

# Whales, Fisheries, and Whales and Fisheries.

Sean Brilliant,  
Senior Conservation Scientist,  
Canadian Wildlife Federation



# Fisheries



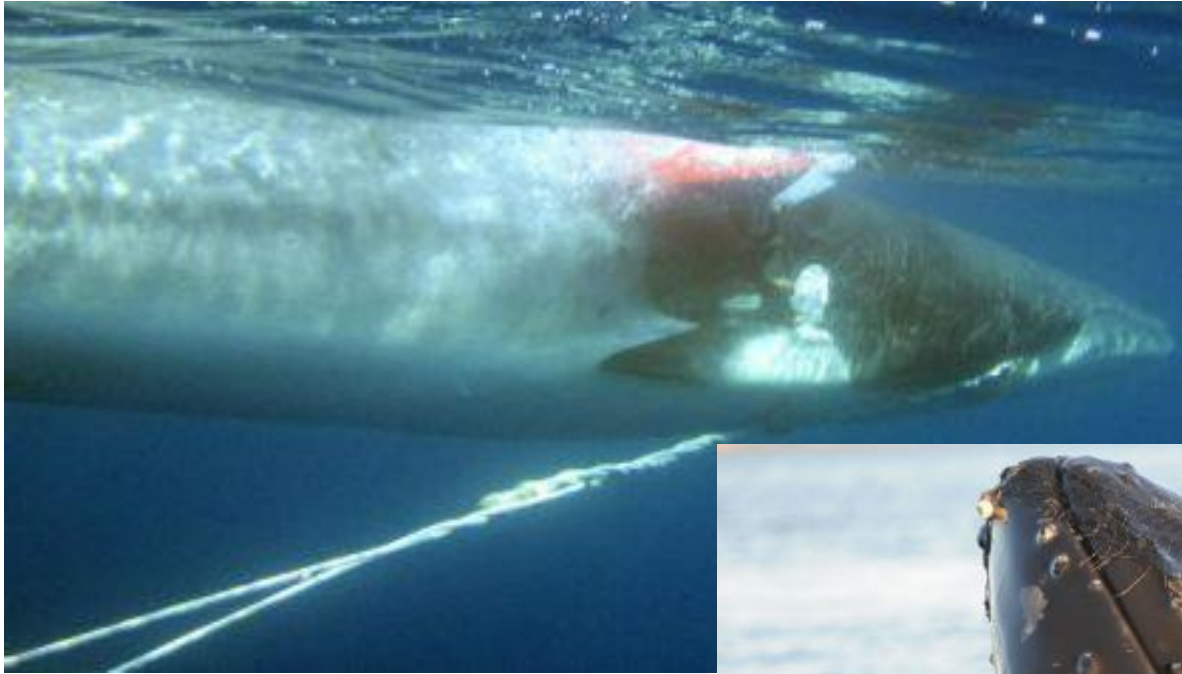
<http://aspybay.ca> ©



Nobody wants this.



# The 'Why?'



Loss of gear  
= \$

Catching whales,  
not fish  
= \$



# The 'Why?'

## NOAA Fisheries Establishes International Marine Mammal Bycatch Criteria for U.S. Imports

NOAA Fisheries **issued a final rule** implementing import provisions of the **Marine Mammal Protection Act** (MMPA) in August 2016.

The United States is a global leader in marine mammal conservation and sustainable fisheries, with U.S. fisheries abiding by some of the world's most robust conservation practices, including measures to reduce marine mammal bycatch—a global threat to many populations of marine mammals.

This **rule** implements aspects of the Marine Mammal Protection Act that aim to **reduce marine mammal bycatch** associated with international commercial fishing operations, by requiring nations exporting fish and fish products to the United States to be held to the same standards as U.S. commercial fishing operations.

The **rule** also establishes the criteria for evaluating a harvesting nation's regulatory program for reducing marine mammal bycatch and the procedures required to receive authorization to import fish and fish products into the United States. To ensure effective implementation, the **rule** establishes a 5 year exemption period to allow foreign harvesting nations time to develop, as appropriate, regulatory programs comparable in effectiveness to U.S. programs.

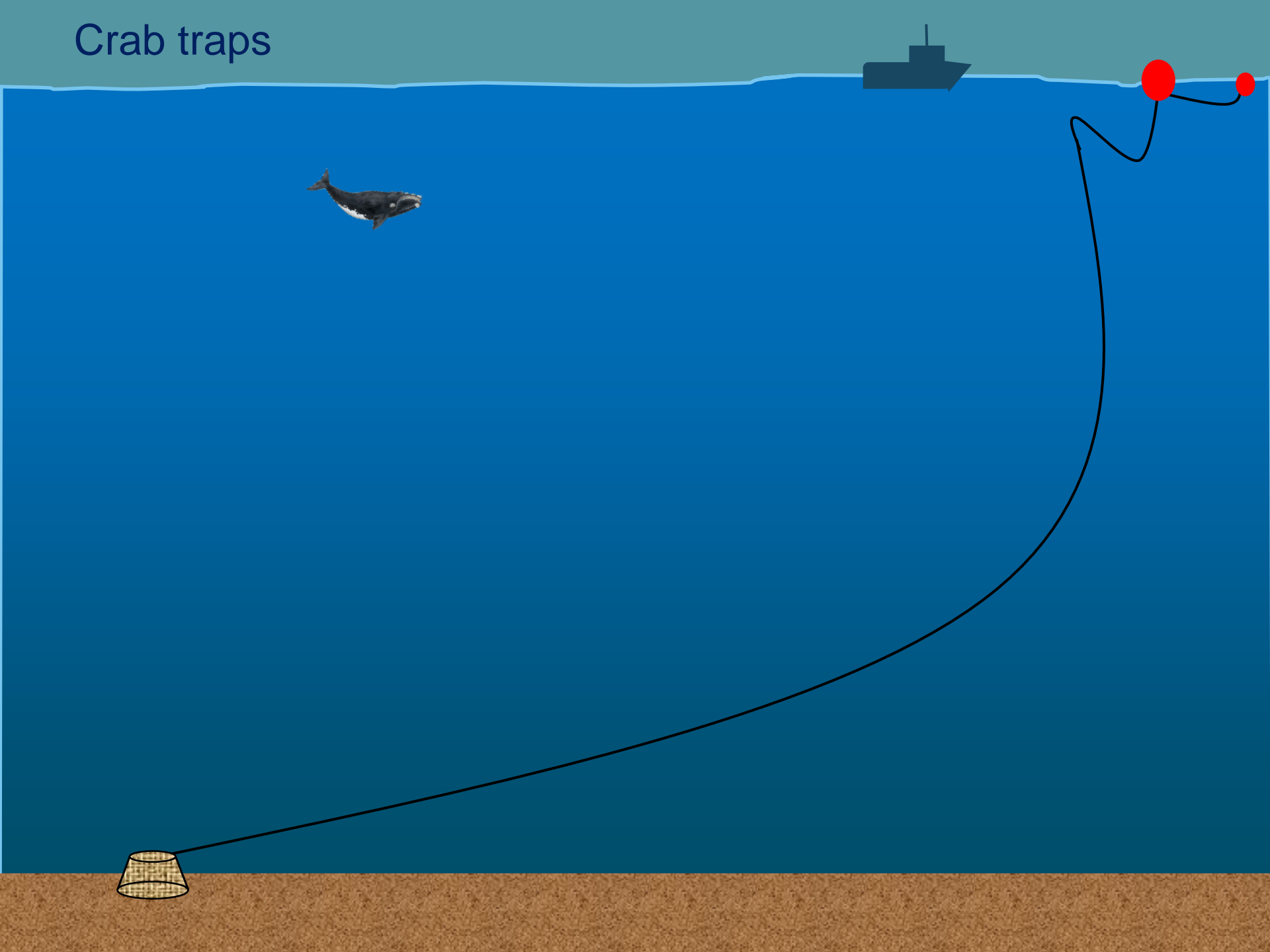
NOAA Fisheries has a long history of working collaboratively with other nations to address **international marine mammal conservation**, and has provided technical assistance to other countries in support of their marine mammal conservation efforts. This **rule** marks a significant step forward in the global conservation of marine mammals and expanding international collaboration for best stewardship.

NOAA Fisheries filed a **Federal Register Notice** seeking information on foreign commercial fishing operations that export fish and fish products to the United States and the level of incidental and intentional mortality and serious injury of marine mammals in those fisheries in January 2017.



\$\$

# Crab traps





# 1. Who should be involved?







A background image of a fishing boat deck with several crew members in work clothes. One person is in the foreground on the left, another on the right, and a third in the center. A large metal cage is visible in the middle ground. The scene is outdoors on a boat.

## **Fishermens' Rules:**

### **1) Whatever we change must make a difference.**

*We will only support changes that will work.*

### **2) Want only the changes that are necessary; look local.**

*Don't make changes to everything, everywhere.*

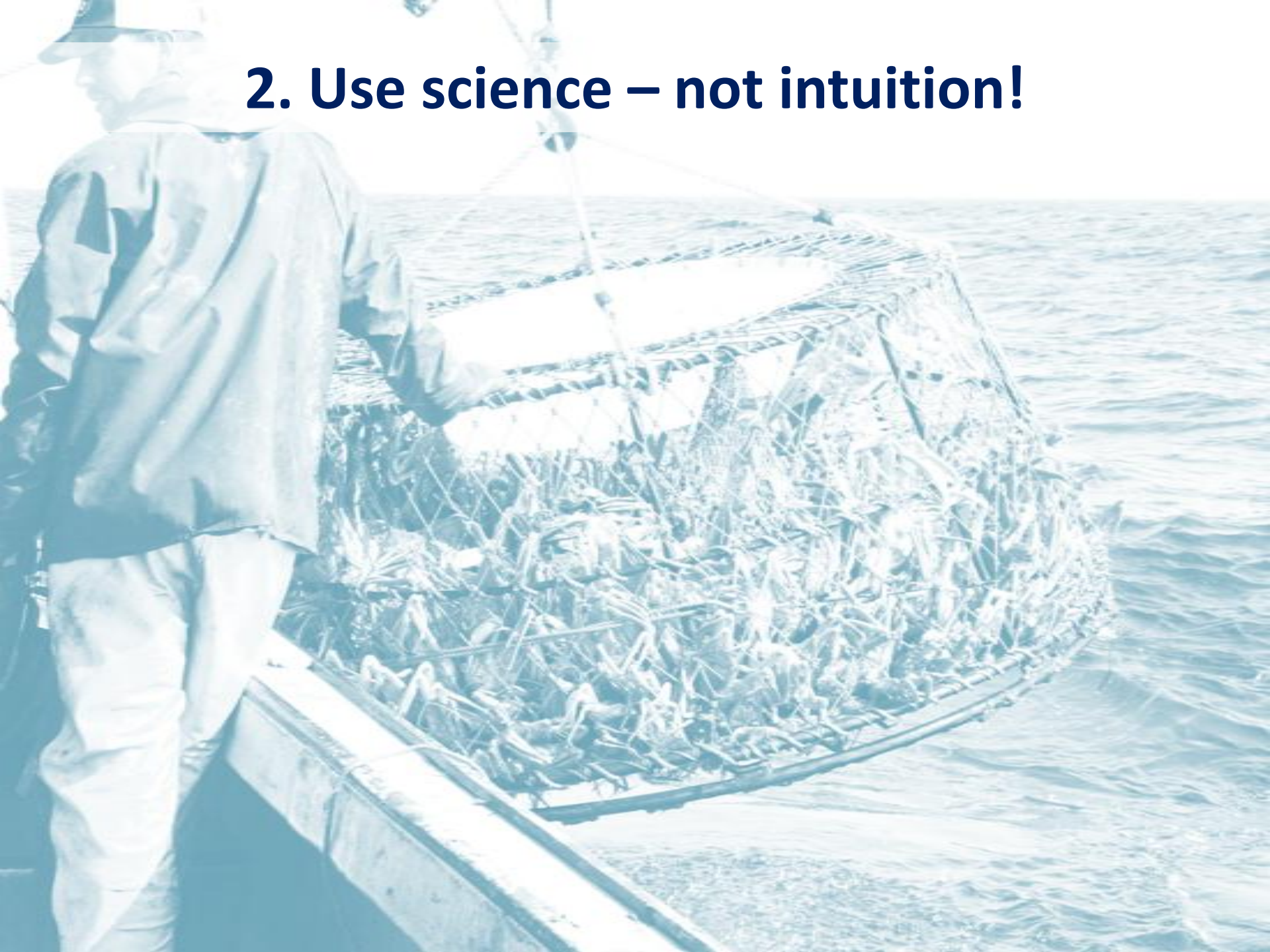
### **3) Make it a part of the law.**

*Volunteer actions only go so far. We need rules for everyone to follow.*

**“If it's the right thing to do, does it have to be a rule to be obeyed?”**

**Yes!**

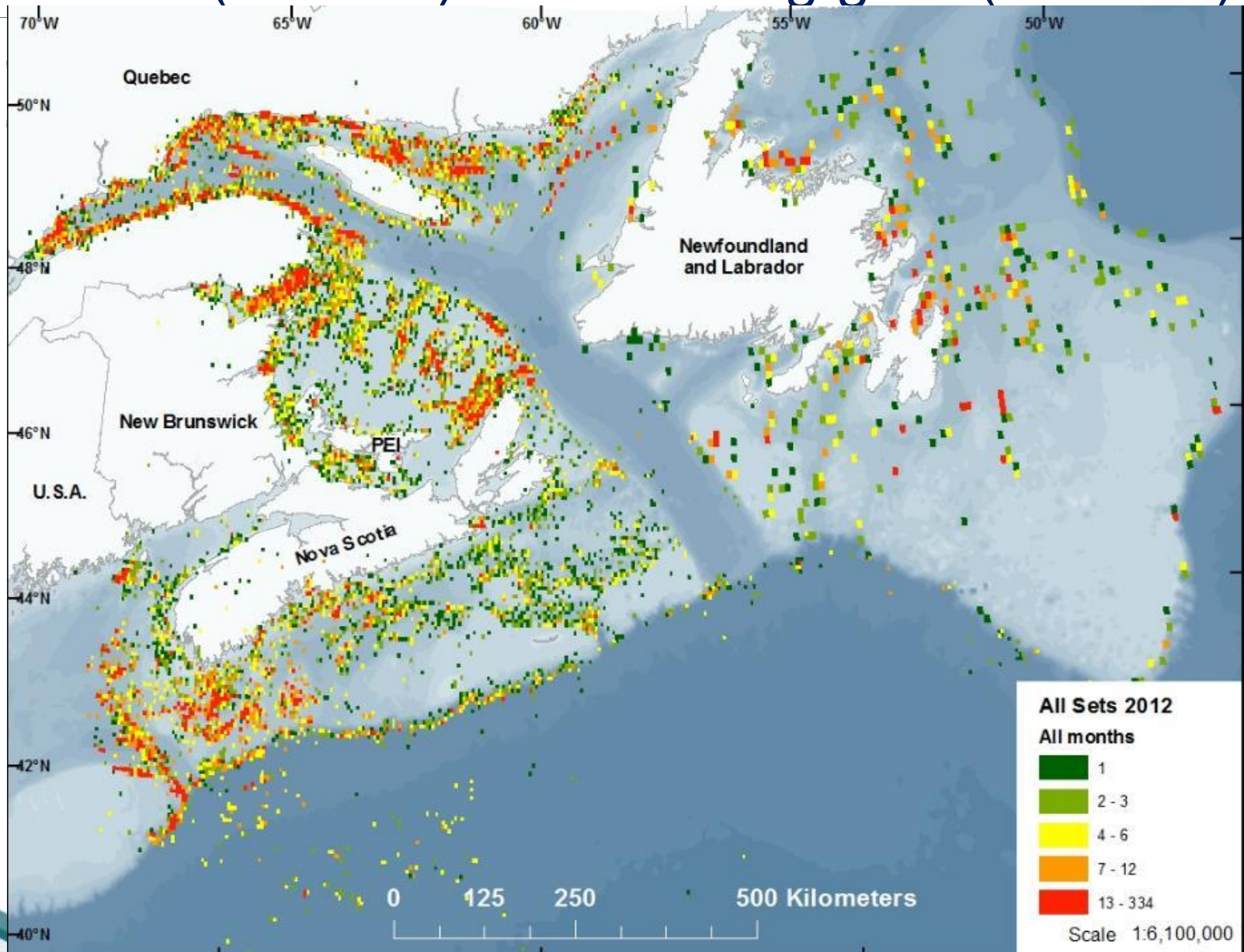
## 2. Use science – not intuition!



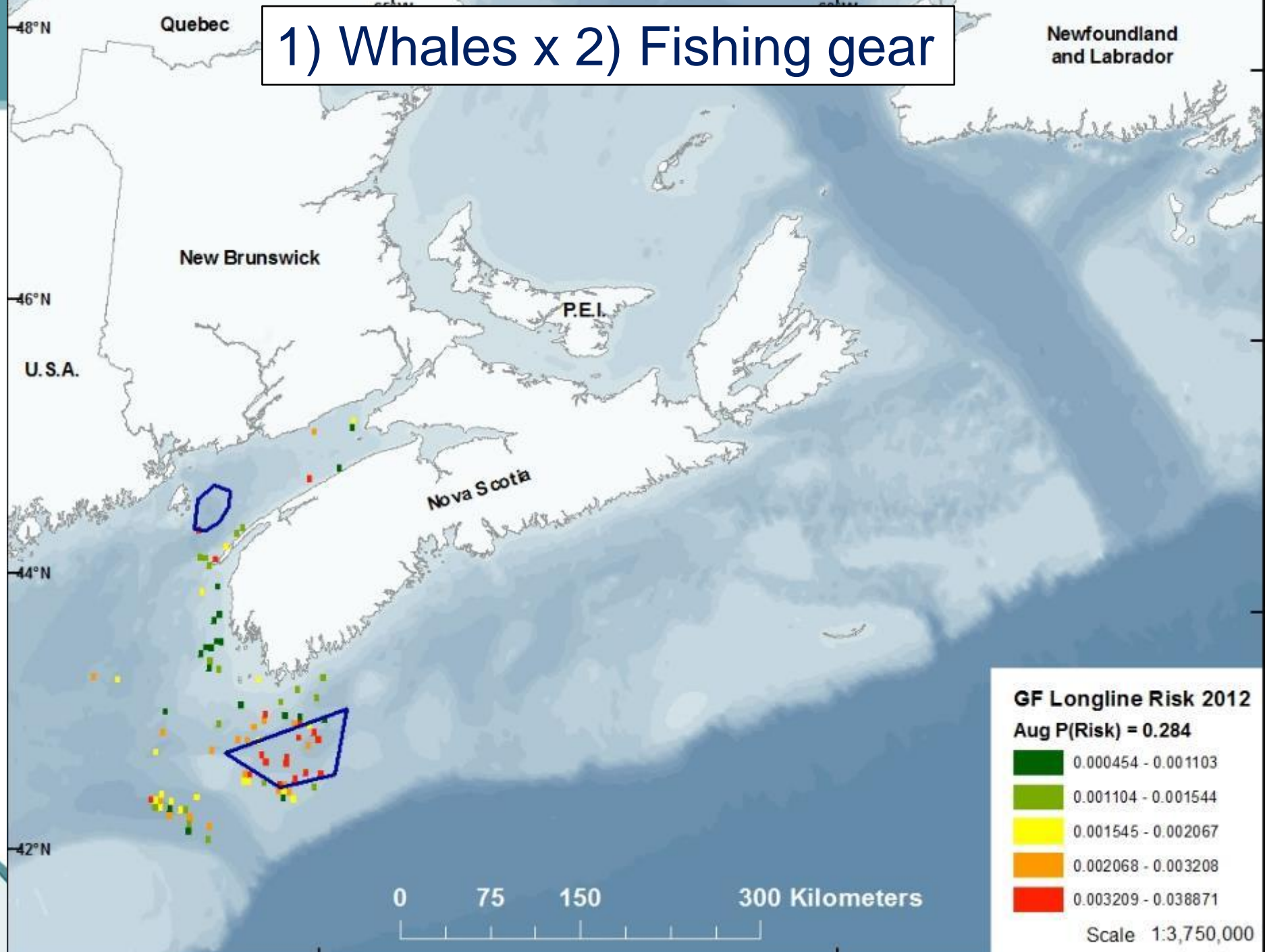


1) Where are the whales

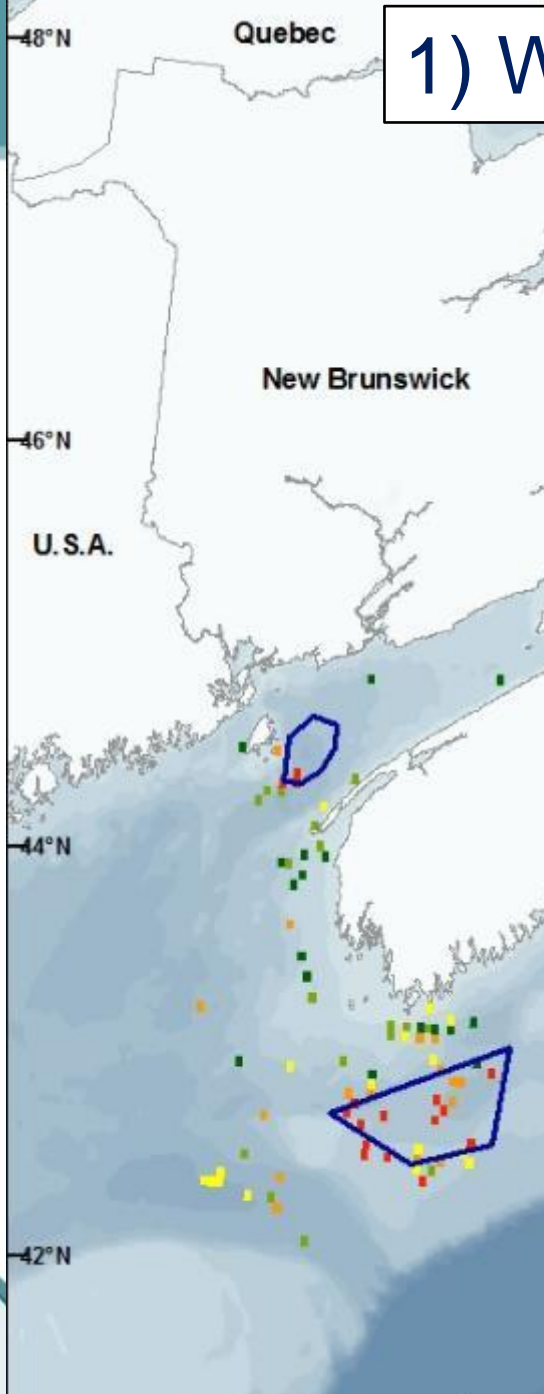
2) Where (& when) is the fishing gear (& which)?



