

Maine Department of Marine Resources Division of Marine Mammal Research: Updates



Erin Summers
Division Lead



Photo Credit: Sarah Leiter
Taken under NMFS Permit No. 27858



NOAA
FISHERIES

ENDANGERED NORTH ATLANTIC RIGHT WHALE POPULATION STATUS

Primary threats



Vessel strikes



Fishing gear entanglements

CANADA

UNITED STATES

FORAGING

CALVING

318
WHALES
2000

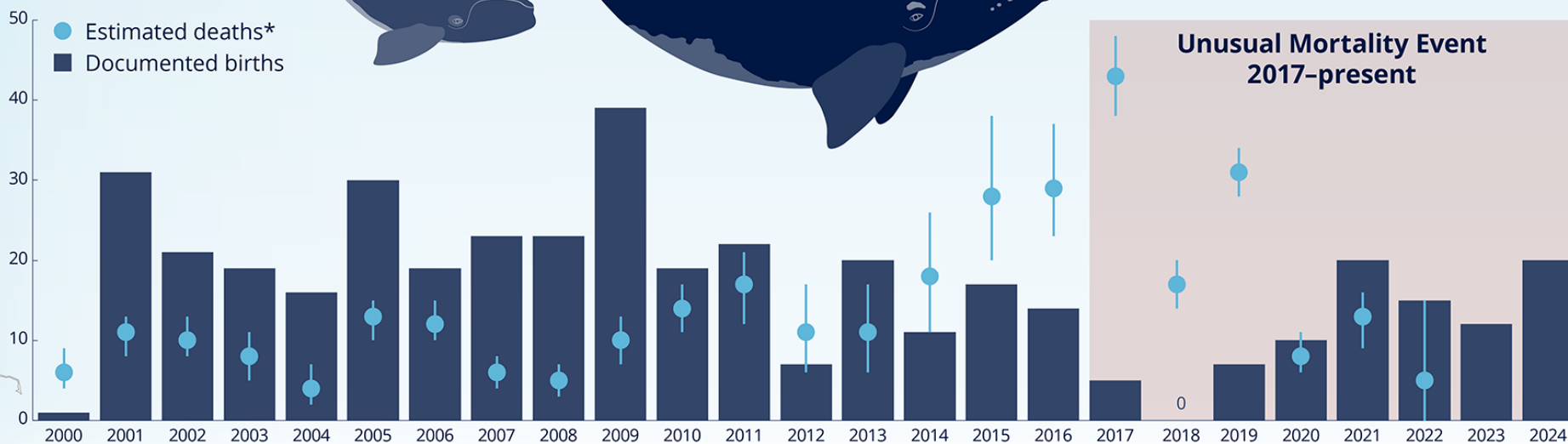
477
WHALES
2010

431
WHALES
2017

Approximately
370
whales remain

2023

● Estimated deaths*
■ Documented births




Unusual Mortality Event 2017-present

Updated October 2024

*Total deaths not estimated for the last 2 years due to lag in data processing and analysis.

2024 – 2025 Updates

- ▶ Right whale #5120 cause of death determined to be entanglement in Maine trap/pot fishing gear
 - ▶ 5 known mortalities in 2024
 - ▶ 4 presumed dead calves in 2024
 - ▶ Highest mortality since 2019
 - ▶ Calving season is underway in the southeast US with 10 calves identified so far
- 

Whalemap.org

Data

Colors

Layers

Choose date(s):

☐ Specific date

☒ Date range

☐ Range among years

2024-06-01

to

2024-08-31

Choose platform(s):

Slocum Glider Plane

Vessel RPAS Buoy

Opportunistic

Choose platform name(s):

All

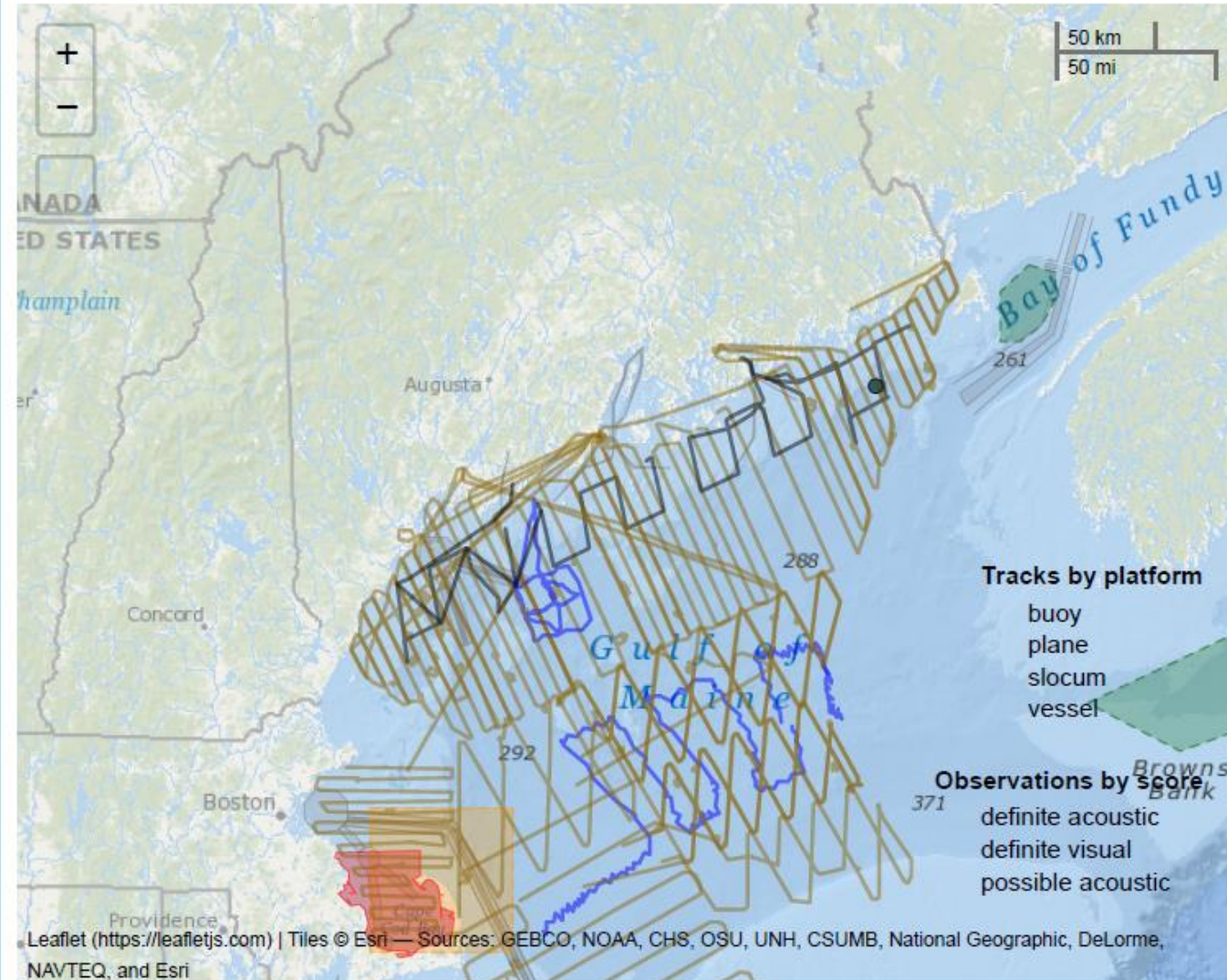
Choose species:

Right whale

Choose data source(s):

NARWC WhaleMap

Map



These data are preliminary data, subject to change, and not to be used without permission from the contributor(s)

Whalemap.org

Data

Colors

Layers

Choose date(s):

☐ Specific date

☒ Date range

☐ Range among years

2024-11-01

to

2025-01-01

Choose platform(s):

Slocum Glider Plane

Vessel RPAS Buoy

Opportunistic

Choose platform name(s):

All

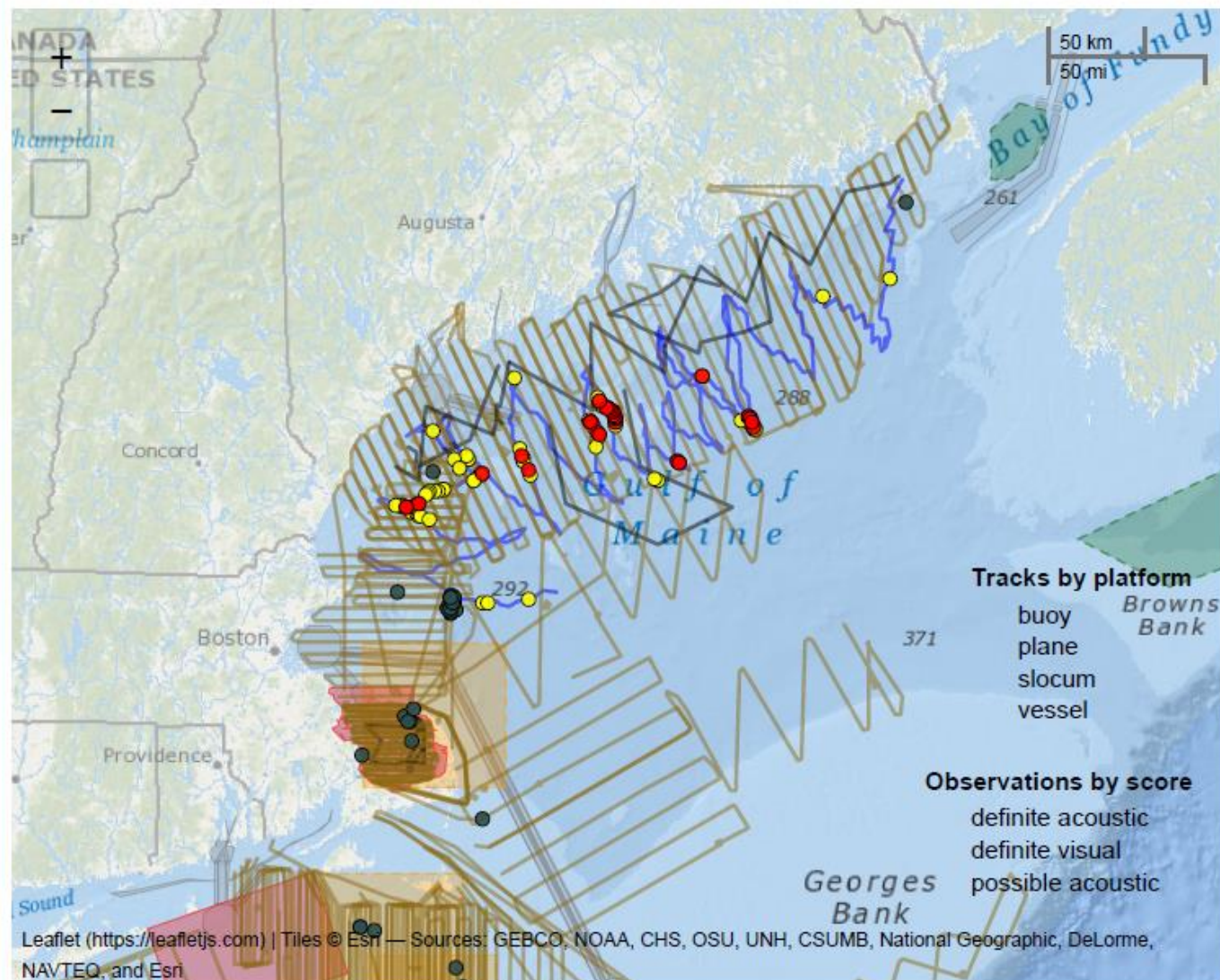
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Whalemap.org

Data

Colors

Layers

Choose date(s):

☐ Specific date

☒ Date range

☐ Range among years

2025-01-12

to

2025-02-01

Choose platform(s):

Slocum Glider Plane

Vessel RPAS Buoy

Opportunistic

Choose platform name(s):

