Vessel Traffic Management in Canada:

In-Depth Interviews with Working Groups

RESEARCH REPORT

Presented to
WWF CANADA

December 2019

BIP RECHERCHE

WWF

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Research Objectives & Methodology

RESEARCH OBJECTIVES

BIP Recherche was contracted by World Wildlife Fund (WWF Canada) in collaboration with Transport Canada to interview existing Committees/Working Groups active in addressing shipping concerns by developing management measures to improve marine safety and environmental protection. The aim of the study is to help assist the development of best practices for vessel management.

RESEARCH METHODOLOGY

32 1-hour in-depth telephone interviews were conducted in September and October 2019, 13 in French and 19 in English.

RESEARCH PARTICIPANTS

We interviewed members of selected North American Committees/Working groups representing diverse sectors. Groups and contact names were provided by WWF Canada. In total, 9 groups were interviewed:

- **Aleutian Islands Waterways Safety Committee:** 2 members – NGO for industry, Indigenous community
- **Arctic Waterways Safety Committee:** 3 members – NGO, Indigenous community, Government
- **Comité concertation navigation (CCN):** 3 members – NGO (2), Industry
- **ECHO Program:** 4 members – NGO, NGO, Industry, Industry
- **G2T3M :** 6 members – NGO for industry, Industry, Government (4)
- **MEWG:** 4 members – NGO, Indigenous community, Industry, Government
- **NARW:** 4 members – NGO for industry, NGO/research, Industry, Government
- **Placentia Bay Traffic Committee:** 3 members – Industry (2), Government
- **Puget Sound Harbour Safety Committee:** 3 members – Industry (2), Government

NOTE ON INTERPRETING THE RESULTS: The information collected through in-depth interviews is qualitative in nature. This research method is not meant to draw generalizable statistical conclusions for the entire population under study, but to fully understand the opinion and perceptions of the participants in the study and to measure their intensity. Note also that any numbers presented are for illustrative purposes only.

Overall Takeaways

Overall Takeaways

- The working groups studied are all deemed to be effective and well-balanced, although all would benefit from a few adjustments to improve their effectiveness.
- Groups need to have adequate funding, to be able to fund initiatives, conduct research, collect data and have a dedicated person responsible for the logistical aspects of the Committee. It is not necessary to compensate members for their participation but reimbursement of travel expenses is appreciated (particularly from indigenous groups and NGOs) and ensures greater in-person presence.
- Consensus-based decisions making and voluntary measures work best in creating engagement among members and assuring compliance.
- Discussions and decisions need to be evidence-based, as opposed to just stating opinions. Using scientific evidence and data helps members to build consensus, to agree on a common situation assessment, to prioritize issues, and decide on solutions to implement and/or test.
- Groups that work best are those where every member is heard and respected. It is particularly important for industry to feel that their concerns are listened in order to have their complete involvement. Groups that are most productive at developing measures are those that reconcile their different interests and balance the imperatives of environmental, economic and social sustainability.
- Having around 20-25 members appears to be the right size for a committee, so that all stakeholders or users of the area are present at the table, that no one is left behind, yet having the group remain manageable. Participation level in the meetings is a strong indicator of engagement.
- It is important to have a strong Chair (or co-Chairs) that is neutral and unbiased and keeps the discussions moving along so that it does not become a shouting match or a sterile exercise.
- Having a designated person or outside firm handle the logistics (agenda, minutes, invitations, follow-ups, etc.) is essential in keeping a group productive and effective, and keeping members accountable in between meetings.
- Members appreciate that these committees are also a forum to share and exchange information with other waterway users that they don't get to interact with often. This helps build relationships between individuals and between organizations that are essential to developing effective measures.

Aleutian Islands Waterways Safety Committee

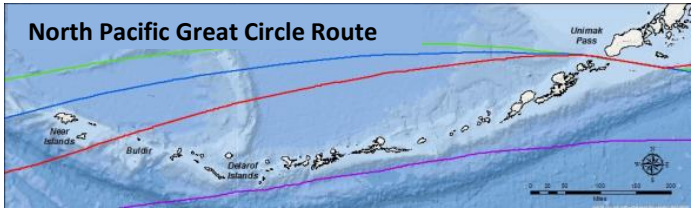
Establishment

- The Aleutian Islands Waterways Safety Committee (AIWSC) was established in 2017. It was formed in response to the Selendang Ayu* oil spill. Although inception is fairly recent, the primary players have been engaged with this issue for more than a decade as the Aleutian Islands Risk Assessment team, which was formed after the Selendang Ayu oil spill.

  **The Selendang Ayu was a Malaysian bulk cargo ship that ran aground off Unalaska Island on December 8th 2004 after an engine failure, releasing all of its oil, diesel and millions of pounds of soybeans. The spill impacted multiple village corporations, beyond the community of Unalaska.*

- As a result of the spill, the state of Alaska and the US Coast Guard commissioned a report by The Transportation Research Board of the National Academy of Sciences as to how to develop a risk assessment to look at improving marine safety in the Aleutian region that resulted in a report (special report 293) on essentially how to conduct a risk assessment specific to that region.

- Recommendations of the Aleutian Islands Risk Assessment was that the islands were at high risk of spills *(the North Pacific Great Circle Route that connects the west coast of the United States with major ports in Asia transits directly through the Aleutian archipelago – see adjacent map)* and that there were limited capacity for spill response at the time. Indeed, there was no organized body that would help share best practices, better engage the international insurers and the larger shipping companies, and work together to provide more support for the in-region spill response capacity that was needed.



- It advised that a stakeholder driven process be utilized to conduct a risk assessment. That process played itself out over eight years. There were studies conducted, which were presented to a stakeholder panel and advisory panel. That panel made recommendations on risk reduction measures for the Aleutians. One of those recommendations was that that process should continue on in terms of having a forum for maritime users and the people that are at risk from maritime accidents into the future. And that forum became the Aleutian Islands Waterways Safety Committee.

Establishment (cont'd)

- In parallel to the development of the Committee was the institution of some formal areas to be avoided in the Western Aleutians. These are IMO* designated areas that are actually in themselves a best practice, but are a reportable, and potentially enforceable, area that shows up on Mariners screens using AIS or other mapping systems to show them the appropriate lanes for transiting between two islands.

  **International Maritime Organization (IMO): the largest managing body of all international maritime traffic. They provide the framework for things such as innocent passage, which is the concept of vessels being able to transit even in your economic exclusive zone (EEZ) waters if they are never going to land in one of your ports, so it's an essential concept for the free trade of goods to cross the globe.*

Mission

- As stated in their Charter and their revised safety plan: *"The mission of the Aleutian Islands Waterways Safety Committee is to enhance safe, efficient and environmentally sound maritime operations in the Aleutian Islands by fostering a productive exchange of information among mariners and other stakeholders and establishing and promoting best practices and standards of care."*

- The primary goal is to improve maritime safety and to prevent marine accidents on the great circle route, improve the use of best practices, improve marine awareness of specific regional issues and any specific additional requirements. This goal is achieved through information sharing and supporting education and outreach. The group is very mindful of the danger of being a mariner and of the fishing profession for example, and to prevent fatalities at sea.

- Similar to a Harbour Committee. Although, the safety committee format is relatively new to Alaska (about 10 years old or so), it is a very traditional model for the lower 48 in the form of a Harbor Safety Committee where public-private partnerships come together to work out issues amongst themselves.

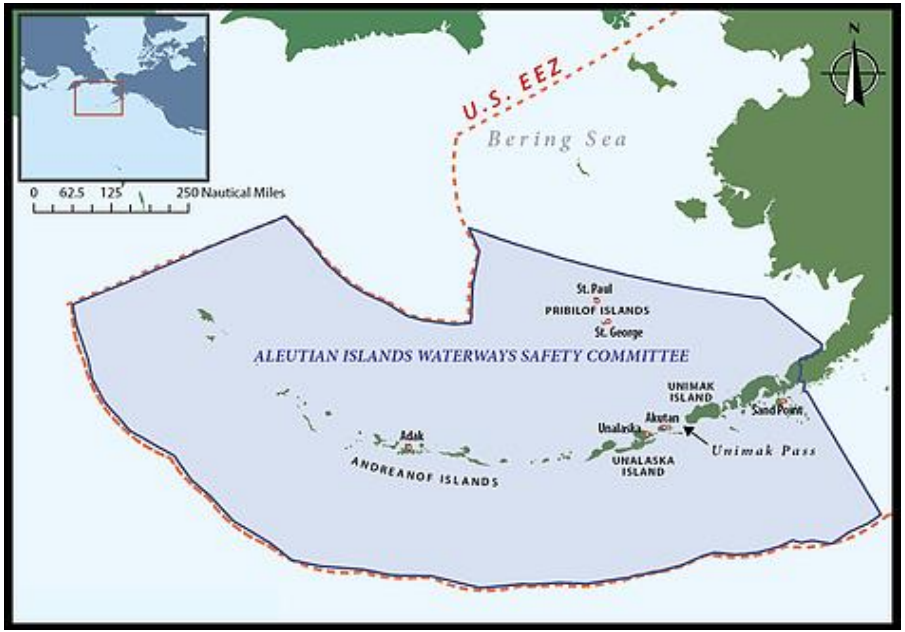
- These Harbor Safety Committees have been supported by the Coast Guard as being a good functioning body to assist them in ensuring their primary goals of life safety, property protection, and environmental protection.

Geographic Scope

- The geographic scope of the Aleutian Islands Waterways Safety Committee includes the Aleutian Islands and Pribilof Islands and the southern half of the Bering Sea. The approaches to the Amukta Pass in the North Pacific and down to the U.S. Exclusive Economic Zone of the Aleutians as depicted here.

- The north of the area is handled by the Arctic Waterways Safety Committee *(see following chapter)*. Their Southern boundary is north of the AIWSC Northern boundary. There is a gap of several hundred miles of uncovered area, that includes Bristol Bay and up through the sea of Peninsula.

  The Aleutian Islands Waterways Safety Committee has a commitment not to overlap with the Arctic Waterways Safety Committee and cause best practice confusion in the area and the natural fit, for instance, for the Bering Strait.



Membership

MANAGING BOARD OF DIRECTORS (5)

- President
- Vice-President
- Secretary/Treasurer
- Chair of the Waterways Safety Committee (voting seat)
- Member

EX OFFICIO REPRESENTATIVES (NON VOTING) (6)

- U.S. Coast Guard (USCG)
- U.S. National Oceanic and Atmospheric Administration (NOAA), Office of Coast Survey
- Alaska Department of Environmental Conservation (ADEC)
- Alaska Department of Fish and Game
- North Pacific Fisheries Management Council
- U.S. Fish and Wildlife Service
- Nuka Research and Planning Group, LLC *(facilitator – contractor firm)*

VOTING MEMBERS (21)

Marine Vessel Operations

- At Sea Fish Processors – Primary
- Commercial Fishing
- Commercial Fishing Vessels <60ft
- Passenger Vessels
- Cargo Ships
- Tank Vessels
- Barges (including cargo and petroleum) and Associated Tugs
- Assist Tugs (docking, rescue)

Ports and Harbors

- Port Director, Harbor Master, Local Government
- Terminal Operators

Response operations

- Oil Spill Response
- Protection and indemnity (P&I)Clubs
- Salvage

Others

- Alaska Native Interest
- Conservation Organizations
- Marine Pilots
- Ship's Agents
- Subsistence User
- AIWSC Managing Board Director Representative
- At Large
- Vessel Monitoring and Tracking

Membership (cont'd)

- The Committee is large, with 21 Committee members and 6 Ex-Officio members, each set up with a primary and alternate position to hopefully always have somebody at the table. The large size of the Committee is perceived as a benefit, as all stakeholders' interests are heard and taken into consideration.

- Many are the same players from the Aleutian Islands Risk Assessment process, but including some that were missing such as tribal representation, separate subsistence representation, separate NGO representation, and a public at large seat.

- There is wide variety of representation on the Aleutian Islands Waterway Safety Committee. The 21 seats are assigned in a broad manner to cover all of the different interests in the Bering sea and on the Great Circle Route.
  - About a third of the seats (8) are the different types of fishing vessels, transportation, or passenger vessels, that have specific interest and limitations. For example, cargo ships have a very different use pattern than barges, assist tugs, passenger vessels, etc. They each have a different style of working their waters.
  - A variety of fishing interests at different scales are represented (since there is nearly a billion dollars a year picking out of the Bering sea by the various fisheries) as well as those in the Maritime industry. For instance, there is representation from the Oil Spill Response Organizations (OSRO), as well as those businesses that provide AIS data *(Automated Identification System Data or shipping and location so that ships, as well as their home office, know their location)*.
  - About another third is the support industry surrounding the terminal operators, salvage communication systems and the international insurers (P&I Clubs).
  - The remaining are more the public at large and general public, including Alaska native interests, conservation organizations, subsistence, and a representative from the managing Board of Director to ensure an open line of communication at all times.

Membership (cont'd)

- The Board of Directors are seated for two years. Committee members are seated for three years on their first appointment. Half of them were seated for only two so that there's an overlap. It's a three year term.

- Ex-Officio members are non-voting governmental agency representatives that are invited to serve on the Committee in an advisory capacity and to the extent the agency consents to participate on the Committee.

  Although they don't vote, they participate and inform the discussion to help the Committee know what their issues are without them having any responsibility in the development of the best practices or public policy that would impact their agency. They can provide input on what's appropriate, where the Committee should be looking, what their group's concerns and interests are, and then how the Committee should work from there.

  They are important to the work as they represent agency interests but do not get involved in making public policy. Those Ex-Officio members include the Coast Guard, the Alaska department of conservation, NOAA's office of post-survey, the U.S Fish and Wildlife service*, Alaska Maritime National Wildlife Refuge and these have changed a bit.

  **Nationwide there were these things called landscape conservation cooperative, which were an initiative under U.S Fish and Wildlife service, which is now been defunded, but in Alaska a couple of them still survive on as the Aleutian Island Bering Sea Initiative.*

- Coast Guard participants, for example, help guide the Committee not by suggesting enforcement or regulatory approaches, but by focusing on best practices, information sharing and building a community of practice.

Membership (cont'd)

BALANCED REPRESENTATION

- There is a real effort to get a balanced representation in terms of the risk makers and the risk takers and trying to get both of those perspectives at the table.
- The Committee's membership is deemed well-balanced, even by members outside the industry. Although, some felt at first that industry had too much presence, in the end, it is deemed essential.
- However, regarding native organizations or cultural groups, if the Committee could expand to more than one member it would be appropriate to have both Alaska natives and Aleut cultural groups involved. Since the nuances of each traditional hunting patterns and traditional use patterns vary so significantly, those nuances would be really important to develop effective best practices or to understand what the independent issues are.

Organizational Structure

- The AIWSC is a 501(c)(3) non-profit organization and as such is overseen by a Board of Directors. The Committee and the Managing Board of Directors are separate entities. The board oversees the Committee but doesn't set policy. The Committee sets policy.
  The Managing Board of Directors is composed of five people. All leaders in the region, from community mayors to port directors to representatives from the State of Alaska and from the maritime organizations. It is a self-selecting Board in that they would advertise for and reach out and get board members.

- Given the US system of governance, being a non-profit made the most sense. On the Eastern coast of United States, there are a lot of Harbor Safety Committees that are essentially *ad hoc*. They're usually very specific to a small geographic harbor area. Like a rotary club or the like, they'll have a meeting once every month or two months, so somebody will sponsor a luncheon that provide a meeting room and everybody gets together and they talk about whatever the topic to do this year is. But they can't adopt a Waterway Safety Plan, for instance, or a Harbor Safety Plan. It's just a forum for discussion, but there's nothing more to it than that. And there's usually no budget associated with it at all. It's just the members' night. But on the West coast of the US, almost all of the Harbor Safety Committees are non-profit entities with no direct governmental funding (with the exception of California).

- The board developed the Committee membership, by looking at other groups of Safety Committees, their memberships, their compositions, and then tailored it to their needs. The composition of the Committee was developed for the unique needs of the area, as well as, for who has interest in the Aleutian and in shipping in the Aleutian. Some of that groundwork was laid out by the Aleutian Islands Risk Assessment.

- For instance, not all Safety Committees or Harbor Safety Committees would want a seat for international insurance companies. But for the Aleutian Islands, insurers are a major player. Indeed, it is important for the AIWSC to have industry at the table, but when thinking about it in terms of something going wrong, and a choice of staying out of areas to be avoided before they're actually designated, this can save a lot of potential liability for companies. Then of course insurance companies overseeing or underwriting these large multimillion dollar vessels, and their multimillion dollar cargo have a very important role in all of this.

Organizational Structure (cont'd)

- The Committee is a non-regulatory body. The goal is to have decisions taking by consensus, to strive for consensus, but ultimately there is a voting process and Robert's Rules of Order are used to conduct the meetings. Each seat has one vote. There's a primary and an alternate selected for each seat. The primary sits in the seat and votes. If they are not present at the meeting, and the alternate is there, they sit in the seat and vote.

- The goal of consensus is part of the success of the Committee, as industry is then engaged in developing the measures and practices that they will accept to adhere to, and how they are implemented, without being forced to by regulations from an enforcement authority.
- There is one position that overlaps between the Board of Directors and the Committee and that's the Chair of the Committee. The Board of Directors selects and appoints the Chair of the Committee.

- AIWSC works with a contractor firm, Nuka Research, that facilitates the Committee and essentially does what an Executive Director would do. Nuka Research was actually hired to help form the Committee initially.
  This firm has allocated individuals to organize the meetings, take the minutes, edit publications, etc. The firm is also in charge of creating some of the content with the expertise drawn from the Committee and the language used by the Committee. The contractor is essential to the functioning of the Committee.

Organizational Structure (cont'd)

- Meetings are one or two in-person meetings a year with about 4 call meetings. The geographic scope of the area is vast, so in-person meetings are very expensive. The frequency of meetings is issue and budget-driven.

- The group works with subject-matter experts in work groups distinct from the Committee. They work on specific issues at the request of the Committee. The Waterway Safety Plan was first developed by one of these distinct work groups. Their task is to come back to the Committee with recommendations to vote on.

Organizational Structure (cont'd)

FUNDING

- The Board of Directors is responsible for the sustainable funding of the organization. They figure out the scheme for funding it, and do development exercises. By being a non-profit, they can take monies from legislative appropriations, from grants or donations, philanthropic donations, etc.
- Current funding by remaining restoration funds from the Selendang Ayu settlement. It was a way to be effective with money and improve tug capacity in the area by putting money to good use with ongoing collaboration and coordination that would be real effective.
- However, money from the settlement will eventually run out and the Managing Board of Directors is assessing how the Committee can become self-sustaining. For example, it is typical for Harbor Safety Committees to have committee participant dues of some sort. However, this may not be feasible for this Committee, since many of the members are non-profit organisations with limited funding capabilities.
- As well, some feel it is important that funds do not come internally, as having industry members pay for it could impact the consensus ability of the group, the way it attracts participants, etc.
- The Managing Board of Directors recognizes the need for a funding structure that allows the Committee to continue using contractor capacity to do some of the organizing work.
- Members are not given an honorarium. All members, including Alaska native representatives, subsistence users, etc. have the capacity and can afford to participate or have day jobs that specifically pay them to participate and attend meetings.
- Meetings are held in Anchorage (to prevent too much travelling for members) at the offices of the Aleutian Pribilof Islands Association (APIA) – one of the Committee participant – which provides the space at no cost.
- There is funding to provide members with travel, although the Board encouraged members from the start to provide their own travel and meet lodging and meals themselves. For the most part, members have provided their own traveling. No one's ever paid for with the exception of the facilitators (contractor firm).

Documentation

WEB SITE

The Committee has a very detailed web site that is managed by Nuka Research, the environmental consulting firm working with the Committee: www.aleutianislandswsc.org

TERMS OF REFERENCE / BY LAWS

The Committee has Bylaws and a Charter which are made available on their web site.

Bylaws: https://ba5d8e27-22a6-4c7e-bfd1-86a9416f28e1.filesusr.com/ugd/cd25fe_f0ff84c66948444b9a33469c26abc56c.pdf

Charter: https://ba5d8e27-22a6-4c7e-bfd1-86a9416f28e1.filesusr.com/ugd/cd25fe_af0ce8de41934f8892cc1e3cc74afff3.pdf

SAFETY PLAN

The **Waterways Safety Plan** can be found and downloaded from the web site at:
https://ba5d8e27-22a6-4c7e-bfd1-86a9416f28e1.filesusr.com/ugd/cd25fe_8d3470a62d3a461fae34d29f0495dd25.pdf

Positive elements and improvements

WHAT'S WORKING WELL

- Always had quorum, which is a good sign of participation
- Having a consensus based Safety Plan that has a lot of voluntary, but appropriate and important, best practices available for mariners to pick up and that aligns well with existing regulations, industry standards, etc., The plan works well for most mariners.
- Having a contractor taking care of the logistical functioning of the Committee (website, communications, agendas, coordination between work groups, with the Board of Directors, etc.).
- The organizational structure works well. The Board is small enough to be agile and meets often (often by teleconference).
- The Board of Directors does their job efficiently and quickly, and does not get bogged down as an organization with 20 Board of Directors might.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- Potential areas of improvement in the long run could be to reduce marine mammal interaction or improve habitat protection. Although, an important aspect related to that concept is timing and how it impacts Aleut food security, and traditional cultural practices.
- The challenge for the organization are the vast distances. Basically, everyone is asked to come to Anchorage, which is 1,000 miles away. The challenge is the amount of time and effort and money that it takes to hold an in-person meeting.
- The other challenge is that people involved in the Committee all have other lives. They have a job or occupation, and have limited time to focus on the matters at hand.

Voluntary or Mandatory Measures

- The Aleutian Islands Waterways Safety Committee (AIWAC) is a consensus group where participants choose to take on best practices on a voluntary basis.
- The members of the AIWSC we interviewed feel that there is a need for both voluntary or mandatory measures for the area. They feel that the Committee's role of supplying voluntary measures is valuable and plays an important role.

Measures/Plan

- The Waterways Safety Plan was promulgated to further enhance marine safety and environmental stewardship in the region through risk-based decision making and the implementation of standards of care, dissemination of information and development of capabilities. It is a best practices document for Mariners in the Bering sea or through the Great Circle Routes.

- The document is available to download so that mariners can read through the entire document. There is a small compressed megabyte version as well a 8 X 11.5 version. The included maps are not for navigation.

- It is designed as an introduction to the lay of the land and who does what, where, for mariners. Contact information for captains of the port and for coast pilots and for Dutch Harbor fairway management. The plan contains information on response capacity *(being remote there is very limited capacity)*, understanding oil spill prevention, how to call for communications, severe weather guidelines, standards of care, issues relating to land ownership, etc.

- The Safety Plan is a living document, intended to be updated as additional areas are explored and developed by the Committee.

- Many of the recommendations were intended as mitigation measures. Here are some examples of the best practices of the plan:
  - One of the biggest one is areas to be avoided, which is an IMO International Maritime Organization designation, that came from the risk assessment and that establishes a buffer of approximately 50 miles around the Aleutian Islands that vessels transmitting through the area are asked to avoid.
  - And then there's a monitoring program to see that those vessels are, in fact avoiding them. There are vessels in international trade and vessels in domestic trade. Each has slightly different regulations associated with that area to be avoided.

Measures/Plan (cont'd)

- However, sometimes vessels cannot avoid going into those areas because of a storm or an emergency. So there are procedures for if vessels that need to go into the areas to be avoided: how to best do that safely, contact those stranded, work with local pilots and notify everybody about what you're doing.
- Oil spill response preparedness.
- Conflict avoidance between fishing vessels and other commercial traffic.
- Procedures, best practices, for transferring oil from one vessel to another.
- Emergency towing best practices.
- Severe weather guidelines.
- Medical transfers for sick or injured crew.
- Etc.

- There is a section of the plan on marine mammal conflict avoidance, which features some general guidance on the issue. There was some discussions at the Committee on improving this section further before publishing the plan. However, it was decided not to expand that portion at the moment as it was not the primary driving issue. The overall goal was to get an initial safety plan out, recognizing that it is a living document that will have improvements, upgrades, and additions in the future.

- As well, the Committee is working on improving the infrastructure and even the business opportunities out in the Aleutian by having more of the response equipment, the tow packages, special mooring areas for very large vessels, etc. and then getting that knowledge out into the new maps, the shipping magazines, the regulation documents, etc.

Measures/Plan (cont'd)

PROPOSED IDEAS THAT WERE PUT ASIDE

- When deciding what practices to include in the safety plan, the Committee is careful to achieve a balance between economics and the protection of the environment. As well, as a balance between large industrial interests and those of small communities.
- Some of the severe weather guidelines have yet to be adopted, since there are on-going discussions regarding at what point when a vessel decides to take refuge, do they need to notify the Coast Guard or the pilots or some governmental officials. There are some disagreements about the exact language that would drive that recommendation for a vessel needing to call the Coast Guard.

COMMUNICATION OF MEASURES/PLAN

- When the Coast Guard has an interaction with a vessel or company they will be asking questions like: "Do you have a copy of this?, Do you know our best practices?, Are you up to date and are you meeting the industry standards of care for an innocent passage in this area?" The regulator is definitely pointing towards it.
- Having a lighter version of the plan (in terms of megabytes) that is small enough to satellite email to vessels that are already in transit.
- The Committee is still working on education and outreach. It is the logical next step after putting out the plan. So communicating the Safety Plan is an active topic of discussion for the Committee at the moment. For example, the Committee is discussing providing reference ads in *US Coast Pilot* publication, or other publications that industry receives, to get the message out at large but to small communities as well.

Measures/Plan (cont'd)

IDENTIFYING PRIORITY ISSUES AND PROCESSES USED TO DEVELOP MEASURES

- In developing the Safety Plan, the Committee used information by the multi-year risk assessment that looked at marine safety and the Aleutian Islands. There was eight years of work that was done to look at what the risks are and what the mitigation measures might be. The Aleutian Islands Risk Assessment group that essentially mirrored the current Committee interacted with each other to develop what were the risk and what are the practices to minimize those risks.

