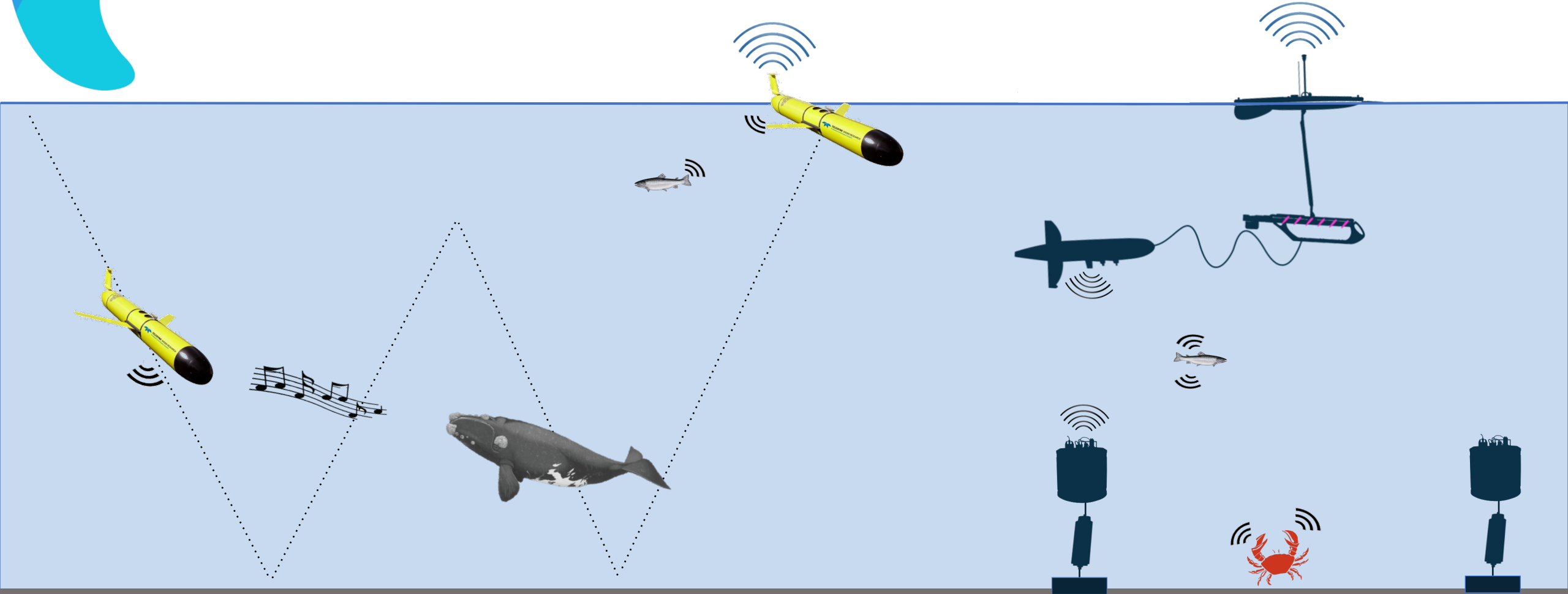


## CEOTR glider whale monitoring program



# CEOTR glider team

Sue L'Orsa, Jude van der Meer, Tyler Byrne, Zach Viva, Noa Wilks, Collette Robertson, Adam Comeau







