



Progress Report

Project Title: Southeast Coastal Ocean Observing Regional Association (SECOORA):
Implementation of the Infrastructure Investments and Jobs Act

Award number: #NA23NOS0120081

Period of Activity: 12/1/2023 – 5/31/2024

Progress Report Submission Date: 6/27/2023

Principal Investigator(s): Debra Hernandez, SECOORA Executive Director

Progress and Accomplishments:

Year 2 progress and accomplishments are listed by Topic in the below tables. High-level milestones/deliverables, accomplishments and any issues are included for each project. Status of each project is reported as “not started”, “in-progress”, “not on schedule” or “complete” as required by the IOOS Performance Reporting Guidance for BIL Awards. If a specific milestone is delayed, a justification for the delay and description of activities employed or to be employed to mitigate the delay are provided.

NEPA SACs are complete for the following Topic 1 activities:

- East Coast Florida Buoy Deployments
- Ocean Acidification Sensor Deployment in the Florida Keys.

NEPA SAC for Topic 2 activities:

- Surface Elevation Table (SET) locations - 16 SET locations will be identified as part of the gap analysis objective for this project. The gap analysis has begun; however, we do not anticipate identifying SET locations until later in Year 2. This NEPA SAC should be addressed in Year 2 once the gap analysis is complete.

Project and Task(s)	Status
TOPIC 1: To support improved and enhanced coastal, ocean, and Great Lakes observing systems	
Goal A: Invest in new observing infrastructure for the Southeast	
Water Level Network	

<p>Coastal Carolina University (CCU, Lead PI Paul Gayes) and partner Florida Atlantic University (FAU) have installed and are operating water level stations in South Carolina (SC) and Florida (FL). The NEPA review for these stations has been conducted under award NA21NOS0120097 by the IOOS program office. Further NEPA documentation for each site is found here on the CCU-FAU tab: https://docs.google.com/spreadsheets/d/10KN3sdkzaUR-Kf_TbC-YI0d1mcCqWH6pvWowcQVbB8o/edit?usp=sharing.</p> <p>The project team has installed 8 stations this reporting period in the following locations:</p> <ul style="list-style-type: none"> • Lion's Park, Niceville, FL • Cessna Landing, Santa Rosa, FL • Sylvania-New Heights, Fort Walton Beach, FL • Camp Helena State Park, Panama City Beach, FL • Black's Island, Port St. Joe, FL • Grand Lagoon, Panama City, FL • Skidaway Island Skidaway, GA • T.H. Stone Memorial St Joseph Peninsula State Park <p>The Sylvania-New Heights sensor location is in an underserved community in Fort Walton Beach, FL.</p> <p>The following CCU/FAU stations did not meet the SECOORA 85% up-time requirement:</p> <ul style="list-style-type: none"> • FAU Engineering East Pond, FL– 38% • Navsea 2 in FL- 66.50% • HWY 501 & ICW in SC - 76.45% • Horry County-Enterprise Landing, SC - 60.42% <p>The low uptime percentage is due to multiple older sensors going bad requiring replacement and the Hwy 501 site experienced vandalism.</p> <p>A list of all CCU/FAU water level stations is found here: https://portal.secoora.org/#metadata/150/sensor_source. FAU is the data management team for this project. FAU shares data with SECOORA from all sensors that are deployed in SC and FL, even those not funded by SECOORA.</p>	<p>In Progress</p>
<p>Florida International University (FIU, lead PI Tiffany Troxler) operates seven water level sensors in south Florida. The NEPA review for these stations has been conducted under award NA21NOS0120097 by the IOOS program office and documentation on each site is found here on the FIU tab: https://docs.google.com/spreadsheets/d/10KN3sdkzaUR-Kf_TbC-YI0d1mcCqWH6pvWowcQVbB8o/edit?usp=sharing.</p> <p>Accomplishments by objective are as follows:</p>	<p>In Progress</p>

<ul style="list-style-type: none"> • Data for the 7 stations are available here: https://portal.secoora.org/#metadata/2212/sensor_source • The previously failed sensor at Ramrod Key (failed as of 8/17/23) is now operational as of 12/13/2023. • The first FIU web cam, located at Looe Key Resort (Ramrod Key, Monroe County, FL) was installed in September 2023. Data are currently being stored using the brownrice application. The feed can be accessed here: https://player.brownrice.com/embed/ramrodkey1. <p>The following stations reported below 85%:</p> <ul style="list-style-type: none"> • Cocoplum Bridge – 65% • El Portal – 82% • Fernandina Beach – 56% • Hollywood Beach – 66% <p>The low uptime percentage is due to battery issues at each site. Batteries have been replaced and new sensors are being ordered. This will provide the team with additional back-up sensors to ensure that sensor swaps can occur in a timelier manner.</p>	
<p>Ocean Acidification (OA) Monitoring</p>	
<p>Mote Marine Laboratory (MML, Lead PI Emily Hall) is deploying an OA mooring in Looe Key, within the Florida Keys National Marine Sanctuary (FKNMS), that will produce directly measured climate-quality pH and other carbonate chemistry data products. The MML team will use the data to establish a unique time series of seafloor OA for the lower Florida Keys. This data will also support the Southeast Coastal and Ocean Acidification Network (SOCAN) objective for OA monitoring in the FL Keys.</p> <p>Accomplishments by objective are as follows:</p> <ul style="list-style-type: none"> • All permits have been received for the OA sensor deployment: Florida Keys National Marine Sanctuary (FKNMS-2021-172) and US Army Corps of Engineers (SAJ-2023-01397). • The SeapHOx (OA sensor) was purchased and delivered. It has been laboratory tested and validated and is prepared for the initial deployment. • A seafloor mooring was purchased and has been adapted to hold the SeapHOx at the appropriate angle and adjusted with weights. • A training session was held on the SeapHOx with staff from Mote Marine Laboratory and US Geological Survey. • The first deployment is scheduled for June 3-12, 2024 (weather permitting). All travel has been planned for the research team to meet at the Mote Marine Laboratory in Summerland Key, FL and a dive plan has been completed for the first deployment. 	<p>In Progress</p>

Florida Buoy Deployments

The University of North Carolina Wilmington (UNCW, PI Lynn Leonard)/Florida Atlantic University (FAU, co-PI Jordan Beckler) team have deployed and are maintaining three buoys off the east coast of FL: two met/ocean buoys and one Spotter wave buoy.

In Progress

Accomplishments (and a few failures) are as follows:

- Procure buoys, sensors, equipment, supplies – In progress
 - For each deployed buoy, a backup system is ready to be deployed. To build out the backup systems, UNCW purchased two MSI G-2000 buoys, meteorological sensors, CTDs, dataloggers, modems, peripheral wiring, enclosures, antennas, power system components, and other accessories required for two complete replacement buoys for the Fort Pierce (FTP) and Ponce de Leon (PNC) locations.
 - The FTP buoy was hit by a ship on 12/9/23 and completely obliterated. There were no remnants of the buoy remaining; even the anchor was gone. A full new buoy set up is required. UNCW has now ordered a 3rd MSI G-2000 buoy which will be received in June 2024.
- Build out year 2 buoys for deployment - On track.
 - Buoys deployed in year 1 will need to be replaced (i.e. FTP) or swapped (PNC) as part of routine operations and maintenance. Set up and sensor testing of the buoys to be deployed in year 2 is underway, with one buoy & data system complete. Setup and sensor testing for the 2nd buoy is planned for July 2024.
- Buoy deployments and FAU team support – In progress
 - Fort Pierce ([FTP](#)), Ponce de Leon ([PNC](#)), and [PNCWAVE](#) buoys were deployed September 2023. FTP and PNC were both damaged by ship strikes: PNC on 4/15/24 and FTP on 12/9/23.
 - FAU team members conducted on-site assessments of the PNC damages, which included damage to the top side instrumentation. CORMP has shipped one complete telemetry/power/met sensor package to FAU. FAU will replace the damaged components in June 2024.
 - UNCW/FAU plan to deploy new FTP and PNC buoys in Fall 2024; however, the R/V *Hogarth* (the vessel originally planned for buoy deployments) is not available on the east coast of FL during 2024. The R/V *Walton Smith* is available but additional vessel transit days are needed since it will have to transit a further distance from its home port to the buoy locations.
- Publication and integration of buoy data into UNCW, SECOORA, and NDBC data management systems is complete.

Uptime stats from 12/1/23 - 5/31/24		
	FTP	PNC & PNCWAVE
Air Temperature	5%	79%
Air Pressure	5%	79%
Wind speed, gust, direction	5%	79%
Surface (1 m) salinity	5%	87%
Surface (1 m) water temperature	5%	87%
Waves	N/A	90%
<ul style="list-style-type: none"> FTP buoy stopped reporting on 12/9/23 due to a catastrophic ship strike. A site visit in December 2023 and diver surveys in March 2024 found no remnants of buoy or mooring. An insurance claim for the CTD has been filed. PNC buoy was damaged by a vessel strike on 4/15/24, damaging the buoy tower and solar panels and causing a complete loss of meteorological data. A site visit on 5/8/24 was conducted to remove the damaged sensors, datalogger/telemetry system. Replacement sensors will be installed by FAU in June. 		
<p>News/Media</p> <p>A Facebook post by FAU Harbor Branch about the missing FTP buoy yielded 7,148 interactions, including a group of boaters who voluntarily investigated the site the day after its disappearance and discovered that it was missing. Follow-up conversations with local community members and groups did not result in finding the buoy but did raise awareness.</p>		
<p>Education/Outreach</p> <ul style="list-style-type: none"> Three FAU graduate students participated in buoy servicing fieldwork. Public tours at FAU Harbor Branch mention the buoys. In FY23, over 100 tours reached more than 1,200 people. Buoy time series data were incorporated into a module on oceanographic concepts and technology in a two-day NASA high school student workshop in May 2024 led by co-PI Beckler that reached 53 students. 		
Goal B: Reinvestment in existing observing infrastructure for the Southeast		
High Frequency Radar (HFR) Reinvestment		
ECU Coastal Studies Institute (CSI) – SECOORA purchased a 5 MHz long-range CODAR	Complete 5/31/23	
University of South Florida (USF) –SECOORA purchased spare CODAR	Complete	

equipment for the USF HFR program (Lead PI, Cliff Merz).	11/30/23
Buoy Reinvestment	
USF - purchased a new YSI XO2 multiparameter water quality sonde.	Complete 9/18/23
TOPIC 2: To enhance associated sharing and integration of Federal and non-Federal data to inform the most pressing regional coastal and ocean management challenges	
Goal A: Data and product development to support high priority regional management issues	
Improve access to regional ecological data to help inform offshore ocean use decisions through stakeholder engagement and mapping tool refinement	
<p>Proposed offshore projects such as wind energy sites or sand dredging have the potential to impact marine species and habitats across the South Atlantic. To sustain the region’s rich marine diversity, it is important that the siting, construction, and operation of offshore development is done with the environment in mind. The Nature Conservancy (TNC, lead PI Mary Conley) is working with partners to further develop and refine the Southeast Marine Mapping Tool (https://www.maps.tnc.org/marinemap/se/#7/34.5/-76.5)</p> <p>Accomplishments by objective are as follows:</p> <ul style="list-style-type: none"> • Engage Stakeholders <ul style="list-style-type: none"> ○ The project team presented the Southeast Marine Mapping Tool at that GOMCON meeting in February 2024 and at the SECOORA Annual Meeting in May 2024. ○ The project steering committee met on 2/27/24 and discussed project priorities, reviewed new updates on management and human use information on the marine mapping tool, and discussed other potential tool updates, including (see Appendix A for presentation): <ul style="list-style-type: none"> ▪ Communicating ocean area management: There are an array of spatial management designations across the region which come with different purposes and restrictions. In several cases these designations overlap within a selected ocean site which can make it difficult to use the mapping tool. The new approach is designed to communicate: (a) percent of the selected area falling within each management type (e.g., NMS, HAPC, EFH) and (b) management implications. The latter refers to the level of restriction, such as closed or gear restrictions, and the ecological driver for the management. 	In Progress