- The plan was also developed through meetings and discussions of various subcommittees with expertise on specific sections or topics. Members with the most expertise on the topic were consulted. For instance, on the topic of marine mammal conflict avoidance, Alaska native subsistence representatives, NGOs and NOAA, fisheries and the refuge staff, were all consulted. And, for the sections that are very technical to mariners, they were the leads.

Effectiveness of Measures

- The Committee has been effective at producing a Safety plan that is now out there as a resource for local mariners and large innocent passage mariners.
- Members feel that the areas to be avoided is the most successful measure of the Safety Plan. Compliance of the areas to be avoided has been very good both from US government vessels but even vessels in innocent passage.
- The success of the areas to be avoided in the Western Aleutian is easily measured with AIS data, from before the areas to be avoided were implanted and then after, when industry got to hear about them. As well, AIS data can help assess the effectiveness of best practices in terms of speed, for instance.
- Monitoring is done by the Alaska Marine Exchange organization. The data is sourced from Coast Guard, satellite vendors and their own stations. The data is ultimately shared back with the Coast Guard.
- Specifically, vessels that are under US governmental jurisdiction have to participate in a monitoring program, and that's where somebody's looking at the vessel's AIS signal and if they go into an area to be avoided, the Coast Guard can call them to enquire: “Did you know you're on an area to be avoided?”.
- As well, communities can visualized change in behavior around certain habitat or areas or communities. Behavior in passes, where there has been more traditional user conflict, without using an evaluative tool.

Emerging Issues

- Communicating the Safety Plan will continue to be a topic of discussion going forward.
- Funding is a perennial problem.
- Safety of fishing vessels, with regards to weather, is going to be an issue this year.
- The other issue is ship to ship transfers of fuel.
- There is one seat for passenger vessels on the Committee, which could be interpreted to just mean Alaska ferries. However, in the future, it could mean that the cruise ship industry might want more participation. And, there are significant differences between some of the sizes of those cruise ships and their patterns of use. So, there could potentially be even differentiation between just that one sector for instance in the future.
- Long-term planning would be to new needs as they arise. For example, there are frequent talks about the Great Circle Route, which is transiting through the Aleutian chain East-West or West-East. The fishing industry doesn't have a lot of interactions with the East-West traffic, or they have worked out those potential user conflicts over the years. But what is anticipated, with more open northerly sea route, would be far more North-South traffic. That would be a place where the Committee would certainly have reason to have far more discussions.

Recommendations to other groups

- Do not have industry fund the group while having them sit at the table, as the weight of everybody's opinions is not the same and it undermines the consensus-based process.
- Part of the effectiveness of this Committee is being large enough (having enough people at the table) to have the interests of everybody considered.
- The foundational principle is that the Committee is a nongovernmental non-regulatory all volunteer consensus based body. At this table, no one's holding anyone’s feet to any fires. It is essential to be effective and getting industry at the table in a manner where they will be participatory and open. Which is not to say that sometimes there is a need for governmental interference to force a change of industry practices.
- Both non-regulatory and regulatory bodies have their place.
- The success of such Committees comes down to the implementation and the ability to sustain the organization, both with input from the membership, and then with funding to pay for the things that need to be done to make it a viable organization.

Arctic Waterways Safety Committee

Establishment

- The Artic Waterways Safety Committee (AWSC) was established in October 2014 through grass-roots efforts from five indigenous organizations. The AWSC Bylaws were adopted in March 2015.

- Around 2010, there was increasing levels of attention on matters having to do with Arctic Waters, specifically concerns regarding potential increase of shipping traffic (in a region with little traffic) and the impact of that increase on the region's subsistence activity, especially bow head whale hunting. Indigenous co-management bodies became concerned about what that increased shipping would mean for them, specifically regarding their time on the water hunting marine mammals, particularly around shoulder seasons. As ice is melting out, the idea of being caught in a large swell from a large vessel in broken ice and opening skiff was becoming worrisome.

- Consequently, it was felt important to speak with the people who live in the region, in order to understand their priorities regarding Arctic issues. So there were some conversations going on in each of the individual co-management* groups. For the Arctic, there are five of them: the Eskimo Walrus Commission, the Alaska Eskimo Whaling Commission, the Beluga Whale Committee, the Ice Seal Committee, and what was historically the Nanuq Commission, which was polar bears. These five groups operate under the informal umbrella name The Arctic Marine Mammal Coalition.

  **Co-management has developed over the past few decades. It is a mode of governance or management, where there is sharing of responsibilities, and sometimes of rights, in wildlife management. Particularly for marine mammals in the US context, Alaska natives are exempted from regulation by the government for species that are not depleted. In 1994, the US Congress passed an amendment to the Marine Mammal Protection Act supporting developments of relationships between the federal government and indigenous organizations to co-manage marine mammals. This helped build up some trust with both communities and with the indigenous co-management bodies to participate in more discussions.*

- While these individual conversations were happening, Coast Guard would go into the individual groups, and it quickly became apparent that speaking with one voice was going to be a lot more powerful. At the time, there was no particular body or forum where those issues were being discussed.

Establishment (cont'd)

- At first, the Native groups met on their own to discuss the various issues affecting their subsistence ability. Then, after a few years, they invited other waterway users to come to the meetings. The intention was to leave no users out of the discussions, to be inclusive and have everyone sit at the table.

- The positive trust that was being built with the Conflict Avoidance Agreement *(see definition in the Measures section of this chapter)* – that is, negotiations and renewals every year between co-management groups and industry – was part of the inspiration to create a forum regarding shipping.

- As well, prior to the Committee's formal formation, the group of five native organizations had a successful negotiation regarding routing of vessels around St. Lawrence Island. The hunters wanted the vessels to go East of the St. Lawrence Island and avoid the area of the marine mammal aggregation on the West. Through meetings with the Coast Guard, it turned out that the vessels actually wanted to go East as well. They were not doing it because there was no charting on the East side of the island, so their insurance would not allow them to do it. And so the group of co-management partners got together and met with NOAA leadership, with congressional delegation and managed to get that issue prioritized. Thus, that became an established vessel route that had been charted to a point where insurance would be fine with it. The success of collectively finding a solution to a problem, allowed them to address bigger issues regarding shipping.

- So, through some urging from NGOs and a non-profit called the Marine Exchange of Alaska *(an organization gathering vessel traffic data and promulgating it out to vessel owners to enable them to keep track of the location of their fleets)*, it was suggested to establish a forum, modeled after the Harbor Safety Committee, where people could sit down and talk about shipping issues.

Mission

- As stated on the Committee's website: *"The purpose of the Arctic Waterways Safety Committee is to bring together local marine interests in the Alaskan Arctic in a single forum, and to act collectively on behalf of those interests to develop best practices to ensure a safe, efficient, and predictable operating environment for all current and future users of the waterways."*

- In effect, the goal is to have indigenous groups of hunters at the table with industry and work it out without anybody else interfering. Finding ways that both can coexist and not step on each other's toes during specific hunting seasons.

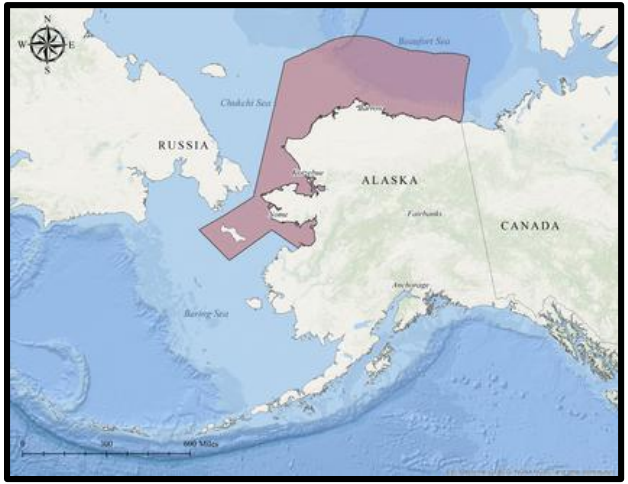
- The Committee is really focused on indigenous food security and not conservation. The primary goal is to not effect indigenous food security. For this Committee, avoiding vessels being around marine mammals, where they are concentrated, is a form of mammal protection. Even though the communities are hunting the animals, trying to keep a lack of disturbance when the whales are aggregated close to the community is a form of conservation.

Geographic Scope

- The geographic scope has been debated for many years. It is dictated by the migration patterns of the area's marine mammals. In the end, as depicted here, the Arctic Waterways Safety Plan encompasses United States territorial waters of the Beaufort Sea, bordered on the east by Canada; the Chukchi Sea, bordered on the west by the Russian Federation; and the northern Bering Sea. The ANSCA Bering Straits region, encompassing St. Lawrence Island, demarcates the boundary to the south.

- The area covered does not include the Provideniyas nor the Nunivak Islands, but includes all of the villages and the territory that is represented by the Kawerak Native Corporation *(a compact of a variety of communities)*, the North Slope Borough, it includes the port of Nome and that part of the State, as well as the Northwest Arctic Borough.

- Focusing on the northern Bering Sea was a conscious decision by the Committee during its formation, that this group would focus on marine mammals. The South of the region is the heart of salmon fishing. There was concern that including fishing would dilute the conversation about marine mammals.



Membership

EXECUTIVE COMMITTEE (4)

Officers

- Chairman
- Vice Chairman
- Secretary
- Treasurer

EXECUTIVE SECRETARY

EX-OFFICIO OBSERVERS (8)

- Governor's Office
- State of Alaska
- Marine Exchange of Alaska
- U.S. Coast Guard, Sector Anchorage
- U.S. Coast Guard, District 17
- Science/NGO
- Advisor on Legal & Federal Regulatory Issues
- OSRO/Marine Salvage

VOTING MEMBERS (15)

Subsistence Hunters

- Alaska Beluga Whale Committee
- Alaska Eskimo Whaling Commission
- Eskimo Walrus Commission
- Alaska Nanuuq Commission
- Ice Seal Committee

Industry

- Oil / Gas / Mining
- Tugs (Barges & Cargo)
- Research
- Tourism
- Fishing

Other

- Alaska Marine Pilots
- Municipality of Nome
- Northwest Arctic Borough
- North Slope Borough
- Regional Tribal Organization (Rotating between Kawerak, Maniilaq, or ICAS)

SUB-COMMITTEES & CHAIRMANSHIP (6)

- Subsistence
- Fundraising
- Standards of Lightering & Barge Operations
- SOC
- Science
- Infrastructure

Membership (cont'd)

- The Committee is composed of a wide array of arctic maritime users and stakeholders that fall under three categories: Subsistence Hunters, Industry, and Other representatives. Each category has five seats, each with a vote in decisions made by the organization. Subsistence Hunters are all of the five indigenous co-management bodies in area. The total number of Committee members is 15 seats. There was an intention at the start to limit the size of the panel in order to be more productive in getting things done.

- For each of the five industry seats, their representative volunteers a person to seat on the Committee. For example, for researchers, there was an initial meeting with researcher and the funders of research and they selected their representative.

- Coast Guard is present at the table to help inform discussions. By the nature of these Committees, based on voluntary rules, the Coast Guard cannot really be a voting member.

- Executive Committee Officers are elected by the members.

Membership (cont'd)

- As well, there are subcommittees that are transient committees, for focusing on certain specific issues, more technical shipping issues for example. The Chair's ability to form subcommittees to deal with particular problems, allows the actual Committee to remain of limited size. For example, there is a subcommittee that is looking at standards for tugs and barges that bring supplies, oil, gas, fuel to the Arctic communities.

BALANCED REPRESENTATION

- Members that we interviewed feel that the Committee is well-balanced.
- However, over time it has been more challenging to find industry representatives, mostly because there is just not that much vessel activity in the area. Shipping in the area is mostly tug and barge lines, as fuel and materials are moved by barges out to remote locations during the summertime. Nothing much happens in the wintertime. So the pool of industry representatives to choose from is not large. And it may be difficult to find representatives to come to a meeting in December.

Organizational Structure

- The AWSC was established as a self-governing multi-stakeholder group. The Committee itself is a 501(c)(3) non-profit organization. As such, they decide what they want to advance and move on their agenda. The group follow Robert's rules of order. Anybody on the Committee has a vote. They can advance a topic if they want to have the group talk about it and work on it. The groups is chaired by an indigenous representative because of the way the Committee came about.

- The Arctic Waterways Safety Committee is modeled after a Harbor Safety Committee (which is usually focused on an individual port).

- In-person meetings are held twice a year. Subcommittees can meet as frequently as they need to in order to produce something to bring to the Committee. The five native groups will have frequent teleconferences amongst themselves to discuss issues to bring up to the Committee meetings. Some of the Committee meetings have been held in Juno, others in Anchorage and perhaps in Nome once before.

- The meetings are driven by dialogue. It's mostly consensus-based discussions and decision-making. At the end of the meeting, the Committee will take a vote, but it's usually unanimous by the time it gets to the vote.

- Decisions are based on indigenous knowledge but also on scientific data. Indeed, subject-matter experts will often be asked to come in and present at some meetings**.**

- The organization of the Committee is conducted in the name of the Chairman by three of the representatives: the Executive Secretary and two of the ex-officio observers. They raise money, arrange meeting locations, coordinate dates and send out invitation, freeing up the members of the Committee to dealt with the actual issues and focus on the discussions.

Organizational Structure (cont'd)

FUNDING

- No funding per se, other than the occasional grants from organizations like the Oak Foundation (a philanthropic foundation that funded the first three years), Pew Charitable Trusts and the National Fish and Wildlife Foundation.
- Finding a stable source of funding to cover travel and clerical support is a main challenge of the Committee.
- At the moment, they are trying to get funding from the State and Federal government.
- Members are not given an honorarium. Members pay for their own representative to come to the meeting, except for the five substance hunters (the Arctic Marine Mammal Coalition) for which travel is paid for.

Documentation

WEB SITE

The Committee has a detailed web site : http://www.arcticwaterways.org/

TERMS OF REFERENCE / BY LAWS

The Committee has **Bylaws** which are made available on their web site:
http://nebula.wsimg.com/5acd1bcd24462dfe3a1179128c6c2f31?AccessKeyId=4913A243119CE1325FB9&disposition=0&alloworigin=1

SAFETY PLAN

The **Arctic Waterways Safety Plan** can be found on the web site at:
http://www.arcticwaterways.org/safety-plan.html

The **Standard of Care (SOC) document** for research vessels can be downloaded directly from:
http://nebula.wsimg.com/59d6c3a08bd7b825f68f3e4998f39bf4?AccessKeyId=4913A243119CE1325FB9&disposition=0&alloworigin=1

Positive elements and improvements

WHAT'S WORKING WELL

- Natives have enough of a voice.
- The meetings are open to whoever wants to nominate a topic for the Committee to discuss. And, communication is open and not contentious.
- It gives the Coast Guard something they can enforce.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- Funding is a challenge.
- The group as a whole doesn't have a broad background of expertise in shipping matters, as other groups do (with involvement of experts such as active state marine pilot organization, Army Corp of Engineers, port directors, vessel agents, shipping company agents, etc.).
- Have only addressed one issue: research vessels. Should focus on other issues like location specific best practices. As well, being so indigenous oriented and focused on food security, there may be missed opportunities to address other potential conflicts, for example with the fishing industry, or with people transiting the region, or regarding maritime safety issues.

Voluntary or Mandatory Measures

- It's all on a voluntary basis.
- Although the measures are voluntary, they are deemed successful as they ensure a way to resolve conflicts without having to compel people to comply, without having to impose strict regulations that are difficult to modify afterwards. Regulations trigger an important bureaucratic process that takes time. For example, establishing routing measures involve doing a study (which could take years), putting together a proposal, taking it to the IMO, going through IMO approval, having it go to the big book on the bridge of every ship, going on the chart, etc.
- Industry is a willing participant because no responsible members or industries want to risk ruining a community's ability to catch their marine mammals one season that led to food insecurity and the front page story. They want to be seen as good citizens in this arena.
- As well, industry likes predictability and doesn’t want to enter an area at the wrong time and have to cancel their research operations.

Measures/Plan

- The main issue that the Committee started working on initially was research vessel activity. And, a Standard of Care for research vessels was adopted in December 2018. This document, which took two years to develop, is sort of a research vessel plan for coordinating communications between researchers and the vessels that are operating with them, communications protocols, who to call in each particular village. Like an informational packet stating : *If you are going to be doing research, this is what you should do, this is what you shouldn't do.* The document also includes what vessels should do when encountering a marine mammal during hunting season, notably to slow down (<10 knots) and to stay at distance, as well as to generally avoid migration routes.

- This document was not just based out of Committee discussions. It was based on many years of data and historical issues, much of which has to do with US plans to do outer continental shelf development, gas exploration on the intercontinental shelf. It all came to a head a few of years ago when it looked like some research activities from a Japanese research vessel, the Mirai, were potentially going to impact the bow head whale hunt in a particular year.

- Whalers have traditional environmental knowledge that they can share with research vessels.

- For example, bow head whales make their migration in the fall (mid-August). They come along the coast. If there's any type of activity, or if they encounter ships operating in the same area, then the whales may deflect off shore, and all the ones that are following the whale out in front will just sort of follow. When whales are too far off shore, it is very difficult for whalers to successfully harvest a whale.

- The research community is not monolithic. There are different institutions that are doing research, and doing it off of different vessels (foreign flag ships, Coast Guard, etc.).

Measures/Plan (cont'd)

- Communication quickly became the focus: communication with the right people in rural Alaska ahead of the whaling season (about 6 months prior) to address any issues ahead of time and debriefing after the season so as to ensure ensuing conflicts do not reoccur.
- On the agenda at many of the meetings has been sharing information about hunting practices. The Committee is basically offering a forum for anybody doing research in that area, to come up and present their project. They can talk to all five co-management groups at once, as opposed to having to reach out to the Whaling Commission, then reach out to the Walrus Commission, etc.
- There is no strategic plan in place regarding upcoming issues to address. Issues that cause conflict are the stimulus for discussions. The issues are addressed as they arise.
- There's another governance mechanism in place. It is called the Open Water Season Conflict Avoidance Agreement (CAA), which has been around for over 30 years, and is an agreement between the Alaska Eskimo Whaling Commission, just that one, and the oil and gas industry, with the involvement of NOAA and National Marine Fisheries. The Arctic Waterways Safety Committee is trying to accomplish something similar with the research vessels operations.
- The objective of the Conflict Avoidance Agreement (CAA) is to avoid conflict between seismic operations and when the whales are out.

Measures/Plan (cont'd)

COMMUNICATION OF MEASURES/PLAN

- Information of the Standard of Care is communicated through word of mouth, the Alaska Marine Exchange, the Coast Pilot publication and official navigation safety information processes.

- A timeline that gets posted online every year indicating all the research vessels that are going to be in the area. So a community can go on the site and see what the cruise plan is, and can be informed about what's going on.

- An mobile application called the Arctic Vessel Tracking App is also now available to download for mariners.
  - As described on the web site http://www.arcticwaterways.org/attorneys-1.html, the App provides free access to information on commercial vessel activity for Alaska's Arctic maritime subsistence hunters. This service was requested by the five marine mammal co-management representatives. It is intended for use by subsistence vessel captains, as approved by the Arctic Waterways Safety Committee.
  - The App shows local vessel activity, types of vessels, and details of individual vessels near a hunter's community. Hunters can set notifications for when vessels approach or depart a community. Data on specific vessels can provide information for hunters for understanding what nearby vessels are doing, and for reporting if conflicts or concerns arise. The App is limited to the ground-based AIS range (similar to VHF) ~20 to 40 miles depending on conditions and coastal terrain.
  - The version of the App is first generation and intended to be improved over time based on user's feedback.

Effectiveness of Measures

- Compliance is assured by the hunters, the Coast Guard and the insurance companies that insure the ships.
- The Coast Guard does not have an active vessel traffic monitoring system in the area. Compliance with the Standard of Care is done by the hunters who are in the area and will see if vessels are in an area at a time when they should not be.
- Industry compliance is quite good given that their insurance companies require them to follow protocols.
- Success is measured by having conflict reduced. Having a more predictable environment for research vessels reduces the potential for conflicts.
- The larger industry vessels are easier to have comply than the private yachts which they have no way of communicating with.
- As well, research vessels are willing to comply as they want their research done and have understood that they can benefit from tribal knowledge.

Emerging Issues

- Addressing issues other than research vessels, for example tourism. Tourism is an important issue as tour groups have been increasing and the local communities are not informed of their presence nor equipped to handle any kind of disaster that could arise. Some of these communities don’t have ports or hospital facilities. So developing safety protocols would be a priority.

- They should be working on developing best practices document for the Arctic, village by village, tailored to each community, that would complement other official publications like the Coast Pilot.

- The Committee will next be addressing a Port Access Route Study. It is a four mile wide marine highway that the Coast Guard has established for large ships to stay within. Ships are authorized to break off into the communities if they're hauling something. The Coast Guard has finished the study from the Aleutian Chain to the Bering Strait. The route needs to get extended to the Canadian border. The Committee is working with the Coast Guard to make sure that it's at least 15 miles out from the coast.

Recommendations to other groups

- Have a stable source of funding.
- Be patient, as it takes time to develop trust among members. It doesn't happen overnight. Relationship building can be made more difficult by having representatives move through every 2-3 years, which prevents from building long-term relationships among individuals.
- Have sources of real time information (about where the ships are, where they are going, etc.) and of crowd-sourced information (e.g. whale sightings voluntary entered into a database).
- Most of the folks that you talk to want more information about what is happening. Marine Exchange of Alaska (mxak.org) is a non-profit organization facilitating safe shipping by providing information. It operates a number of terrestrial AIS transmit and receive stations.
- When working with native tribes, it is important to keep in mind that native communities benefit from shipping and see it as a benefit.
- Ideally, have the Committee be a grassroots effort.

Comité concertation navigation (CCN)

Establishment

- From 1988 to 1998, a number of studies on the environmental impacts of commercial shipping and recreational boating were conducted by various St. Lawrence Action Plan stakeholders. As a result, the Comité concertation navigation (CCN), or Navigation Coordination Committee (NCC) as it is referred to in English, was established in 1998, followed by the Committee on the Integrated Management of Dredging and Sediments (CIMDS). The objective of the project was to build consensus between representatives of the marine transportation industry, recreational boaters, and the general public through the work of these committees, with a view to integrated management.

- The Navigation Coordination Committee (NCC) was created under the St. Lawrence Action Plan, a Canada-Quebec agreement for the conservation and development of the St. Lawrence River. It thus stems from a governmental initiative between these two levels of government.

Mission

- The Navigation Coordination Committee's objective is to harmonize shipping and recreational boating practices with the protection of ecosystems, it is thus expected to reconcile the varied and sometimes divergent interests of the groups represented. It is a platform for the different users of the St. Lawrence to exchange information regarding navigation.

- It is a Committee aimed at identifying priorities, that will eventually be dealt with by their different initiatives or member organizations. The Committee itself does not put together actions or initiatives.

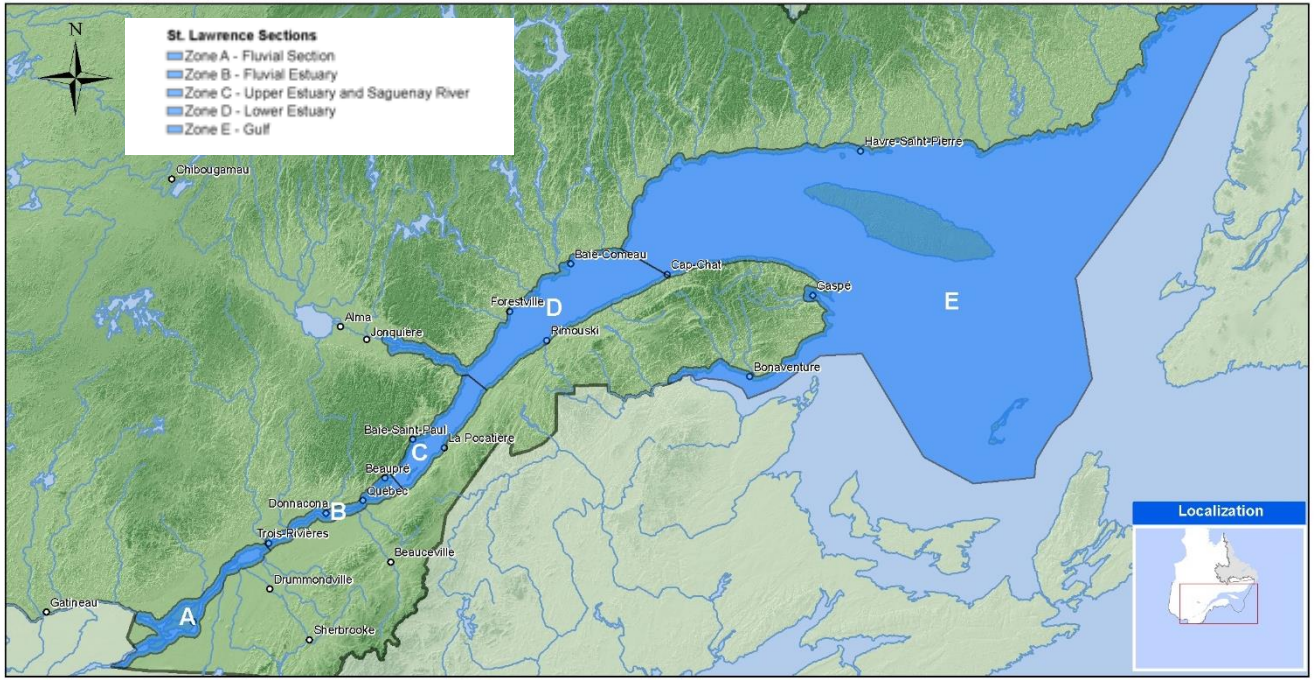
- The objective of the first edition of the Sustainable Navigation Strategy, an initiative of the NCC and essentially their main deliverable, was to adapt the management practices of commercial and recreational navigation stakeholders in keeping with the imperatives of environmental, economic and social sustainability. It was aimed at establishing a balance between navigation practices and other uses of the St. Lawrence, as well as reconciling these different interests through consensus building.

