

Northeast Regional Ocean Council
&
Habitat Classification and Ocean Mapping Subcommittee

REPORT ON

**Advancing Seafloor Mapping
Priorities for the Northeast:
Summary of Priorities for
Future Funding**

AUGUST 2024

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EXECUTIVE SUMMARY

The Northeast Regional Ocean Council (NROC) is a Regional Ocean Partnership that facilitates the Northeast states, federal agencies, Tribes, regional organizations, and other interested groups in addressing ocean and coastal management issues of mutual interest. The Habitat Classification and Ocean Mapping Subcommittee (HCOM) under the Ocean and Coastal Ecosystem Health Committee works “to acquire high-quality regional seafloor data in order to produce regional mapping products that can be used to address ongoing and emerging management challenges.”¹

To inform the allocation of limited mapping resources and identify the areas of highest immediate need, HCOM utilized an online, quantitative, participatory Geographic Information System (PGIS) approach developed in ArcGIS Online by the National Oceanographic and Atmospheric Administration’s (NOAA) National Centers for Coastal Ocean Science (NCCOS). This PGIS was used to measure the mapping interests of a state, federal, and other regional partners within NROC. HCOM partners prioritized specific management priorities and data needs at the regional and for specific mapping projects at the sub-regional scale. It is HCOM’s hope that this report and process will improve the likelihood that federal surveys will be conducted in areas that also meet state and regional management needs.

From this prioritization process, HCOM has identified priority management and data needs for mapping investments:

TOP MANAGEMENT NEEDS

- **Monitoring/research sites**
- **General data gap**
- **Cable corridor planning**
- **Fisheries management**
- **Marine Protection area planning**

TOP DATA NEEDS

- **High-resolution geophysical data**
- **Biological observations**

At the sub-regional level, HCOM has identified five recommendations for near-term mapping projects:

- **Down East Maine Subtidal Habitat and Mussel Beds Mapping**
- **Eastern Cashes Ledge Mapping**
- **Sand Resource Characterization of Coastal Massachusetts**
- **Western Long Island Sound Gap**
- **Long Island Sound Phase V – Cable Corridor Planning**

This report provides a full analysis and recommendations (Section 3 and 4) as well as describes the project’s background (Section 1) and approach (Section 2). The prioritization report serves as the basis for coordination and collaboration on seafloor mapping in Northeast but is only the start. Future work, guided by this initial prioritization process, will seek to broaden, and include additional regional partners and mapping interests. The overall goal being to continue to fill critical data gaps in the region to inform, mitigate, and address the most pressing ocean and coastal management challenges.

¹R:1

1. BACKGROUND

The Northeast is experiencing an increase in proposed multijurisdictional projects that require high-resolution seafloor data including but not limited to siting offshore wind infrastructure and aquaculture projects, water quality monitoring efforts, comprehensive marine spatial planning, and creating or updating species protection and management plans. The collection of high-resolution bathymetric maps, sediment maps, and biological data is necessary to inform those projects. Seafloor data also improve our understanding of habitats, identify unique bottom features and communities such as coral reefs, and inform further analysis needed for ocean planning.²

With the leadership of NROC's HCOM, regional partners worked collaboratively to prioritize the areas where seafloor surveys are most needed to inform habitat identification and marine planning.³ This report identifies priority geographic areas for future national, regional, and state level mapping activities and establishes a common understanding of regional priority areas by management and data needs.⁴

The goal is for HCOM member groups, state coastal programs, regional organizations, and federal agency partners to use the findings to identify synergies and collaboration opportunities to inform data collection efforts, prioritize mapping projects in a limited resource environment, inform planning for multiple ocean uses, support review and formal comments on proposed projects, and enhance habitat identification and fisheries habitat modeling.⁵

It is HCOM's intention to build on this effort by developing an acquisition plan, engaging a broader range of Tribes and regional partners to refine priorities over time, and identifying potential funding sources for mapping the priority areas

Later phases of this work will put the plan into practice and acquire additional bathymetric data with coordination and assistance from multiple partners.⁶

²R:2, ³R:2, ⁴R:3, ⁵R:4, ⁶R:2,

2. APPROACH

This participatory GIS prioritization effort was included in the HCOM 2022-2023 Workplan based on the identified need for data collection coordination among regional partners – an ongoing mission of the HCOM Subcommittee.

This collective prioritization, conducted by HCOM, facilitated coordination among partners and provides an overall set of mapping priorities in the Northeast region, with the hope of improving the likelihood that federal surveys will be conducted in areas that also meet state and regional management need.

The public-facing component of the project concluded in November 2023 with a stakeholder review workshop in Portsmouth, NH that validates the survey's results and priorities specific, short-term mapping projects.

To set priorities, NROC partners engaged in a participatory GIS methodology and shared their priorities by allocating a limited number (300) of votes to specific geographic grid cells. The study area was equivalent to the NROC planning area⁷, plus New York State, from the coastline out onto the continental shelf to the ends of the Exclusive Economic Zone (EEZ; 200 nautical miles). The methodology builds on a similar process developed through a partnership with NOAA's Office of Ocean Exploration and Research (NOAA OER) in collaboration with 46 organizations representing federal agencies, academic institutions, industry, philanthropy, and the private sector to identify national ocean exploration priorities along the Pacific U.S. Coast and Territories.⁸ Initial data analysis was conducted using a script developed for the report *Agency Priorities for Mapping Coral Reef Ecosystems in Puerto Rico and the Virgin Islands*.

NOAA's Integrated Ocean and Coastal Mapping (IOCM) office routinely solicits regional and local mapping needs to inform allocation of NOAA and other federal survey resources (hydrographic vessels, etc.). These needs are captured at the national level in IOCM's SeaSketch and inform where surveys take place, with the goal of meeting as many needs as possible for each survey. NROC members have contributed individually to SeaSketch in the past; however, it has been difficult to establish overall regional priorities and associate them with particular informational needs (e.g., sediment grain size) or with intended management applications (e.g., wind energy infrastructure siting, cable siting, and sand resource identification, etc.).

2.1 Project Team and Participating Groups

The project team consisted of representatives from Maine, Massachusetts, NOAA, and selected members of NROC leadership. The method used to conduct the prioritization process (see Section 2.4) relied on regional representatives to assign priorities for their organizations and close partners to grid cells in the prioritization spatial framework. Regional partners and their representatives were drawn from the NROC membership list and included a diverse set of federal, state, non-profit, and other organizations.

⁷R:5, ⁸R:2

Groups that participated in this priority mapping exercise included:

PARTICIPATING GROUPS	ACRONYM	ENTITY
New York Department of State	NYDOS	State
Connecticut Department of Energy and Environmental Protection	CT DEEP	State
Rhode Island Department of Environmental Management	RI DEM	State
Massachusetts Office of Coastal Zone Management	MA CZM	State
New Hampshire Department of Environmental Services	NH DES	State
Maine Department of Marine Resources	ME DMR	State
Environmental Protection Agency	EPA	Federal
Fish and Wildlife Service	FWS	Federal
National Park Service	NPS	Federal
NOAA National Marine Sanctuaries Office	NMS	Federal
U.S. Army Corps of Engineers	USACE	Federal
U.S. Coast Guard	USCG	Federal
U.S. Geological Survey	USGS	Federal
Gulf of Maine Research Institute	GOMRI	NGO
The Nature Conservancy	TNC	NGO

The New England Fisheries Management Council was contacted but was unable to provide input within the timeframe of the project (although a representative did participate in the regional workshop). Additionally, three other NROC member organizations did not contribute their priorities to this study: NOAA's Office of Coast Survey has an internal process for identifying future surveys and seeks to include input from other stakeholders to guide their planning. NOAA's Greater Atlantic Regional Fisheries Office (GARFO) deferred to the NOAA OCS process. The Bureau of Ocean Energy also did not participate because it proposes Wind Energy Areas based on input from other stakeholders and thus will be a user of these results.

2.2 Geographic Boundaries

The geographic extent of this project encompassed the NROC planning area⁹, plus New York State, from the coastline out onto the continental shelf to the edge of the EEZ. For the purposes of this report, coastal Northeast states are, from north to south, Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, and New York. Regional priorities as well as local areas of interest were identified within these boundaries.

The geographic area – 303,100 km² – was divided into 3031 grid cells each measuring 100 km² (10 km x 10 km). This spatial grid format has been used for similar analysis in other regions. The grid resolution was decided on by consensus of HCOM members as it is being used nationally by NOAA Integrated Ocean & Coastal Mapping (IOCM) and will be advantageous should any group wish to integrate the results of this project with other prioritization efforts.¹⁰

2.3 Priority Setting Methodology

2.3.1 Collecting Priorities using Participatory GIS

The participatory GIS data collection and prioritization tool was developed by Ken Buja, NOAA's National Centers for Coastal Ocean Science NCCOS), using ESRI's Web AppBuilder for ArcGIS. This tool was used because it allows for the analysis to be “customizable with local input and spatial framework, could be pre-populated pull-down menus for easy attribution, and included automated QA/QC enforcement. Responses were saved as they were made.”¹¹

Each participating group was given access to the prioritization tool and detailed directions for sharing their priorities. The prioritization tool contained numerous data layers of existing map resources spanning biology/fisheries, infrastructure, navigation, seafloor hazards, and research/permitting. All layers could be turned on or off to inform selections. The result was a tool that provided visual information on where data currently is available or unavailable, which critically informed participant group preferences for priority areas (Appendix A) as well as their associated priority management needs and data needs.¹²

Participant groups (n=15) were instructed to indicate their mapping priorities by placing virtual “coins” –indicating their votes— within a system of grid cells (10 km x 10 km) overlaying a map of state and federally managed coastal zones as defined above. Each participant group was given 300 votes to distribute with a maximum of 30 votes allocated to an individual grid cell.¹³ In total 4,500 votes were placed.

For each vote, participants were required to designate a primary (tier 1) and secondary (tier 2) and tertiary (tier 3) management need and primary (tier 1) and secondary (tier 2) data need.¹⁴

Management needs and data needs are defined as:

MANAGEMENT FRAME

Aquaculture siting

Offshore wind siting

Cable corridor planning

Marine protection area planning

Fisheries management

Offshore sand resources

Protection of historic resources

General data gap

Long-term monitoring/research sites

Hazards and geotechnical

Coastal numerical modeling

Cold-water coral and sponge habitat discovery, modeling, protection

DEFINITION

Floating fish pens and their anchoring systems.

Potential wind energy areas and leases.

Existing or potential infrastructure development, including telecommunication and energy cables.

Marine protected areas, sanctuaries, conservation areas, restoration sites, dynamic management areas for marine mammals and other protected species.

Fisheries management and regulation (e.g., commercial/recreational fishing locations, fisheries sampling stations, high bycatch areas, sport/charter fishing).

Unconsolidated sediment resources for beach renourishment and coastal habitat protection

Shipwrecks, tribal use areas, paleolandscapes, and other archaeological/cultural/historic resources.

Default/general option

Monitoring of specific study areas for scientific or other purposes (e.g., coral health monitoring invasive species monitoring, etc.).

Detection, forecast and management of coastal and marine hazards (e.g., weather/storm surge, flooding, tsunamis, earthquakes, geologic faults, harmful algal blooms, etc.).

Modeling of specific study areas for scientific or other purposes (e.g., hydrodynamic, or bottom shear stress modeling).

Mapping of habitats by direct observation or modeling of potential habitats via proxies (e.g., depth, slope, rugosity, etc.).

¹¹R:6, ¹²R:7, ¹³R:7, ¹⁴R:7

DATA NEEDS

High-resolution Geophysical

Geotechnical - Surface

Geotechnical - Cores

Biological grab, photo, or video

DEFINITION

Aerial optical imagery, acoustic backscatter, bathymetry, and sub bottom profiling.

Sediment grabs.

Sediment cores.