<ul style="list-style-type: none"> ▪ Species Models (birds, marine mammals, and sea turtles): New models are available for birds and sea turtles which will be brought into the marine mapping tool. These updated models will enable more consistent representation across species groups simplifying the users experience with the tool. The steering committee requested that the models also be available for monthly output, not just annual. ▪ Proposed updates to bathymetry, fishing and shipping, artificial reefs and cables were reviewed. ○ The committee continued discussion of a broader outreach plan and provided initial input based on the following questions: (a) Who should we focus our outreach towards? (b) What are the best ways to reach identified audiences? and (c) What resources would be useful? • Enhance the Online Tool <ul style="list-style-type: none"> ○ The technical team is enhancing the online tool based on a prioritized list of requirements identified by the steering committee. • Connect to related online resources: <ul style="list-style-type: none"> ○ TNC co-hosted a breakfast meeting at GOMCon with GCOOS which brought together multiple organizations that are developing and sharing ocean data and tools. This event expanded TNC outreach into the Gulf of Mexico and identified potential new outreach as the tool is further developed. <p>Publications The Marine Mapping Tool: Increasing Access to Regional Ecological and Management Data to Help Inform Offshore Wind Use Decisions. Marta Ribera. GOMCON. February 21, 2024. (Link to presentation on Box: https://tnc.box.com/s/rhat17wxqmp1wl2efe5vlfww08oo2amz)</p>	
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Expansion of water level monitoring in underserved communities

<p>SECOORA is supporting the installation and long-term operation of new water level stations in the Southeast. The network will provide real-time local water level data to town managers, emergency managers, design engineers, and the public. This data is vital for monitoring coastal flooding and keeping citizens informed of hazardous conditions. This network will enable localized flooding alerts and improve community resilience. SECOORA is working with Sea Grant agencies in each state to help identify locations in underserved communities where water level data is key to community resilience.</p> <p>Accomplishments by Objective are as follows:</p>	
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<ul style="list-style-type: none"> • Select 10 locations for water level sensor installation. <ul style="list-style-type: none"> ○ The four southeast Sea Grants, funded through SECOORA 2021-2026 IOOS Year 2 Supplemental Regional Ocean Data Sharing funds, are working with communities to determine water level data needs. Based on Sea Grant recommendations, the following 8 sites have been identified for water level sensor installation: <ul style="list-style-type: none"> ■ Belhaven, NC (installed by SECOORA March 2024) ■ Chocowinity, NC (installed by SECOORA March 2024) ■ Love Grove community in Wilmington, NC (to be installed by SECOORA early Fall 2024) ■ Rebault River Reserve, Jacksonville, FL (installed by FACU Oct 2024) ■ Sylvania-New Comb Heights, Fort Walton Beach, FL (installed by FAU Dec 2023) ■ Niceville, FL (installed by FAU Dec 2023) ■ Two locations Williamsburg County, SC along the Black River (CCU is working through SC DOT permitting) ■ Two locations in GA are currently being evaluated. ○ NEPA Compliance: Locations are included on the following worksheet and final checks in ERMA are noted. https://docs.google.com/spreadsheets/d/10KN3sdkzaUR-Kf_TbC-YI0d1mcCqWH6pvWowcQVbB8o/edit?usp=sharing 	
<p>Increase the visibility of regional ocean data sharing activities with a Regional Ocean Data Sharing Web Presence</p>	
<p>SECOORA’s regional ocean data-sharing program is a partnership with coastal zone managers from NC, SC, GA, and FL. The Southeast Regional Ocean Data Sharing Initiative webpage was launched 12/16/23 and provides access to ongoing and completed projects: https://secoora.org/southeast-regional-ocean-data-sharing-initiative/</p>	<p>Complete 12/16/23</p>
<p>Goal B: Establishment of Communities of Practice to address regional ocean data sharing needs in the southeast</p>	
<p>Surface Elevation Tables (SETs)</p>	
<p>The Surface Elevation Table (SET) project and Community of Practice (CoP) aim to foster regional collaboration for coordinated SET management. This initiative unites stakeholders to deepen our understanding of coastal resilience in the face of rising sea levels. The project is led by Jacksonville University (JU) PI Dr. Nisse Goldberg.</p>	<p>In Progress</p>

<p>Accomplishments are as follows:</p> <ul style="list-style-type: none"> • Comprehensive regional SET inventory <ul style="list-style-type: none"> ○ The JU team has a complete inventory of SET locations in the SECOORA region that was vetted by members of the SET network. This inventory is posted on the SECOORA SET CoP (https://secoora.org/surface-elevation-table-community-of-practice/). The team has identified SETs that are active/inactive and the number of SET publications per state. • Gap analysis <ul style="list-style-type: none"> ○ An initial gap analysis was completed to determine where the 16 proposed new SETs should be installed; however, there is more interest from the SET community in reactivating and maintaining the SET stations currently installed. The next step is to meet with the practitioners to formalize the gap analysis and identify which SETs should be reactivated and where potential new SETs should be installed. • Community of Practice (CoP) <ul style="list-style-type: none"> ○ To date, practitioners from the following agencies/institutions have shown interest in participating on the CoP: <ul style="list-style-type: none"> ▪ US Fish and Wildlife Services ▪ SC Department of Natural Resources ▪ Florida Department of Environmental Protection ▪ US Geological Survey ▪ US National Parks Service ▪ National Estuarine Research Reserves (NERR) ▪ NOAA NCCOS ▪ Researchers from various universities within the southeast • Develop SET website content <ul style="list-style-type: none"> ○ The SET website is available here: https://secoora.org/surface-elevation-table-community-of-practice ○ The JU team is working with Axiom Data Science to create a beta version of the SET data visualization platform. The team is using R script, developed by NERRs researchers, to analyze available SET data and share with the data visualization team: https://nerrsciencecollaborative.org/project/Cressman18 	
Support and expand the existing Drone Community of Practice (CoP)	
<p>Uncrewed Aircraft Systems (UAS), or drones, are a rapidly growing component of research, assessment, and monitoring of coastal regions within the U.S. Southeast. The Drones in the Coastal Zone (DITCZ) CoP shares knowledge and best practices related to the use of drone technologies to</p>	In Progress

<p>support coastal research.</p> <p>Accomplishments by objective are as follows:</p> <ul style="list-style-type: none"> • The DITCZ CoP website is live: https://secoora.org/drone-network/ • The Drones in the Coastal Zone (DITCZ) meeting was hosted February 6 – 8, 2024, in Beaufort, NC. This in-person meeting provided a great opportunity to network with colleagues in the U.S. Southeast and Caribbean with common interests in using unoccupied aircraft systems (UAS), or drones, for coastal and ocean research and management. The meeting included tours of the NOAA Beaufort Lab and the Duke University Marine Lab, a hands-on equipment showcase, and discussions on the future of the DITCZ Community of Practice. <ul style="list-style-type: none"> ○ There were 80 meeting participants. ○ The 2024 meeting summary, agenda, and overview are found here: https://secoora.org/drones-in-the-coastal-zone-2024-meeting/ • Troy Walton, UNC Chapel Hill, provided a DITCZ lightning talk at the SECOORA Annual Meeting: https://secoora.org/wp-content/uploads/2024/06/9-Morning-DITCZ-Lightning-Talk-2024-SECOORA-Annual-Meeting.pdf 	
<p>Goal C: Support resilience planning in the southeast through the <u>Southeast & Caribbean Disaster Resilience Partnership</u></p>	
<p>The Southeast and Caribbean Disaster Resilience Partnership (SCDRP)</p>	
<p>The SCDRP seeks to strengthen community resilience and support rapid recovery from storms and disasters by serving as the primary network for professionals in emergency management, climate adaptation, and disaster recovery in the US Southeast and Caribbean territories. The SCDRP coordinates regional disaster recovery and resilience planning and is a convening forum for professionals who are committed to building capacity and sharing their expertise to advance community resilience. Heather McCarthy is the Executive Director of the SCDRP.</p> <p>Accomplishments by objective are as follows:</p> <ul style="list-style-type: none"> • Provide support for the SCDRP Executive Director <ul style="list-style-type: none"> ○ The SCDRP Executive Director hosted and facilitated monthly partnership meetings. Meeting recordings are available here: https://www.youtube.com/playlist?list=PLN1Eo26yGEtC8u8bOQPazldbyfjWMK8Yi. Monthly meetings and speakers are as follows: <ul style="list-style-type: none"> ▪ 1/4/2024 - Rashmin Gunasekera, World Bank: “Roadmap to Resilience: Innovations in Disaster Risk Management.” 	<p>In Progress</p>

<ul style="list-style-type: none"> ▪ 2/22/2024 - Andy Fox, NC State University: “Accelerating Recovery and Resilience in Flood-Vulnerable Communities.” ▪ 3/28/2024 – Avery Davis Lamb, Creation Justice Ministries, and Susannah Tuttle, North Carolina Interfaith Power & Light: “Engaging faith communities to effectively build resilience in vulnerable areas”. ▪ 4/25/2024 - Derek Frohbieter, NC Emergency Management: “FIMAN: Flood Inundation Mapping Alert Network for the State of North Carolina” ▪ 5/23/2024 -Lauren Schmied, Engineering Resources Branch, FEMA: “FEMA and Coastal Future of Flood Risk Data” • SCDRP membership expansion and diversification <ul style="list-style-type: none"> ○ The Partnership Committee met monthly to identify and contact potential members and speakers for Monthly Partnership Meetings, including the “Partner Picks” Summer Speaker Series to solicit summer speakers from members. ○ The Partnership Committee is planning a Fall Group Membership Drive to enhance membership revenue. ○ The Partnership Committee is organizing a Mentorship Program, conducted exploratory meetings, designed and sent out a survey to gauge interest, and gathered materials to train and match Mentors and Mentees. ○ Executive Director met virtually with potential Partners including USDA Southeast Climate Hub and SmartHome America. • SCDRP Resources and educational opportunities <ul style="list-style-type: none"> ○ 20 e-newsletters mailed to ~ 580 SCDRP listserv participants containing information on upcoming webinars, seminars, workshops, training sessions, funding opportunities, job opportunities, and relevant policy and SCDRP updates. ○ Consistently shared news and information on social media outlets (Facebook, LinkedIn, and X). ○ Monthly Partnership meetings include time for partners to share resources and opportunities • Formalize new Policies and Procedures <ul style="list-style-type: none"> ○ SCDRP engaged Members and Advisory Board Members in the strategic-planning process that led to the 2024-2027 Strategic Plan. The Plan includes a new vision, mission, core values, and 3-year strategic objectives. 	
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- The Governance Committee met monthly to continue developing Policies & Procedures focused on refining the definitions of Advisory Board seats.
- Held the second official election of new Advisory Board Members, and the first official Advisory Board Officer Election. See Advisory Board Members and Officers here: <https://www.scdrp.secoora.org/about-4>
- The SCDRP Advisory Board voted to create a Finance & Audit Committee, and the Governance Committee is drafting the definition and role of this new committee. The new Finance & Audit Committee will work closely with SECOORA to review SCDRP Annual Budgets, cash flow, and financial goals.
- Fundraising strategies to help sustain the organization.
 - The Development Committee met monthly to develop and execute fundraising strategies including the pursuit of meeting sponsors, philanthropic and corporate support, and increasing the number of dues-paying Individual and Group Members.
 - The Development Committee is creating a Tiered Membership Model with proposed increased dues to enhance foundational funds coming into SCDRP.
 - Worked with collaborators and SECOORA staff to submit the first major grant proposal to the NOAA Climate Resilience Regional Challenge.
- [2024 SCDRP Annual Meeting](#) hosting and participation.
 - The 2024 SCDRP Annual Meeting was held at the Fort De Soto Hotel in Savannah, GA, January 23-24, with 127 registered attendees. <https://www.scdrp.secoora.org/copy-of-2024-annual-meeting>
 - Facilitated a pre-meeting 4-hour field trip entitled “Tybee Island Resilience Tour”.
 - The meeting featured 8 sessions on current climate and disaster resilience issues, 10 Data Tools & Technology Exhibits, a “Resilient Sites Scavenger Hunt” to learn more about the historic sites and resilience efforts in Savannah, and a walking tour of the Chatham County Emergency Operations Center in Savannah.
 - Awarded 8 registration scholarships for students and nonprofit representatives to attend the meeting and secured 18 meeting sponsors.
 - Collaborated with the Duke University Nicholas Institute for Energy, Environment, and Sustainability to offer a Roundtable Discussion on Hazard Insurance in conjunction with the Annual Meeting.