- A number of initiatives associated with this initial action plan (2004–2011) have been implemented, and the Strategy inspired stakeholders to develop innovative projects. Its continuous evolution, which ensures its sustainability, is achieved through close co-operation among navigation community stakeholders and their commitment to harmonizing their actions. The Sustainable Navigation Strategy evolved as new concerns emerged and therefore constitutes an example of adaptive management.

- The second edition of the Sustainable Navigation Strategy was an updated version of the strategy that was developed in 2004, and reaffirmed its objectives and underpinnings. It also presented the Strategy's 2012–2017 Action Plan, encompassing all the priority issues identified in the first edition of the action plan, together with a new issue — the protection of marine mammals.

Geographic Scope

- The area covered by the Navigation Coordination Committee (NCC) is the St. Lawrence, from the Great Lakes to the Gulf. The Committee is only concerned with the portion situated in the province of Québec.



Membership

CO-PRESIDENTS

- Transports Canada - Sécurité maritime
- Ministère des Transports, de la mobilité durable et de l'Électrification des Transports du Québec - Service du transport maritime

MEMBERS

Governments

- Canadian Coast Guard
- Fisheries and Oceans Canada (DFO)
- Environment and Climate Change Canada
- Ministère Développement durable, de l'Environnement et de la Lutte contre les changements climatiques
- Tourisme Québec
- Ministère des Forêts, de la Faune et des Parcs du Québec

Environmental groups

- Stratégies Saint-Laurent
- Marine Mammal Observation Network (ROMM)
- Nature Québec (Commission Eau)
- Les Amis de la vallée du Saint-Laurent

Users

- Administration portuaire de Montréal
- Armateurs du Saint-Laurent
- Association maritime du Québec
- Corporation des pilotes du Bas Saint-Laurent
- Corporation of Central St. Lawrence Pilots
- Escadrilles canadiennes de plaisance
- Fédération de la Voile du Québec
- Shipping Federation of Canada
- Société de développement économique du Saint-Laurent (SODES)
- Green Marine
- Administration de pilotage des Laurentides
- ÉcoMaris
- Alliance des villes des Grand Lacs et du Saint-Laurent

Membership (cont'd)

- The Navigation Coordination Committee (NCC) is made up of 25 members from various Canadian and Quebec government departments, shipping industry and recreational boating associations, and environmental groups. All stakeholders that are somehow involved with the navigation on the St. Lawrence.
- The environmental groups are present in great part for the protection of marine mammals which is an important issue.
- Organizations may ask the Committee to join, at which time the Committee will evaluate their request and then make a decision.

BALANCED REPRESENTATION

- The representation is deemed to be well-balanced between government agencies, commercial and recreational users and the different environmental groups. The Committee does aim to have a good representation of stakeholders.
- It was suggested that having a few academics representing university research might be a good idea. It would balance out the scientists stemming from the government agencies.
- As well, some feel that it may be interesting to include indigenous communities to the Committee. The NCC is open to this idea, but the communities have not yet shown interest. Participation from these communities is generally better when they are part of the development of a Committee from its inception, as opposed to be asked to join later on.
- Another missing representative would be those from the recreational sector of sport fishing.

Organizational Structure

- The Navigation Coordination Committee (NCC) is co-chaired by representatives of Transport Canada and the Quebec Department of Transport, Sustainable Mobility and Transport Electrification (MTMDET). The MTMDET does most of the logistical work, that is, set the agenda, take the minutes, do the follow-ups, etc. Members can propose elements to be discussed on the agenda ahead of time.

- The Committee meets three or four times a year. Meetings are centrally held, such as in Bécancour or Trois-Rivières.

- The Committee was officially created under Phase III of the St. Lawrence Action Plan. Its members, who meet on a voluntary basis, opted for a consensus building approach to determine its modes of operation and decision making. The choice was a necessary one, essentially because of the shared desire to develop a coordination process between members from diverse areas, especially governments, the marine industry, environmental organizations, riverside communities, recreational navigation and other sectors. Years of work were devoted to establishing such a collaboration, culminating in a shared vision for stakeholders and users whose interests initially seem to differ, if not diverge, when it comes to sustainable development.

- Given that the Committee is a *generalist*, it tends to break up in several different sub-groups to address specific issues only with the organizations concerned. For example, there are sub-groups on hydrocarbons, vessel speed, recreational boating, etc. These sub groups are invited to present the fruit of their work to the main Navigation Coordination Committee. Subcommittees meet about three times a year.

- One of the most important sub-group is on dredging and sediments. Indeed, dredging and sediment management have been the priority issues associated with navigation on the St. Lawrence since the establishment of the NCC. A sub-Committee on the Integrated Management of Dredging and Sediments (CIMDS) was eventually formed to address these issues. The CIMDS is mandated to improve the management of dredging activities in the aim of providing for adequate protection of ecosystems and public health while also allowing the development of navigation on the St. Lawrence River.

Organizational Structure (cont'd)

- And now, the G2T3M is also a type of subcommittee from the NCC *(see G2T3M chapter for more details)*.
- Organisations outside the NCC are sometimes invited to come and make presentations to the Committee, for example academics or organizations that have projects related to the NCC's mission.

FUNDING

- Members are not compensated for their participation. Their respective organizations pay for their time and their travel.
- Funding for the Navigation Coordination Committee comes from the Plan St-Laurent and thus from both level of government, federal and provincial.
- Some of those funds are made available to some of the subcommittees to help finance their actions and to fund the publishing of the Sustainable Navigation Strategy.

Documentation

WEB SITE

The NCC has a dedicated page on the Plan St-Laurent website :
http://planstlaurent.qc.ca/en/uses/consultative_committees/navigation_coordination_committee.html

TERMS OF REFERENCE / BY LAWS

The NCC's terms of reference are not publicly available.

PLAN

The NCC has produced two editions of their Sustainable Navigation Strategy plan.
The first one, issued in 2004 can be found here: http://planstlaurent.qc.ca/fileadmin/publications/diverses/SND_longue_e.pdf
While the second one, published in 2012, can be found here:
http://planstlaurent.qc.ca/fileadmin/site_documents/documents/Usages/SND_ANG_2015_web_acc.pdf

Positive elements and improvements

WHAT'S WORKING WELL

- There is a dedicated person/organization responsible for the logistical work of the Committee. To do follow-ups between the meetings, hold people accountable to be present at the meetings, etc. It keeps members connected and engaged.
- The NCC is a *generalist* Committee in a sense. It is important to have a Committee that handles a wide range of broad topics, whereas some committees are focused on very specific issues. The Committee's goal is not to solve all problems afflicting the St. Lawrence, but rather to determine what are those biggest issues that need to be handled.
- The main users impacting the St. Lawrence are around the table discussing the issues, being part of the decisions, which makes them more engaged and ultimately renders this Committee very effective. Decisions are more thought out and take into consideration all aspects of a problem.
- Having commercial and recreational boating at the same table is rare and members appreciate having this forum of discussion.
- Some feel that the fact that a lot of the same individuals have been at the table for a long period of time helps with the stability and with building respectful relationships.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- Being a *generalist* committee, the NCC handles a great number of varied topics having to do with the St. Lawrence. Some member organizations that deal with more specific topics find it sometimes difficult to stay motivated by the discussion of broader topics. It really depends on the organization and their role. Some feel that the Committee's focus is a bit scattered.
- It would be appreciated by some organizations with lesser means that the travels fees be reimbursed.
- The users come from such different industry sectors, which is one of the Committee's strength, that it sometimes makes it difficult to come up with common solutions that are relevant to all sectors.
- Being primarily a forum for the exchange of information, some feel that the NCC lacks some *concreteness*. Although it does have real decision-making power, it is not a decision-making committee. It make recommendations.
- Some feel that the Committee's goal or vision has been lost over time, that it lacks some direction due to an increase in turnover of individuals on the committee.

Voluntary or Mandatory Measures

- Both Sustainable Navigation Strategy documents have produced actions ranging from awareness campaigns, to voluntary measures to regulations.
- Some urgent situations require mandatory measures (like the issue of the North American Right Whale), while others can be dealt with voluntary measures that can be evaluated and reviewed in the longer term.
- And when voluntary measures have been developed by consensus, that all stakeholders back them up, there is greater compliance by all parties and, after that, it eventually becomes much easier to change them into mandatory measures if need be.
- Although it can take longer to put together and refine voluntary measures, in the end it takes less time than setting up measures that are not respected or not well adapted to a problem, and having to correct them.

Measures/Plan

- The NCC's main deliverable is the Sustainable Navigation Strategy, detailed below. However, the Committee can discuss other issues, issues that were not planned or included in the Strategy at the outset, but that are now significant simply because the news often catches up with an organization between two publications of the plans.

- In 2004, the NCC issued its **first Sustainable Navigation Strategy** for the St. Lawrence. This document identifies a number of priority issues and sets out approximately 10 basic principles serving as guidelines for the committee's actions. An initial action plan for these issues was completed in 2010. This first action plan produced successful projects such as the creation of the Dredging Activity Planning Registry, the adoption of a voluntary speed-reduction measure for commercial vessels in erosion-prone areas, and a study of the impacts of climate change on marine transportation.

- Subsequently, a **second Sustainable Navigation Strategy** has been published (2012-2017).
  The nine issues providing the framework of this second Sustainable Navigation Strategy are :
  - Consensus building – A prerequisite
  - Implementation of integrated management of dredging and sediments
  - Evaluation of adaptation options for navigation with respect to fluctuating water levels
  - Relative effect of the wake produced by ships and pleasure craft, one of the elements of the phenomenon of erosion examined in some sectors of the St. Lawrence
  - Improvement of the management of sewage discharges and cargo residues for all types of ships and craft
  - Reduction of risks of introduction and spread of exotic organisms by ballast water for all types of ships and pleasure craft
  - Hazardous product and oil spill prevention and response
  - Development of marine transportation in relation to its environmental and social benefits
  - Protection of marine mammals

  These issues serve in identifying the objectives and projects to be collectively implemented by the NCC members.
  Some of these projects are incorporated into the program of joint actions.

Measures/Plan (cont'd)

- The Integrated Management of Dredging and Sediments (CIMDS) does the following:
  - adds to scientific knowledge through applied research projects to support management of activities relating to dredging and restoration of sites with contaminated sediment;
  - develops tools and guides for various stakeholders involved in the design, planning, execution, assessment and monitoring of work relating to dredging and restoration of sites with contaminated sediment;
  - promotes cooperation and facilitates federal and provincial environmental assessment processes applicable to projects (e.g., assessment of fish habitat loss); and
  - enhances public consultation and participation processes as part of project review while also helping to build consensus among the various stakeholders involved in dredging and sediment management activities.

  It helps to bring transparency to an activity that the public is apprehensive about.

- Voluntary speed-reduction measure for commercial vessels. Erosion affects all waterways, and it has many causes. One cause is wave action produced by the wakes of ships and recreational craft. In the fall of 2000, the shipping industry voluntarily adopted a speed-reduction measure for commercial vessels in a 25 km stretch of the St. Lawrence between Sorel and Varennes. Vessel pilots are strongly urged not to exceed 10 knots.

Measures/Plan (cont'd)

IDENTIFYING PRIORITY ISSUES AND PROCESSES USED TO DEVELOP MEASURES

- In developing actions or measures, it is important to have an accurate diagnostic of the situation which is based on scientific data.

COMMUNICATION OF MEASURES/PLAN

- The NCC is more a committee that is served by its members, in terms of information, than the opposite. The members are there to give the governmental instances an adequate portrait of the situation and help guide their thought-process. Therefore, there is no real communication plan of the activities of the Committee to the member organizations or the individuals that make them up.

Effectiveness of Measures

- When measures are decided upon with and by the key stakeholders, their participation is sure to increase. In a way, members take a moral obligation to comply with the measures that they have agreed to or help to create.
- Compliance results of voluntary measures are presented during the Committee. This presentation has an impact on organizations wanted to perform well and look good in front of the others. It does help with compliance.
- For some measures, compliance is rather easily measured with AIS data, aerial surveillance, Coast Guard, etc.
- For example, the industry has shown a very high level of compliance of the voluntary speed-reduction measure (98% on average, from April 2015 to July 2016). As part of this measure, the speeds of various ships in these sensitive areas are measured monthly to verify compliance. Having pilots aboard vessels in that area of the St. Lawrence certainly helps with compliance.
- However, for dredging compliance is more difficult to assess.

Emerging Issues

- Marine mammals protection will be a more important issue going forward. As traffic is increasing on the St. Lawrence, the issue of usage conflicts will inevitably lead to thinking about the impact on marine mammals. So protection of marine mammals, reducing collisions, underwater noise, etc.

- As well, adapting navigation to climate change (for example fluctuating water levels) will be more of an issue to deal with going forward.

- Prevention and intervention of spills of such toxic products like hydrocarbons, etc.

Recommendations to other groups

- It takes money to put together such programs and ensure that the subsequent actions can be put in place. In the case of the NCC, the government is behind it and thus has a big impact on its success.
- Findings ways to value results is important. That is, following-up and praising people and organizations that are engaged, that want to be part of the solutions and that have complied with measures.
- You need clear and measurable indicators of compliance and of success. And someone in charge of following-up those indicators for the Committee and presenting them. It keeps organizations accountable.

ECHO Program

Establishment

- The ECHO Program was in development throughout 2014. The first official meeting of the ECHO Program's Advisory Working Group (AWG) was in November 2014.

- The development phase included many discussions about selecting the right governance structure, the optimal composition, how to fund the Program, etc. These pre-meetings were held with NGOs, with industry representatives, as well as with First Nations individuals to understand who best to select to gather First Nations perspective. These meetings also served to inform people about the issues to be tackled by the Program and to convince them to participate in it.

- One of the key drivers for the Program was the designation of Southern Resident Killer Whale critical habitats in the late 2000s. This critical habitat straddles the international shipping lanes that call all of the ports within the Salish Sea (that is, the Port of Vancouver and all of the other ports on the US side).

- In parallel to the Program's development, some NGOs working in the region were looking at that issue and the Species at Risk Act and what that meant for the Port of Vancouver. Back in 2012, the issue of impact of vessels and underwater noise was raised by WWF and the Vancouver Aquarium and discussed with the Vancouver Fraser Port Authority. Since increasing risk to that species through existing or increased shipping is directly contravening the Species at Risk Act, the Program was initiated to demonstrate that the Port was taking the matter seriously and wanted to do something about it.

- Also, around that same time, the Vancouver Fraser Port Authority went through a visioning mission setting exercise and had decided to adopt the vision of being the world's most sustainable port.

Mission

- The Enhancing Cetacean Habitat and Observation (ECHO) Program is a Vancouver Fraser Port Authority-led initiative aimed at better understanding and managing the impact of shipping activities on at-risk whales throughout the southern coast of British Columbia.

- The ECHO Program supports a series of individual projects to determine the information requirements needed to better understand vessel-related threats, fill knowledge gaps and design and implement mitigation and management measures in order to achieve the long-term threat reduction goals of the ECHO Program.

- The ECHO Program initially structured its focus areas around three of the four threat categories to whales in the region as identified by the Fisheries and Oceans Canada Recovery Strategy. The program has advanced projects in three potential vessel-related threat categories (acoustic disturbance, physical disturbance environmental contaminants) with a view to informing the development of measures to reduce threats to whales. However, to date, the primary focus of the ECHO Program has been around the threat category of acoustic disturbance and in particular reducing this threat to the endangered Southern Resident Killer Whales.

- The long-term goal of the ECHO Program is to develop mitigation measures that will lead to a quantifiable reduction in potential threats to whales as a result of shipping activities.

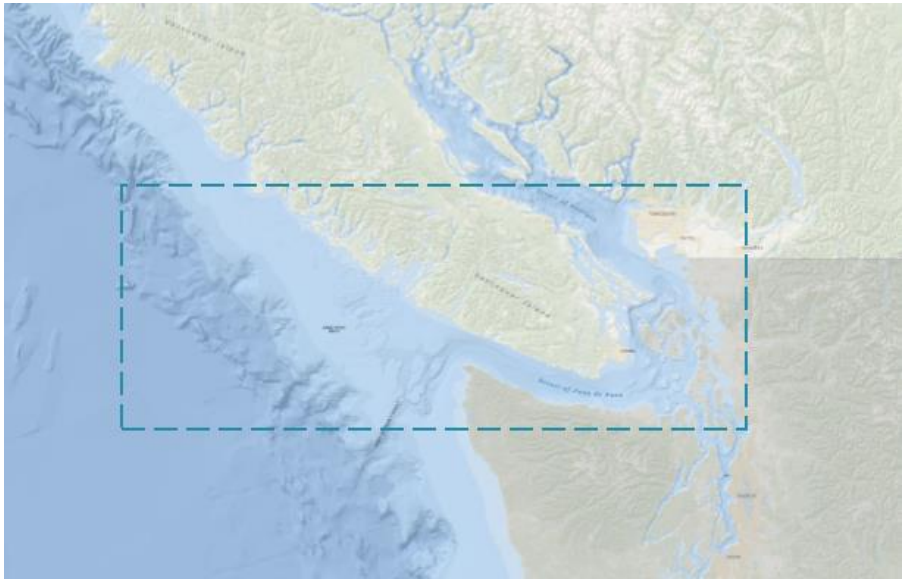
Geographic Scope

- The geographic scope of the ECHO Program generally includes Canadian as well as part of U.S. critical habitat for Southern Resident Killer Whales, and also encompasses an area off the South West Coast of Vancouver Island where other larger at-risk whale species are present. Indeed, the area extends a considerable distance off the West Coast of Vancouver Island and the mouth of the Strait of Juan de Fuca.

- So basically, the waterways from open ocean to the Port of Vancouver, thus covering some areas outside of the Port's jurisdiction.

- The boundaries of this area are intended to be used as a general geographic focus for the ECHO program, taking into consideration that the program's activities from time to time may relate to areas outside these boundaries.

- There are discussions in the U.S. to possibly replicate a similar approach/model as the ECHO Program in the adjacent waters in the U.S.



Membership

ADVISORY WORKING GROUP (AWG) (17)

- BC Coast Pilots
- BC Ferries
- Canadian Coast Guard
- Chamber of Shipping
- Council of Marine Carriers
- Cruise Lines International Association (North West & Canada)
- Fisheries and Oceans Canada
- National Oceanic and Atmospheric Administration (NOAA)
- Indigenous individuals
- Ocean Wise
- Pacific Pilotage Authority
- Royal Canadian Navy
- Shipping Federation of Canada
- Transport Canada
- Vancouver Fraser Port Authority
- Washington State Ferries
- WWF-Canada

FUNDING PARTNERS AND IN-KIND CONTRIBUTORS (10)

- Vancouver Fraser Port Authority
- Fisheries and Oceans Canada
- Fraser River Pile and Dredge
- JASCO Applied Sciences
- Oceans Networks Canada
- Trans Mountain Corporation
- Transport Canada
- Tsleil-Waututh Nation
- University of Victoria
- Vancouver Aquarium

INDEPENDENT FACILITATION

- Fraser Basin Council

OTHER PROGRAM OR PROJECT COLLABORATORS (12)

- Achieve QUieter Oceans (AQUO)
- American Waterways Operators
- Green Marine
- Nanaimo Port Authority
- Ports of Seattle and Tacoma
- Prince Rupert Port Authority
- Puget Sound Pilots
- Saturna Island Marine Research and Education Society
- Scripps Institution of Oceanography
- Sea Mammal Research Unit (SMRU) Consulting
- The Whale Museum
- University of Victoria NEMES Project (Noise Exposure to the Marine Environment from Ships)

Membership (cont'd)

ACOUSTIC TECHNICAL COMMITTEE (16)

- BC Ferries
- Fisheries and Oceans Canada
- DHI Group Inc.
- DW Ship Consult
- JASCO Applied Sciences
- National Oceanic and Atmospheric Administration (NOAA)
- Oceans Networks Canada
- Ocean Wise – Coastal Ocean Research Institute (CORI)
- Royal Canadian Navy
- Robert Allan Naval Architects
- Sea Mammal Research Unit (SMRU) Consulting
- Transport Canada
- University of British Columbia
- University of St. Andrews
- University of Victoria
- Washington State Department of Transportation

VESSEL OPERATORS COMMITTEE (18)

- BC Coast Pilots
- BC Ferries
- Canadian Coast Guard
- Chamber of Shipping
- Council of Marine Carriers
- Cruise Lines International Association (North West & Canada)
- Hapag-Lloyd (Canada) Inc.
- Holland America Group
- Marine Exchange of Puget Sound
- Pacific Merchant Shipping Association
- Pacific Northwest Ship & Cargo
- Pacific Pilotage Authority
- Royal Canadian Navy
- Shipping Federation of Canada
- Transport Canada
- U.S. Coast Guard
- Vancouver Fraser Port Authority
- Washington State Ferries

Membership (cont'd)

- The ECHO Program Advisory Working Group (AWG) is composed of individuals bringing a broad spectrum of relevant backgrounds, perspectives and interests who share the common goal of reducing potential threats to at-risk cetaceans. Membership in the AWG is by invitation from the Vancouver Fraser Port Authority.

- AWG members stem from federal and/or provincial government agencies, First Nations *(drawn from a community in the Salish Sea)*, industry *(carriers, cruise ships, bulk, tugs & barges, etc.)*, the Pilots' corporation *(a service provider to the industry)*, non-government organizations, academia and other relevant sectors and organizations. The fact that the Port Authority took the leadership role in putting together the Program was helpful in getting industry representatives to convene at the table.

- The purpose of the Advisory Working Group (AWG) is to provide input, advice and recommendations during the development and execution of the Program. Advice and perspectives from a range of potentially affected and interested parties and including a diversity of expertise are sought by the ECHO Program in order to solve complex problems with practical solutions. Members are asked to work collaboratively and productively with other AWG members to contribute to a positive and respectful atmosphere within the AWG.

- In all, there are about 25 participants at the meetings, which is as large as is felt is manageable.

- Member representation has remained similar over the years. However, there have been some additions as the Program has transitioned away from simply doing research to inform, to actually look into specific measures to implement on the waters. For example, Coast Guard and Royal Canadian Navy were not at the table originally, but recently joined.

- The Program expanded the membership to include some of the key US stakeholders, as there was a challenge of implementing initiatives in both Canadian and US waters.

Membership (cont'd)

- There are also two technical committees that have spun out of the Advisory Working Group (AWG) that support with getting the actual work done on different aspects that the Program wants to explore:
  - The Acoustic Technical Committee is a different composition from the AWG. Although, there are some conservation representatives from the AWG, it is mostly made up of very technical acousticians, such as acousticians from government, from industry and from Academia.
  - The Vessel Operators Committee came about to help plan for the implementation of the first slow down trial. There is overlap between industry representatives from the Advisory Working Group (AWG) table and the Vessel Operations Committee. For example, they can be different individuals from the same organizations, but generally more operational representatives such as pilots, who understand how vessels move, what is safe and unsafe, etc.

BALANCED REPRESENTATION

- The Program is more heavily weighted towards industry, as they are the mariners that the Program is trying to get to make changes as to how they do business. So, the balance is correct for the goals the Program is pursuing. Members outside of industry do get to voice their opinion and shape solutions. But ultimately, it is industry that directs what they are comfortable with.

- That being said, the Program is currently exploring how to balance that composition better and provide slightly more strength for the NGO and First Nations representative at the table, so that they don't feel like they carry as much burden to bring the perspective of their communities to the table.

- The First Nations representation can be a challenge as some of the tribes have positioned themselves against shipping. That position may make their participation in a Program like ECHO difficult. First Nations there have constitutional rights and they are concerned about continued shipping activities and its impacts in their traditional territories. They are also very concerned about the killer whales, which is a culturally important symbol for them and part of their cultural beliefs.

Organizational Structure

- AWG members can propose an alternate from their organization to participate at AWG meetings when they are unable to attend.
- The Program is managed by a Program team housed within the Port Authority and composed of 4 or 5 people. Communication support is provided by the Port Authority.
- Up to four full or half-day meetings of the AWG are held per year. The technical committees met as often are required.
- Membership is on volunteer basis and members receive no compensation. That being said, there are funds available for representatives who may want to receive some stipend for their time or reimbursement for their travel expenses. Typically, only some NGOs and First Nations representatives have taken advantage of this.
- The Port pays for the hire of an independent facilitator, the Fraser Basin Council, as well as for technical specialists when needed. This independent facilitator has been with the Program from the outset. Having this neutral third party facilitate the meetings has been a key aspect of the success of the Program. The facilitator interviewed with each AWG member prior to the first meeting in order to clarify their role. As well, if any AWG member has issues or concerns that they do not want to bring up in meetings, they can go to this facilitator to discuss privately.
- The Program does not have a Chair per se, but the independent facilitator plays a similar role. He sets the objectives and checks in with everyone on the agenda, keeps everybody on task and on time, and makes sure that everyone has the ability to speak safely around the table and keeps the discussion moving along. The Program team prepare for the meetings, manages the research studies, take the meeting minutes and distributes them.

Organizational Structure (cont'd)

- The Program team and the Port Authority hold the ultimate decision-making role, but are informed by the feedback from the Advisory Working Group. The Port Authority does not formally vote in the Advisory Working Group meetings. It is very much based on consensus and seeking recommendations and feedback from the group and then reflecting that in the meeting notes, taking the recommendations and working them into the work plan going forward.

- Once a year, the Program team checks in with the different members to see how they are evaluating the work being done. Is the program working for them? What's working? What's not working? Etc.

