

Mitigating the risk of ship strikes through a collaborative approach

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GREEN MARINE

A **voluntary certification program** to reduce environmental footprint of marine operations by

- exceeding regulatory compliance
- promoting a culture of continuous improvement

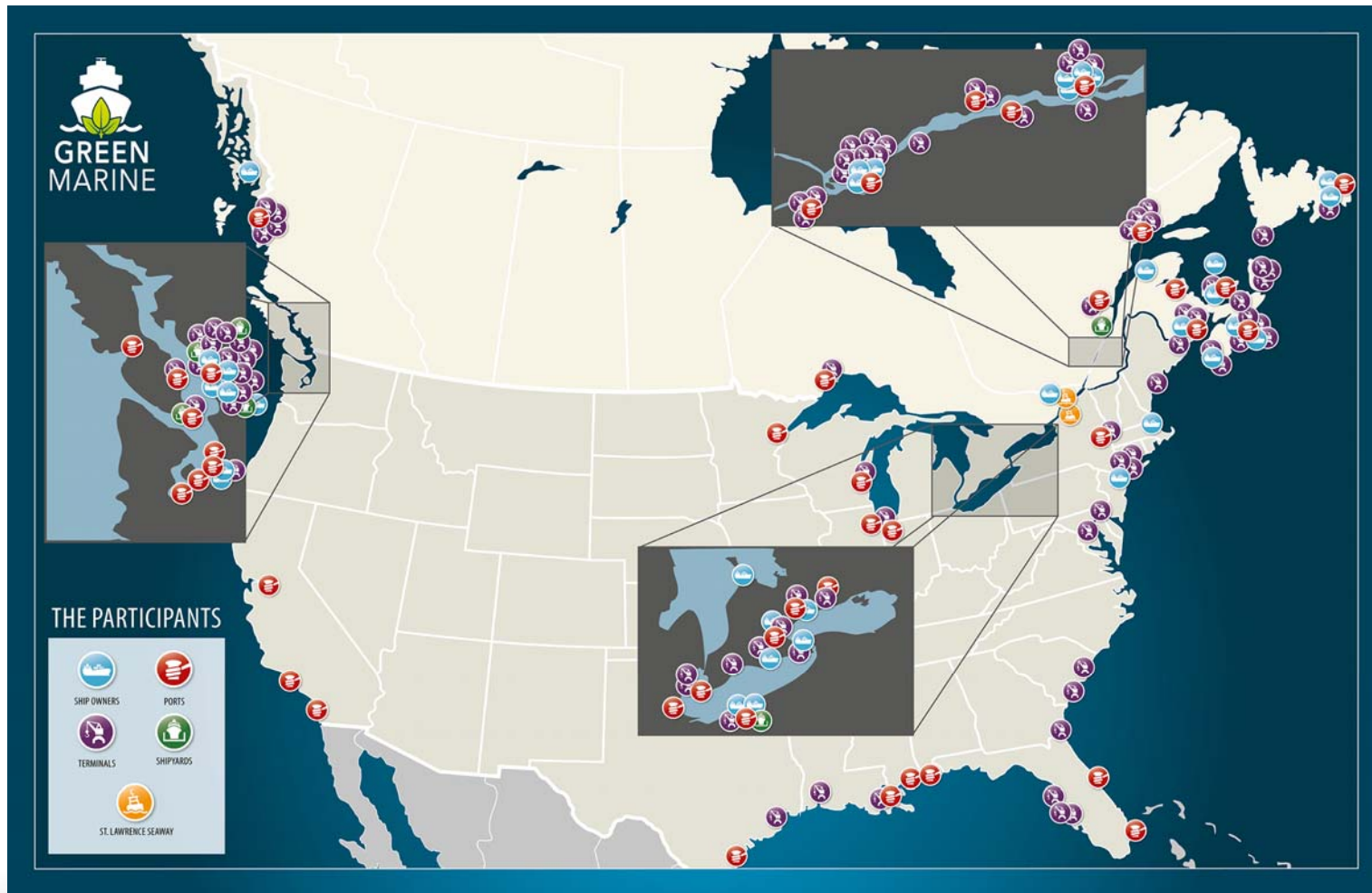


A **benchmarking tool** to measure performance

A **partnership** initiative involving stakeholders



128 PARTICIPANTS IN U.S. & CANADA



12 PERFORMANCE INDICATORS

ENVIRONMENTAL PERFORMANCE INDICATORS

PERFORMANCE INDICATORS	SHIP OWNERS	PORTS & SEAWAY	TERMINALS & SHIPYARDS
Aquatic invasive species			
Community impacts			
Dry bulk handling and storage			
Environmental leadership			
Garbage management			
Greenhouse gas emissions			
Oily water			
Pollutant air emissions NOx			
Pollutant air emissions SOx & PM			
Prevention of spills and leakages			
Underwater noise			
Waste management			

1

Monitoring of regulations

2

Best practices

3

Formally adopted management plan and a quantitative measurement of environmental impacts

4

Advanced technologies and/or reduction targets

5

Excellence and leadership



Shipping Federation of Canada



GREEN MARINE & WHALES

PERFORMANCE INDICATOR: UNDERWATER NOISE (ship owners)

- 1 Monitoring of regulations