BUDGET SUMMARY:

Total Approved YEAR 1 Funds (Topic 1 + Topic 2)	\$ 950,500
Matching Funds	\$ 0 (no matching funds required)
Total Funds Expended (YEAR 1 Topic 1)*	\$ 440,802.43
Total Funds Expended (YEAR 1 Topic 2)*	\$ 182,593.61
Total Unobligated Funds (Topic 1 + Topic 2)	\$ 0
Budget Deviations	None
Total Approved YEAR 2 Funds (Topic 1 + Topic 2)	\$ 955,500
Matching Funds	\$ 0 (no matching funds required)
Total Funds Expended (YEAR 2 Topic 1)*	\$ 195,989.77
Total Funds Expended (YEAR 2 Topic 2)*	\$ 118,773.40
Total Unobligated Funds (Topic 1 + Topic 2)	\$ 0
Budget Deviations	None

* SECOORA pays its monthly operational costs (i.e., payroll, etc.) and then conducts the ASAP draws in the middle of the following month for both the preceding month's operational expenses and the sub-awardee invoices. SECOORA receives invoices on a quarterly basis. There is always a delay between when a subawardee or subcontractor conducts work and when it is invoiced to SECOORA.

Appendix A
TNC Southeast Marine Mapping Presentation to
the Steering Committee

Phase 2: Southeast Marine Mapping Tool

**Increasing access to regional ecological data to help inform offshore ocean use decisions:
stakeholder engagement and mapping tool refinement**

Steering Committee Meeting

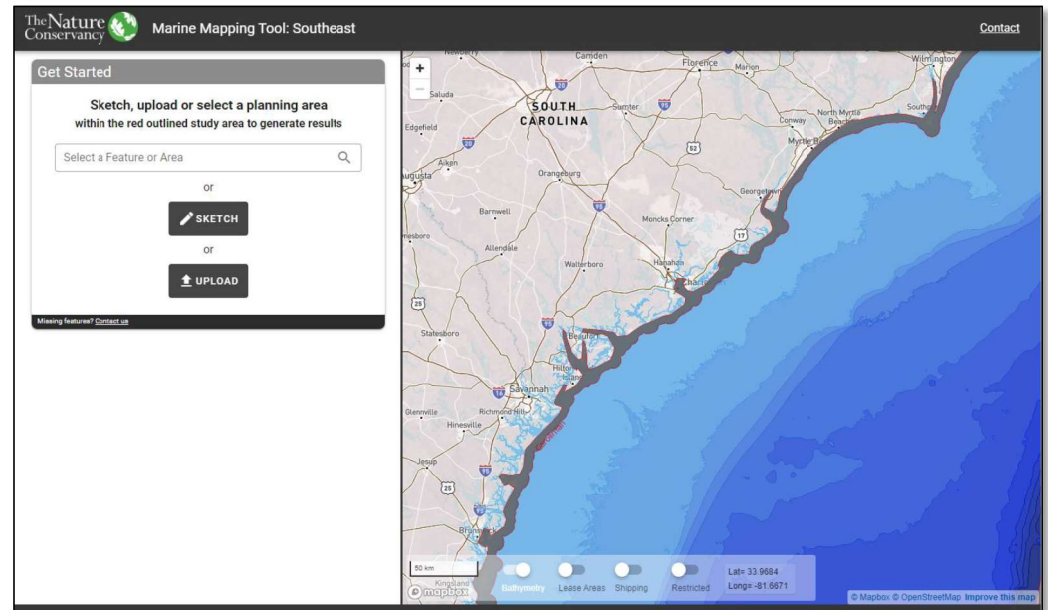
February 27, 2024

The Nature
Conservancy 
Protecting nature. Preserving life.



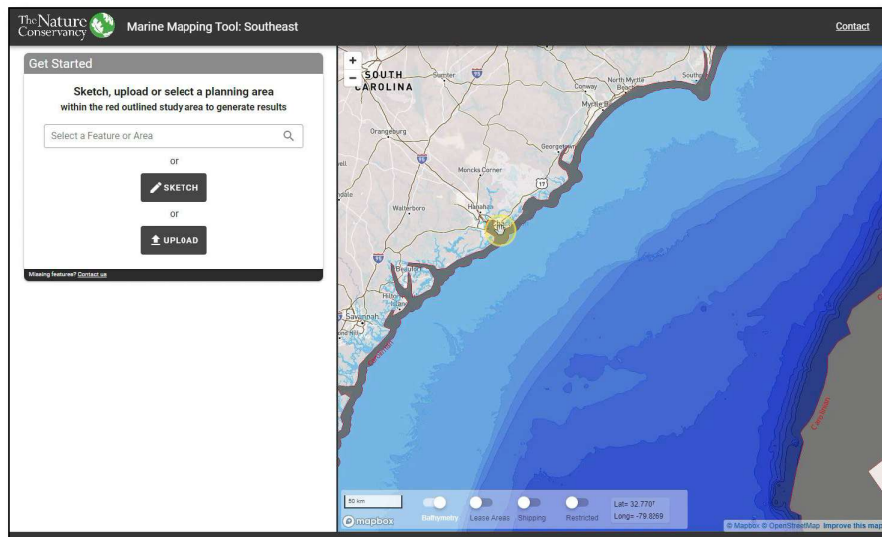
MEETING AGENDA

- ▶ Welcome and introductions
- ▶ Brief overview of project priorities
- ▶ Review new updates on management and human-use information on the tool
- ▶ Discuss new data updates
- ▶ Wrap-up and next steps



PROJECT REVIEW

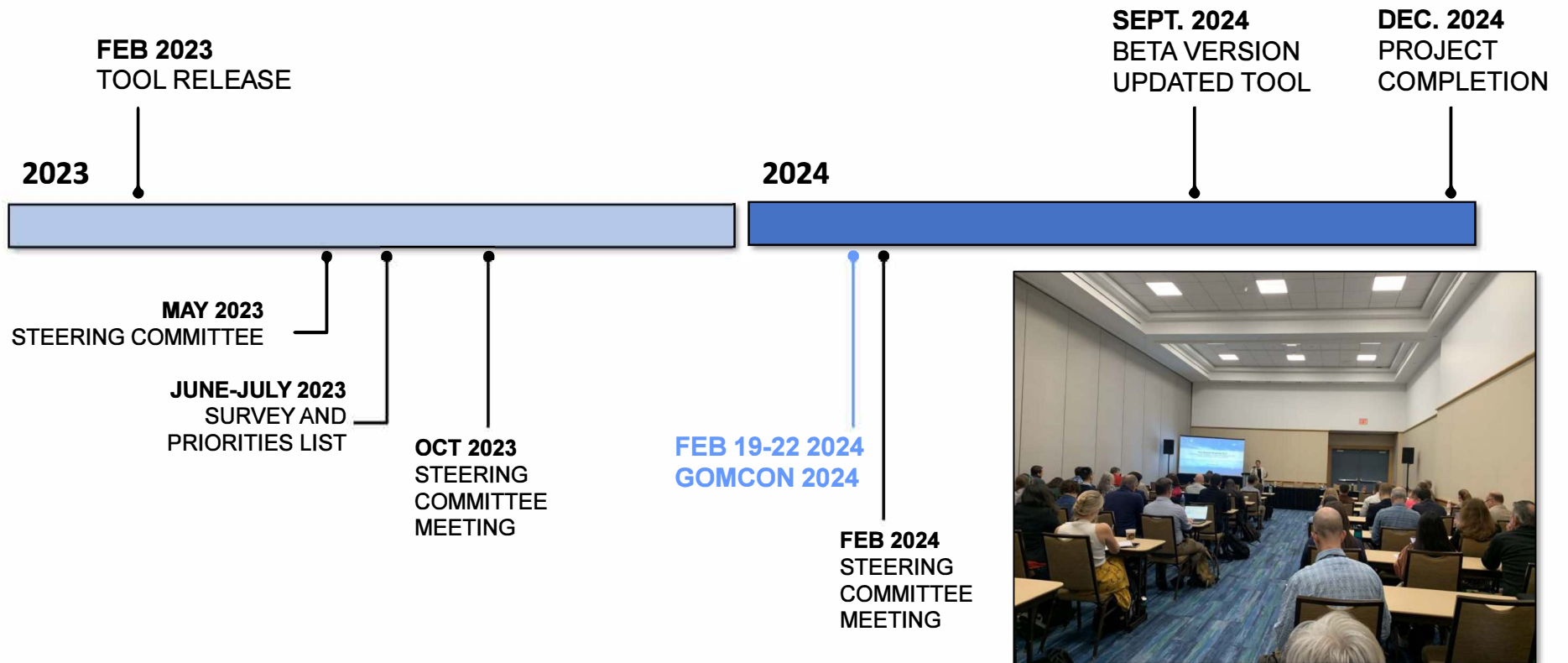
OUR PROJECT: Leverage marine-life, habitat, and use data available to provide guidance so all users can be part of decision-making process. Tool now available for NE and SE regions.



<https://maps.tnc.org/marinemap/se>



TIMING OF THE PROJECT



PRIORITIES SELECTED

1 INCREASE TRANSPARENCY
AND TRUST ON THE TOOL

2 IMPROVE MANAGEMENT &
HUMAN-USE INFO

3 IMPROVE DATA
EXPLORATION ACROSS
THE TOOL

4 INCREASE FUNCTIONALITY
AND STABILITY

5 BETTER COMMUNICATION
AND ENGAGEMENT

PRIORITIES SELECTED

1

INCREASE TRANSPARENCY
AND TRUST ON THE TOOL

2

**IMPROVE MANAGEMENT &
HUMAN-USE INFO**

3

IMPROVE DATA
EXPLORATION ACROSS
THE TOOL

4

**INCREASE FUNCTIONALITY
AND STABILITY**


5

BETTER COMMUNICATION
AND ENGAGEMENT

FOCUS OF TODAY'S CALL

- ▶ Redesign “Uses/People” tab
- ▶ NEW DATA UPDATES:
 - Updated species models (Birds and turtles)
 - Update how Marine mammal data are visualized
 - Update seabed forms and bathymetry
- ▶ EXPLORE NEW DATA SOURCES:
 - Shipping data / Fishing data
 - Artificial Reefs
 - Cables


MANAGEMENT AND HUMAN-USE TAB


Marine Mapping Tool: Southeast


Overview

Management by category


Gear Allowed ⊕



Uses Permitted ⊕



Seasonal Use Restrictions ⊕

 No seasonal use restrictions found

Important Mgmt Considerations ⊕

EFH HAPC NMS

■ Allowed/No Restrictions
■ With Restrictions
■ Not Permitted
■ No info
■ Important Management Consideration

Key management layers ⊕

Essential Fish Habitat

- [EFH for Corals and Life Hardbottom](#)
- [EFH for Snapper and Grouper](#)
- [EFH for Spiny Lobster](#)
- [EFH for Shrimp](#)
- [EFH for Golden Crab](#)
- [EFH for Dolphin and Wahoo](#)
- [EFH for Coastal migratory pelagic](#)
- [EFH for Highly migratory species \(19 species\)](#)

Habitat Area of Particular Concern

- [HAPC for snapper and Grouper](#)
- [HAPC for Dolphin and Wahoo](#)
- [HAPC for Coastal Migratory Pelagics](#)
- [HAPC for Tilefish](#)

Gear restrictions

- [SAFMC Gear regulation under FMPs - Sargassum](#)
- [SAFMC Gear regulation under FMPs - Rigs](#)
- [Trawls](#)
- [SAFMC Gear regulation under FMPs - Octocorals](#)

