

Canada's Domestic Efforts to Mitigate Underwater Vessel Noise

Michelle Sanders, Alternate Permanent Representative of Canada at the International Maritime Organization (IMO)

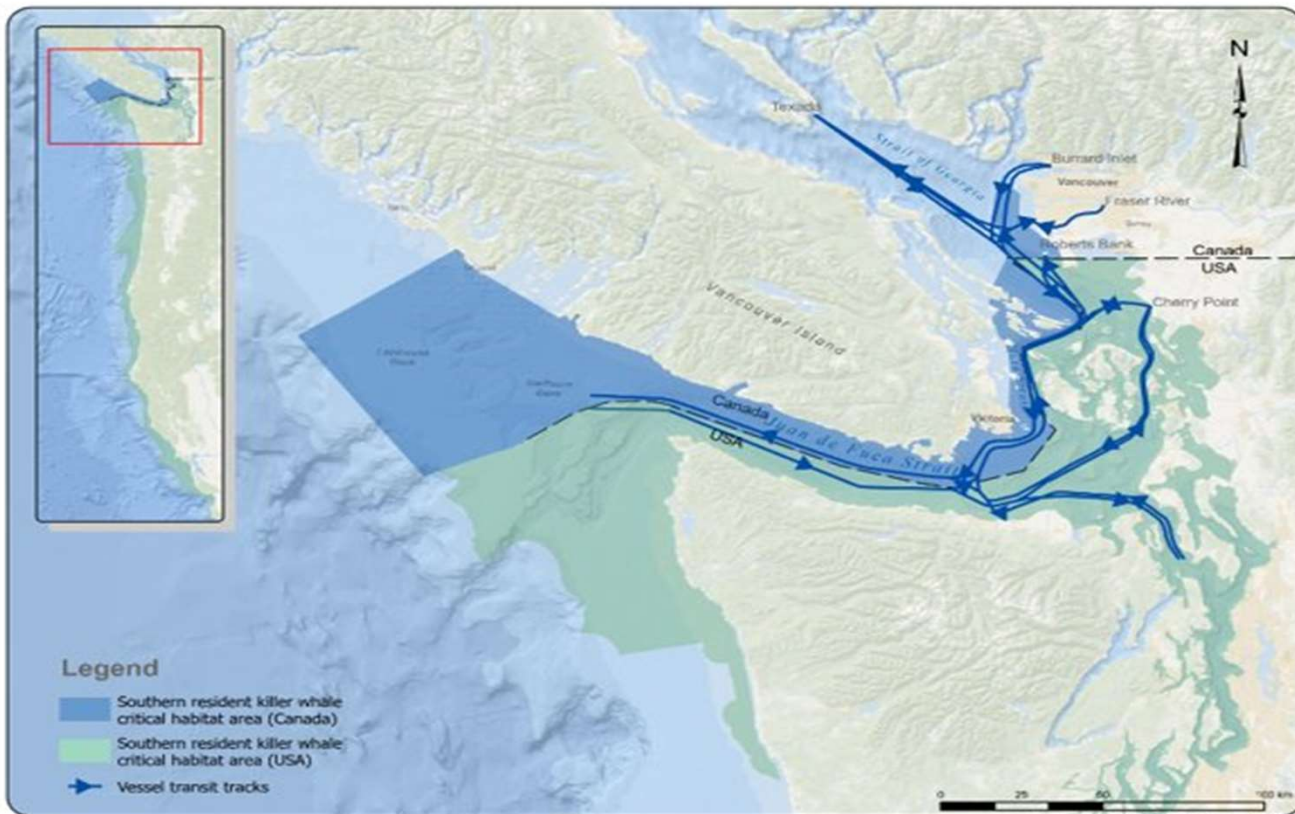
IMO – WMU GloNoise Workshop, Session 3: URN Mitigation Solutions, Transferrable Practices and Role of Stakeholders

