



Photo Credit: Chris Jamison

A crabby coast: monitoring green and blue crabs in the Gulf of Maine



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Green Crab Monitoring

- Green crabs = invasive species
- Lack of long-term monitoring
- Standardized protocol
 - Published protocol (McMahan 2020)
- Goals:
 - Understand changing populations
 - Management implications



Photo Credit: P. McAleenan

Intertidal Crab Survey

- Quadrat based survey in rocky shoreline
 - 100m stretch, 10m² quads
- Low intertidal
- Density, carapace width, sex, shell condition, injury
- Varied target audience



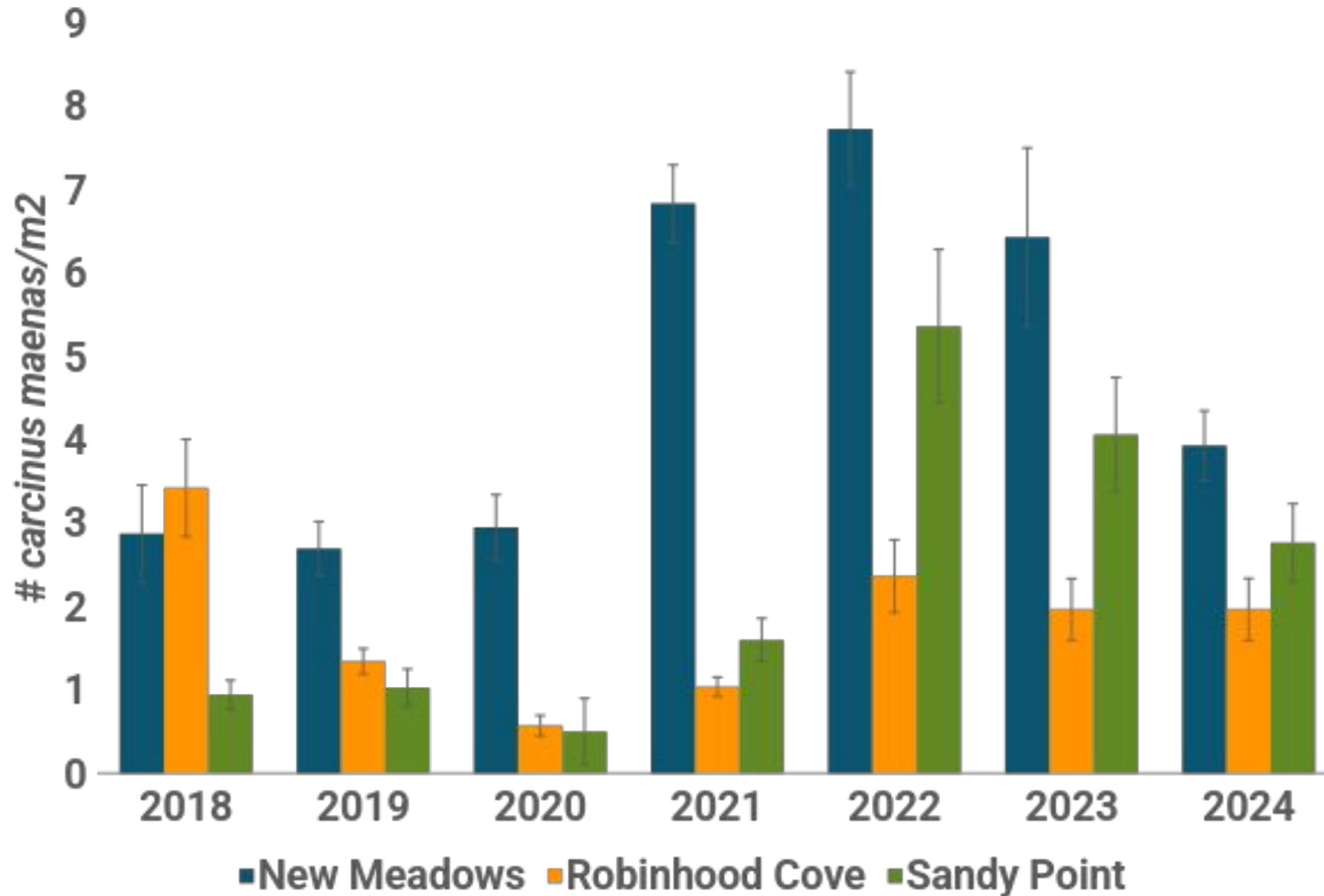
Sites

- 3 long-term monitoring sites
- Other research sites
 - Oyster restoration
- Ecosystem Investigation Network (GMRI)
 - Over 1100 observations
- Open-access dataset
 - Environmental Data Initiative



Photo Credit: GMRI Ecosystem Investigation Network

Annual Green Crab Density



A photograph of a blue crab resting on a ground covered with dry, brown, lobed leaves. The crab is positioned horizontally in the center of the frame, facing left. Its large claws are extended outwards, and its legs are visible. The crab's shell is a mottled greenish-brown color, while its claws and legs are a vibrant blue. The background consists of a dense layer of fallen leaves, with some dark soil visible between them.