Ocean Use: Shipping ⊕

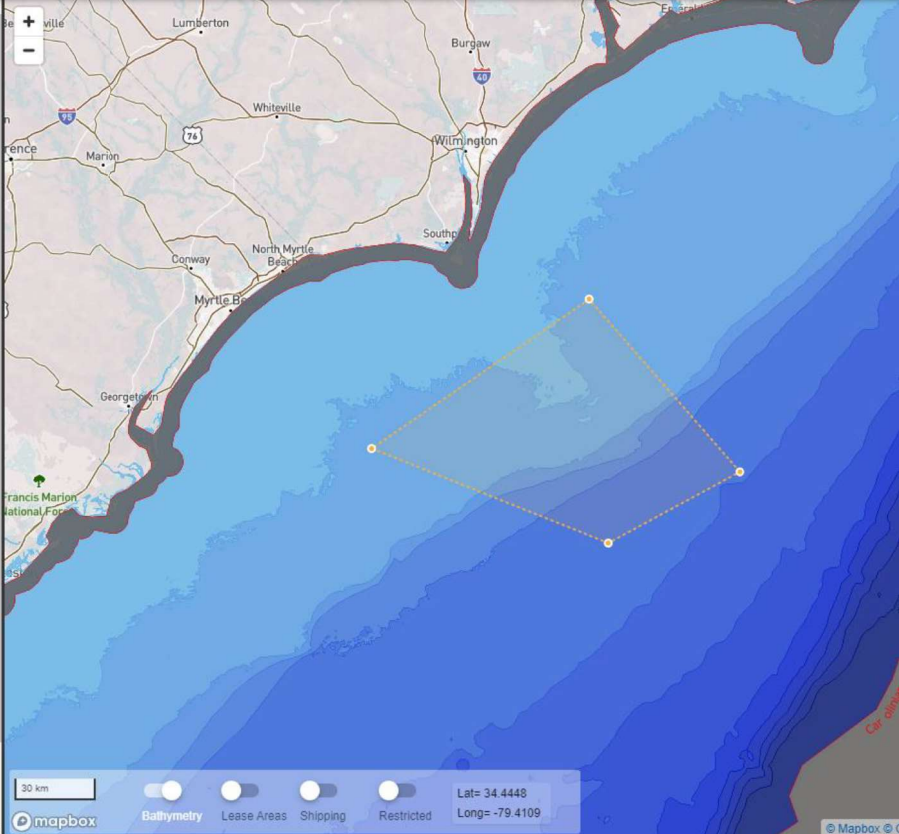
Relative transit counts (Compared to Ecoregion)

	Far Below	Same	Far Above
All Ships:	█	█	█
Cargo Ships:	█	█	█
Fishing Ships:	█	█	█
Passenger:	█	█	█
Sail Vessels:	█	█	█
Tankers:	█	█	█
Tow Vessels:	█	█	█

Shipwrecks and Artificial Reefs ⊕

The following features were found in this area:

- Ship Wrecks
- No Artificial Reefs



30 km

Bathymetry
 Lease Areas
 Shipping
 Restricted

Lat= 34.4448
 Long= -79.4109

MANAGEMENT AND HUMAN-USE TAB

The Nature Conservancy Marine Mapping Tool: Southeast

Overview

Management by category

Gear Allowed

Uses Permitted

Seasonal Use Restrictions

Important Mgmt Considerations

Ocean Use: Shipping

Relative transit counts (Compared to Ecoregion)

	Far Below	Same	Far Above
All Ships:			
Cargo Ships:			
Fishing Ships:			
Passenger:			
Sail Vessels:			
Tankers:			
Tow Vessels:			

Key management layers

Essential Fish Habitat

- [EFH for Corals and Life Hardbottom](#)
- [EFH for Snapper and Grouper](#)
- [EFH for Spiny Lobster](#)
- [EFH for Shrimp](#)
- [EFH for Golden Crab](#)
- [EFH for Dolphin and Wahoo](#)
- [EFH for Coastal migratory pelagic](#)
- [EFH for Highly migratory species \(19 species\)](#)

Habitat Area of Particular Concern

- [HAPC for snapper and Grouper](#)
- [HAPC for Dolphin and Wahoo](#)
- [HAPC for Coastal Migratory Pelagics](#)
- [HAPC for Tilefish](#)

Gear restrictions

- [SAFMC Gear regulation under FMPs - Sargassum](#)
- [SAFMC Gear regulation under FMPs - Rigs](#)
- [Trawls](#)
- [SAFMC Gear regulation under FMPs - Octocorals](#)

Shipwrecks and Artificial Reefs

The following features were found in this area:

- Ship Wrecks
- No Artificial Reefs

Main issues that were brought up:

- ▶ Confusing representation of management areas
- ▶ Need to highlight EFHs and HAPCs, and their implications
- ▶ Visualization of shipping info not useful or confusing
- ▶ Bring information on other uses, like cables or sand extraction

MANAGEMENT AND HUMAN-USE TAB

OBJECTIVES:

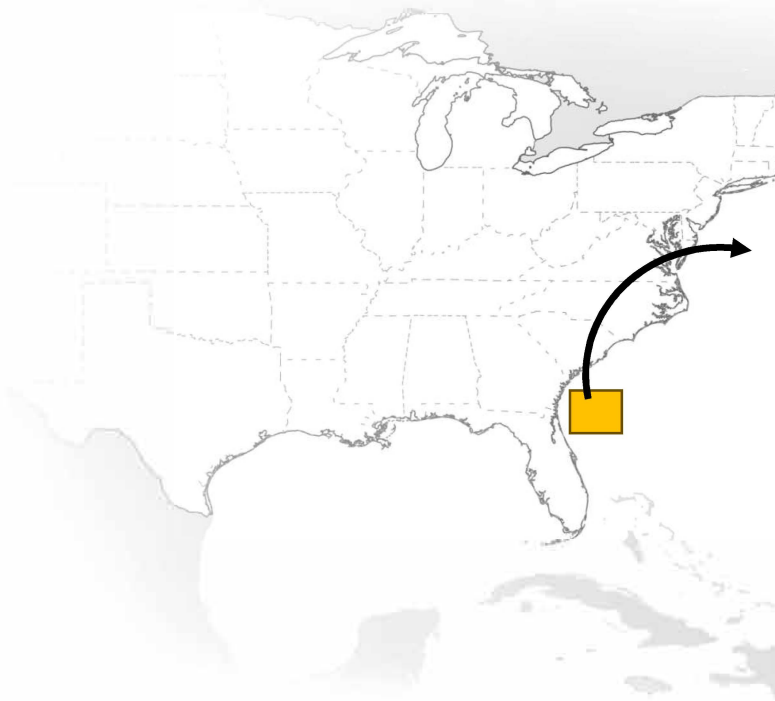
- ▶ Show **type and level of management** currently in the area.
- ▶ Visualize connections to species from **EFH/HAPC designations**.
- ▶ Visualize **implications of management**.

When reviewing mock-ups...

- ▶ Numbers are not representative of an area, just an example.
- ▶ Mock-ups were created to spark ideas and comments.
- ▶ We want to know:
 - Is this the **right level of detail or granularity**?
 - Are we **missing or mis-representing** any information?
 - Is this **useful and/or necessary** to make decisions?



MANAGEMENT AND HUMAN-USE TAB



The Nature Conservancy Marine Mapping Tool: Southeast Contact

Overview

Management by category Key management layers

Gear Allowed

- Essential Fish Habitat
- SEIS for Corals and Life Habitats
- SEIS for Seagrass and Grasses
- SEIS for Seagrass Lobster
- SEIS for Seagrass
- SEIS for Seagrass Crab
- SEIS for Seagrass and Shellfish
- SEIS for Coastal Operations and/or
- SEIS for Seagrass Operations and/or

Uses Permitted

- Habitat Area of Particular Concern
- HAPO for Corals
- HAPO for Seagrass
- HAPO for Seagrass and Grasses
- Gear restrictions

Seasonal Use Restrictions

No seasonal use restrictions found

Important Mgmt Considerations

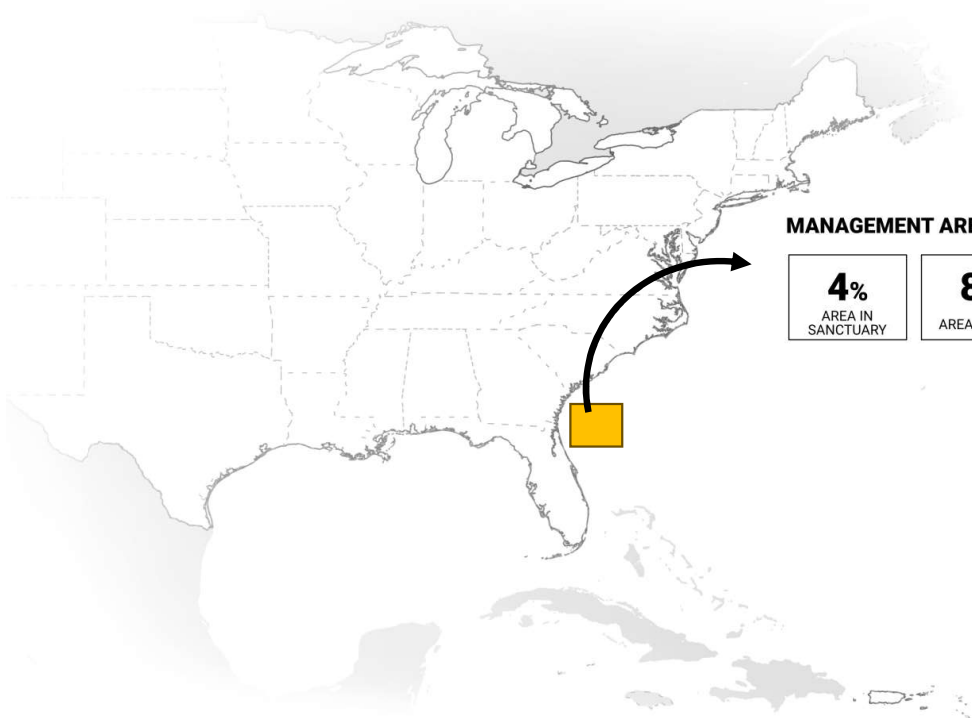
Allowed by...
Not Allowed by...
Not Allowed by...

Summary of numbers within Area of Interest (AOI). Interactive graphs.

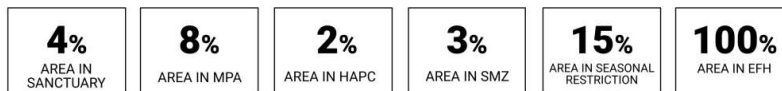
Click on a graph, and the map shows spatial information.