FUNDING

- The Program is funded by the Vancouver Fraser Port Authority. But the Port is in essence a non-profit organization that charges its users, the industry.
- But the Program also benefits from in-kind contributions from many different organisations.
- A few people told us that The Vancouver Fraser Port Authority and shipping industry representatives have recently entered into a Section 11 Conservation Agreement with the government around protecting Southern Resident Killer Whales. This agreement would commit them to do a certain number of things and commit the government to a certain number of things, including funding to sustain this work. This information is to be confirmed.

Documentation

WEB SITE

The ECHO Program has a detailed page on the Port of Vancouver web site: https://www.portvancouver.com/environment/water-land-wildlife/echo-program/

TERMS OF REFERENCE / BY LAWS

The ECHO Program's Terms of reference are not publicly available.
The Terms of Reference address things like the fact that members must contribute constructively, be transparent in providing advice, agree not to divulge the details of conversations held at the meetings, etc.

MEASURES

All ECHO Program projects and initiatives are detailed on their web page with several companion documents (such are reports, infographic or peer reviewed publications) available for download: https://www.portvancouver.com/environment/water-land-wildlife/echo-program/projects/

As well, the site provides resources and links for mariners who navigate West Coast waters to help familiarize themselves with marine mammals in the region: https://www.portvancouver.com/environment/water-land-wildlife/echo-program/resources/

Positive elements and improvements

WHAT'S WORKING WELL

- A lot of work is being done between meetings by the Program team, whose time is 100% dedicated to the Program, which is how the ECHO Program is able to develop so many initiatives in such a short timeframe. The Program team works in a transparent manner.

- Having an independent neutral facilitator that creates a safe space for people to share their perspective respectfully has allowed members to understand each other's worlds even though they come from different perspectives.

- There is a high participation rate in the meetings. Alignment among stakeholders is high as there is agreement on the assumptions of the species health. And, even though there can be real tensions about certain issues among stakeholders, there has been real trust that has been built around the table. Specifically, industry feels that this Program is good for them, so they want to be part of it and help move it forward. Some industry stakeholders started out skeptical *(of the Program's intentions and ability to do something)* but are now fully engaged.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- The group has been under pressure in the last two years. It is a different landscape from when the Program started five years ago. Stakeholders feel in a pressure cooker through some of the work that's being undertaken by the governments and parallel processes and confusion about who does what and pressures put on the group to do more.
  Specifically, in 2018, there were petitions to the government around protection of a species and legal action was initiated for failing to protect the species. That created some pressure, as failure to demonstrate action is bad for government and industry.

- Some people have requested better connections between the Technical Committees and the Advisory Working Group. Making sure there's better understanding of what they're doing and communications between them. Indeed, some stakeholders outside industry have felt left out of the discussions that pertain to the details of the trials or their implementation.

- The Program is looking at the weighting of the group's composition to perhaps involve other stakeholders, for example more First Nations representation.

Voluntary or Mandatory Measures

- The initiatives implemented by the Program are voluntary.
- The measures put in place are first trials, as opposed to hard measures. The idea being that let's see how these work with a voluntary approach and trying to trial them, and then see how we can make those measures better. This adaptive approach has been important in informing the most productive outcomes.
- The issues that are dealt with by the Program are not black or white. So, a fear of regulating a measure is that it is then set in stone going forward and you potentially extinguish the opportunities for innovation. For example, having industry design and build quieter vessels in the future, as opposed to just following slowdown or displacement measures.
- The Program is in a transboundary area where vessels are coming in on the Canadian side and out on the US side. The complexity of implementing a regulatory measure in Canada could actually mean less benefit to the whales because you would only be able to regulate them on one side of the water, where currently the Program has about 80% of vessels participating on both sides of the border.
- Industry fears regulation and really prefers to keep the measures voluntary. Conservation stakeholders are in accordance with that as long as there are results demonstrating the effectiveness of these voluntary measures at sustainably, consistently, reducing threats to the species. The tension between voluntary vs. mandatory is present at the AWG. And, there is a real struggle to understand how government fits into all of this.

Measures/Plan

- The following pages list the ECHO Program initiatives (in the three threat categories of acoustic disturbance, physical disturbance and environmental contaminants) that have been completed or that are still underway, The projects highlighted with a yellow star ★ are featured initiatives for the Program.

ACOUSTIC DISTRUBANCE

Project name (completion year)	Description
Haro Strait and Boundary Pass voluntary vessel slowdown trial (2019) ★	In 2019, the ECHO Program is coordinating an expanded voluntary vessel slowdown trial in Haro Strait and Boundary Pass over the summer months when whales are present. The monitoring period began June 1 and the slowdown as activated on July 5 when the whales were confirmed as present within the trial area.
Inshore lateral displacement trial (2019)	The ECHO Program and Transport Canada, supported by regional and international partners will be studying how moving tugs and barges away from known whale feeding areas affects the underwater noise levels in those areas. This trial began on June 17, 2019 and will end on October 31, 2019.
Haro Strait voluntary vessel slowdown (2018)	In the summer of 2018, the ECHO Program supported an industry-led voluntary speed slowdown for ships transiting Haro Strait over the summer months when whales were present.
Strait of Juan de Fuca lateral displacement trial (2018) ★	The ECHO Program and Transport Canada, supported by regional and international partners, led a voluntary trial in 2018 to study how moving ships away from known whale feeding areas would affect the underwater noise levels in those areas. The initiative ended in October 2018 and some preliminary results have been shared with ECHO Program advisors, a final summary report is being prepared and will be available in late summer 2019.
Burrard Inlet underwater noise monitoring	This one-year project aims to measure the baseline ambient underwater noise conditions and other noise sources of interest through a network of hydrophones placed throughout the Burrard Inlet. The project is led by the ECHO Program in partnership with Transport Canada and Tsleil-Waututh Nation.
Ambient underwater noise evaluation (2019)	This project looks to identify and evaluate the key factors affecting ambient noise at various hydrophone locations that the ECHO Program has monitored throughout the Salish Sea over the last number of years. To evaluate changes in ambient underwater noise over time or with specific mitigations, it is important to understand how to consider and account for other environmental factors, such as large ship and small boat traffic, currents, water temperature, weather and biological components.
Educational outreach to mariners	Since 2014 the ECHO Program has been delivering presentations regionally, nationally and internationally on the issue of vessel-whale interactions and the ECHO Program research findings. The port authority harbour patrol crew supports outreach and educational awareness efforts by boarding vessels calling the port and sharing educational materials from the ECHO Program such as an underwater noise infographic, information on the underwater listening station and the Mariner's Guide to Whales, Dolphins, Porpoises of Western Canada.

Measures/Plan (cont'd)

ACOUSTIC DISTRUBANCE *(cont'd)*

Project name (completion year)	Description
Strait of Georgia underwater listening station (2018)	In partnership with Transport Canada, Ocean Networks Canada and JASCO Applied Sciences, Vancouver Fraser Port Authority installed an underwater listening station in the Strait of Georgia in 2015 to monitor not only underwater noise source levels from ships, but also marine mammal presence and total ambient underwater noise. The Strait of Georgia underwater listening station was maintained and operated for just over two and a half years. Fisheries and Oceans Canada also some provided funding support to this project.
Vessel noise studies with regional partners (2018)	The ECHO Program and Fisheries and Oceans Canada supported a small boat underwater noise measurement study in Haro Strait to better understand the underwater noise levels of whale watch and other small boats that operate in the Salish Sea near southern resident killer whale summer feeding habitat. This study was conducted in parallel with the 2017 Haro Strait vessel slowdown trial which was measuring underwater noise levels from large piloted commercial ships in Haro Strait.
Haro Strait vessel slowdown trial (2017)	Between August 7 and October 6, 2017 the ECHO Program led a first-of-its-kind voluntary vessel slowdown trial in Haro Strait to better understand and measure the level of noise reduction achieved through reduced ship speed.
Killer whale behavioural response to vessel noise (2017)	This study sought to better understand how southern resident killer whales are predicted to respond to underwater noise from both large commercial ships and smaller whale watching boats.
Study of humpback whale calls in the presence of ships (2017)	This study aimed to better understand the potential effects of ship noise on humpback whale calls in B.C. waters using underwater sound recordings.
Port authority incentives for underwater noise – Ship quieting options study (2017) ★	What makes ships quieter? This study scanned the best options to reduce underwater noise from ships. The study recommended options to be included in the port authority's EcoAction Program, which incentivizes ship operators to go above and beyond environmental regulations. As of January 1, 2017, ships with quiet classification notations or cavitation reduction technologies calling the Port of Vancouver are eligible for a discount on harbour due fees.
Regional ocean noise contributors study (2017)	How do different ships sound and where and how often do they transit in this region? This study identified and quantified the underwater noise contributions from various marine transportation sectors to overall regional ocean noise.

Measures/Plan (cont'd)

	Project name (completion year)	Description
PHYSICAL DISTURBANCE	WhaleReport Alert System (WRAS) (2019)	The WhaleReport Alert System mobile app helps to notify select regional commercial ship operators when whales are in their proximity. This one-year pilot project began in October 2018 and is led by the Vancouver Aquarium/Ocean Wise's BC Cetacean Sightings Network, in collaboration with the Vancouver Fraser Port Authority-led ECHO Program and the Prince Rupert Port Authority.
	Whales in our Waters tutorial (launched in 2017) ★	Developed for mariners by BC Ferries and the ECHO Program in partnership with Ocean Wise, the *Whales in our Waters* tutorial covers a range of topics to build awareness of local whale species, how to identify them, and best practices to implement when navigating ships in their presence.
	Large whale aerial surveys and strike risk assessment (2017)	Where is the risk of whale vessel strike the greatest? The ECHO Program supported Fisheries and Oceans Canada's survey of large whale distribution off the southwestern coast of Vancouver Island using aerial surveillance and satellite tagging. The data collected through these surveys led to both a Fisheries and Oceans Canadian Science Advisory Secretariat report and peer reviewed publication titled: Assessing the Risk of Ship Strikes to Humpback and Fin Whales of the West Coast of Vancouver Island.
	Mariner's Guide to Whales, Dolphins, Porpoises of Western Canada (2017)	In collaboration with the Vancouver Aquarium/Ocean Wise and Prince Rupert Port Authority, the ECHO Program supported the development of the *Mariner's Guide to Whales, Dolphins, Porpoises of Western Canada* which helps mariners identify marine mammals, their seasonal usage of areas along the west coast and ways to reduce potential interactions.

Measures/Plan (cont'd)

	Project name (completion year)	Description
ENVIRONMENTAL CONTAMINANTS	Ocean Wise PollutionTracker project (2019)	Since 2016, the ECHO Program has been supporting PollutionTracker, a Vancouver Aquarium/Ocean Wise initiative, to collect and analyze samples of sediment and mussels to establish baseline levels of environmental contamination and inform best practices in and around the water.
	Management of contaminants during underwater hull cleaning (2019)	In partnership with Transport Canada, the objectives of this project was to validate a new in-water hull cleaning technology, and to investigate if hull cleaning a ship's hull may result in reductions to fuel consumption and underwater noise.

Measures/Plan (cont'd)

- The AWG first set off to better understanding the issues, starting with acoustic disturbance. At the start of the program five years ago, industry and First Nations communities did not understand that underwater noise from shipping was an issue impacting whales. And so, a lot of the work prior to the formation of the ECHO Program was convincing people to come to the table.

- What ultimately convinced people was undertaking and presenting reliable science to provide the evidence upon which mariners could move forward to acknowledge that there is an issue and that they should be involved in reducing threats. Taking the time to provide good data and evidence and to answer questions, so as to have informed discussions about what to do about the issue, was a key element to the success of the program.

- In the early days, the Program was very focused on better **understanding the issues**, but then shifted over time to trying **to quantifiably reduce some of the threats**. A lot of the current work is focused on trying to reduce the threats or testing or trialing different solutions around that issue. The Program's mission is large enough that it can undertake other issues that may emerge, for example, issues around strike risk or other species or other emerging problems that are not yet known.

- The main initiatives that have been developed are:
  - Port Authority putting incentives for quiet vessels, which came out of one of the research studies.
  - Implementing a research listening station under the shipping lane for a number of years to understand who is contributing to the noise where and where should efforts be focused.
  - Working with regional operations and studying vessel design and designing noise-reduction plans.
  - Tested a volunteer vessel slowdown *(to 11.5 to 14.5 knots depending on the vessels)* to understand if slowing vessels down makes them quieter *(to eventually confirm that it does)*.
  - Lateral displacement trial, to have vessels move further away from a key foraging area, laterally.

Measures/Plan (cont'd)

PROPOSED IDEAS THAT WERE PUT ASIDE

- The decision to put aside an idea is based on navigational safety and/or operational complexities that would just make it extremely challenging to implement given the current processes in place.
  An example of that is convoying at certain time periods to leave the environment totally quiet at others. However, the shipping industry felt convoying cannot be done safely.

COMMUNICATION OF MEASURES/PLAN

- The Program team ensures the information about the initiatives is communicated to all relevant agents, working with the shipping associations that represents the majority of the vessels calling the Port.

- All of the communications materials comes from the ECHO Program and is disseminated by the Program, but amplified by the organizations, the shipping associations, the pilots, and their members.

- The Program team reaches out to the different companies, in advance of them coming to the Port of Vancouver, to inform them about the initiatives and understand if they are planning to participate or not.

Measures/Plan (cont'd)

IDENTIFYING PRIORITY ISSUES AND PROCESSES USED TO DEVELOP MEASURES

- In developing initiatives, the Program team will think about what issues should be focused on, what would benefit the whales most, based on data from the last 15 years. They will aggregate the information and put together the biological case to be considered by the Advisory Working Group when thinking about measures.

- The biological benefits are put against the economic impact of several different scenarios. The AWG then assesses what is going to work best from an operational perspective, from a navigational safety perspective, from economic impacts and the biological benefits and ranks and weights those. There is great value in the discussions around trying to get a measure that works for all stakeholders. The Program team and the Port Authority then ultimately come to a decision.

- For complex measures to be put in place, such as the original slowdown, it can take up to a year of discussions in advance of implementation. Simpler measures may require less time and input.

- For example, regarding noise and disturbance from shipping, ECHO first identified the knowledge gaps and tried to fill them with science, scientific advice and assessments from well-documented technical consultants. The pieces of information they generated was how much noise is contributed by different groups of vessels including commercial vessels and small vessels. That study informed that roughly two-thirds of the noise in the environment is coming from large vessels. That was one of the key pieces of assessments that happened early. And then, there was some further assessment of how much of that noise is affecting the ability of the whales to feed, find food or communicate. These assessments were building the rationale of why noise needs to be managed. Once that was established and everyone agreed with it, primarily industry, the question was how do you start to reduce noise. And there was a discussion on what is practical, what is doable, what is safe. From that perspective, things like speed reduction and lateral displacement became things that looked doable.

Effectiveness of Measures

- The Program has worked well in terms of trying to achieve some results. Out of five years of operating, the Program has piloted actions for three years which is significant. Effectiveness is monitored and can be measured both with industry compliance and threat reduction.

- Compliance has been good. The vessel slow down had 60% participation rate the first year and that rate increased the following years. For example, for the vessel slow down, compliance is measured two ways:
  - How many vessels participated: which is done by tracking data through the pilots. When they finish their job, the dispatcher will ask the pilots whether this vessel participated or not, and that gets logged.
  - And then secondly, looking at the result in noise reduction in the foraging area: using hydrophones in key areas to determine how much the noise levels dropped over the course of the trial relative to baseline conditions before it started.

- With the lateral displacement trial last year in the Strait of Juan de Fuca, after gathering feedback during that process and analyzing the data, particularly from the US Coast Guard's perspective, they were not comfortable with that proceeding again for a second year based on a number of incidents where vessels had gone into areas where they shouldn't have gone into.

- Every trial put together by the Program is defined as a learning exercise and an adaptive process. Did the initiative work, did it not, how do we make it better, is it safe to do it again, yes, no, etc. All based on feedback from the Committees collected over the course of the meetings throughout the year. This adaptive approach to trialing measures and the willingness to identify knowledge gaps and to fill them have been two important keys to the success of the Program.

- Communication of the measures or initiatives is also key to the success of the Program. There was a lot of learning around the process of who makes decisions and who needs to be communicated with at the various stages.

Effectiveness of Measures (cont'd)

- Now, in terms of the actual effectiveness of the measures on threat reduction, there has been some assessment of how much noise has been reduced and there is an estimate of 1.7 to almost two decibels of noise reduction by the trials on speed reduction, and also two to three decibels, if not more, on the lateral displacement. So, the program is achieving results in terms of noise reduction. However, whether noise reduction is sufficient for what the whales need right now, is a question that is still not answered.

- ECHO's success in engaging industry has been in part set by the pressure put by the government through the Species at Risk Act to force industry to figure out solutions. So, government plays an important framing role in setting the targets or expectations of what industry should achieve.

Emerging Issues

- The Program has not really addressed climate change yet and its impact on how they discuss issues going forward. There may be conversion points and co-benefits between how the shipping industry thinks about how to achieve emission reduction goals and potentially reducing noise.

- Also, there are emerging opportunities around technology in terms of understanding where the whales are in space and time and providing that information to the vessels in more real time, which could be very helpful.

- Shipping in the area is increasing: The Port of Vancouver is building a new terminal (Roberts Bank Terminal 2) and doubling its capacity. Trans Mountain has been improved. There are half a dozen other projects that are looking to increase shipping. In this context, some feel there needs to a target of noise reduction for the entire environment. These short-term measures are only going to be measures at the current level of shipping, but if shipping is increasing, they will be negated.

Recommendations to other groups

- The Program's success is very much tied to the availability of resources. The funding available to bring people together, to have a facilitator and Program team available to do the work in between, to get the science done, confirm with discussions, to move these voluntary measures forward so that people feel engaged and committed.
  Indeed, having the resources available to work between meetings to push things, to keep things moving forward, so that representatives feel like there is momentum and action is very important. That they feel a sense of accomplishment and ownership over what's taking place over time. It is not enough to bring people to a table and discuss issues.

- Have discussions informed by data and decision-making based on as much good evidence as possible. Having a common accepted objective source of information and assessment is very important. Consider measures initially as trials or research tests, aimed at figuring out what is going to work or not work. Be open to adapting and learning to make them better. Issues that the Program are dealing with are complex issues that don't have simple black or white solutions. Solutions cannot simply be: implement solution A and never think about it again. Measures need to be implemented as adaptive approach.

- Research tests and monitoring are also a great way to engage industry and increase their level of ownership and engagement of an issue. Allowing them to be part of the solution, informing them of what it is going to look like and then of how things are implemented, helping to evaluate results, and helping to plan for how you make it better next time around, or not, if it doesn't work. That is the value of learning for all stakeholders.

- Be patient, as it takes time to have people get to know and respect each other and build trust and responsibility. You need time to build those trusting relationships. People from different sectors can differ on how they perceive problems. So you need time to inform people, to get them on the same page of moving forward. To get them to a level of comfort and have trust in the process and trust in each other. With that comes a sense of shared responsibility. Because if you have people who are sitting at a table, but really not believing in what you are talking about, they will drag the process backwards and obstruct. Building rapports is easier when there is continuity of the representatives themselves, not just of the organizations.

G2T3M

Working Group on Marine Traffic and Protection of Marine Mammals in the Gulf of St. Lawrence (G2T3M)

Establishment

- The genesis: Prior to the group's formation, they were having a regulatory review at the Saguenay St-Lawrence Marine Park (part of Parks Canada), and the Park was exploring imposing a speed limit. That limit would have been 10 knots based on the literature. It was felt that this could not just be unilaterally applied without discussing it first with industry. Indeed, that could have resulted in vessels speeding up right before the Park, which could have caused more collisions with blue whales. Or if navigation was displaced to the South Shore, that would have increased problems for belugas. There had been discussions of having a MPA (Marine Protected Area) on the outskirts of the Park. They even had public consultations to resolve the issue of having vessels navigate North or South of l'Île Rouge. Given all this, it was strongly suggested to form a working group and to invite DFO. Parks Canada was already working with a model for maritime transport with Clément Chion (a researcher that now sits on the G2T3M) and it was a good occasion to test the model.

- In essence, the working group stems from efforts from managers at Parks Canada to invite industry and discuss potential solutions.
  To facilitate the recovery of whales at risk in the St. Lawrence, researchers, wildlife managers and industry are working together to develop measures to reduce the various threats faced by whales.

- The Working Group on Marine Traffic and Protection of Marine Mammals in the Gulf of St. Lawrence (G2T3M) was formed in 2011 to propose concrete solutions to reduce the shipping traffic-related risks to which marine mammals are exposed in the Gulf of St. Lawrence while allowing for the activities of the merchant marine and without compromising safety.

- Since 2013, the working group has been a subcommittee of the Comité Concertation Navigation (CCN). Created in 1997, the CCN is a committee resulting from the 3rd phase of the Plan d'action Saint-Laurent (PASL), an agreement between the governments of Canada and Quebec. The PASL aims to protect and restore the St. Lawrence River and its uses. The CCN was founded to provide a venue for different parties to work together on managing shipping activities on the St. Lawrence.
  Although the G2T3M Working Group is affiliated with the CCN, its work is independent. The G2T3M was actually founded independently before becoming a subcommittee of the CCN. The G2T3M presents the progress of their work to the CCN a few times a year.

Mission

- The working group provides a framework for cooperation between government representatives, the maritime industry, NGOs and the academic community. Its purpose is to recommend realistic and effective solutions to lessen the impacts of shipping traffic on the whales of the St. Lawrence.

- Guiding principles:
  - Protection of marine mammals → Help ensure the protection of marine mammals in the St. Lawrence.
  - Safety of people and ships → Follow the safety principles and measures recognized for crews, users, goods, ships and the environment.
  - Sustainable development of commercial shipping activities → Respect the requirements of economic development of shipping activities and ensure their harmonization with environmental and social imperatives.

- The initial objective was to reduce the risk of collisions with whales. But from the onset it was also planned to work on reducing underwater noise. No other group or organizations was working on those issues.

Geographic Scope

- The geographic area is the St. Lawrence Estuary, that is the Saguenay-St. Lawrence Marine Park. *Refer to the map presented later in this chapter for more information.*
- The geographic scope is loosely based on the future *zones de protection marine* (ZPM) limits for the St. Lawrence Estuary, which has been under study for about 10 years. This covers part of the Saguenay Fjord, mid Estuary from around Baie-Saint-Paul to Tadoussac, then Tadoussac to about Rimouski.
- There are discussions to study other nearby areas where whales aggregate.

Membership

MEMBERS

Industry
- St. Lawrence Shipoperators
- Corporation of Lower St. Lawrence Pilots
- Shipping Federation of Canada
- SODES (Société de développement économique du Saint-Laurent)

Academic research
- University of British Columbia
- Université du Québec en Outaouais

NGO
- St. Lawrence Economic Development Council
- Group for Research and Education on Marine Mammals (GREMM)
- Green Marine *(was an observer initially)*
- Marine Mammal Observation Network (ROMM) *(was an observer initially)*

Government
- The Maritime Strategy (an office of Transports Québec) – *recently asked to join*

CO-CHAIRS
- Fisheries and Oceans Canada (DFO)
- Parks Canada

RESOURCE PERSONS
- Ministère des Forêts, de la Faune et des Parcs (gouvernement provincial)
- Transport Canada
- Parks Canada
- Fisheries and Oceans Canada (DFO)

OBSERVERS
- Canadian Coast Guard

Membership (cont'd)

- The members that make up the G2T3M come from the commercial navigation sectors (piloting, cabotage, international transport, international cruises, regulations and intervention in matters of safety and security), the sectors of conservation and protection of the marine environment (regulations and intervention in the protection of the marine environment) and of the scientific environment (marine mammals, modeling, effects of maritime traffic, etc.).

- Who to invite at the table was really determined by the participants themselves. Many of the stakeholders outside of industry were already working together on a model for maritime transport (3MTSim – *described later in this chapter)*. And so, all that they needed to do is invite industry representatives to this existing core group.

- It is was very important from the outset of the group, that participants be people that have knowledge and expertise to contribute to the group and not just be people sitting around to observe. The objective of the working group is to come up with concrete solutions.
  It is truly a working group, as opposed to a committee, in the true sense of the word. In a committee, you come to the table with ideas and ask the committee to debate them. While in a working group, you come to the table with an issue, present the data and then ask the participants what they think should be done. The G2T3M does not *consult* on reducing the risk of whale strikes, they w*ork together on reducing* the risk of whale strikes. It is a subtle yet important nuance.

- Parks Canada (the agency responsible for the St Lawrence Marine Park) wanted to invite DFO at the table in order to have a more holistic approach to the issues and go beyond the Marine Park, as not to push the problem beyond the Park.

- New members to the group are invited after all stakeholders agree that there is a gap in knowledge and a need to invite a new organization.

Membership (cont'd)

BALANCED REPRESENTATION

- As the objective of the working group is to share expertise, it was not felt necessary that the group be perfectly representative of all marine users of the area. Rather, it was considered more important to invite people to the table that had expertise to contribute.

- The working group is deemed as having a well-balanced representation by the stakeholders that we interviewed. Although the participants come from divergent points of view, they are all working towards a common goal. In the end, the representatives are the right ones to help advance the group's mission.

Organizational Structure

- The governance structure was really determined by the participants themselves. There are four types of memberships:
  - Co-chair: chairs the group and meetings. Have the same rights as a member.
  - Member: attends meetings, provides expertise, has the right to speak and participates in consensus.
  - Resource person: attends meetings, provides expertise in an area of interest that affects the issues addressed, has the right to speak and can comment on G2T3M documents. *(For some participants, the difference in the role between resource person and member is unclear.)*
  - Observer: can attend meetings and have access to G2T3M products.

- The measures developed are not voted on, but rather are based on consensus. Indeed, issues are discussed until a consensus is reached and everyone is in agreement. Only one member per organization can express themselves formally in the process of reaching consensus. This member may be accompanied by resource persons or observers, subject to the co-chairs.

- The group meets at least twice a year in-person at the offices of Transports Canada or DFO. There may be *ad hoc* conference call meetings.

