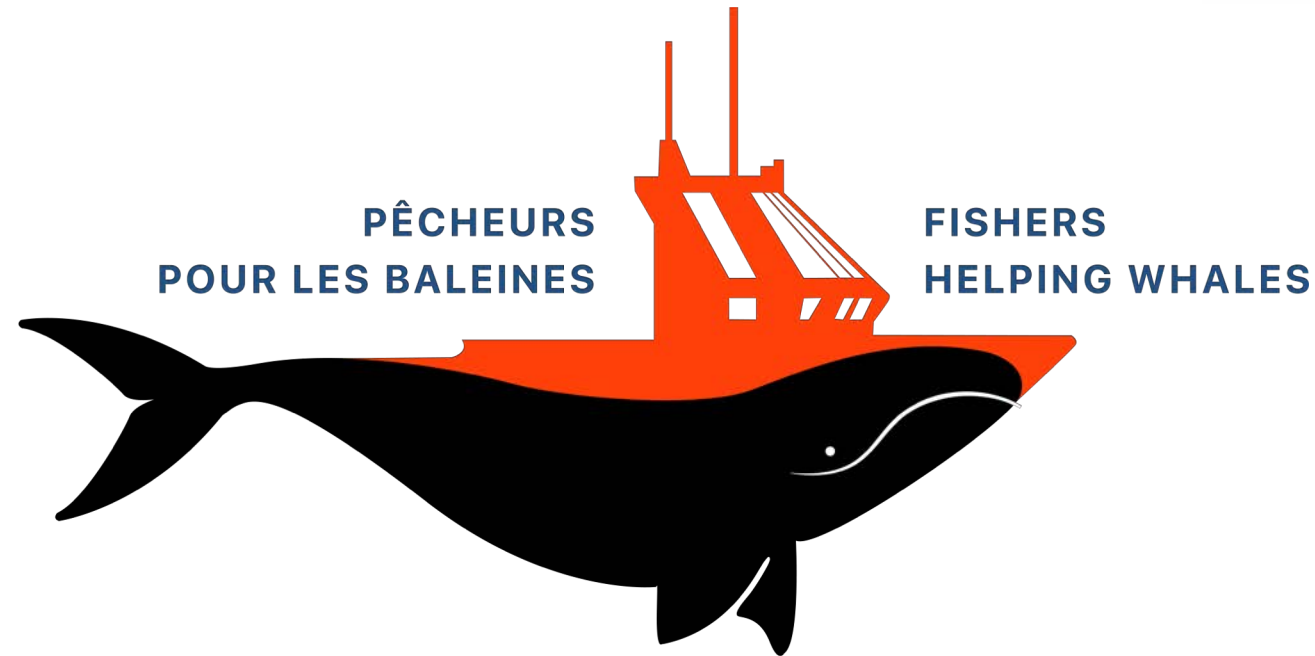


CO-EXISTING IN THE GULF OF ST. LAWRENCE

AN INTEGRATED APPROACH WITH CRABBERS, FOR WHALES



Philippe Cormier, Robert Haché, **Lyne Morissette**, Martin Noël & Yvon Therriault

 **CORBO**
ENGINEERING



CNE



Association des
pêcheurs professionnels
crabiers acadiens inc.