All

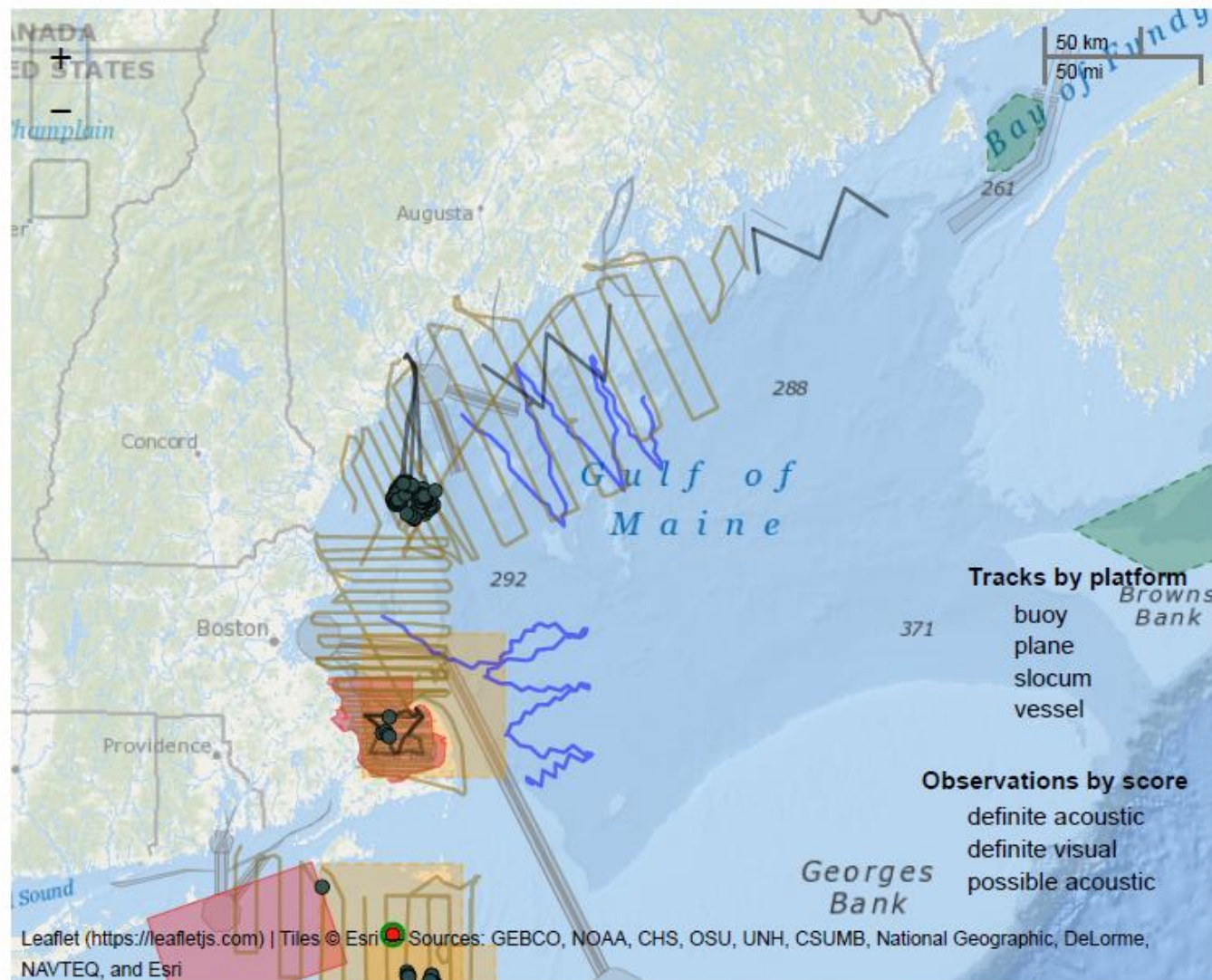
Choose species:

Right whale

Choose data source(s):

NARWC WhaleMap

Map



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Primary Program Goals:

Contributions to risk models -

Create and contribute to models that assess the risk of entanglement to right whales in the Gulf of Maine and guide management

- * Objective 1: Create alternative risk and population models that will incorporate new/different data streams and include the potential to forecast using climate change and other scenarios
- * Objective 2: Modify existing Decision Support Tool by filling key data gaps

Peer-review and publish survey and model results -

Published Gulf of Maine right whale and fishery data and analyses will be considered part of the best available science and guide regulatory discussions

Support Management Plan and Tool Development –

Create and define Dynamic Management Plan

Test alternative gear technologies with fishermen and define implementation scale and hurdles