- It is chaired by designated representatives from Parks Canada and DFO. They take turns setting the agenda, sending out invitations, moderate the meetings, writing-up the minutes, following-up on tasks to perform, etc. Individuals from these organisations perform these tasks on their own time. Members can have a say in the topics put on the agenda.

- The group receives no funding and members are not compensated for their work in the group. Member organizations pay their travel fees.

- The group has very recently put together some sub-groups to discuss very technical issues or specific projects. One such sub-group is to focus on communications, to build a web site and/or have a platform to archive and exchange information within the group.

Documentation

WEB SITE

The Working Group on Marine Traffic and Protection of Marine Mammals in the Gulf of St. Lawrence (G2T3M) does not have a website.

TERMS OF REFERENCE / BY LAWS

The G2T3M's Terms of reference are not publicly available.
The Terms of Reference for the group were based on the TOR of the CCN. The document addresses topics such as the mission, operational framework, group composition, nomination of members, roles and responsibilities, meetings (frequency, how meetings should run, etc.), etc. It is not followed to the letter.

MEASURES

In the absence of a website, information on the protection measures can be found on DFO Coast Guard's following web publication:
https://www.notmar.gc.ca/publications/monthly-mensuel/east-est-07-19-en.php#SAGUENAY%E2%80%93ST.LAWRENCEMARINEPARKANDSURROUNDINGWATERS%E2%80%93WHALEPROTECTION

Positive elements and improvements

WHAT'S WORKING WELL

- The right organizations are at the table. And the group has been lucky to have stability of the members for the first few years, not just of the organizations, but of the actual individuals.
- Governmental representatives at DFO and Parks Canada take care of the logistics of the meetings (calling the meetings, writing-up the minutes, following-up on projects, etc.).
- Part of the success of the group comes from the fact that Parks Canada, that has as part of its mandate to protect marine mammals in the Marine Park, leads the work of the G2T3M group.
- The group is the right size and does not hold too many meetings.
- The process is effective: the group develops a measure, tests it, monitors its compliance and then gets feedback with data. They can then assess its effectiveness and make changes if needed.
- The developed measures strike the right balance between risk reduction and consideration of the economic impacts of slowdowns. They are practical measures that are a win-win for all.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

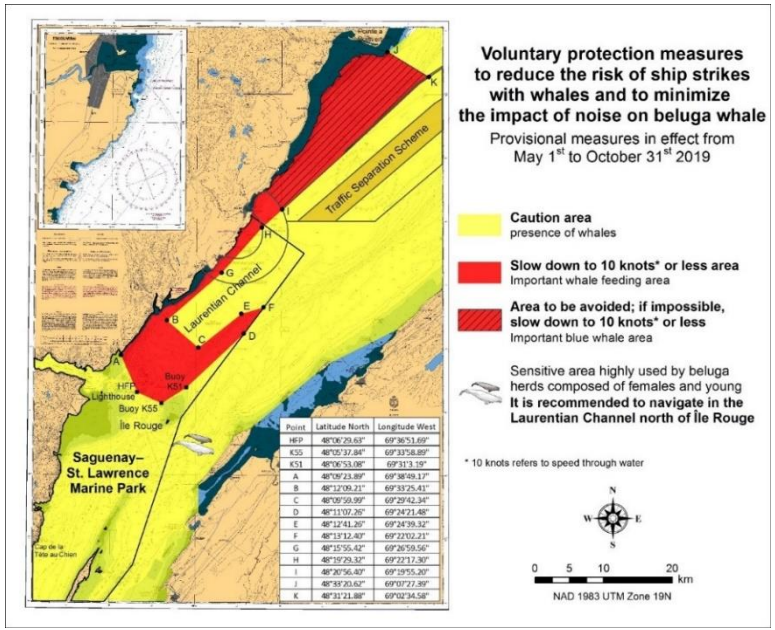
- Recently, there has been request by some organizations to join the group. As well, there have been changes in representatives of member organizations. This has led to having to do a lot of re-explaining. That is of having more discussions around how the group operates, the mandate, etc. These discussions take time away from the measures and their compliance. There is a risk of losing members when too many of these *bureaucratic-type* discussions occur. Maritime industry representatives are pragmatic people that like to work on concrete issues.
- The messages or activities put forward by the G2T3M could be better communicated. For example, have press releases or talking points that could be used by the different stakeholders within their own organizations to help spread the messages.
  Until now, no member was assigned to communications. At the last meeting, there sub-group put together to help take care of communications.
- There is no strategic plan, which has the advantage of keeping the group flexible and agile, but has the disadvantage of not working towards a specific goal within a specific timeline.

Voluntary or Mandatory Measures

- The measures are voluntary. As well, they are provisional for now, as opposed to permanent.
- Were it not for the fact that this is a compulsory pilotage area, the measures might have needed to be mandatory instead of voluntary, such as the ones in the Gulf of St Lawrence (see NARW chapter).
- There was some skepticism at the beginning, and there still is by some, particularly from pilots, that vessels are or were really hitting whales. So awareness needed to be raised. And, not all individuals demonstrated the same open-mindedness. However, in the end, mentalities slowly changed over time. So even though the G2T3M is perceived as a success by most, it was not always easy getting there. That being said, industry did not join in reluctantly, but rather were a willing participant from the beginning.
- At the start of the group, industry was not very open to having mandatory measures. Now that the measures are in place, there is a feeling that since the voluntary measures are followed, there is no need to render them mandatory. For the industry, complying with the measures and avoiding whale strikes is also part of being a good corporate citizen.
- The fact that the measures are voluntary allows for some flexibility that would not be possible with regulations. For example, when there was a sudden increase in traffic in the South Laurentian Channel (were belugas aggregate), it was possible to quickly impose a new measure, even before scientific data was presented to the group. That would not have been possible with mandatory measures.
- However, some feel that at this point the measures have been in place for some time (since 2013) and are thus are fine tuned. Therefore, rendering them mandatory would probably not change much at this point. And keeping them voluntary could create frustrations as pilots from the Corporation are complying but perhaps not smaller leisure boats navigating the Marine Park, etc.

Measures/Plan

- The work from the G2T3M led to the adoption in 2013 of voluntary measures by shipping operators.
- Such measures include a reduced speed zone, an off-limits zone and a recommendation to navigate the northern channel of the Estuary to avoid areas that are highly frequented by female and young belugas along the southern shore.
- The opposite map depicts the sectors targeted by the voluntary protection measures. The yellow zones are where the group believes there are whales where are the red zones represent where they know there are. Other areas could eventually be studied by the group.
- These measures, in effect from May 1 to October 31, apply to commercial vessels and cruise ships navigating the St. Lawrence Estuary between point à Boisvert and cap de la Tête au Chien. They include a caution area with increased vigilance recommended (yellow area), an area of reduced speed of 10 knots or less at the head of Laurentian Channel off Tadoussac (red area), and an area to avoid, downstream of Les Escoumins (hatched red area). Ships are instructed to follow the measures only when it is safe to do so.



Measures/Plan (cont'd)

- The working group is also in discussion to institute a measure to reduce underwater noise.

- Indeed, since 2016, the 3MTSim simulator *(described later in the chapter)* also integrates the acoustic dimension in order to evaluate belugas' exposure to noise generated by the shipping industry. They added to this model the acoustic signatures of different vessels and data on sound propagation in the environment. They ran a number of simulations with and without the voluntary measures to compare the cumulative boat traffic noise to which belugas are exposed.

- And, the results of a 2017 study revealed that the measures implemented to reduce the risk of ship strikes may reduce the noise exposure of belugas in certain areas of the Estuary, particularly in the Upper Estuary (upstream of Île Rouge), which is mainly frequented by females and young. This is good news, as protecting females and young is a priority for the recovery of this endangered population.
  However, in the reduced speed zone, belugas are exposed to more noise than before. Because a slower-moving vessel, although it emits a lower instantaneous sound, produces noise over a longer period of time (since it takes more time to travel a given distance). The reduced speed of merchant ships may therefore lower the risk of collision, but increase the aggregate acoustic energy emitted into the environment. This is to be confirmed as the literature is not conclusive yet.

- So this summer, hydrophones where put in place to measure the noise level in certain areas of the Marine Park (at Baie Ste-Marguerite where belugas aggregate), where the 10 knots speed limit was in effect (from June 15 to August 31). Results are currently being analyzed. These new hydrophones tests were discussed with pilots. However, hydrophones were put in place last year (in 2018) when speeds were around 14-15 knots, but pilots were not told of these tests, which irked some of them upon finding out.
  The objective of these tests is to understand, in the field, if speed reduction has an effect on noise. It is a trial run.

Measures/Plan (cont'd)

PROPOSED IDEAS THAT WERE PUT ASIDE

- Over 90% of the shipping traffic transit through the North Laurentian Channel. So it would have been easy to just divert the traffic to the South of the Laurentian Channel, where there are less blue whales but more belugas. Since belugas are more mobile, there is less strike risk. However, that would have increased the underwater noise where the belugas are. So in the end, this solution was not retained.
  Which is why, instead of diverting traffic, it was decided to slow it down in the North.

- Originally, six scenarios were tested (with the simulator). Analyses focused on the impact of each scenario on conservation but also on economics (transit times). The current measures are hybrids from these original scenarios that were tweaked after testing and re-testing.

- Initially, there were discussions of implementing technological solutions. For example, having technologies to detect whales and send that information to oncoming vessels. But the group quickly focused on more practical measures of speed reduction and traffic displacement.

COMMUNICATION OF MEASURES/PLAN

- Communication to the pilots by the Corporation is key to the success of the measures. Reminders to the pilots are necessary.

- Pilots get the sense that Canadian and international vessels have heard of the measures, perhaps through their shipping agents.

Measures/Plan (cont'd)

IDENTIFYING PRIORITY ISSUES AND PROCESSES USED TO DEVELOP MEASURES

- It was decided to address the collision issue before the noise disturbance, as collisions put the whales at risk of death which was naturally deemed more serious. But also, the group had more scientific data on collisions to work with, while underwater noise is a more complex scientific issue.

- The process used to develop measure is to first start with discussions and data, then implementation of the measure, testing it, monitoring the compliance, then presenting the results, discussing these results and then making changes to the measure if need be.

- The risks of whale-ship collisions were calculated while taking into account the cetaceans' distributions, the known relationship between the ships' speeds and the probability of mortality of a whale in the event of a strike, and the observed position and speed of ships in the Gulf of St. Lawrence. As well, the measures were developed by taking into consideration operational and safety needs of the industry.

Effectiveness of Measures

- The very first year these measures were applied, 2013, encouraging results were obtained, as the average speeds of ships decreased significantly *(from 12.3 knots to 10.3 knots)* at the head of the Laurentian Channel. This reduces the risk of mortality in the event of a collision *(40% decrease in the risk of collisions)* and enhances the protection afforded to marine mammals. These protective measures are in addition to those provided under the Marine Activities in the Saguenay-St. Lawrence Marine Park Regulations.

- To evaluate how these mitigation measures impact the belugas, researchers used a model to simulate movements of merchant vessels and belugas and their interactions in the St. Lawrence Estuary and the Saguenay Fjord (Marine Mammal and Maritime Traffic Simulator, or 3MTSim). The principle of the computer simulator is simple: to realistically represent the dynamics of each boat and each whale in the spatiotemporal simulator. This tool (developed around 2007) has been used since 2012 to inform the G2T3M in their search for solutions to lower the risks of collision between ships and large rorquals in the Estuary. This tool is a large part of the success of the measures.

- Some measures were modified slightly over the years to increase their effectiveness. For example: one of the zones was resized slightly.

- Compliance has been very good. For example, the percentage of transits going 16 knots or more, went from 20% to zero. Vessel speeds are monitored with AIS data.

- The success of the measures are in large part due to the fact that pilots from the Corporation are the ones piloting the vessels in this area. Indeed, this is a compulsory pilotage area, where a pilot licensed or certified by the Laurentian Pilotage Authority takes the conduct of every ship of a certain size navigating the St. Lawrence River between Les Escoumins and Montréal.
  As the Corporation is sitting on the working group and participating in the development of the measures, their compliance is expected.

Effectiveness of Measures (cont'd)

- The effectiveness of the speed reduction measure is really based on the literature and the model. It remains theoretical. As there were no data collection of (known or reported) collisions prior or after the measures were imposed. The objective is to reduce the risk.

- Since the number of whales that were not struck is difficult to quantify, or could be due to fewer mammals in the area, a more concrete and measurable success of the G2T3M is having all these different stakeholders sit at the same table, working together enthusiastically towards the same goal and complying with the measures.

- Compliance is measured in the red zone but not so much in the red hatched zone where few vessels pass and pilots from the Corporation don't really navigate in. There is lack of data for that red hatched zone and less effort was deployed by the G2T3M regarding that zone.

Emerging Issues

- The measures are provisional at the moment, but there are objectives to make them permanent and to have them recognized by the IMO (International Maritime Organization).
- The current measures are also not necessarily adapted for all marine mammals and their distribution in the area. Analysis of data are planned to help guide future discussions. Indeed, the group had planned a review of the distribution of marine mammals, in time and in space this fall, followed by the publication of a scientific report, and they had planned to have the group sit-down with the industry to design new measures.
- The group may take on other threats to marine mammals in the area as they emerge or may widen the zones if need be.

Recommendations to other groups

- Invite the right organizations to participate in your group and take advantage of the breadth of knowledge that is sitting around the table, from scientific evidence to navigational practices. Ideally, have the same individuals (not just organizations) at the table, so that you don't have to start from scratch at every meeting.
- It is important to create a climate of collaboration and trust among participants and have very collaborative individuals at the table.
- It is also key to value and appreciate the knowledge of the stakeholders at the table, in an authentic manner. Indeed, when industry feels listened to, heard, that their knowledge is valued, that they are treated like professionals, they will want to collaborate. For example, in developing the measures, the true assessment of what is safe, operationally and economically feasible comes from the pilots.
- It is important to invite people at the table not just *for show* but to truly gather their point of view with genuine open-mindedness. Remain flexible. And avoid being dogmatic.
- Better to develop imperfect practical measures that are applicable, than perfect measures in theory that are difficult to implement or comply with.
- To mobilize the industry, it is important to present scientific data, build a case for the measure and develop measures based on scientific evidence.
- Have designated people responsible for taking care of the logistical aspects of the group (scheduling meetings, writing minutes, doing follow-ups, etc.) and for communicating the activities and results of the groups (for example, via a newsletter, web site, etc.)
- In the context of voluntary measures, it is important from the start to decide with the group how compliance is to be measured. And to do that when the measures are being developed, as opposed to later on, to avoid conflicts but also to give credence to the measures.

MEWG

Marine Environment Working Group

Establishment

- The Marine Environment Working Group (MEWG) is established in accordance with the Nunavut Impact Review Board (NIRB) Project Certificate No. 005 for Baffinland Iron Mine Corporation's Mary River Project. The Certificate outlines the terms and conditions for operation of the Mary River Project.

- The MEWG is a requirement of the Project, in order to fulfil the Project Certificate conditions relating to the interaction between the Mary River Project and the marine environment. The working group has been operating since 2013.

- A bit of background:
  - Any major development project in Nunavut is assessed through an institution of public government *(mandated under the Nunavut Land Claims Agreement)*. There are a number of these different organizations, one of which is called the Nunavut Impact Review Board (NIRB). Any project in Nunavut, such as a development project, a mine, etc., is reviewed and screened through an institution like the Nunavut Impact Review Board (NIRB) which then makes a recommendation to the federal government as to whether or not a project should go ahead. The Federal agency in charge then has to decide whether they will accept or reject the NIRB's recommendations.
  - Baffinland Iron Mines Corporation is a Canadian mining company, mining iron ore at the Mary River operation in the Qikiqtani region of North Baffin, Nunavut. Baffinland is jointly owned by ArcelorMittal and Nunavut Iron Ore.
  - The Mary River Property is located on Baffin Island and consists of nine high-grade iron ore deposits. After a few years of development, operations started in 2015. Because of the high grade of the iron ore, no concentrating or processing is needed. Thus, Baffinland mines, crushes, and screens the ore on site, and then ships it directly to European markets.

- Phase II of the Project is currently in the development stages. Baffinland's expansion plan is based on building a 110-kilometre railway in north Baffin, which will double its ore production and extend the length of its shipping season from July 1 to Nov. 15. That expansion would require more infrastructure at the Mary River mine site and at the port for the roughly 175 round-trip shipments by vessels that would dock at Milne Inlet. Baffinland's expansion plans also includes another railway-port proposal.

Mission

- The purpose of the Marine Environment Working Group MEWG is to act as an advisory group for Baffinland and a forum for the discussion of ongoing cooperation, communication, reporting, proactive review and consideration of supplemental baseline needs, environmental effects monitoring, mitigation measures for the protection of the marine environment, adaptive management processes and to make recommendations on appropriate management approaches related to the Mary River project.

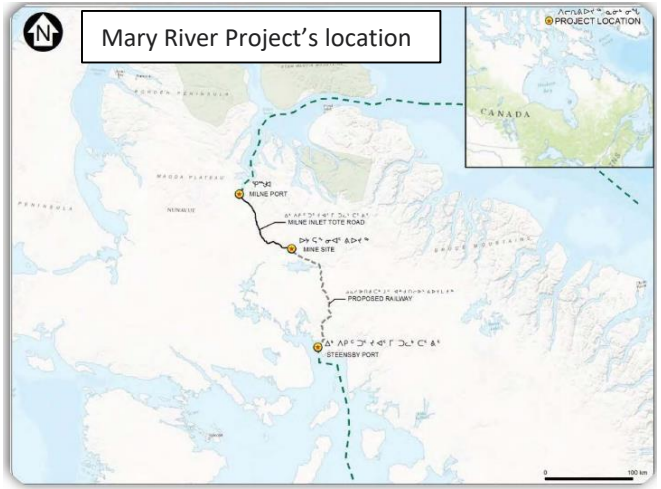
- It is the intention of Baffinland to establish cooperative environmental arrangements between the company, members of the MEWG and Inuit to protect both the environment as well as the traditional relationship of the Inuit with the natural environment.

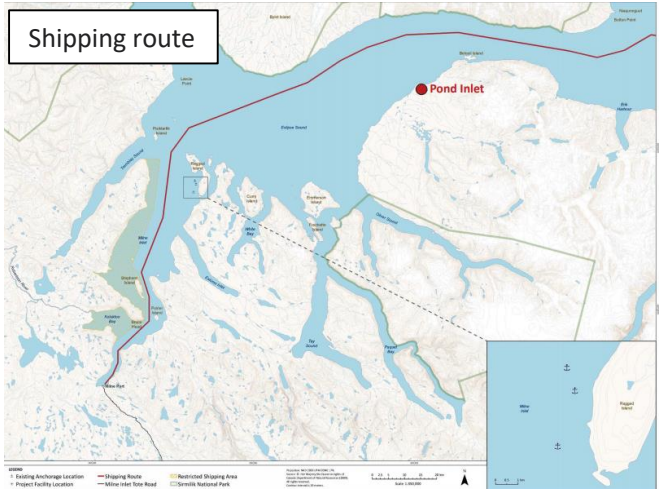
  The objectives of these arrangements are to:
  - Develop sufficient baseline from which the Project can be effectively monitored and managed;
  - Develop a comprehensive and integrated environmental monitoring program as required in the Project Certificate;
  - Incorporate an integrated approach for monitoring and management of Project-related environmental effects;
  - Include the meaningful participation of members of the MEWG and local Inuit in all aspects of the environmental monitoring program in all phases of Project development, including decommissioning and reclamation;
  - Integrate Inuit Qaujimajatuqangit (IQ) into the development and implementation of the environmental monitoring programs;
  - Where deemed necessary by the working group, report in an effective and timely manner on the environmental monitoring program and its results in ways that are meaningful to Inuit people; and
  - Support adaptive management systems and processes.

Geographic Scope

- The Mary River Property is located at approximately 72 degrees north by 79 degrees west on Baffin Island. Baffinland's head office is located in Oakville, Ontario and the Northern Headquarters are located in Iqaluit, the capital of Nunavut. The company also maintains a year-round presence in the North Baffin communities near their operation, with community liaison offices in Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet.

- After mining and crushing, the ore is sent to the port and then loaded onto bulk carrier ships during the ice-free summer season, typically around July-October. Most of the ships travel across the Atlantic Ocean and through European ports to be used by steel makers in continental Europe. There is a regional study area associated with the mine, which is the center of the mine itself, on Baffin Island, and the tote road to the port, Milne Port, at Milne Inlet. The transportation corridor goes out through Eclipse Sound, which is the southern end of the Tallurutiup Imanga National Marine Conservation Area, or Lancaster Sound Marine Conservation Area. The regional study area (RSA) isn't all of Lancaster Sound, but it's the southern portion of Eclipse, Milne, and Navy Board Inlet. Some argue that the regional study area is too small, as narwhals travel outside the area and over to Greenland.





- There is another route, a southern route, planned for but that is currently on hold.

Membership

MEMBERS

- Baffinland
- Environment and Climate Change Canada (ECCC)
- Fisheries and Oceans Canada (DFO)
- Government of Nunavut's Department of Environment (GN)
- Parks Canada (PC)
- Qiqiktani Inuit Association (QIA)* and Consultants
- Mittimatilik Hunters and Trappers Organization (MHTO) – *from Pond Inlet (because they are the closest impacted community)*
- Makivik Corporation – *out of Quebec, for the portion of the project that will eventually ship through Foxe Basin and Hudson Strait. Have not yet participated*
- Baffinland Consultants: Golder, EDI (Environmental Dynamics Inc.)

OBSERVERS

- Canadian Northern Economic Development Agency
- Nunavut Impact Review Board (NIRB)
- Oceans North Canada
- World Wildlife Fund (WWF)

*NOTE: The Qikiqtani Inuit Association (QIA) is a Designated Inuit Organization (DIO) responsible for the Qikiqtani region *(sometimes also referred to as the Qikiqtaaluk region)*, that is the Baffin Island region of Nunavut. QIA is a not-for-profit society which represents approximately 15,500 Inuit in the Qikiqtani region, which includes 13 communities. Their mission is to safeguard, administer and advance the rights and benefits of the Qikiqtani Inuit; and to promote Inuktitut, the Inuit language and Inuit traditions, environmental values, self-sufficiency, and economic, social and cultural well-being.

Membership (cont'd)

- The addition or removal of a member or observer must be approved by all members.

- The Qiqiktani Inuit Association (QIA) sits on the working group as a member with the interest to fulfil many different objectives: sustainable development and employment/training opportunities for Inuit, but balancing that against environmental concerns and the need for a healthy environment, and the need for access to healthy and sustainable food.

BALANCED REPRESENTATION

- There could be more local Inuit representation besides the Mittimatilik Hunters and Trappers Organization (MHTO), from Pond Inlet, to include some other communities like Igloolike and Hall Beach, or the youth from the impacted communities that might bring another broader perspective. However, it is better than it used to be. Indeed, at the beginning, there was not as much community involvement or Inuit knowledge.

- As well, there not as many expert scientists from government. But that is also getting better. For example, DFO used to send managers, now they send marine mammals experts with technical expertise that can better evaluate the monitoring programs.

Organizational Structure

- Baffinland is the responsibility party mandated by NIRB to facilitate the Working Group meetings. As such, they chair all MEWG meetings.
- Baffinland sets the agenda, requests input from parties on proposed draft meeting agendas in advance of meetings, compiles the results from the monitoring programs, provides updates on the Project during the meetings and writes-up the minutes.
- Each Member must appoint an alternate Member and may send other experts, staff, their legal counsel, or observers to any meeting of the MEWG. For example, DFO has at least two representatives: one marine mammal expert (with expertise on narwhal behavior and effects of noise on narwhals) and one invasive species expert.
- The MEWG meets twice a year and in addition hosts at least two teleconferences. Meeting schedules correlate with key information periods from Baffinland (i.e. when results of past year monitoring programs are available for discussion, or during monitoring program design planning phases of each year, etc.). As well, there are *ad hoc* email exchanges as required.
- The meetings are structured to enable participants to have the opportunity to provide input on monitoring program design and implementation and follow-up at the conclusion of the field programs prior to finalization of the Annual Monitoring Reports. The group receives presentations on the implementation of field programs and the subsequent results in order to prioritize monitoring plans and suggest measures for mitigation where required. The MEWG provides a platform for the discussion of collaborative research opportunities between parties and to identify monitoring programs suited for community-based monitoring and Inuit participation.
- There is no vote taking place and no consensus sought. The group doesn't actually have any legal authority to change things, they can only make recommendations. However, those recommendations can go forward to the NIRB and they in turn can ask for changes or improvements.

Organizational Structure (cont'd)

- Observers are not allowed to make recommendations, only members.
- The Terms of Reference do allow for subgroups and there have been some as needed, such as for the ship observer program. They are small subgroups with the relevant two or three organizations, that discuss specific subjects over a conference call, and then report back to the main group.
- MEWG is moving to a more formal process where votes will be tallied.

FUNDING

- Baffinland covers all meeting costs (such as venue costs, translation services, etc.). The company is also responsible for the costs of the Project Marine Monitoring Plan (MMP) related to the Project.
- However, each Member, with the exception of Makivik and the Mittimitalik Hunter and Trappers Organization (MHTO), are responsible for their own costs, including travel costs, relating to participation in the MEWG.
- Regarding Makivik and the MHTO, Baffinland cover costs associated with travel, accommodations, and incidentals, including an agreed upon daily honorarium.
- Government and regulatory agencies are responsible for the costs of research and regional resource management studies in accordance to their legislative mandates. Baffinland provides in-kind and financial support on a project-based manner, at Baffinland's discretion.

Documentation

WEB SITE

Baffinland has a website but does not have a specific page dedicated to the MEWG:
https://www.baffinland.com/

TERMS OF REFERENCE / BY LAWS

The MEWG's Terms of reference are of public record and should be found in the NIRB archives.
The document addresses topics such as Enacting Provisions, Purpose, Composition, Meetings of the Marine Environment Working Group, Project Monitoring, Function of the Marine Environment Working Group, Recommendations and Decision-Making, Minutes of MEWG Meetings, Materials Supporting the MEWG, Costs, Community Participation, etc.