Gulf of Saint Lawrence

# Protecting the North Atlantic right whale

Critically endangered species

Protection measures can help industry

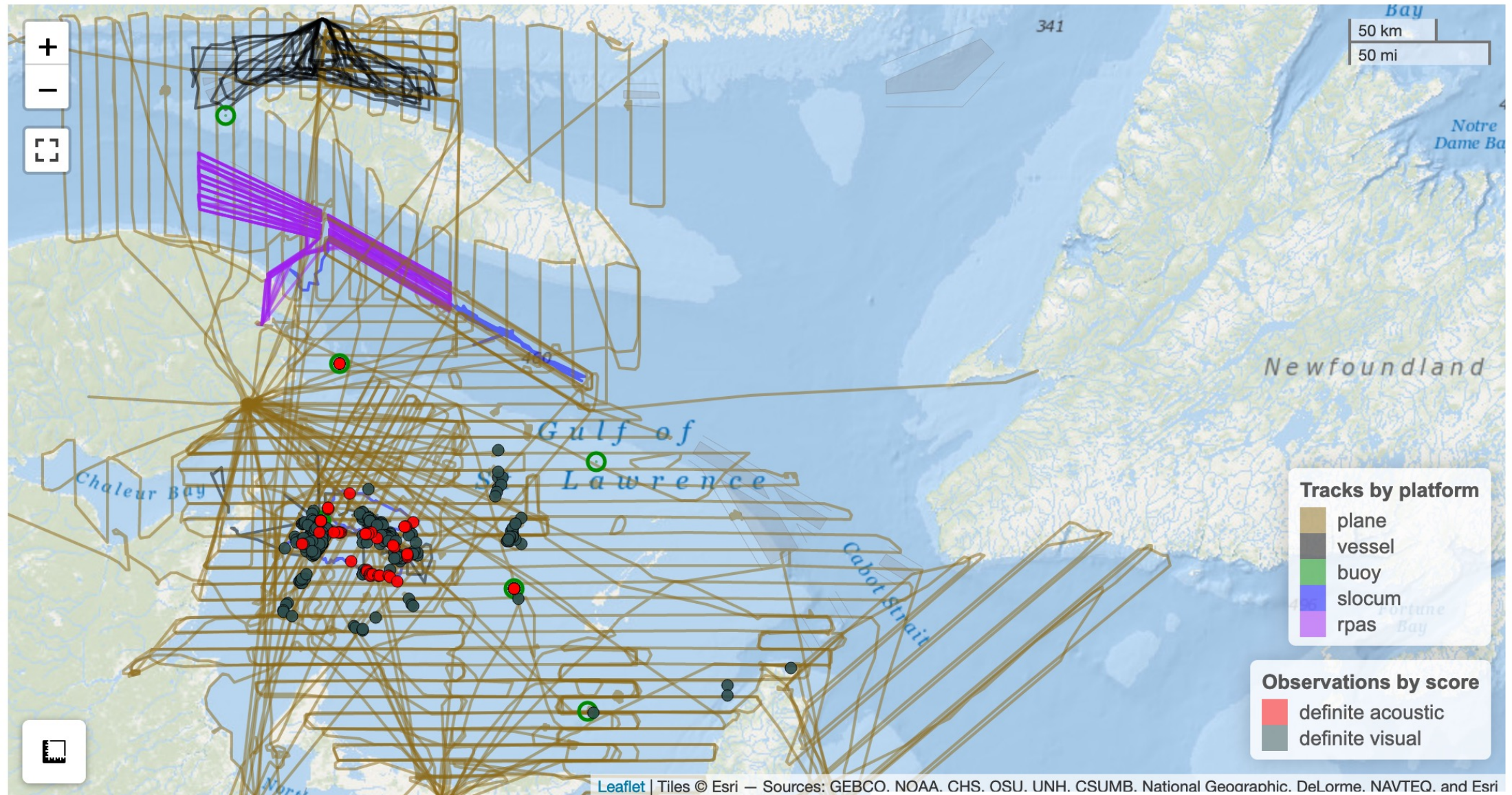
Monitoring methods

- Visual surveys (boats and airplanes)
- Acoustic (gliders, buoys)