October 2024

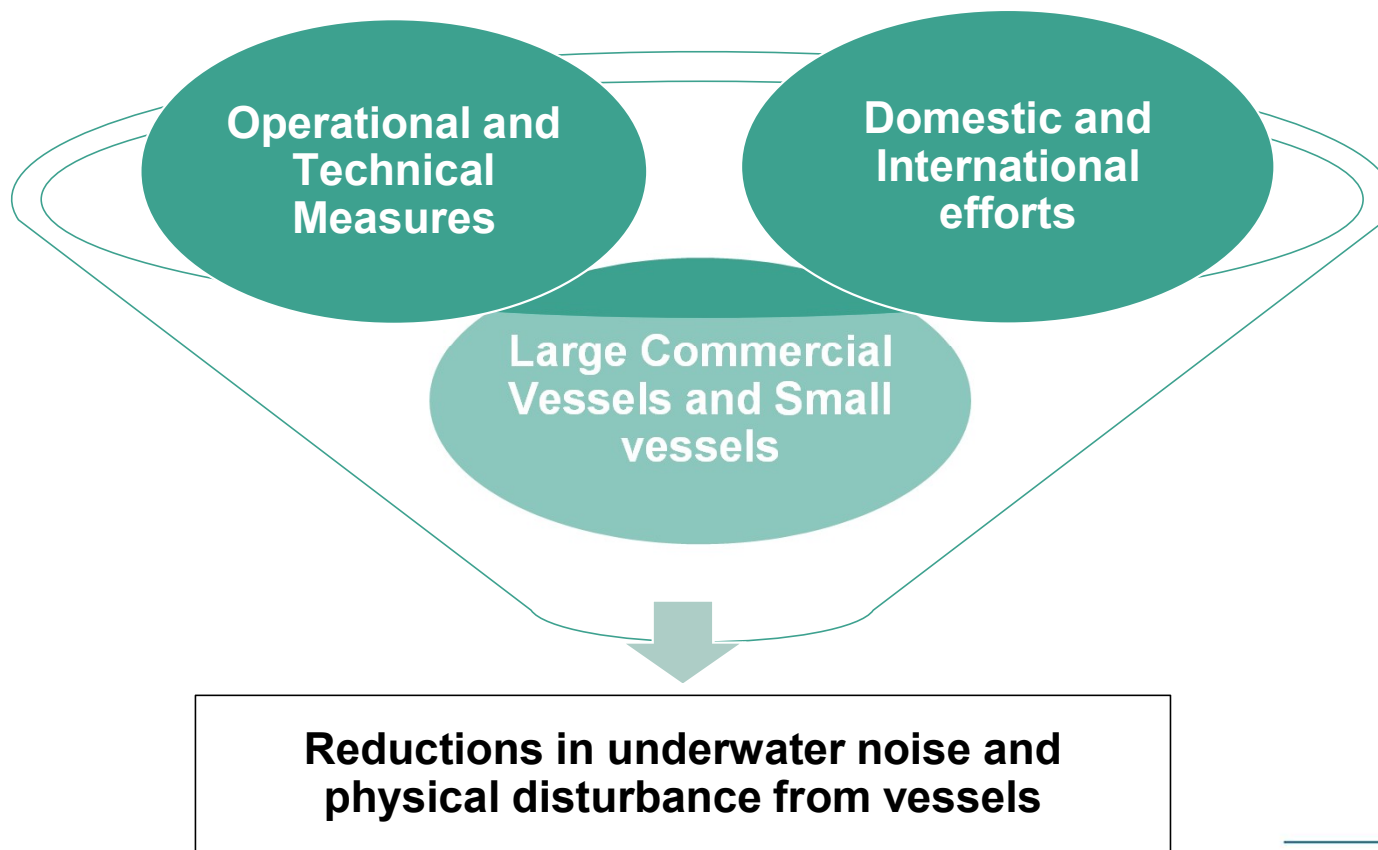


Underwater Vessel Noise in Canada

- Underwater noise is identified in Canada as a high-risk anthropogenic threat in recovery plans for the Southern Resident killer whale (SRKW) and other whales listed under the *Species at Risk Act*.
- Critical habitat of these at-risk species often overlap directly with international shipping lanes.