ANNUAL REPORT

The Baffinland Iron Mines Annual Report to the Nunavut Impact Review Board is a publicly available document. The 2018 edition can be found here: http://www.baffinland.com/downloadocs/201903312018-nirb-annual-report_2019-04-56-56.pdf
The Annual Report is a requirement of the Project Certificate No.005 issued by the Nunavut Impact Review Board (NIRB) to Baffinland outlining the terms and conditions for operation of the Mary River Project. The Report provides information on how Baffinland is meeting the terms and conditions of the Project Certificate and its performance against them.
The minutes of all the MEWG meetings for that year are presented in Appendix C1 of the Annual Report.

Positive elements and improvements

WHAT'S WORKING WELL

- The group is effective at ensuring that Baffinland is communicating what they're doing to the various groups. There are open and frank discussions about what's working and what's not working.
- A positive aspect of the group is that it gets the different organizations (federal agencies, community members, NGOs, etc.) talking to one another and contribute technical expertise.
- The fact that Baffinland is chairing the meetings is working for now. There is a provision in the Terms of Reference that it could rotate, but no other organizations has volunteered to take over the chairmanship. At the moment, members are satisfied with Baffinland taking on that responsibility, as it is part of the project certificate.
- There has been an improvement in transparency from Baffinland in the past few years. For example, the company has started to append the member comments to the meeting minutes.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- The group participants are questioning the effectiveness of their work. Indeed, there is nothing binding. The group can say they don't agree with the findings from Baffinland, but Baffinland can ignore it, and the NIRB has no recourse, really, to hold Baffinland to account. As a consequence, the Terms of Reference were recently revised in the Fall. The hope is to be a bit more prescriptive about how changes can actually be made or communicated up to whoever it is that can actually do something about it.
- The feedback between Baffinland and the MEWG is not optimal. The group will hear back the next year or in six months about whether Baffinland made changes or not following some recommendations. Sometimes they just do the changes that are recommended without going through the NIRB, but other times no. The process is not transparent.
  For example, it has been recommended for years that there be sampling of ballast water to understand what organisms are in there, in order to conduct a proper risk assessment. This recommendation has not been acted upon, and yet Baffinland is going forward with Phase II of the project.
- It is unclear how changes are implemented. Some members feel that they are just discussions. Things are brought up and they get noted. Sometimes they are dealt with and sometimes they are not. There have been little discussions about the impacts. How does the information from aerial surveys, tagging, ship noise, etc. get integrated into determining impacts and effects from the mining project, and shipping? This is the key fault of the review process more generally, and of the MEWG.

Voluntary or Mandatory Measures

- The MEWG does not produce any measures, voluntary nor mandatory. The group addresses issues that are identified as relevant, makes recommendations on the monitoring programs and these are either dealt with by Baffinland or not.

- Baffinland has different monitoring programs. The agenda of the meetings is to review each of the programs, for example:
  - Bruce Head Vessel-based Monitoring Program: it is a land based monitoring observatory (to watch and count narwhal and look at their behavior around the ships).
  - Milne Inlet Marine Environmental Effects Monitoring Program and Aquatic Invasive Species Monitoring Program
  - Passive Acoustic Monitoring Program
  - Ship-based Observer Program

- Everything is quite voluntary, governance is quite voluntary. The terms and conditions say you have to have a working group, and you have to have them giving you advice, but there's nothing beyond that, so Baffinland can take or leave that advice. That is kind of at the crux of some of the current dysfunction felt around the group, is that group members feel they are not being heard.

- Every year, Baffinland submits what is called an annual report to the Nunavut Impact Review Board. In it, they are required to report on all the terms and conditions and what was done, what wasn't done and why. Then, the NIRB will come back with recommendations on what should be done. Although, in the past, Baffinland has ignored some of those recommendations with no consequences. For things that are outside the government regulatory authority, then there is no real authority to force Baffinland to implement the NIRB's recommendations. Which is why members of the MEWG would like to see the government agencies impose more stringent regulatory measures to solve certain issues such as ballast water exchange and control of invasive species.

Measures/Plan

- As part of Baffinland's Environmental Management System, Baffinland has produced the Project Marine Monitoring Plan (MMP). The purpose of the MMP is to select and design full environmental effects monitoring studies that are capable of meeting all of the relevant criteria and thereby able to detect and measure Project-induced changes in the environment. The environmental effects monitoring studies also provides a context under which the design of the MMP can be evaluated, with the aim of enabling continuous improvement.

- The specific purposes of the MMP are to:
  - Verify the accuracy of Project effects predictions
  - Identify and select appropriate target species, indicators and linkages for monitoring
  - Measure the relevant effects of the Project on marine wildlife
  - Evaluate the effectiveness of Project mitigation measures and to support any required improvement of those measures
  - Identify any unforeseen environmental effects caused by the Project
  - Conform with relevant Project Certificate 005 Terms and Conditions issued by NIRB for the Mary River Project
  - Determine and identify any cause-and-effect interactions between the Project and the environment

- Baffinland finalizes field programs and/or documents in consideration of advice rendered by the MEWG and its members. The MEWG may make recommendations to Baffinland on any aspects of the Project Marine Monitoring Plan (MMP) in relation to the marine environment for the adoption of mitigation measures in order to comply with applicable regulatory requirements or that may help to mitigate adverse Project effects. Baffinland considers such recommendations as deemed appropriate and captures the recommendations and any relevant subsequent actions, as part of meeting minutes to be included as appendices in the Annual Report to the Nunavut Impact Review Board.

Measures/Plan (cont'd)

- For example, on the 2018 marine monitoring draft reports, Baffinland received the following number of comments from the MEWG members:
  - 2018 Bruce Head Vessel-based Monitoring Program Field Summary Report: 30 comments (Parks Canada, QIA, DFO Science)
  - 2018 Milne Inlet Marine Environmental Effects Monitoring Program and Aquatic Invasive Species Monitoring Program Report: 63 comments (Parks Canada, QIA)
  - 2018 Passive Acoustic Monitoring Program Report: 52 comments (Parks Canada, DFO Science and QIA)
  - 2018 Ship-based Observer Program Report: 61 comments (Parks Canada, DFO Science, QIA)

- Indeed, Baffinland is responsible for running a number of monitoring programs, that is doing aerial surveys, narwhal tagging, observation survey from land for narwhal, or acoustic program. They are responsible for running all those programs.

- Examples of measures that have been put in place:
  - There have been speed limits, designated anchoring areas, slight change in the routing of the ships, and also a clarification around ballast exchange (ships are only releasing it at the dock itself now, not where they anchor, which is in Ragged Island, outside of Milne Inlet). However, it is very difficult for stakeholders to speak to the actual measures that have been put in place by Baffinland as there is a lack of transparency about certain information. For example, how did they go about deciding that their ships should travel to 9 knots through Eclipse and Milne.
  - Marine mammal observers: there are now community marine mammal observers on escort vessels at the beginning and end of the shipping season. Indeed, for the first three weeks of the shipping season, there's an escort vessel that is ice strengthened, and does some ice breaking. Observers are on board that vessel.

Measures/Plan (cont'd)

- Examples of some of the concerns regarding the narwhals:
  - Changing their behavior, that there is avoidance of the ships so it can add extra stress because they are moving. They may need to move out of the area where they might be feeding. No one knows for sure what the effects are and that is a big concern.
  - Local people are just generally saying there are not as many and they're blaming the shipping but there are other potential impacts as well, just changes in the ice conditions and things like that. It is really difficult to tease apart the climate change and other effects versus the shipping effects. There are more killer whales moving into the area as well, which could potentially impact them.
  - There are concerns about things like entrapment as well. If there is shipping on the shoulder seasons and that breaks up the ice and then the shipping stops and things freeze up, the narwhal are further into the inlet. There is open water and then it freezes up right away, so there is potential for entrapment.

- The environmental impact review for Phase II has been more formalized. The science advisory experts from the MEWG are able to review the documents and Baffinland is collating the comments to fine tune the documents before they get presented publicly.

Measures/Plan (cont'd)

PROPOSED IDEAS THAT WERE PUT ASIDE

- Measures that cost very little and are easy to implement, get implemented more quickly. However, Baffinland is more hesitant to implement measures that cost more money, are more difficult to do and may have greater impacts on their ability to ship their ore.

IDENTIFYING PRIORITY ISSUES AND PROCESSES USED TO DEVELOP MEASURES

- The issues that are discussed are those that go through the Nunavut Impact Review Board (NIRB) and their project review and approval process. For example, potential impacts to narwhal from shipping has been a big focus along the current northern shipping route. There are a number of project conditions that speak to the need for Baffinland to monitor impacts to narwhal, establish thresholds for those impacts, etc. Those are explicitly laid out in the project certificate term and conditions. These then provide guidance for the working group on what the priorities are, what the main concerns are, and that gives the MEWG a roadmap for what needs to do addressed moving forward.

Effectiveness of Measures

- At this point, it is very difficult for the MEWG to determine if the measures are effective of not. What the actual impacts of the measures are. The discussions are really around the specifics of the science (for example, what type of telescope should we use from land to see narwhal) and not what the science is telling us about the impacts of the project.

- There is a sense that Baffinland has put in place these measures, but that there is no real interest in having significant success, or even measuring the real impact of those measures.
  - For example, the reduced speed to 9 knots, it does not appear that vessels are complying to that speed limit. Nor is it clear what the impacts of this is.
  - Regarding narwhals, Baffinland was asked to improve their survey methods and they said they needed help with that, so there was an agreement that they would work closely with DFO on trying to do those surveys. There has been joint survey work going on.
  - Regarding invasive species, Baffinland was cooperative when they identified some new species that MEWG experts said should be looked at by another lab. This other lab found discrepancies. Consequently, the MEWG has been pushing for Baffinland to be more careful with what labs are used or maybe have more than one lab review the results. As well, MEWG would like Baffinland to use a protocol for identifying what species might be new, that haven't been found regularly up in the Arctic before.

- The group feels that they have been able to get more things done recently from the environmental review process for Phase II.

Emerging Issues

- Phase II with the doubling of shipping exports. They will have a second dock built and there'll be larger vessels going in.

- With Phase II, Baffinland will be looking to capture more of the shoulder seasons for contingency shipping to basically increase their numbers overall throughout the season. However, they recognize that the shoulder season does create additional circumstances that need to be studied: for example, the extent of land fast ice existence in the area, how to reduce noise levels, understanding ice-breaking noise fields travel farther than open water noise fields. So, there will need to be discussions around vessel traffic management in the shoulder seasons.

- A monitoring framework that is transparent, that everyone can agree on and would hold Baffinland accountable. That is, that everybody refers to as to how the monitoring should be done. This framework would provide results that guide how decisions should be made.

- Baffinland has committed to end-of-season surveys within the local study area to identify if there are any entrapment events of marine mammals. So, going forward, the MEWG will work on how that program's developed and implemented and what the follow-up measures are, should there ever be entrapment events.

Recommendations to other groups

- There needs to be clear roles and clear terms of reference as to how the mechanisms for making changes are. It is all fine to make recommendations but it needs to be clear how those can actually can be transformed into change. A clearly defined mechanism and roles and procedure for how you do that. So not just advisory but mandatory.
  Following up on recommendations that are made is a key to building trust in the working group, and that is lacking in the MEWG.

- There needs to be transparency in the decision-making process and accountability in the recommendations being made or commitments being made on all members' parts. Also, the weight of evidence on recommendations is critical.

- The regulating body, the NIRB in this case, has to have the authority to impose certain decisions.

- It is important for communities to have a seat at the table and even co-lead the discussions. In order to do that, they need resources and support to participate in these working groups.

- It is important to have expertise at the table from Federal agencies in order to make these groups work. You can't have high level managers. Expertise from subject-matter experts, not high level managers, so that real discussion happens.

North Atlantic Right Whale (NARW) Working Group

Establishment

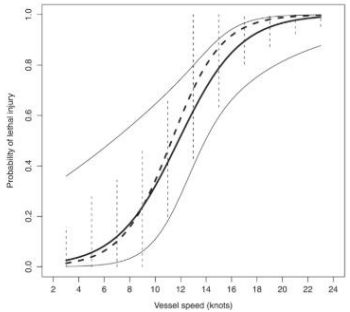
- During the summer of 2017, 12 NARWs were found dead in the Gulf of St. Lawrence. In response to the very high and sudden mortality, the Government of Canada implemented a temporary mandatory speed reduction zone of 10 knots* for all vessels 20 metres and longer in the Gulf of St. Lawrence on August 6, protecting this designated endangered species under the Species at Risk Act.

- In the context of this measure and its impacts on the shipping industry, a group of industry representatives, associations, researchers and government officials met on October 4, 2017, and agreed that a working group would identify and assess potential options designed to protect NARW while minimizing the impacts of mitigation measures on industry.

- So, the NARW Working Group was essentially formed by Transport Canada, DFO, the shipping industry and the Shipping Federation of Canada in response to right whale mortality that occurred in the Gulf of St. Lawrence in 2017.

- The Working group is a grassroots effort and stems from industry wishing to discuss the economic impacts of the aggressive mandatory speed reduction to 10 knots with government officials. Industry was supportive of the government mandatory measures from the start as they recognized there was an emergency issue to address. However, they wanted to be part of the discussions going forward and be strategic about the right whale problem, which is why they went knocking on DFO and Transport Canada doors to set up an initial meeting.

*NOTE: This measure was based on Taggart & Vanderlaan's probability curve of a lethal injury resulting from a vessel strike to a large whale based on the vessel's speed (see opposite graph).



Mission

- The working group's mission is to identify potential options that protect the NARW while minimizing the impacts of mitigation measures on maritime industries.

- Basically, the group aim is to figure out ways for shipping and right whales to coexist in the Gulf of St. Lawrence by having participants share information and advice.

- In 2017, the following elements were considered for development:
  - Whether a range of monitoring and risk management solutions can be designed to respond to maximizing NARW protection, while responding to the needs of different operators.
  - Short-term (For 2018):
    - Identify data needs and gaps (including data regarding NARW activity, foraging areas, data collection efforts, sharing of data among various sources, etc.)
    - Inventory of mitigation measures
    - Options for criteria and procedures for trigger points to implement NARW protection measures
  - Medium to long term (2018- 2020)
    - Options for the development of cooperative and systematic data collection and shared communication of data on NARW location, including real-time information
    - Costing of measures and research
    - Communication and partnerships

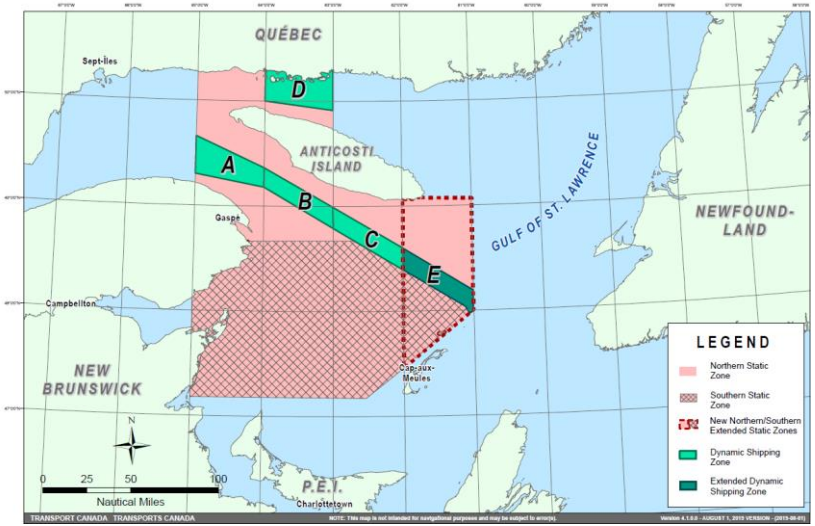
Geographic Scope

- The geographic area is the Gulf of St. Lawrence, which has been seeing an increase in right whales in the last few years.

  The right whales feed mainly on a plankton called copepods. This calanus was quite present for many years in the Grand Manan Basin in the lower Bay of Fundy and Roseway Basin south of Nova Scotia. Those were well known right whale habitats for which there were existing conservation measures. With climate change, this copepod is migrating north, and is taking the right whales with them, and is now very present in the Gulf of St. Lawrence, particularly in the south of the Gaspé Peninsula, where they concentrate in deep water basins.

- As per Transport Canada emergency measure, there are two shipping lanes where temporary speed restrictions can be activated:
  - South of Anticosti Island: divided into four speed restriction zones (see areas A, B, C and E on the map)
  - North of Anticosti Island: part of the shipping lane consists of a speed restriction zone (see area D)

  The corridors were chosen based on habitual traffic for the big commercial ships and through areas where there was a much lower probability of seeing right whales.



- There have been discussions to expand the focus from the Gulf of St. Lawrence to other aggregation areas, so that there is consistent protection and the same precautionary level is applied throughout Eastern Canada.

Membership

PARTICIPANTS

Industry

- Cruise Line International Association
- Holland America Line
- Croisières du Saint Laurent
- Association of Canadian Port Authority
- St. Lawrence Shipoperators (2 representatives)
- Chamber of Maritime Commerce
- SODES
- Green Marine
- OOCL (Canada) Inc.
- Oceanex
- Shipping Federation of Canada
- Canadian Ferry Association
- Corporation of Lower St. Lawrence Pilots

Academic research

- Canadian Whale Institute
- Dalhousie University (Habitat and Listening Experiment (WHaLE) project)
- Maurice Lamontagne Institute (marine science research institute)

Government

- Fisheries and Oceans Canada (DFO) – 4 representatives
- Transport Canada – 3 representatives
- Coast Guard

NGO

- WWF Canada

CO-CHAIRS

- DFO (High level representative: Regional Director General, Québec Region
- Transport Canada (high level representative)
- Groupe Desgagné (Environmental Advisor) – co-chair at 1st meeting in October 2017

NOTE: The organizations in grey were present at the first meeting but it is unclear if they are still participants in the group.

Membership (cont'd)

- As the right whale issue has become political, there are high level representatives from government at the table. There is more governmental action to get things done with this working group.

- Membership was by invitation from the initiators of the group, that is industry, SODES and Shipping Federation, to join and be part of the solution to this problem. For example, The Shipping Federation insisted that the Canadian Whale Institute and Dalhousie University be involved to include scientific knowledge from outside governmental agencies. These experts have decades of experience and had previously worked on developing similar measures for other at-risk areas like the Bay of Fundy and Roseway Basin.

- There is technical sub group that have been formed in order to get the best available science, work on specific measures and bring that to the advisory committee. The initial advisory committee meeting was held with over 20 people at the table, which was felt too large a group to work effectively on the measures. Thus, the formation of a technical sub group.

BALANCED REPRESENTATION

- Stakeholders feel that the working group is well balanced. Although there are only two scientific representatives, their participation level is very high which balances out their small number.

- Some feel that the group is very focused on Canadian companies and could include some international companies destined for Canadian ports.

- There is a flexibility to this working group that allows for new members or subject-matter experts to join or participate as needed. Yet the same core group of participants have been involved since the beginning, which increases effectiveness.

Organizational Structure

- The working group meets as needed to deliver its mandate. Work is conducted through email, online, teleconference, and in person. There have been about 2 meetings a year of the advisory committee and about 3 per year of the technical sub group.
- The NARW working group does not receive any funding. All participants cover their own costs. So, some members have only been able to attend some meetings via conference call due to lack of money from their organization for travel expenses.
- This is not a consensus-based group. There is no vote. Transport Canada calls the meetings. They set the agenda. They do ask for additional items. And then there are discussions and an exchange of information among participants. And Transport Canada will ultimately make a decision. They are also responsible for writing-up the minutes. When a Committee operates in a regulatory context like this one, its role is to provide points of views with the objective of refining and optimizing measures. It is a consultative committee.
- In terms of governance, this group emphasizes transparency, collaboration, information exchange, science, expertise and research.
- The group does not operate under a strategic plan, but rather the work of the group is adaptive and guided by the situation of the right whales. It is crisis management in essence.
- What the technical sub group did was work with industry to fine tune the measures, working more towards the coexistence of whales and shipping, trying to figure out how shipping can proceed as carefully, as precautionary, as possible while giving room for right whales. It is the meeting of scientific knowledge and vessel operational knowledge.

Documentation

WEB SITE

The North Atlantic Right Whale (NARW) Working Group does not have a website.

TERMS OF REFERENCE / BY LAWS

The NARW's Terms of reference are not publicly available.
The Terms of Reference document developed prior to the first meeting is very succinct and briefly addresses things like the mandate, membership, frequency of meetings, reporting, etc.

MEASURES

In the absence of a website, information on the protection measures can be found on Transport Canada following web site page:
https://www.tc.gc.ca/en/services/marine/navigation-marine-conditions/protecting-north-atlantic-right-whales-collisions-ships-gulf-st-lawrence.html

Positive elements and improvements

North Atlantic Right Whale (NARW) Working Group

WHAT'S WORKING WELL

- The group is extremely functional. There is a nice exchange and collaboration between the technical sub-group, the working group and government instances. It is a very nice structure that was put together in only 3 months.
- Industry is really involved in trying to be part of the solution. As all stakeholders told us: the shipping industry does not want to hit whales.
- Good measures have been put in place based on experiences elsewhere, enforcement is good (from the point of the view of the whales) and compliance is high.
- There is a real recognition of issues such as maritime safety and economic imperatives.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- There is some frustration that the decisions are being made before the data or science is there to back them up. As this is a new field of study, academics don't have all the data or information required to make decisions. But decisions are being made anyway.
- From the point of view of the shipping industry, enforcement is perceived as extremely rigid with no consideration for a slight of error.
- The reaction time may not be optimal. For example, there was some aggregation of whales in early 2019 near (but not in) the shipping lanes. Nothing was done. Dead whales were found not long after. Could something have been prevented had reaction time been faster?
- There are no fishing representative on this working group. Part of the difficulty with the fishing industry is that they are represented under several fishing associations.

Voluntary or Mandatory Measures

- The measures are mandatory and are issued by the federal government. The measures, initially imposed in the summer of 2017, were expanded in July 2019 following new deaths of right whales. Indeed, the speed reduction zones were expanded to enclose more areas. Although this expansion did not directly emanate from the work of the group, industry feels that the collaboration in the working group has influenced these new measures, as government was not working from scratch.

- Transport Canada has been very strict in enforcing the speed limits thus compliance has been very high.

- There are some questions among industry as to where the money collected from fines is going. Some feel that the money should be used to respond to the whale events, necrosis and carcass recovery and all of these things.

Measures/Plan

- The working group helped establish dynamic corridors, as the initial measures were static zones of speed reduction. Thus, under certain conditions, ships can transit at operational speed in certain corridors.

- All measures are described in detail on the Transport Canada web site: https://www.tc.gc.ca/en/services/marine/navigation-marine-conditions/protecting-north-atlantic-right-whales-collisions-ships-gulf-st-lawrence.html

- In summary, in 2019, Transport Canada used two measures to protect North Atlantic right whales in the Gulf of St. Lawrence *(refer to the earlier geographic map)*:
  - From April 28 to November 15, 2019, a fixed speed restriction is in place (the speed restriction applied to vessels 20 meters or more until July 8, 2019, and now applies to vessels above 13 meters) in a large area (in pink on the map) known as the speed restriction zones or the northern and southern **static zones** in which:
    - vessels above 13 meters length over all cannot travel over 10 knots (except where required for safety reasons)
    - other vessels are encouraged to respect this limit
  - Temporary speed restrictions are implemented in designated areas (in green on the map) within the shipping lanes when a North Atlantic right whale is spotted in or near the shipping lane. These are identified as **dynamic shipping** sectors A, B, C, D and E on the map.

  Vessels in the static zones and dynamic shipping zones, when the speed restriction is in effect, are required to operate at a maximum of 10 knots only when safe to do so. Navigational warnings lifting the speed restriction will be issued to that effect for adverse weather conditions jeopardizing the safety of vessels.

- The static zones are sensitive areas where the whales aggregate most. The dynamic sectors are flexible. Aerial surveillance is used to spot whales and see if a slowdown needs to occur in the dynamic zones. The idea of having dynamic zones came from industry.

Measures/Plan

- NGOs and academics have emphasized to the group that the 10 knots speed limit does not eliminate the probability of a lethal vessel strike. It reduces that probability to plus or minor 30%. 10 knots is a compromise whereby a ship can maintain navigational steerage and safety, and still get through the water safely, without risk of collision or risk of grounding. But it does not eliminate the probability of striking.

- Aerial surveillance of the dynamic zones is sometimes halted in bad meteorological conditions. This unfortunately puts the whales at risk of strikes as there cannot be sighting confirmation.

IDENTIFYING PRIORITY ISSUES AND PROCESSES USED TO DEVELOP MEASURES

- There is an underlying political driver to act in the form of international pressure. Indeed, in the U.S., there is a Marine Mammal Protection Act. Two years ago, it was said that in 2022 the U.S will require all countries that export fish products (like Canada) to meet or exceed U.S. standards for protection of endangered species. Recently, some governors from New England called for stopping the import of lobster and other fish products from Canada because of how many whales have been killed in Canadian waters. So, there is political pressure to correct the whale situation, as this will be enforced in 2022.

- Measures are evidence-based using on scientific data, survey data, etc.

Measures/Plan (cont'd)

PROPOSED IDEAS THAT WERE PUT ASIDE

- In developing the measures, there were discussions as to whether the static slowdown needed to apply to the entire area or if there was a way that vessels could go through areas where the whales are less likely to be and where ships can travel at normal operational speeds, since slowdowns cost big money. Everything is on-time delivery. International ships can build this into their voyage plans, because they can speed up across the Atlantic. However, domestic operations, ferries, commercial shipping, that are delivering to ports along the lower north shore, have very tight schedules. So there have been some thoughts on concentrating shipping traffic in deep water and leaving the shallower water for the whales (i.e. 200 meters or less).

