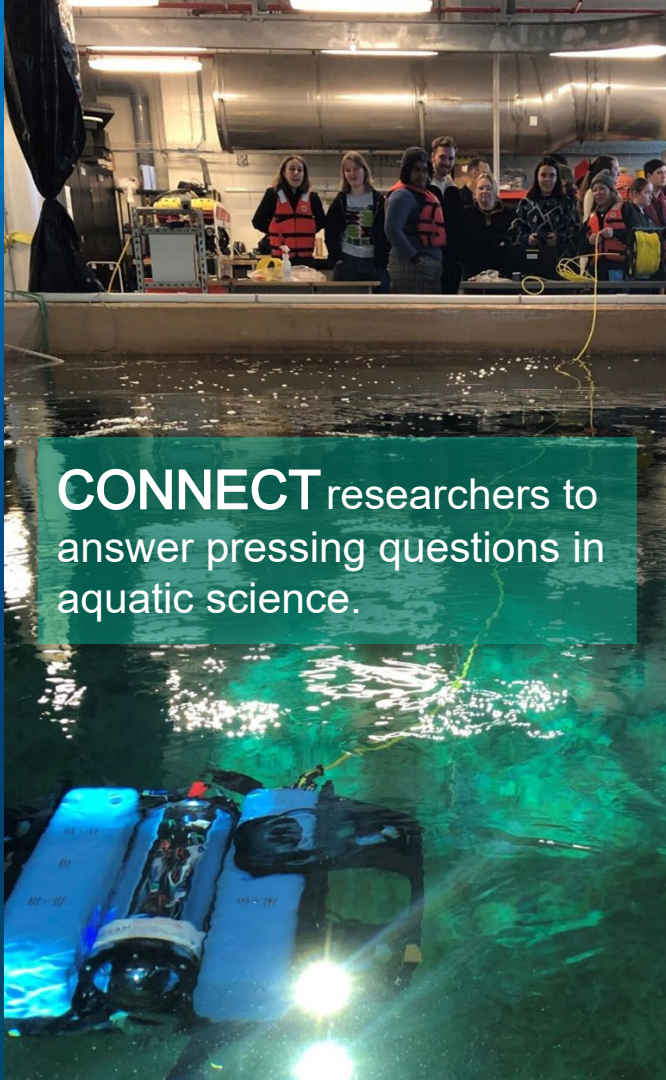


Knowledge generated by OTN is used to help guide management decisions and the sustainable use of aquatic systems.





TRACK aquatic animals
across the globe in support
of conservation and
management



CONNECT researchers to
answer pressing questions in
aquatic science.



TRANSFORM the way
oceans and connected
inland waters are
understood to guide
better stewardship and
sustainability.

OTN as Research Infrastructure

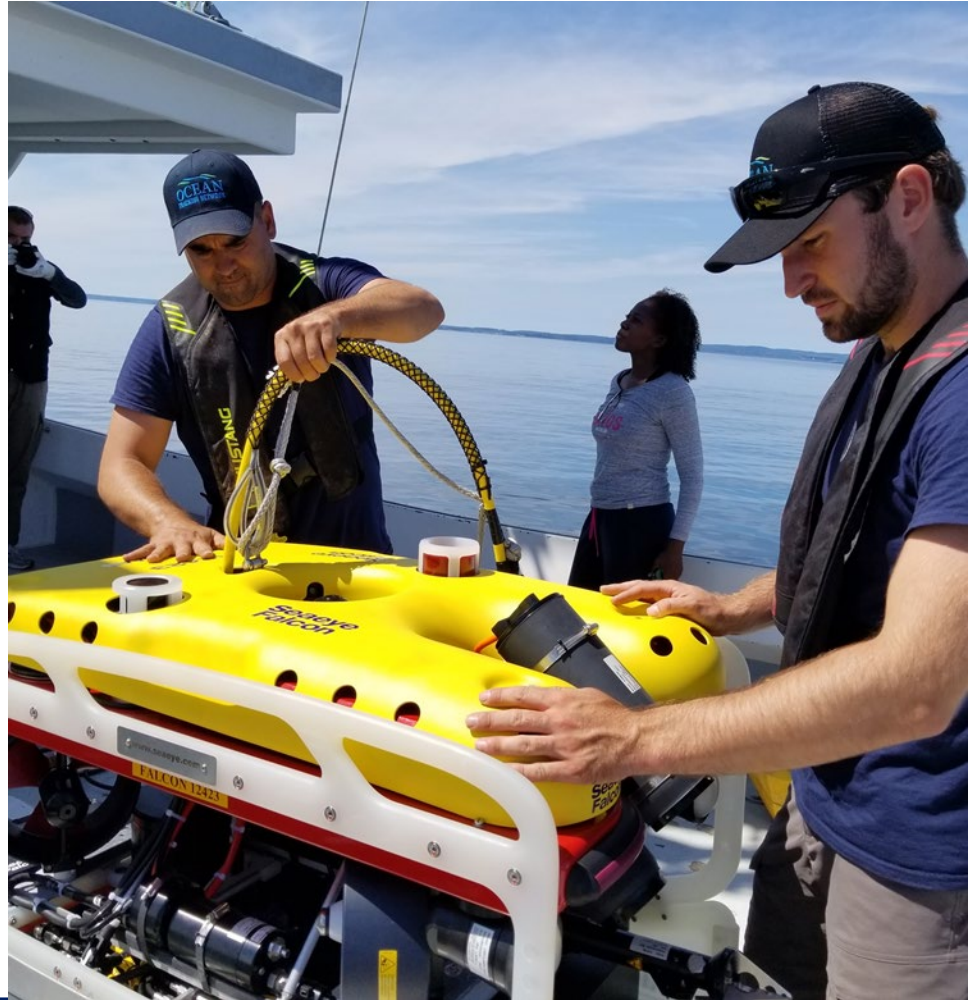
Listening equipment, AUVs, data management