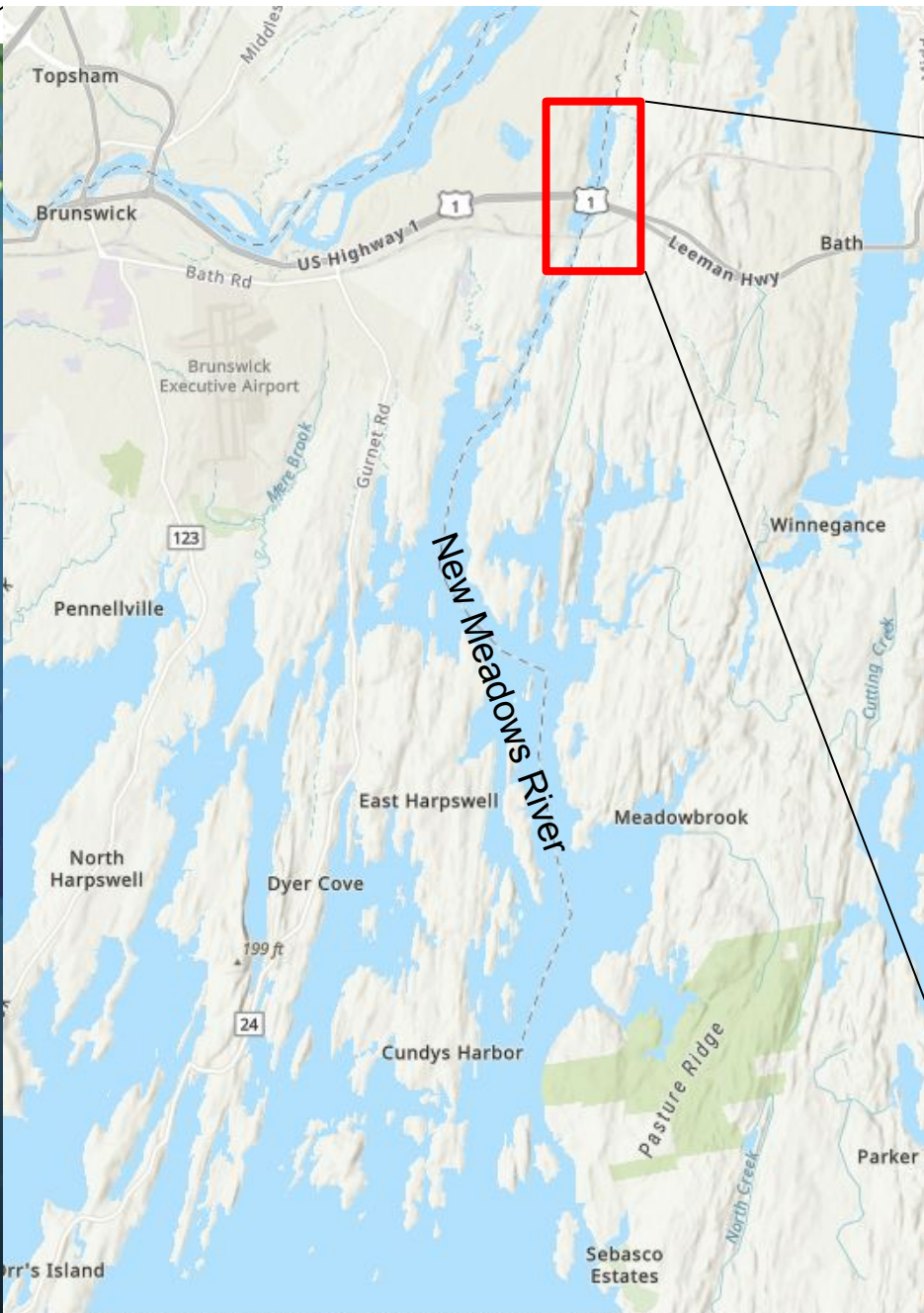
Goal: understand the distribution, abundance and habitat use of blue crabs