COMMUNICATION OF MEASURES/PLAN

- Transport Canada publishes notices to mariners and notices to shipping. Notices to mariners are something that are published annually, and it is regarding measures that are in place and have a perpetuity to them. Notices to shipping is a method to get day-to-day navigational information, warnings, operational constraints out to the ships, either through NAVTEX or through marine communications and traffic services. The notices to shipping are now referred to as NAVWARN navigational warnings.

- The information would reach the international fleet since basically all ships entering the Gulf of Saint Lawrence would likely be in contact with DFO's marine communications and traffic services, via the reporting system ECAREG (Eastern Canada Vessel Traffic Services Zone - which requires vessels sailing in the Eastern Canada to obtain the necessary clearance).

- Whale sightings are also now being reported at large (by entities other than the NARW working group):
  - There is a website that was developed by a graduate student of Chris Taggart's at Dalhousie University and it's called WhaleMap (https://whalemap.ocean.dal.ca/), which reports sightings of right whales within 24 hours in Eastern Canada and the US.
  - There is a free mobile app called Whale Alert (http://www.whalealert.org/) that posts information from across Canada and the US.

Effectiveness of Measures

- There is real social acceptability around the plight of the North Atlantic right whale. This drives industry to be involved and to comply, as no company wants to be responsible for striking a whale.

- In 2018, there were no registered deaths of right whales. However, in 2019, there were nine reported whale deaths in Canadian waters.

- For some of the stakeholders, the whale deaths that occurred in 2019 are not necessarily an indication that the measures are not effective. They could be a matter of circumstances. Indeed, the measures were lifted for a few days because of difficult meteorological conditions in the Gulf. Vessels went back to navigating at full speed. At the same time, there were numerous fishermen in the area lifting their nets and traps. As well, the whales aggregated a bit differently this year. So, some of these deaths occurred in a context of increased vessel speed, whale movements and higher probability for entanglements with fishing boats.
  However, for other participants, dead whale carcasses are a sign that the measures are not enough.

- However, all agree that there is still much to learn and observe about the right whale and that it is too early to claim victory.
  Indeed, the mitigation measures that have been put in place are narrowly tailored toward the specific areas to which they are being applied, that is to aggregation areas. But do not do well in the migratory areas, because there is little knowledge of where they are.

- To increase effectiveness would require underwater noise system in the shipping lanes to better understand movements of the whales in those lanes. A pilot study took place in the Fall of 2019 where a hydrophone was place on a glider in order to follow and listen to the whales. This is to enhance the aerial surveillance activities.

- The mobilization of the working group, and the pooling of expertise in an emergency situation, is seen as a benefit to the right whales, despite the disappointing incidents of 2019. The climate of trust, information sharing and stakeholder engagement can only be beneficial in the long term.

Emerging Issues

- The working group is really following the right whale and adapting its discussions on what is happening with the whale in the Gulf.

- A recent discussion has been on migratory corridors. These need to be taken into consideration since whales don't just come in, stay and feed all summer and then leave. There is constant turnover, as they actually come and go all during the season.
  So, some feel that there needs to be investments in surveillance modes (acoustic, aerial, visual, infrared, etc.), in order to continue to follow the whale where it is going, get that knowledge, conduct modelling, etc.

- Some feel that government should look into the other several listed species that is present in the habitat, that is blue whales. Some feel that nothing is being done about protecting blue whales, since no dead blue whale has been found yet. And since they sink when they die (as opposed to float like the right whale), the probability of finding a carcass is low.

- Perhaps Transport Canada should review the VMS (vessel monitoring system) data from vessels smaller than 20 meters, like fishing boats, to evaluate if these boats are involved in vessel strikes.

Recommendations to other groups

- In a highly sensitive political climate, like the one surrounding the right whale situation, it is important to have high stakeholder engagement. In this specific case, the government was very lucky that the shipping industry rallied behind a few leaders, setting up this working group and demonstrated a willingness to work with the government. They were not so lucky with the fishermen, who did not rally behind one leader (as it is a very competitive industry, less collaborative) to have their say with one voice.

- What needs to be put in place to ensure successful measures: science-based conservation. So, use the best available science to develop precautionary protective measures for endangered species of whales in Canadian waters.

- Also, get all stakeholders at the table, that is everybody from industry that is navigating in the area that you are covering. Including Coast Guard and Navy.

- The best practices already exist. There are not a lot of options to do this. You either slow ships down, if there's an intersection point. Or you would have them go around whale aggregations. But the trick is applying those options, and tailor them for each individual habitat area.

- To be effective, working groups need to be adequately funded, in order to have the resources to gather the information and be productive, and not simply have people sit around a table discussing issues.

- This working group works well because everyone at the table has the same objective of preventing whale strikes, people feel that their input has real influence on the decisions and every member conducts themselves with great professionalism, even in disagreements.

- Finally, to have an effective Committee you must have a well-defined focus with concrete objectives that are practical in nature.

Placentia Bay Traffic Committee

Establishment

- In the early 1990's, the Public Review Panel on Tanker Safety and Marine Spills Response Capability identified Placentia Bay as the marine area with the highest potential for an oil-related environmental accident in Canada. More than 365 islands and reefs are found in the bay where visibility can be reduced to less than one kilometer on an average of 187 days per year.

- Industries in Placentia Bay include an oil refinery, shipyard, ferry terminal and an offshore oil transshipment facility. The reopening of the oil refinery at Come By Chance in 1987, along with the Newfoundland Transhipment Terminal becoming operational in 1998, has increased tanker traffic and the risk of accidents.

- Proposed future developments include a second oil refinery, a liquefied natural gas handling facility and a wind generated electricity project.

- The Placentia Bay Traffic Committee was actually first established back in the '70s by the users of the Bay when the refinery was opened. The refinery only operated a couple of years and when it closed, the Committee just became dormant. They did not hold any meetings for a long time. When the refinery reopened in 1987, the Committee started back again.

Mission

- The Placentia Bay Traffic Committee handles risk management issues. The Committee has a mandate of maintaining the harmonious co-existence of various interests in the Bay. It allows for the lines of communication to remain open between all different actors in the area.
- The Committee assures the smooth and efficient movement of tanker traffic in and out of Placentia Bay, to reduce the risk of accidents and to ensure environmental protection, and protection of the fisherman, their gear and their fishing grounds.
- While not a regulatory agency, the Placentia Bay Traffic Committee is a well established forum for all marine users of Placentia Bay and sets to identify, discuss and, where possible, resolve marine traffic-related issues.

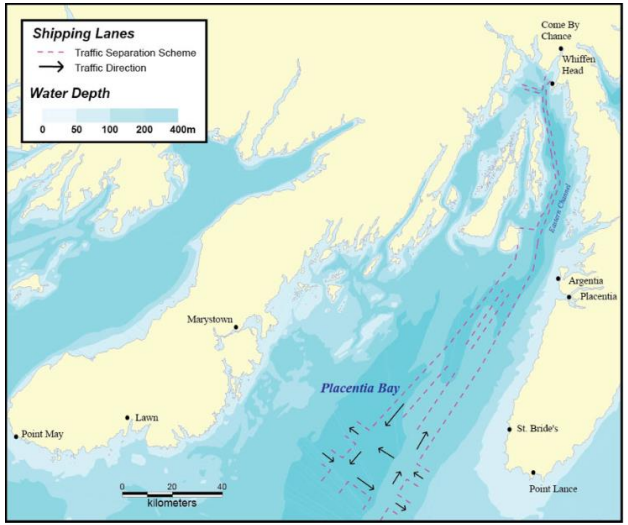
Geographic Scope

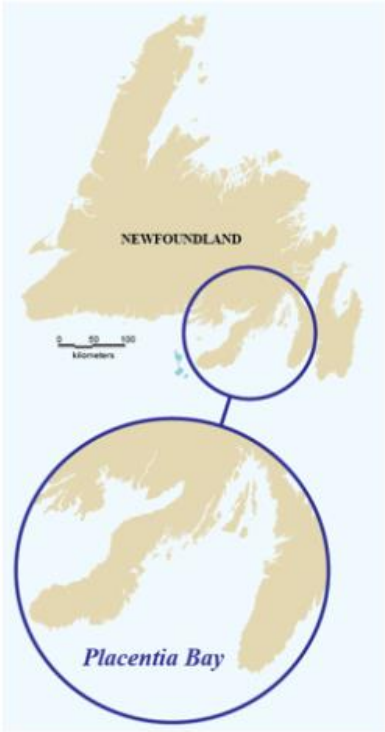
- Placentia Bay is a large bay on the south coast of Newfoundland. It lies on a north-northeast axis, opening to the Atlantic Ocean at the southwest. It separates the Avalon Peninsula on the east from the Burin Peninsula on the west. The opening, or mouth, of the bay is approximately 145 km wide, and the bay is approximately 125 km long. Placentia Bay has many islands, shoals, reefs and banks as well as three well-defined channels. The Western Channel lies between the Burin Peninsula and Merasheen Island, the Central Channel lies between Merasheen Island and Long Island and the Eastern Channel lies between Long Island and the Avalon Peninsula. The Eastern Channel is the largest of the three in both width and depth and is the principal channel in the bay used for shipping and transportation.

- The bay is large, deep and ice-free, which allows year-round shipping in and out of the bay. Placentia Bay is an area of expanding marine transportation and coastal development. With the growth of the oil and gas industry in Newfoundland and Labrador, Placentia Bay is the largest oil handling port in Canada.

- Placentia Bay is characterized by deep water and exposure to southwesterly winds and currents.

- The Committee's geographic scope covers Placentia Bay, all the way out to the check point where the ships come and they are given approval to come in farther and pick up their pilots, or wait outside. So, it is to that line where the ships can't come further.





Membership

MEMBERS

Government

- Canadian Coast Guard
- Transport Canada
- Canadian Marine Advisory Council (CMAC)
- Fisheries and Oceans Canada (DFO)
- Canadian Hydrographic Services
- Port of Come by Chance (the Harbour Master)
- Port of Argentia
- Marine Communications and Traffic Services (MCTS)
- Town councils

Industry

- Ship owners (e.g. Teekay, etc.)
- Oil companies (e.g. North Atlantic Refining Limited (NARL), Newfoundland and Labrador Refining Corp. (NLRC), Vale, WWRP, etc.)
- Newfoundland Transshipment terminal (for crude oil)
- Atlantic Pilotage Authority
- Marine Atlantic (ferry service)
- Eimskip (container company)
- Customs brokers (e.g. Avalon, PF Collins, etc.)
- Fishermen, fisheries
- Fish Food & Allied Workers Union (FFAW)
- Ship agents
- Aquaculture Association
- Canship Ugland (tug operators)
- Teekay Shipping (tug and ship operators)

ONGs

- Environmental groups (e.g. Newfoundland and Labrador Environmental Association, etc.)

Oil spill experts

- Eastern Canada Response Corporation (ECRC)

Education

- Marine Institute (Fisheries and Marine Institute of Memorial University of Newfoundland)

Membership (cont'd)

- The Placentia Bay Traffic Committee has a regular attendance of Canadian Coast Guard, Transport Canada, terminal and refinery staff, Eastern Canada Response Corporation, pilots, and fishermen.

- Membership is by invitation from the Committee. For example, when a new user comes into the Bay, the Committee will reach out to them and invite them to make a presentation of their activities, attend the meetings and update the Committee.

BALANCED REPRESENTATION

- Representation is deemed adequate and representative of the users of the Bay. Although, some feel that there should be more than one fishermen representative and that perhaps it would be good to have representation from locals.

Organizational Structure

- The Placentia Bay Traffic Committee meets two or three times a year or more often if required. Most meetings are held in St. Johns. Meetings generally have about 20 members in attendance. Not all member organizations will attend.

- Coast Guard has been chairing the meetings. An administration person from the Coast Guard sets up the agenda, sends it out for comments, takes the minutes and sends the minutes out to the Committee.

- More than one representative from an organization can attend the meetings. Although they are trying to instill a process where each organization has one representative and one alternate.

- The Committee is not funded. Representatives are no given a honorarium to participate. They are paid by their organization for their attendance. Members take turn sponsoring the meetings, that is, providing a lunch and renting a meeting room.

- Decisions are mostly taken by consensus.

- There are subgroups that work on particular topics and meet as required.
  - Weather Watch Committee: Placentia Bay can see storm or hurricane force winds in the winter time. During extreme weather forecast, using different tools, this subgroup of the Committee will decide if oil tankers are permitted to remain in the Bay or if they should be taken off the anchorages and moved out until the storm passes. This is to minimize damage to the port facilities and any issues at the anchorage, etc. Of course, these decisions have important economic consequences. This sub group, is the only active one at the moment.
  - Anchorage sub Committee: This subcommittee was active a few years ago when there were not enough anchorages in Placentia Bay and industry wanted to add two more. It was important to work with the users, particularly the fishermen (who did not want their fishing grounds taken away), to agree on a site for the two extra anchorages.
  - Other topics that could be dealt with in a sub group are: the speed of the traffic coming in the Bay, whether or not to widen the traffic lane, in which areas to park the tankers that are waiting to be offloaded or to go to another port, etc.

Documentation

WEB SITE

The Placentia Bay Traffic Committee does not have a website.

TERMS OF REFERENCE / BY LAWS

The terms of reference are not public.

Positive elements and improvements

WHAT'S WORKING WELL

- The Committee has an informal and flexible nature to it that works well.
- Communication between members is open, respectful and working well. There may be difficult discussions sometimes but all opinions and concerns are listened to.
- The Committee is one of the only forum where these different actors of the Bay, or even governmental agencies, can discuss issues and speak face-to-face.
- All members are willing to work together to reach a common goal. It is very different from 20-30 years ago, when it was a screaming match, there was no focus, no control, and everybody was just looking out for their own selves.
- The Committee is very successful at getting everybody to agree on things. For example, the fishermen and the oil industry have set up traffic lanes and safe anchorages where tankers are not taking away fishing grounds.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- There are lots of discussions but many don't end with a solution or resolution.
- There should be more transparency and communication about what the Committee does.
- The time it takes, sometimes two or three meetings, from when an issue is raised to when it is addressed could be improved.

Voluntary or Mandatory Measures

- The Placentia Bay Traffic Committee does not issue mandatory measures, but rather makes recommendations.
- The Committee publishes practices and procedures. They are not mandatory measures. However, the Committee is trying to make them be part of the public ports practices and procedures, which are published by Transport Canada.

Measures/Plan

- More than issuing procedures, the Committee is really focused on having members share information and have discussions about their activities. Placentia Bay is such a high traffic area that it is very important that everyone is made aware of users activities and have the same focus, for everything to work well in the Bay.

- There are five anchorages within Placentia Bay, identified as A, B, C, D and E, but two of them can take two ships. In the winter time, ships are not allowed to anchor at certain anchorages, because of wind, wind directions, sea heights, tides, fishing activity, etc. And at other times, one anchorage can't be used because there are fishermen there. So this is an example of a procedure.

- There is a voluntary speed reduction because of the presence of more fishing vessels and fishing gear during snow crab fishery from early May to mid-July. And during that time, they have a speed limit of 10 knots through the traffic lanes. Crab congregates almost in the traffic zone because it is a deep water fish. So there is a concentration of crab fishermen in the same area where the traffic is coming in through.

- There is a traffic scheme for the tankers. They have to follow the scheme and deviate as per.

- Every time there is a storm warning, even if it is on the borderline, then the Weather Watch Committee will hold a conference call to make recommendations.

- For a while there was a requirement of having charts of the Bay on board the vessels. Many in industry felt that was not a necessary expense as they had electronics on board to that effect. The Committee felt it was important for vessels to be able to navigate the Bay the “old-fashioned way” in case they lost power or had electronic failure or the like.

Measures/Plan (cont'd)

COMMUNICATION OF MEASURES/PLAN

- Marine Communications and Traffic Services (MCTS) which is safety and navigation-related services for vessels, boaters and fishers that is communicated by the Canadian Coast Guard. Practices and processes from the Placentia Bay Traffic Committee would be put out as reminders to all vessels that transit the Bay so that they have that information on board as they come in and out the Bay.

- As well, the Committee has communicated their decisions and requirements through other mediums in the past, for example by publishing booklets, etc.

- SmartBay, by the Marine Institute, is an applied ocean observation system initiated on Newfoundland's south coast, with on-going expansion of the initiative to additional ports-of-call around the Province.
  SmartBay is comprised of three basic components:
  - Intelligent infrastructure to support data collection, modeling and forecasting (e.g. buoys, communications, etc.)
  - Ship-board technology (Electronic Charts, Automatic Identification System – AIS, ATONIS)
  - Simple access to data and value-added information products (web portal)

  SmartBay gives information of different areas of the Bay such as wave heights, wind direction, wind speed, etc. It basically indicates what the weather is like at different points as you go in and out the Bay.

Effectiveness of Measures

- There is always a pilot on board on every vessel and in some cases there is an escort tug. As the Atlantic Pilotage Authority have representatives on the Committee they agree to follow the voluntary speed reduction. The pilots jump on board at the pilot station. They pilot to the two major port facilities: Port of Come By Chance where the North Atlantic Refining is. And then there is IMTTNTL (Newfoundland - International-Matex Tank Terminals), which is a trans shipments facility situated in Arnold's Cove.

- The lack of incidents is an indication that the measures are effective.

- Compliance is assured by the Placentia Traffic Services, which is the local marine communications and traffic services. They have radars and all the anchorages are monitored. For example, the anchorages have alarms, and if a vessel drifts on the anchorage, the alarm will go on their station, and then they'll contact the vessel right away. It is a 24-hour operation.

- Compliance is also assured by the pilots which are the best participants in shipping activity that keep things safe in the Bay. As well, ship agents, which represent the ship owners and the terminals, play a great part in compliance with the measures.

- Topics that are yet to be resolved:
  - Speed of vessels outside of fishing season.
  - Invasive species. Green crab in the Bay is a very vigorous invasive species. They are eating the eel grass, which is the home for incubating lobsters, codfish, scallops, etc. Transport Canada had a Ballast Water Management program instituted some years ago stating that vessels have to exchange their ballast water 200 miles off shore if possible. But that has not eradicated the problem.

- It was suggested that there should be more wind speed indicators in strategic areas in the Bay.

Emerging Issues

- Ship to ship transfers are something that are being discussed at the moment.

- When vessels laden with crude oil are moving through a traffic scheme in Placentia Bay is escorted to and from the pilot station with a tug escort. So the pilot is on board, and there is an escort tug there as well the whole way right to the pilot station and all the way to the berth. Both ways. But, at North Atlantic Refining, they only escort tankers laden with crude oil from the pilot station to the berth (so going in). Or so they should. But they don't. What they do is they bring in crude oil, refine it, and then other products (what are called clean products) are made and smaller vessels come and take those away. So that would be gasoline, diesel, jet fuel and six oil, which is a heavy persistent oil. If six oil were spilled it would be a terrible disaster. So, some feel that when an empty ship comes to the refinery, is loaded with any persistent oil, like six oil, that there should always be a tug escort to take it to the pilot station, regardless of the facility. It should be mandatory for all facilities.

- Fishermen are troubled by the displacement of their activities due to incoming new users such as aquaculture and the like. There is so much activity going on in the Bay, from oil, mining, building of oil structures, transshipment, etc., that fishermen are feeling displaced. And there is a question as to who is overseeing these new activities. For instance, who is the overseeing regulator of aquaculture? Is there an independent body out there overseeing all these activities? It appears to some that none of the different governmental agencies are taking responsible.

- Increasing traffic in the Bay will be an issue in the next few years, and its impact on the users and the environment.

Recommendations to other groups

- Make sure that no one is left out and that everyone's opinions is heard and matters. This will produce collaboration and respect that are the keys to a productive committee.
- Having the same individuals at the table, not just the same organizations, helps to build cohesion.
- Having representatives from every division that needs to be represented there or that has an involvement, so that everybody is notified and knows what is happening. So you never have organizations coming back to the Committee saying *"Well, we didn't know about this. Nobody was notified that this is going to happen."* etc.

Puget Sound Harbour Safety Committee

Establishment

- Although there have been several different stakeholder forums to precede it, the Puget Sound Harbor Safety Committee (PSHSC) was created in 1997 by stakeholders with an interest in promoting safety and the protection of Puget Sound. It was formally incorporated as a non-profit organization on December 13, 2000.

- Initially, the PSHSC was an initiative from the Coast Guard captain.

Mission

- The mission of the PSHSC is to provide a proactive forum for identifying, assessing, planning, communicating, and implementing operational and environmental measures beyond statutory and regulatory requirements that promote safe, secure, and efficient use of Puget Sound and adjacent waters. The Committee is made up of delegates appointed by broadly based organizations representing a span of interests focused on Puget Sound. Additionally, various governmental agencies formally support the work of PSHSC in advisory roles.

- PSHSC takes responsibility for capturing existing standards and protocols as well as developing new standards and protocols that address those environmental and operational elements of maritime operations that are somewhat unique and especially significant to Puget Sound.

- The purpose of The Puget Sound Harbor Safety Committee is to link local marine interests in the state of Washington in a single forum and to act collectively on behalf of those interests to include the following functions:
  - Provide a proactive forum for identifying, assessing, planning, communicating and implementing those operational and environmental measures that promote safe and efficient use of Puget Sound and adjacent waters.
  - Act as an education and resource network through which ideas, materials and procedures can be provided to persons interested in marine safety and operations.
  - Promote the improved operational and environmental safety for Puget Sound and adjacent waters.
  - Act as a resource at the request of governmental bodies and individual legislators regarding issues related to marine operational and environmental safety.
  - Promote and sustain the goals of marine and environmental safety programs.
  - Ensure that marine safety and environmental measures are coordinated with security initiatives.

- The mission has remained pretty much the same over the years, although the Committee took on more of a security role after 9/11. The by-laws were actually modified at the time to incorporate “security”. However, 4 or 5 years later, “security” was taken out as the Coast Guard had a Maritime Security Committee to specifically deal with security issues.

Geographic Scope

- Puget Sound is a large body of water in the state of Washington. It is a complex estuarine system of interconnected marine waterways and basins connected to the Pacific Ocean through the Strait of Juan de Fuca.

- Puget Sound extends approximately 100 miles from the north where it meets the Strait of Juan de Fuca at Admiralty Inlet to Olympia, Washington in the south.

- However, the term "Puget Sound" is used not just for the body of water but also the general region centered on the sound. The PSHSC addresses its attention to the general region, to include all the navigable waters of Northwest Washington.
  Basically, Puget Sound up to the Canadian border, the Strait of Juan de Fuca, as well as some involvement with an area to be avoided off the coast of Washington (Olympic Coast National Marine Sanctuary).

Membership

MEMBERS

- Commercial Fishing (non-tribal)
- Environmental Advocacy
- Labor
- Local Government
- Maritime Services Organizations
- Native American
- Passenger Vessel Operators
- Petroleum Shippers
- Pilots
- Public at Large
- Public Ports
- Recreational Boaters
- State Ferry System
- Steamship Lines
- Tug and Barge

ELECTED OFFICERS

- Marine Exchange of Puget Sound (Chair)
- Public at Large (Vice Chair)
- Crowley Maritime (Secretary/Treasurer)

ADVISORS

- U.S. Coast Guard
- U.S. Army Corp of Engineers
- U.S. National Oceanic and Atmospheric Administration (NOAA)
- U.S. Maritime Administration (MARAD)
- U.S. Navy
- Pacific States/British Columbia Oil Spill Task Force
- Washington State Department of Ecology (DOE)
- Environmental Protection Agency (EPA)
- Fish and Wildlife Department

Membership (cont'd)

- The Puget Sound Harbor Safety Committee is a stakeholder organization. A broad based association representing the interests of each stakeholder group is invited to nominate a representative and an alternate.
- Federal agencies are advisors to the Committee but not members. They are regular attendees at the meetings and have a strong relationship with the Harbor Safety Committee.
- The PSHSC has been particularly successful in attracting both industry members and agency members, as well serving as a forum for various groups that have waterway projects, or research or environmental studies that they want to accomplish. The Committee has been very well received from its inception.
- The group is inclusive and very accepting of organizations that wish to join.

BALANCED REPRESENTATION

- The industry members and State agencies are well represented. However, the Committee has experienced inconsistency with regular attendance from the public at large, the fishing vessels and the recreational boating representatives. Those have been a struggle to attract.
- Even though they were invited to join, there was no representation from environmental groups for a long time, as a very vocal activist from the region kept disparaging the PSHSC's work. That changed about six or seven years ago when one of the environmental organizations showed interest to join and the activist retired. Now, there is good representation of environmental groups.
- Tribes is also an area where the Committee may be weak. Indeed, there is only one tribe (the Makah tribe) sitting on the PSHSC at the moment, but there are many tribes in the area and they have not shown interest in participating.

Organizational Structure

- PSHSC meets every other month starting with the annual meeting in February. All meetings are open to the public. Meetings are held in a variety of locations, mostly in Seattle, but some in Everett, Tacoma, Olympia, Bellingham, etc., often times in meetings rooms at the Port Commission facility. There are 50 to 60 people attending the meetings. Only the members can speak, but the Committee will take questions or comments from the audience throughout.

- Election of officers (Chair, Vice-Chair, Secretary, Treasurer) are held in odd numbered years. The period of office is two years. Administrative support is provided by the Marine Exchange of Puget Sound to take care of the Committee's notes, the financing, setting the agenda, etc.

- As per the by-laws, each member possesses voting rights, with one vote per member. However, essentially majority rules. And when it comes to the Standards of Care, the Committee pursues full consensus. Indeed, it is felt that voluntary standards can only work if all parties are in accordance.

- Subgroups can be put together when required to focus on a particular project and meet as often as required. These work groups are formed with a subset of members, based on their interest, involvement and expertise.