L. Blair, NMFS Permit No. 27066



N. Telschow, Permit No. 27858

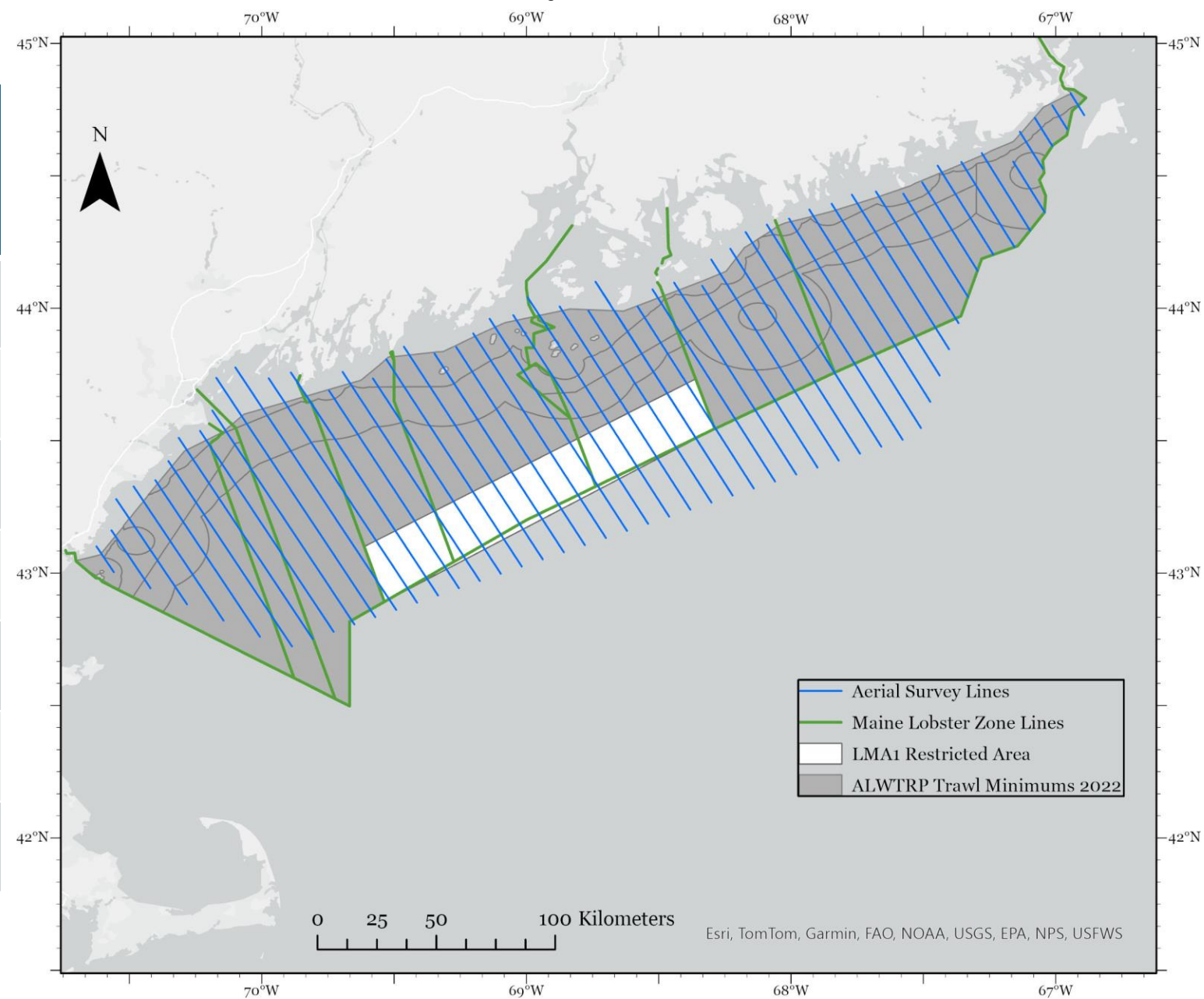


Survey Program Update

Division of Marine Mammal Research

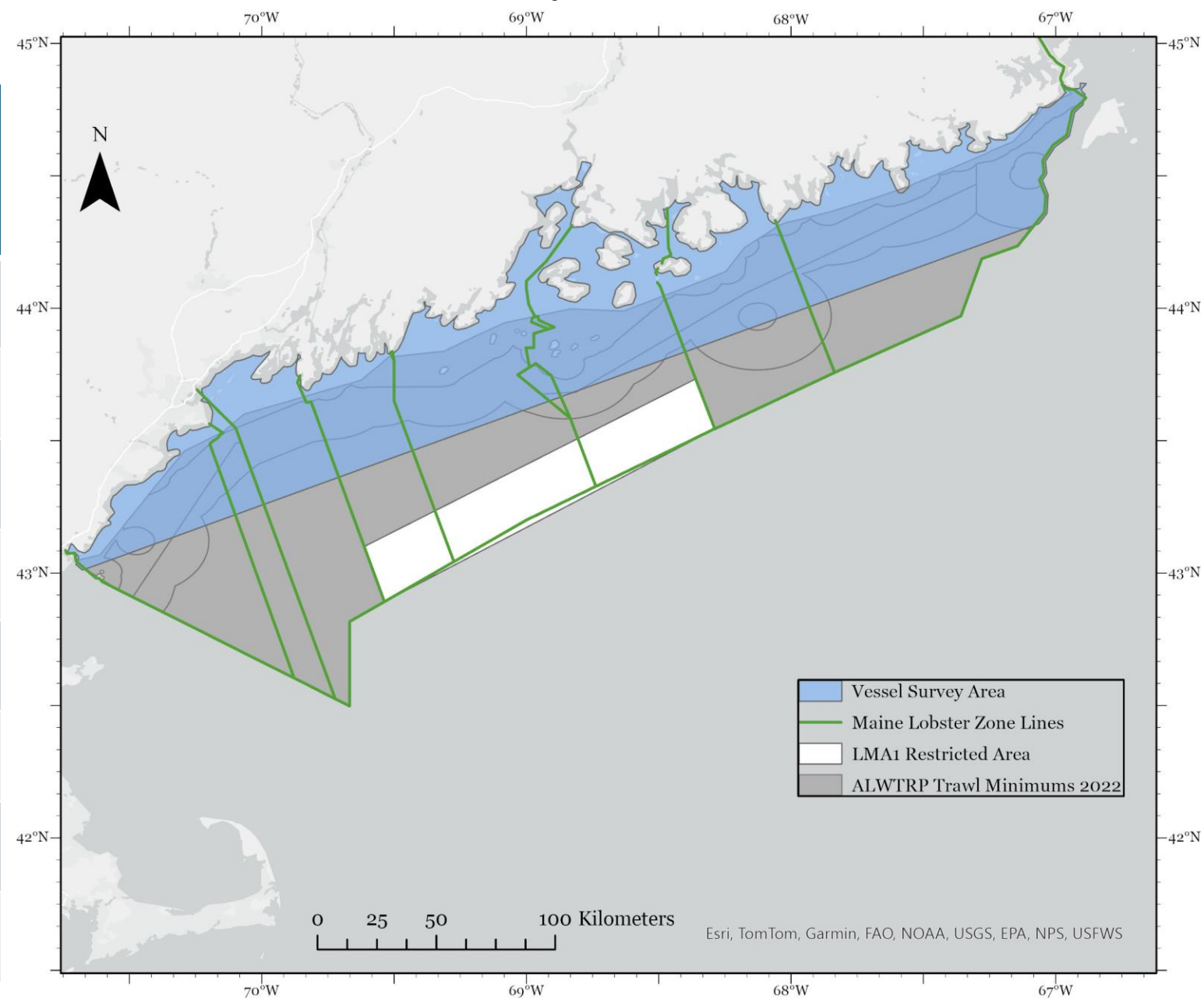
ME DMR Marine Mammal Aerial Survey Area and Effort 2024