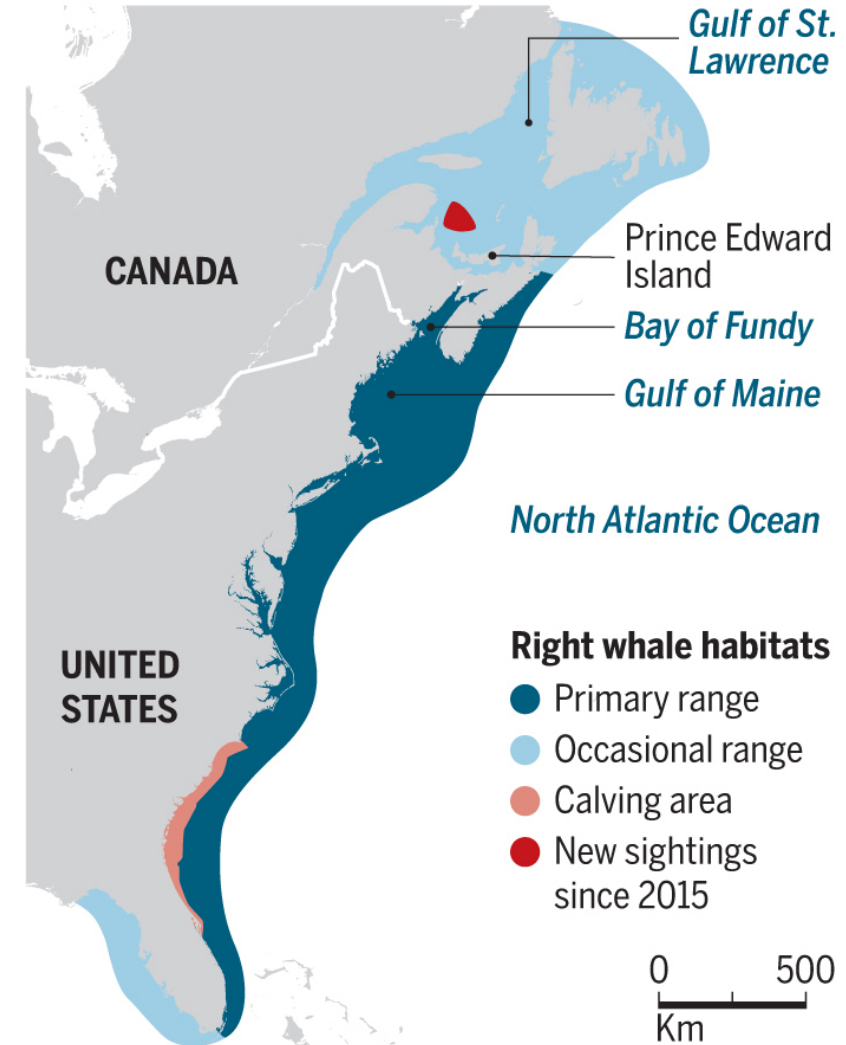


 **New Brunswick**  **Canada**

NARW IN THE GULF OF ST. LAWRENCE

Into the danger zone

Recently right whales have been seen much more often in the Gulf of St. Lawrence, where they have been killed by ships and fishing gear.



Source: Stokstad 2017 - Science



NOAA

FISHERIES SERVICE
Northeast Fisheries Science Center
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NEFSC

Satellite

Interactive North Atlantic Right Whale Sightings Map

This map should not be used for management purposes as sightings are not effort corrected. Visit NARWC.ORG for further information regarding data access.



2008





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2009



Google

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2010





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2011





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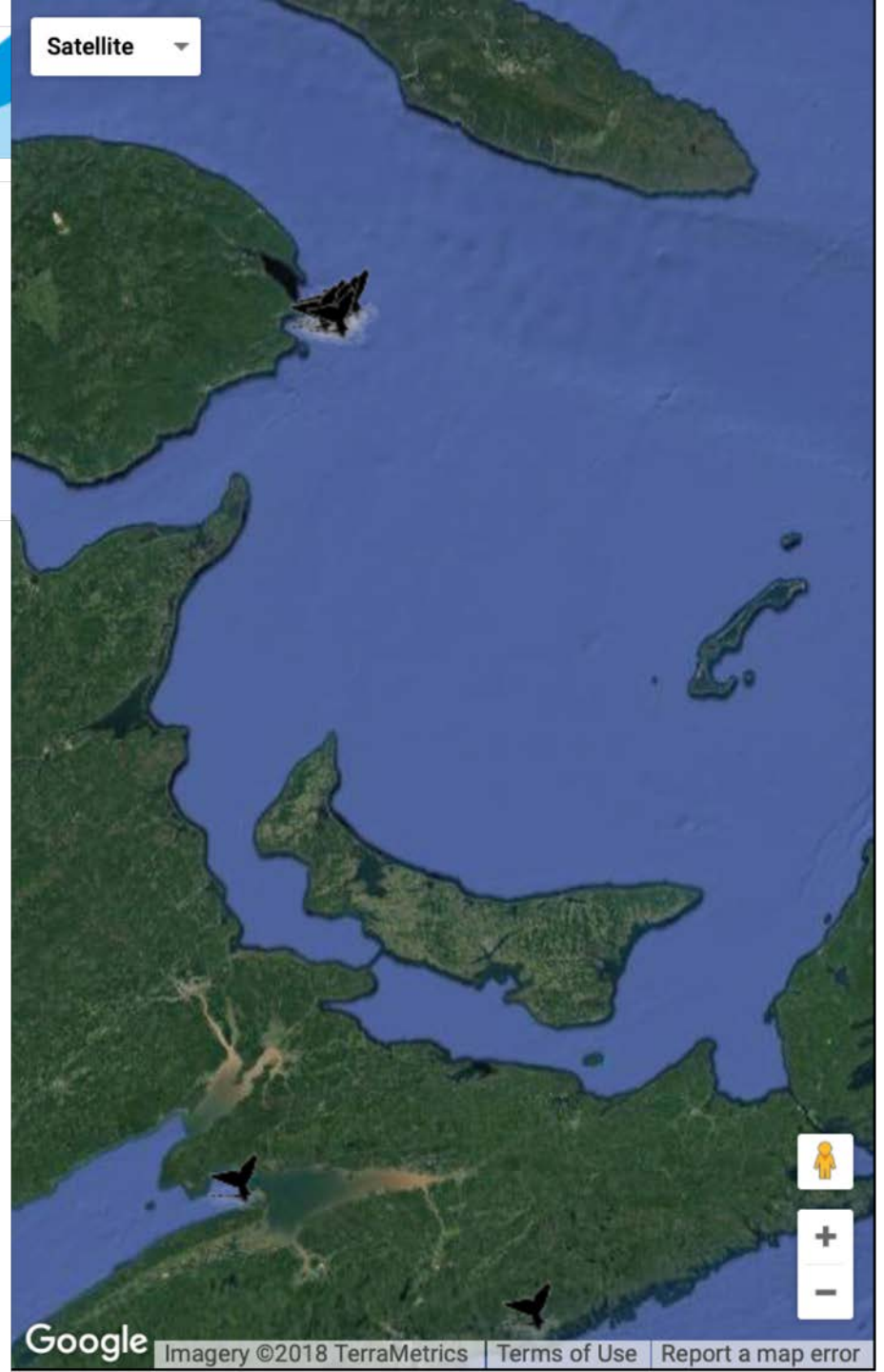
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2012