Mapbox © OpenStreetMap contributors, Imagery © Mapbox

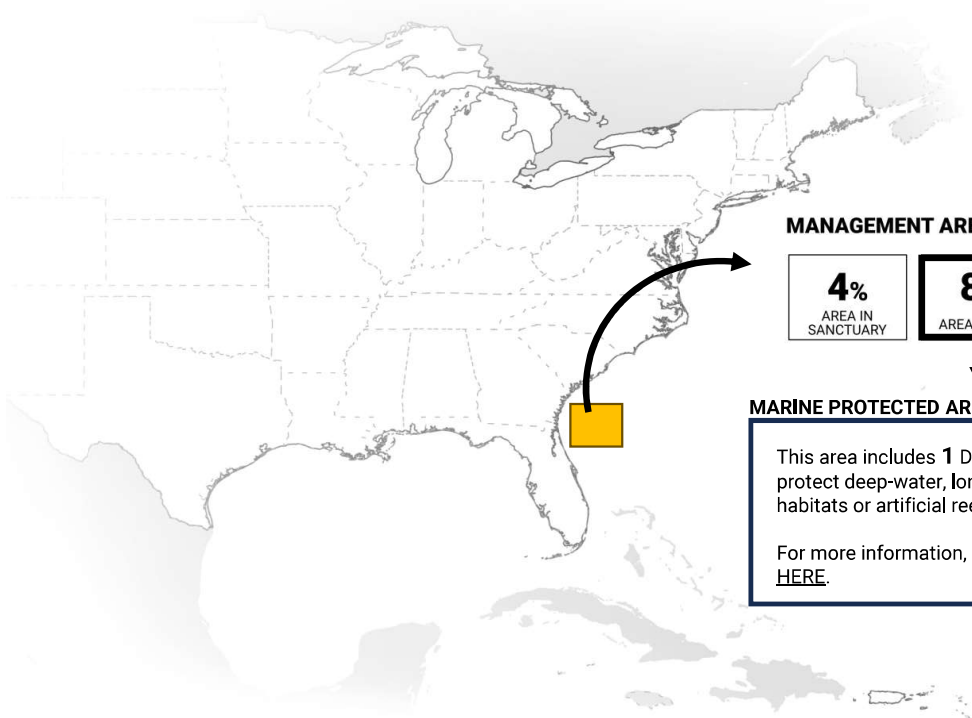
MANAGEMENT AND HUMAN-USE TAB



MANAGEMENT AREAS BY TYPE



MANAGEMENT AND HUMAN-USE TAB



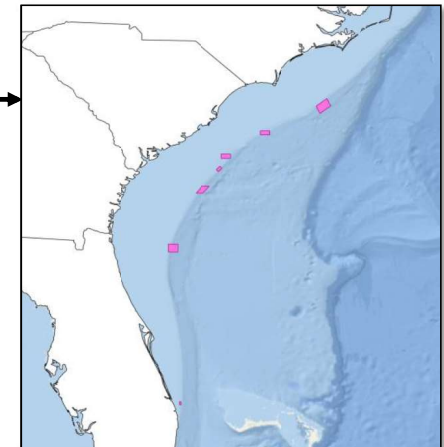
MANAGEMENT AREAS BY TYPE



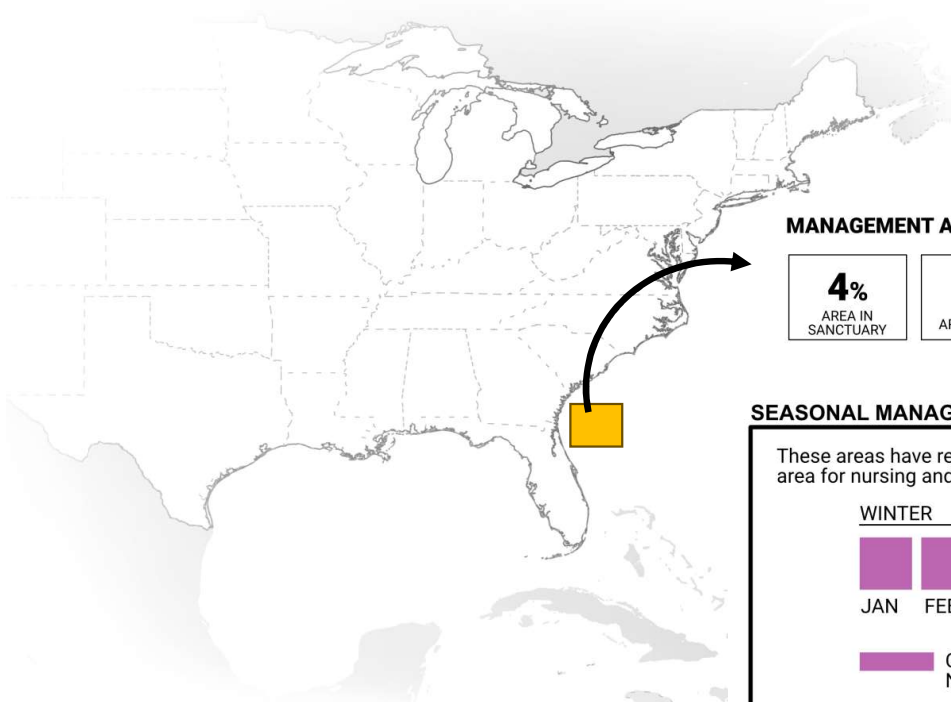
MARINE PROTECTED AREAS (MPAs)

This area includes **1** Deep-water MPA (North Florida MPA). These MPAs are in place to protect deep-water, long-lived snapper-grouper species. Areas include either natural habitats or artificial reefs.

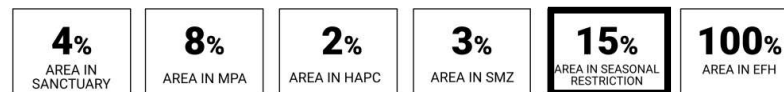
For more information, go to the South Atlantic Fisheries Management Council website [HERE](#).



MANAGEMENT AND HUMAN-USE TAB

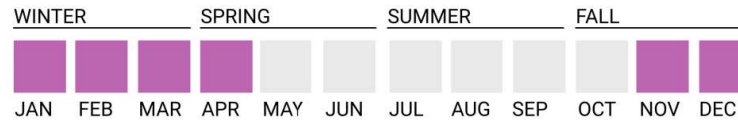


MANAGEMENT AREAS BY TYPE



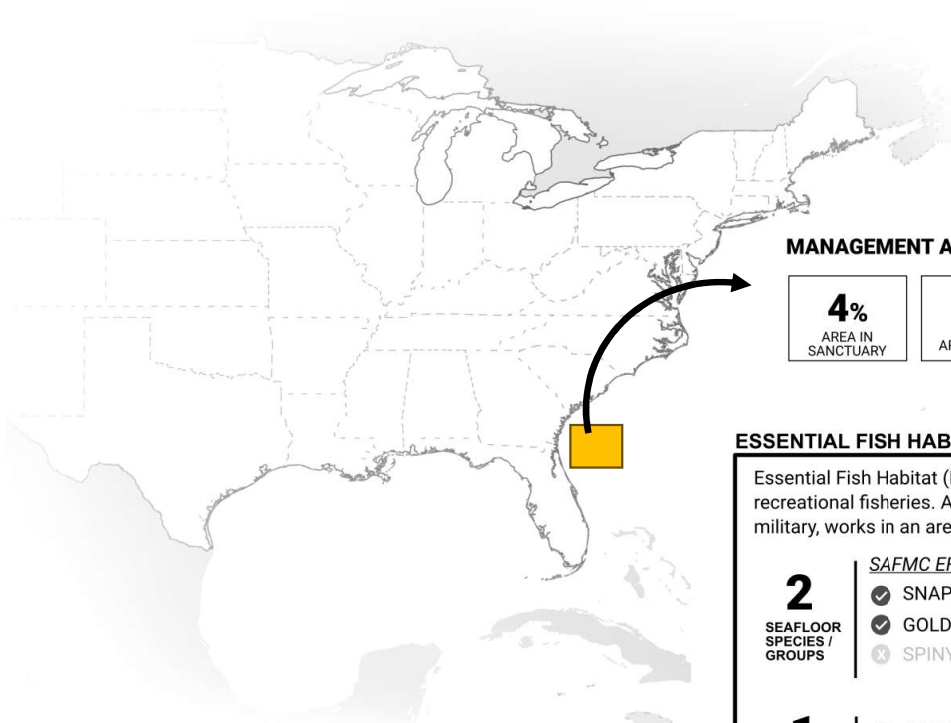
SEASONAL MANAGEMENT AREAS

These areas have restricted vessel speeds during months when North Atlantic Right Whales use the area for nursing and calving. For more information, contact NOAA or view more information [HERE](#).

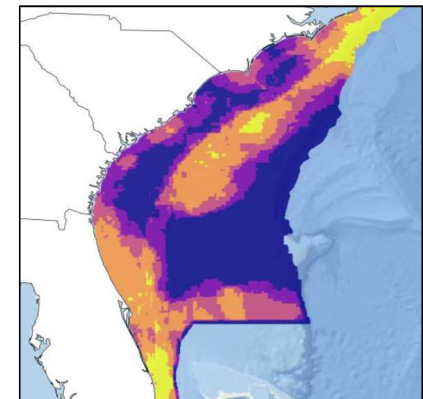


 CALVING AND NURSERY GROUNDS - North Atlantic Right Whale

MANAGEMENT AND HUMAN-USE TAB



MANAGEMENT AREAS BY TYPE



ESSENTIAL FISH HABITAT

Essential Fish Habitat (EFH) is a way for NOAA to recognize the importance of healthy habitat for commercial and recreational fisheries. A consultation with NOAA Fisheries is required whenever a federal agency, including the military, works in an area that will adversely affect essential fish habitat. For more information, click [HERE](#).

2
SEAFLOOR SPECIES / GROUPS

SAFMC EFH:

- SNAPPER/GROUPER
- GOLDEN CRAB
- SPINY LOBSTER

1
HABITAT

- CORAL, CORAL REEFS, LIVE OR HARD BOTTOM

12
PELAGIC SPECIES / GROUPS

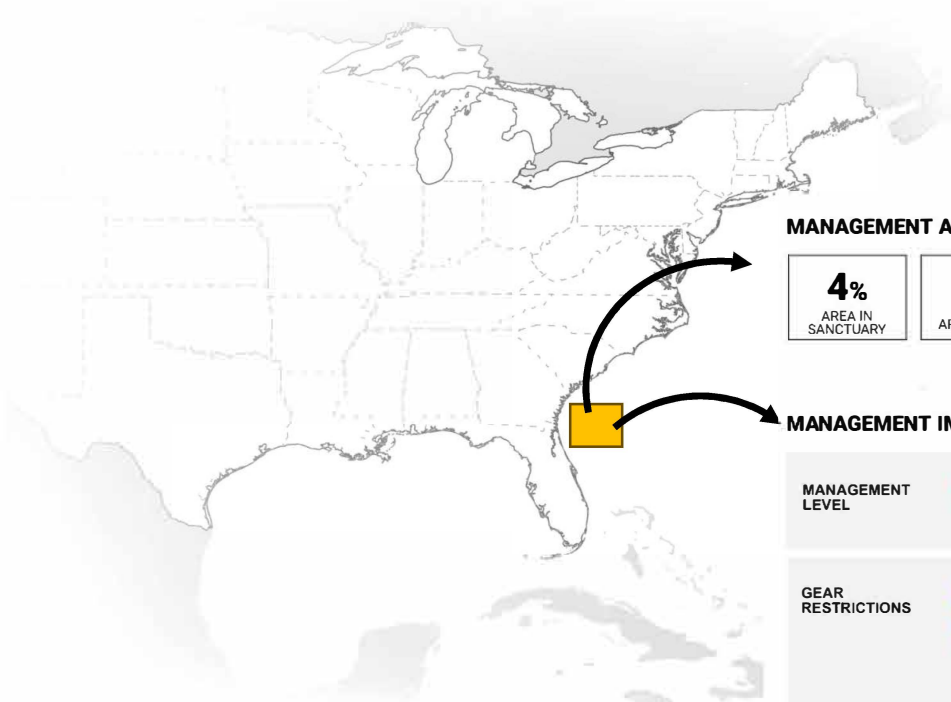
SAFMC EFH:

- SHRIMP
- DOLPHIN / WAHOO
- COASTAL MIGRATORY PELAGICS

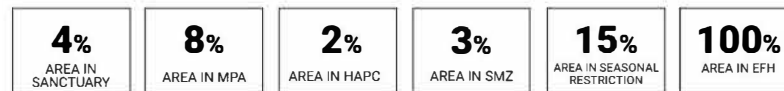
NOAA HIGHLY MIGRATORY EFH:

- 7** SHARKS — ADULTS | JUVENILES | LARVAE
- 4** TUNAS — ADULTS | JUVENILES | LARVAE
- 1** OTHER — ADULTS | JUVENILES | LARVAE