Benthic grabs, still photos or underwater video collected along transects or as drop camera recordings.

2.3.2 Analysis of Participatory GIS voting process

HCOM analyzed the distribution of votes at the participant group and regional level by individual management needs and data needs. The analysis was based on a process created by the NOAA and NCCOS and previously utilized by NOAA's Coral Reef Conservation Program (CRCP) for the report *Agency Priorities for Mapping Coral Reef Ecosystems in Puerto Rico and the U.S. Virgin Islands* and *Priorities for Lakebed Mapping in Lake Huron's Thunder Bay National Marine Sanctuary*.

Analysis followed the following steps¹⁵:

- Step 1: QA/QC data compilation (see QA/QC parameters below)
- Step 2: Summarized frequency of management needs and data needs
- Step 3: Standardized votes to account for differences in sub-regions
- Step 4: Mapped individual management needs, data needs, and organizations
- Step 5: Clustered cells based on shared values for management needs and data needs

To understand how priorities were defined spatially, HCOM identified the grid locations (cells) where the top 10% (90th percentile) of votes were allocated for each column of summarized data using the quantile function. This allowed for the identification and mapping of locations that received the top 10% of vote allocation overall (total votes), the locations for the top 10% votes for each management frame, and the locations for the top 10% of votes for each data need. Cells with lower density of votes were highlighted in lighter red to signify lower priority areas. Priorities were only calculated out of the cells that had >0 votes allocated by that participating group or under the specific management frame or data need. Calculations excluded cells with zero votes under each division.¹⁶

The resulting maps were reviewed by HCOM to determine the highest regional priority areas for seafloor mapping investment and activities for each management frame and data need. Those results follow in Section 3: Northeast Mapping Results and Section 4: Regional Recommendations.

QA/QC PARAMETERS

The online participatory prioritization tool included the following QA/QC controls¹⁷:

1. Each respondent allocated all their votes (total votes = 300).
2. Each respondent allocated no more than 10% of votes to a single cell (votes = 30 or fewer).
3. No justification/data product listed for cells with 0 votes
4. At least a primary justification and product for all cells with >0 votes
5. No justifications and/or products were listed twice for the same cell by a single respondent.

¹⁵R:6, ¹⁶R:8, ¹⁷R:8

2.3.3 Ranking Priorities and Identifying Priority Areas

HCOM utilized a process adopted from *Agency Priorities for Mapping Coral Reef Ecosystems in Puerto Rico and the U.S. Virgin Islands* to understand areas of greater importance based on multiple data metrics. The following methodological description is adapted content presented in that report.

To understand areas of greater importance based on multiple data metrics, composite rank analysis was conducted. First each spatial cell was ranked by total number of votes, number of participating groups, and number of unique management needs. Cells with the same value were given an average rank among the cells. The rank values for each of these data metrics were then summed to calculate an overall summary rank, indicating the importance of each grid cell across the number of votes, number of groups interested in the cell, and number of management needs supported if the cell were to be mapped.¹⁸ The Northeast Regional Mapping Priorities that emerged from this analysis are in section 3.

2.3.4 Validation workshop

An in-person workshop was held in November 2023 in Portsmouth, NH that brought together seafloor mapping expertise from HCOM partners to review the progress being made on the participatory GIS process and to establish priorities for near-term investment in seafloor mapping. The following groups participated in the in-person workshop:

1. New York Department of State
2. Rhode Island Department of Environmental Management
3. Connecticut Department of Energy and Environmental Protection
4. New England Fisheries Management Council
5. Massachusetts Office of Coastal Zone Management
6. New Hampshire Department of Environmental Services
7. Maine Department of Marine Resources
8. NOAA National Marine Sanctuaries Office
9. Environmental Protection Agency
10. Gulf of Maine Research Institute
11. The Nature Conservancy

At the workshop, participants received an update on the overall project, purpose, and goals as well as an update on the GIS prioritization event held in June 2023 and the subsequent draft HCOM synthesis report. Following the overview, participants divided into groups to:

1. Verify alignment of priority focus areas as identified by regional partners in the GIS prioritization process.
2. Develop one to four-year funding priorities for focal areas and/or other seafloor mapping across the region.
3. Identify agencies and entities that were not present but need to be engaged in the prioritization discussion.

The prioritization decisions made during the workshop, and verified with partners are presented in Section 4: Recommendations for Near-term Mapping Projects.

¹⁸R:9

3. NORTHEAST REGIONAL MAPPING PRIORITIES

Based on the participatory GIS and validation process, the results for the top management priorities and data needs are:

Top management needs for mapping investment:

- **Monitoring/research sites**
- **General data gap**
- **Cable corridor planning**
- **Fisheries management**
- **Marine protection area planning**

Top data needs for mapping investment:

- **High-resolution geophysical data**
- **Biological observations**

Additional details about these priorities are described below, along with data needs at spatial scales, total vote summary, and a priority rank analysis.

3.1 Top management priorities for mapping investment

Over 50% of the total votes prioritized one of five management needs in near equal distribution:

- **Monitoring/research sites**
- **General data gap**
- **Cable corridor planning**
- **Fisheries management**
- **Marine protection area planning**

Notably, Fisheries management and Marine protection area planning were most often selected as a primary justification in contrast with Monitoring/research sites, General data gap, Cable corridor planning which were identified as a primary, secondary, or tertiary justification in near equal proportions.

Figure 1 and Figure 2 present the top data needs by rank order and participant group. Maps detailing the geographic distribution of the votes for each management need at the regional level can be found in Appendix B.

Figure 1. Top management priorities.

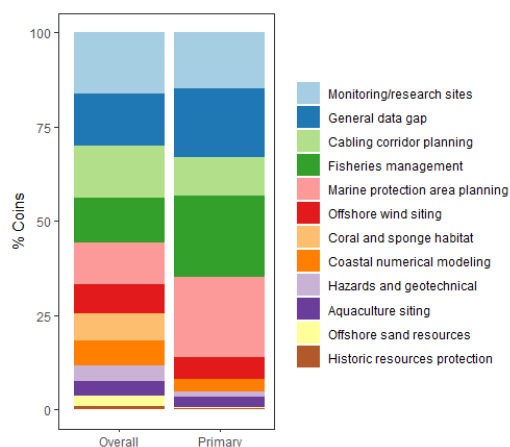
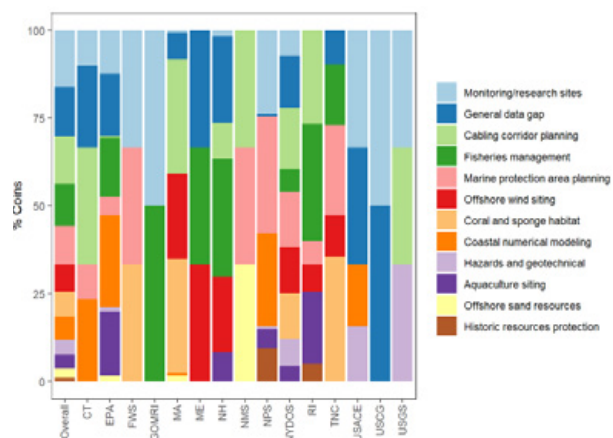


Figure 2. Top management priorities by each participant group.



3.2 Top Data needs for mapping investment

Nearly 75% of the total allocated votes were justified with one of two data needs:

- **High-resolution geophysical data**
- **Biological observations**

High-resolution geophysical mapping was overwhelmingly identified as the region's primary data need for future activities. Biological observations received the remaining primary justifications. No participant group identified geotechnical – surface nor geotechnical – cores as a primary data need. Of the 15 participant groups that submitted data, 12 voted for at least 3 of the 4 available data needs. GOMRI selected only high-resolution geophysical and biological observations while NMS and USCG selected only high-resolution geophysical.

Figure 3 and Figure 4 present the top data needs by rank order and participant group. Maps detailing the geographic distribution of the votes for each technical need at the regional level can be found in Appendix C.

Figure 3. The percentage of total allocated votes associated with data need at the overall, primary, secondary, and tertiary levels.

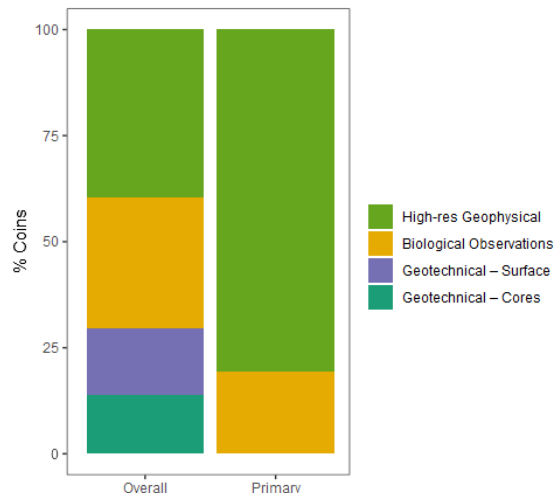
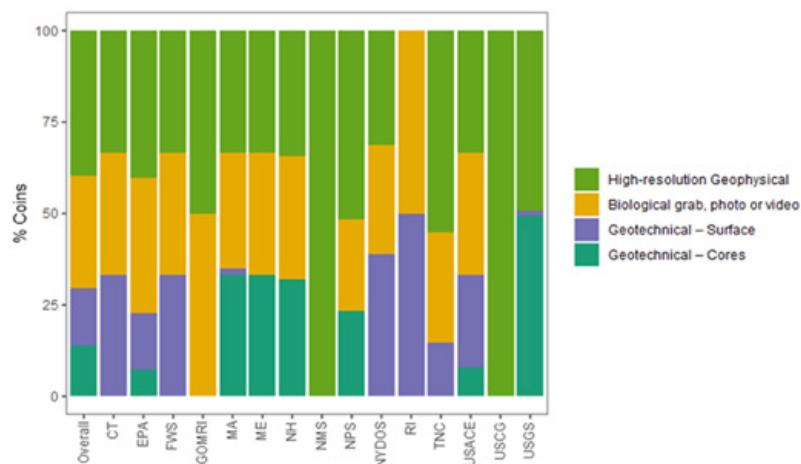


Figure 4. The percentage of votes for each data need selected at the primary level by each participant group.



3.3 Total Vote Summary

Figure 6 shows the distribution of total votes across the study area. The distribution of total votes across the study area was calculated by summing all information from all participants for each grid cell. Data were summarized generally (e.g., all votes for each grid cell summed) and for each management frame option and data need option. The number of participants that allocated any votes to that cell as well as the total number of management needs and data needs selected for each cell were also tallied.¹⁹ Cells with the top 10% (90th percentile) of total votes allocated were identified using the quantile function. Percentiles were only calculated out of the cells that had >0 votes allocated.

There are 92 top 10% cells totaling an area of 9,200 km².

¹⁹R:8

3.4 Priorities Summary Rank Analysis

To understand areas of importance based on number of votes, number of groups interested in the cell, and number of management needs supported if the cell were to be mapped, a composite summary rank analysis was conducted. Figure 7 presents the rank values for each these metrics were summed to calculate an overall summary rank (high, middle, and low) with “high” indicating the highest level of importance.

All locations to which at least one vote was allocated received more than one management and data need, as participants were required to choose primary, secondary, and tertiary justifications for both.” Highest Rank” indicates a composite rank score at the 90th percentile (top 10%) or above.²⁰

Figure 5. Map of total votes allocated by all participant groups.