Google

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2013





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2014





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2015





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2016





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2017





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NEFSC

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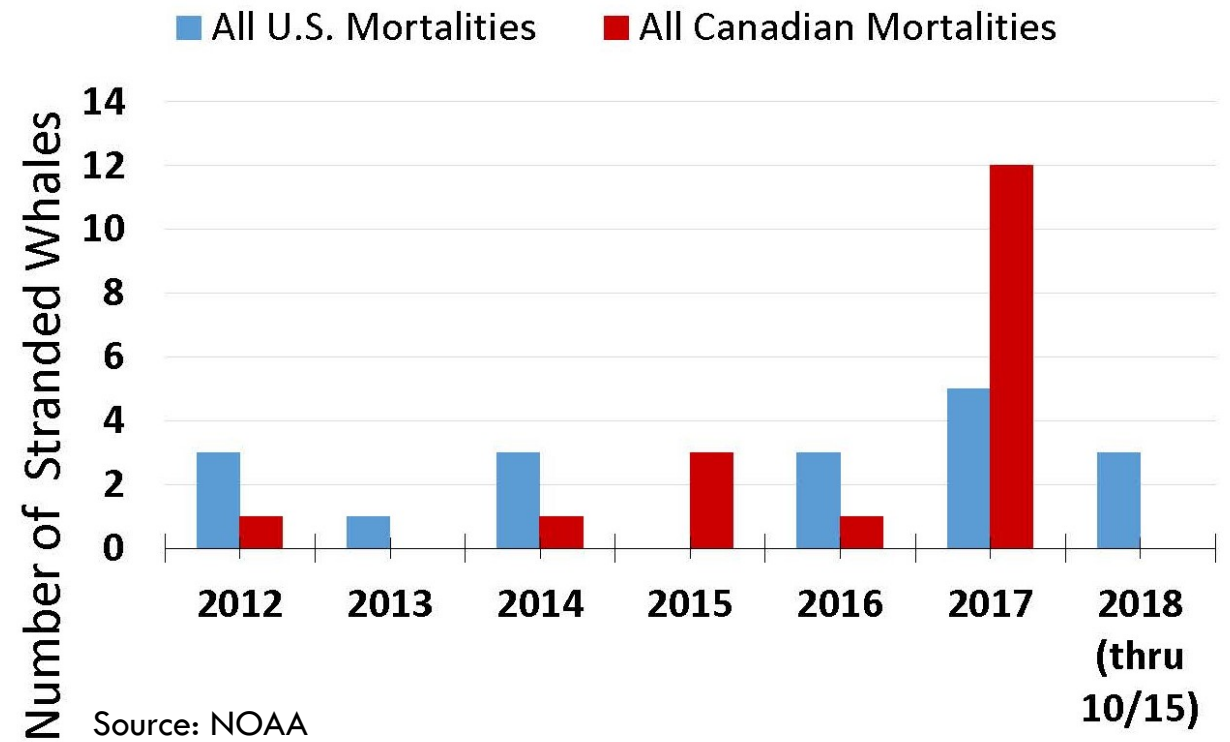
2018