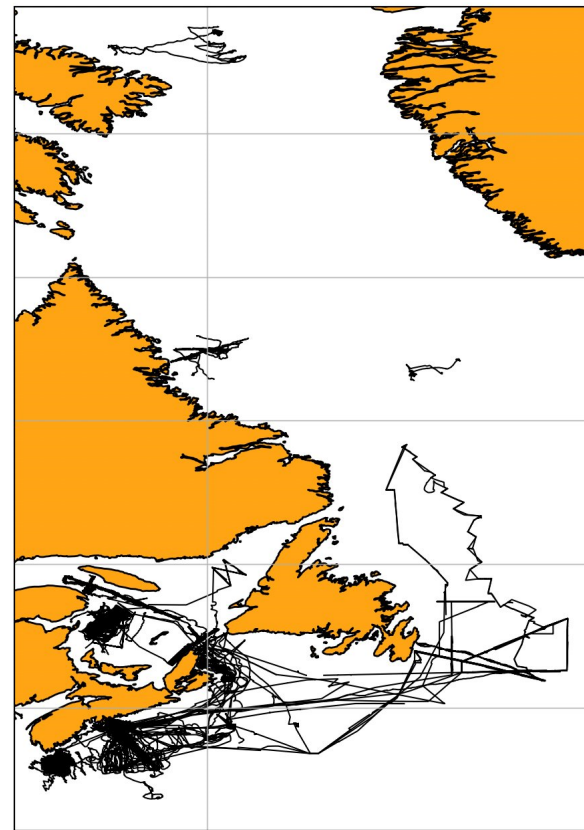
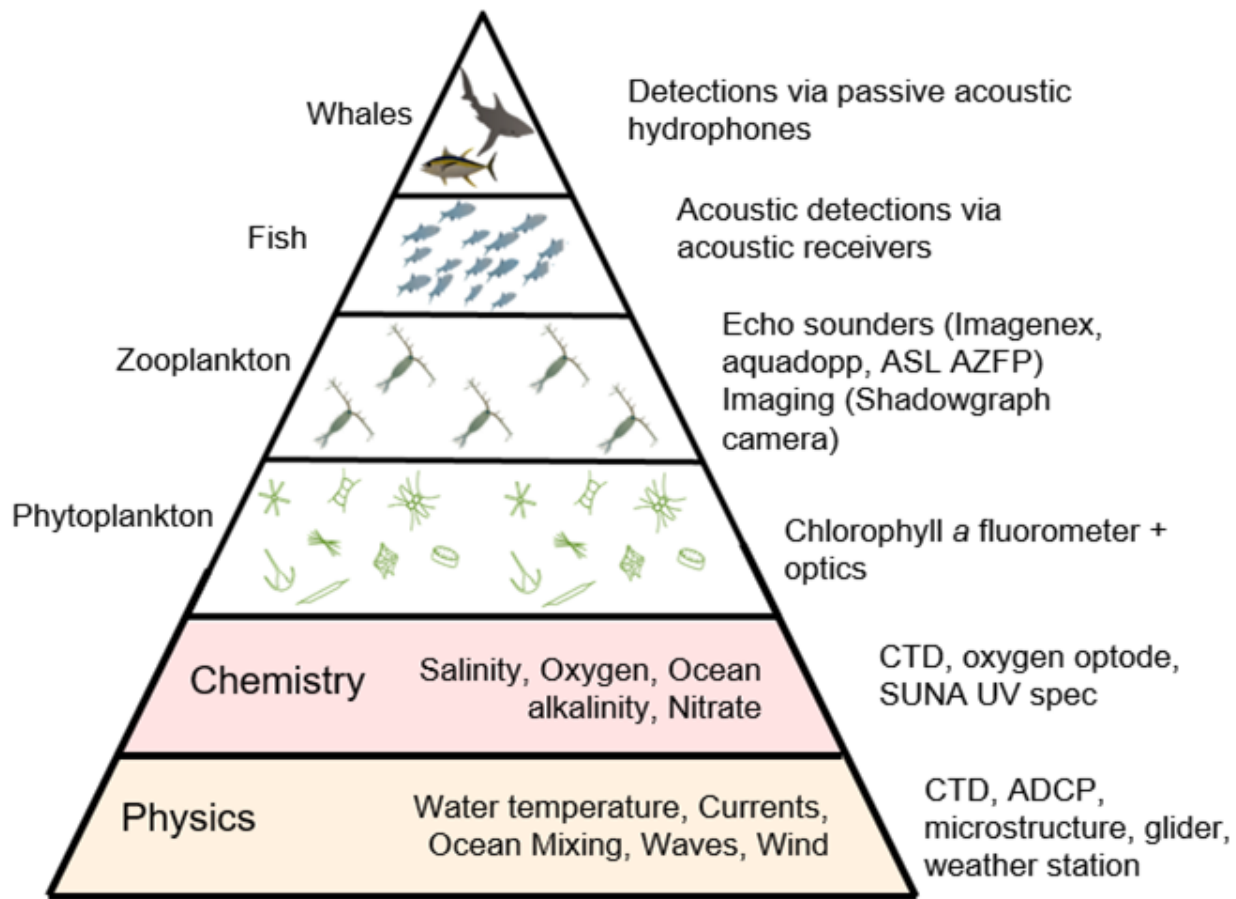
- Funded by CFI as research infrastructure through 2029
- Telemetry, ROV, and glider programmes monitoring Atlantic Canada
- Data system w/ 2 billion+ acoustic detections +6800 glider sampling days at sea