1. Trapping

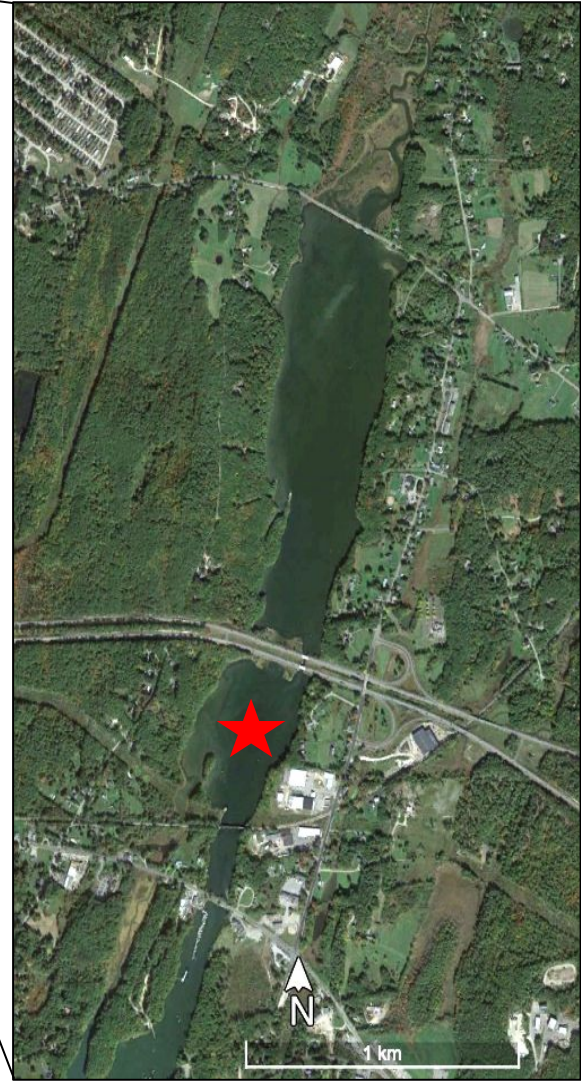
2. Crowdsourcing



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Esri, NASA, NGA, USGS | Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, US



Trapping

- Traps:
 - 2 traps
 - 2022 - 2024
 - spring – late fall
 - 7 day soak period
- Crab data:
 - Carapace width, sex, ovigery, molt status
- Tag & mark crabs



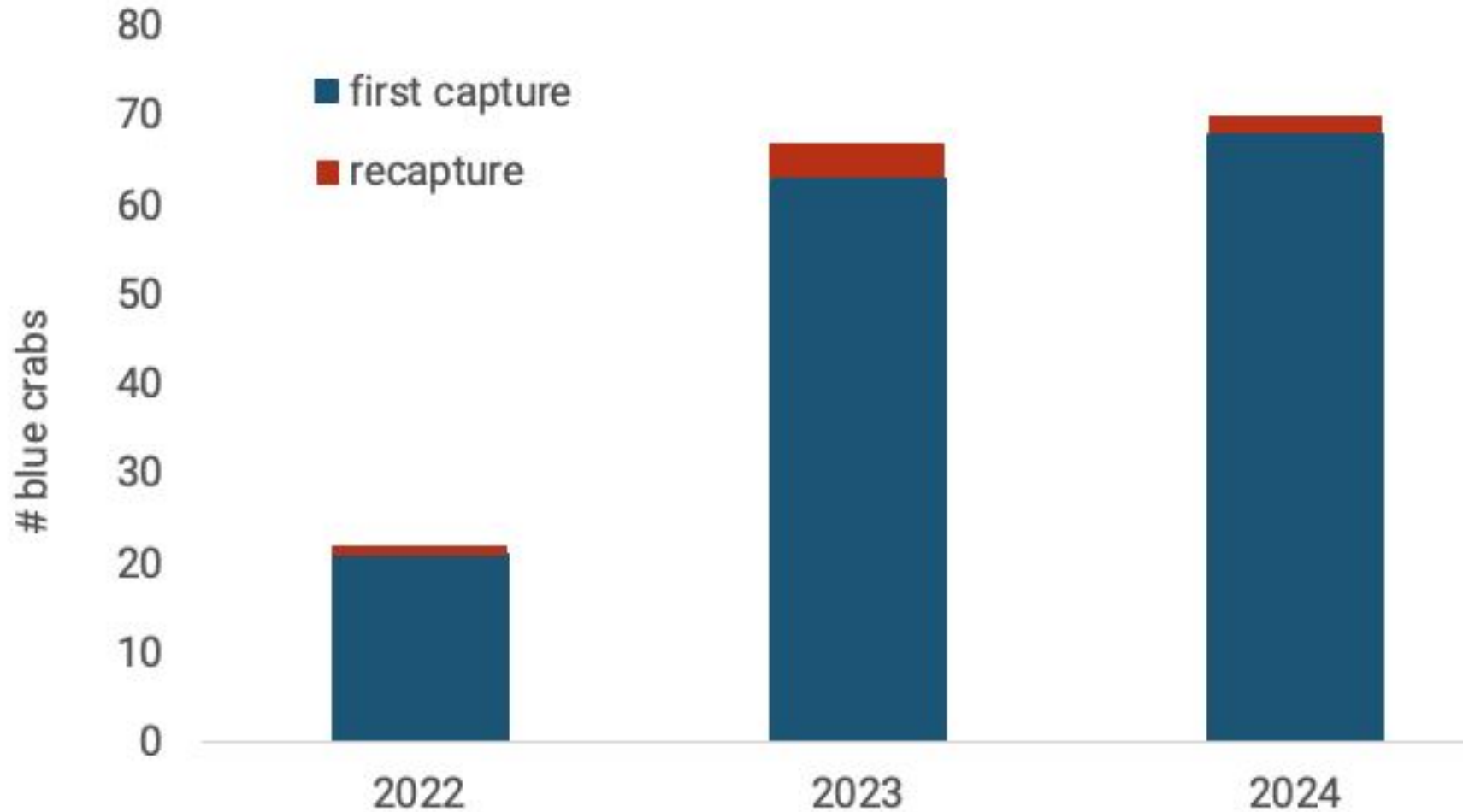
Photo Credit: Jessie Batchelder, Manomet



Photo Credit: Jessie Batchelder, Manomet



Trap Data - catch



- Crabs caught
 - 2022: 22
 - 2023: 67
 - 2024: 70
- Recaptures
 - 2022: 1
 - 2023: 4
 - 2024: 2

Crowdsourcing

- Trapping only samples a small fraction of the coast
- Target community & industry members through trusted relationships
- Rely on fisher/harvester/farmer knowledge
- Simple survey

Blue Crab Sightings



Photo Credit: Jessie Batchelder

As the Gulf of Maine waters continues to warm due to climate change, we are seeing more species expand their range northward. One of those species is the Atlantic blue crab, *Callinectes sapidus*. To understand where blue crabs are being found, we are collecting survey responses from anyone who has encountered a blue crab north of Cape Cod in Massachusetts, New Hampshire, Maine or Canada.