2017 MORTALITY

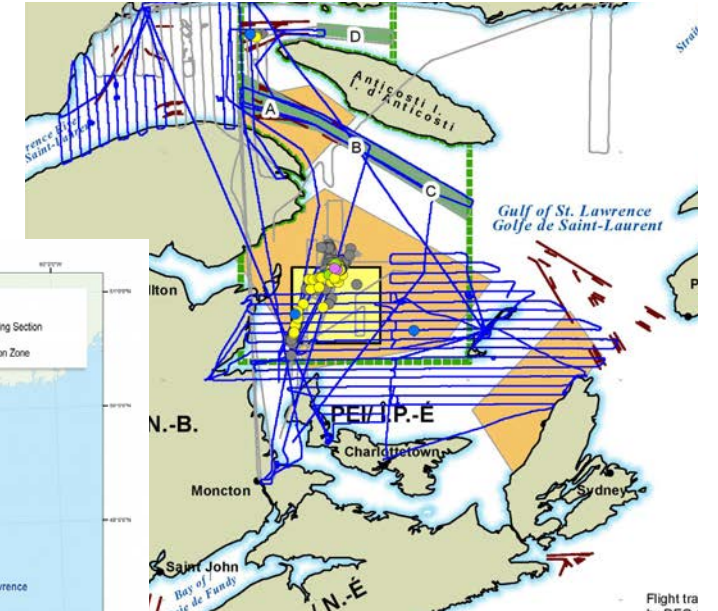
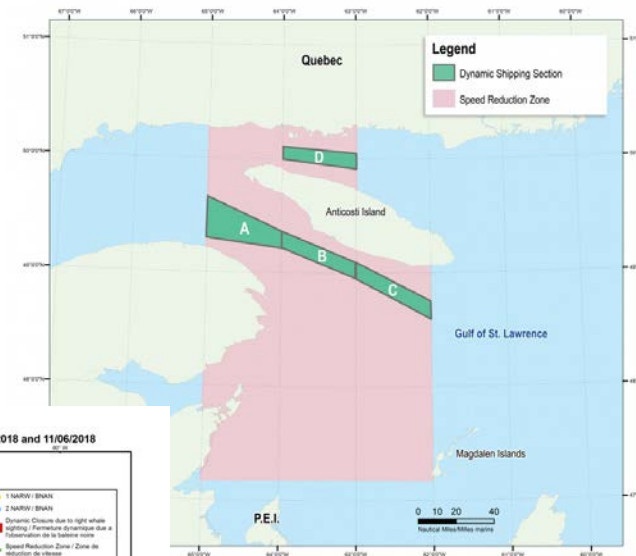
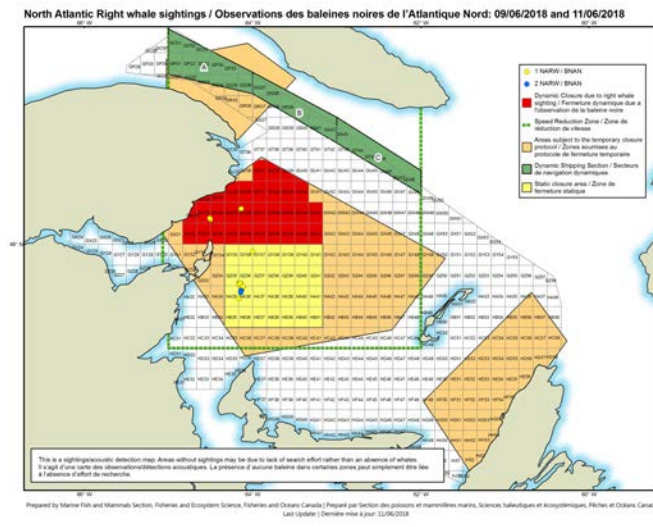


- 12 dead NARW in the Gulf (6 necropsies)
 - 1 chronic entanglement in fishing gear
 - 4 blunt trauma
 - 1 unknown
- 5 live entangled whales
 - 4 in snow crab gear
 - 1 unknown



WHAT WAS DONE

- Increased surveillance
- Speed reduction zones
- Fishing closures
- Meetings
- Meetings
- Meetings
- Meetings...