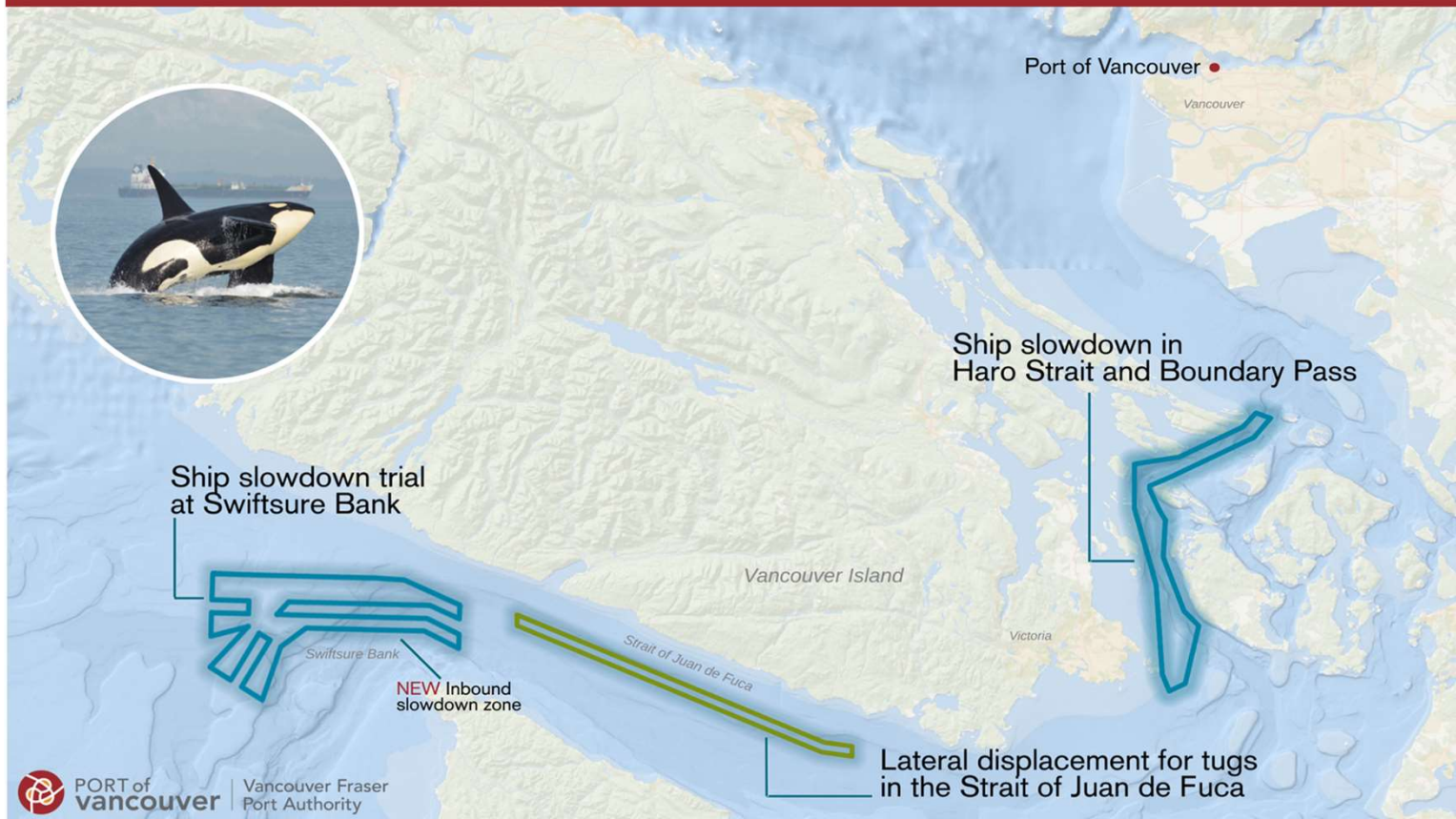
Canada's Approach



Large Commercial Vessel Measures

Enhancing Cetacean Habitat and Observation (ECHO) Program

Voluntary underwater noise reduction measures in southern resident killer whale critical habitat