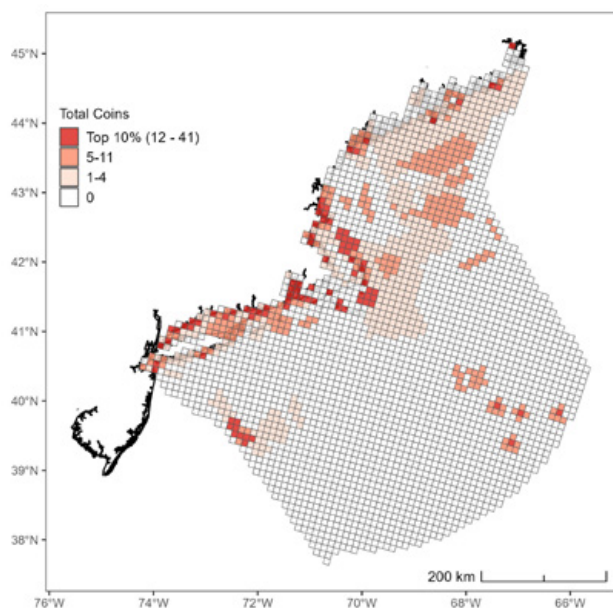
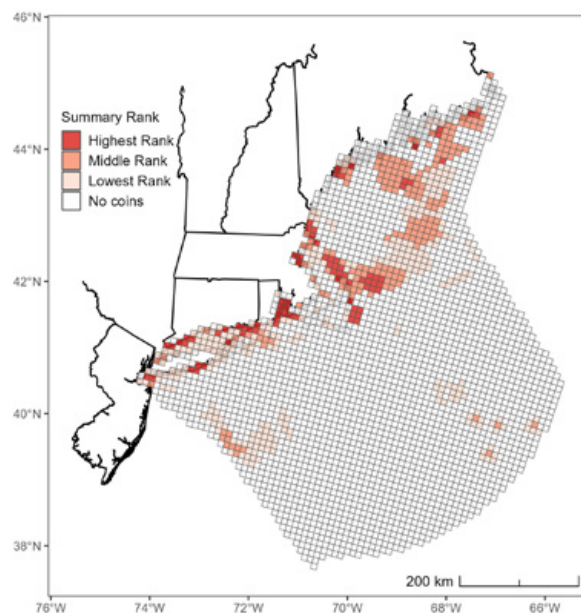


Figure 6. Map of summary rank analysis (see section 2.3.3 for more information).



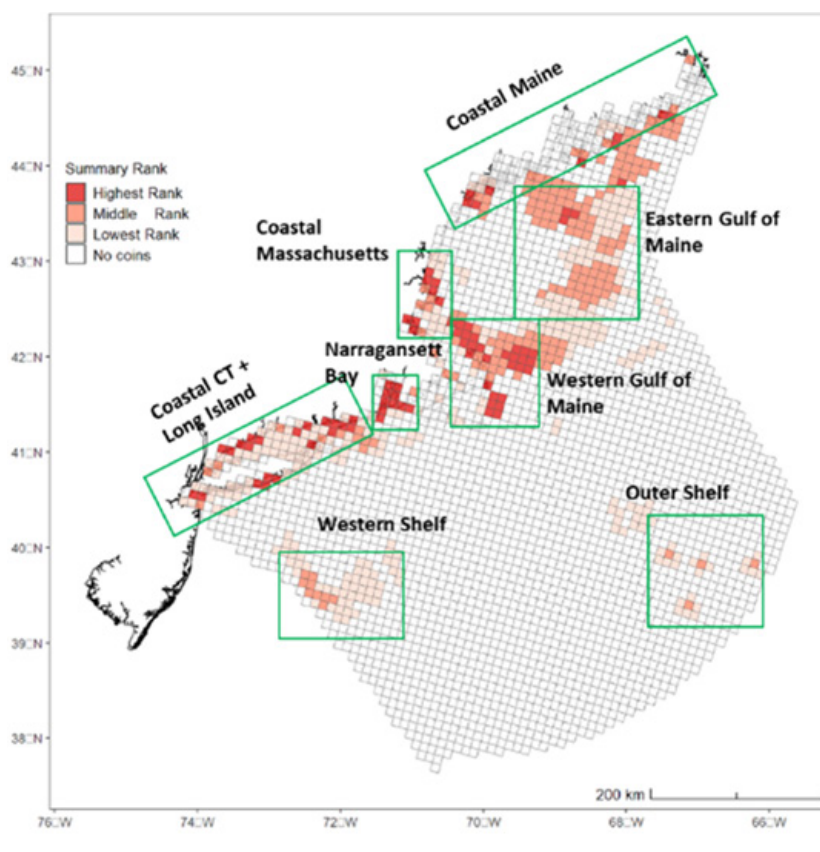
4. RECOMMENDATIONS FOR NEAR-TERM MAPPING PROJECTS

Using the map of Regional Summary Rank Analysis (Figure 7) NROC HCOM drew boundaries around and gave titles to areas of importance within the study area. These areas of importance are called “regional focus areas.”

These areas, from north to south, are:

1. Coastal Maine
2. Eastern Gulf of Maine
3. Coastal Massachusetts
4. Western Gulf of Maine
5. Narragansett Bay
6. Coastal Connecticut and Long Island
7. Western Shelf
8. Outer Shelf

Figure 7. Map of regional focus areas with geographic boundaries and names.



Using these regional focus areas, HCOM provided an opportunity to its stakeholders at the November 2023 in-person workshop in Portsmouth, New Hampshire to further analyze underlying data within sub-geographies and make recommendations for near term mapping investments. This resulted in five projects for near-term investment.

These recommendations do not reflect all of the areas that would benefit from additional mapping investment. Rather, they reflect the near-term priorities, interests, and perspectives of NROC HCOM members as established through a participatory process conducted during the November 2023 in-person workshop in Portsmouth, New Hampshire. NROC HCOM members unable to attend the November workshop were given the opportunity to identify their own priority projects.

RECOMMENDATION 1 - Down East Maine subtidal habitat and mussel beds mapping

In the regional focus area of “Coastal Maine,” investment in shallow water mapping of mussel beds and other critical habitats (i.e., eelgrass, etc.) is needed. The creatures and plant-life within these beds and critical habitats are important natural resources and food sources for underserved communities and the Indigenous peoples of coastal Maine, but existing maps of these areas are outdated. This limits the effective stewardship support that could be provided by state and federal partners. For example: Mussels in this area are currently only collected through wild harvest. With the information provided by low draft vessel acoustic/benthic mapping with split beam sonar, partners could identify areas for protection, aquaculture leasing, or restoration.

NAME: Down East ME subtidal habitat/mussel mapping

DATA NEEDS: Geotechnical – cores, biological grab, and high-resolution geophysical data.

MANAGEMENT NEEDS: Aquaculture siting, marine protection area planning, marine protection area planning, coastal numerical modeling, and historic resources protection.

PROJECT LEAD AND PARTNERS: The key partner and investor for this recommendation is the Maine Department of Marine Resources.

RECOMMENDATION 2 - Eastern Cashes Ledge Mapping

The regional focus area “East Gulf of Maine” contains East Cash’s Ledge, a location that has not been mapped but sits adjacent to an area with both high habitat and high economic value. Bathymetric mapping, benthic biological grab and video surveys, and geotechnical sub-bottom cores need to be conducted in this area to fill the existing data gap as soon as possible so that these data are available to decision makers as they site and auction high-value wind energy leases. Improperly sited leases may result in damage to important habitat and other natural resources.

NAME: Eastern Cashes Ledge Mapping

DATA NEEDS: High-resolution geophysical, biological grab/photo/video, geotechnical – cores.

MANAGEMENT NEEDS: Fisheries management, offshore wind siting, monitoring/research sites, general data gap

PROJECT LEAD AND PARTNERS: The key partners in this recommendation are the Massachusetts Office of Coastal Zone Management, Massachusetts Division of Marine Fisheries, U.S. Geological Survey, and NOAA National Marine Fisheries Service.

RECOMMENDATION 3 - Sand Resource Characterization of Coastal Massachusetts

The sands found in the regional focus area “Coastal Massachusetts” are valuable to both public and private entities. It is in the public interest to understand and thoughtfully manage the nearshore high-value sand resources in coastal/state Massachusetts waters. To ensure that these areas are resilient and that sand resources are available for years to come, sediment cores, sub bottom profiling, and sediment characterization are needed within the next five years..

NAME: Sand Resource Characterization

DATA NEEDS: Geotechnical – cores, high-resolution geophysical data

MANAGEMENT NEEDS: Offshore and sand resources management, marine protection area planning, monitoring/research sites, general data gap, cable corridor planning, fisheries management, coastal numerical monitoring.

PROJECT LEAD AND PARTNERS:

RECOMMENDATION 4 - Western Long Island Sound Gap

Within the regional focus area “Coastal CT and Long Island” is the Western Long Island Sound Gap (WLIS) gap, an area between Black Rock Harbor and Norwalk Harbor to the New York state line that is of interest due to its overlapping importance for research, marine protection area planning, navigation, and infrastructure siting (specifically cabling). There is little to no modern geological, sedimentary, ecological, or physical mapping data for the area. High-resolution geophysical, sub-bottom profiling, cores, surface chemistry grabs, grain size, CTD, and currents and waves modeling should all take place in this area within 3-4 years.

NAME: Western Long Island Sound Gap

DATA NEEDS: High-resolution geophysical data, biological grab/photo/video, geotechnical – surface, geotechnical – cores.

MANAGEMENT NEEDS: Monitoring/research sites, general data gap, cable corridor planning, marine protection area planning, coastal numerical modeling, hazards and geotechnical.

PROJECT LEAD AND PARTNERS: The key partners for this recommendation are CT DEEP, University of Connecticut, Stony Brook University, University of New Haven, EPA Regions 1 and 2, EPA Long Island Sound Office, and U.S. Coast Guard.

RECOMMENDATION 5 - Long Island Sound Phase V -- Cable Corridor Planning

The second near-term mapping investment that should be made within the regional focus area of “CT and Long Island Sound” builds on previous mapping activities, phases I-IV. The underlying needs for mapping this area are similar to those that justify near-term investment in mapping the WLIS gap – a general data gap made critical by the location’s overlapping importance for research, marine protection area planning, navigation, and infrastructure siting – with additional emphasis placed on its importance as a cable corridor. Sedimentary and ecological information gathered through biological grabs and sub bottom cores, physical characterization gathered through sedimentary analysis (grain size), chemistry, conductivity, temperature, and depth (CTD) profiler, currents and waves analysis, and the integration of hi-resolution bathymetry and backscatter data are all necessary within 3-4 years to inform cable corridor planning and implementation.

NAME: Long Island Sound Phase V -- Cable Corridor Planning

DATA NEEDS: High-resolution geophysical, biological grab/photo/video, geotechnical-surface, and geotechnical-cores.

MANAGEMENT NEEDS: Monitoring/research sites, general data gap, cable corridor planning, fisheries management, marine protection area planning, coastal numerical modeling, hazards and geotechnical.

PROJECT LEAD AND PARTNERS: The key partners for this recommendation are CT DEEP and U.S. Coast Guard.

CONCLUSION

The Report on Advancing Seafloor Mapping Priorities for the Northeast: Summary of Priorities for Future Funding highlights for the first-time regional partner collaboration in the Northeast to support a collective understanding of seafloor mapping needs. The work is iterative and will evolve over time as additional collaborators, improved technology and data management as well as key seafloor data gaps are addressed. HCOM will advance this work by developing an acquisition plan, engaging a range of Tribal and regional partners to refine priorities, and identifying funding opportunities for priority mapping with the goal of increasing bathymetric data to inform science and decision making.

HCOM recognizes that much of the current focus has been on the Gulf of Maine given specific planning and management questions related to offshore wind development and transmission planning. As those timely data gaps are filled, a broader focus on southern New England, coastal mapping, sand resources, and other critical management topics outlined by partners will need to be addressed. Tribal partners, where appropriate and interest lies, will be included in future iterations of this work. Additional regional partners such as those in the maritime industry are also targets for future work. NROC and the work of HCOM is working toward the collective goal of better information to inform planning and management decisions for the benefit of healthy, productive, and sustainable ecosystems in the Northeast. The current and future collaboration informed by this report are steps toward achieving this collective goal.