A TWO STEP PROCESS

2



February 15, 2008 Courtesy FWC

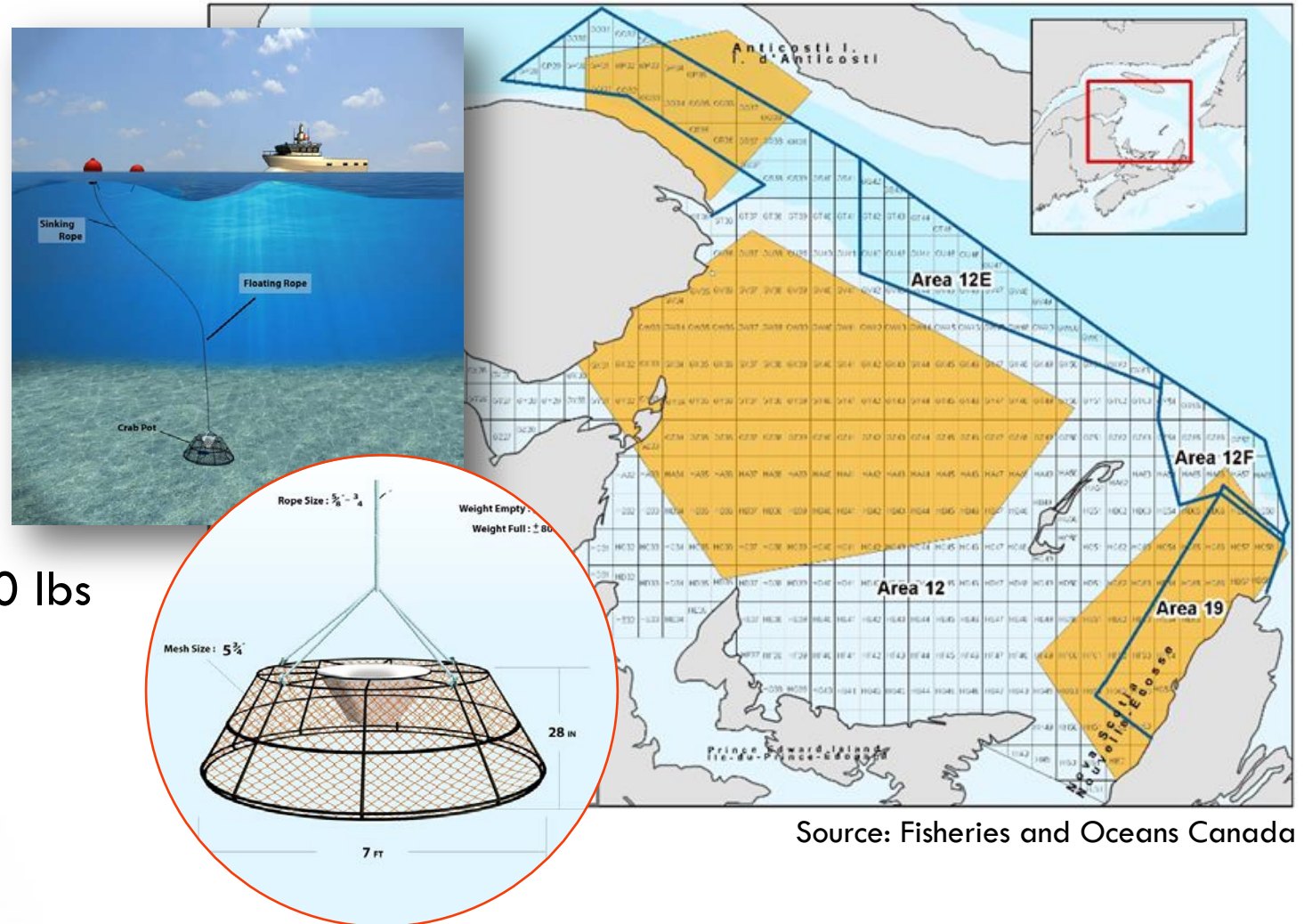


1



OVERVIEW OF SNOW CRAB FISHERY

- Approx. 500 licences
- Approx. 30,000 pots
- Average rope length: 75 ftms
- Average fishing depth: 40 ftms
- Average vessel length: <65 feet
- Average fish hold capacity: 30,000 lbs
- Average fishing trip: 48 hours
- Season: April - June