# 1) Whales x 2) Fishing gear



# 1) Whales x 2) Fishing gear



Newfoundland and Labrador

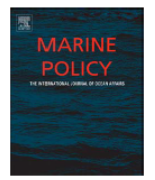
Marine Policy 81 (2017) 160–166

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Marine Policy

journal homepage: [www.elsevier.com/locate/marpol](http://www.elsevier.com/locate/marpol)



## A timely opportunity to protect North Atlantic right whales in Canada



Sean W. Brilliant<sup>a,b,c,\*</sup>, Tonya Wimmer<sup>b,1</sup>, Robert W. Rangeley<sup>b,2</sup>, Christopher T. Taggart<sup>c</sup>

<sup>a</sup> Canadian Wildlife Federation, 350 Michael Cowpland Dr., Kanata, ON, Canada K2M 2W1  
<sup>b</sup> WWF-Canada, Atlantic, 5251 Duke Street, Duke Tower Suite 1202, Halifax, NS, Canada B3J 1P3  
<sup>c</sup> Oceanography Department, Dalhousie University, PO Box 15000, Halifax, NS, Canada B3H 4R2

### ARTICLE INFO

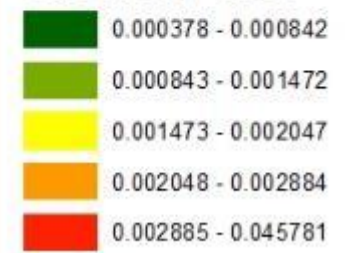
**Keywords:**  
Bycatch  
Canada  
Entanglement  
Fishing

### ABSTRACT

The survival of federally protected North Atlantic right whales (*Eubalaena glacialis*) requires an immediate reduction in the risk of entanglement in commercial fishing gear. This paper argues that at least a 30% reduction in risk is needed to meaningfully contribute to the conservation of right whales. The argument follows from risk estimates calculated using time and space intersections of right whales and fishing gear in Canadian waters. Almost all the risk was during the period from September 1, 2009 to September 30, 2012 (approximately 36% of the total risk).

### GF Longline Risk 2012

Sep P(Risk) = 0.294



Scale 1:3,750,000

# A lobster trawl



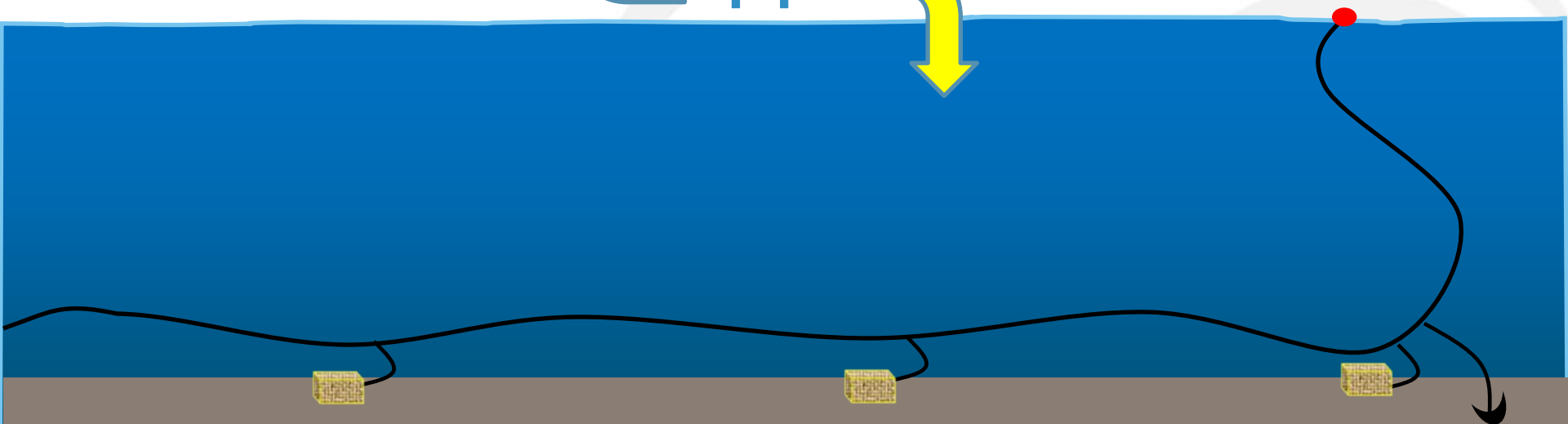
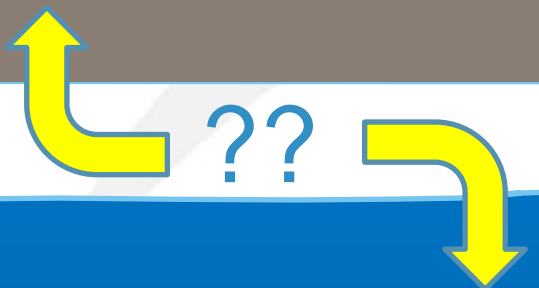
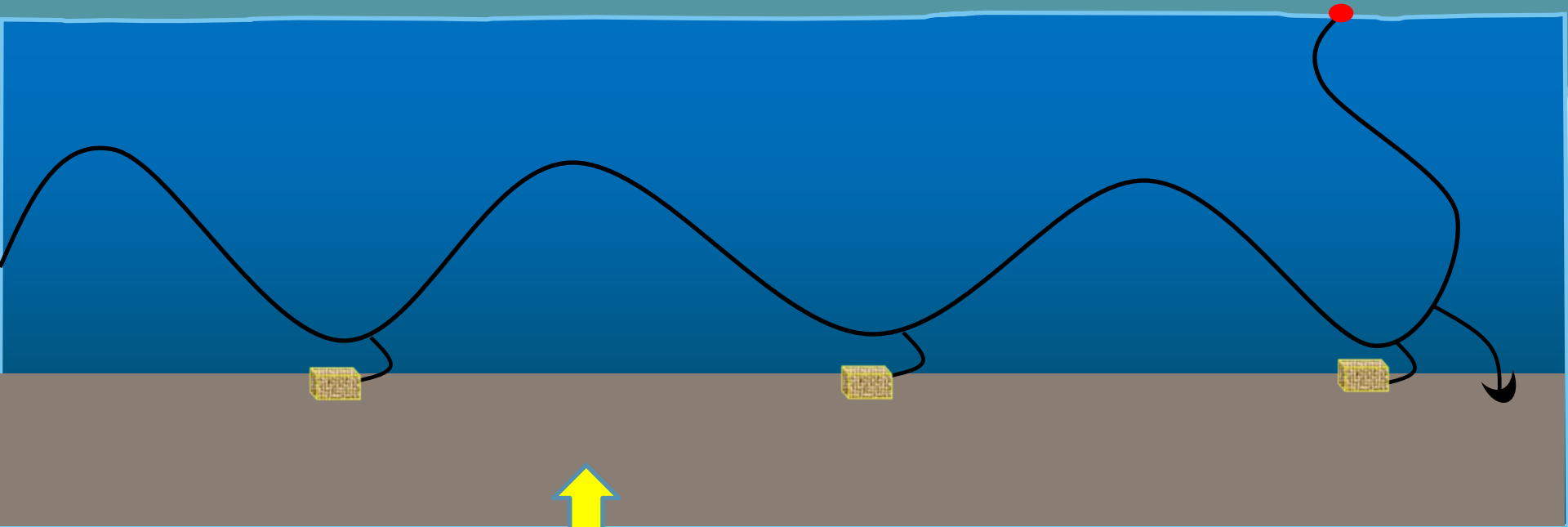
Endline  
(*Buoyline / Warpline*)

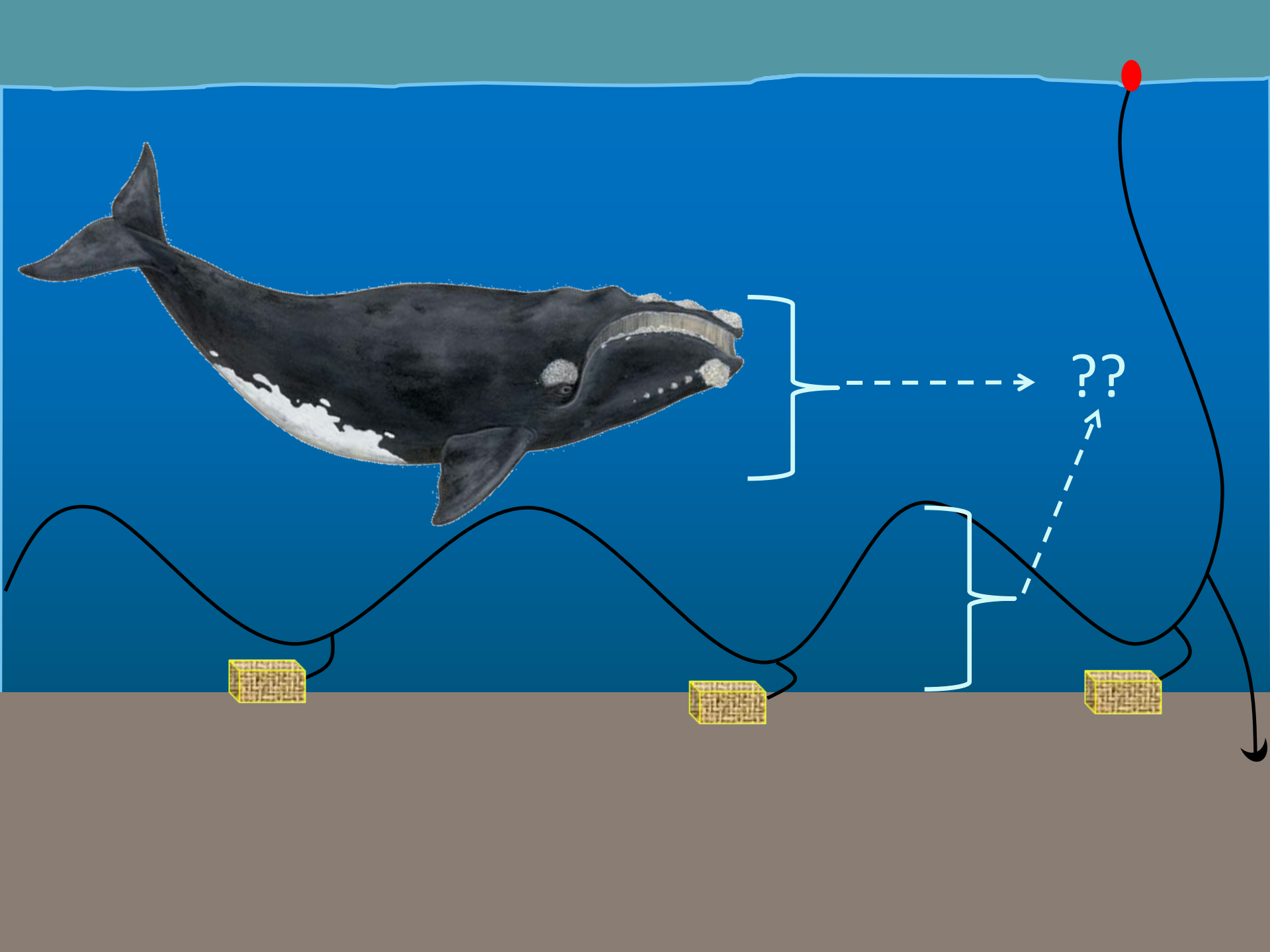
Traps

Groundlines











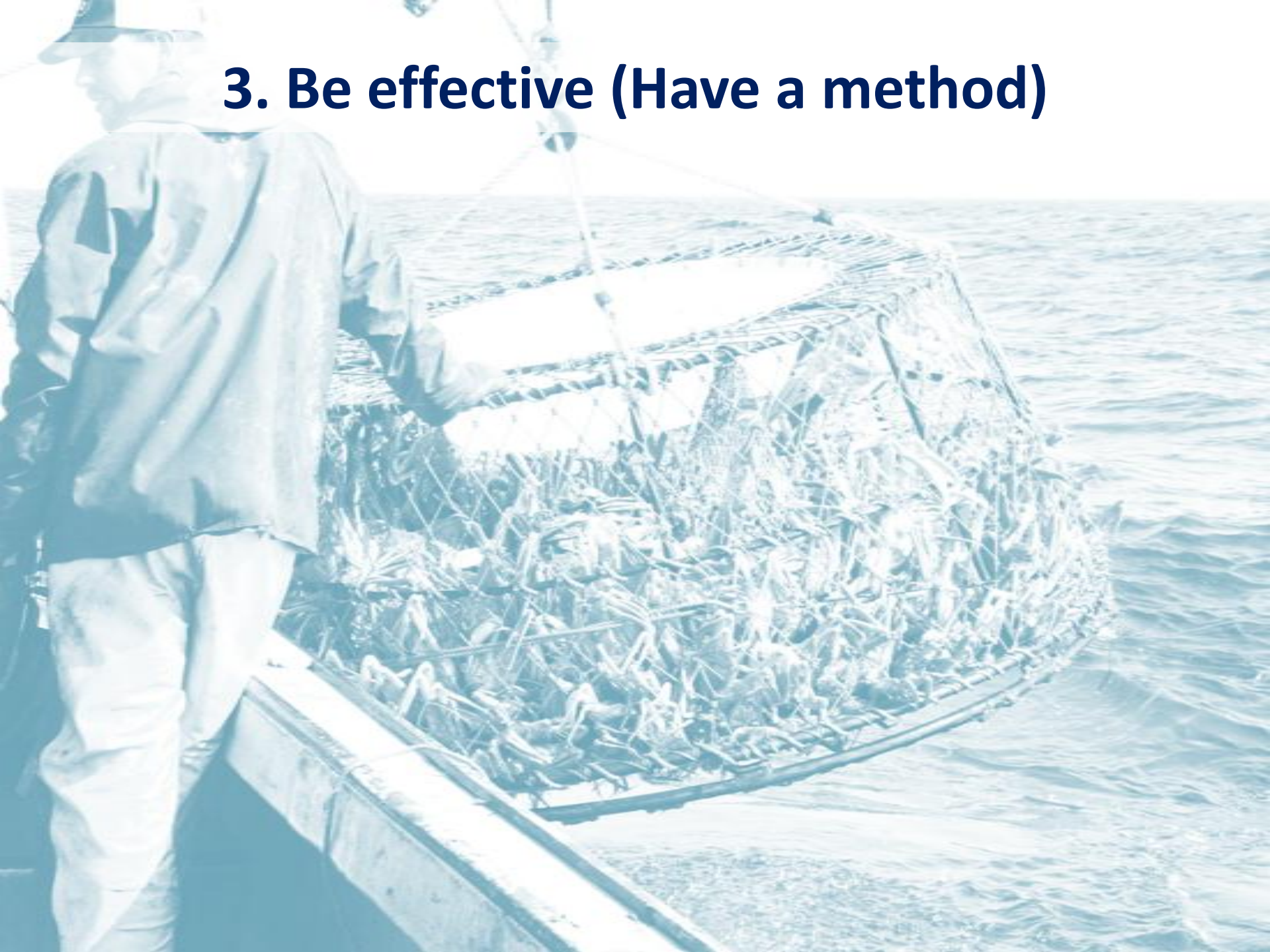
## Incremental fishing gear modifications fail to significantly reduce large whale serious injury rates

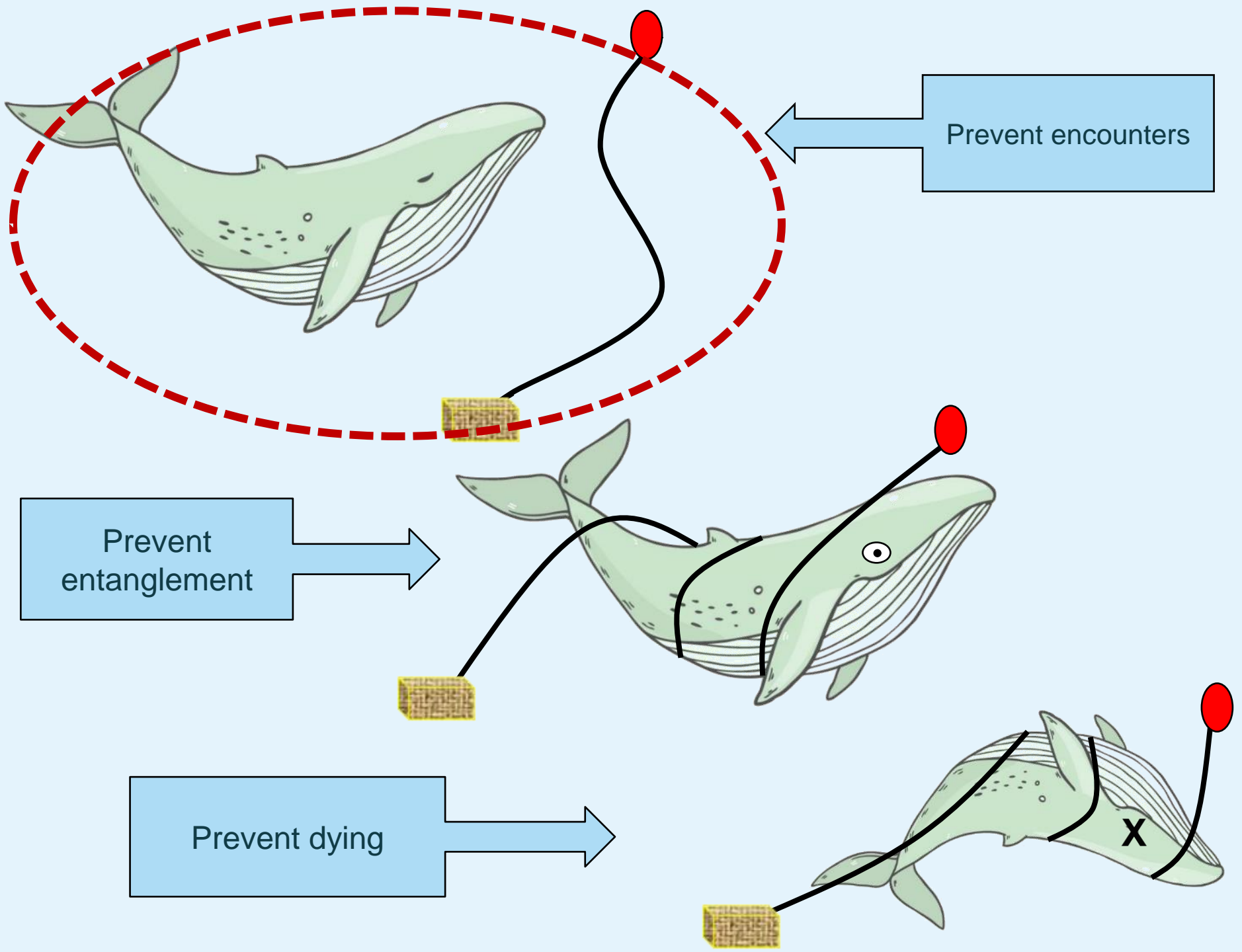
Richard M. Pace III\*, Timothy V. N. Cole, Allison G. Henry

Northeast Fisheries Science Center, National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543, USA

**ABSTRACT:** A major and immediate goal of the US Marine Mammal Protection Act is the reduction of marine mammal mortality incidental with commercial fishing operations. Under articles of the Act, the Atlantic Large Whale Take Reduction Plan (ALWTRP) was developed and implemented to reduce entanglement mortality of North Atlantic right whales *Eubalaena glacialis*, Gulf of Maine humpback whales *Megaptera novaeangliae*, and western North Atlantic fin whales *Balaenoptera physalus* by requiring modifications to commercial fishing gear (i.e. pots and sink gill-nets). Although they undercount the number of entanglements, counts of detected incidents of entanglements and entanglement-related mortality are the primary index to entanglement mortality. We analyzed the annual counts of large whale entanglements including serious injuries and mortalities attributed to entanglements to evaluate the effectiveness of the ALWTRP from 1999 to 2009. The annual number of mortality events (including serious injuries) related to fishing gear entanglements averaged 2.5 for right whales, 6.5 for humpbacks, 0.6 for fin whales, and 2.4 for minke whales *B. acutorostrata*. Annual entanglement rates increased during the study period, but evidence for increased rates of entanglement-related mortality was equivocal. No significant

### **3. Be effective (Have a method)**







# What can be done?

- 1) Don't fish during whale 'season'
- 2) No endlines ('Ropeless')
- 3) Fewer traps (= Fewer endlines)
- 4) Reduce the amount of rope
- 5) Remove ghost gear
- 6) Whale detection
- 7) Disentangle
- 8) Weaker ropes
- 9) Gear marking
- 10) Educate – share information
- 11) ...