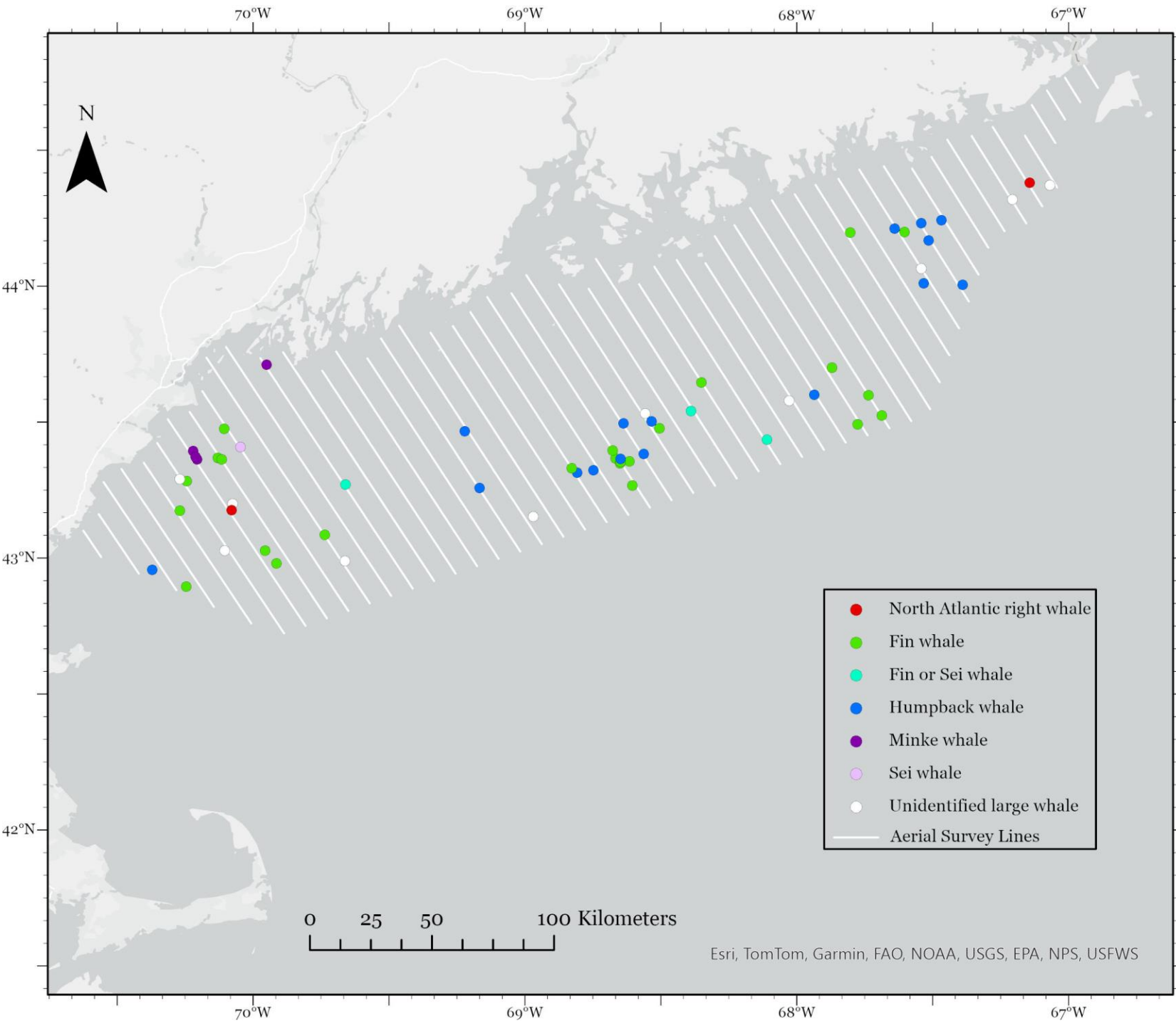
Month	Survey Effort in Nautical Miles
July	274.8
August	1040.5
September	812.7
October	741.5
November	1362.6
December	744.9
TOTAL	4977.0



ME DMR Marine Mammal Vessel Survey Area and Effort 2024

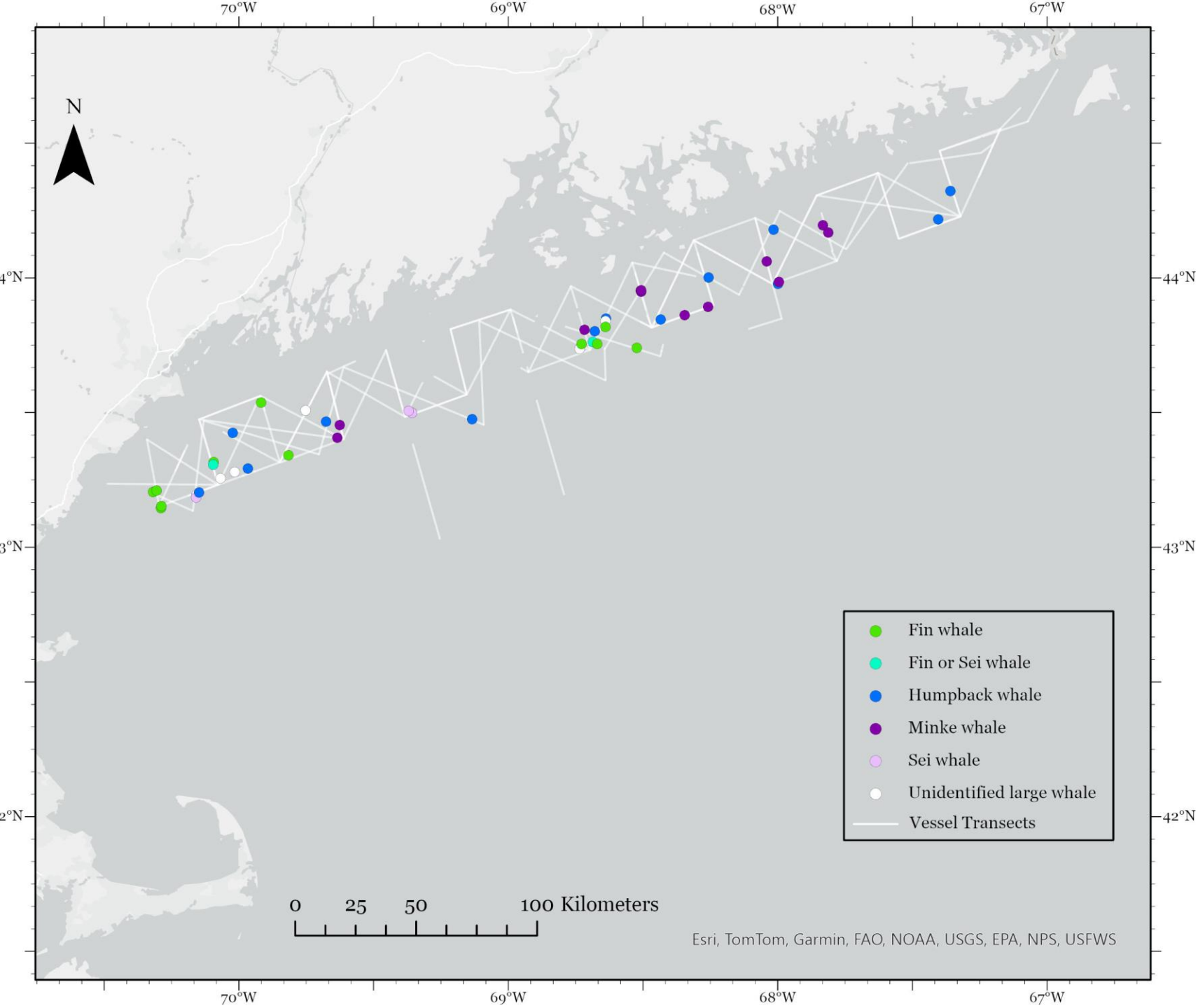
Month	Survey Effort in Nautical Miles
March	236.5
July	258.7
August	158.4
September	241.0
October	197.6
November	146.0
December	256.6
TOTAL	1494.4





2024 Vessel Surveys Large and Medium Whales

Species	Number of Sightings
North Atlantic Right Whale	2
Fin Whale	24
Humpback Whale	16
Minke Whale	4
Sei Whale	1
Fin or Sei Whale	3
Unidentified Whale	10



2024 Vessel Surveys Large and Medium Whales

Species	Number of Sightings
Fin Whale	11
Humpback Whale	13
Minke Whale	12
Sei Whale	3
Fin or Sei Whale	2
Unidentified Whale	6