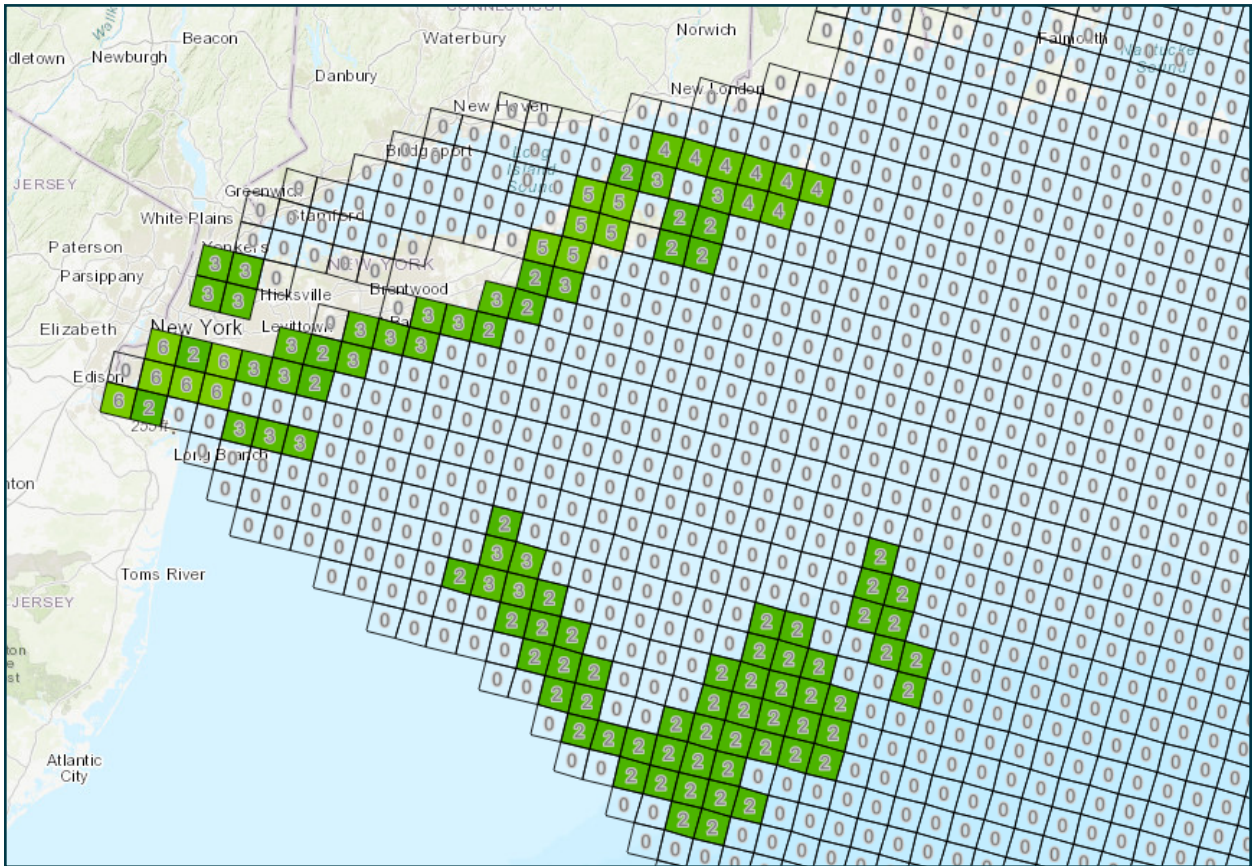
REFERENCE LIST

1. <https://www.northeastoceancouncil.org/committees/ocean-and-coastal-ecosystem-health/hcom/>
2. *"Effort Summary_ Seafloor Acquisition Prioritization"*
https://docs.google.com/document/d/117fNF2KmubKtw_g09U5E_3sQUvSHD2nw9iJHUhAOOrE/edit?usp=drive_link
3. *"NROC_HCOM Workshop Summary November 29 2023"*
https://docs.google.com/document/d/1gYuaU_3FWSKVahHureuUJyTkAtgfOszp/edit?usp=sharing&oid=101600839903312816136&rtpof=true&sd=true
4. *"HCOM Post Fall Meeting Prioritization Questions"*
<https://docs.google.com/document/d/1e1GkN3Zvpnjg4jCRK38F-kmZbutLkgPFPzk8oeUh-mQ/edit?usp=sharing>
5. <https://www.northeastoceancouncil.org/about/nroc-overview/>
6. *"2022.10.25 – PIRO spatial prioritization" Where, What, When, and Why is bottom mapping needed? An on-line process to set priorities using expert opinion"* (PowerPoint)
https://docs.google.com/presentation/d/1jaCDyu-BgVCID0D8-Iqs1vYcPV_i9S8t/edit?usp=drive_link
7. *"HCOM Spatial Prioritization guidance"* (PDF provided to LCG by HCOM.)
8. *"NE Prioritization HTML"*
https://docs.google.com/document/d/1_6-sAp8TKI6hYKpg0-Sq0P0bo6rA-6JQM99TLormbaY/edit?usp=drive_link
9. *"Agency Priorities for Mapping Coral Reef Ecosystems in Puerto Rico and the U.S. Virgin Islands"*. NOAA Technical Memorandum NOS NCCOS; 345.
<https://repository.library.noaa.gov/view/noaa/48477>
Accessed 11/2/23. Accessed 11/2/23.

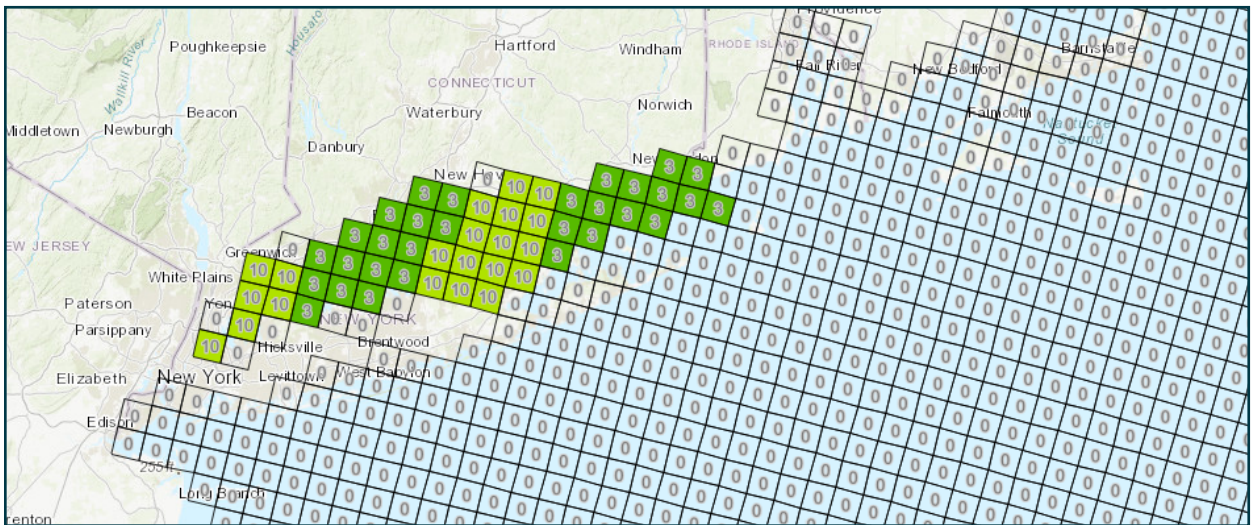
APPENDIX A: PARTICIPANT GROUP VOTE ALLOCATION MAPS

Maps are organized first by the state (south to north), followed by federal agency in alphabetical order and NGO in alphabetical order.

New York Department of State: Geographic distribution of votes allocated by the New York Department of State

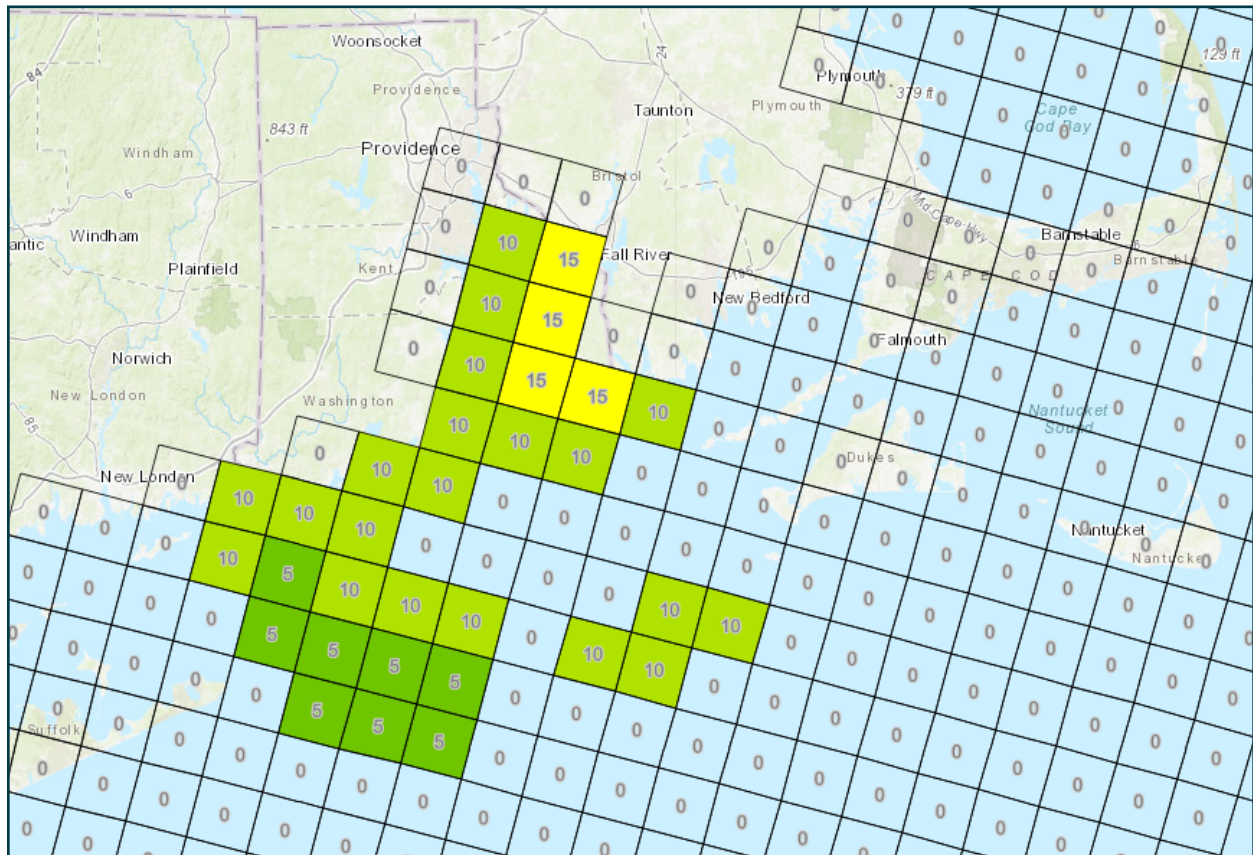


Connecticut Department of Energy and Environmental Protection: Geographic distribution of votes allocated by the Connecticut Department of Energy and Environmental Protection