INNOVATION

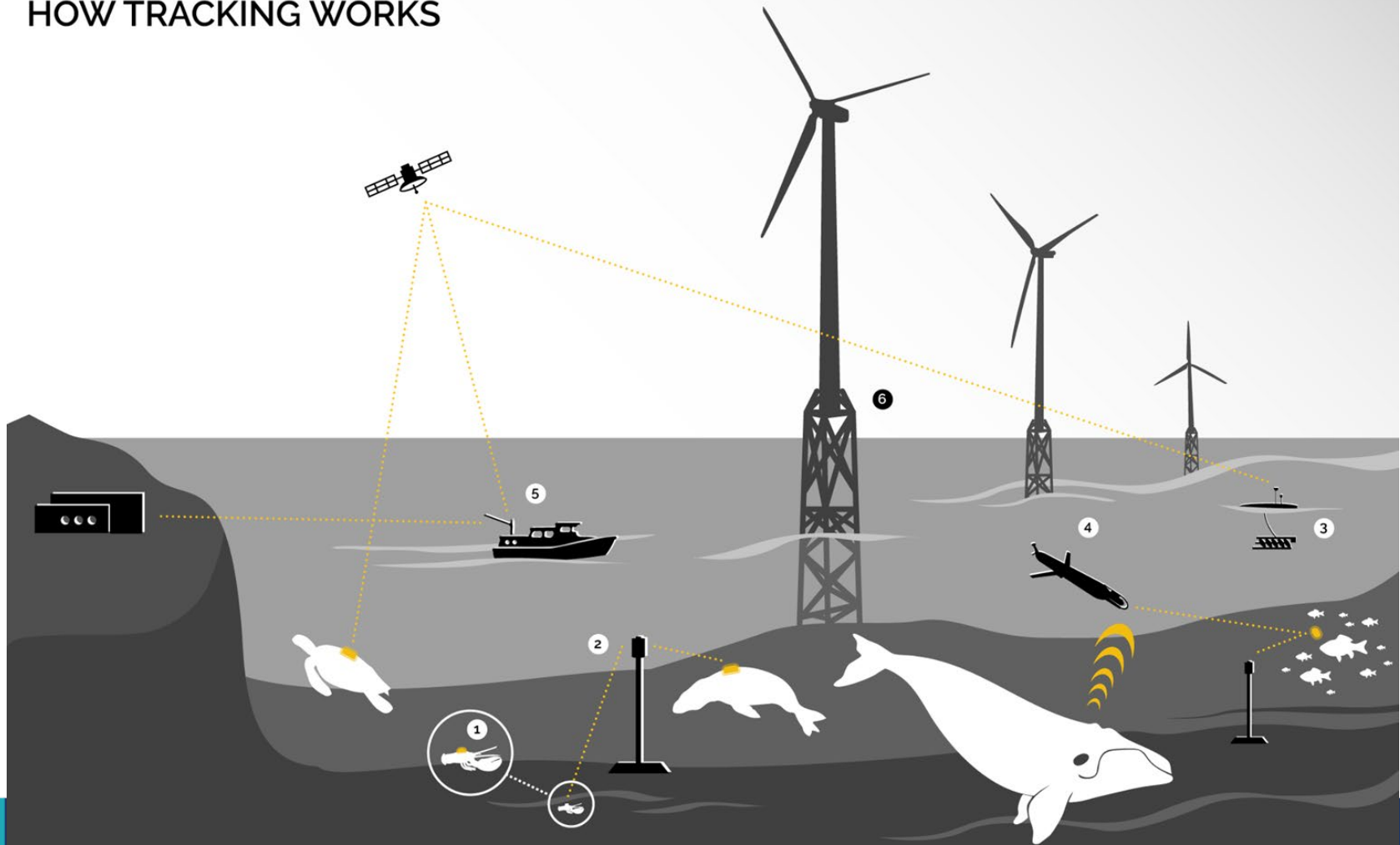
Canada Foundation
for Innovation

Fondation canadienne
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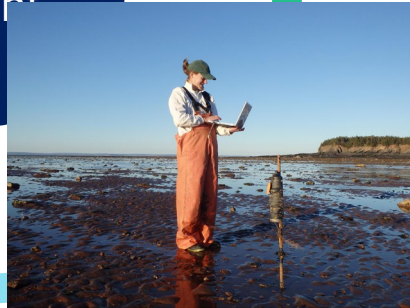
HOW TRACKING WORKS



Three main components of acoustic telemetry data



Detection
Event



Receiver deployments: Locations of listening equipment. Where was the instrument when it heard the tagged animals?