- 2 Conduct regular hull cleaning and propeller blade maintenance; determine the cavitation inception speed (CIS) for each vessel in the fleet; **review the list of sensitive areas** in Canadian and US waters.
- 3 **Actively participate in providing whale sighting data**; develop and adopt a Marine Mammal Management Plan (MMMP) in order to reduce the potential adverse effects of vessels, especially within known sensitive marine areas.
- 4 Incorporate applicable vessel quieting technologies during re-fits and new vessel construction; work with ports or use a dedicated hydrophone to estimate relative ship noise levels for at least one vessel in their fleet; **support / collaborate on scientific research**
- 5 Work with ports or use a dedicated hydrophone to estimate relative ship noise levels for 15% of the vessels in their fleet; proceed to an in-depth analysis of vessel noise footprint on at least one ship in order to identify and reduce main noise sources.



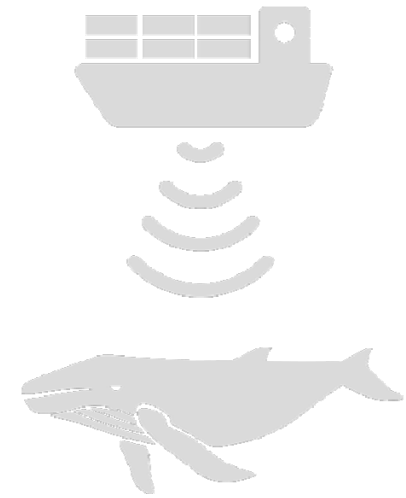
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GREEN MARINE & WHALES

Green Marine also addresses indirectly ship strikes through other criteria in its program:

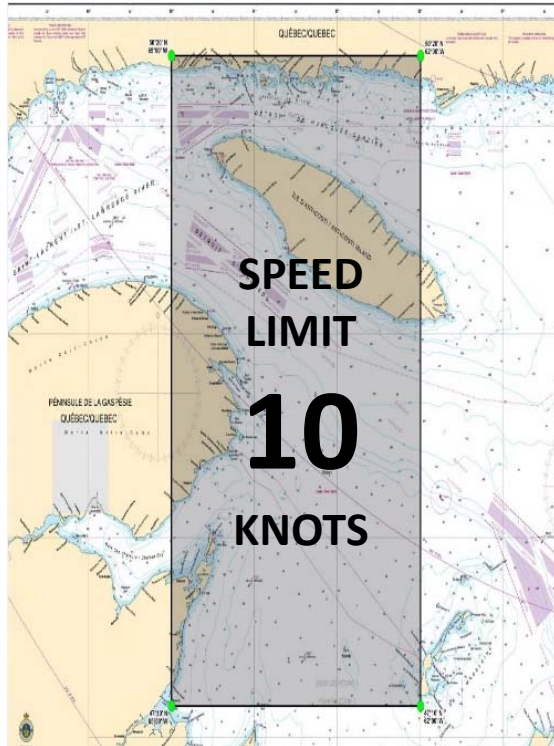
- Voluntary slowdown measures
- Air emissions reduction
- Whale watchers training program
- Rerouting
- Raising awareness of mariners