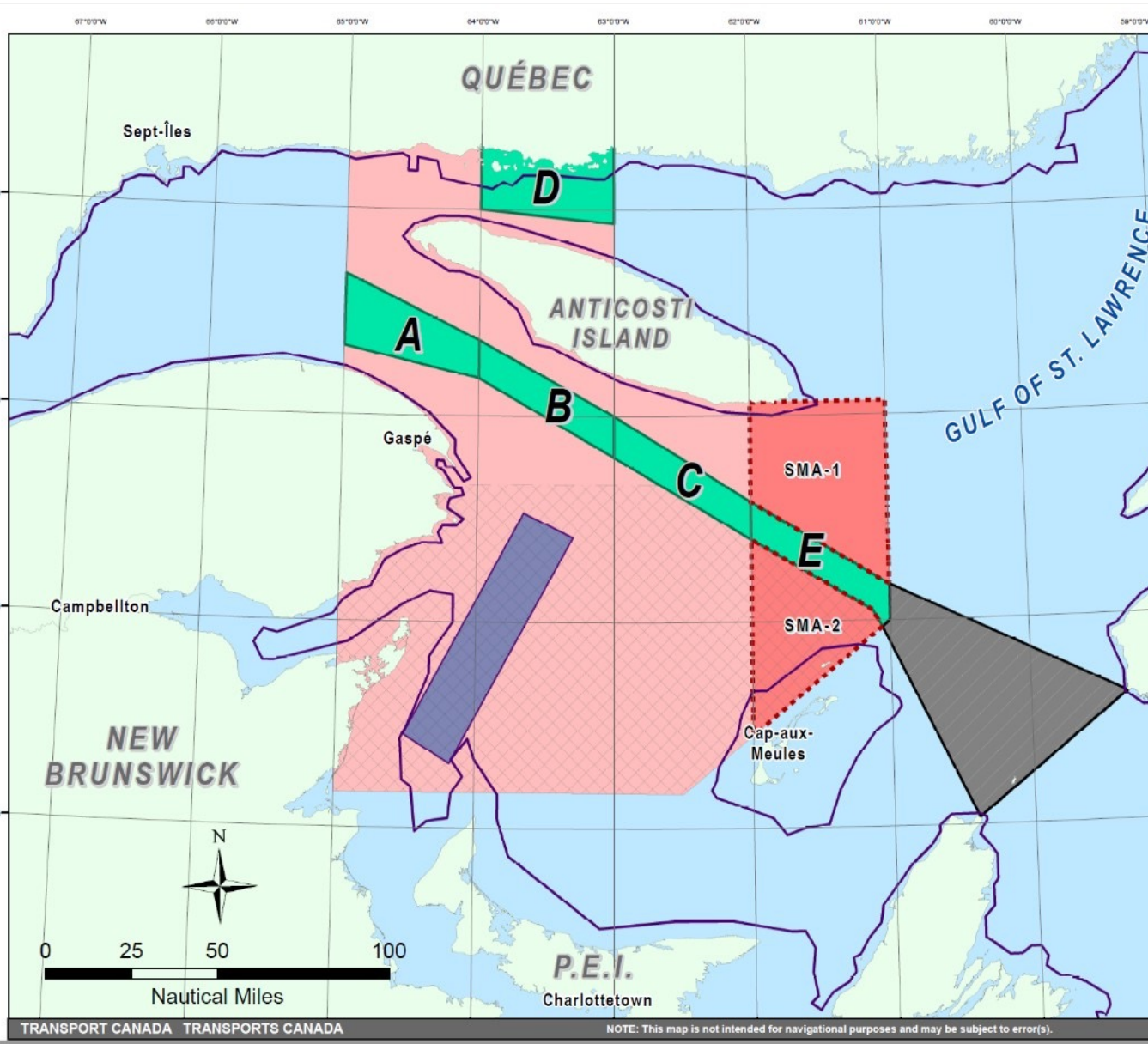
# Example of monitoring effort in August 2022



These data are preliminary data, subject to change, and not to be used without permission from the co

<https://whalemap.org/WhaleMap/>





**Dynamic shipping zone A/B/C/D/E (green)**

Speed limits in shipping lanes when NARW are present

- 10 knot limit for 15 days after detection
- Speed limit if when monitoring isn't happening
- No speed limits when whales aren't detected

**Voluntary slowdown zone (grey)**

- Known migration route
- More exploratory

Dynamic shipping zone: zone area ~700 km<sup>2</sup> (41 by 17 km; 23 by 9 nm)

# Gliders

- Using 2 gliders + spare
- Monitored for 7.5 glider months (2021)
- 8.3 glider months (2022)
- More in 2023

Slocum gliders equipped with DMON (WHOI, Baumgartner): low power consumption, low false detections

Detections are reported in near realtime when the glider surfaces, then validated by humans

Each mission last about 4 months (hopefully longer this year)