Find a blue crab? Tell us where/when and any other information you have! We highly encourage you to include a photo with your submission. Submit one entry for each location and date you've found blue crabs. Thank you!

If you have any questions, please reach out to jbatchelder@manomet.org.

For a map showing other blue crab observations, view our [Blue Crab Dashboard](#).



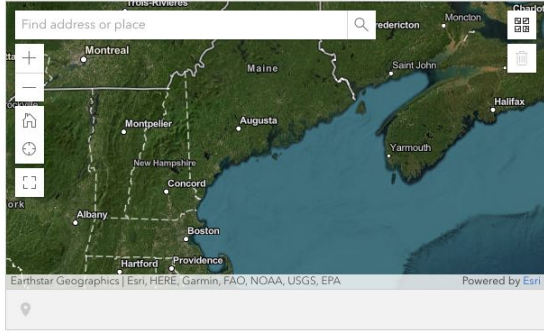
Date of blue crab Sighting*

Enter the date you saw/found a blue crab

Where was the blue crab found?*

Select where you found the Blue Crab. If it's not exact, your best guess is okay!

Instructions: Zoom and drag the map to the area you found the blue crab. Place your cursor in the location and click to set the pointer where you found the blue crab.



Find address or place

Earthstar Geographics | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA Powered by Esri

How did you find the blue crab?*

What was the capture method or where was it seen?



How did you find the blue crab?*

What was the capture method or where was it seen?

☐ Lobster Trap

☐ Oyster Cage

☐ Clam Digging

☐ Bull Rake

☐ On intertidal flats

☐ SCUBA diving

☐ Other

How many blue crabs did you find?*

Only count the number of blue crabs you found at the location and date selected above. If you've had multiple encounters with blue crabs, please submit another observation.

Sex Identification guide

Use this image to help identify the sex of the blue crab.