And through its implication in different national and binational working groups – East Coast and West Coast



NARW - 2017



- Federal government managed in reaction to a crisis
- Static speed limit was imposed throughout a huge area from August to January
- Significant impacts on some sectors of the industry:
 - The static area affected major trade corridors; Cruise, ferries, cargo vessels supporting the St. Lawrence and Great Lakes economies
 - The static speed represented additional transit time of up to 10 hours for certain sectors



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NARW - 2017



Government
of Canada

Gouvernement
du Canada

Industry representatives



Scientific community



AS A RESULT, shipping industry stakeholders asked CAN Government for the establishment of a formal workgroup and diligently work in partnership with NARW scientists:

- Shared the concerns for survival and recovery of NARW
- Worked on an approach that could deliver on both:
 1. Whale protection
 2. The need for effective and safe marine transportation within this vital commercial corridor

SHIPPING INDUSTRY WANTED TO BE PART OF THE SOLUTION



NARW - 2017

Considerations were given to:

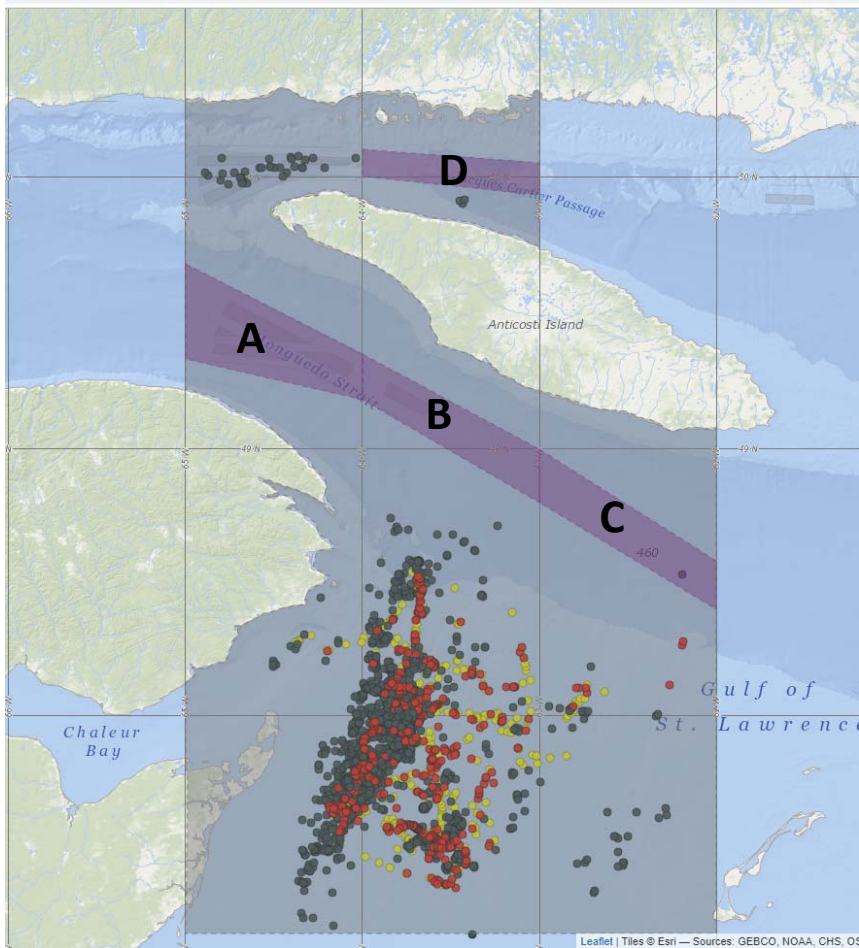
Based on the best data we had, the “known high aggregation areas” were mostly outside of shipping corridors, so we worked on:

- Focussing static speed limits on “known high aggregation areas”
- Managing shipping corridors – outside of the aggregation areas – through dynamic management, allowing vessels to navigate at normal operational speed when NARW are not observed (dynamic management)
- Inspired by the U.S. model – but refined for the Canadian context

Industry’s proposal fed into the management approach that the Canadian government implemented