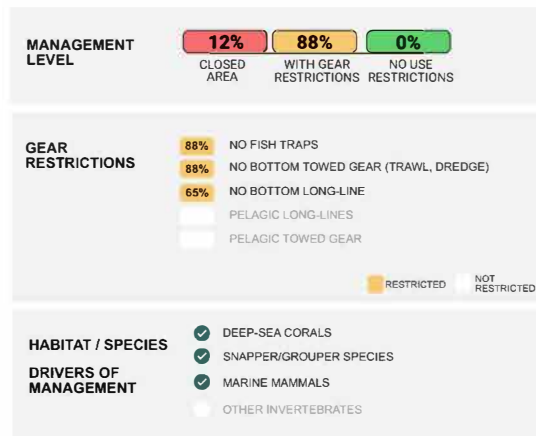
MANAGEMENT AND HUMAN-USE TAB



MANAGEMENT AREAS BY TYPE



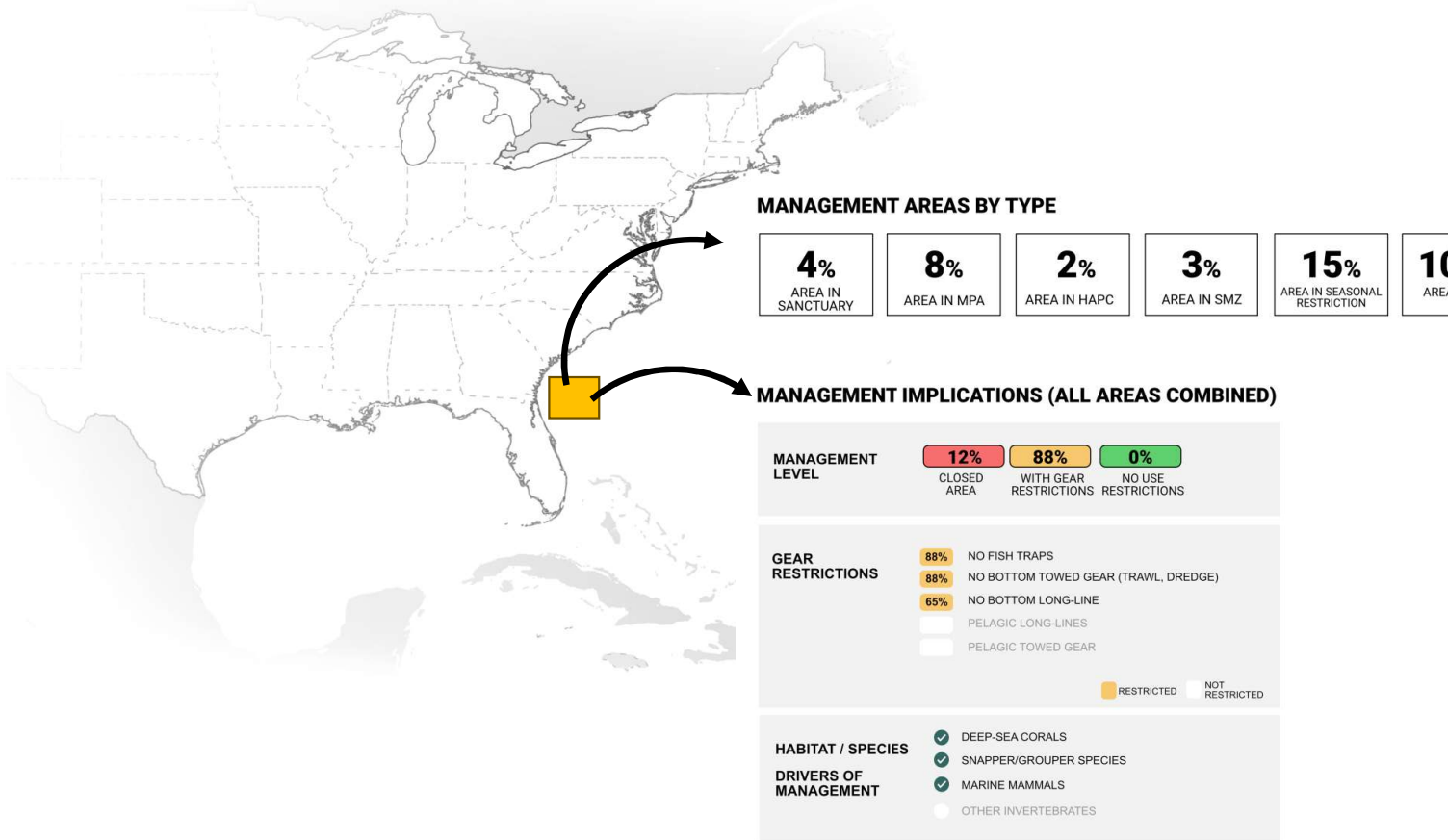
MANAGEMENT IMPLICATIONS (ALL AREAS COMBINED)



MANAGEMENT AND HUMAN-USE



MANAGEMENT
DATA



Did we capture your thoughts, concerns, and ideas for the management tab?

Is this the **right level of detail or granularity?**

Is this **useful** to make decisions?

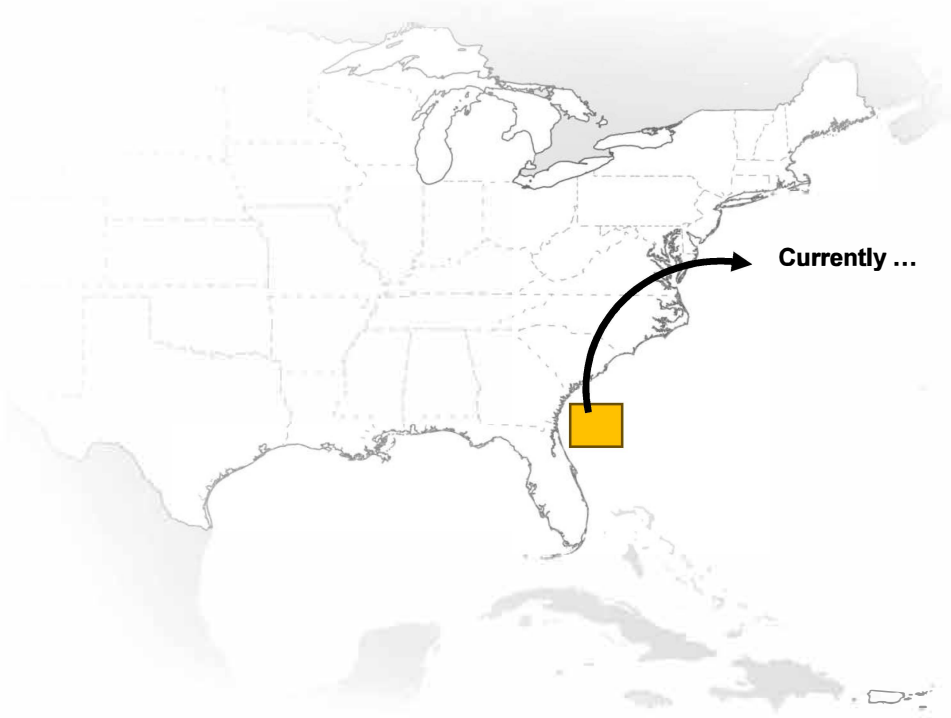
DATA UPDATES



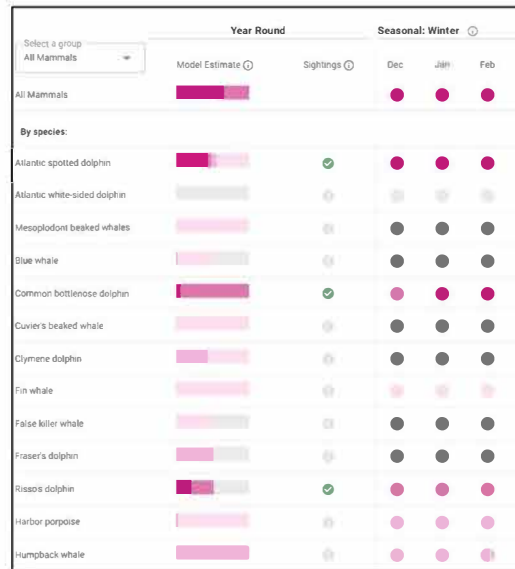
MAIN FOCUS:

- ▶ Bird, Marine Mammal, and Turtle models
- ▶ Bathymetry
- ▶ Shipping / Fishing
- ▶ Artificial reefs
- ▶ Cables

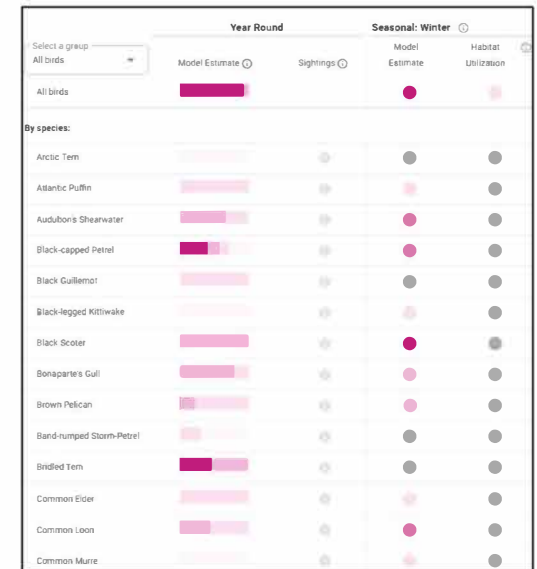
SPECIES MODELS



Marine Mammals

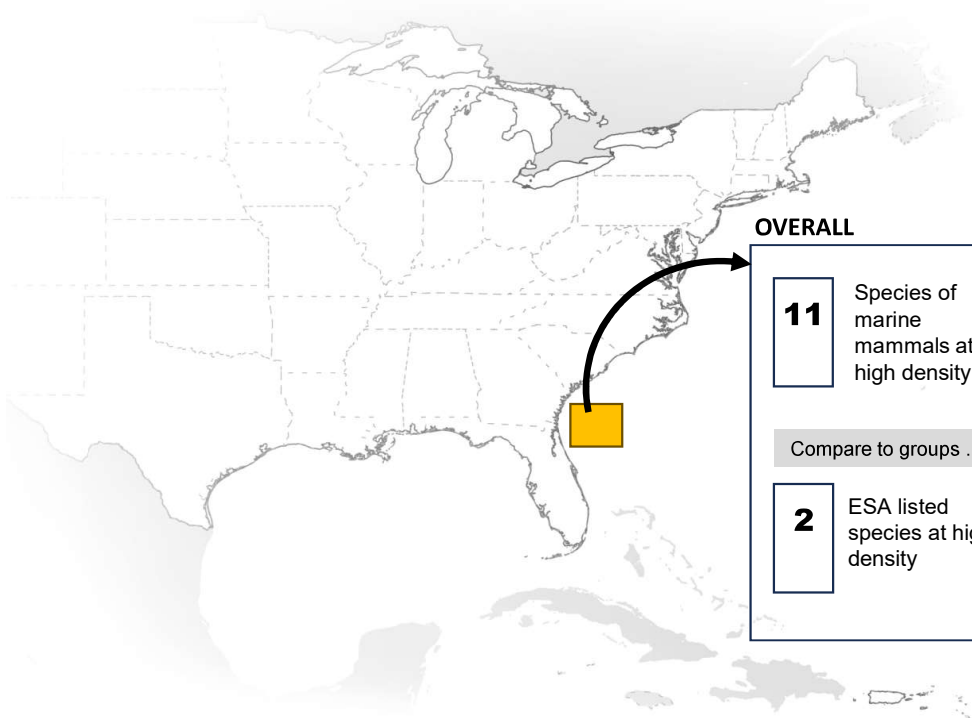


Birds



- ▶ Updated data for birds and turtles
- ▶ All now have monthly resolution layers
- ▶ Also available are monthly resolution uncertainty information
- ▶ Objective is to simplify this and make it consistent across species

SPECIES MODELS



OVERALL

11

Species of marine mammals at high density



HIGHER than regional average

Compare to groups ...