Survey Program Data Availability & Feedback

The Survey Program 2024 Annual Report will be available by mid-March on the ME DMR Website here:

<https://www.maine.gov/dmr/science/right-whale/monitoring>

North Atlantic right whale sightings and survey effort are submitted to Whale Map

www.whalemap.org

The Survey Program Wants Feedback from Fishermen! Submit feedback to:

Sarah.Leiter@Maine.gov


Or find Sarah at the DMR Booth

Saturday 12PM – 2:30



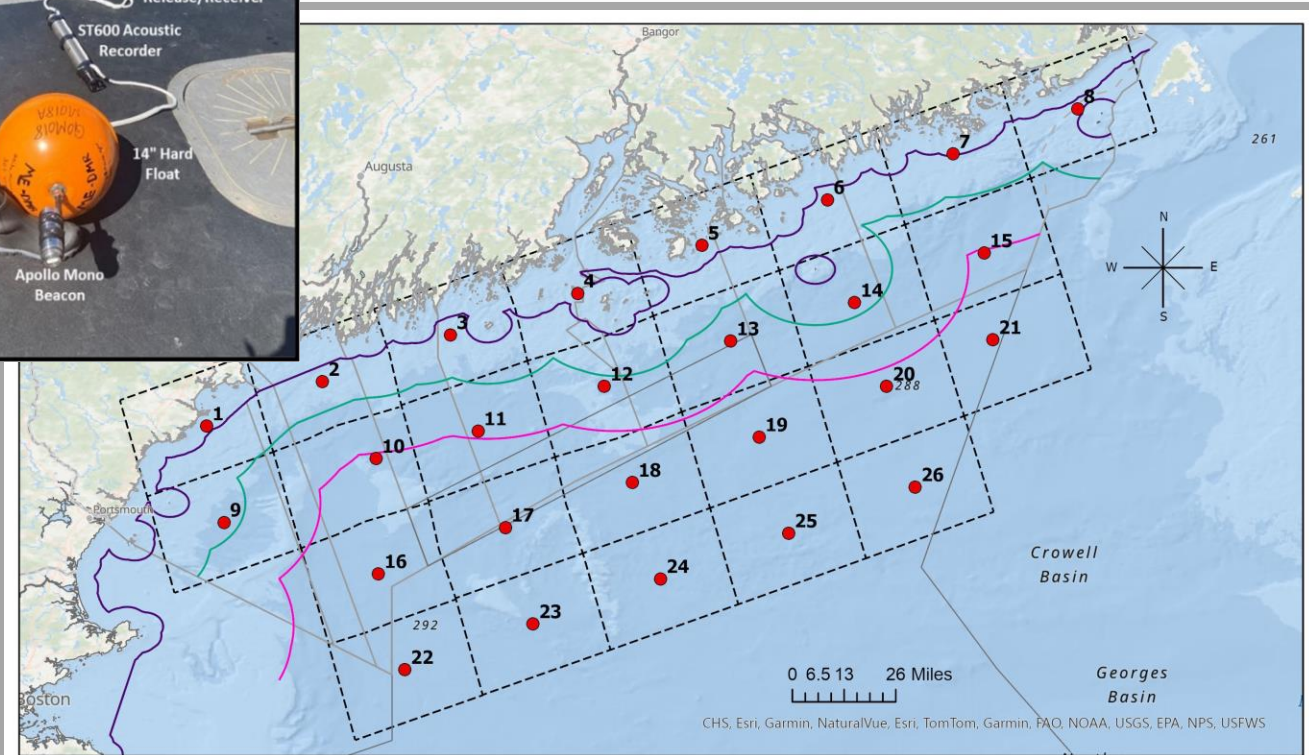
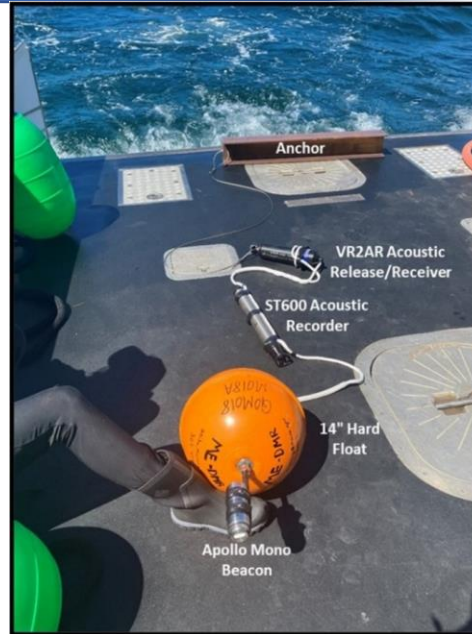
S. Leiter, NMFS Permit No. 27858

Visual Survey Program – how will the data be used?

- ▶ Integrates into WhaleMap platform for near real-time online viewing of effort and right whale sightings
 - ▶ Right whale density model used in the DST being updated with sightings through 2023
 - ▶ DMR modeling efforts, reports, and upcoming publications
- 

DMR Passive Acoustics Program


- Passive Acoustic Monitoring (PAM)
 - 26 Sites
- ~24 miles x 24 miles grid cells
- Swap PAM Moorings
 - Mar, Jul, & Nov
- Currently analyzing Data
 - Deployed since Aug 2023
- Passive Acoustics Team
 - Program Lead – Anita Murray
 - anita.murray@maine.gov
 - Project Leads
 - Nicole Velandia
 - Jessie Mathews
 - 9 Acoustic Analysts/Field Techs




Legend

- | | | |
|----------------------|------------------------|----------------------------|
| ● MEDMR GoM PAM 2024 | — NOAA 24 nm | □ Lobster Management Areas |
| — NOAA 3 nm | □ LMA1 Restricted Area | |
| — NOAA 12 nm | □ MEDMR Lobster Zones | □ Grey Zone |
| | | --- 40kmx40km Grid |

Passive Acoustics Program – how will the data be used?