Photo by Nicolas Winkler



# Example glider missions 2022

## Dynamic shipping zones

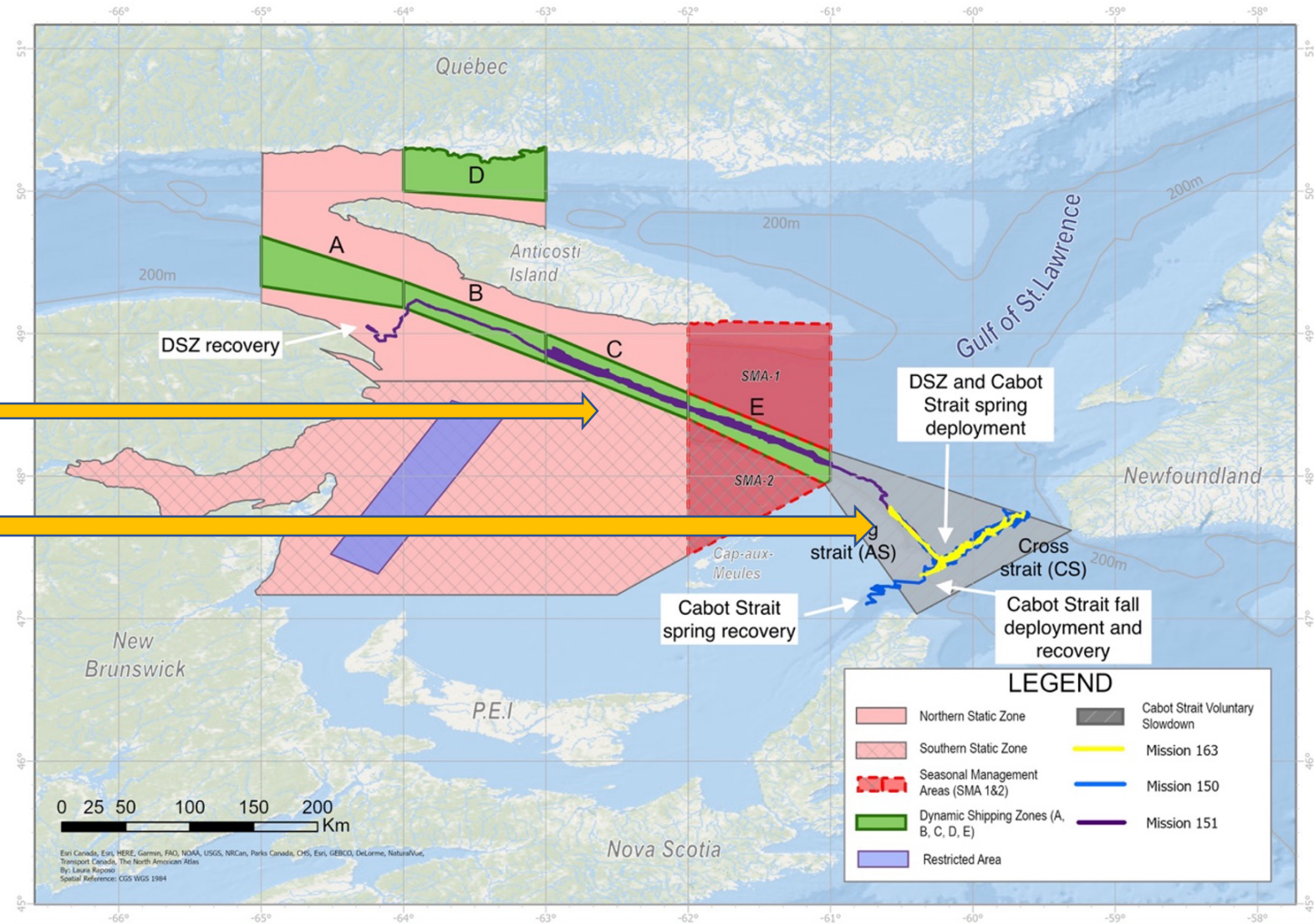
Monitored for 113 days from April to September, had one validated NARW detection (14 in 2021)

## Voluntary zone

76 day spring mission

39 day fall mission

No validated NARW detections





# Setting up a new monitoring program

## Considerations

- Define area to survey
- Identify when to monitor
- Are gliders the right tool?

## What is needed?

- Gliders plus spare gliders, spare parts, spare batteries. SPARES!
- People – glider pilots, glider technicians, whale experts (24/7)
  - Leverage existing glider groups
- A detection system with low false positives
  - WHOI DMON, Jasco Observer
- People to validate detections for increased confidence
- Pipeline to get detection data to appropriate authorities



Photo by Nicolas Winkler  
Nicolas Winkler Photography

# What we've found

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- Whales are complex animals and their behaviour can change from year to year
- Long endurance missions are ideal for constant monitoring.
- Industry can benefit from these types of monitoring programs
- Gliders are a useful tool to augment right whale monitoring programs.