2018 Dynamic Management

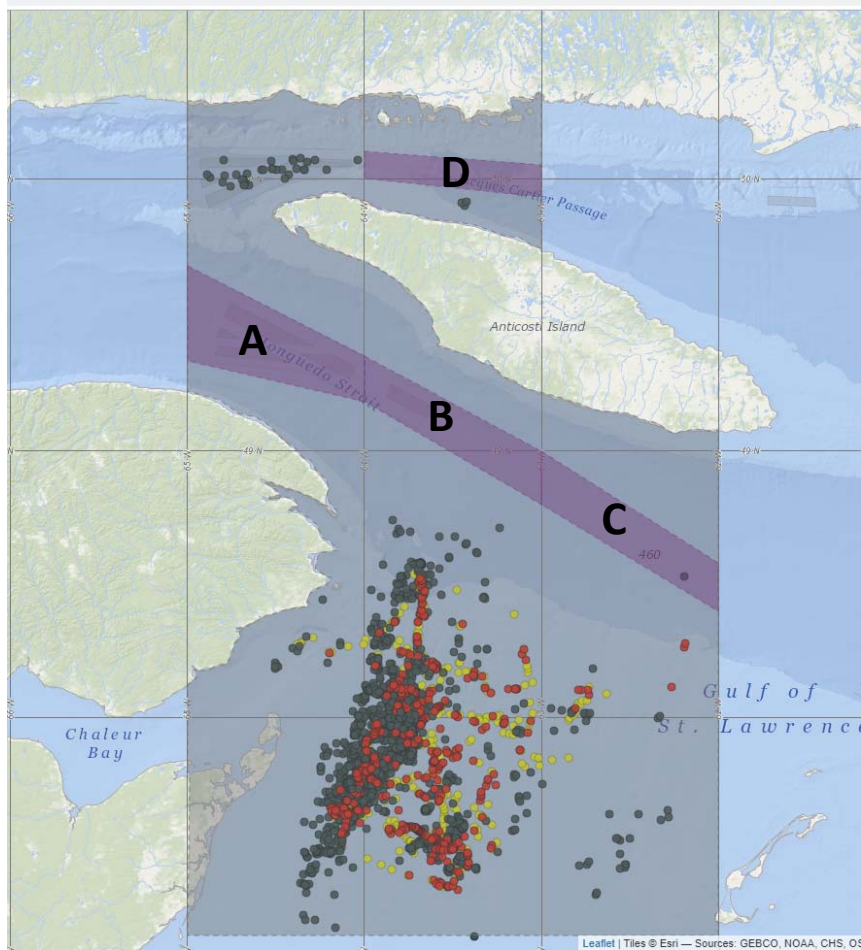


NARW confirmed sightings for 2014, 2015, 2016, 2017, and 2018 (up to October 28) – Source: Whalemapp – Dalhousie

- 2018 NARW management approach:
 - A static speed restriction zone (shaded area)
 - Dynamic management zones in the shipping lanes (A,B,C,D);
 - Vessels allowed to navigate at normal speed when no whales observed
 - A temporary 15-day mandatory slow down to be activated in dynamic sector(s) upon observation of ONE NARW
 - Dynamic management supported by aerial surveillance : Requires two flights per 7 days without observation to allow vessel to navigate at normal speed



2018 Dynamic Management



NARW confirmed sightings for 2014, 2015, 2016, 2017, and 2018 (up to October 28) – Source: Whalemapp – Dalhousie

No strategy will ever deliver zero risks

- Only 1 NARW observed in shipping corridors based on available data since 2015
- No NARW have yet been observed in the dynamic zones A,B,C,D in 2018
- Since April 28, **temporary speed restriction activated 25% of the time** (Activations due to unsuitable flight conditions; None due to actual presence of whales)



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High Compliance

Over 4 000 transits from April 28 to October 24, 2018:

- Domestic and international cargo vessels, ferries and cruise ships
- **Compliance rate** with the dynamic Management measure is **over 99%**



2018 Dynamic Management

Lessons learned from 2018 dynamic management:

- Dynamic management is working BUT we can make it even more efficient
- In 2018, managing dynamic zones depends **solely** on aerial surveillance and if planes cannot fly, the speed limit is applied as a precaution
- A **combination of detection technologies** is **needed in the dynamic sector** to further improve mitigation measures.