- ▶ Will integrate into Passive Acoustic Cetacean Map platform for online viewing of effort and right whale vocal detections
 - ▶ Right whale density model used in the DST does not incorporate passive acoustic data
 - ▶ DMR modeling efforts, reports, and upcoming publications
- 

Modeling Efforts –

- ▶ Internal capacity including building Gulf of Maine specific models using alternative data sources
 - ▶ Partnership with Bigelow Lab for Ocean Sciences
 - ▶ Collaborative project with Duke University and Stony Brook University to build alternative Gulf of Maine risk assessment tool
 - ▶ Efforts focus on Gulf of Maine, utilize more datasets available and have some ability to forecast or be resilient to change
- 

New Programs coming in 2025

- ▶ Habitat sampling program
- ▶ Assessment of real-time passive acoustic and other technologies
- ▶ Dynamic management scenario planning

Calanus finmarchicus



Photo Credit:

Rafael Martin-Ledo
MarinePlankton.net

COPEPEDIA
T4000005



Tracker Program Objectives

- The lobster fishery is changing in landings and effort distribution across the state and offshore.
 - Tracker data allows DMR to describe these changes, better describing the future of the fishery.
- Current NARW entanglement risk is calculated by endline numbers from 10-minute square harvester reports.
 - Tracker data, combined with new DMR survey efforts, allows much more precise calculations of where NARW and the fishery overlap, and explicitly marks where are unlikely to occur.
 - These outputs will allow NARW conservation goals to be met while minimizing impacts to the fishery.



Maine

Tracker Program Status



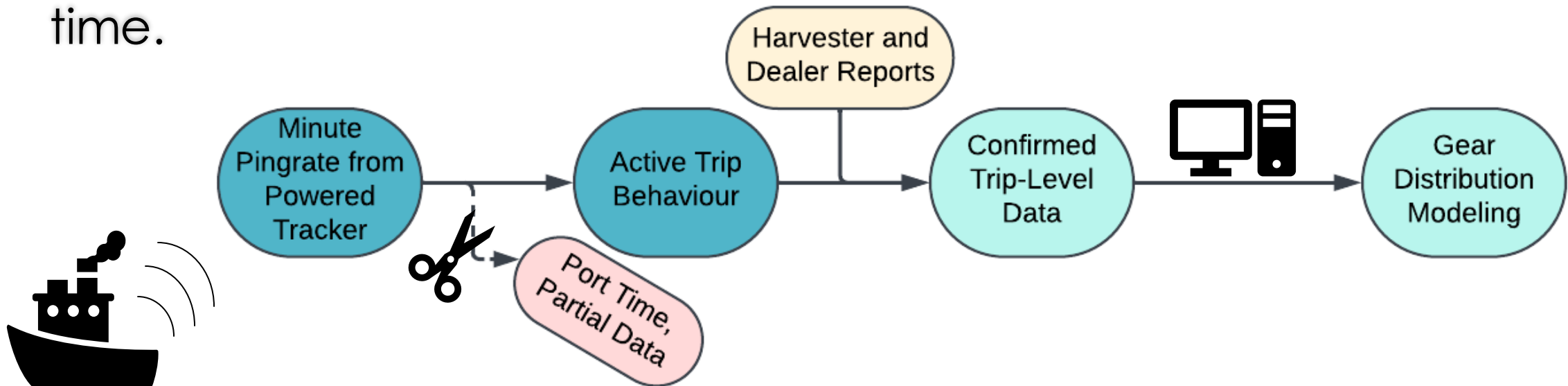
State	Devices Deployed w/ Pings		
	1/1/2024	7/1/2024	1/1/2025
ME	770	1,002	1,059

- 1196 Particle vessel trackers were issued to federal permit holders by Dec 15, 2023, or immediately following the purchase/transfer of a permit.
- The tracker program has scaled up as more vessels began fishing throughout the year.




Data Cleaning

- Incoming tracker data is cleaned and matched to a trip report.
- Accurate harvester reports allows us to remove non-fishing data.
- Models can identify gear locations from minute pings. These data are used for NARW analysis and to describe changes in the fishery over time.



Fisheries Data Program – how will the data be used?

- ▶ The DST currently uses 10% harvester reporting extrapolated to the fishery and assigned by depth reported to map fishing gear in time and space and ultimately, risk
 - ▶ 100% harvester reporting is being used to test the previous methodology
 - ▶ Assessing trends in the fishery such as movement of gear offshore
 - ▶ Maine is on the cutting edge assessing tracker data use in the DST ahead of other states
- 

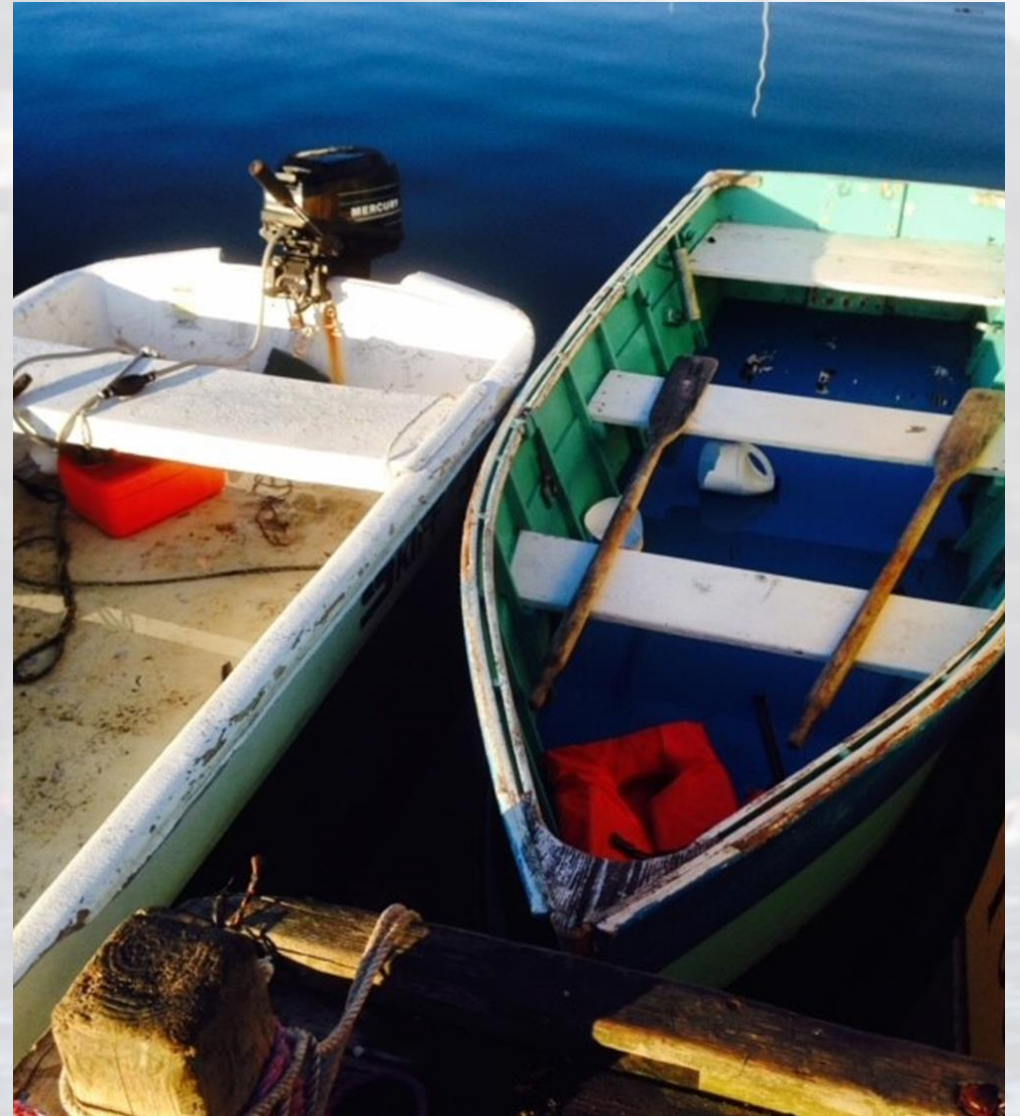
GOALS OF THE MAINE INNOVATIVE GEAR LIBRARY