FUNDING

- The PSHSC is a non-profit, unfunded volunteer organization. Funding mechanisms are developed and approved by the members and subject to a vote. Voluntary dues are solicited from the different members of the PSHSC and the Coast Guard is able to provide some support since it helps with certain of their public meeting requirements.

- Members and elected officers don’t receive any compensation for their services. However, the PSHSC will send a representative to the National Harbor Safety Committee annually meeting, and they will usually pay for transportation for that attendance. As well, the PSHSC will pay the Marine Exchange a relatively small amount of money for administrative report, making copies of agendas, etc.

Documentation

WEB SITE

PSHSC has a dedicated website : https://pshsc.org/

TERMS OF REFERENCE / BY LAWS

The PSHSC's by-laws can be found on the organisation's website at: https://pshsc.org/by-laws
The document addresses topics such as Purpose, Membership, Governance, Committees, Meetings, etc.
The document was last amended in January 2005.

SAFETY PLAN

PSHSC has produced a Puget Sound Harbor Safety Plan that can be downloaded from their website at: https://pshsc.org/puget-sound-harbor-safety-plan .
The safety plan was last updated in June 2017. No changes were made in 2018. However, the Plan is currently being reviewed for 2019 changes.
The safety plan is available in a reduced size for easier download by mariners.

Positive elements and improvements

WHAT'S WORKING WELL

- The Committee is perceived as working very well. It is seen as a viable forum, where people from different sectors can discuss issues, voice concerns or ideas and get traction from other waterway users. There is no other place to do that in the region.
- Participation in the meetings is high, which demonstrates the level of engagement of the members. Many of the individuals attending the meeting have been the same over the years.
- The current Chair is a very strong leader, very polite, pleasant, accommodating with a lot of integrity. He has been a strong champion of the Harbor Safety Committee and members respect that and pay a lot of attention to that. He has been good about not advocating for a specific sector. He is close to retiring and the transition to another Chair may potentially be very difficult.
- The right people and expertise are at the table.

WHAT IS NOT WORKING SO WELL OR WHAT COULD BE IMPROVED

- Waterway users need to get reminded of what is in the Harbor Safety Plan. So, there is a need to regularly reinvigorate people's awareness of what's going on, and how they should be operating consistently with the Harbor Safety Plan.
- The updating of the SOCs is not done regularly. For example, adding a new contact information, or tweaking a SOC following a change in procedure, etc.
- Communications with recreational boaters has been a weak point of the PSHSC.

Voluntary or Mandatory Measures

- Harbour Safety Committees provide a consensus-based approach to addressing port issues that facilitates acceptance of decisions.
- The broad vision that has been championed from the beginning of the PSHSC is that, while the Coast Guard has a variety of legislative and regulatory tools to enforce standards on the waterways, there are many issues, problems or concerns that are better addressed by a quicker and more informal process. So, to that end, a lot of what the PSHSC has done has been to develop Standards of Care, which are voluntary measures that waterway users can follow that complement or supplement the federal rules and regulations and the official policies, but that can more quickly be implemented through the Harbor Safety Committee.
- The PSHSC is much more nimble and can get things done without having to go through a State or Federal regulatory process.
- Although the PSHSC does not issue safety standards that are enforceable, they publish Standards of Care that they believe carry just about as much weight. Indeed, should a vessel get into an incident or have an accident, if a SOC were not followed, could be a mark against that ship operator in a court of law.
- Federal laws and regulations are oftentimes one size fits all. The Puget Sound harbor may not be like the New York harbor. Puget Sound may want things done a little differently. Voluntary SOCs allow for adaptation to the local issues and their specific needs. It is much more difficult for the Federal government to do things local and be very specific.

Measures/Plan

- PSHSC has produced a Safety Plan that is continually being revised and updated. The Safety Plan contains around twenty Standards of Care (SOCs):
  - Anchoring
  - Bridge Team Management
  - Bunkering Operations
  - Dead Ship Tow Plans
  - Equipment Failures
  - Heavy Weather
  - Hot Work
  - Lightering
  - Linehandling at Grain Terminals
  - Port Angeles Precautionary Area
  - Propulsion Loss Prevention
  - Restricted Visibility
  - Rosario Strait Towing Operations
  - Spokane Street Bridge Openings Notification
  - Tanker Escorts
  - Terminal Gantry Crane Safety
  - Towing Vessel Operations
  - Underkeel Clearance
  - Use of Sonar
- The standards and protocols contained in the Puget Sound Harbor Safety Plan complement and supplement existing federal, state and local laws and regulations with advice to mariners regarding unique conditions and requirements that may be encountered in Puget Sound and adjacent waters. These standards and protocols are not intended to supplant or otherwise conflict with the laws or regulations, nor are they intended to replace the good judgment of a ship's master in the safe operation of his/her vessel.
- The PSHSC's mission is to promote safe and environmentally responsible use of the Puget Sound waterways. So, the measures do not really address maritime security, but rather they center around safety and environmental concerns.
- The SOCs are data driven. They are not just based on someone's opinion. In the past, the PSHSC has asked academics from George Washington University and other places to validate information, for example vessel transit data, to corroborate users' perceptions. As well, the Coast Guard can provide information on vessel arrivals, etc.

Measures/Plan (cont'd)

PROPOSED IDEAS THAT WERE PUT ASIDE

- There have been ideas that did not make it in the Safety Plan, due to lack of consensus among members as to the significance of the problem. They are however monitored over time and brought back again as an issue to discuss if required.

IDENTIFYING PRIORITY ISSUES AND PROCESSES USED TO DEVELOP MEASURES

- An issue will be identified, the group will agree that it is significant and a Standard of Care will subsequently be developed in a collaborative manner.
  For example, there was an issue with container ships loading containers over the top of bunker barges that were fueling the vessel that was being loaded with containers. Unfortunately, they managed to drop a couple of containers to the bunker barge which became a problem. There are no federal prescription against that, but the community got together and championed a Standard of Care. This SOC simply asks to take notice of where the containers would be loaded and make sure the bunker barge are not underneath them.

- So then, that Standard of Care is worded, submitted to the members for comments and eventually, when a consensus is reached, it is voted on, approved, and put into the Harbor Safety Plan.

- The Committee works on issues that are complementary or supplementary to federal rules and regulations. As such, areas that are void of rules and regulations, are difficult for the PSHSC to address.

Measures/Plan (cont'd)

COMMUNICATION OF MEASURES/PLAN

- The Safety Plan is available in full resolution with all the pictures and in a basic black and white edition that is reduced in size.
- They are put on a disk and handed to vessels arriving in the area by the ship agents. If they are a one-time visitor, the agent is a really important conduit to get the information out there. If there is an issue that comes up while the vessels are transiting in, they will be apprised of it over the telephone or via email.
- Communications with international ships can be problematic. It was found that people that have English as a second language read it better than they understand the spoken word. Which is why the PSHSC makes sure ships receive an electronic copy of the Safety Plan that they can look at and read. And also why they have developed a reduced size version so that it can be easily emailed ahead of time.
- As well, communications with recreational boaters has been difficult.

Effectiveness of Measures

- PSHSC has generally had very good cooperation with the industry members. Contrary to what some people might believe, the industry really does want to operate safely. It is a primary focus for them. And in general, they are very responsible when in Puget Sound in terms of, not only following the minimum standards, but going beyond that.
- After the SOCs been in place for a while and have been implemented, they start becoming part of the system. The longer they are followed, the more they become institutionalized as a good marine practice.
- The anchorage policy usage is one of the SOCs that is most effective, because it has given all users a good set of rules as to how to use the anchorage system.
- Compliance is ensured by the Coast Guard which has a strong presence in the area, with a vessel traffic management system, close to 60 inspectors monitoring facilities and vessels, radar and AIS coverage over the entire area, etc. As well, concerned citizens will report unsafe or unusual situations.
- It is difficult to measure prevention. But the absence of accidents is a good sign that compliance is good and the Standards of Care are effective.

Emerging Issues

- The Southern Resident Killer Whale issue is something that will need to be addressed by the PSHSC. It may require implementing speed restrictions, vessel routing restrictions, transit measures and modifications, etc., The issue has raised a lot of concern among shipping operators (on both side of the border) as to how these measures will be implemented and what that is going to mean for operating in the Strait of Juan de Fuca up through Haro Boundary Strait, then Haro Strait Boundary Pass and then also Strait of Georgia as well as Puget Sound. This is an issue that is a long ways from being resolved.

- As well, the whale watching industry is growing every year in the area and there are more whale watch boats that go out. The PSHSC may need to work on a specific SOC to keep them educated and to protect the whales.

- They are working on bollard pull re-certification on tugboat. There is a group of people from the Pilot's Association and the towing industry, working together on that standard of care. They identified the need. The Committee agreed that they should work on it. They have been working on it as a work group, but have been butting heads a little bit, and consequently have not brought a finished product yet to the Committee.

- Transport Canada was looking at the shared waterways of the Strait of Juan de Fuca, and possible need to adjust the traffic lanes. They have been getting a lot of complaints from some of the tribes, along the Southern Vancouver Island coastline, which say that the traffic lanes are interfering with their usual and accustomed fishing areas. They would like to see some adjustment made.

Recommendations to other groups

- It is important that the Chair be someone neutral, that is not an industry, tribal or state member, but someone from an unbiased organization. The success of Committee likes the PSHSC rests on having a Chair that handles things down the middle, as opposed to leaning towards one side or the other.
  For example, the current Chair is from the Puget Sound Marine Exchange, which is a non-profit that is like a communication center and logistics coordinator for vessels coming into the area. They make it easier for users to understand what the requirements and local practices are, as well as help coordinate deliveries, etc. They run a 24/7 watch, and it is particularly beneficial.

- It is important to keep having meetings even though there may not seem to have much to discuss. There is a danger of the community getting complacent after a while. Having meetings, even if they are just to share information, is very important to combat complacency.

- You need a Chair that has the skillsets to be able to keep on an agenda, keep the Committee focused, and address the inevitable two or three people out of 50 that sometimes want to dominate the meeting. If not, it will fall apart and people won't come, and you won't be as productive. You got to have ways to navigate through that and still keep a positive vibe in the room.

APPENDIX

Discussion guide – English

DISCUSSION GUIDE

INTRODUCTION

PRESENTATION

- Thank you for accepting our invitation
- Moderator presentation

OBJECTIVE OF THE INTERVIEW

- We have been contracted by World Wildlife Fund (WWF Canada) in collaboration with Transport Canada to interview existing Committees/Working groups active in addressing shipping concerns by developing management measures to improve marine safety and environmental protection.
- The purpose of this interview is to obtain a better understanding your Committee/Working Group, including its current governance structure. Of particular interest is how your Committee/Working group has identified and prioritized the shipping issues of concern and what management measures (voluntary or mandatory) you have implemented to address these issues.
- The information obtained from the interviews will be used by WWF Canada to **assist in the development of a national guide on the best practices for vessel management** for cetaceans (whales and dolphins). Transport Canada will use the information **to showcase best practices as part of a tool kit they are developing for the Proactive Vessel Management initiative under the Oceans Protection Plan**.
- The interview takes about 45 minutes (up to one hour).

USE OF INFORMATION

- The information collected will only serve the study.
- Results will be analyzed and reported in aggregate. However some comments may be tied to your Committee, but never to you personally. You will remain anonymous.

DISCUSSION RULES

- Will be taking notes but also recording (to ensure we don't miss anything).
- Importance of personal opinions
- No wrong answers

PARTICIPANT PRESENTATION

- To begin, please tell me a bit about yourself:
  - your occupation
  - your title and role in the Committee/Working Group
  - how long you have been a member of the Committee/Working Group

SECTION 1 – COMMITTEE STRUCTURE AND MISSION

The first questions will focus on the **Committee/Working Group**.
You may not have the information to answer every question, but please answer what you can.

- **When** was the Committee established and **why**?
  PROBE:
  - Grass-roots vs Top-down?
  - How was it received/perceived? Positively or negatively? Why?
  - Was its foundation harmonious, desired, forced, etc.?
- **Who**, or what group or organization, played a key **role in its establishment?**

- What is the **Mission/Purpose** and **Scope** of the Committee/Working Group?
  PROBE:
  - What are the goals and objectives?
  - Have these changed/evolved over time? Yearly basis?
  - How are the goals and objectives identified?

- What is the **Geographic Area** the Committee/Working Group is looking at?
  PROBE:
  - How was the area defined?
  - Do you believe the Committee could take on a larger geographic area?

Discussion guide – English (cont'd)

- What is the **Organizational Structure** of the Committee/Working Group?
  PROBE:
  - How was the structure of the Committee/Working Group agreed upon?
  - How many members?
  - Hierarchy of members? e.g., Chair, Vice Chair, Secretary-Treasurer?
  - Representatives? e.g. government, industry, academia, indigenous groups, NGOs, etc.?
  - Are members paid for their participation or given an honorarium or is their participation completely voluntary?

- **Membership**: How/why were these **members selected**?
  PROBE:
  - Once the Committee/Working Group was underway, did you expand the membership to include others who were not originally identified?
  - Has membership changed over time? Has this affected the Committee/Working Group?
  - Is it well balanced? i.e., good representation of different partners and stakeholders?

- **Governance**: How is the Committee governed?
  PROBE:
  - How are decisions made? Consensus, Vote, etc.
    - If consensus-based decision making is the desired goal: what is the process that is undertaken when this cannot be reached?
    - If decisions are made through a vote: who gets to vote? How was this determined?
  - Frequency of meetings?
  - Strategic Plan?
  - Sub-Committees, Working Groups?
  - Who chairs/is responsible for the committee (leadership)? How was this decided? Has this changed over time?

- Do you have a **terms of reference/bylaws?**
  PROBE:
  - If YES, where can I obtain a copy?
  - How often are your terms of reference/bylaws reviewed?

- Do you feel the **current manner** in which the Committee/Working Group **governs itself** is **working/not working**?
  PROBE:
  - Is it effective (i.e. at producing successful initiatives/measures)?
  - Is it participatory (i.e. working harmoniously, every representative has a voice, etc.)?

- What elements of your Committee/Working Group are **working**?
- In your opinion, what elements of your Committee **could be improved upon**?

- How is the Committee **funded**?

- Does your Committee have a **website/links** to any Committee resources?

Discussion guide – English (cont'd)

SECTION 2 – ESTABLISHED MEASURES

The next questions focus on the **measures established** by your Committee/Working Group.

Measures can **refer to any management measures that have been implemented to address a particular concern**. They can **include voluntary** measures or **mandatory measures** (regulations), standards of care, guidelines, code of conduct, outreach/educational activities, etc.

Voluntary measures are non-legislative. They are measures that are not enforceable. For example, guidelines or protocols are often voluntary measures and are designed to encourage behavioural change in order to reach a consistent outcome. They are usually developed via consensus to ensure successful implementation by various stakeholders. They usually are accompanied by various knowledge exchange activities in order to increase awareness.

Mandatory measures are prescribed in legislations and as such they impose binding, enforceable requirements on an individual.

- What **process** has the Committee/Working Group **used to identify the priority issues** to be addressed?

- What **measures** have been **established** by your Committee/Working Group to address the priority issues of concern? (Start with voluntary then mandatory (i.e., regulations)).

- What **processes** were used to **develop these** measures?
  PROBE:
  - What research/evidence/indigenous knowledge/information/activities, etc. were needed?
  - How long did it take – a few weeks, months, years?
  - Have some measures started out as voluntary and then transitioned to mandatory/regulatory? If yes, why? How did this process work?

- What measures or proposed ideas **didn't work** and **why**?
  PROBE:
  - What were (are) the **constraints or limitations**?
  - Lack of human and financial resources?

- What are the **measures** that you have implemented that you would **consider effective**? **Why**?
  PROBE:
  - Compliance?
  - Innovative?
  - Communicated effectively?
  - Knowledge exchange?

- How do you **measure the success** of the measures your Committee/Working Group have implemented?
  PROBE:
  - Cohesion/discussion between stakeholders?

- What **provisions are needed** to ensure the sustainable success of management measures? That is, in your opinion, what **needs to be put in place** by the governance structure of a Committee/Working Group to ensure compliance?
  PROBE:
  - E.g. stakeholder engagement, awareness campaigns, etc.
  - Does voluntary vs. mandatory play a role? Should voluntary measures become mandatory if they have proven to be successful using voluntary mechanisms?

- What are **emerging/new issues** that the Committee/Working Group is **likely to address**/will be addressing in the coming year?
  PROBE:
  - What measures are you expecting (or hoping) to develop?

CONCLUSION

- Before we close the interview, are **there any other insights/recommendations** that you would like to share that you think would be helpful to **WWF-Canada**, Transport Canada or **useful to other similar committees**, working groups or programs?

Thank you very much for your participation!

Discussion guide - French

DISCUSSION GUIDE

INTRODUCTION

PRÉSENTATION

- Merci d'avoir accepté notre invitation
- Présentation de l'animatrice

OBJECTIF DE L'ENTREVUE

- WWF Canada (aussi connu sous le nom de World Wildlife Fund) en collaboration avec Transport Canada nous a mandaté pour mener une étude sur la gestion des navires. Nous interrogeons les comités/groupes de travail existants qui adressent les problèmes de la navigation en élaborant des mesures de gestion visant à améliorer la sécurité maritime et la protection de l'environnement.
- L'objectif de l'entretien est de mieux comprendre votre comité/groupe de travail, y compris sa structure de gouvernance actuelle. Nous souhaitons aussi connaître la manière dont votre comité/groupe de travail a identifié et hiérarchisé les problèmes de transport préoccupants et les mesures de gestion (volontaires ou obligatoires) que vous avez mises en place pour remédier à ces problèmes.
- Les informations obtenues lors de ces entretiens seront utilisées par WWF Canada pour **l'élaboration d'un guide national sur les meilleures pratiques de gestion des navires** pour les cétacés (baleines et dauphins). Transport Canada utilisera ces informations pour **présenter les meilleures pratiques dans le cadre d'une trousse d'outils qu'elle élabore actuellement pour l'initiative de gestion proactive des navires dans le cadre du Plan de protection des océans**.
- L'entrevue prendra environ 45 minutes (jusqu'à une heure).

UTILISATION DE L'INFORMATION

- Les informations recueillies serviront uniquement à l'étude.
- Les résultats seront analysés et rapportés de manière globale. Cependant, certains commentaires peuvent être liés à votre comité/groupe de travail, mais jamais à vous personnellement. Vous resterez anonyme.

RÈGLES DE LA DISCUSSION

- Prendre des notes mais aussi enregistrer (pour ne rien manquer).
- Importance des opinions personnelles
- Pas de mauvaise réponse

PRÉSENTATION DU PARTICIPANT

- Pour commencer, parlez-moi un peu de vous:
  - votre occupation
  - votre titre et rôle dans le comité/groupe de travail
  - depuis combien de temps êtes-vous membre du comité/groupe de travail

SECTION 1 – STRUCTURE ET MISSION DU COMITÉ

Les premières questions porteront sur le **comité/groupe de travail**.
Vous n'avez peut-être pas les informations pour répondre à toutes les questions, alors veuillez répondre au meilleur de votre capacité.

- **Quand** le comité a-t-il été créé et **pourquoi**?
  SONDEZ:
  - Volontaire (par volonté populaire) vs obligatoire (initiative *top-down*)?
  - Comment a-t-il été reçu/perçu? Positivement ou négativement? Pourquoi?
  - Sa création a-t-elle été harmonieuse, désirée, forcée, etc.?
- **Qui**, ou quel groupe ou organisation, a joué un **rôle clé dans sa création?**

- Quelle est la **mission**/le **but** et la **portée** du comité/groupe de travail?
  SONDEZ:
  - Quels sont les buts et objectifs?
  - Celles-ci ont-elles changé / évolué avec le temps? Base annuelle?
  - Comment les buts et objectifs sont-ils identifiés?

- Quelle est la **zone géographique** étudiée par le comité/groupe de travail?
  SONDEZ:
  - Comment la zone a-t-elle été définie?
  - Croyez-vous que le Comité pourrait prendre en charge une zone géographique plus vaste?

Discussion guide – French (cont'd)

- Quelle est la **structure organisationnelle** du comité / groupe de travail?
  SONDEZ:
  - Comment la structure du comité/groupe de travail a-t-elle été convenue?
  - Combien y a-t-il de membres?
  - Hiérarchie des membres? Ex : président, vice-président, secrétaire-trésorier?
  - Des représentants? Ex : gouvernement, industrie, universités, groupes autochtones, ONG, etc.?
  - Les membres sont-ils payés pour leur participation ou reçoivent-ils des honoraires, ou leur participation est-elle totalement volontaire?

- **Membership**: Comment/pourquoi ces **membres ont-ils été sélectionnés**?
  SONDEZ:
  - Une fois le comité/groupe de travail créé, avez-vous élargi le nombre de membres pour inclure d'autres personnes non identifiées à l'origine?
  - L'adhésion a-t-elle changé au fil du temps? Cela at-il affecté le comité/groupe de travail?
  - Le comité est-il bien équilibré? c'est-à-dire y a-t-il une bonne représentation des différents partenaires et parties prenantes?

- **Gouvernance**: Comment le Comité est-il gouverné?
  SONDEZ:
  - Comment sont prises les décisions? Consensus, vote, etc.
    - Si l'objectif recherché est la prise de décision par consensus: quel est le processus qui est entrepris lorsque cela ne peut être atteint?
    - Si les décisions sont prises au moyen d'un vote: qui peut voter? Comment cela a-t-il été déterminé?
  - Fréquence des réunions?
  - Plan stratégique?
  - Sous-comités, groupes de travail?
  - Qui préside/est responsable du comité (leadership)? Comment cela a-t-il été décidé? Cela a-t-il changé avec le temps?

- Avez-vous un mandat/des règlements?
  SONDEZ:
  - Si OUI, où puis-je en obtenir une copie?
  - À quelle fréquence votre mandat/règlements sont-ils révisés?

- Pensez-vous que la **manière actuelle** dont le comité/groupe de travail se régit **fonctionne/ ne fonctionne pas**?
  SONDEZ:
  - Est-ce efficace (c'est-à-dire à produire des initiatives / mesures réussies)?
  - Est-ce participatif (à savoir : travailler en harmonie, chaque représentant a une voix, etc.)?

- Quels éléments de votre comité/groupe de travail **fonctionnent**?
- Selon vous, quels éléments de votre comité **pourraient être améliorés**?

- Comment le comité est-il **financé**?

- Votre comité a-t-il un site Web/des liens vers des ressources du comité?

Discussion guide – French (cont'd)

SECTION 2 – MESURES ÉTABLIES

Les prochaines questions portent sur les **mesures définies** par votre comité/groupe de travail.

Par mesure, on entend toute mesure de gestion mise en œuvre pour répondre à un problème particulier. Ils peuvent inclure des **mesures volontaires ou obligatoires** (réglementations), des normes de diligence (*standards of care*), des directives, un code de conduite, des activités de sensibilisation/d'éducation, etc.

Les **mesures volontaires** sont non législatives. Ce sont des mesures qui ne sont pas exécutoires. Par exemple, les lignes directrices ou les protocoles sont souvent des mesures volontaires et sont conçus pour encourager un changement de comportement afin d'atteindre un résultat cohérent. Ils sont généralement élaborés par consensus afin de garantir la réussite de la mise en œuvre par les différentes parties prenantes. Ils sont généralement accompagnés par diverses activités d'échange de connaissances afin d'accroître la sensibilisation.

Les **mesures obligatoires** sont prescrites dans les législations et, à ce titre, elles imposent des exigences contraignantes et applicables à un particulier.

- Quel **processus** le comité/groupe de travail a-t-il utilisé **pour identifier les problèmes prioritaires** à traiter?

- Quelles **mesures** votre comité/groupe de travail a-t-il **définies** pour traiter les problèmes prioritaires? (Commencez par les volontaires puis obligatoires (à savoir, les règlements)).

- Quels **processus** ont été utilisés **pour développer** ces mesures?
  SONDEZ:
  - Quelles recherches/preuves/connaissances locales/informations/activités, etc. ont été nécessaires?
  - Combien de temps cela a-t-il pris - quelques semaines, mois, années?
  - Certaines mesures ont-elles commencé comme étant volontaires puis sont devenues obligatoires/réglementaires? Si oui, pourquoi? Comment ce processus a-t-il fonctionné?

- Quelles mesures ou idées proposées **n'ont pas fonctionné et pourquoi?**
  SONDEZ:
  - Quelles étaient (sont) les **contraintes** ou les **limites**?
  - Manque de ressources humaines et financières?

- Quelles sont les **mesures** que vous avez mises en place et que vous **jugeriez efficaces? Pourquoi?**
  SONDEZ:
  - Conformité?
  - Innovant?
  - Communiqué efficacement?
  - Échange de connaissances?

- Comment **mesurez-vous le succès** des mesures mises en œuvre par votre comité/groupe de travail?
  SONDEZ:
  - Cohésion / discussion entre les parties prenantes?

- Quelles **dispositions sont nécessaires** pour assurer le succès durable des mesures de gestion?
- Autrement dit, à votre avis, qu'est-ce qui **doit être mis en place** par la structure de gouvernance d'un comité/groupe de travail pour assurer la conformité?
  SONDEZ:
  - Ex. : engagement des parties prenantes, campagnes de sensibilisation, etc.
  - Est-ce que volontaire vs obligatoire joue un rôle? Les mesures volontaires doivent-elles devenir obligatoires si elles ont fait leurs preuves en utilisant des mécanismes volontaires?

- Quelles sont les **problèmes ou questions nouvelles/émergentes** que le comité/groupe de travail est **susceptible de traiter** (adresser) ou traitera dans la prochaine année?
  SONDEZ:
  - Quelles mesures comptez-vous (ou espérez-vous) développer?

CONCLUSION

- Avant de terminer l'entrevue, y a-t-il **d'autres idées/recommandations** que vous souhaiteriez partager et qui, selon vous, **pourraient être utiles** à **WWF Canada**, Transport Canada ou à **d'autres comités**, groupes de travail ou programmes **similaires**?

Merci beaucoup de votre participation!

Contact

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