General Vessel Measures

For vessels outside the shipping lanes for the 2024 season:

- A year-round 400 m approach distance, including a prohibition on impeding the path of a killer whale, covering the waters from Campbell River to Ucluelet

From June 1st to November 30th:

- Two Interim Sanctuary Zones, located in the Gulf Islands, specifically Saturna and Pender Island
- A voluntary 10 knot speed reduction zone in Tumbo Channel
- Two Speed Restricted Zones at Swiftsure Bank developed with Pacheedaht First Nation.

Remind boaters to follow Be Whale Wise Guidelines to reduce speed when within 1000m to 7knots, turn off echosounders when safe to do so.



Advancing longer term actions

Recognizing that operational measures will only take us so far, a number of longer term efforts are underway.

- Underwater Listening Station
- Quiet Vessel Initiative
- Underwater Vessel Noise Reduction Target (source) for use in URN management plan
- IMO and other international work (PAME)
- TSS feasibility study



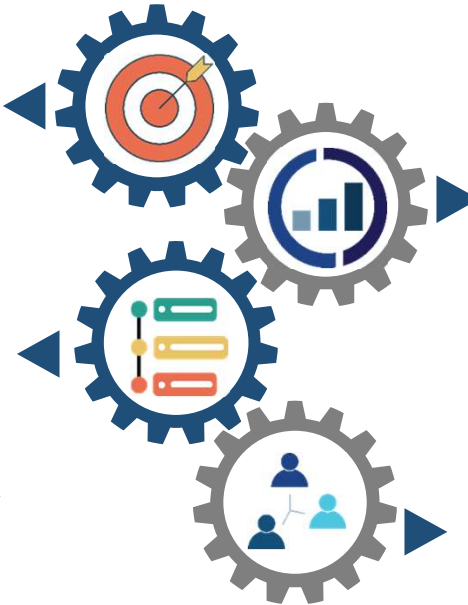
Underwater Listening Station in Boundary Pass

Objective:

Design, manufacture and deployment of a cabled underwater tetrahedral listening station in Boundary Pass to accurately measure vessel noise profiles, in real time.

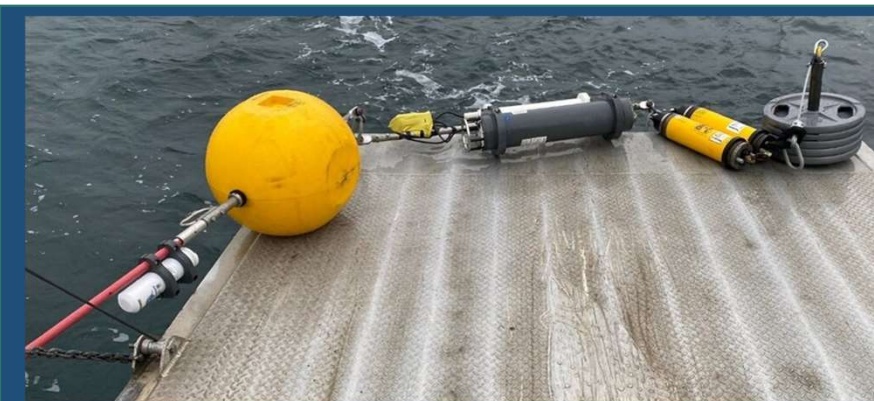
Partners:

JASCO Applied Sciences
Vancouver Fraser Port Authority
ECHO Program



Key Outcome(s):

- **Vessel Noise Profiles** - measurements of noise emissions of vessels entering and exiting the Port of Vancouver, while adhering to international noise measurement standards.
- **Tracking Whales in Boundary Pass** - Detecting and localizing/tracking vocalizing cetaceans in Boundary Pass. Sends automatic detections to Whale Report Alert System (WRAS).
- Currently measuring underwater noise from approximately 4,000-5,000 commercial vessel transits per year, contributing to the **world's largest ship noise database**



Quiet Vessel Initiative (QVI)



What is QVI?