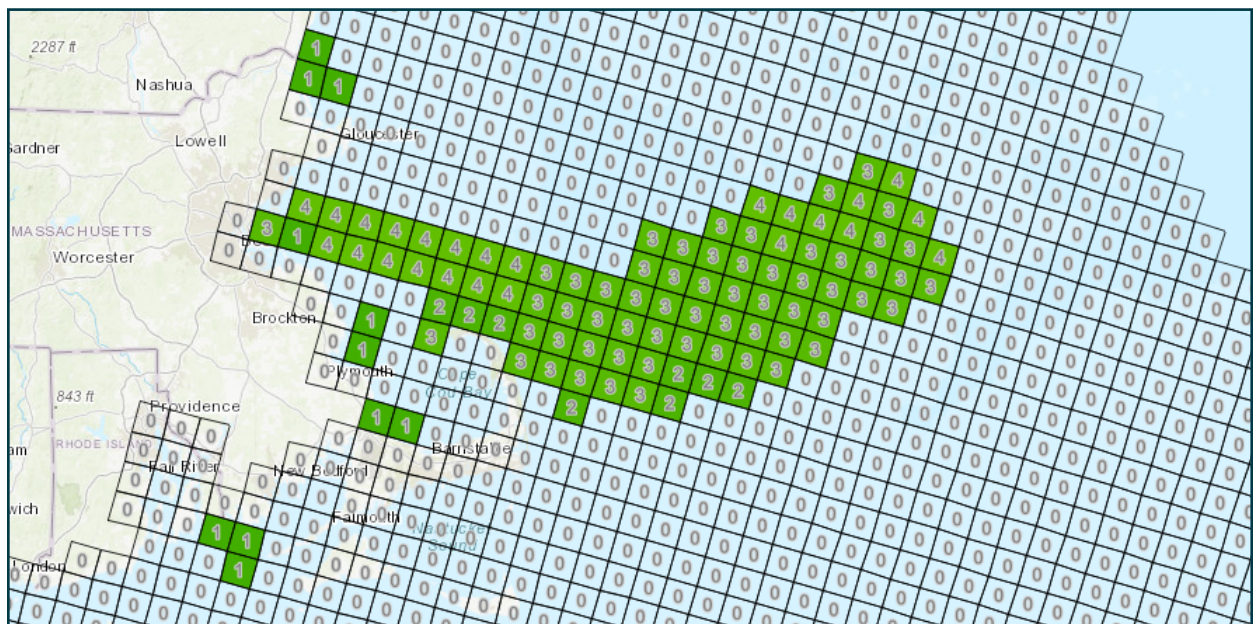


APPENDIX A: Continued

Rhode Island Department of Environmental Management: Geographic distribution of votes allocated by the Rhode Island Department of Environmental Management

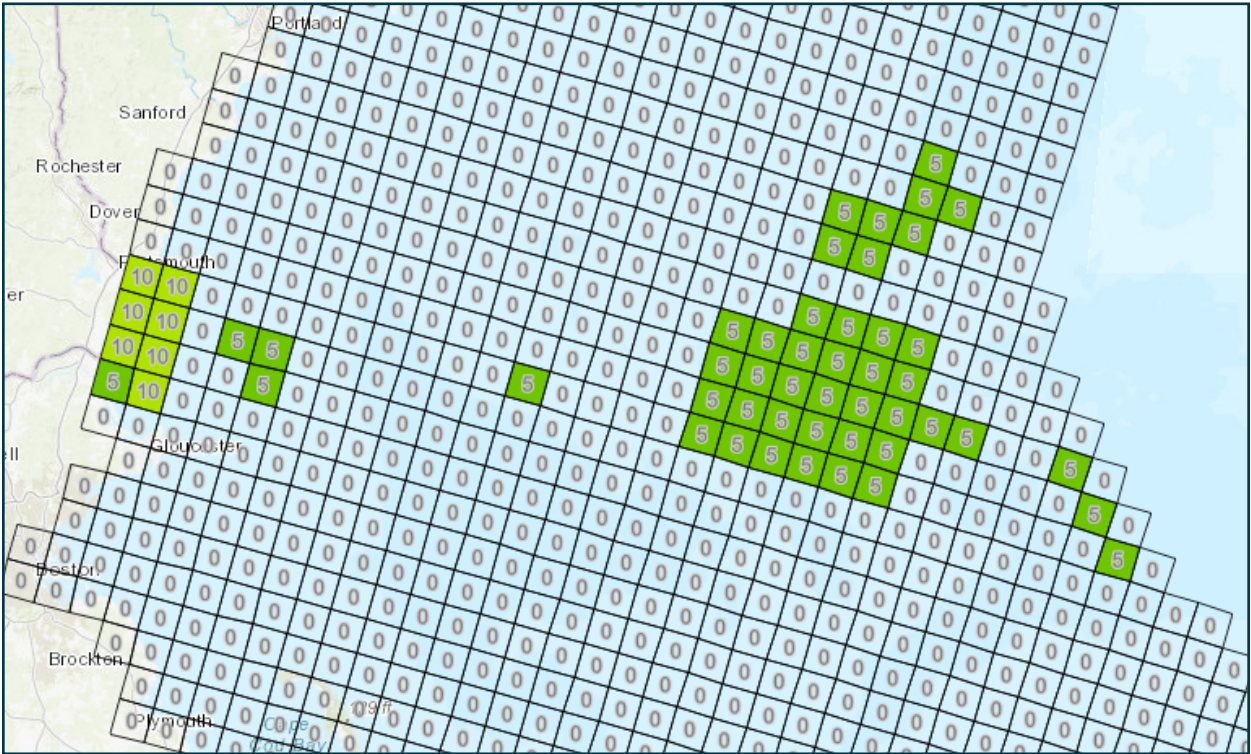


Massachusetts Office of Coastal Zone Management: Geographic distribution of votes allocated by the Massachusetts Office of Coastal Zone Management

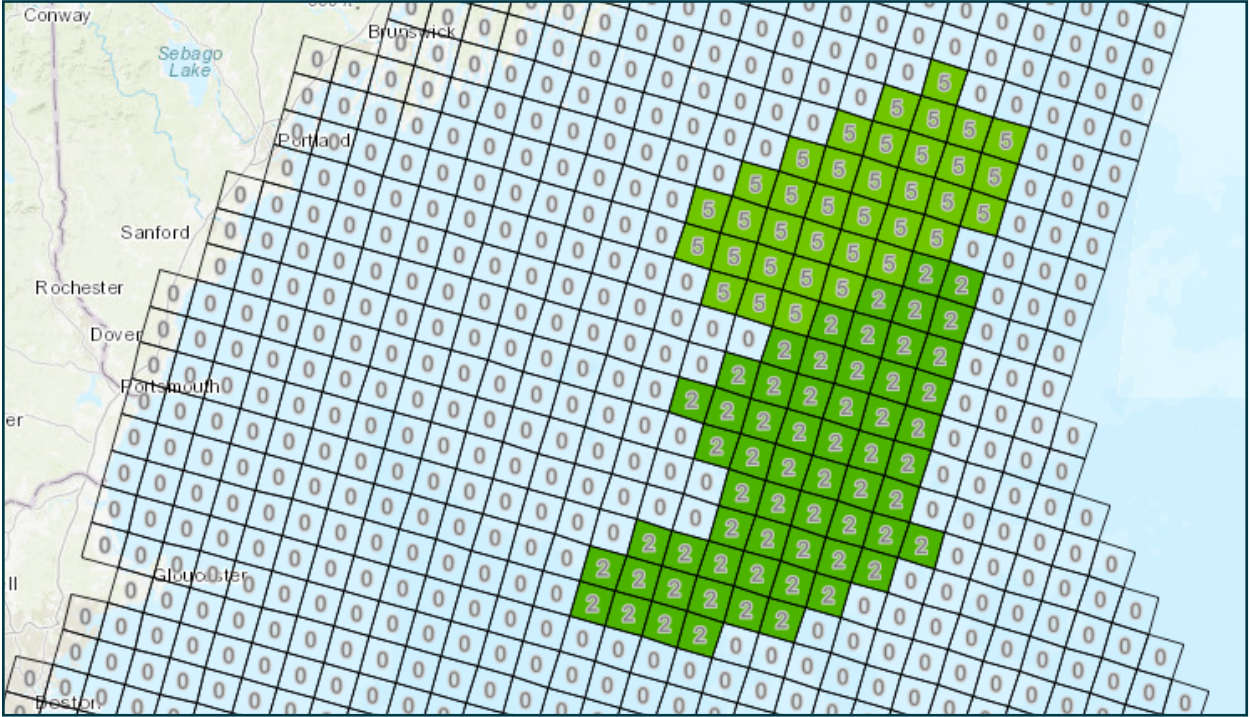


APPENDIX A: Continued

New Hampshire Department of Environmental Services: Geographic distribution of votes allocated by the New Hampshire Department of Environmental Services

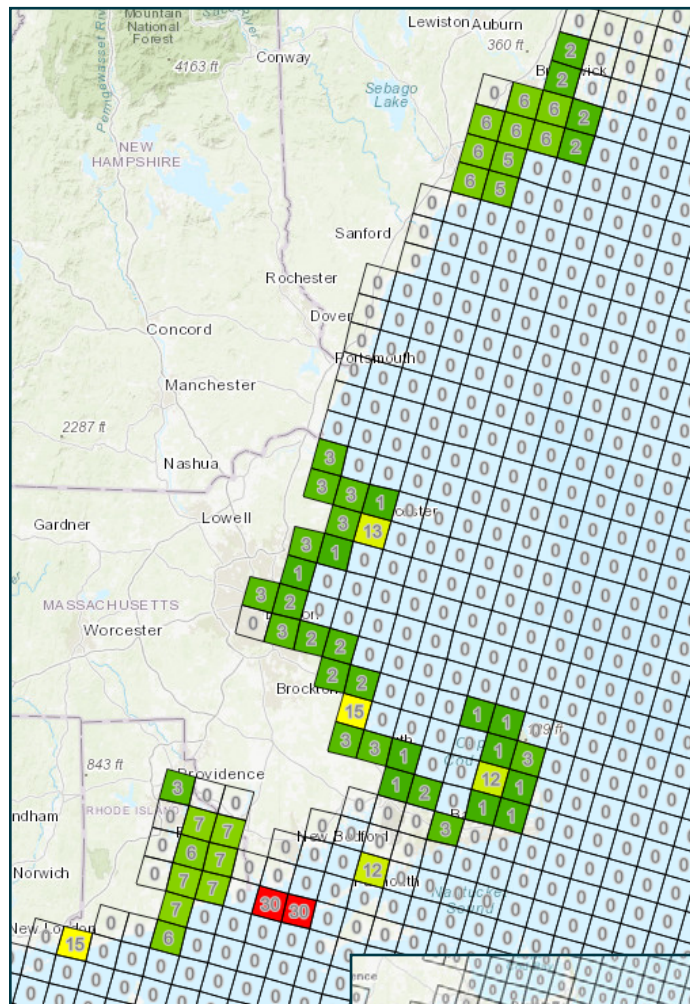


Maine Department of Marine Resources: Geographic distribution of votes allocated by the Maine Department of Marine Resources



APPENDIX A: Continued

Environmental Protection Agency: Geographic distribution of votes allocated by the U.S. Environmental Protection Agency