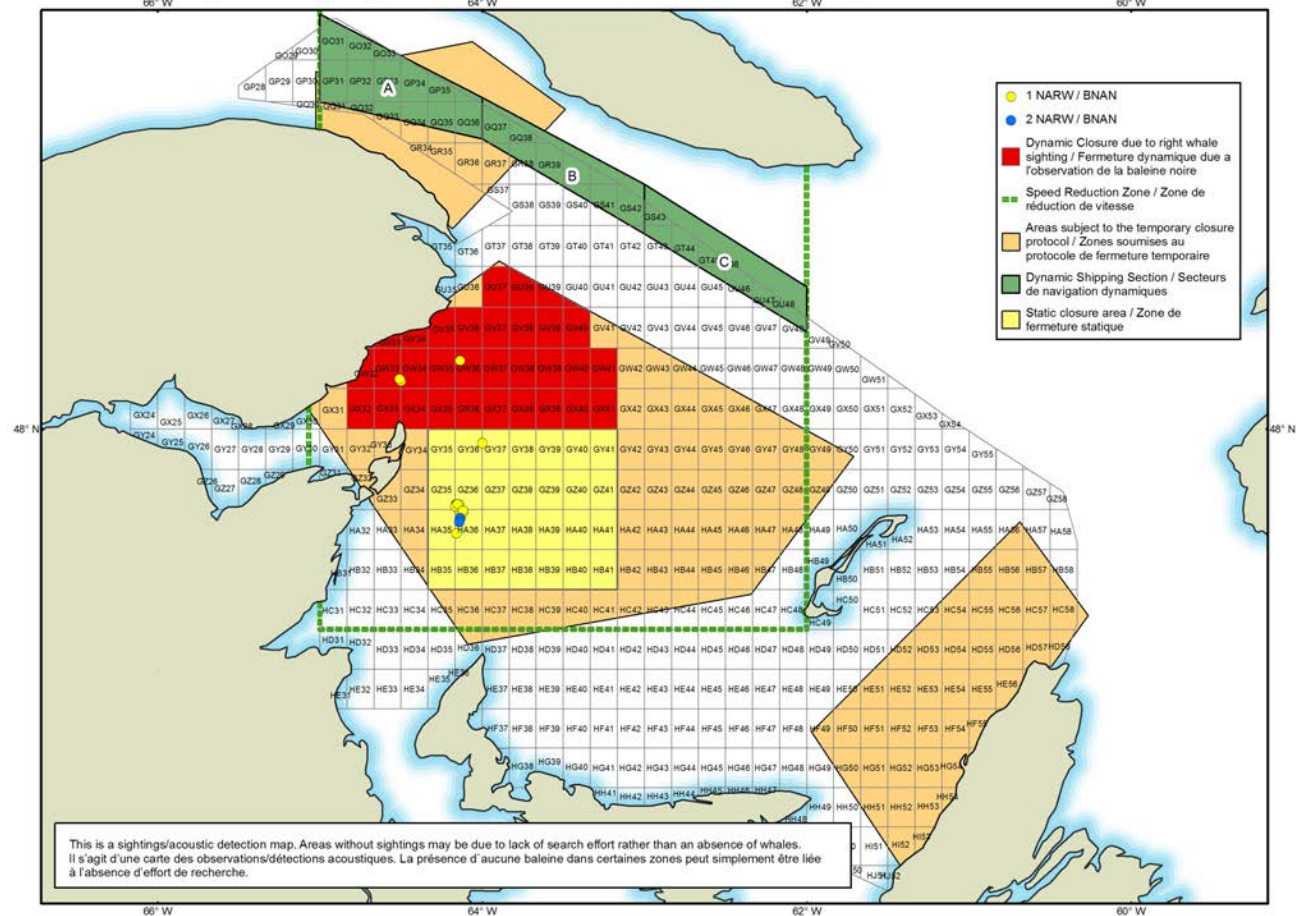
Source: Fisheries and Oceans Canada



1. MANAGEMENT

- Static closure (yellow)
- Dynamic closure (red)
 - One whale closes the zone
 - 15 days
 - 48h to remove the traps
- Mandatory reporting of NARW on fishing grounds

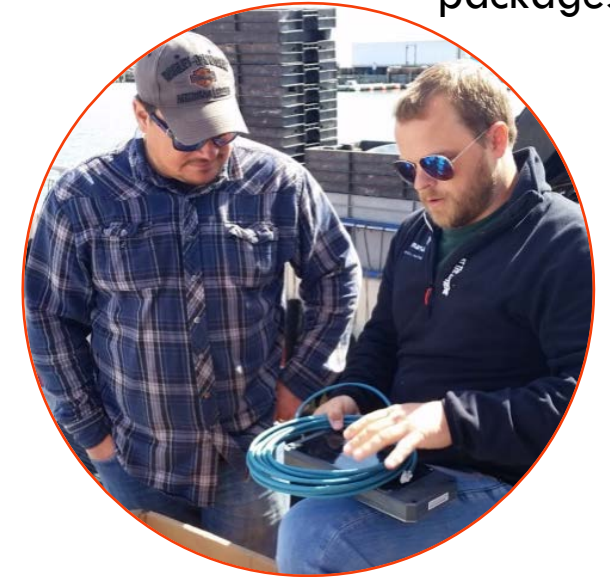
North Atlantic Right whale sightings / Observations des baleines noires de l'Atlantique Nord: 09/06/2018 and 11/06/2018



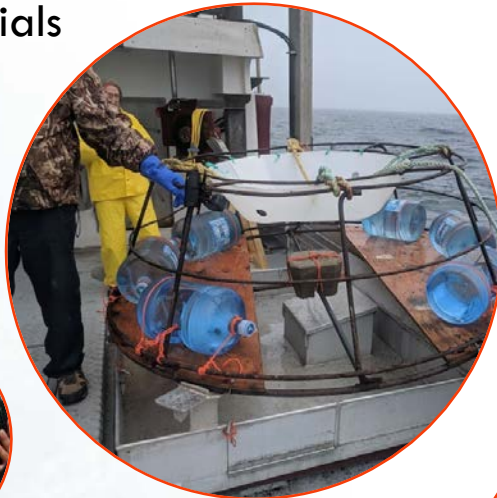
Prepared by Marine Fish and Mammals Section, Fisheries and Oceans Canada | Préparé par Section des poissons et mammifères marins, Sciences halieutiques et écosystémiques, Pêches et Océans Canada
 Last Update: | Dernière mise à jour: 11/06/2018

TECHNOLOGY FISHERS FOR WHALES PROJECT

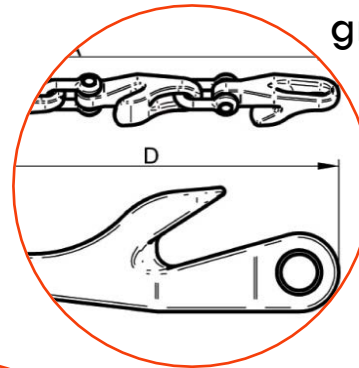
#9: Electronic monitoring packages



#8: Smart snow crab trap – sea trials



#12: Recovery grapple



#7: RopeLess buoy – fishermen training



#7: Sea trials



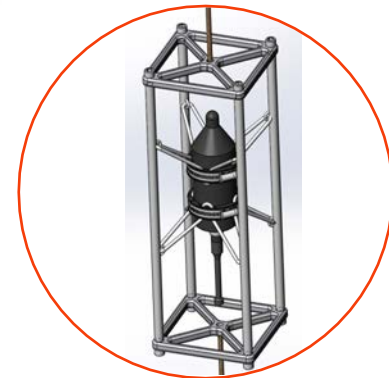
#7: Flume tank testing



#11: Rope ID marking



#2: whale ID handout



#10: Hydrophones on traps

KNOWLEDGE

- For management as well as technology, fishermen have a great deal of knowledge that would be taken into account
- RISK assessment should include socio-economic aspects