## 4. Response proportionally to the observations (or threats)

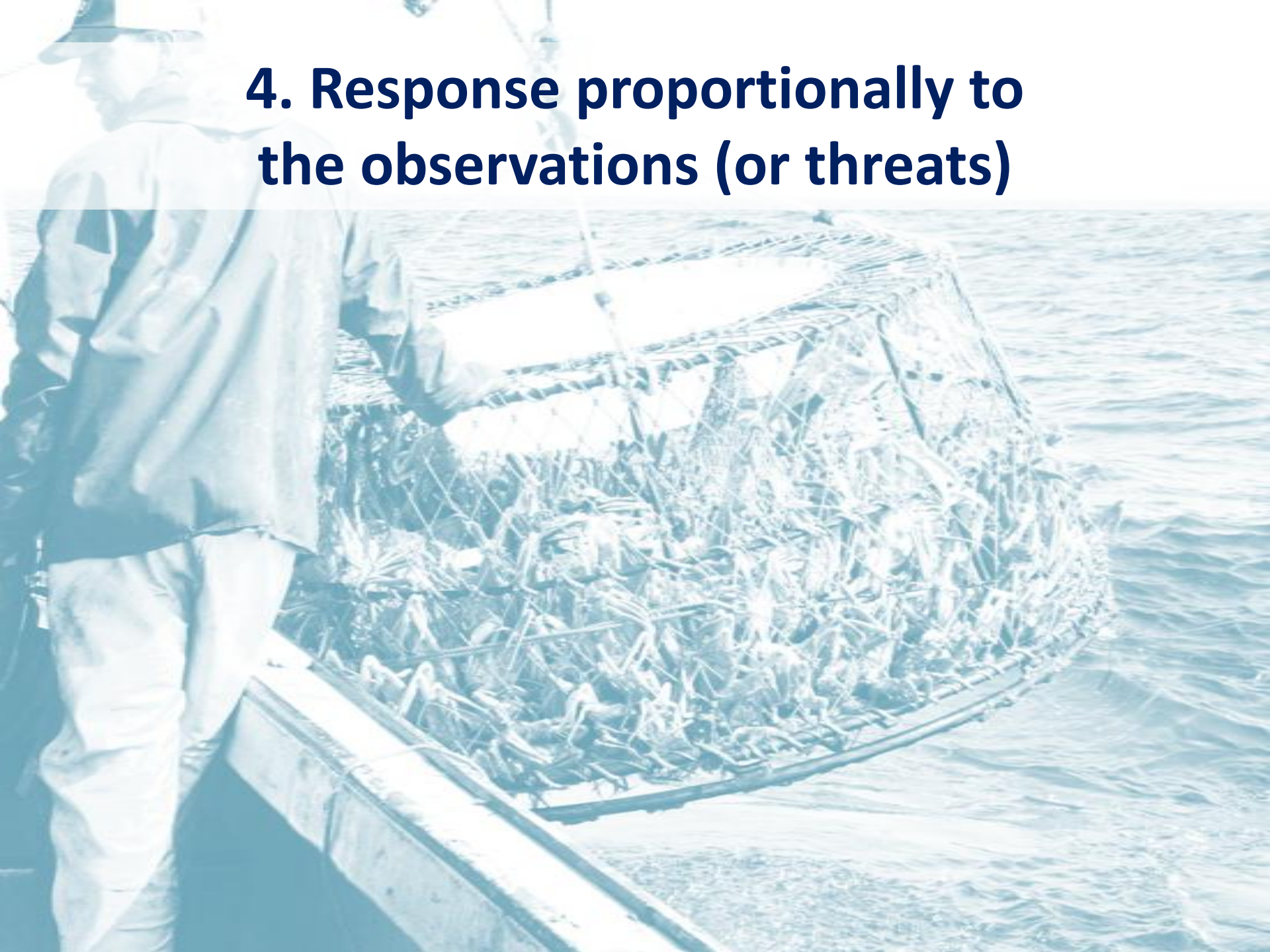
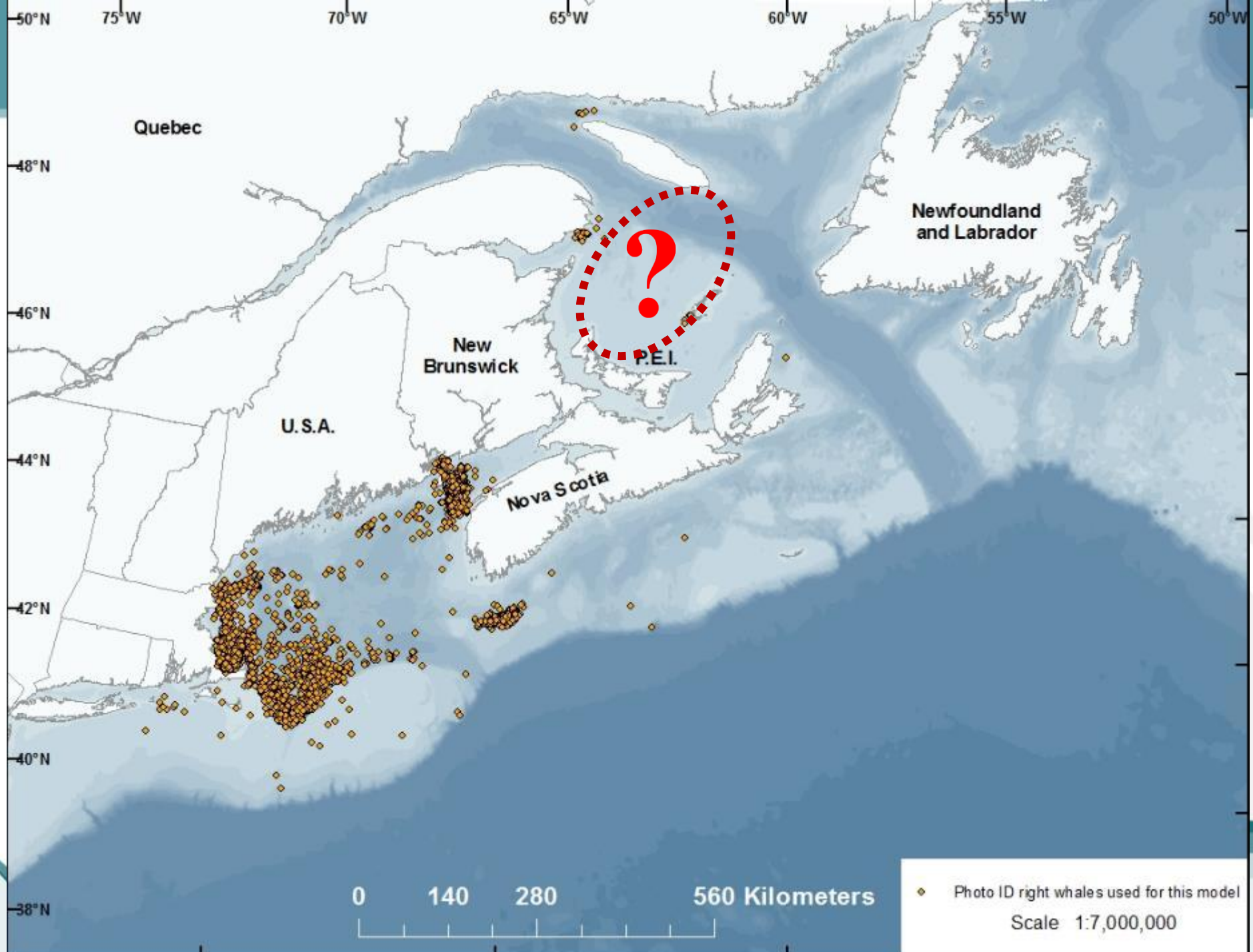
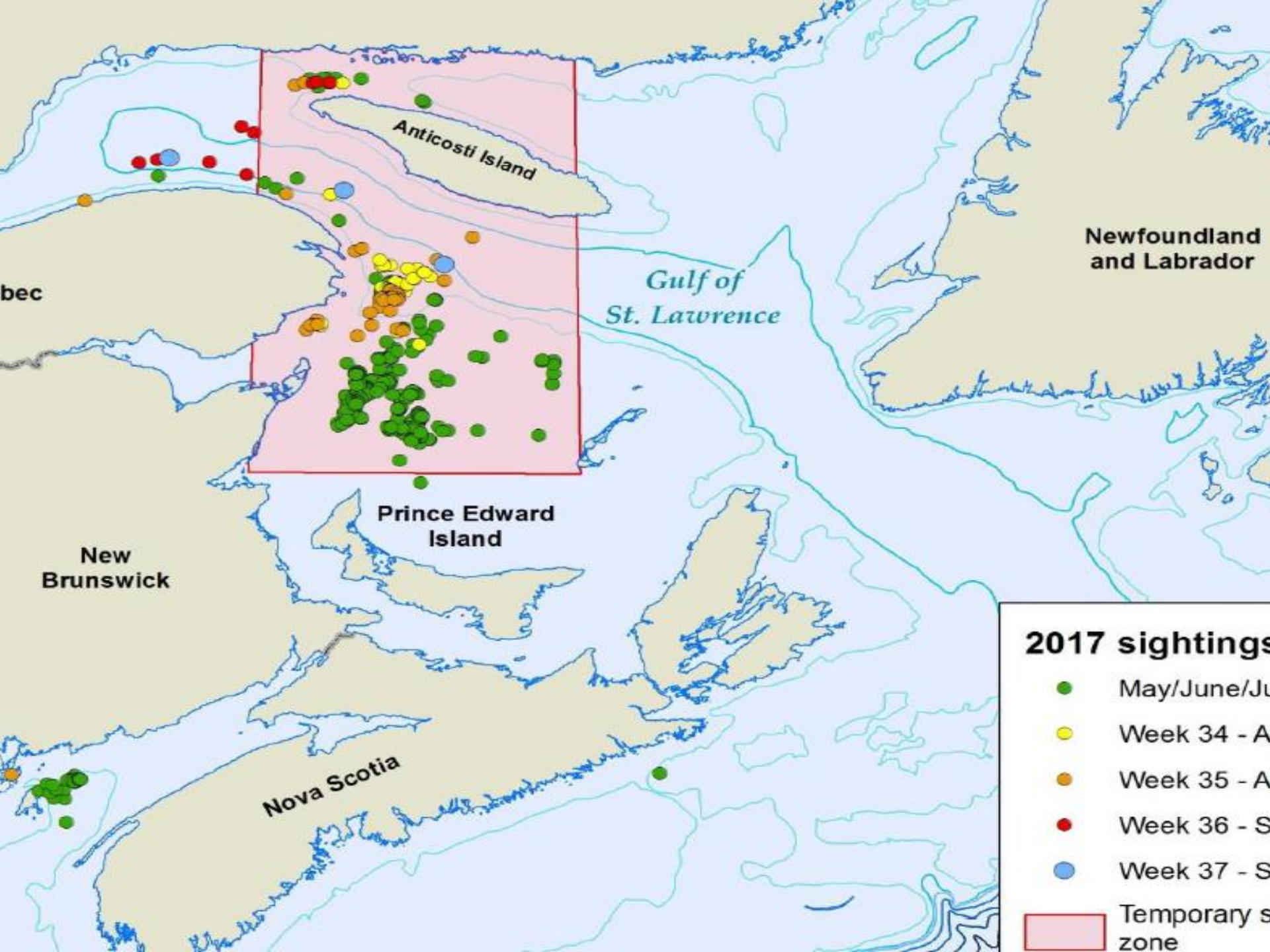






Photo Credit: Marine Animal Response Society





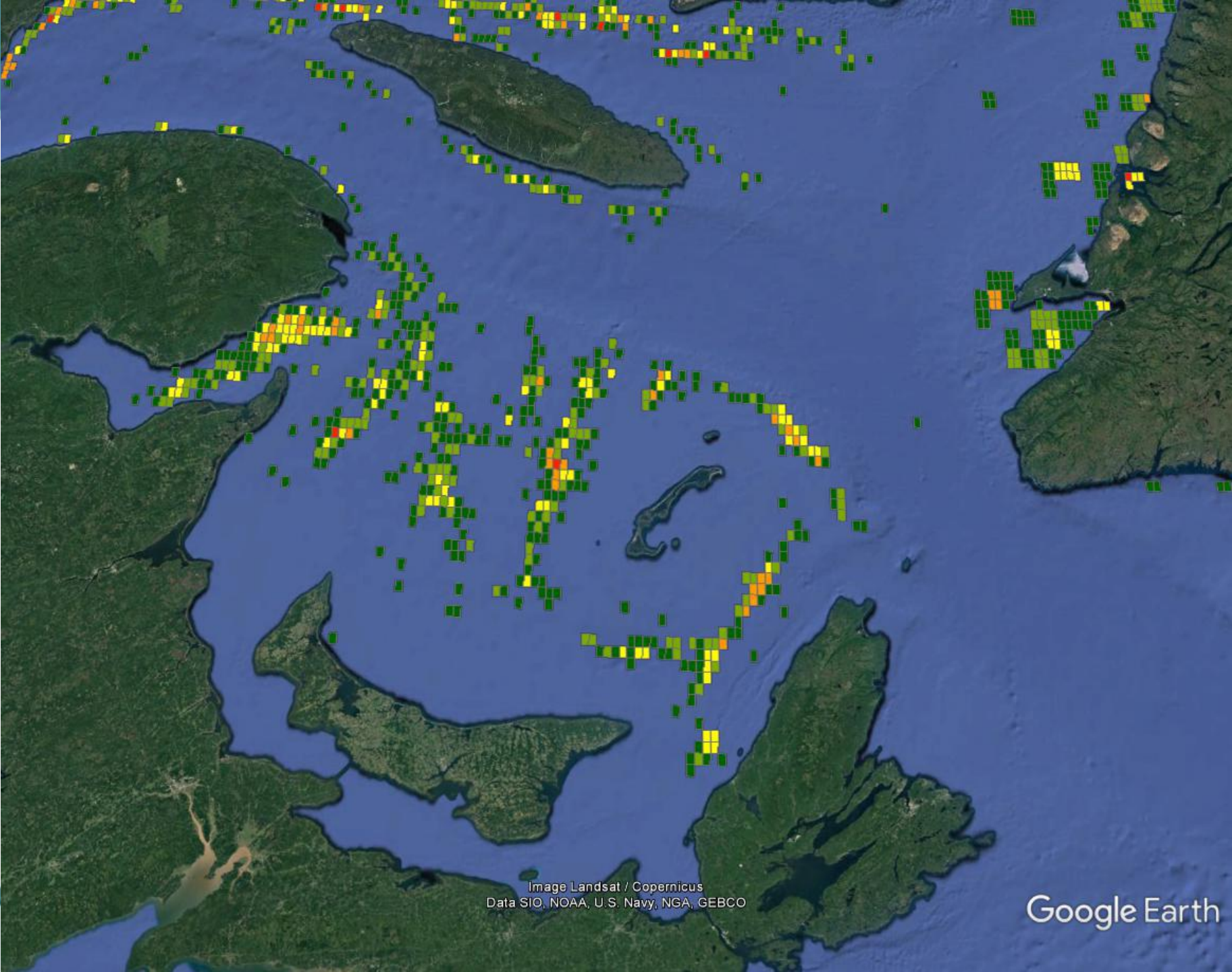
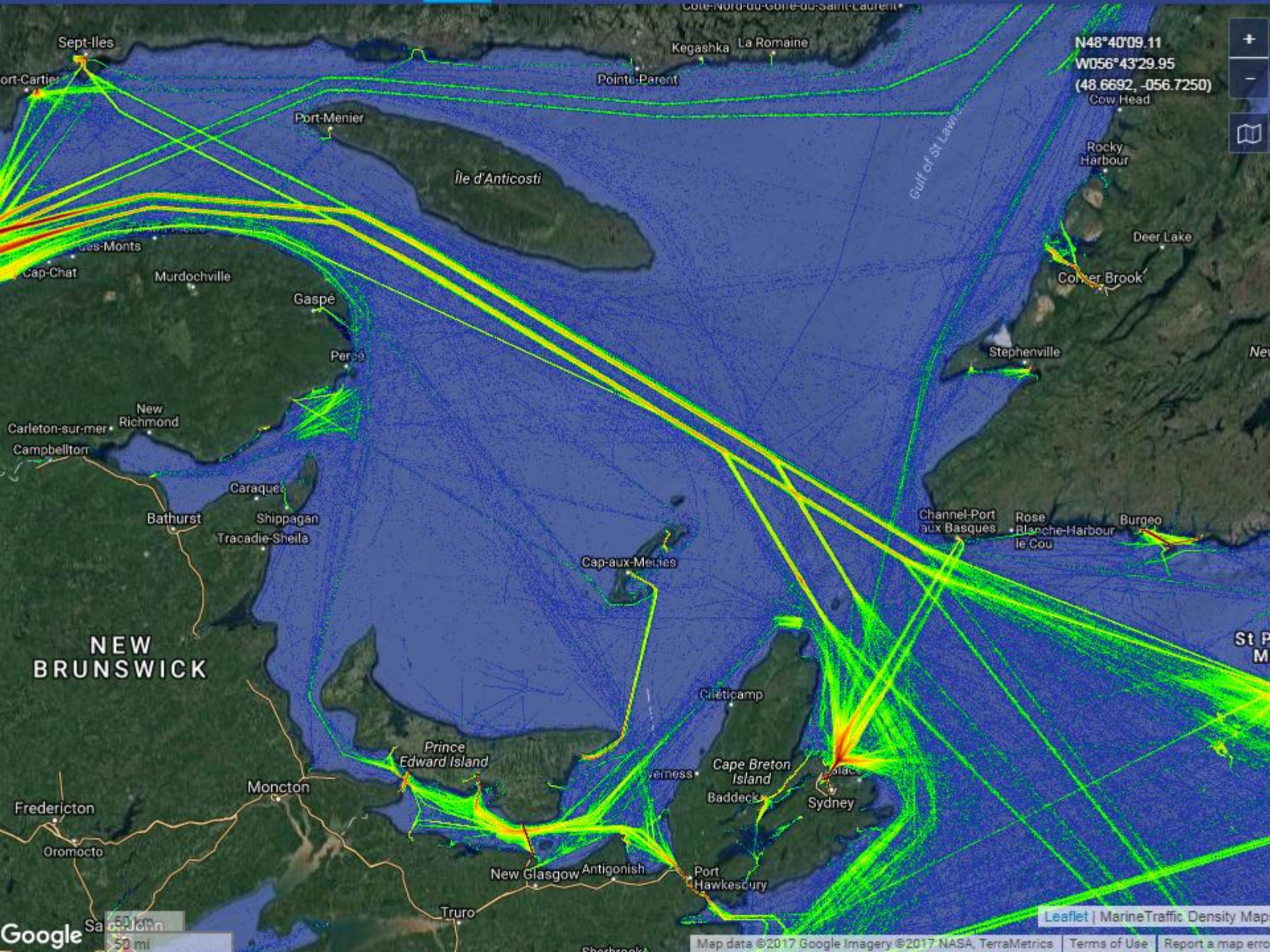


Image Landsat / Copernicus  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google Earth



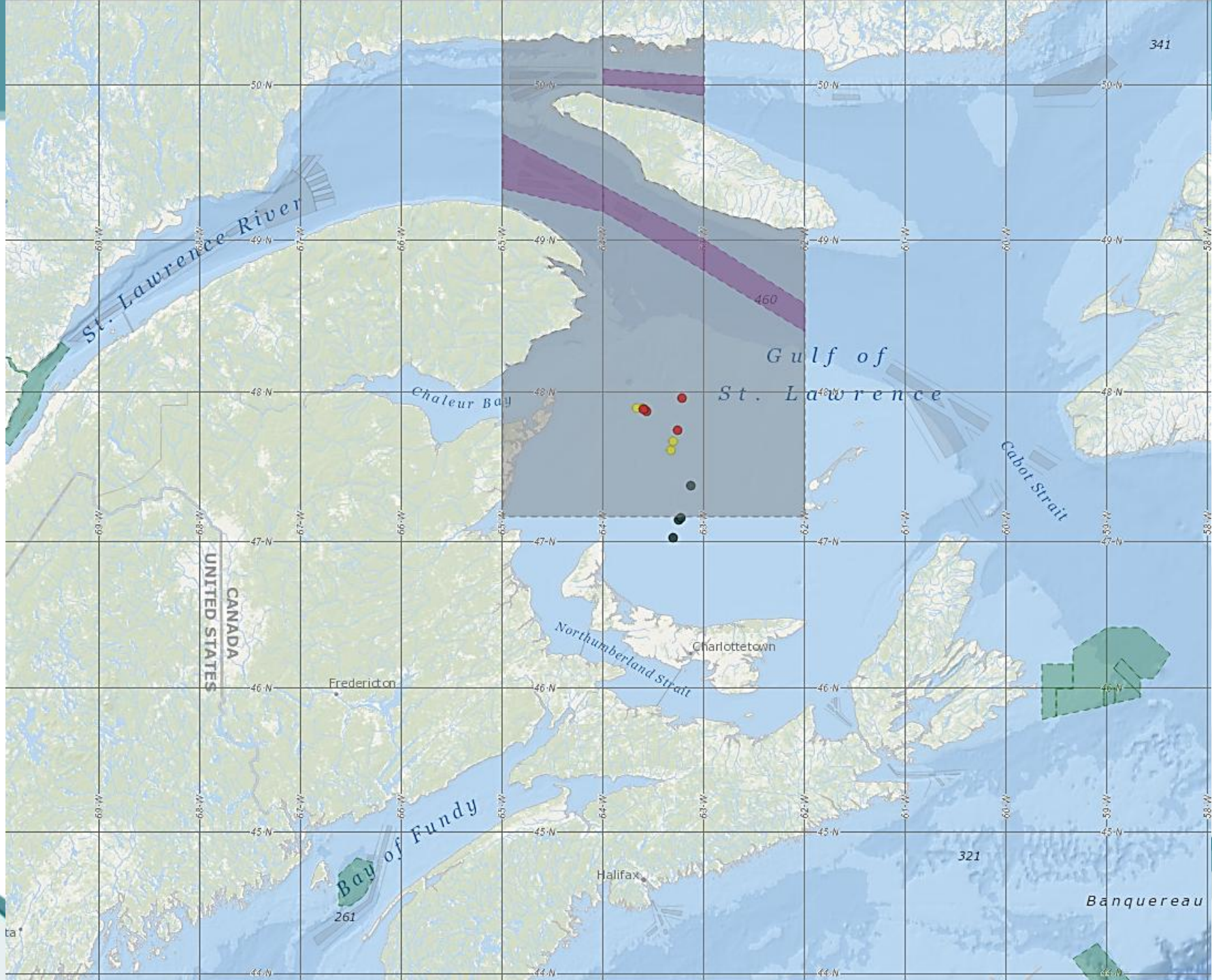
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W056°43'29.95  
(48.6692, -056.7250)  
Cow Head