Tagging activity: The history of which tags are in which animals, where those animals were released, how long the tag will live, and all auxiliary measurements and observations made at tagging time by the researchers.

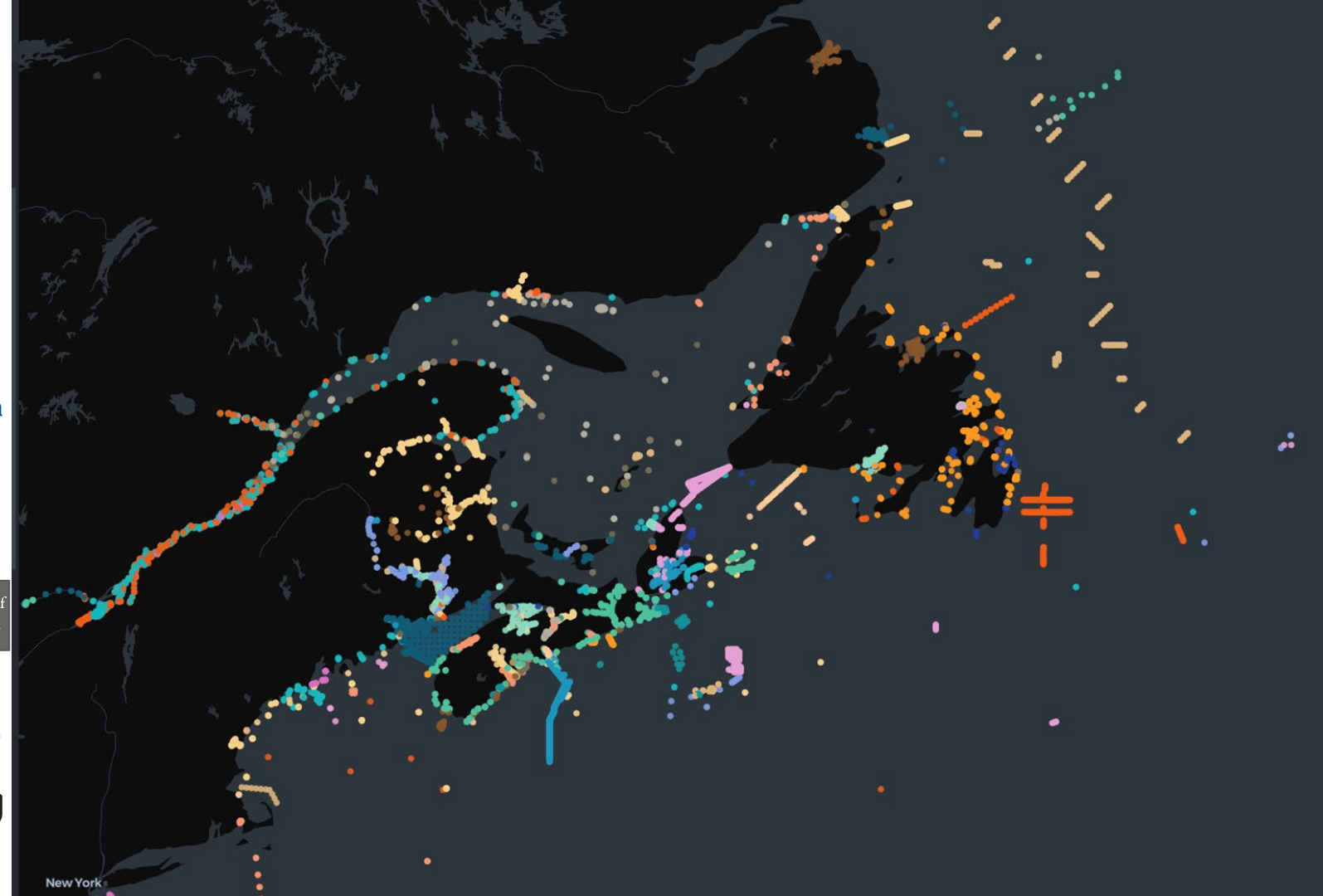
Detection data: recorded by the instrument but not very informative without associated tagging activity data to add the 'what' and the 'where' to the 'when'.