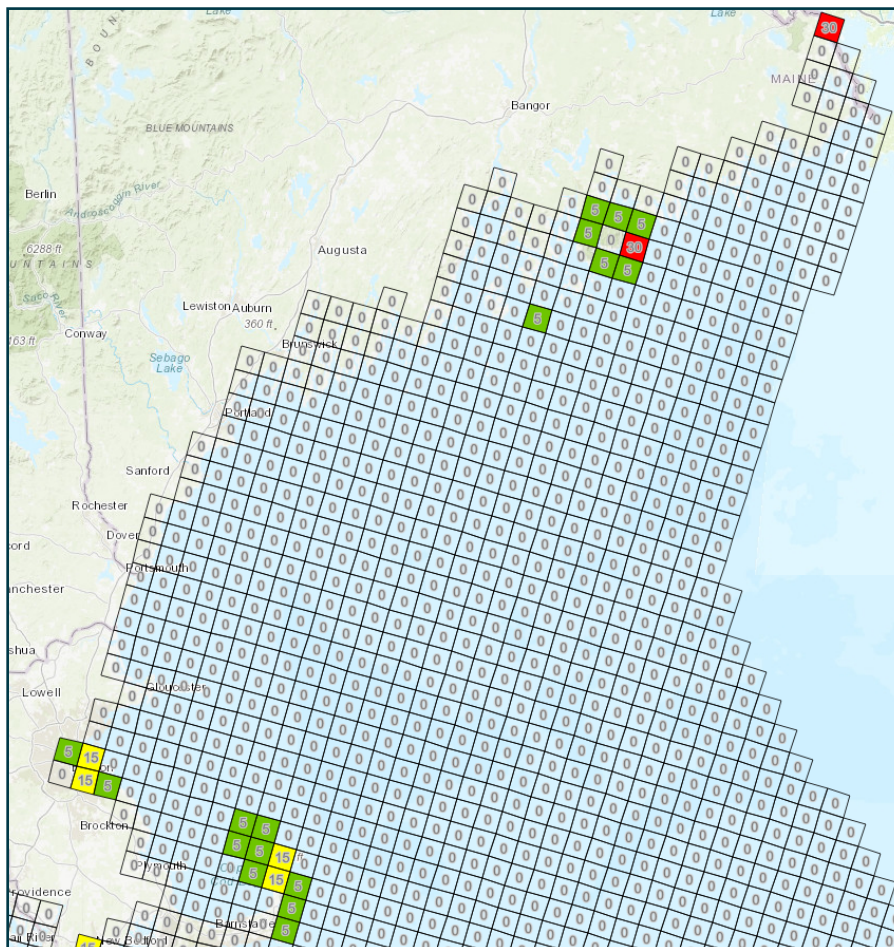


Fish and Wildlife Service: Geographic distribution of votes allocated by the U.S. Fish and Wildlife Service

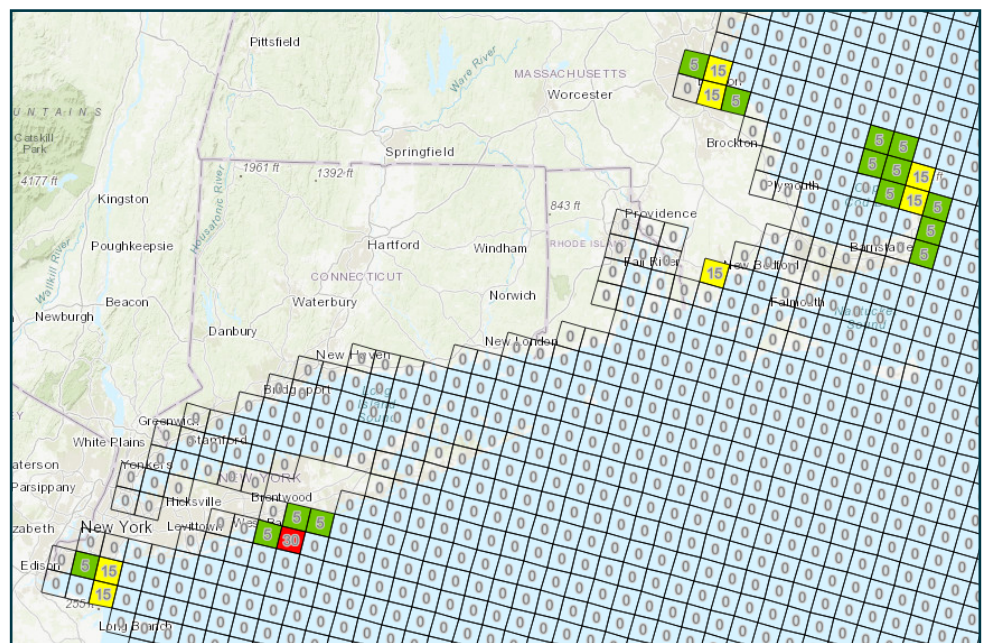


APPENDIX A: Continued

National Park Service (Northern Area): Northern geographic distribution of votes allocated by the National Park Service

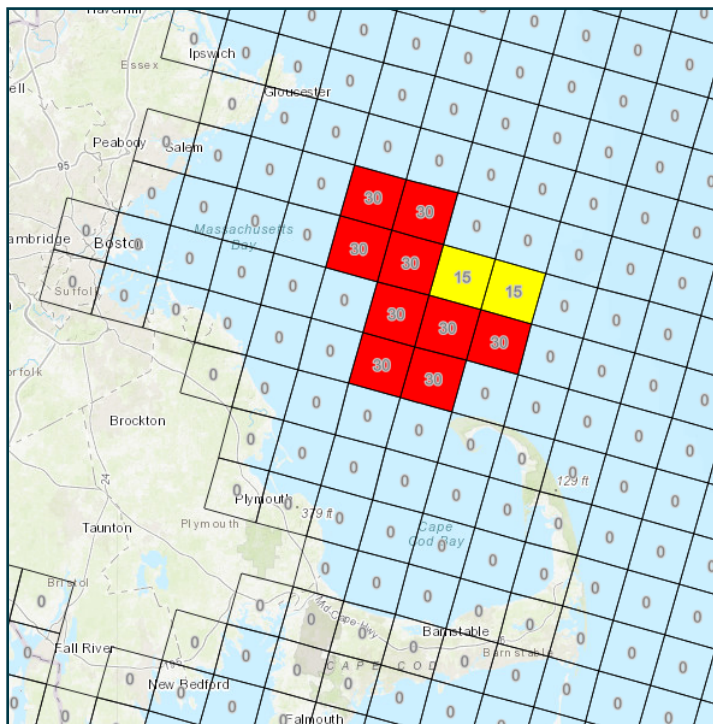


National Park Service (Southern Area): Southern geographic distribution of votes allocated by the National Park Service

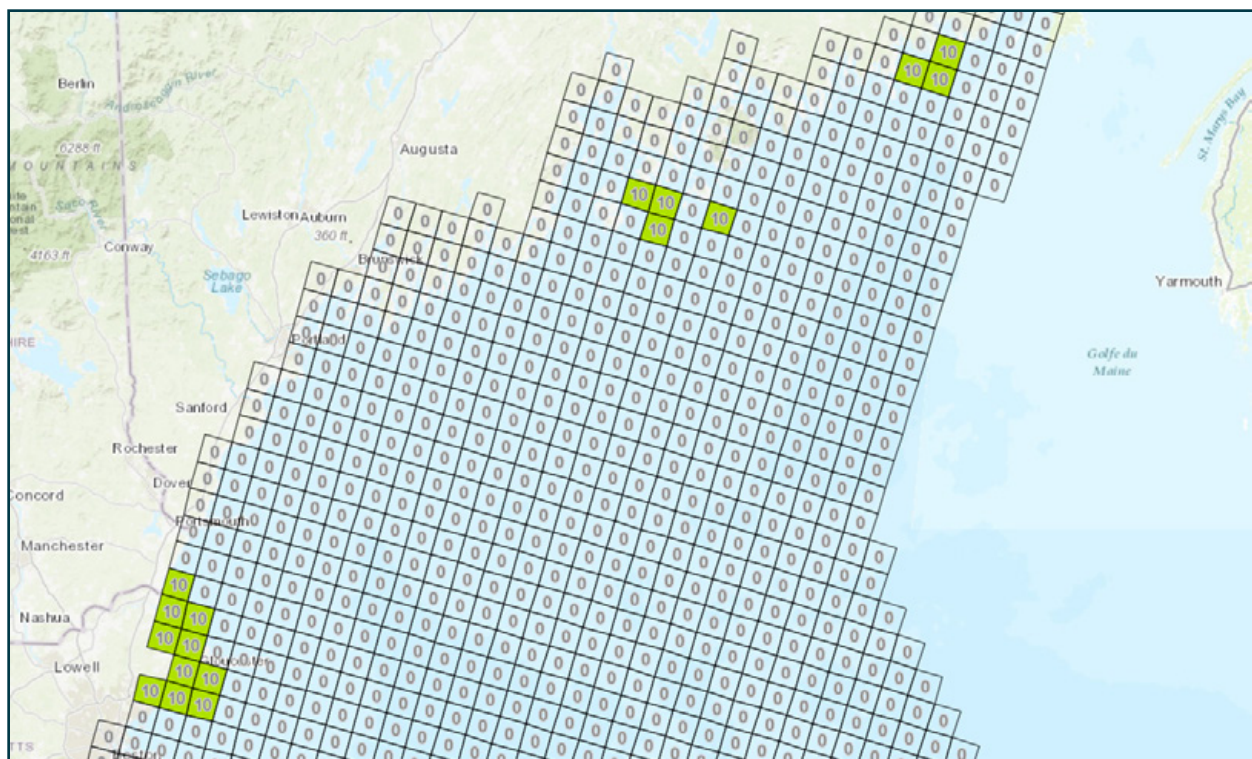


APPENDIX A: Continued

NOAA National Marine Sanctuaries Office: Geographic distribution of votes allocated by the NOAA National Marine Sanctuaries Office

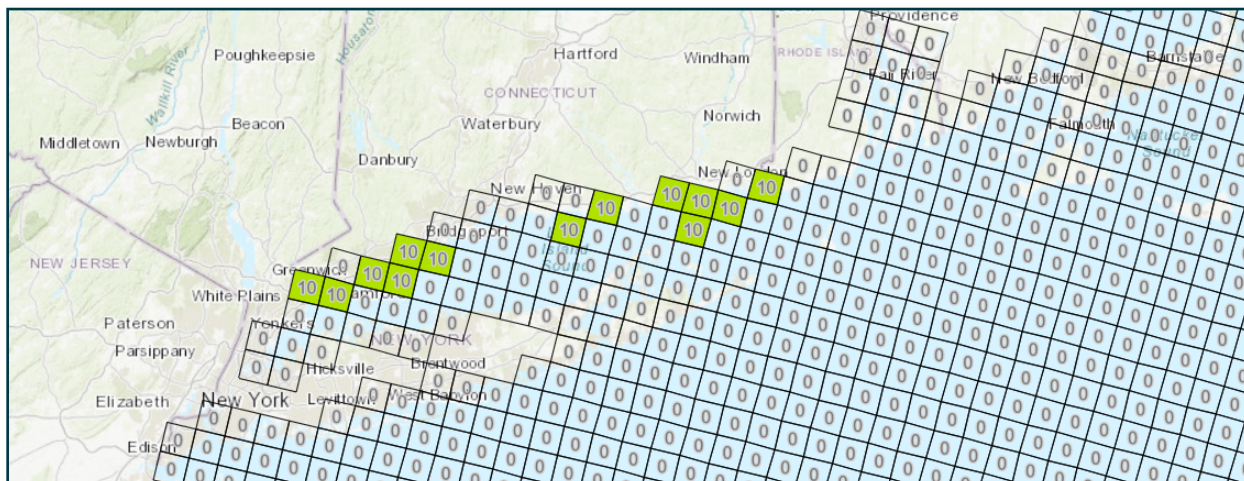


U.S. Army Corps of Engineers (Northern Area): Northern geographic distribution of votes allocated by the U.S. Army Corps of Engineers (USACE)