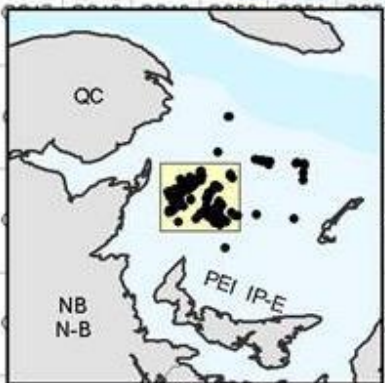
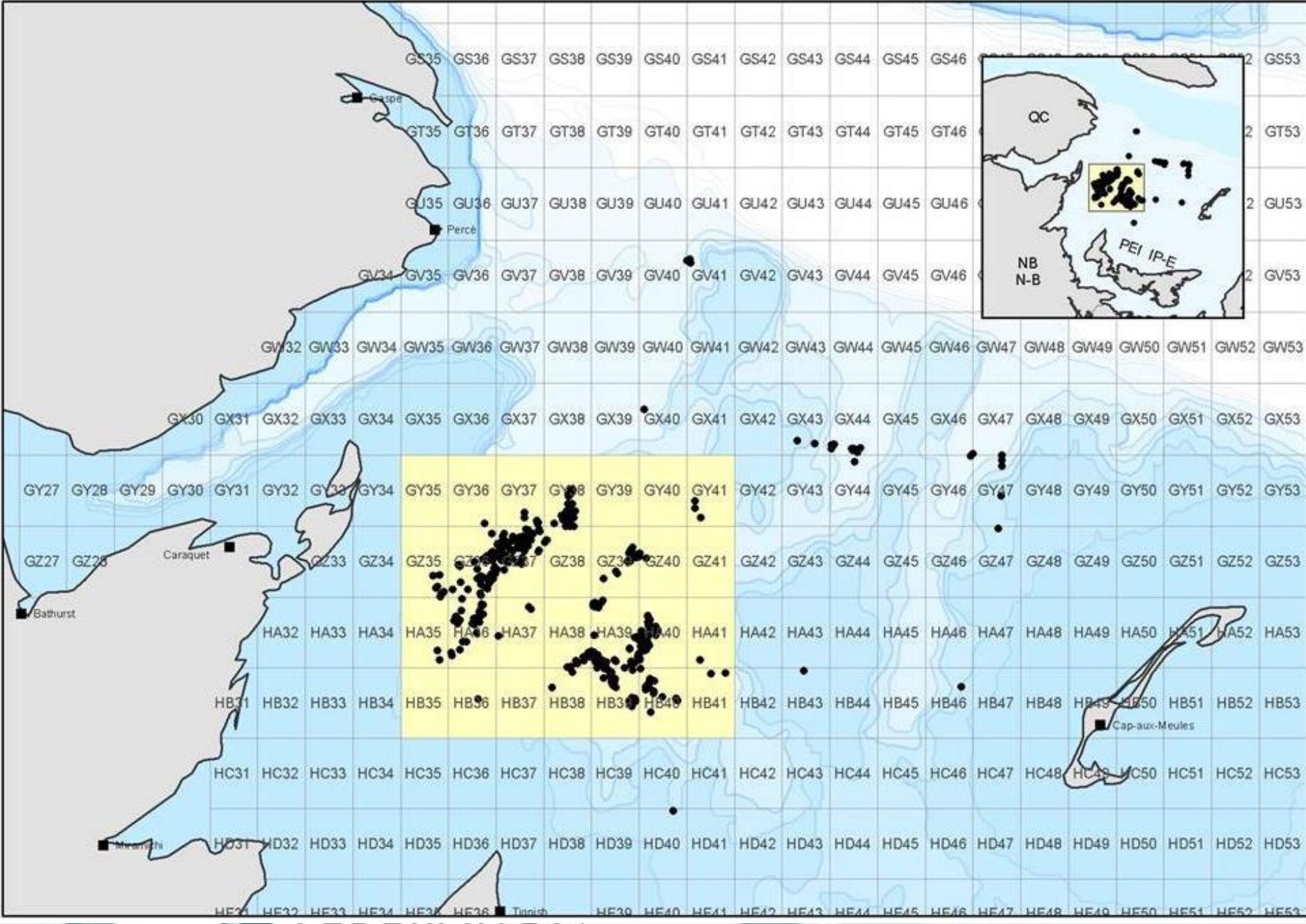
NEW  
BRUNSWICK

Leaflet | MarineTraffic Density Map

Google

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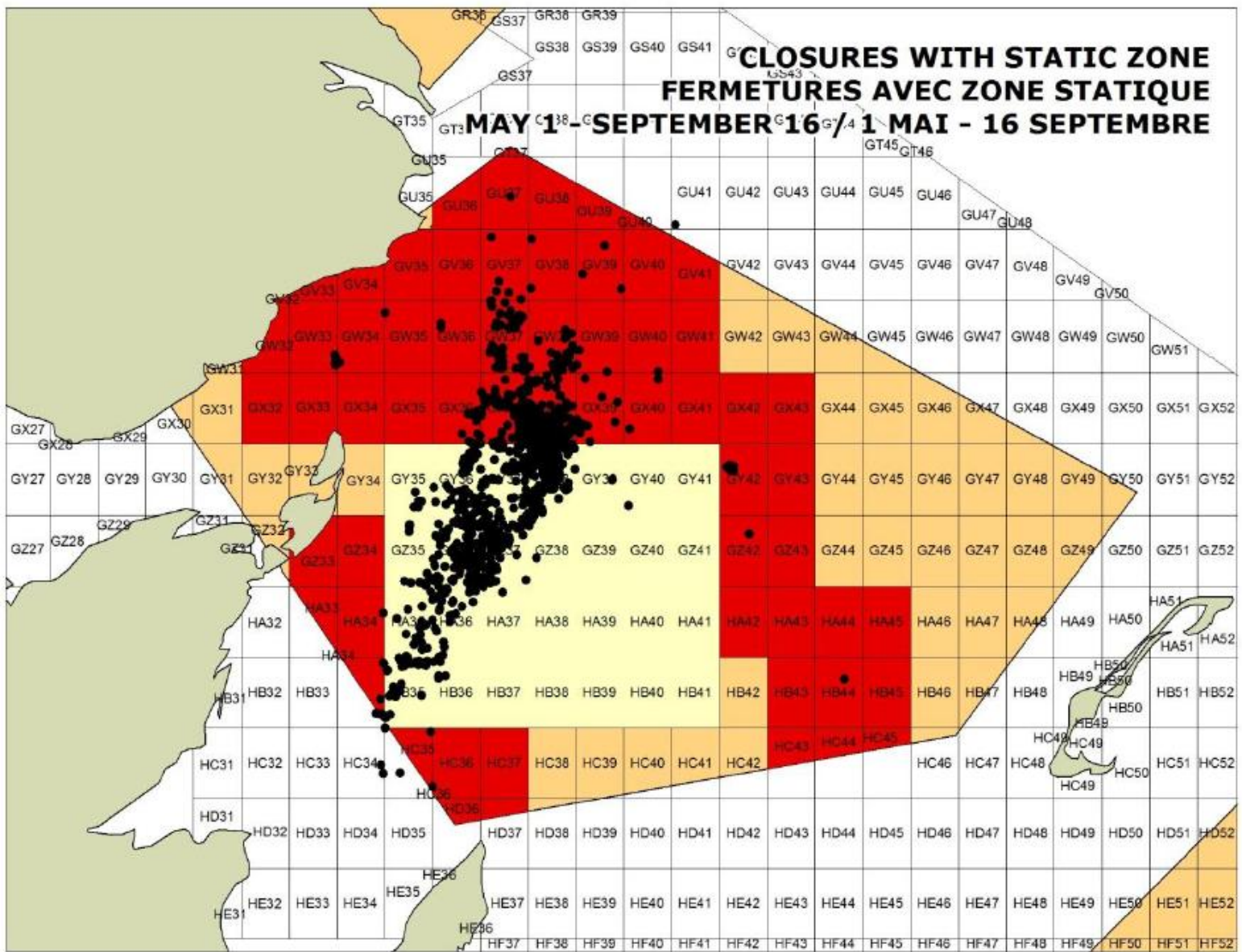




HE31 HE32 HE33 HE34 HE35 HE36 HE37 HE38 HE39 HE40 HE41 HE42 HE43 HE44 HE45 HE46 HE47 HE48 HE49 HE50 HE51 HE52 HE53

# CLOSURES WITH STATIC ZONE FERMETURES AVEC ZONE STATIQUE

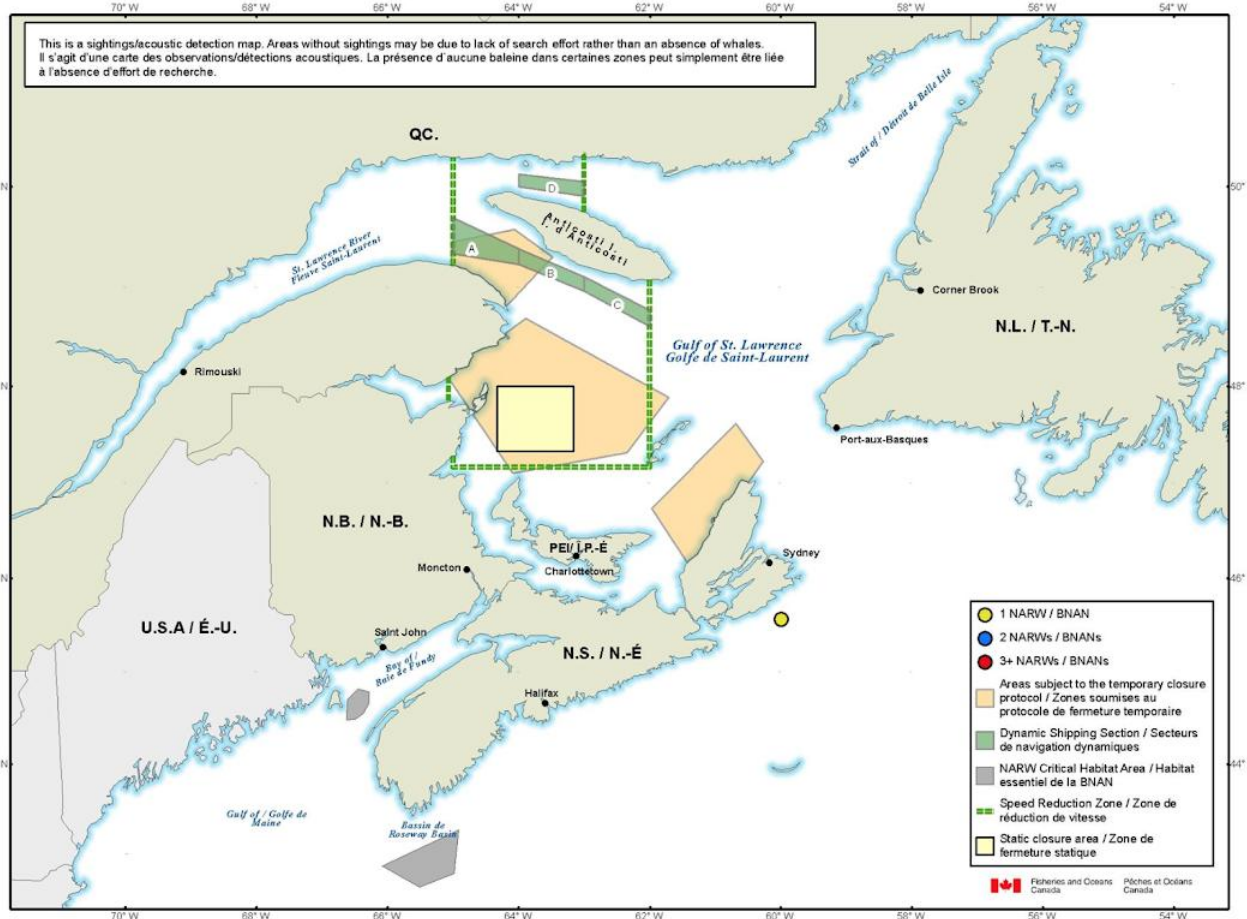
MAY 1 - SEPTEMBER 16 / 1 MAI - 16 SEPTEMBRE





# A proportional response?

North Atlantic Right whale sightings / Observations des baleines noires de l'Atlantique Nord: May 15 / 15 mai



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: 15/05/2018

Fisheries and Oceans Canada  
Page Liked · May 15 ·

A DFO C&P surveillance flight has reported the first right whale in Canadian waters this year. The whale was sighted swimming east of Cape Breton Island. Based on the information we have at this time, fishing will continue but harvesters should be on alert. Regular updates and sightings maps will be available at <http://ow.ly/AHuO30k12uA>

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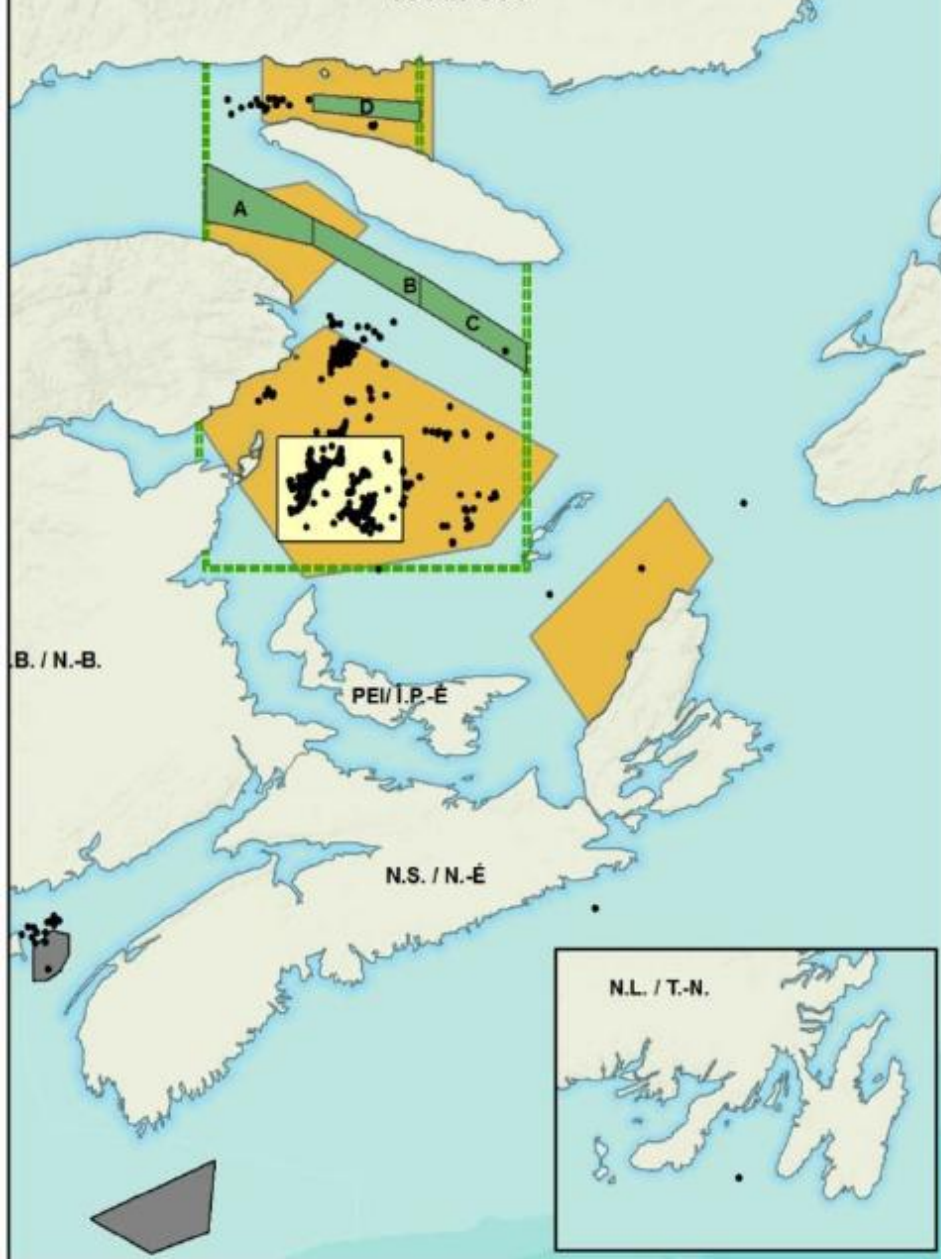
Ryan Jenkins Can't wait to get a nice feed of whale this year, might be the last of it  2

Like · Reply · 2d

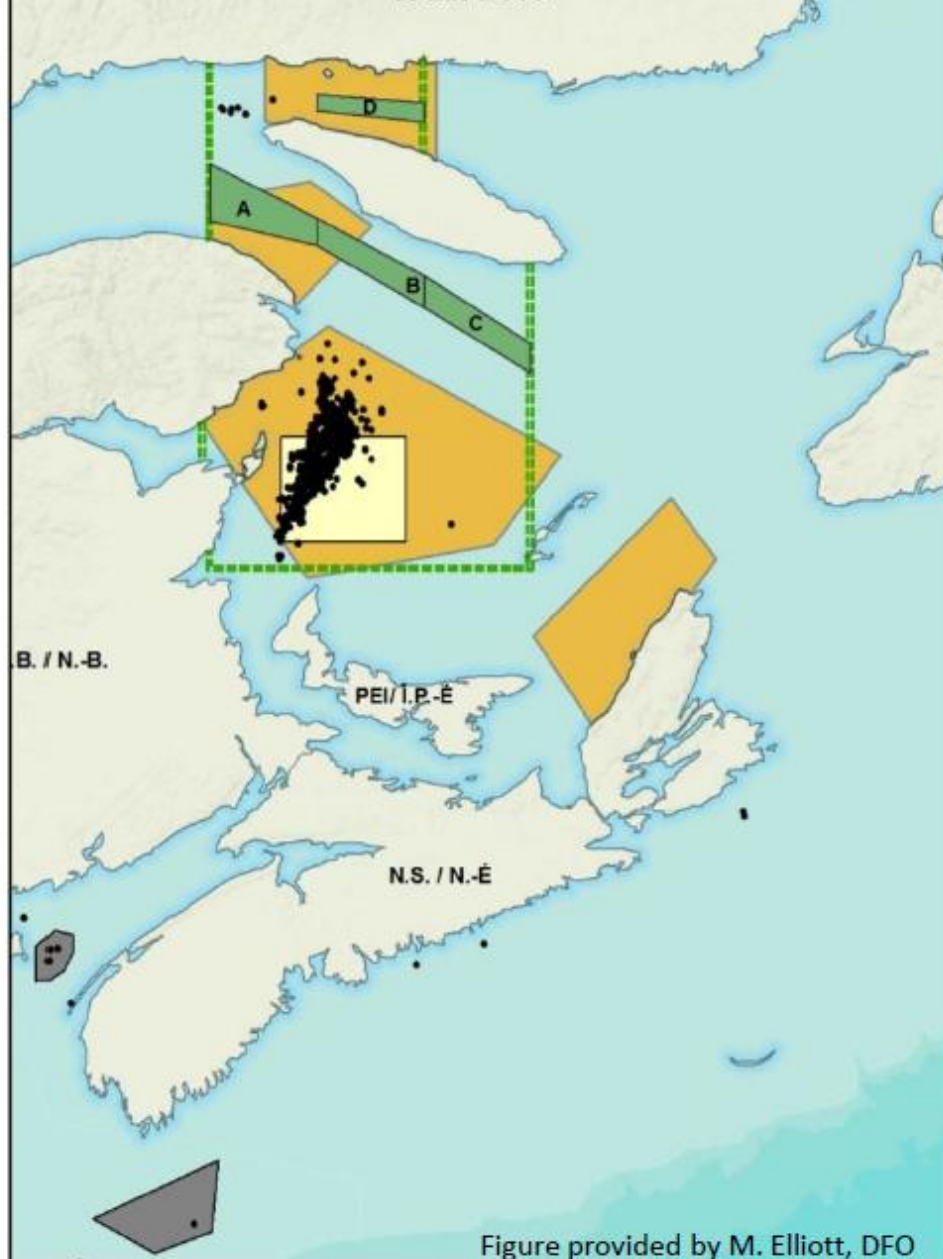
Roger Thibodeau Raynald Lapierre

Write a comment...