male crab

mature female crab

immature female crab

egg-bearing "sponge" crab

Image taken from [Bay Weekly](#), 2010

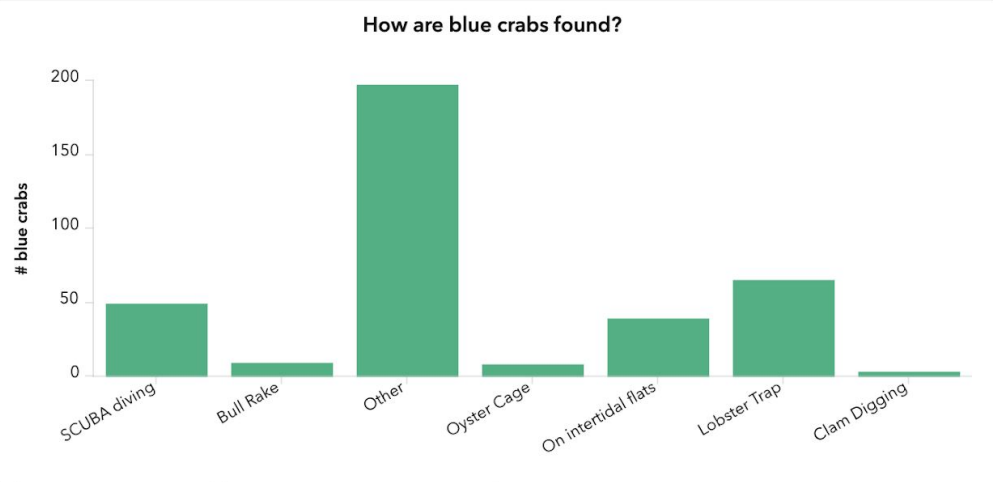
Data Viewer

Blue Crab Sightings



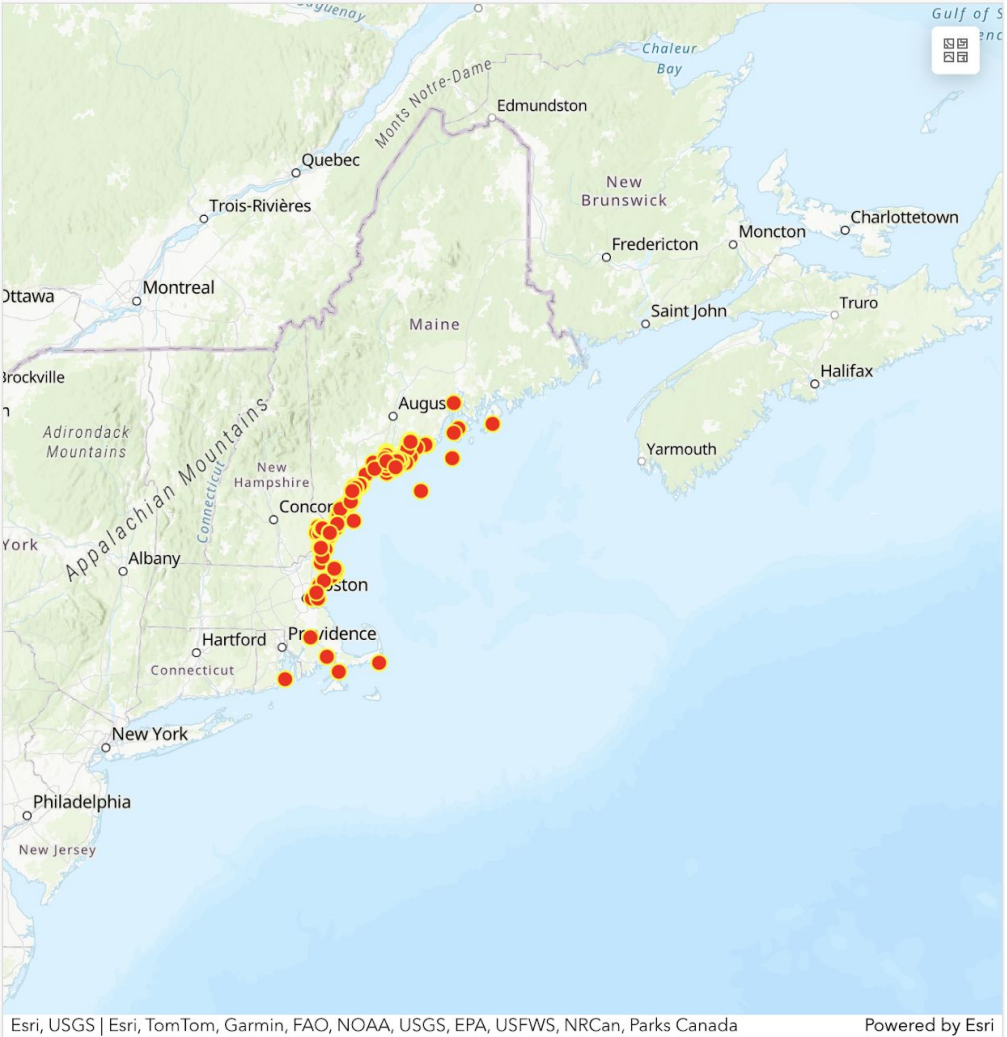
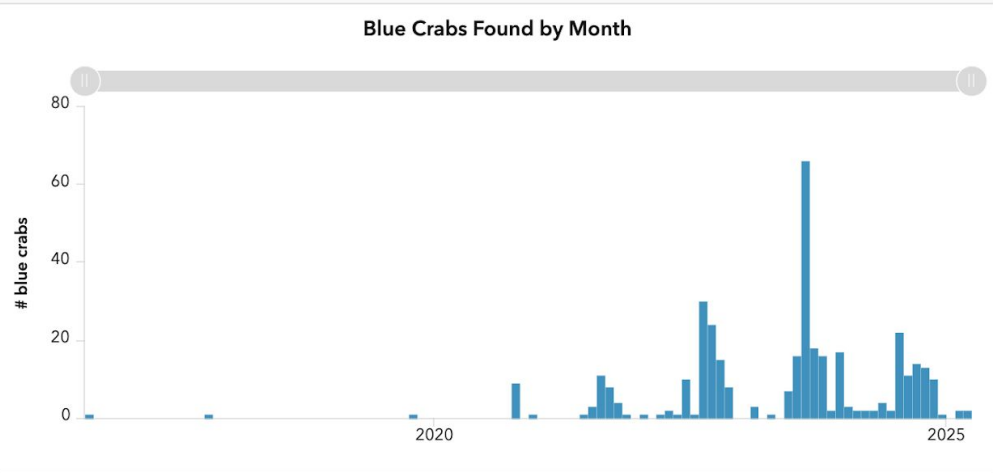
370
reported blue crabs