“Fishermen are the experts of our industry; I think it’s time we have a voice”

“As fishermen we are biologists, ecologists; we just don’t record the data the same way”

COMMUNICATION

COLLABORATION

INVOLVEMENT

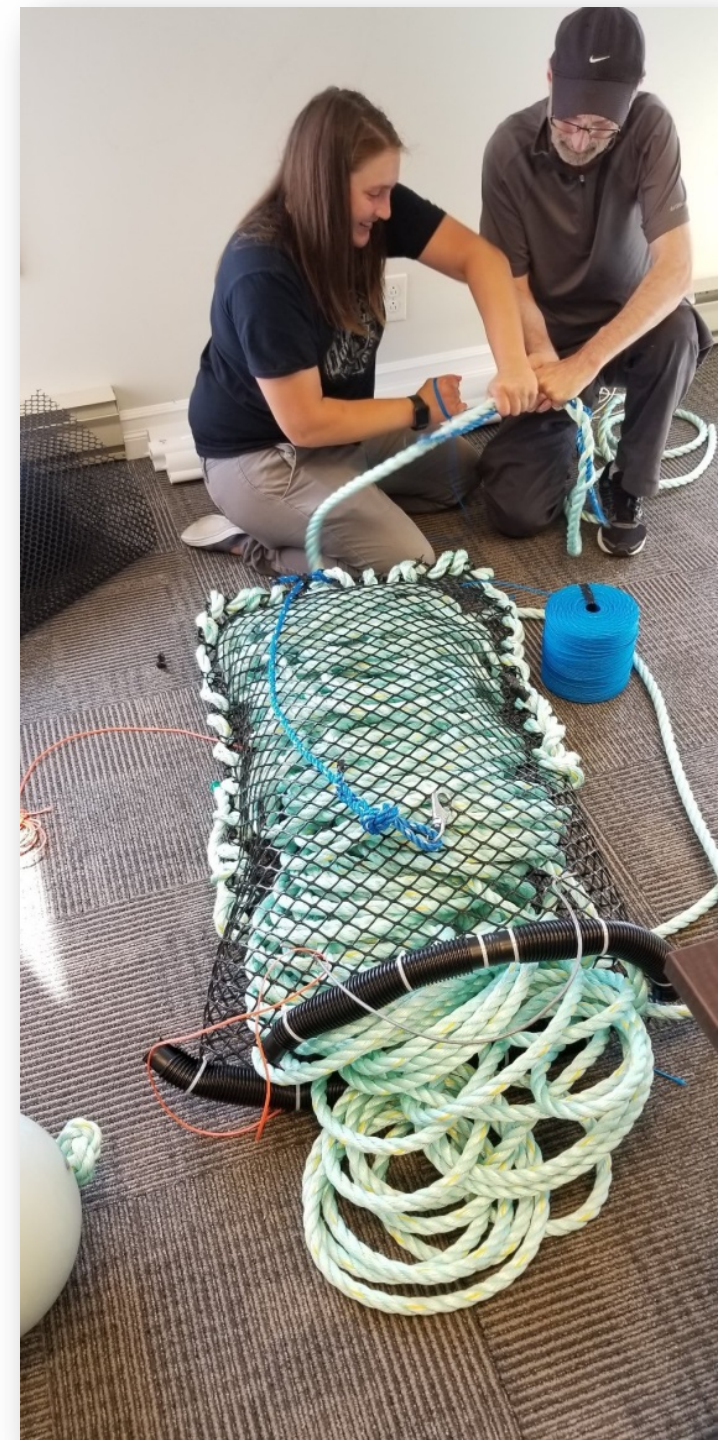
COEXISTING

TRUST

PARTNERSHIP

TRANSPARENCY

CO-CREATION



TOGETHER



CANADIAN WILDLIFE
FÉDÉRATION
CANADIENNE DE LA FAUNE



ENGINEERING

SCIENCE
ADVISORY



CNE



FISHERIES
MANAGEMENT

PÊCHEURS
POUR LES BALEINES

FISHERS
HELPING WHALES

ACADEMIA



CAPTAIN	ASSOCIATION
Stéphane Ferron	ACA
Stéphane Chiasson	CNE
Gilles A. Noel	ACA
Pierre Haché	APPCA
Rémi Guignard	APPCA
Guy Noël	APPCA
Donald Haché	ACA
Mario Haché	ACA
Alfred Mallet	ACA
Réjean Noel	ACA
Jimmy Lanteigne	APPCA
Lévi Noël	APPCA
Adrien Noël	CNE
Hubert Noël	CNE
Rémi Chiasson	CNE