**North Atlantic Right Whale Sightings**  
Observations des baleines noire de l'Atlantique Nord  
May - September 2017  
Total: 800

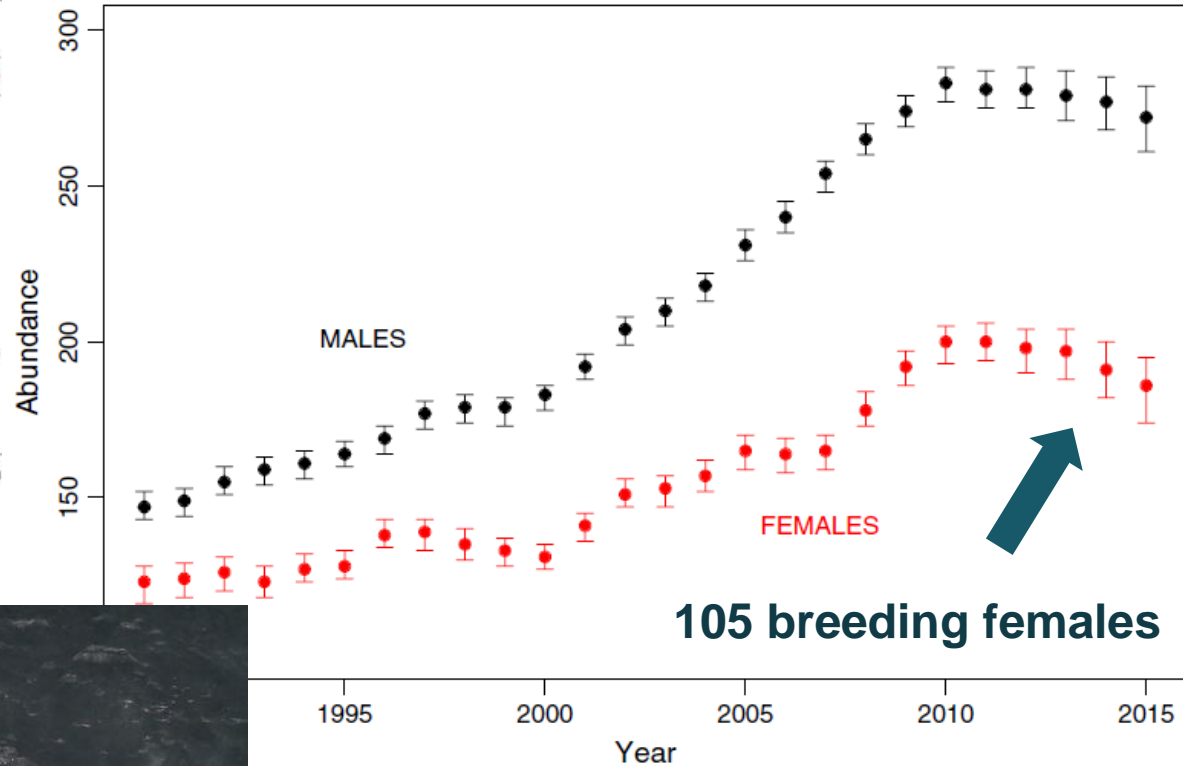
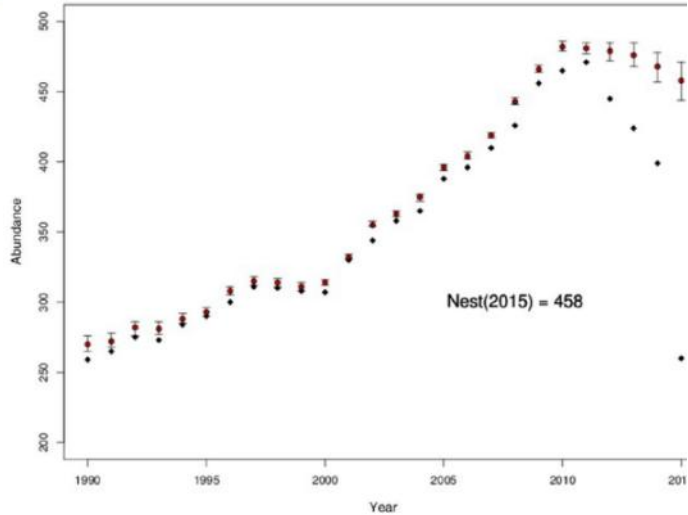


**North Atlantic Right Whale Sightings**  
Observations des baleines noire de l'Atlantique Nord  
Mai à septembre 2018  
Total: 2159





# 2 last unsettling thoughts



- 1) @ 5 deaths/yr = **Extinction 23 years**
- 2) 12 discovered carcasses in Canada  
But it's the only whale that floats.

IT'S A MYSTERY  
WHAT IS KILLING  
ALL THE RIGHT  
WHALES?



deAtter  
hfx herald ltd.

# The End

## What can you take from this?

1. Involve everyone affected or effecting the situation
2. Be scientific. (Not intuition!)
3. Be effective. (Substantiate. Measure if possible!)
  - Have a method: Mitigation hierarchy
4. Response should be proportional to observation



# Integrated Coasts and Oceans Management



# Integrated Coasts and Oceans Management

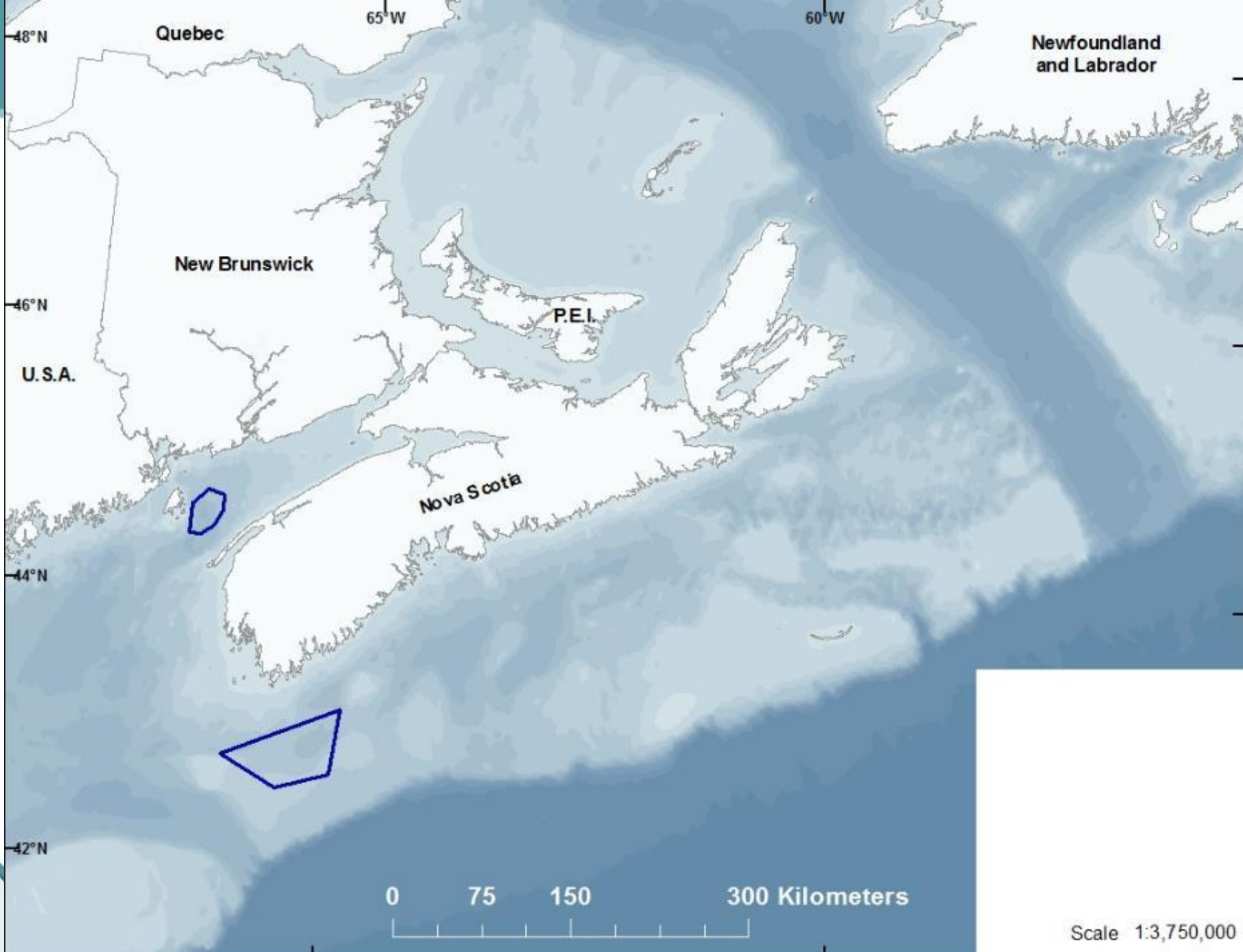


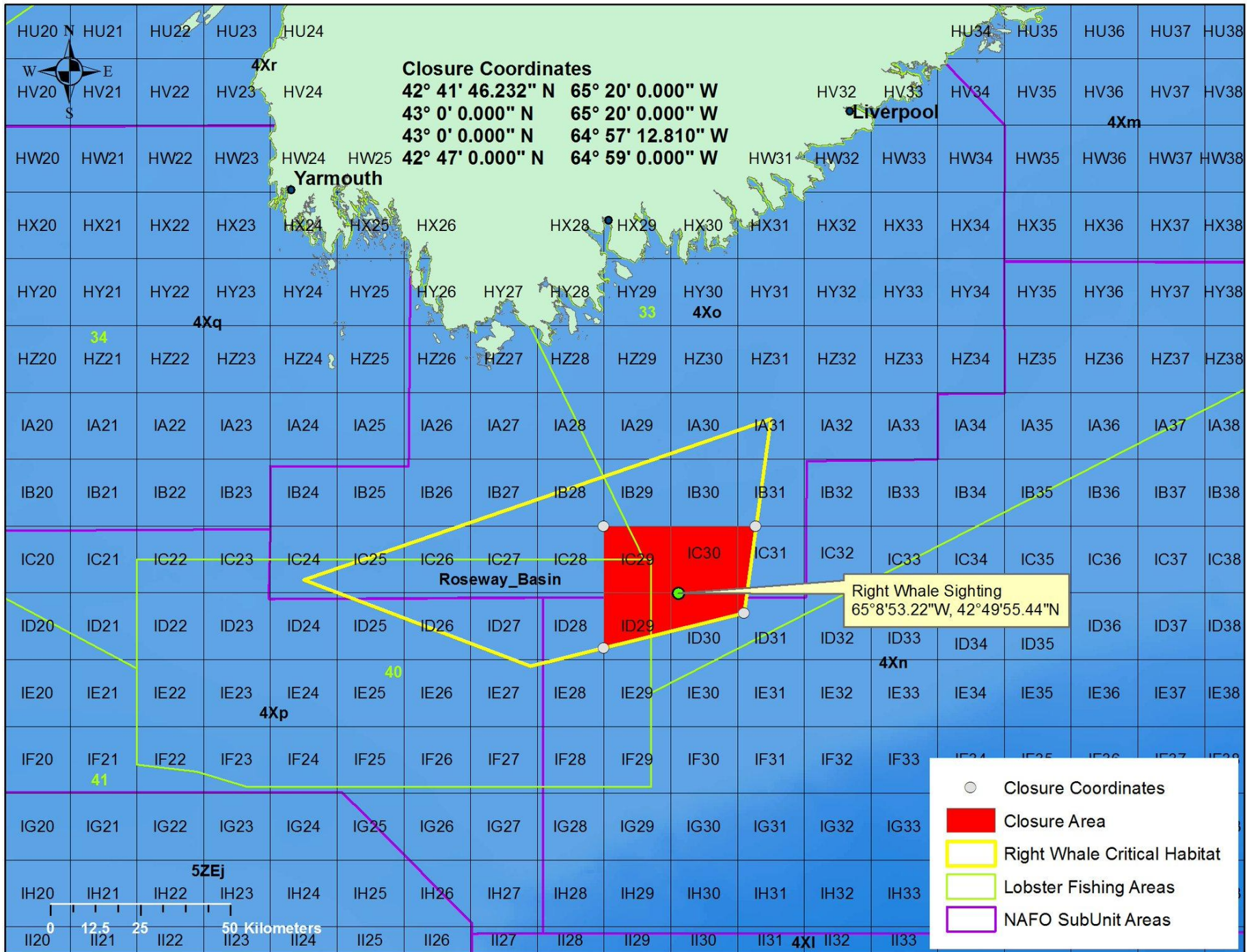


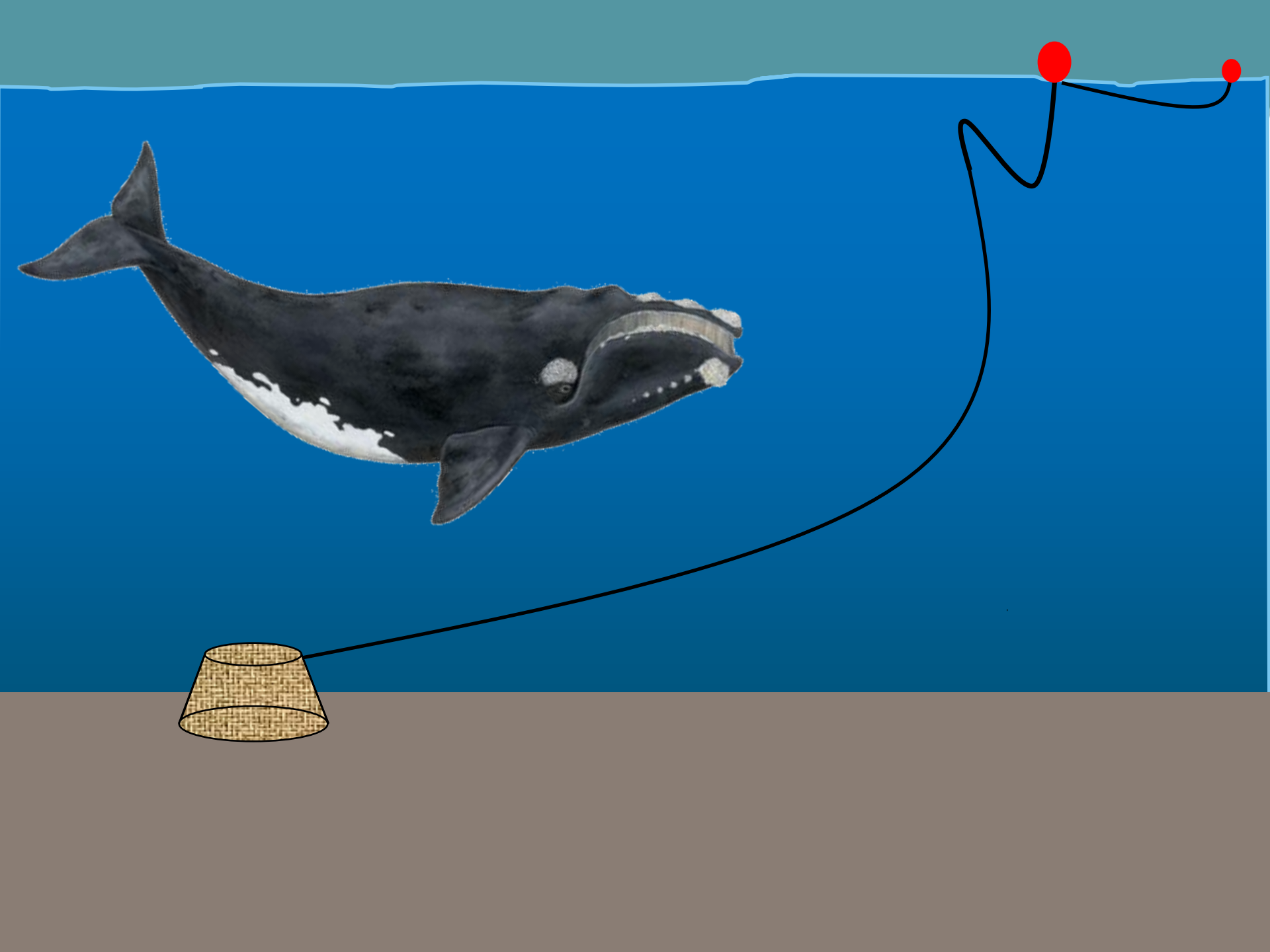


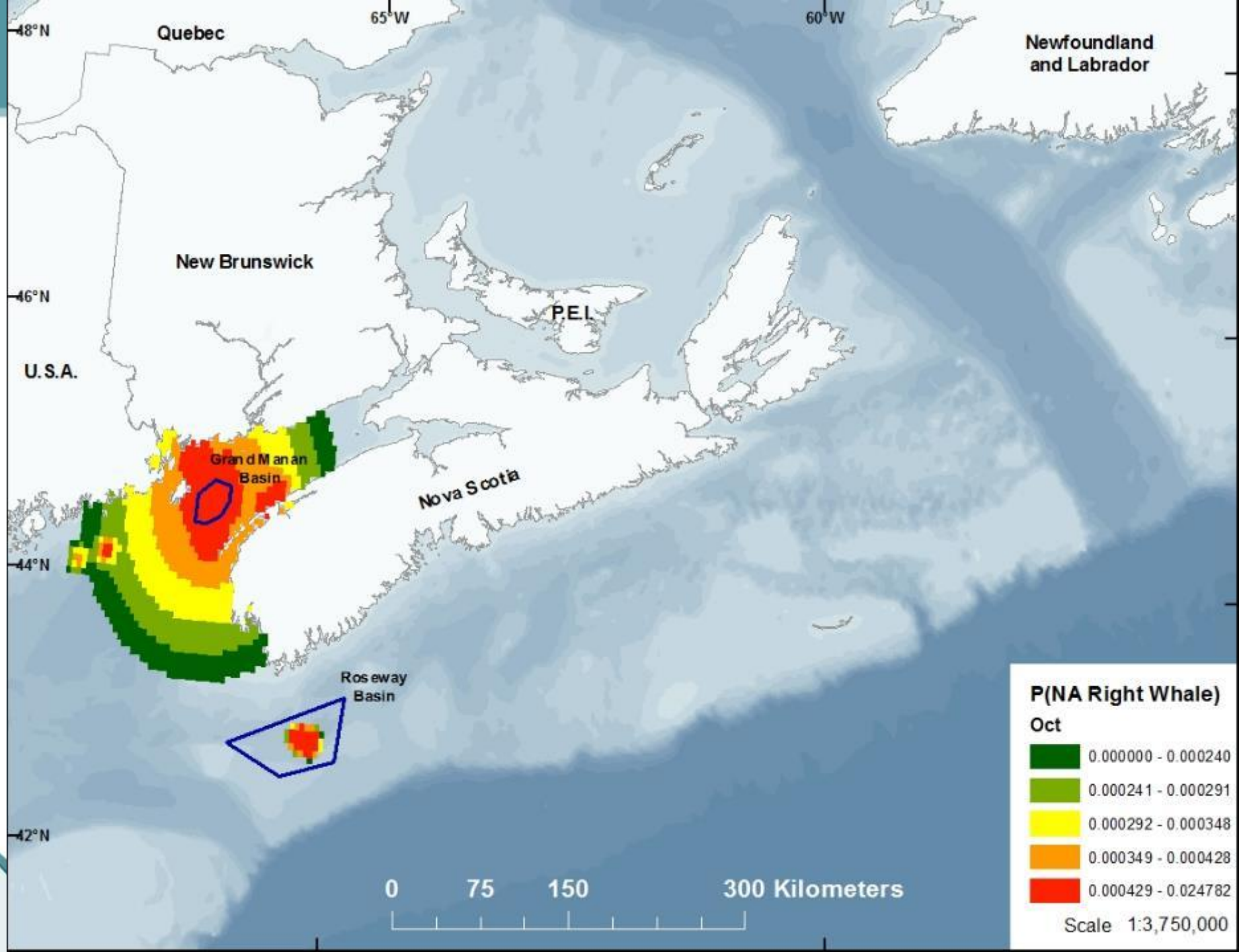
**Sean Brilliant**  
**seanb@cwf-fcf.org**











48°N

Quebec

65°W

60°W

Vol. 27: 141–154, 2015  
doi: 10.3354/esr00651

ENDANGERED SPECIES RESEARCH  
Endang Species Res

Published online April 15



# Quantitative estimates of the movement and distribution of North Atlantic right whales along the northeast coast of North America

Sean W. Brilliant<sup>1,2,3,\*</sup>, Angelia S. M. Vanderlaan<sup>2,4</sup>, Robert W. Rangeley<sup>1</sup>, Christopher T. Taggart<sup>2</sup>

<sup>1</sup>WWF-Canada, Atlantic Region, Halifax, NS B3J 1P3, Canada

<sup>2</sup>Oceanography Department, Dalhousie University, Halifax, NS B3H 4R2, Canada

<sup>3</sup>Canadian Wildlife Federation, Halifax, NS B3H 4R2, Canada

<sup>4</sup>Large Pelagics Research Center, University of Massachusetts Amherst, Gloucester, MA 01931, USA

46°N

New Brunswick

U.S.A.