OCEAN

TRACKING NETWORK

 Fisheries and Oceans Pêches et Océans
Canada Canada



OTN NODE NETWORK

Federated global biologging observing system

North Atlantic arena: Acoustic array projects providing interoperable coverage from Svalbard to Key West to Dominica

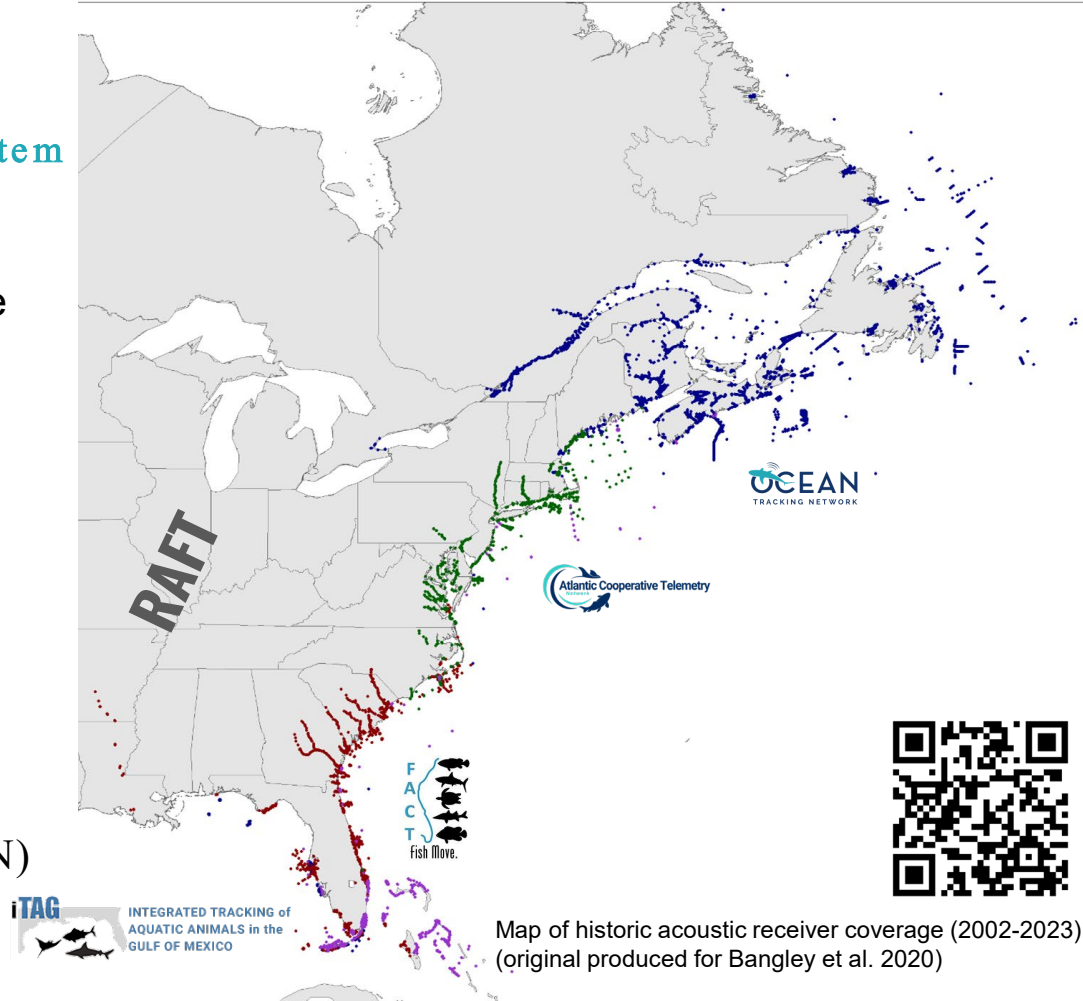
OTN and its partners have thoroughly monitored Atlantic Canada since 2008