- QVI was established to advance quiet vessel research, in order to enhance the understanding of vessel noise, and to support the development of tools, designs and technologies to mitigate its impacts on the marine environment.



What does QVI do?

- QVI is testing safe, environmentally-responsible and effective quiet vessel technologies, retrofits, designs, and operational practices that reduce the impacts of underwater noise on vulnerable marine mammals.

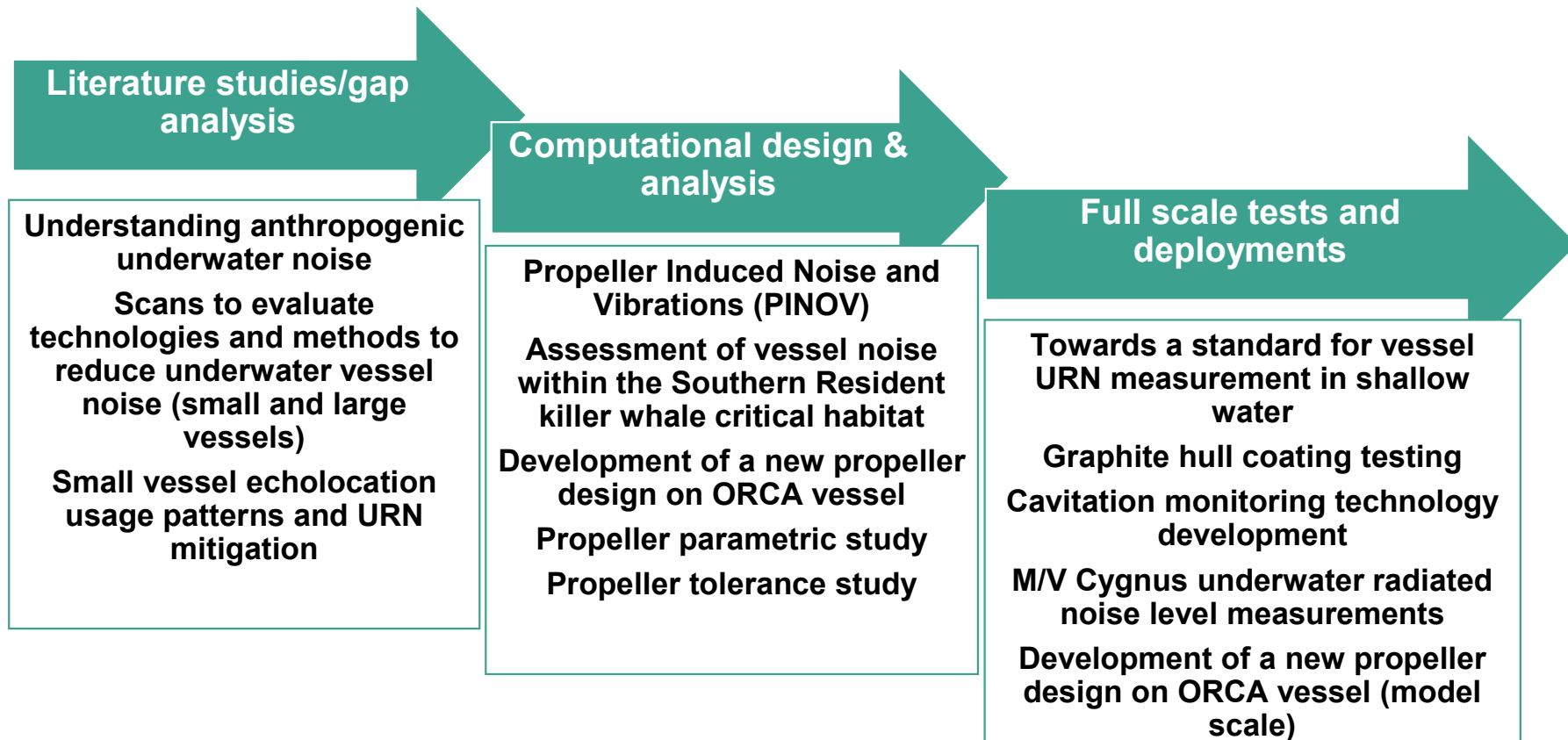


Why did we launch QVI?