203
reports submitted



Catch Methods

"Other" catch methods



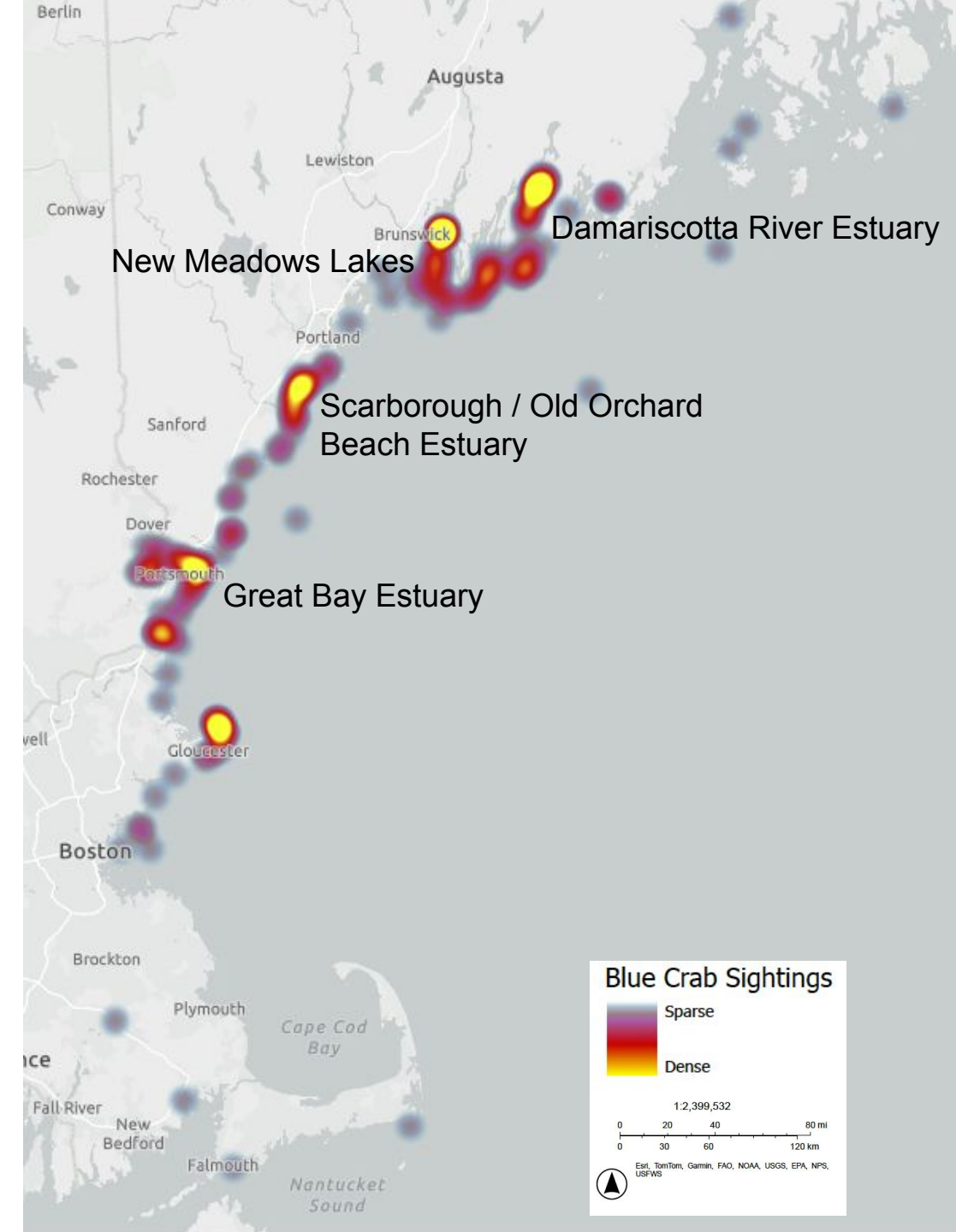
This site was prepared by Manomet in collaboration with NH Sea Grant. These data are collected through an online survey and displayed data has been crowdsourced through individuals who have observed Blue Crabs.