In 2025:

Extending connectivity throughout the Gulf of Mexico

Connectivity with European tracking (ETN)

Freshwater network for major US rivers



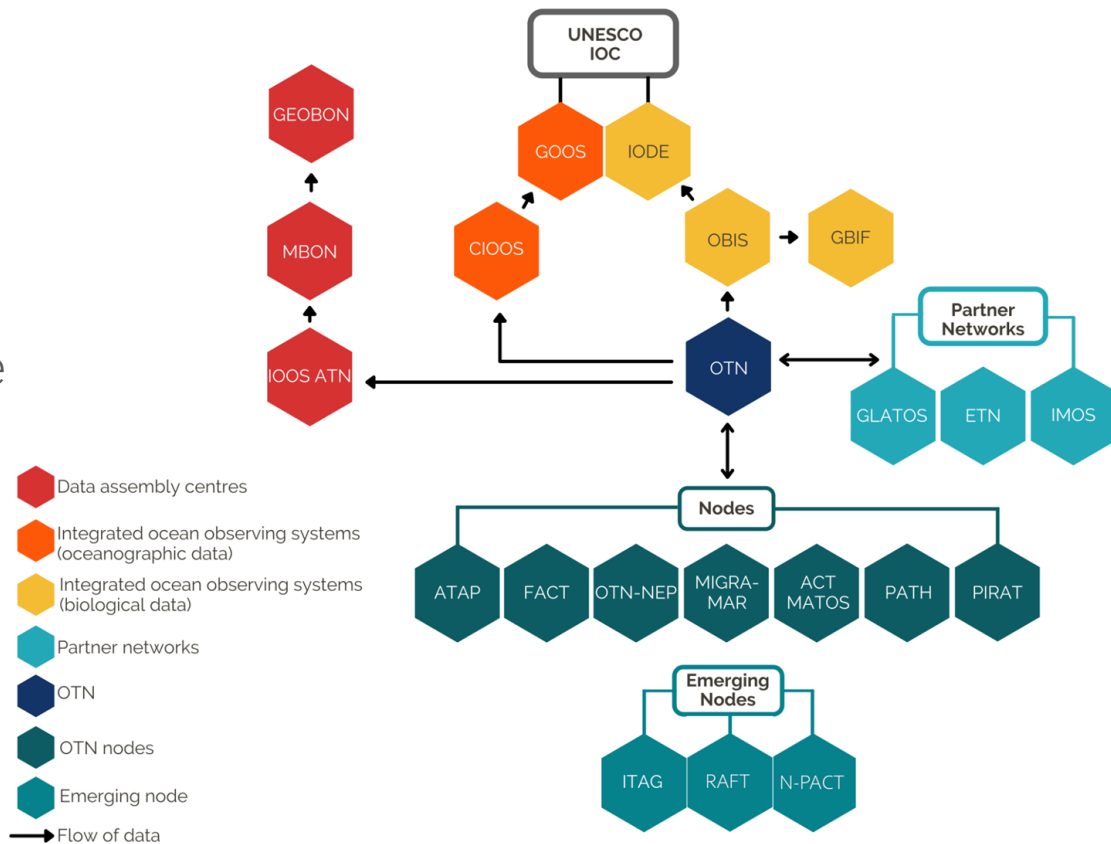
Map of historic acoustic receiver coverage (2002-2023)
(original produced for Bangley et al. 2020)



Data mobilization

Smooth data is easier to mobilize!