Transport Canada



Ocean Tracking Network



JASCO



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NEXT STEP - Enhancing Detection Capacity

- Deploying **acoustic monitoring** in the “dynamic shipping lanes” is a much-needed step:
 - Will improve both efficiency of and confidence in the dynamic management approach
 - The performance of acoustic monitoring in GOSL is proven and it runs continuously; not subject to daylight only (as visual)
 - Urging the Canadian government to undertake pilot project for 2019 – Deploying **near real time acoustic detection technologies** in dynamic **zones A & D, in addition to** aerial surveillance



SHIPPING FEDERATION OF CANADA

- The Shipping Federation of Canada is the **voice of the owners, operators and agents** of ships involved in Canada's world trade
- Members include **shipping companies from all sectors**: dry bulk, liquid bulk, container and cruise
- One of its main role is to **disseminate information** to members and to support compliance
- Central objective to work towards a safe, efficient, competitive, **environmentally sustainable** and quality-oriented marine transportation system.



Industry is Invested

Shipping Industry is a constructive and proactive partner in managing the threat to NARW:

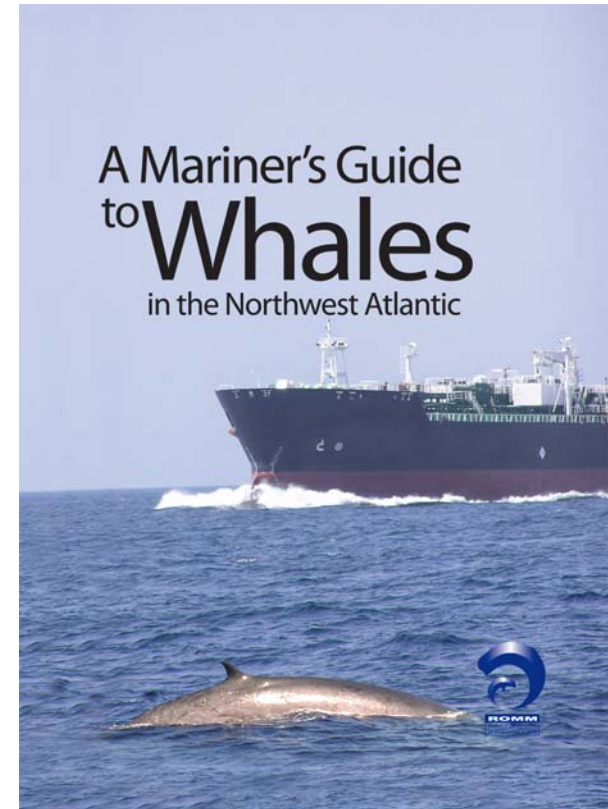
- We initiated the **development of a dynamic management approach** grounded on both science AND operational / commercial realities
- Shipowners, ship agents and industry representatives participate in **bi-weekly conference calls** with Canadian government to support implementation of the dynamic approach
- Joint Industry/Science/Government NARW **Technical and Advisory Working Group** looking at management for 2019 and beyond



Industry is Invested

Additional stewardship actions:

- Industry-led development of a ***Mariner's Guide to Whales in the Northwest Atlantic*** – collaboration between the ROMM and Shipping Federation of Canada
- Shipowners participating in the development of various initiatives for development of **real-time whale time alerts** in Canadian waters
- Trained **whale observers** on board some vessels; Working to extend training tools to be accessible for domestic and international fleet



Industry is Invested

International shipping under a dynamic management approach:

- Early information is key to voyage planning (at previous ports – often 10-15 days in advance)
- The players:
 - Ship owners (operational and environmental departments in headquarters) and crew
 - Ship agents relaying information to and answering questions from vessels
 - Shipping Federation Canada as the association representing both groups:
 - We are in continuous contact with our members to ensure awareness and access to latest information on dynamic management
 - “Regular versus irregular” traders – 55,000 vessels in the world fleet
 - We work on both policy and compliance
- Once vessels in Canadian waters: CCG NOTSHIP in advance of entry into the dynamic zones is an essential tool



Thank you!



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