GEAR
SUPPLIERS

EMERGING
TECH
ENTERPRISES



THERE ARE NO BAD GUYS



INSPIRATION

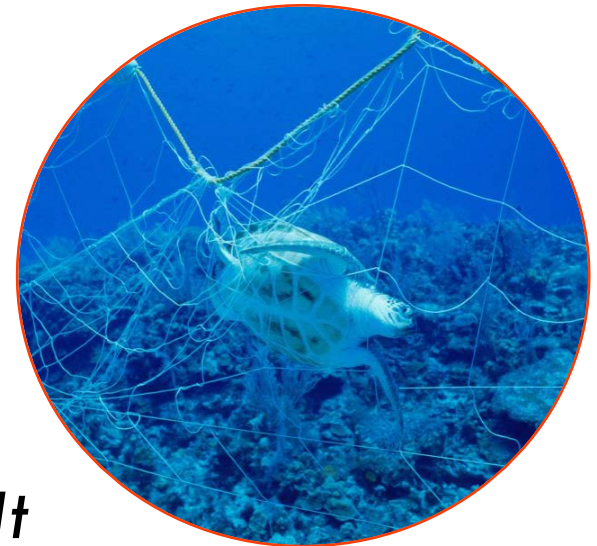
- Collaboration, concertation, together, coexisting.
- Examples where it works:

“Fishermen don’t want bycatch. It breaks our gear and it’s expensive. So, we like to avoid it.”

“Cooperative ecosystem management is the best way to foster joint gains in environmental protection and economic growth over the long term.”

“With fishermen-generated ideas, we design tools that assist the fleet in mentoring other fishermen and improving fishing practices.”

“Save the oceans and feed the world.”



COLLABORATION — FOR THE SURVIVAL OF ALL



COMMUNICATING WHALE SCIENCE & SUSTAINABLE FISHERIES



#FishersHelpingWhales

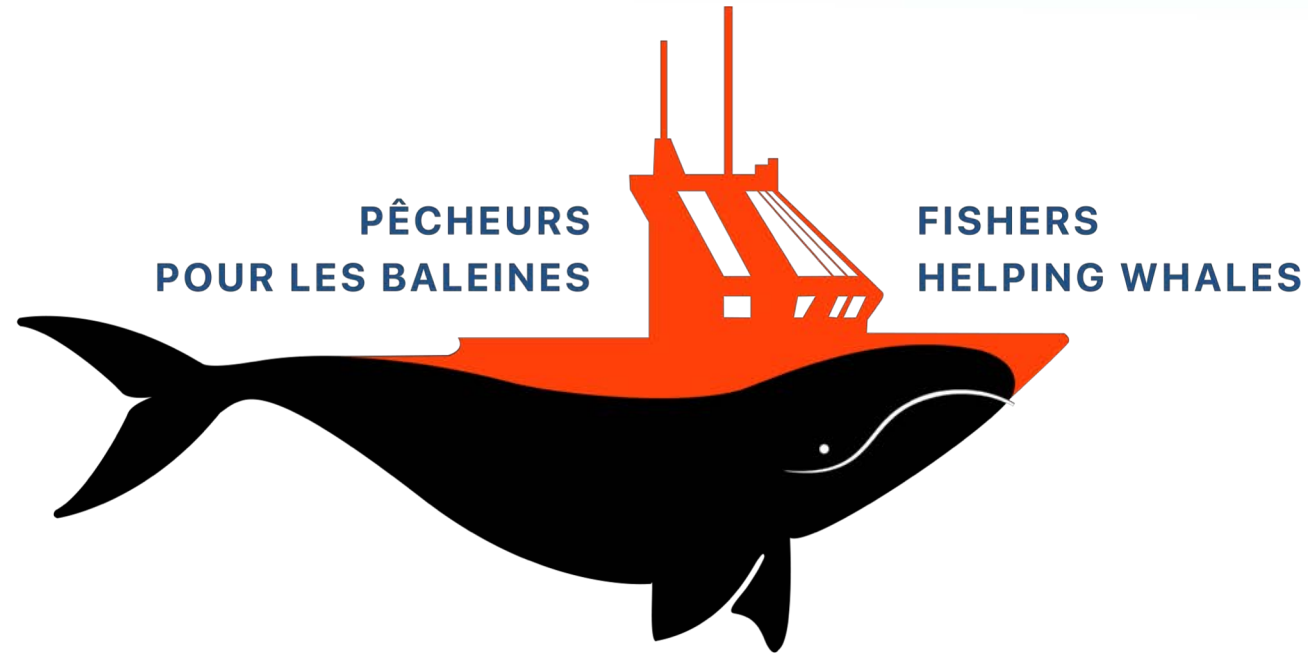
#CoexistingInTheGulf

#WhalesAndFishersTogether

#TogetherForASustainableGulf



THANK YOU



lyne@m-expertisemarine.com



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