- Direct inter-compatibility w/ other OTN-style networks
- Publication of animal presence records to OBIS and GBIF
- Publication of ocean data to ERDDAP, CIOOS -> GOOS
- Feeding biodiversity data to Digital Twins of the Ocean

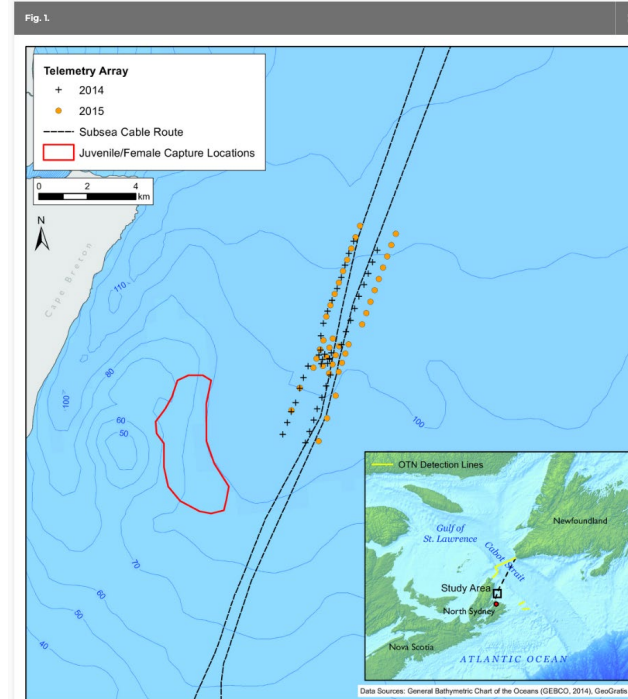


Apoqnm atulti'k

- A collaborative research initiative that brings together different knowledge systems (Indigenous, local, and western scientific) to generate and share information about culturally, ecologically, and commercially important aquatic species in Mi'kma'ki (Atlantic Canada).
- Learn more at apoqnmatic.ca.