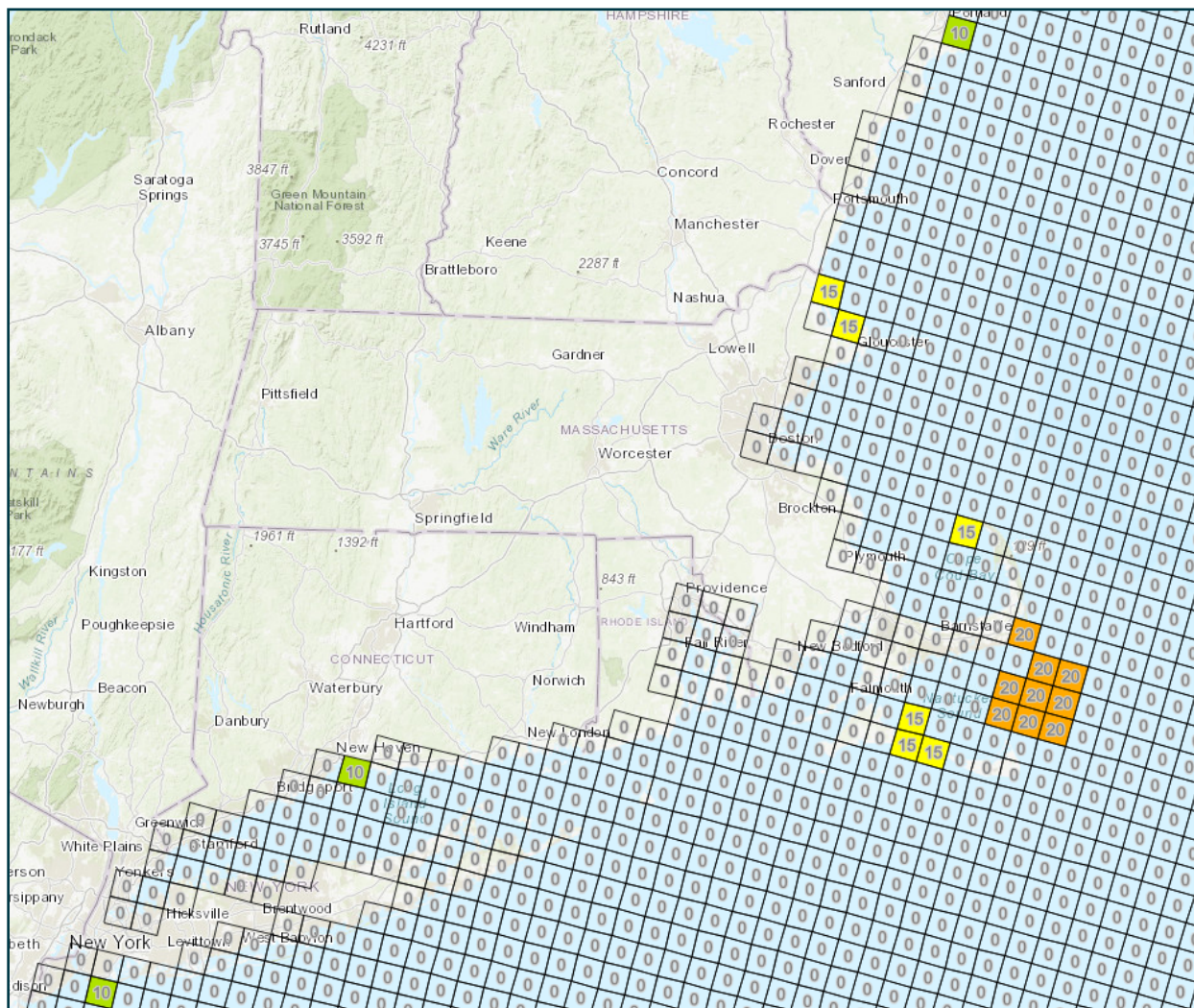


APPENDIX A: Continued

U.S. Army Corps of Engineers (Southern Area): Southern geographic distribution of votes allocated by the U.S. Army Corps of Engineers (USACE)

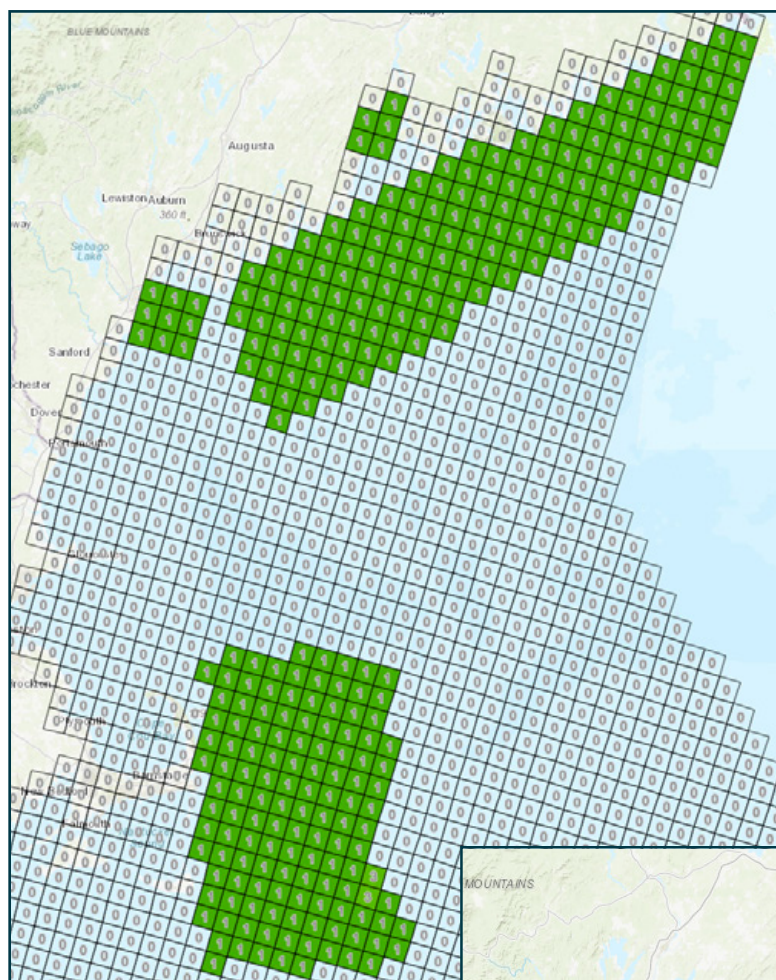


U.S. Coast Guard: Geographic distribution of votes allocated by the U.S. Coast Guard

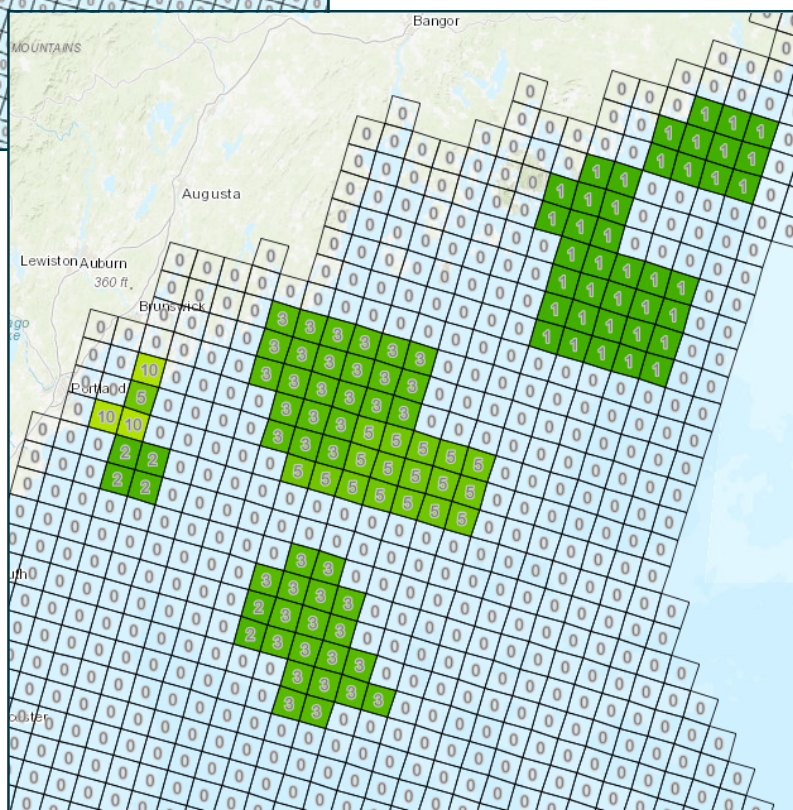


APPENDIX A: Continued

U.S. Geological Survey: Geographic distribution of votes allocated by the U.S. Geological Survey

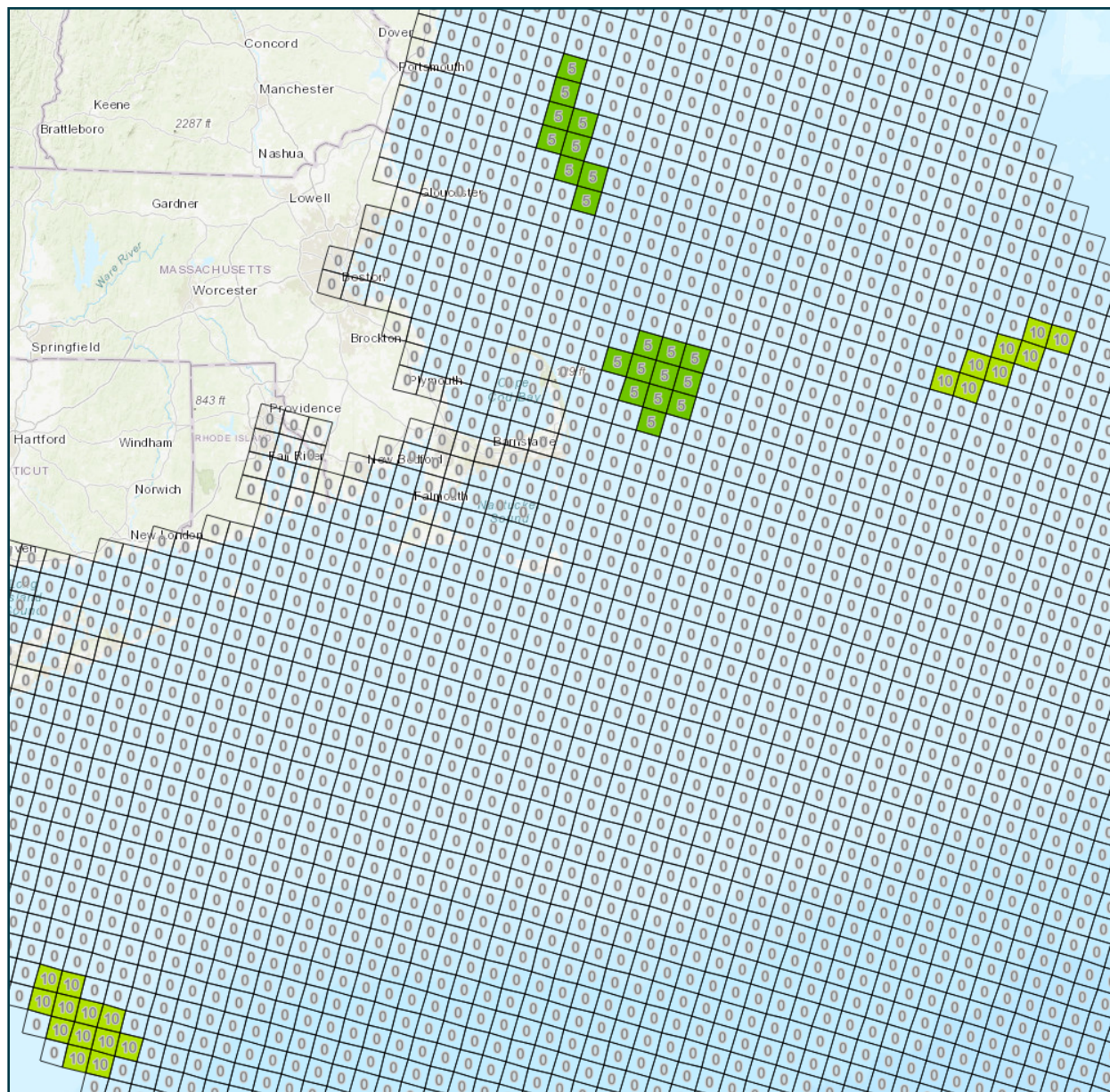


Gulf of Maine Research Institute: *Geographic distribution of votes allocated by the Gulf of Maine Research Institute*