VIEW BLUE CRAB
OBSERVATIONS

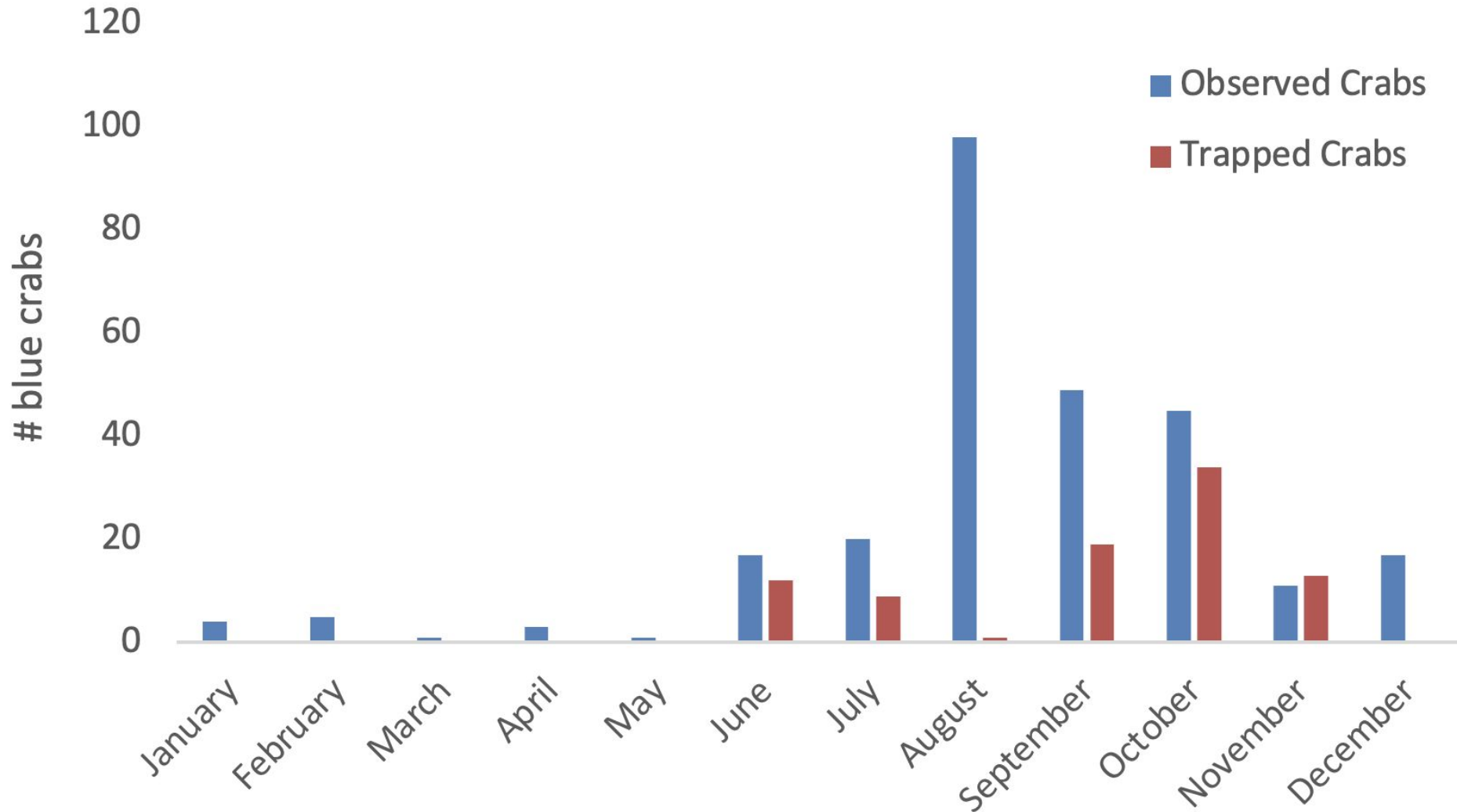


Survey data: heat map

- Locations of blue crabs submitted through the survey
- More crabs in estuary systems
- Areas where we have conducted more outreach



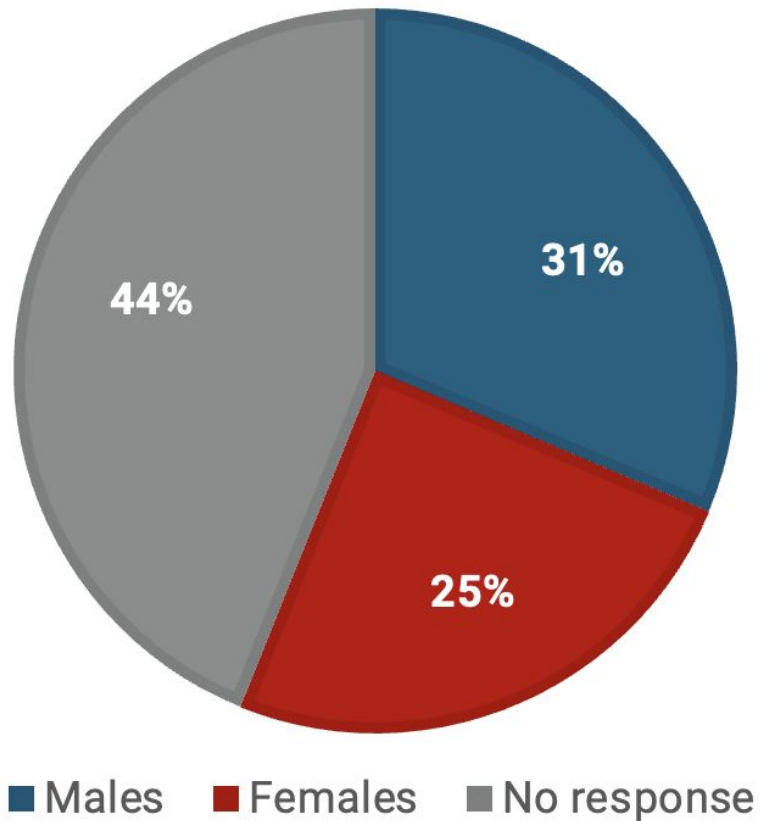
Survey data - seasonality



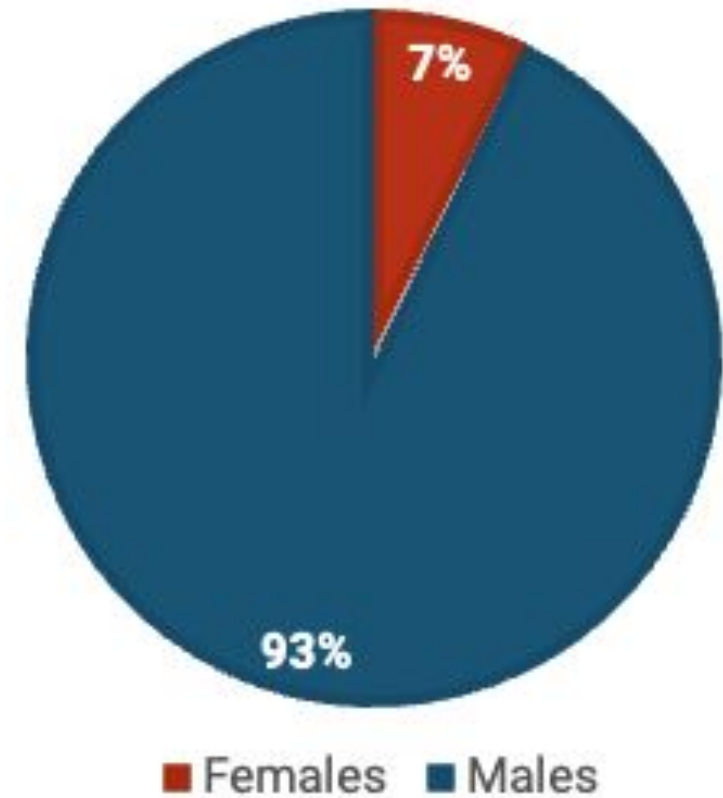
- Blue crabs are being observed year round

Sex Data

crowdsourced crabs
n=271



2024 trapped crabs
n=70 (65M/5F)



What's Next?