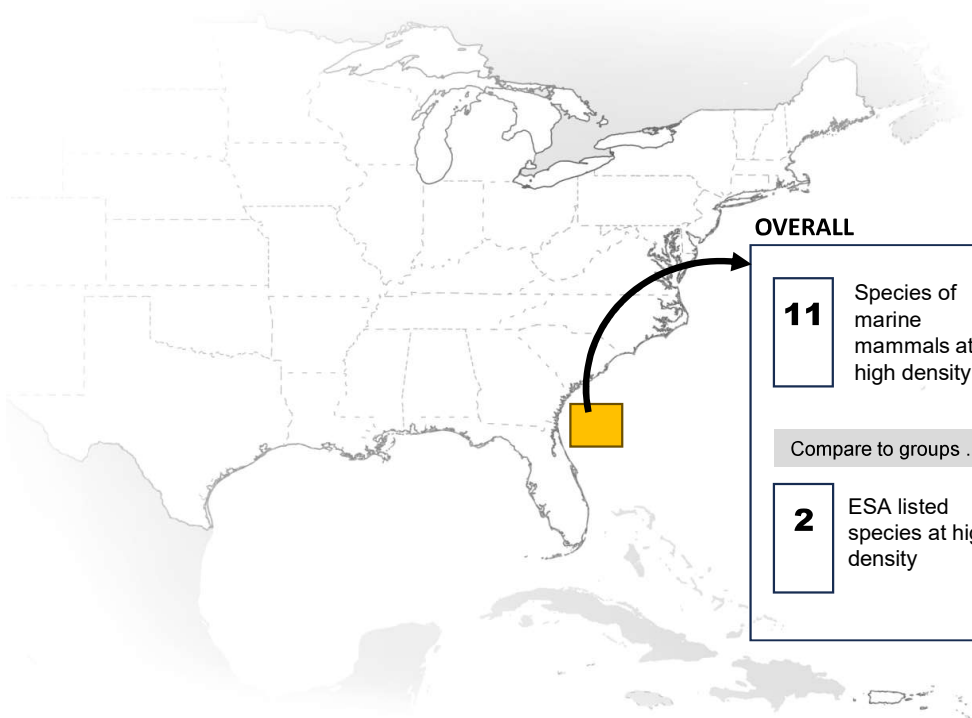
2

ESA listed species at high density

35%

of these species high density areas are within the AOI

SPECIES MODELS



OVERALL

11 Species of marine mammals at high density

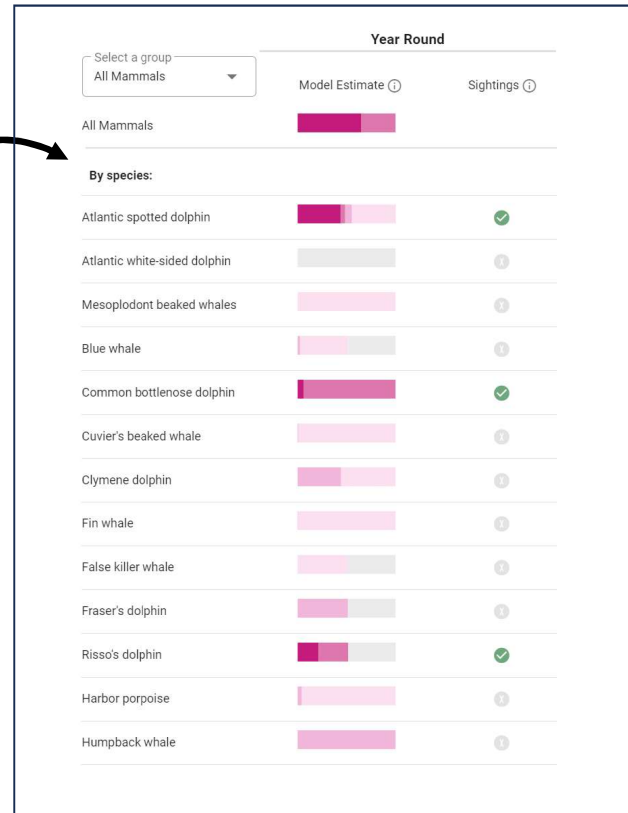


Compare to groups ...

2 ESA listed species at high density

35% of these species high density areas are within the AOI

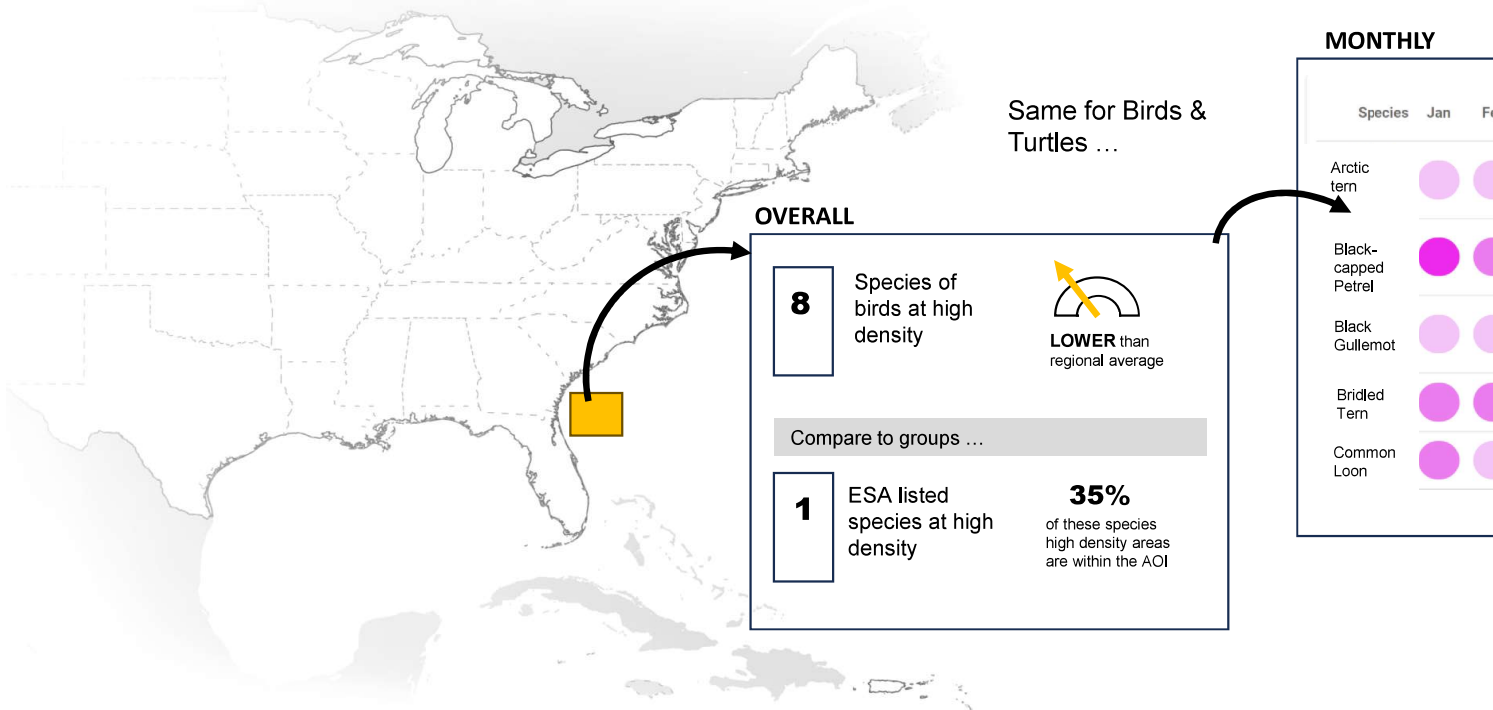
YEAR ROUND



SPECIES MODELS



SPECIES MODELS



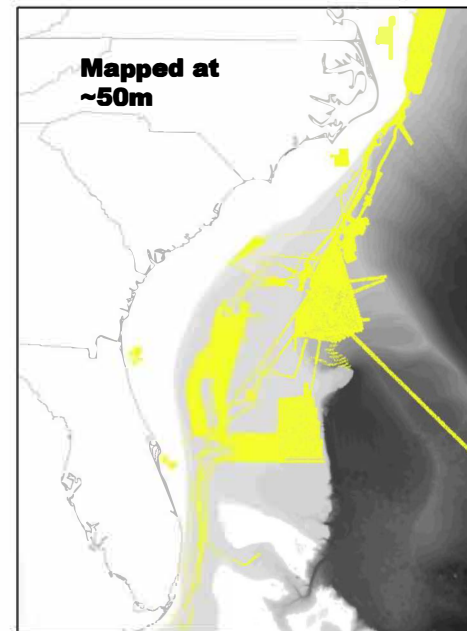
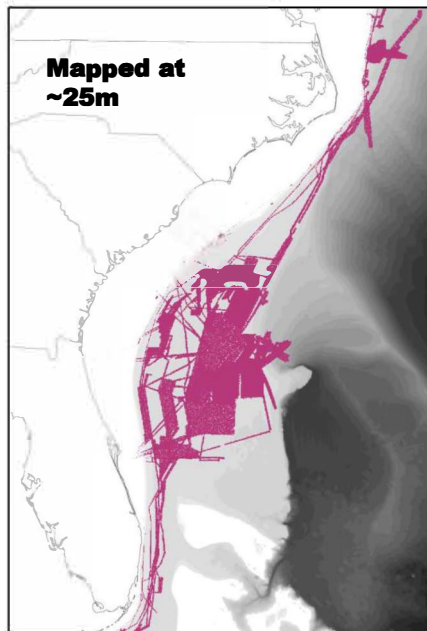
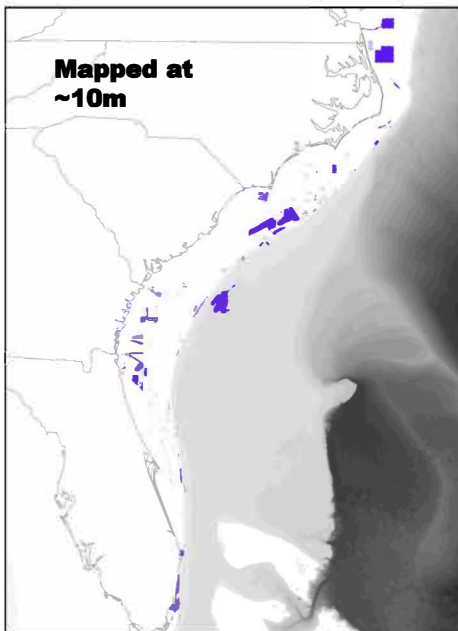
Is this the **right level of detail or granularity?**

Are we **missing or mis-representing** any information?

Is this **useful and/or necessary** to make decisions?

OTHER UPDATES | BATHYMETRY

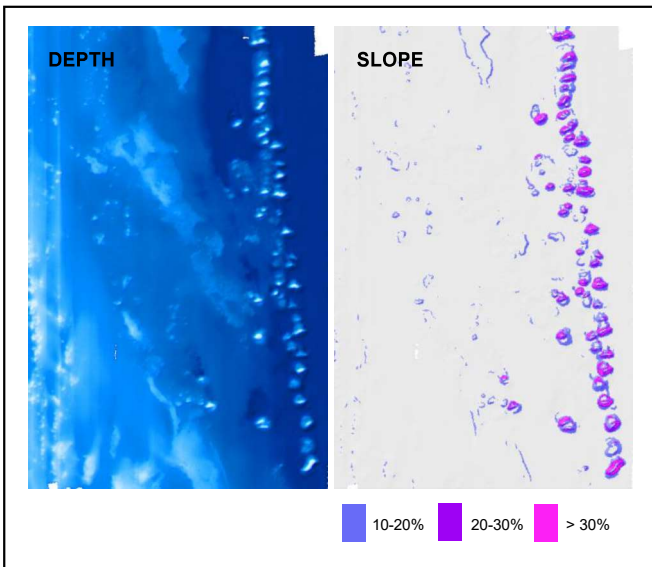
- ▶ Current bathymetry is 100+ meter resolution.
- ▶ Good for an estimate on depth, but not as good for determining features and seafloor structure.
- ▶ Thanks to Okeanos Explorer data, big part of the area (especially deeper than shelf break) now has high-resolution bathymetry.



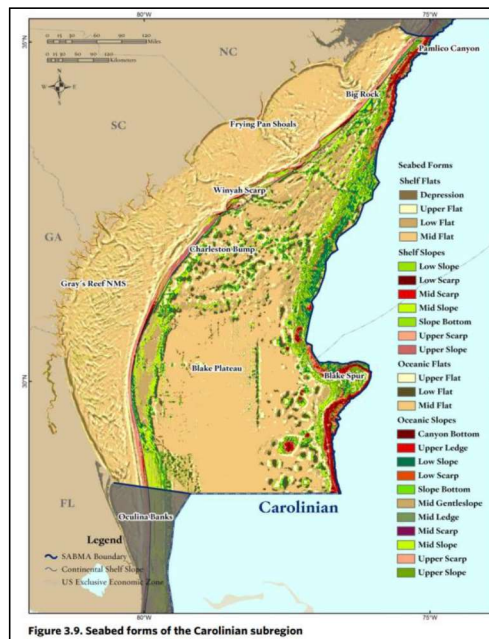
OTHER UPDATES | BATHYMETRY

- ▶ A part from general depth range, what information do we want to convey on the tool?
- ▶ Currently in the tool, you can see Seabed Forms and sediment.
- ▶ Areas of high slope are often used as proxies for hardbottom / coral habitat
- ▶ Future efforts (e.g. NOAA seascapes analysis) may convey the full structure, but that may not be available any time soon.