- The program contributes to the Government of Canada's efforts to advance sustainable marine shipping by supporting RD&D to accelerate the development and adoption of quiet vessel technologies and operational methods.



Project types and examples

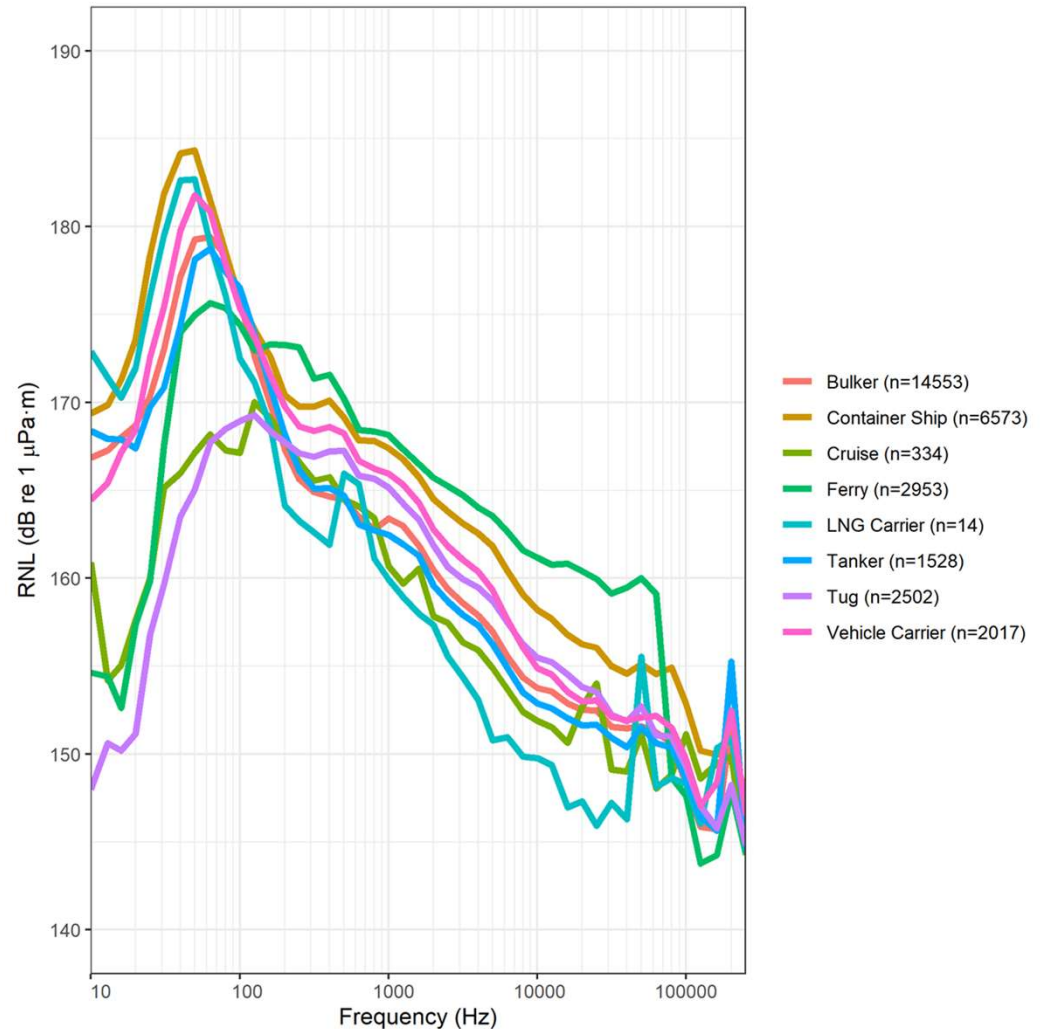


Underwater Vessel Noise Reduction Targets (UVNRT)