44°N

Grand Manan Basin

Nova Scotia

42°N

Roseway Basin

0 75 150 300 Kilometers

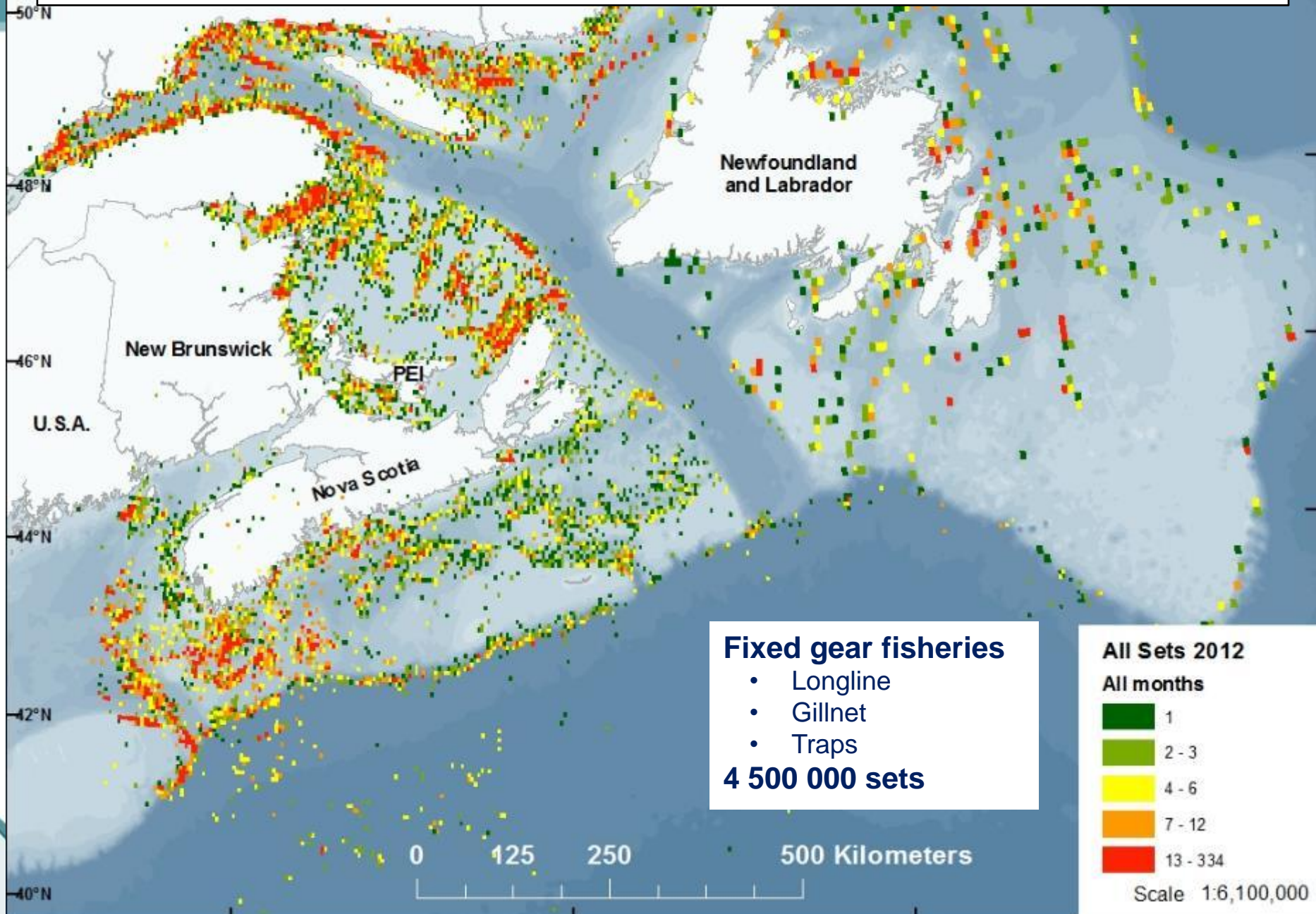
**P(NA Right Whale)**

Oct

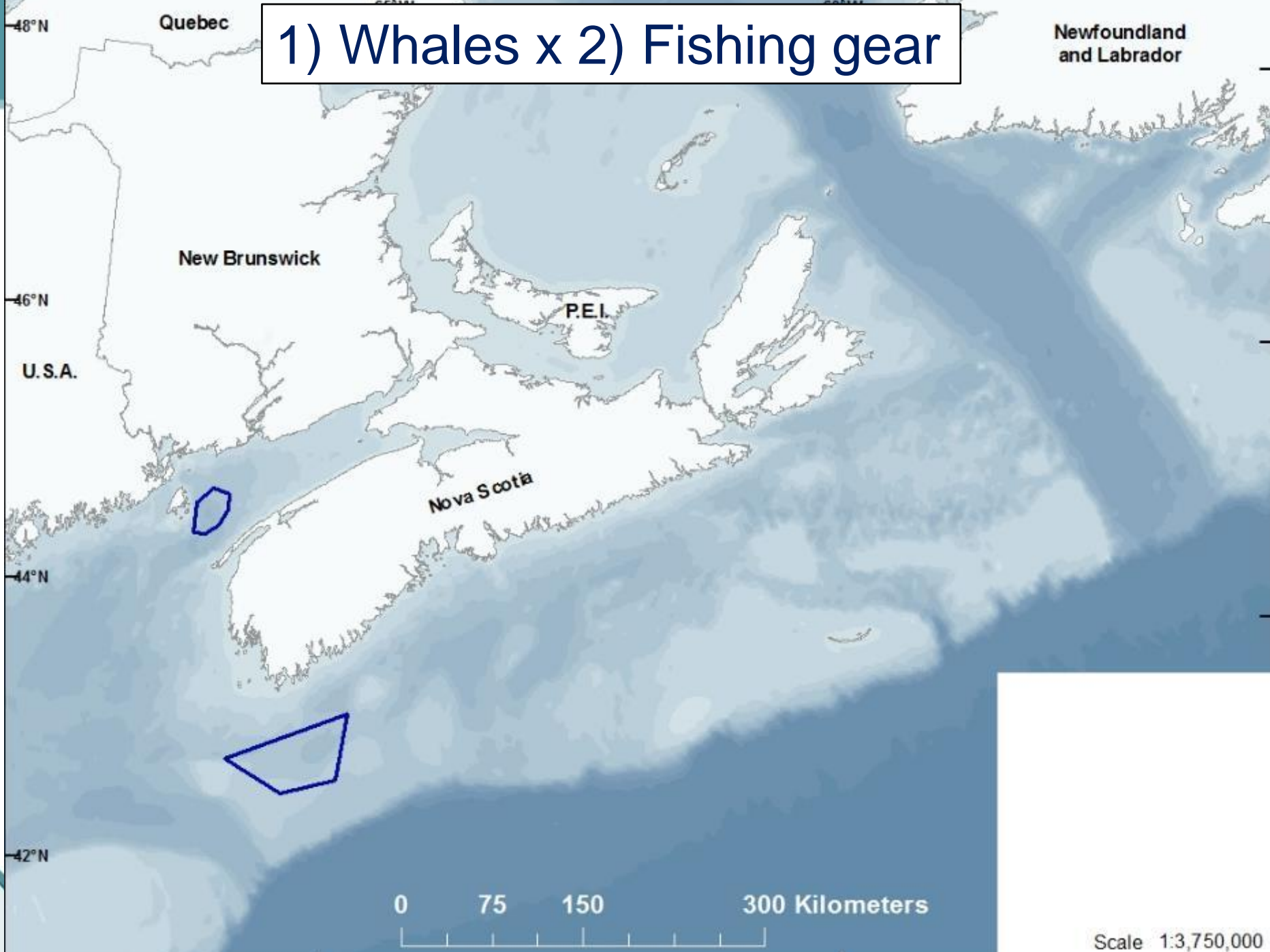


Scale 1:3,750,000

## 2) Where (& when) is the fishing gear (& which)?

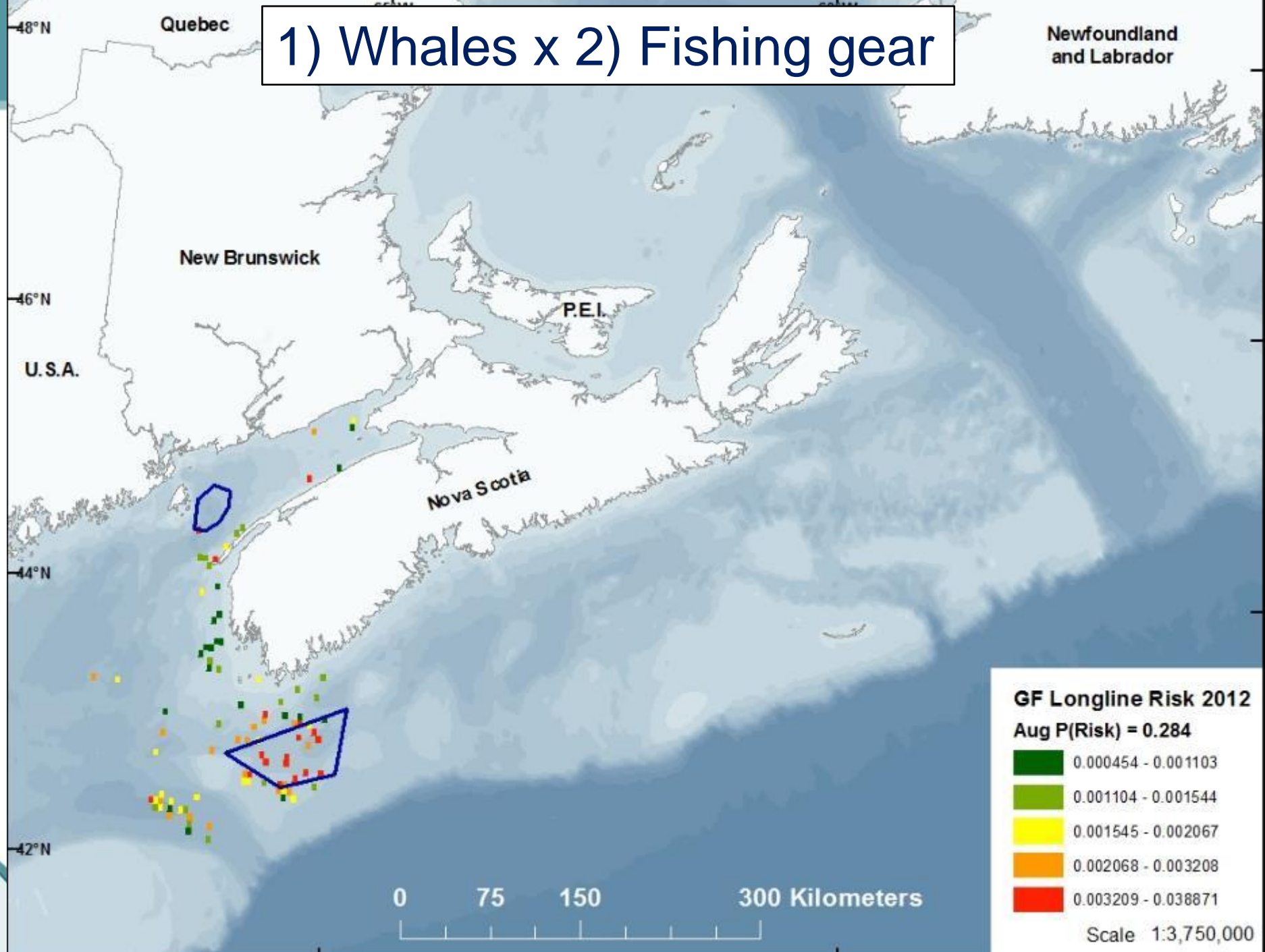


# 1) Whales x 2) Fishing gear

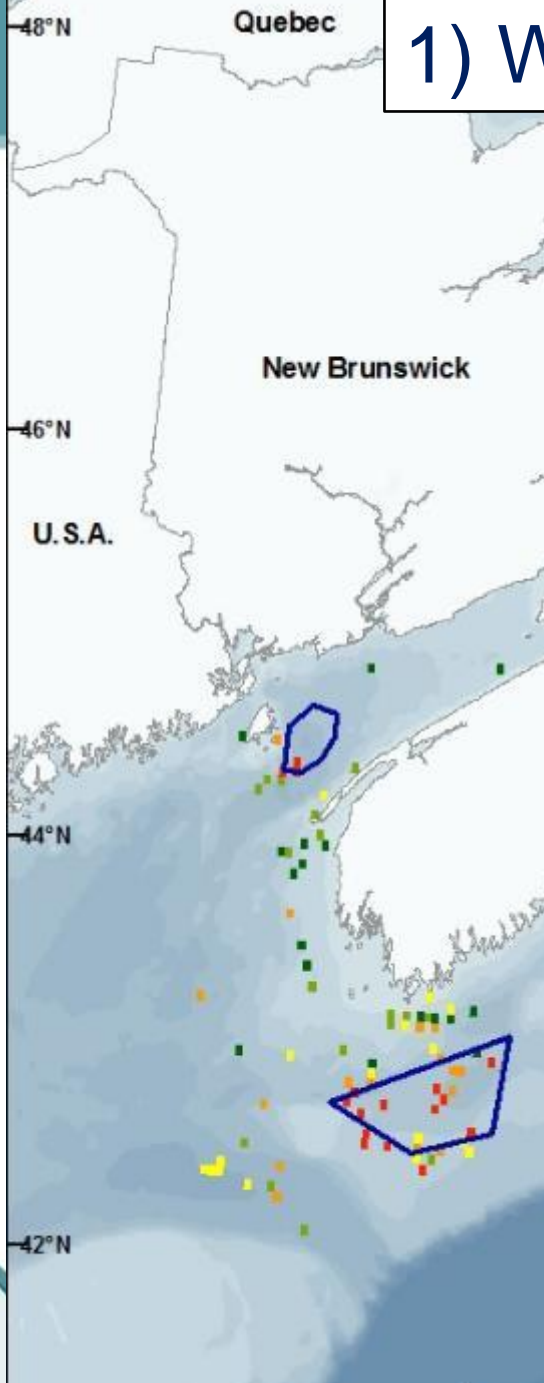




# 1) Whales x 2) Fishing gear



# 1) Whales x 2) Fishing gear



Newfoundland and Labrador

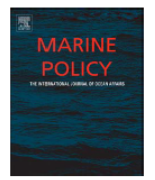
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<sup>b</sup> WWF-Canada, Atlantic, 5251 Duke Street, Duke Tower Suite 1202, Halifax, NS, Canada B3J 1P3  
<sup>c</sup> Oceanography Department, Dalhousie University, PO Box 15000, Halifax, NS, Canada B3H 4R2

### ARTICLE INFO

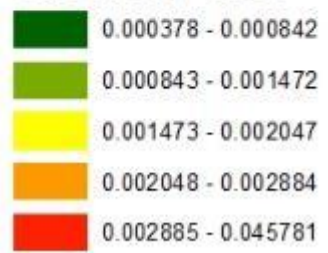
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Entanglement  
Fishing

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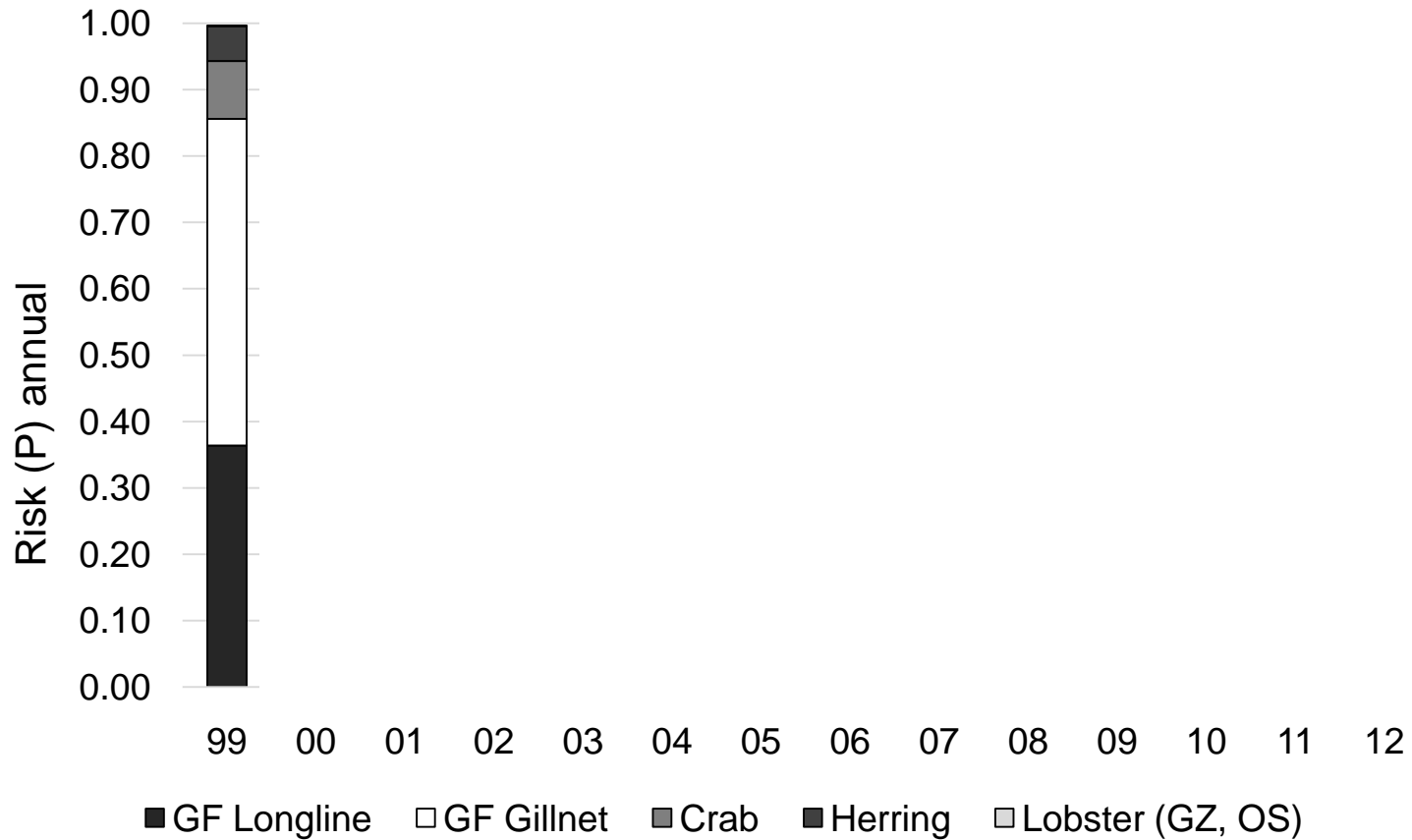