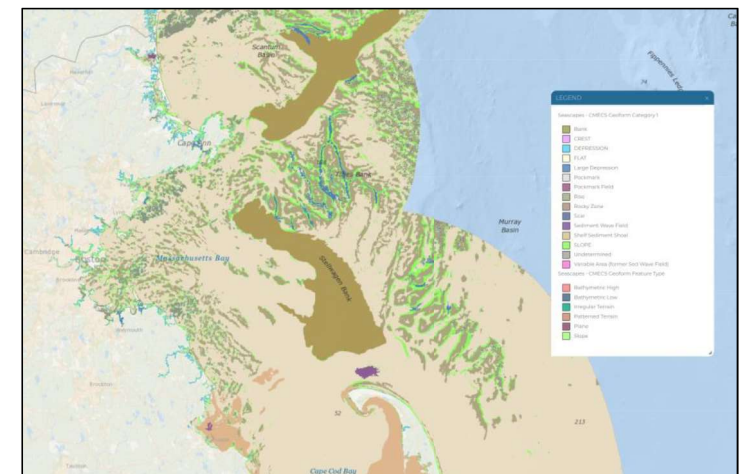
MULTIBEAM – OCULINA REGION



SABMA – SEABED FORMS



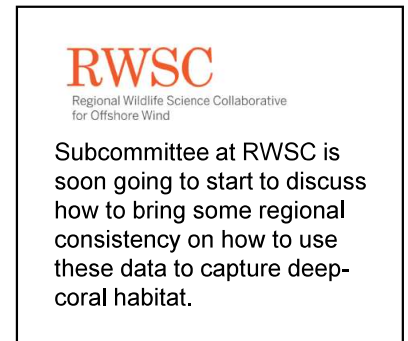
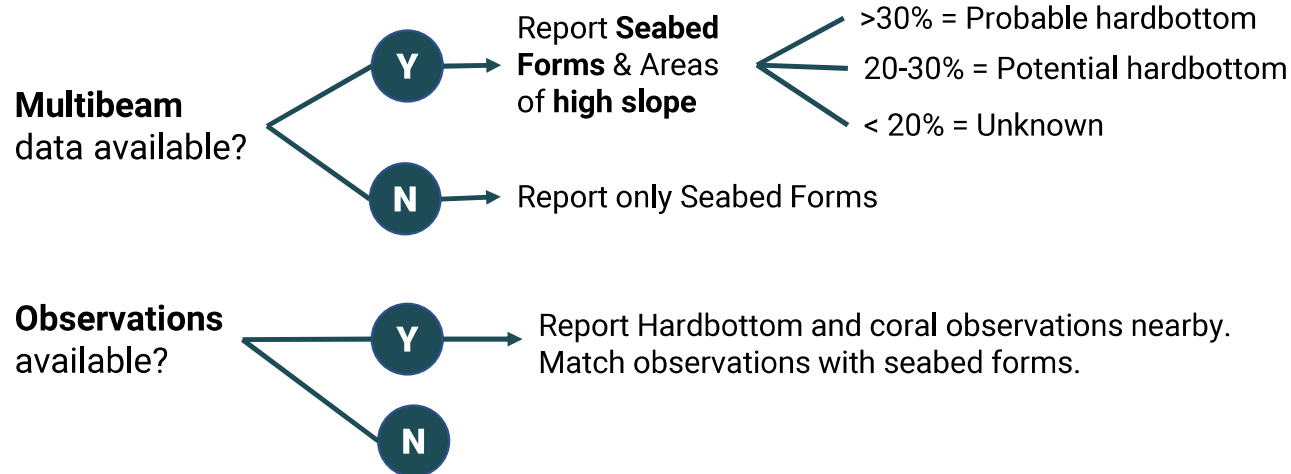
NOAA SEASCAPES PROJECT – GULF OF MAINE



OTHER UPDATES | BATHYMETRY

Our proposal for the tool:

- ▶ Provide general depth range and sediment type (already available)
- ▶ Provide different information based on resolution of data available. One example:



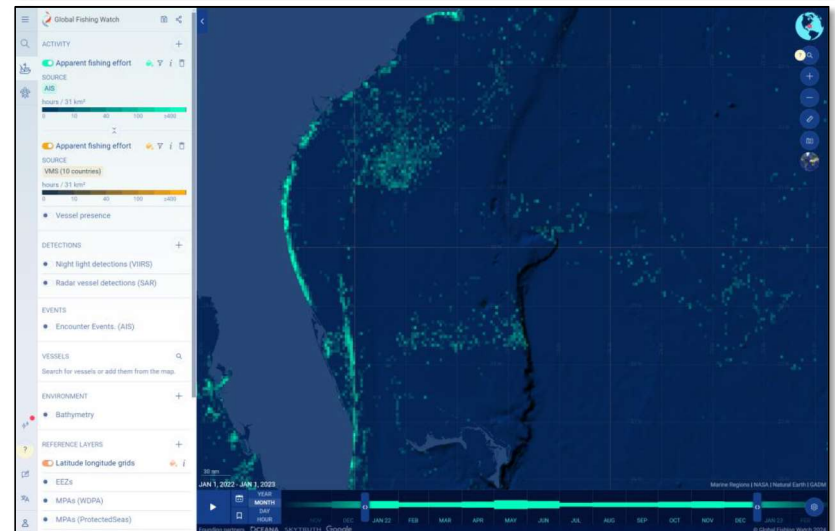
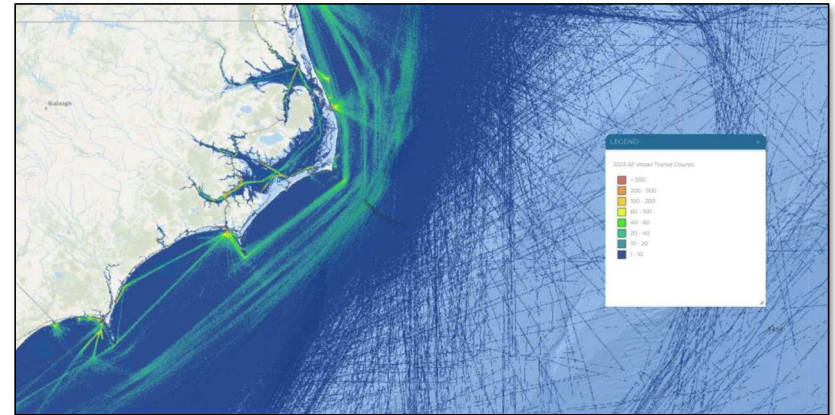
OTHER UPDATES | SHIPPING & FISHING ACTIVITY

Feedback we received on last call:

- ▶ Overall shipping (AIS) – focus on locating areas of high activity.
- ▶ Other categories are less important, except fishing activity.

Our proposal:

- ▶ Overall shipping (AIS)
 - Areas of **high-medium-low** activity compared to regional averages.
 - High consistency from year to year, except when there is construction.
- ▶ Represent fishing activity using AIS data
 - Data from **Global Fishing watch**
 - Overall fishing hours/detections → areas of high activity throughout the year.
 - Exploring whether it's important to show changes over time.



OTHER UPDATES | SHIPPING & FISHING ACTIVITY

Artificial Reefs:

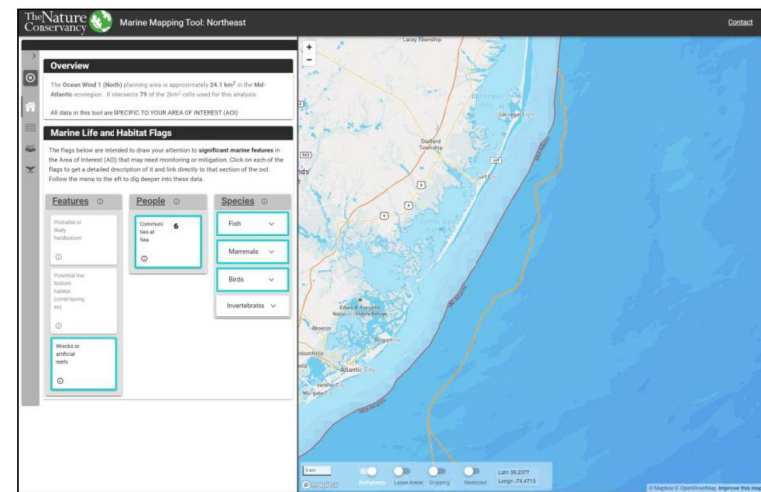
- ▶ New paper from Paxton *et al.* 2024.
- ▶ More exhaustive database of artificial reefs, with different types.
- ▶ Updating data on the tool from that study.



structureID	material	type	sub_type	relief	degradation	description
concrete_secondary-use_20m-narrow	concrete	secondary-use	long-narrow	< 2 m	low	concrete structures of secondary use with long or narrow shapes, such as piers, pilings, utility poles, railroad ties, culverts
concrete_secondary-use_squat-block	concrete	secondary-use	squat-block	< 2 m	low	concrete structures of secondary use with equal or block shapes, such as piers, towers, ballast blocks, towers, (D&B) beacons
concrete_modules_small	concrete	modules	small	< 2 m	low	low-relief concrete modules specifically for reef formation, such as Reef Ball™
concrete_modules_large	concrete	modules	large	> 2 m	low	high-relief concrete modules specifically for reef formation, such as structures
concrete_bridges	concrete	bridges	NA	> 2 m	low	concrete bridge material, including spans, skidways, and pilings
concrete_vessels	concrete	vessels	NA	> 2 m	low	concrete vessels of any size
concrete_unspecified	concrete	unspecified	NA	< 2 m	low	concrete rubble or other concrete structures with unspecified type or shape
metal_pieces_small	metal	pieces	small	< 2 m	high	small, low relief (<2m tall) metal pieces, such as chicken transport cages and cables
metal_pieces_large	metal	pieces	large	> 2 m	medium	large, high relief (>2m tall) metal pieces, such as cable trays, mobile elevators, oil tanks, and gantry cranes
metal_rigs-towers_lower-standing	metal	rigs-towers	lower-standing	> 2 m	medium	metal towers or oil rigs that are standing
metal_rigs-towers_jacket-base	metal	rigs-towers	jacket-base	> 2 m	medium	metal towers or oil rig jacket bases that have been toppled, partially removed, or towed
metal_rigs-towers_jacket-top	metal	rigs-towers	jacket-top	> 2 m	medium	metal towers or oil rig jacket tops
metal_rigs-towers_topside	metal	rigs-towers	topside	> 2 m	medium	metal topside component of oil rig, such as deck
metal_jarcraft	metal	jarcraft	NA	> 2 m	medium	metal jarcraft
metal_vehicles	metal	vehicles	NA	> 2 m	medium	metal vehicles such as army tanks and ambulances
metal_train-containers	metal	train-containers	NA	> 2 m	high	metal train boxcars or shipping containers
metal_vessels_small-400t	metal	vessels	small-400t	> 2 m	medium	small metal vessels (often recreational) and barges, less than 60 ft long
metal_vessels_medium-400t	metal	vessels	medium-400t	> 2 m	medium	medium metal vessels (often recreational) and barges, between 60 ft and 400 ft long
metal_vessels_large-400t	metal	vessels	large-400t	> 2 m	medium	large metal vessels and barges, greater than 400 ft long
metal_vessels_unspec	metal	vessels	NA	> 2 m	medium	unknown metal vessels of any length
metal_bridges	metal	bridges	NA	> 2 m	medium	metal bridge pieces, such as spans
rubber_tires	rubber	tires	NA	< 2 m	high	rubber tires
floatables_plastic	plastic	floatables	NA	> 2 m	high	floatable pieces of any size, such as boat molds and vessels
plastic_unspecified	plastic	unspecified	NA	< 2 m	high	plastic structures, such as plastic modules, plastic containers, plastic pipes
rock_unspecified	rock	unspecified	NA	< 2 m	low	rock structure, such as boulders and quarry rock
unknown_unspecified	unknown	unspecified	NA	NA	unknown	structures of unknown material and unspecified type

Cables:

- ▶ Currently exploring data sources
- ▶ 2 options:
 - Cable information as part of uses within an area of interest.
 - Use proposed cable areas to determine potential overlap with species and other resources.



OTHER UPDATES | SHIPPING & FISHING



BATHYMETRY,
SHIPPING, ARTIFICIAL
REEFS, CABLES

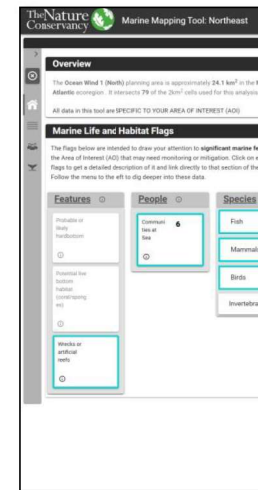
Artificial Reefs:

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Cables:

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of detail or
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TIMING OF THE PROJECT