- Increase access of on-demand and other experimental fishing gear for testing
- Gather data on the performance of different types of on-demand gear in case it could be used as a tool to gain access to areas closed to vertical lines
- Gather data in different areas of the coast to explore how environment, gear configuration and diverse fishing styles affect the feasibility of different types of gear
- Gain feedback from fishermen and relay back to manufacturers and management on what works, and what doesn't work
- Engage with Marine Patrol on the use and impact of on-demand systems
- Engage in conversations on regulatory pathways into fishing in areas closed to vertical lines



TESTING STRUCTURE

- Loan 2 units of experimental gear to each participating fishermen in the fixed gear fisheries (trap and gillnet)
- On-board training and support from MIGL representatives
- Hybrid trawl configuration
- Data collection on the time spent locating, retrieving and resetting
- Data collection on environmental factors in testing area



MIGL INVENTORY

- 85 acoustic release units
- 21 spring release units
- 21 timed release units
- Actively expanding library
- Stowed Rope
 - Sub Sea Sonics/Guardian Sleds
 - Edgetech
 - Ashored
- LiftBags
 - Ropeless Systems
 - SMELTS
 - Edgetech
 - Teledyne
- Spring and Timed Release
 - Nova Robotics



LiftBag



Stowed Rope



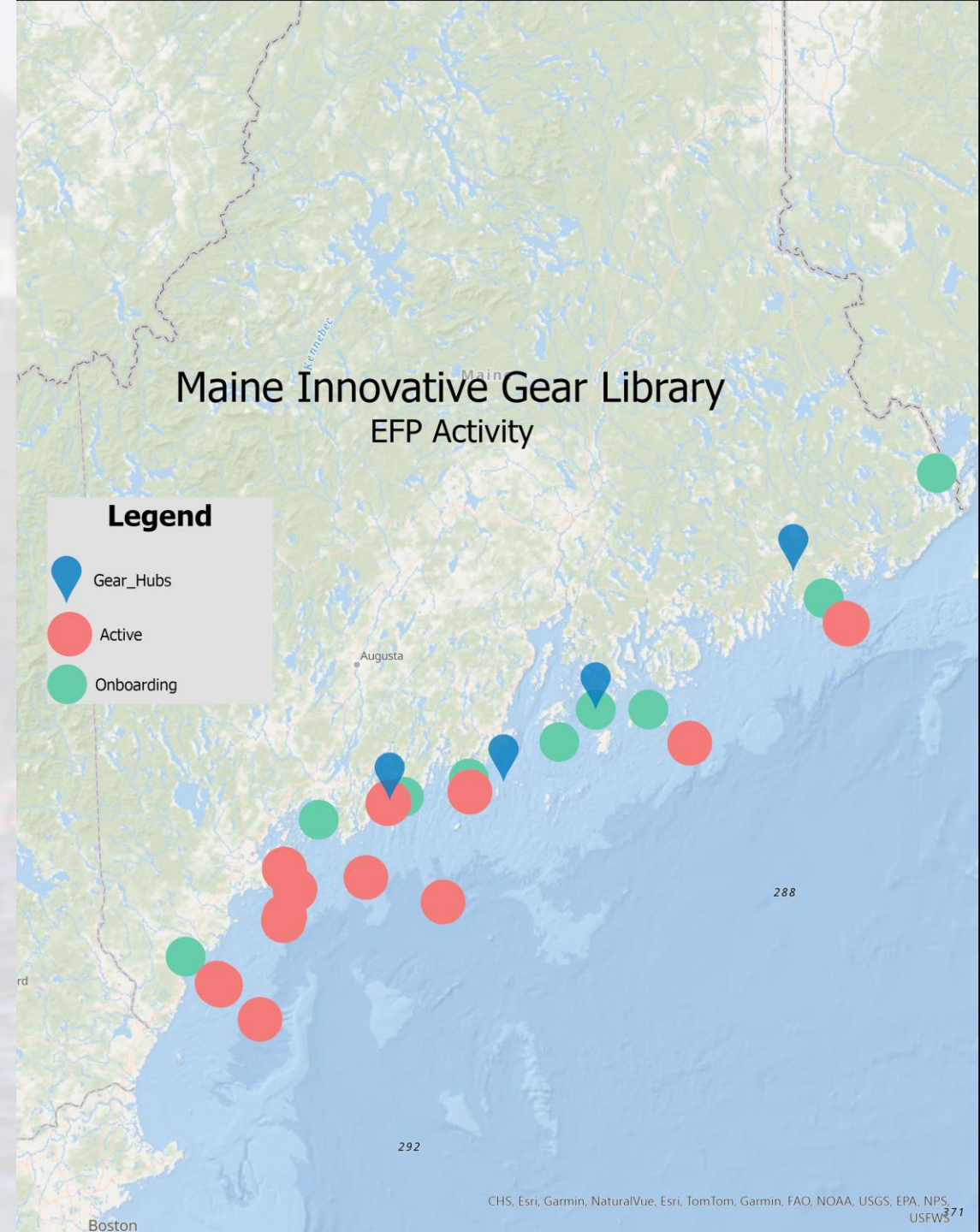
Timed Release



Spring Release

EXPERIMENTAL FISHING PERMIT

- EFP covers 65 participants
- 11 active lobster fishery participants
- 11 onboarding
- Timed, spring, and acoustic release technology
- 269 acoustic retrievals
- 52 spring release retrievals
- 46 timed release retrievals



Gear Location Project Goals

- Evaluate different gear location methods
 - Surface buoy
 - GPS marking
 - Acoustic location
- Testing under different conditions
 - Depth
 - Bottom
 - Density
 - Acoustic manufacturer
- Investigate
 - Differences between the precision of each method
 - Changes to fishing practices when using acoustic technology