### GF Longline Risk 2012 Sep P(Risk ) = 0.294

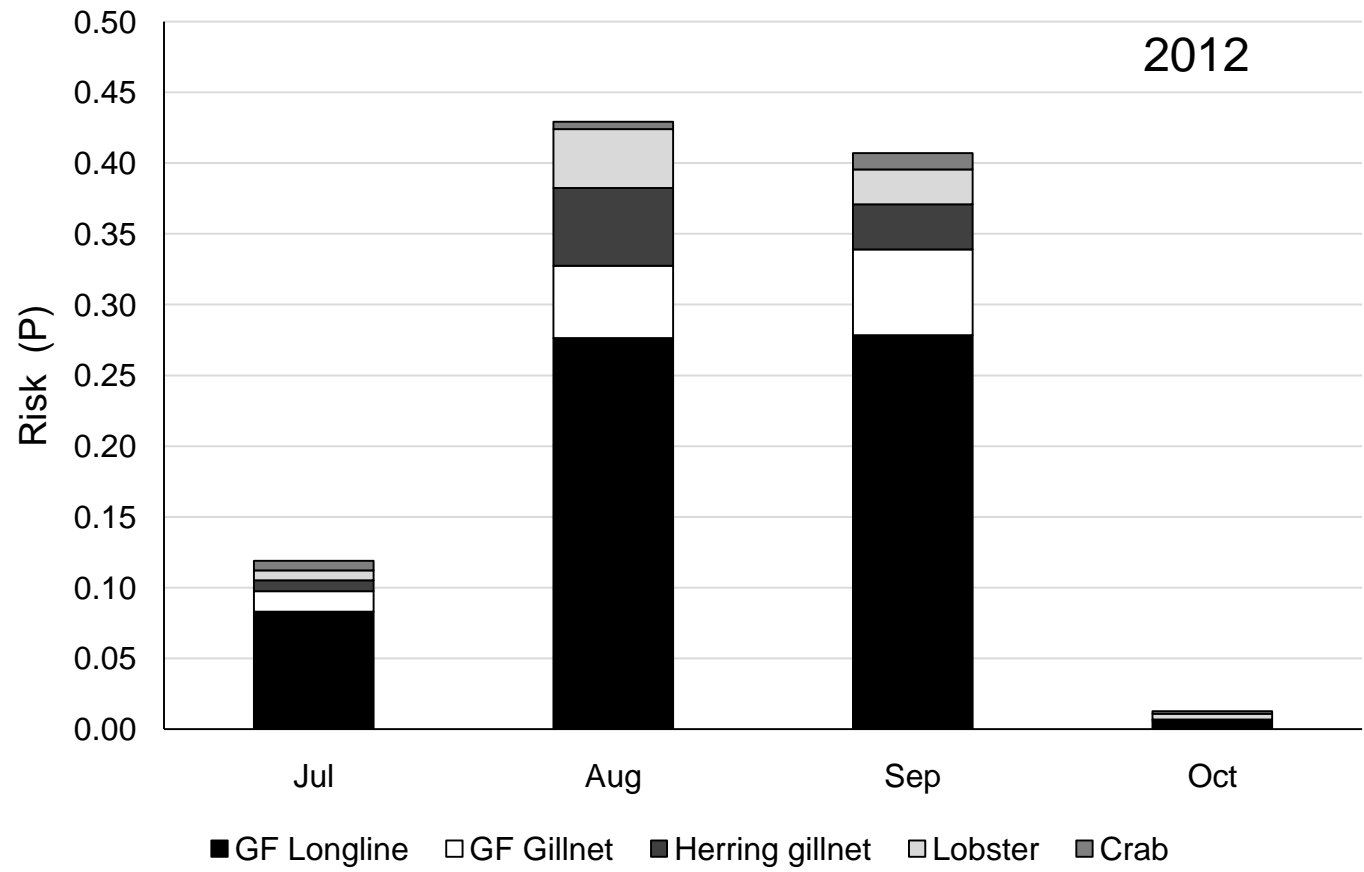


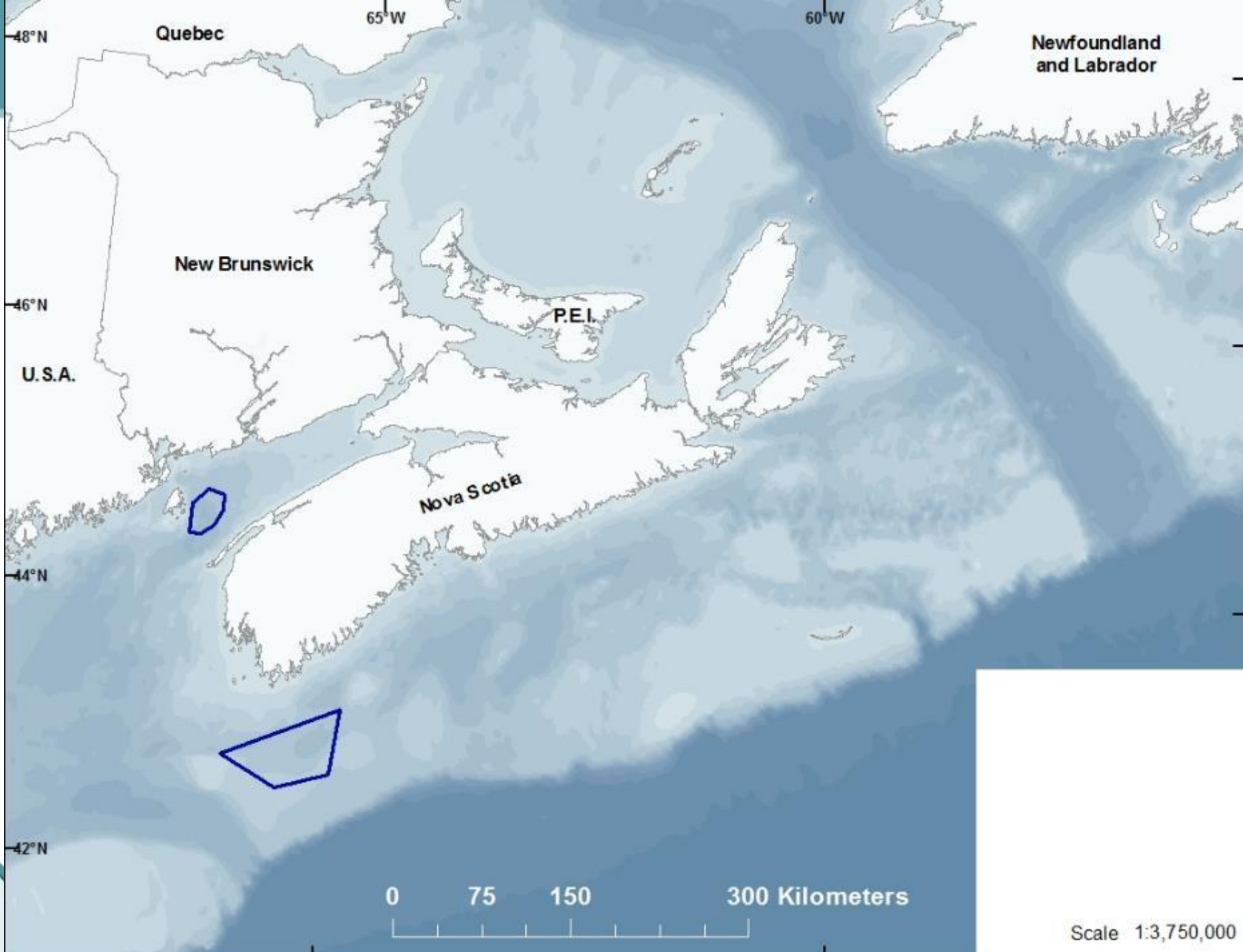
Scale 1:3,750,000

*\* Risk = Probability that whales will:  
encounter fishing gear;  
become entangled;  
and die.*

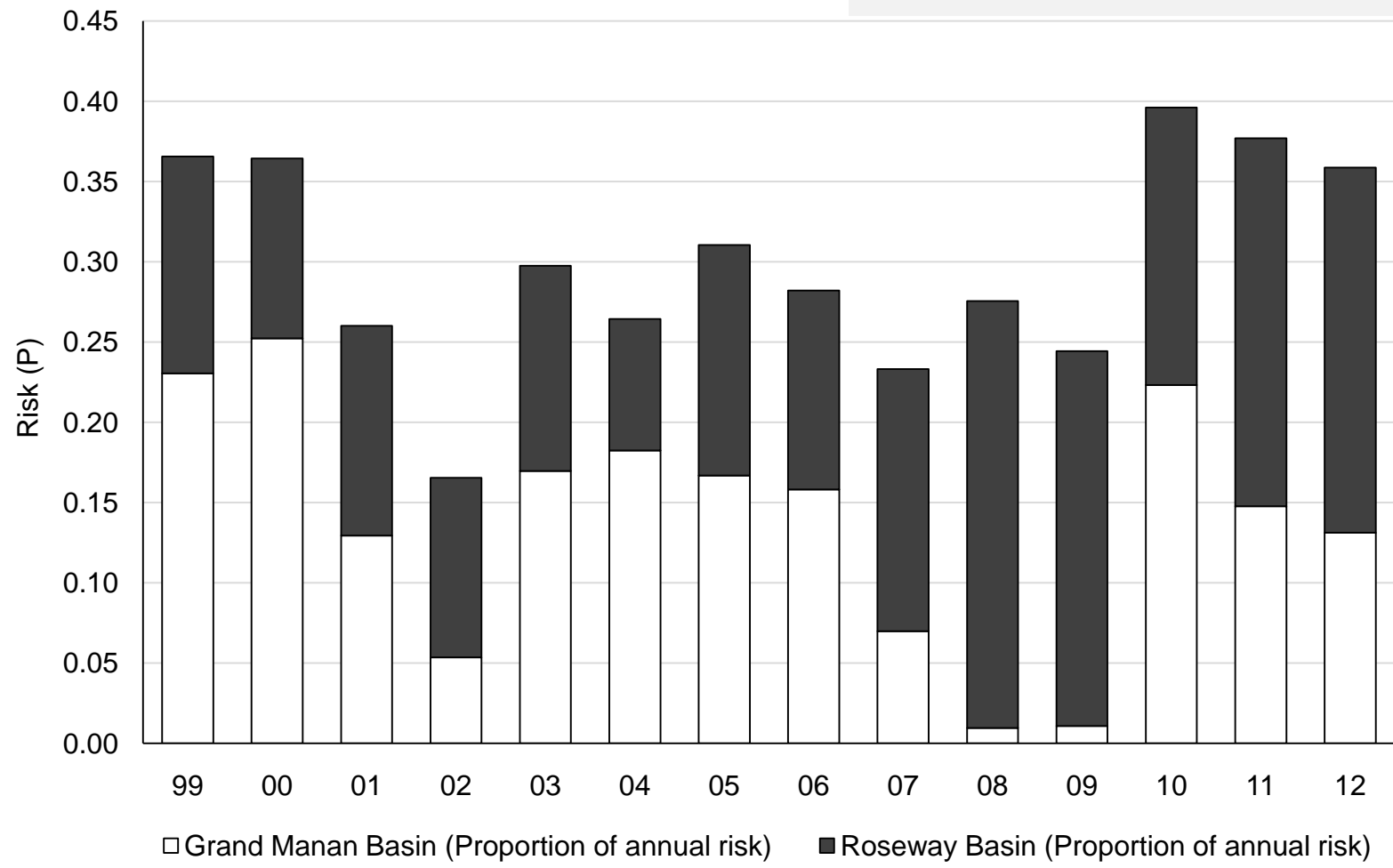


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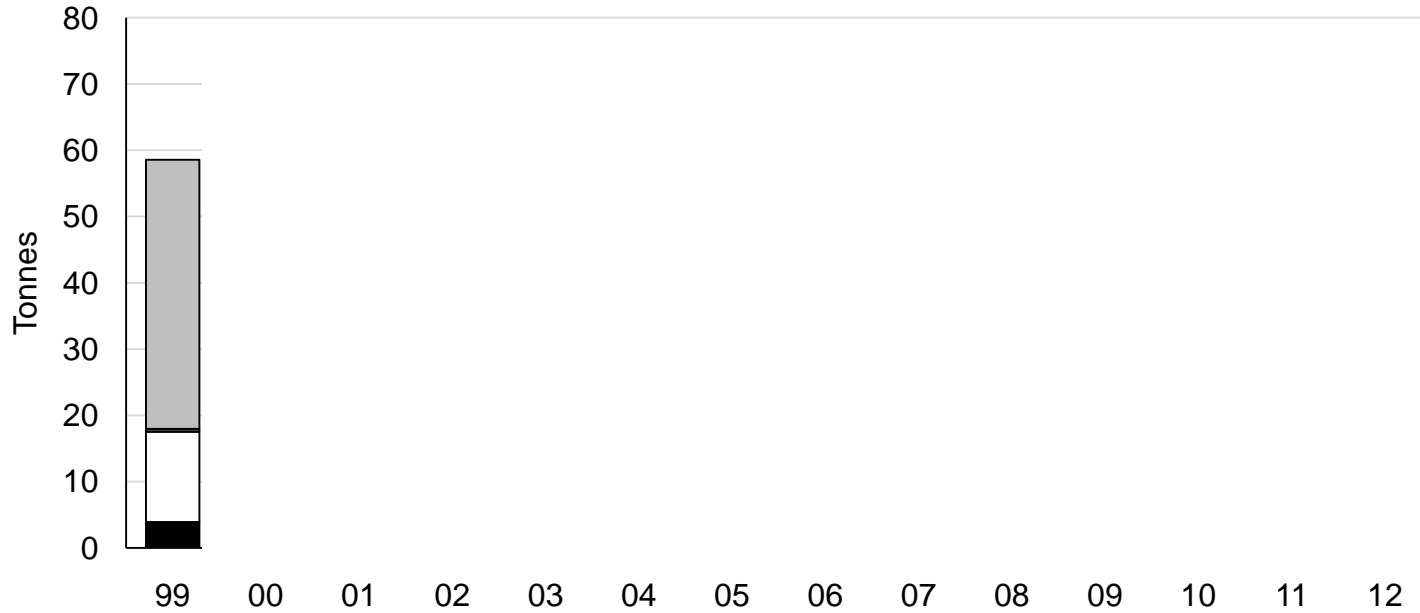


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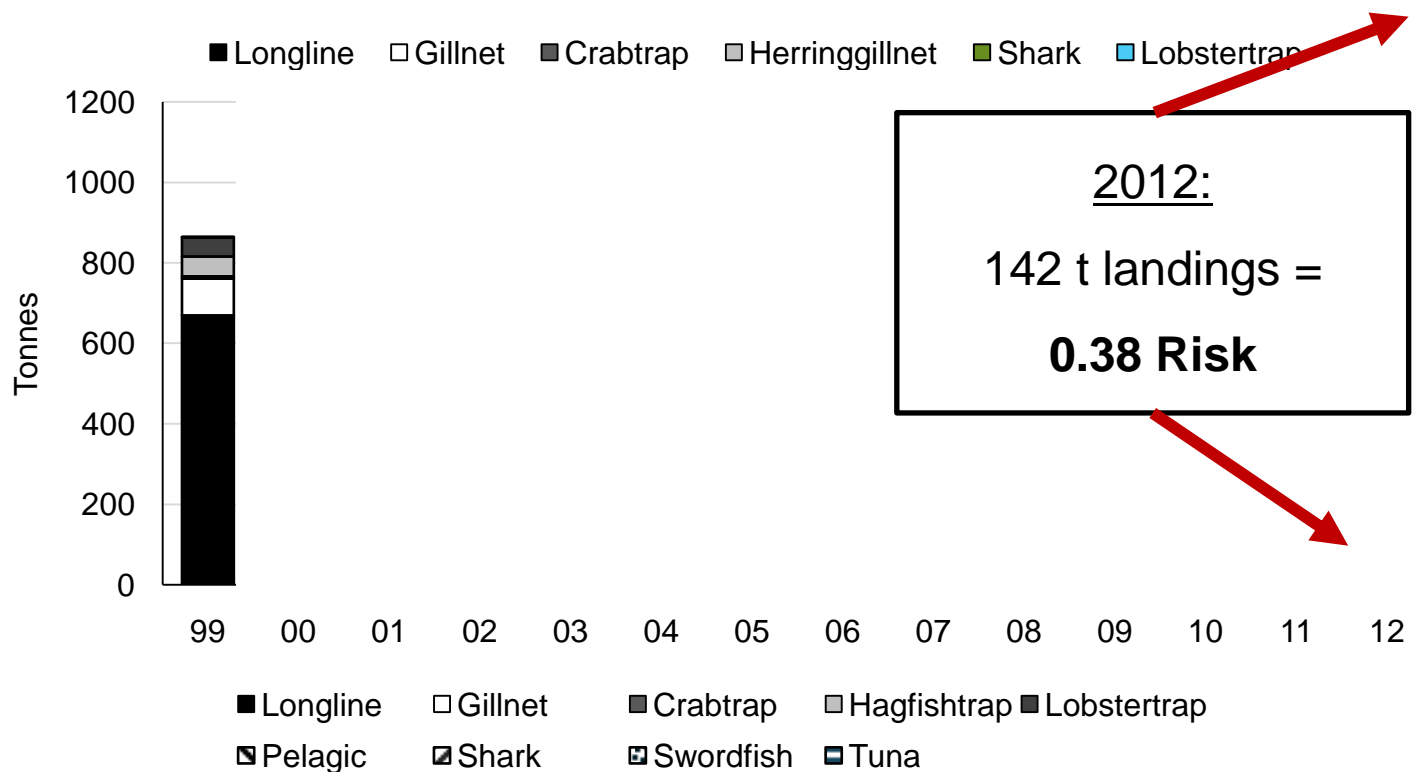


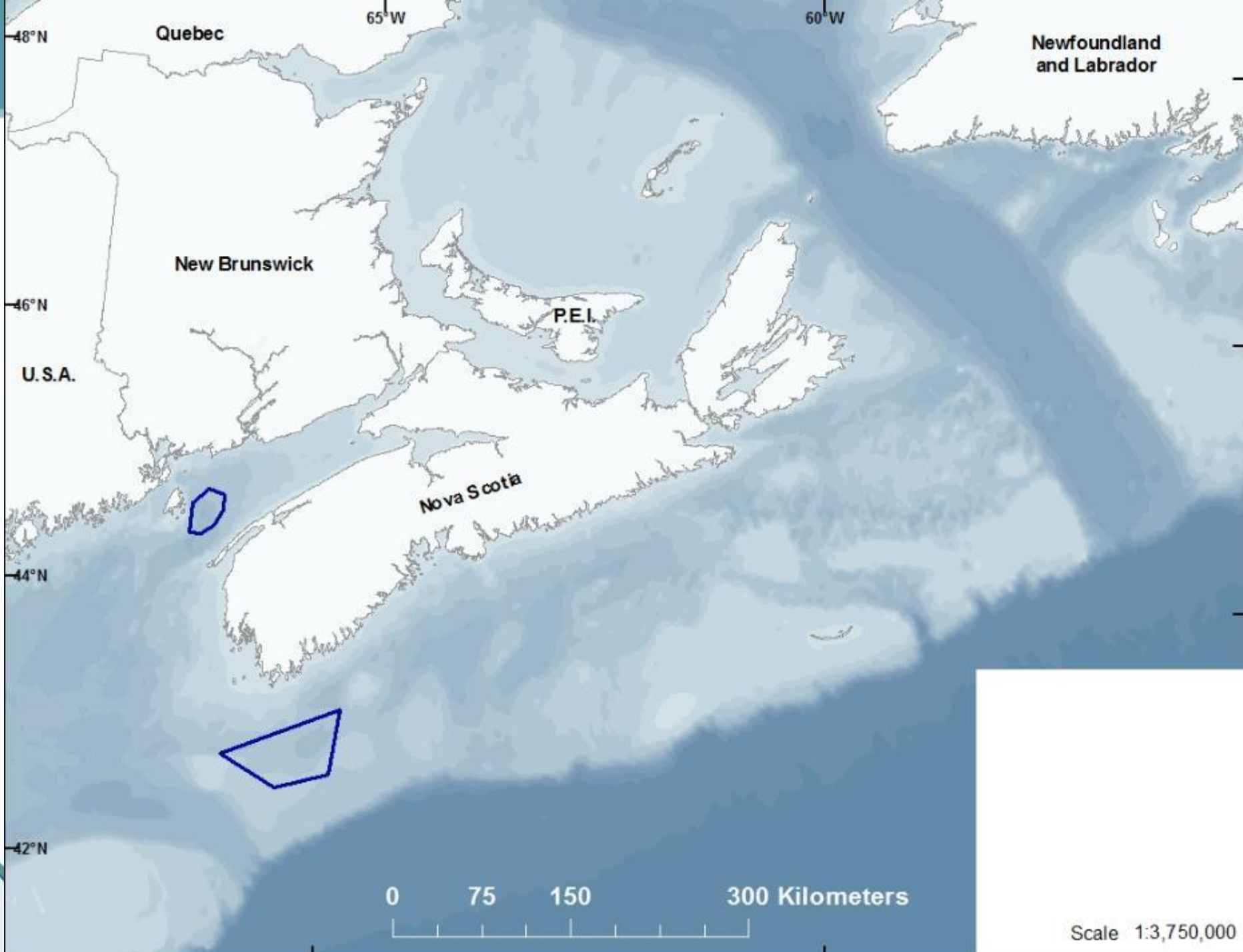
# What's the 'cost'?

## Grand Manan



## Roseway







A blue-tinted photograph of a fishing boat deck. Several crew members in heavy gear are visible, working with equipment. A large fishing net is being hoisted over the side of the boat. The ocean is visible in the background.

## **Fishermens' Rules:**

### **1) Whatever we change must make a difference.**

*We will only support changes that will work.*

### **2) Want only the changes that are necessary; look local.**

*Don't make changes to everything, everywhere.*

### **3) Make it a part of the law.**

*Volunteer actions only go so far. We need rules for everyone to follow.*



## How to reduce risk by 30% and what is the 'cost'?

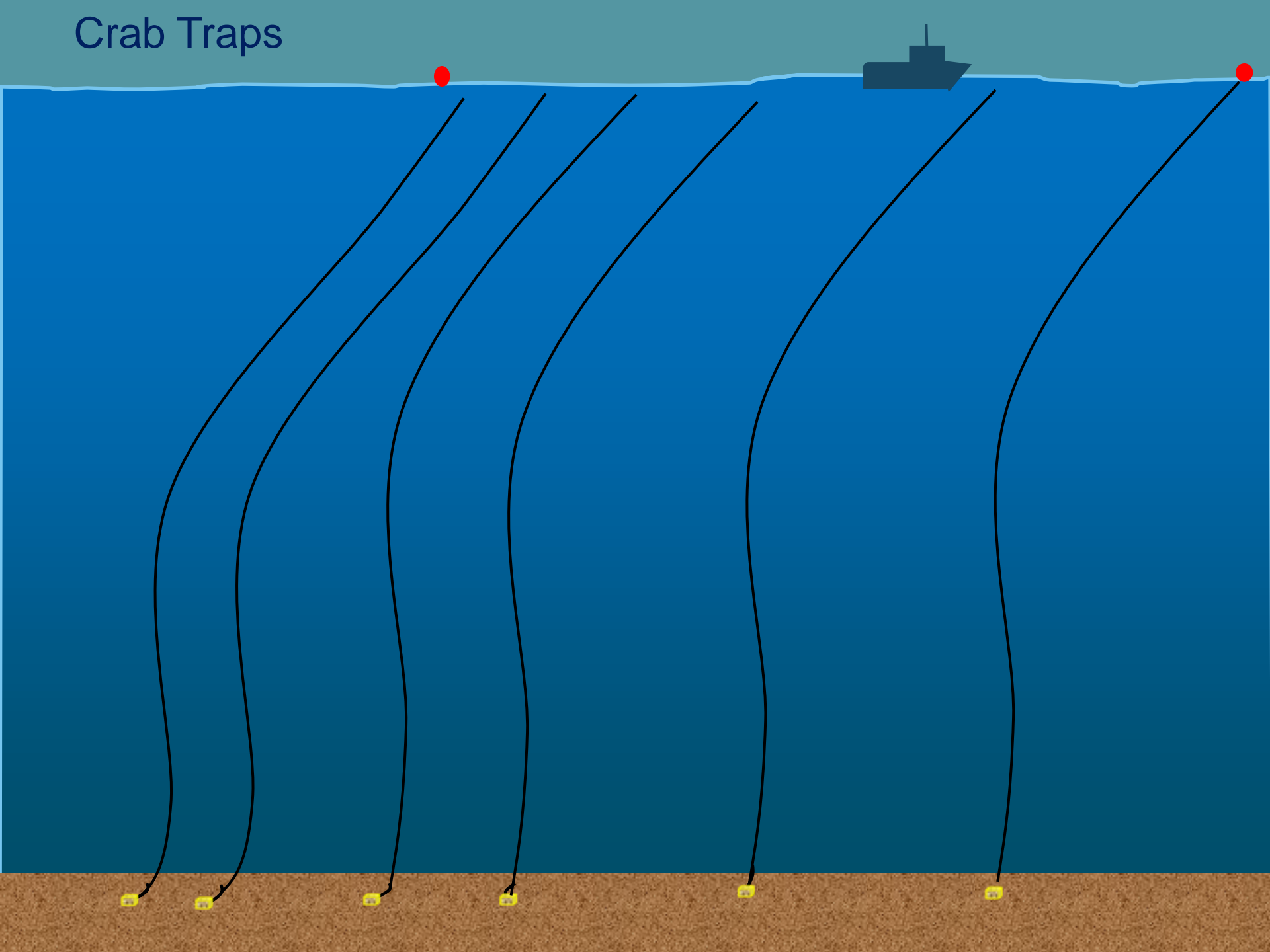
Options	Risk reduction	Annual landings: t (% region)
Grand Manan Basin & Roseway Basin		