- Continued trapping & crowdsourcing
- Acoustic telemetry monitoring in the New Meadows
 - Where are they going & what habitat are they using?
 - Tag ~30 crabs
- Expanded volunteer trapping programs

REPORT A BLUE
CRAB SIGHTING



Questions?

VIEW BLUE CRAB
OBSERVATIONS



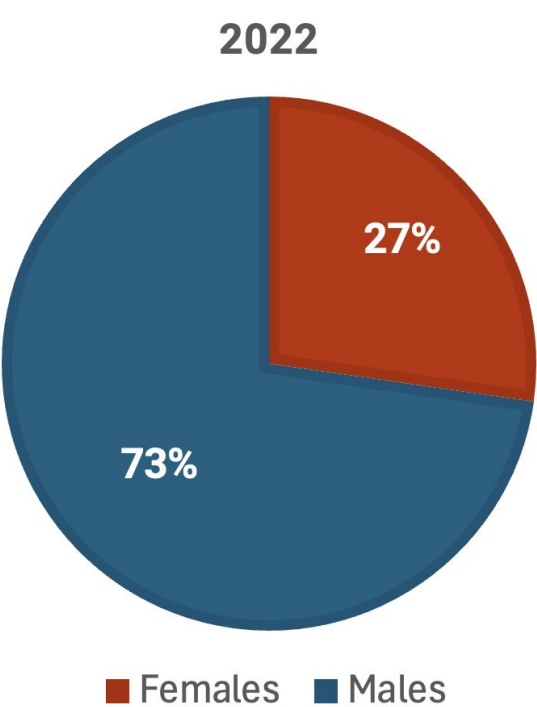
jbatchelder@manomet.org
www.manomet.org/bluecrab



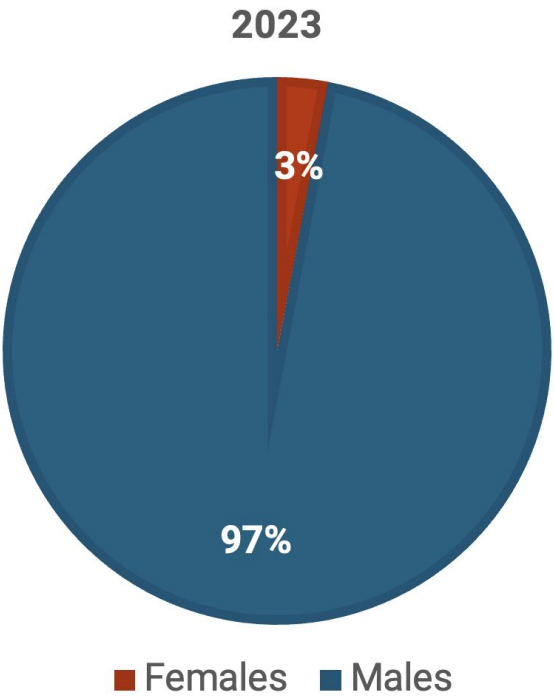
Thank you
partners & funders!



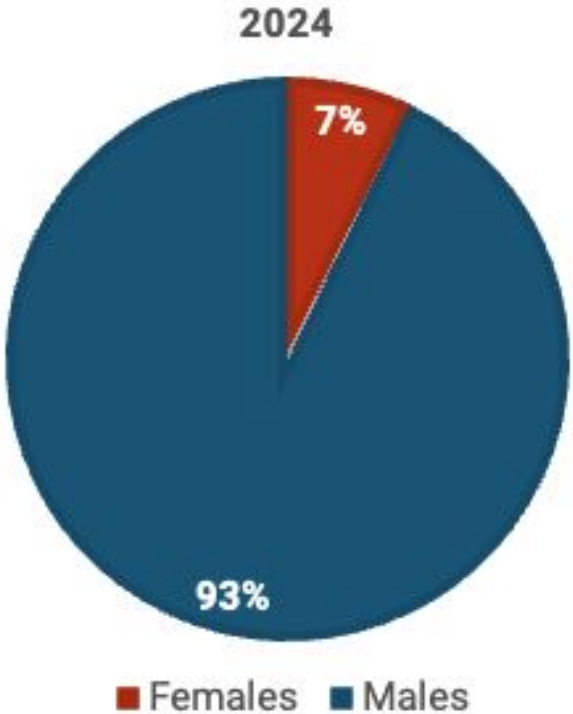
Trap Data - sex



2022: 16 M / 6 F



2023: 65 M / 2 F



2024: 65M / 5 F

Trap Data - size frequency