- In 2019, engaged stakeholders on the concept of URN Management Plans
- Feedback from consultation:
 - More information needed on, for e.g., what is the target for noise reduction?
 - Create a dedicated working group to explore underwater vessel noise reduction targets
- National Working Group on **Underwater Vessel (Source) Noise Reduction Targets** launched in 2021:
 - Canadian and international technical experts, industry and ENGOs representatives
 - Provided technical advice on **noise source reduction targets** for vessels and policy direction on URN management planning (January 2024)

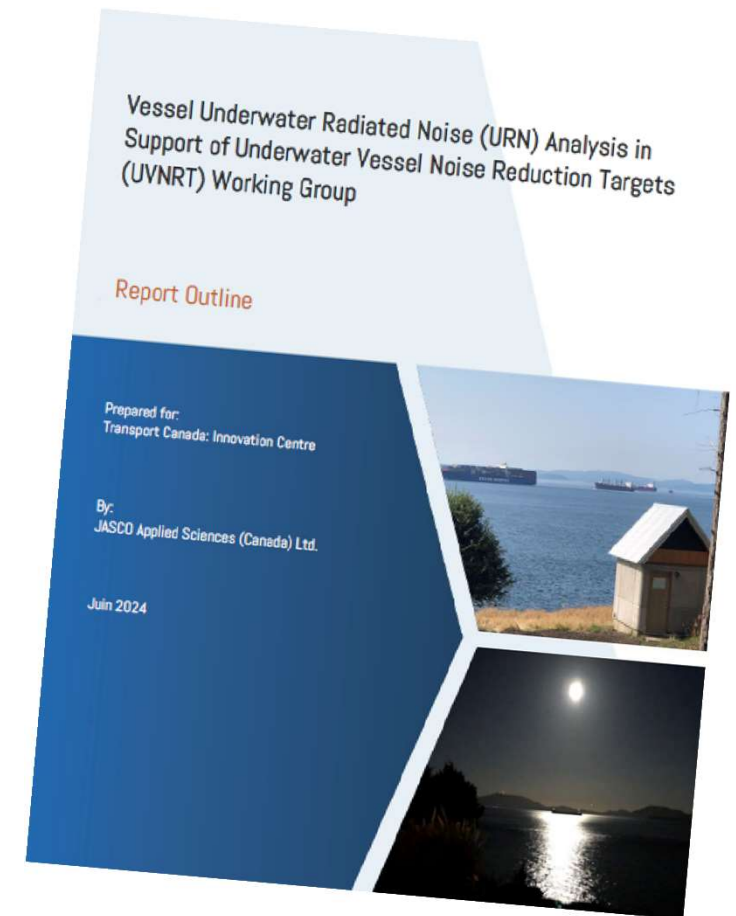
Underwater Listening Station Database of Radiated Noise Levels

- Over 65,000 measurements from more than 8000 ships were measured since 2020
- Figure showing the median values per vessel category
- Limits were developed based on the median values/vessel category



Additional technical work

- Calculate Radiated Noise Level (RNL) for Ferry category
- Statistical analysis of proposed targets and refinement
- Evaluation of Exceedance Levels Options
- Uncertainty in RNL and recommendations for Measurement Repeatability
- Quantification of Limitations of Monitoring Options
- RNL vs MSL discussion (measurement metric)
- Main noise contributors & performance rating options
- Feasibility of conforming to UVNRT limits with speed



Concluding thoughts

- Solutions must reflect complexity of the issue and differences in vessels
- Feasibility of measures must consider economic, cultural, safety, and environmental perspectives
- Industry, governments, ports, NGOs and Indigenous communities play an important role in identifying, analyzing and testing potential solutions