We help each other, to be better stewards of our oceans



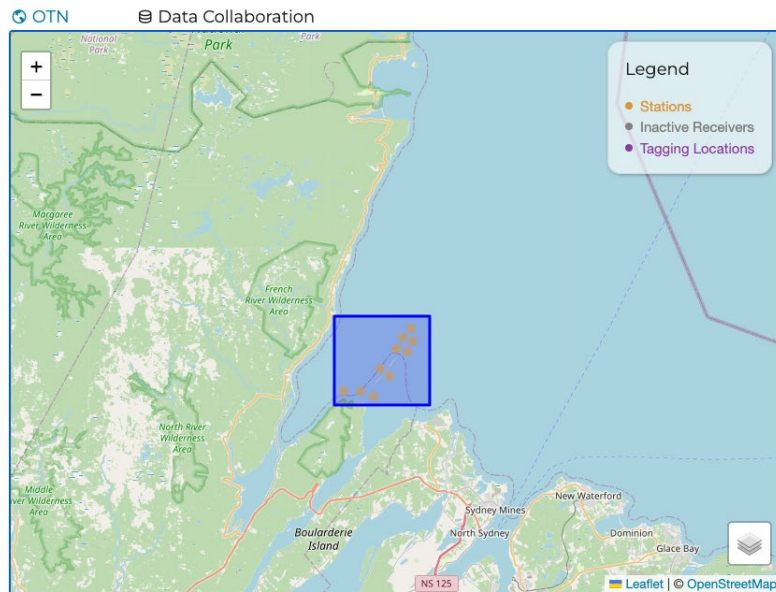
Active Partnerships

We help each other, to be better stewards of our oceans



Fisheries and Oceans
Canada

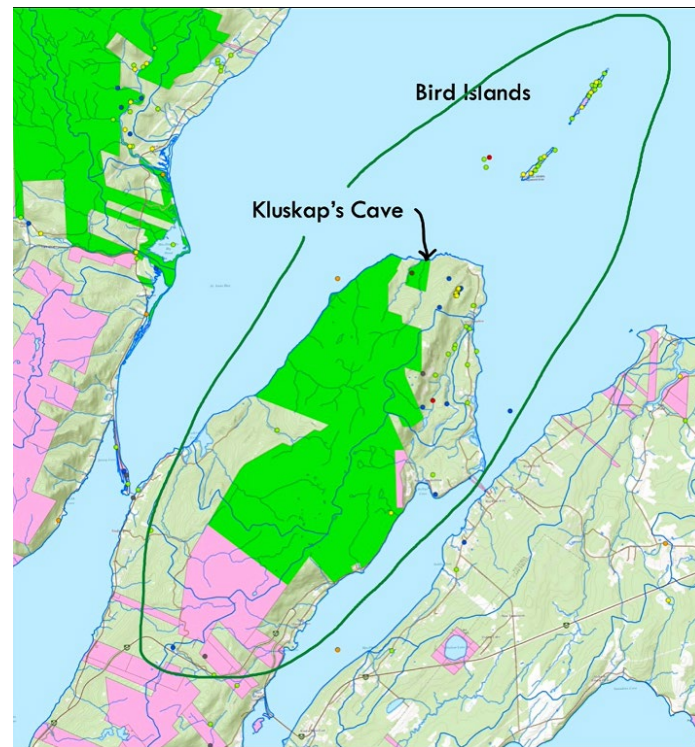
Pêches et Océans
Canada



Species

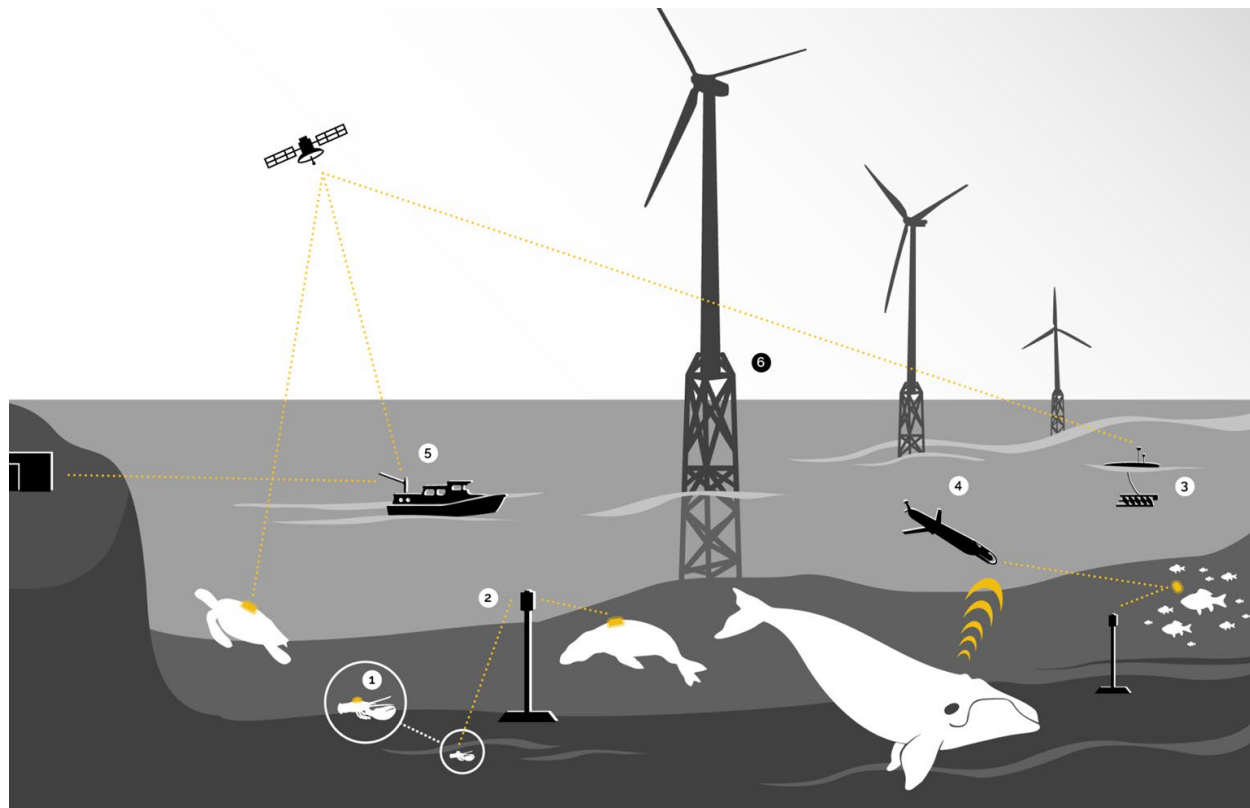
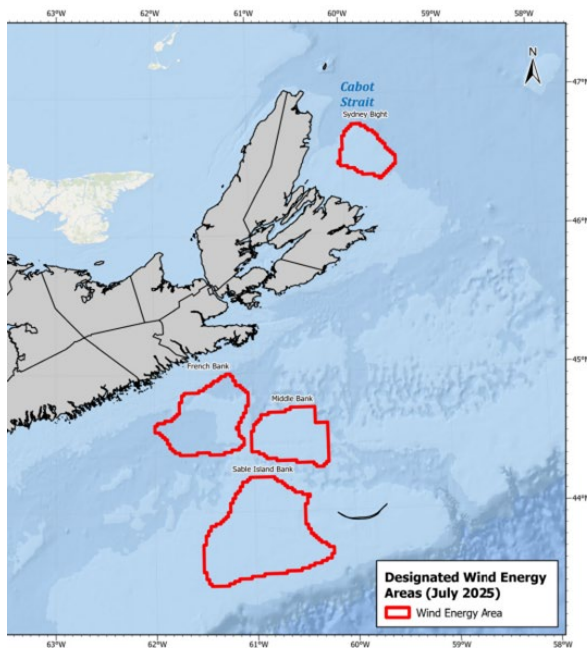
striped bass

Atlantic cod



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Transport
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Acoustic Tracking Array Platform



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