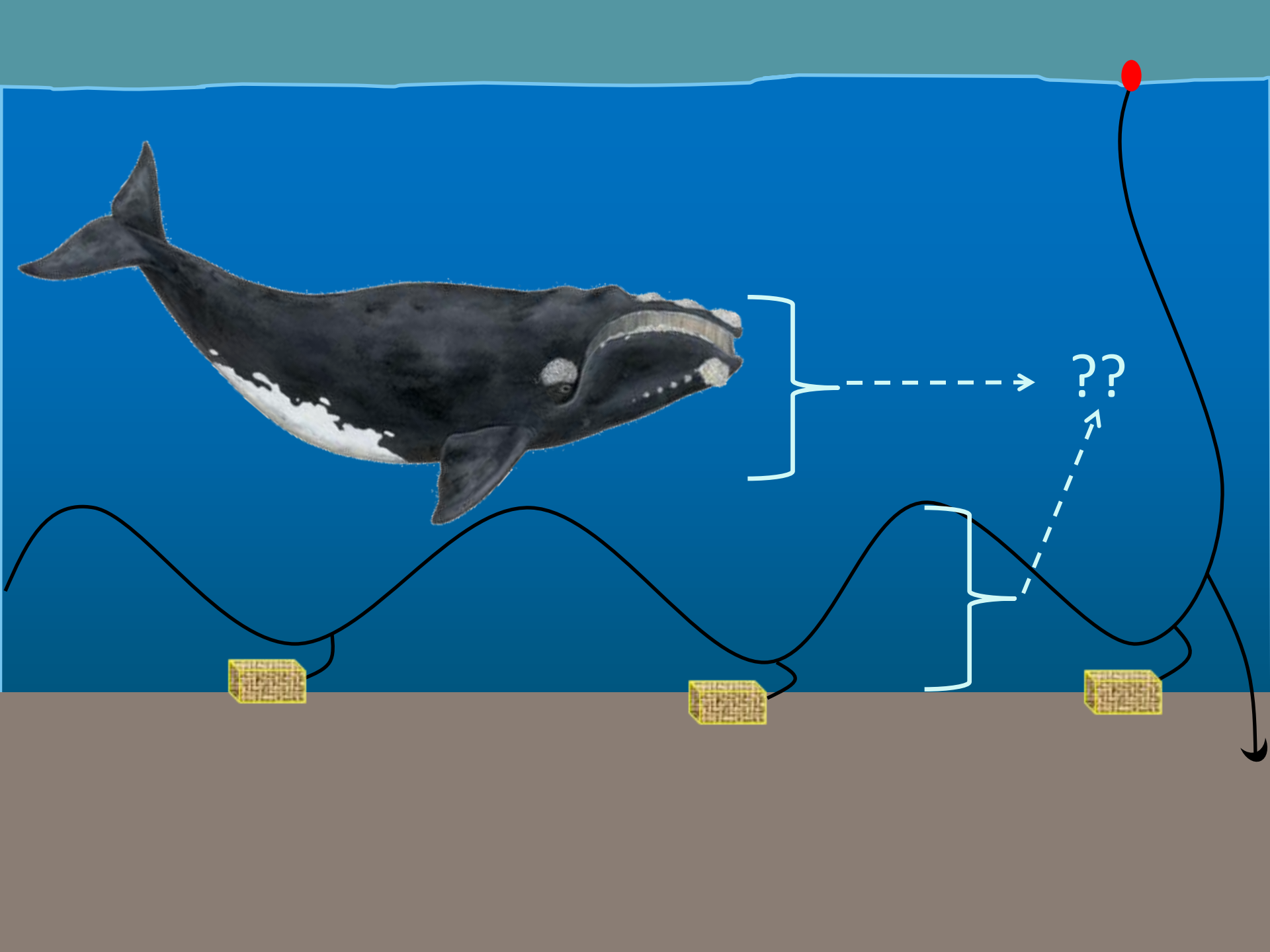
**Time to act.**

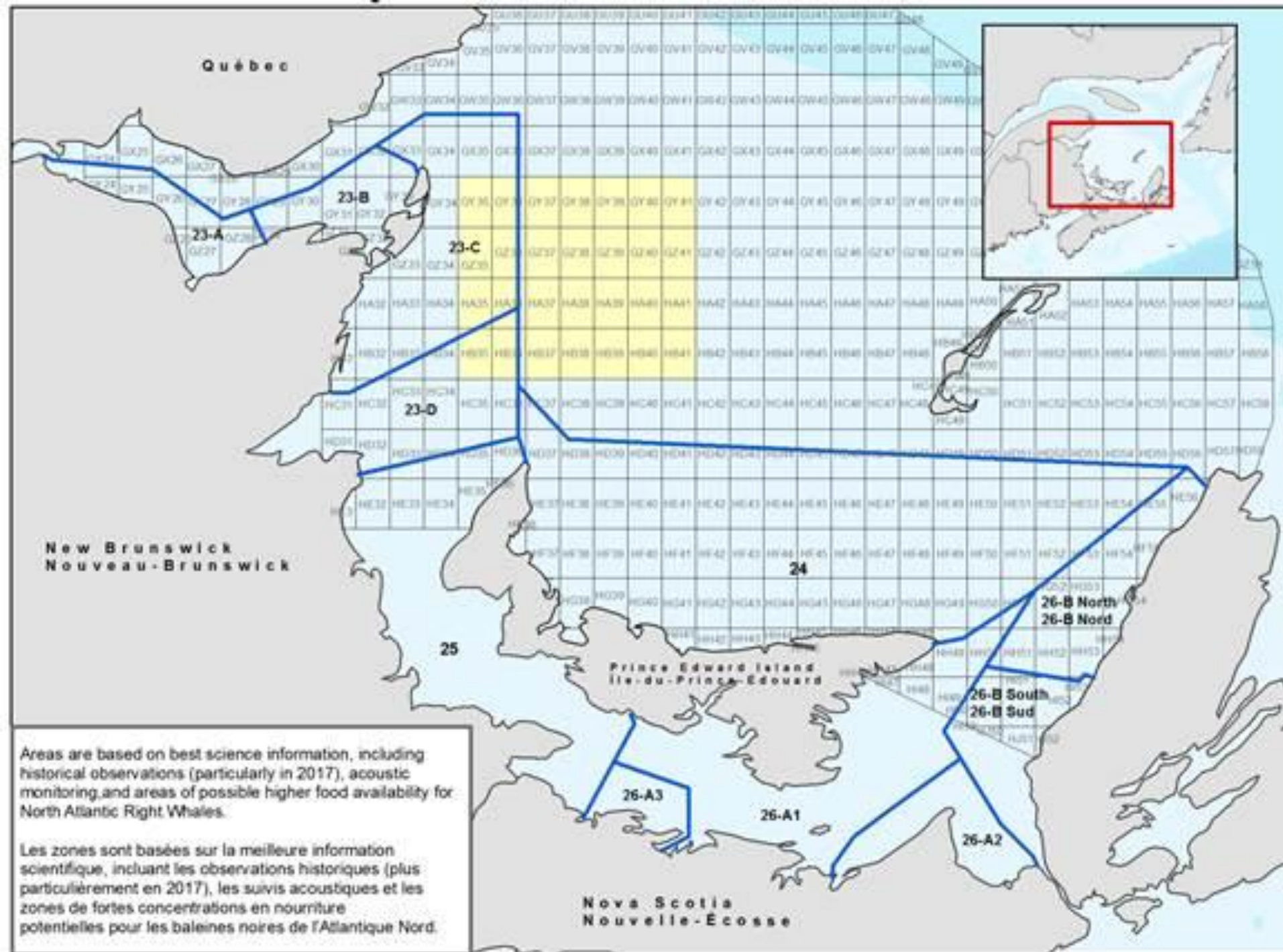
# What we need to know

- 1) Where (and when) are the whales?
- 2) Where (and when) is the fishing gear?  
(And which?)

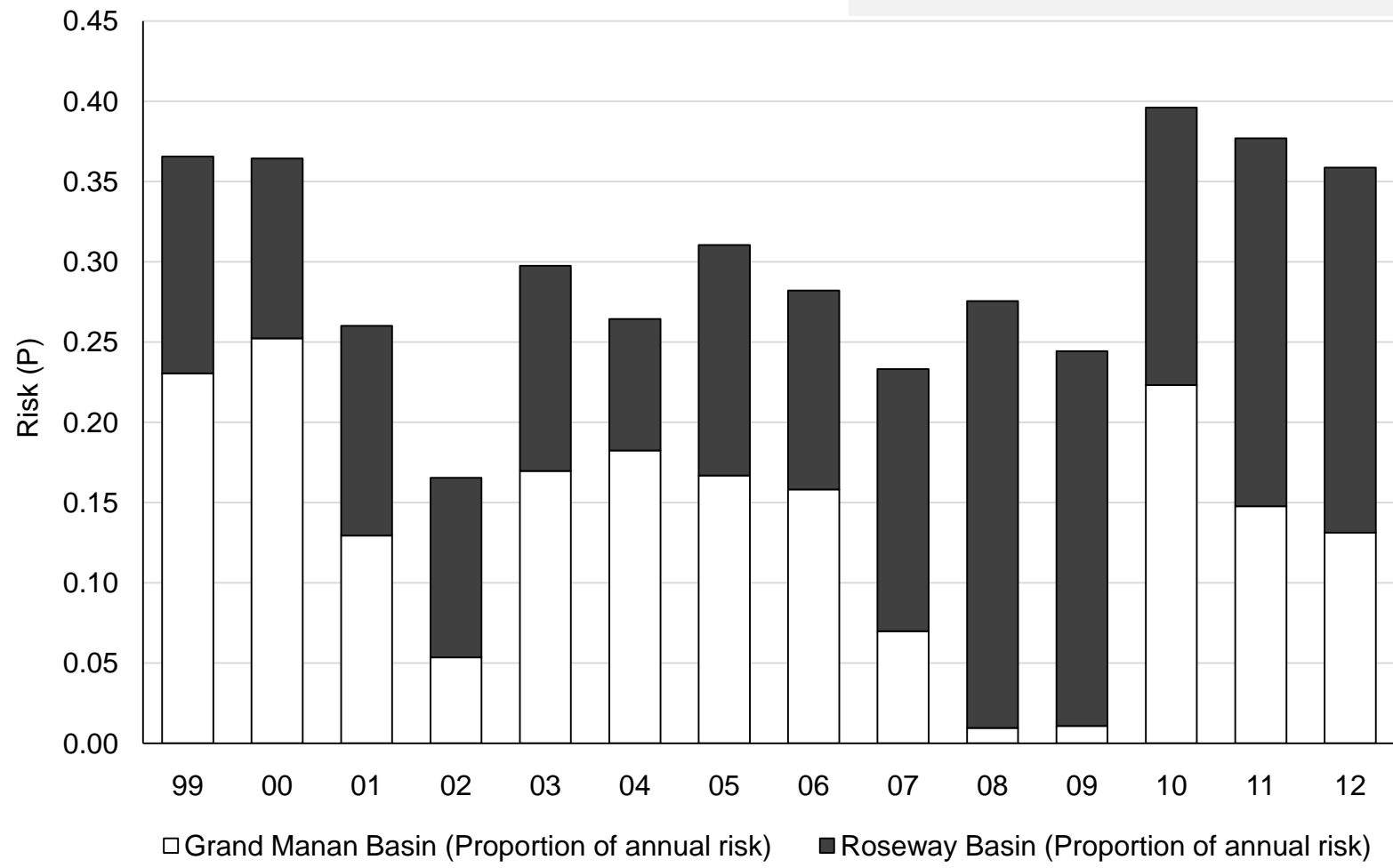
# Crab Traps







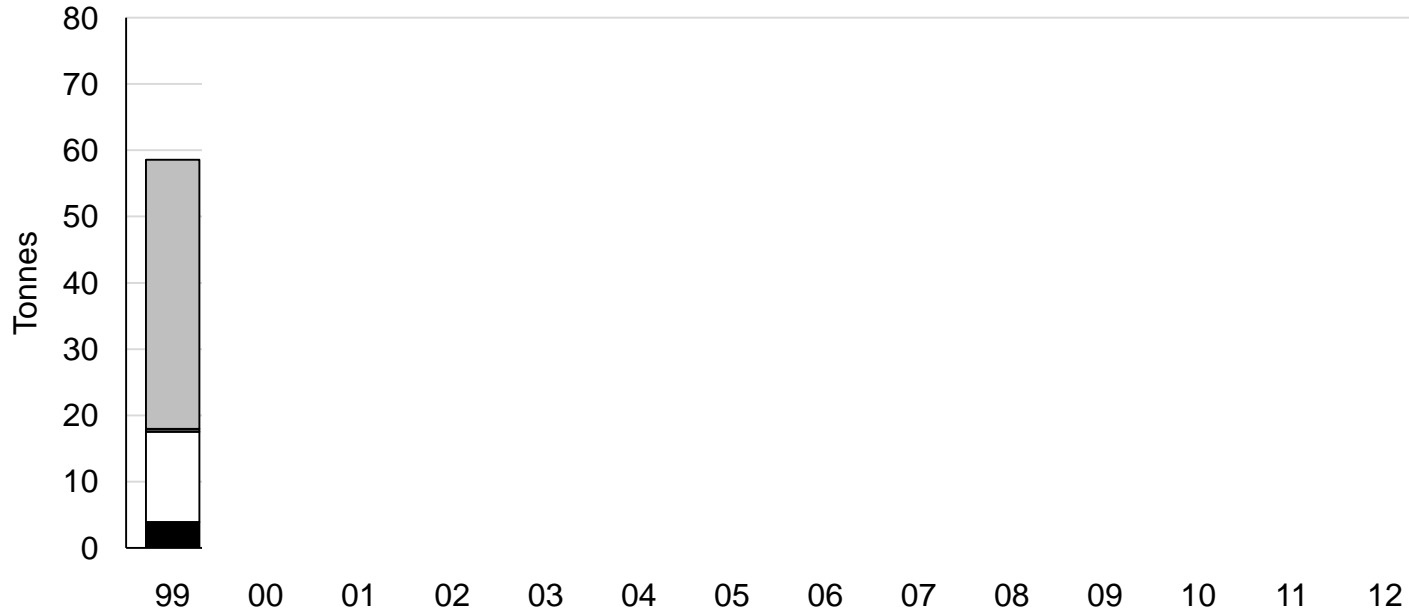
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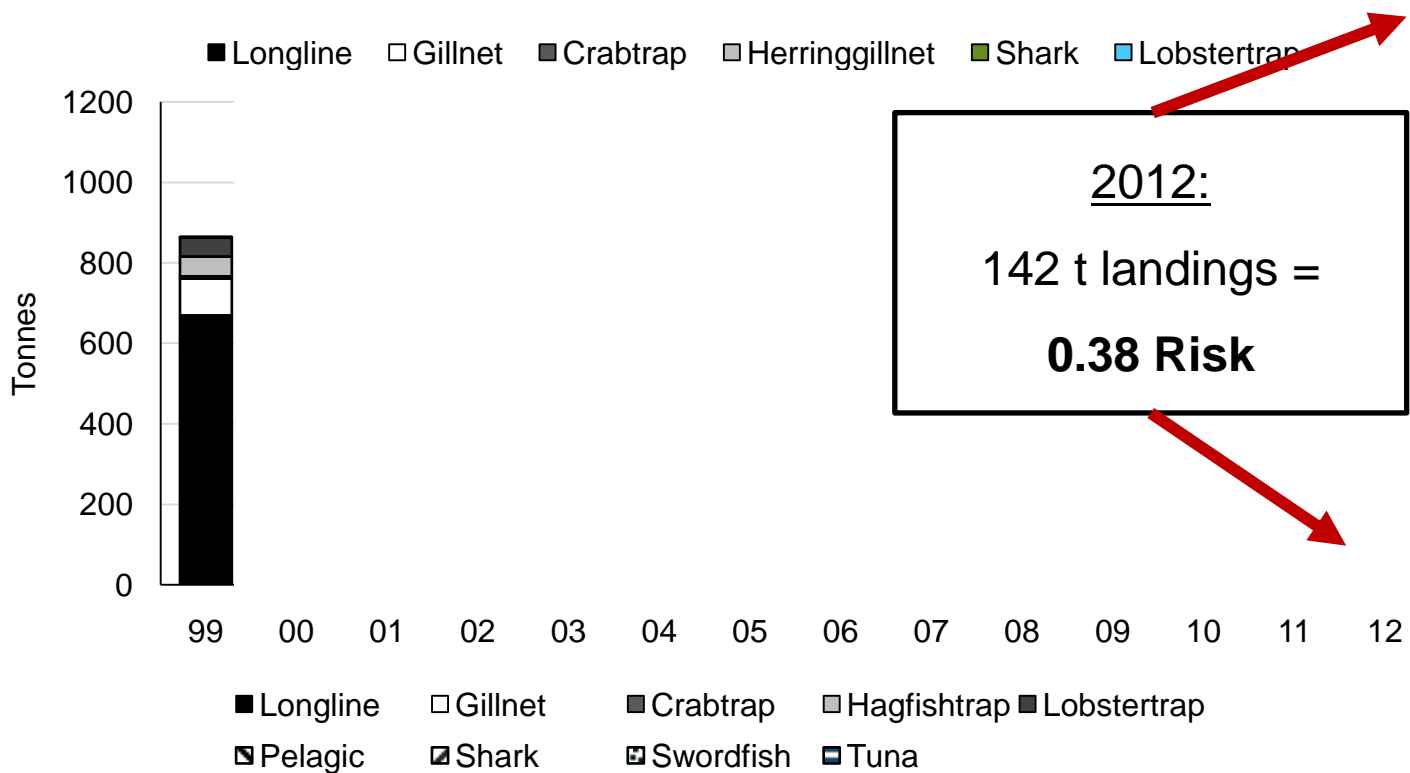


# What's the 'cost'?

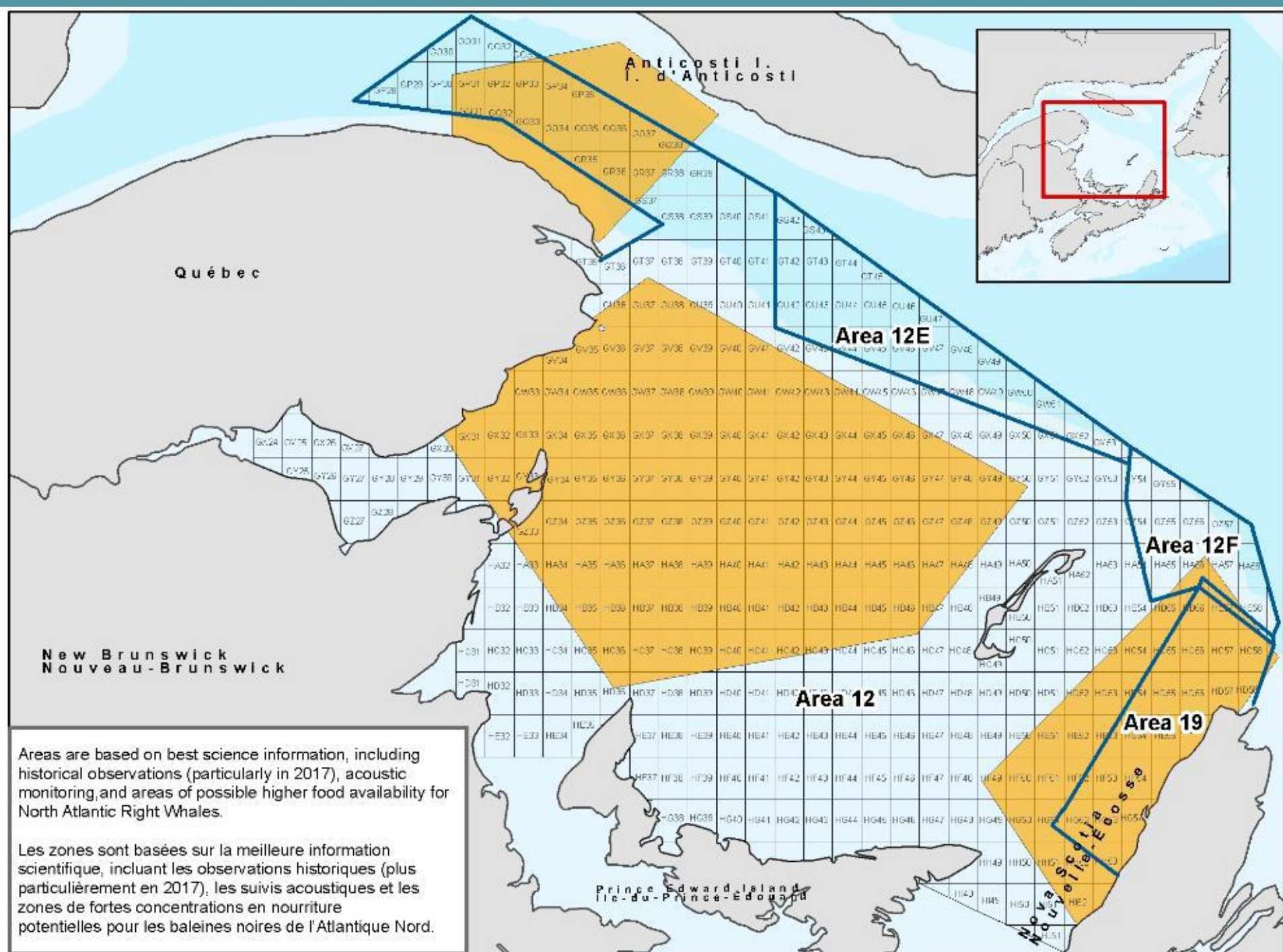
## Grand Manan



## Roseway







Areas are based on best science information, including historical observations (particularly in 2017), acoustic monitoring, and areas of possible higher food availability for North Atlantic Right Whales.

Les zones sont basées sur la meilleure information scientifique, incluant les observations historiques (plus particulièrement en 2017), les suivis acoustiques et les zones de fortes concentrations en nourriture potentielles pour les baleines noires de l'Atlantique Nord.