APPENDIX A: Continued

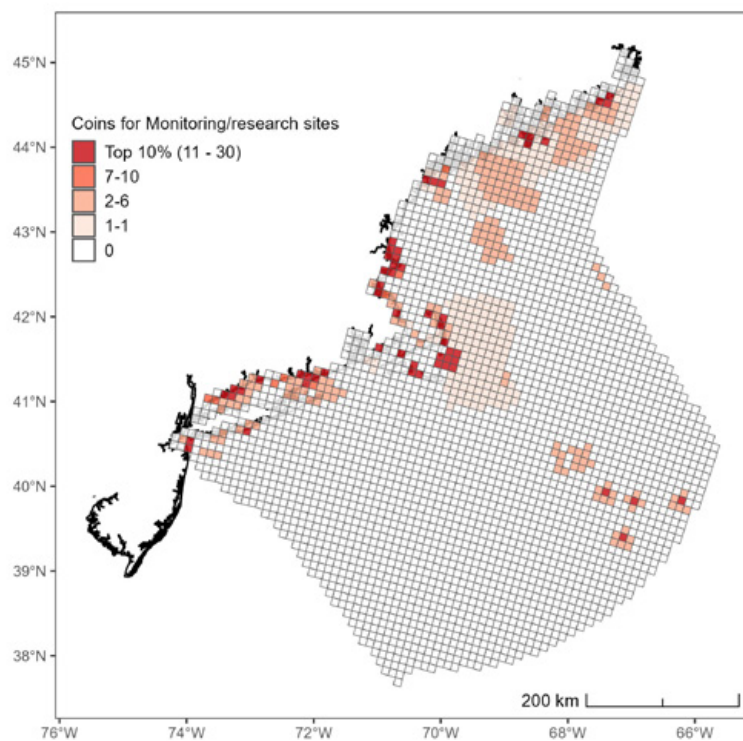
The Nature Conservancy: Geographic distribution of votes allocated by the Nature Conservancy



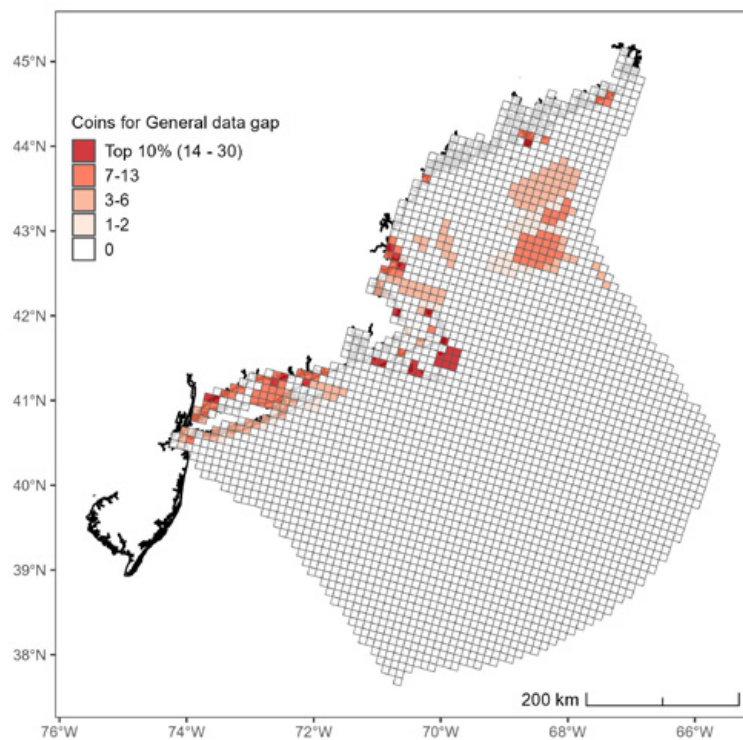
APPENDIX B: MANAGEMENT FRAMES – PRIMARY JUSTIFICATION MAPS

All maps show votes made by participants at the primary level.

Monitoring/Research Sites: Sum of all votes in each cell for the management priority Monitoring/Research Sites.



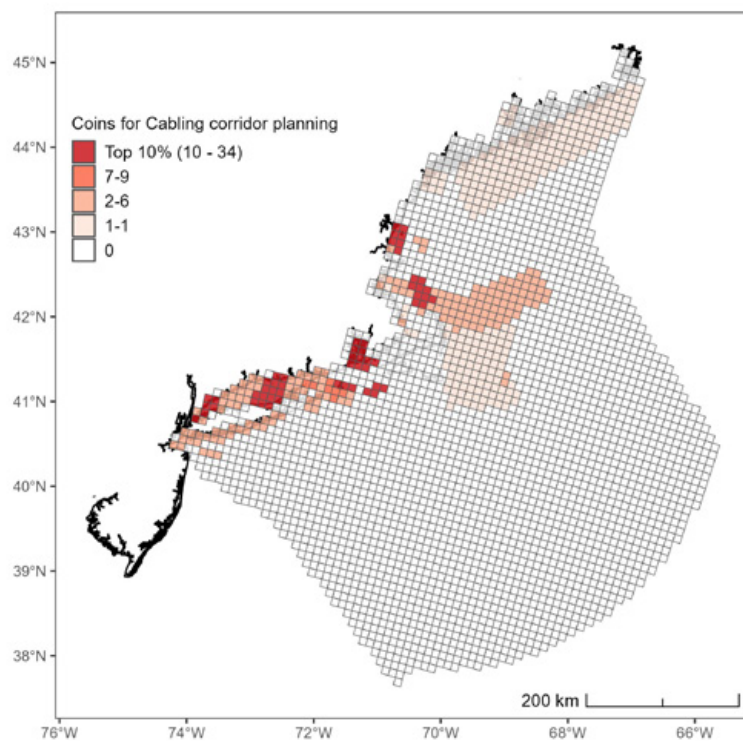
General Data Gap: Sum of all votes in each cell for the management priority General Data Gap.



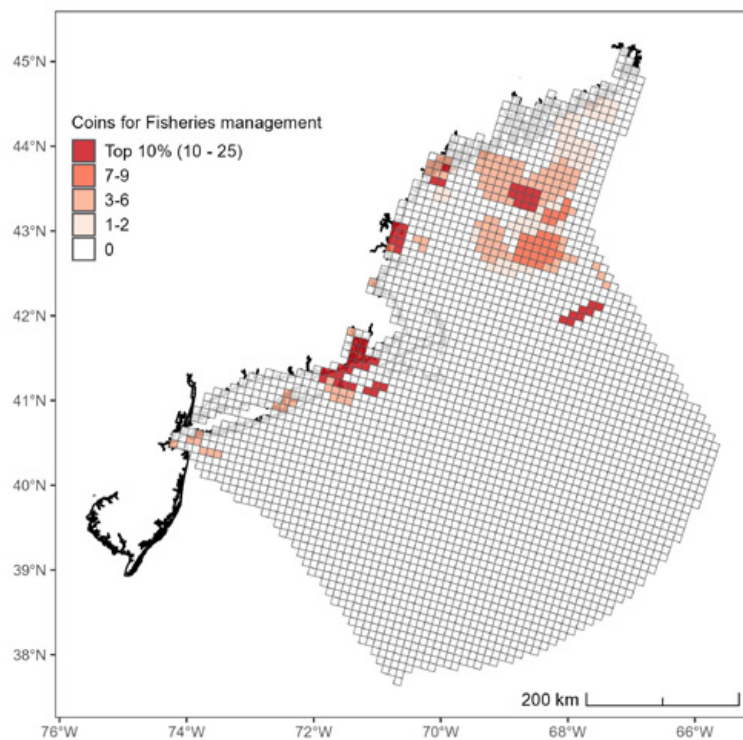
APPENDIX B: Continued

All maps show votes made by participants at the primary level.

Cable Corridor Planning: Sum of all votes in each cell for the management priority Cable Corridor Planning.



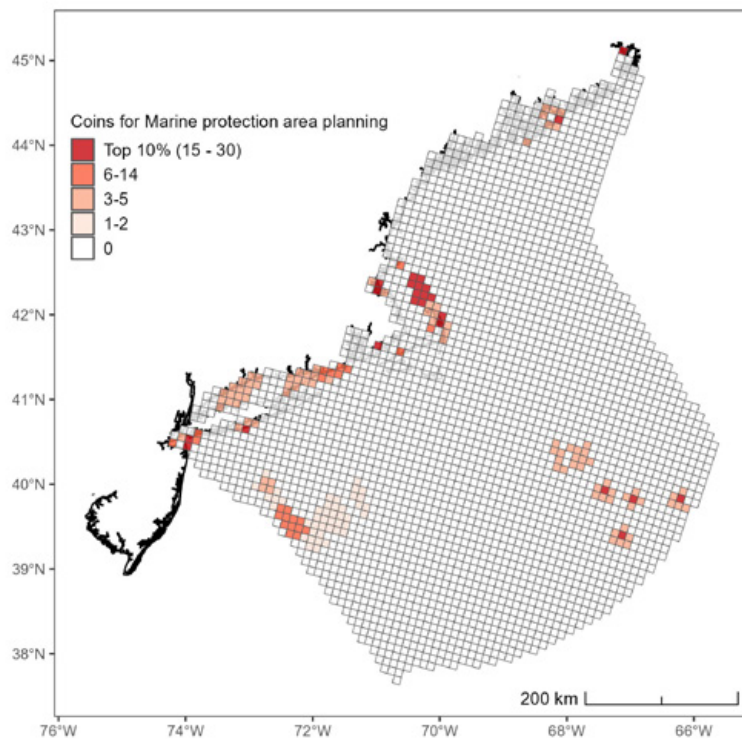
Fisheries Management: Sum of all votes in each cell for the management priority Fisheries Management.



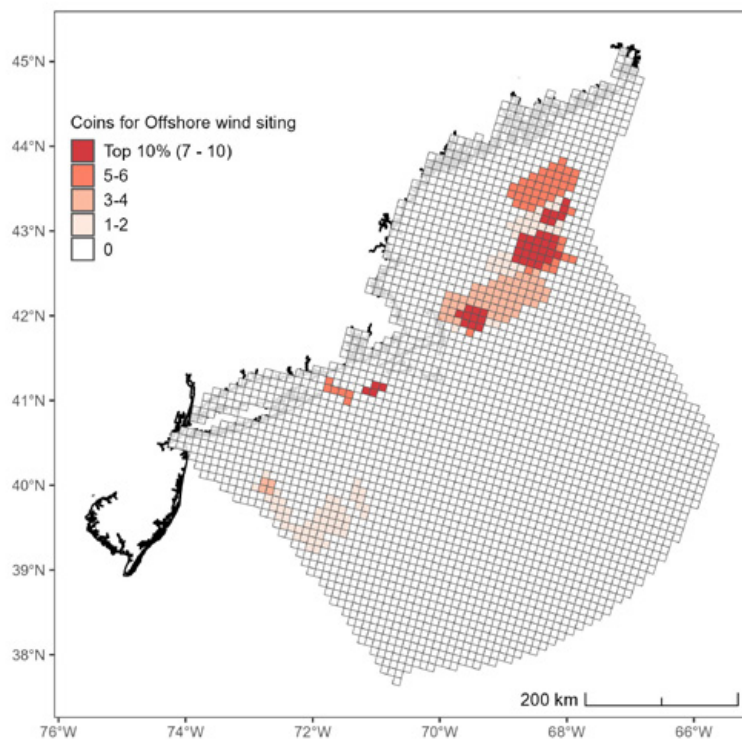
APPENDIX B: Continued

All maps show votes made by participants at the primary level.

Marine Protection Area Planning: Sum of all votes in each cell for the management priority Marine Protection Area Planning.



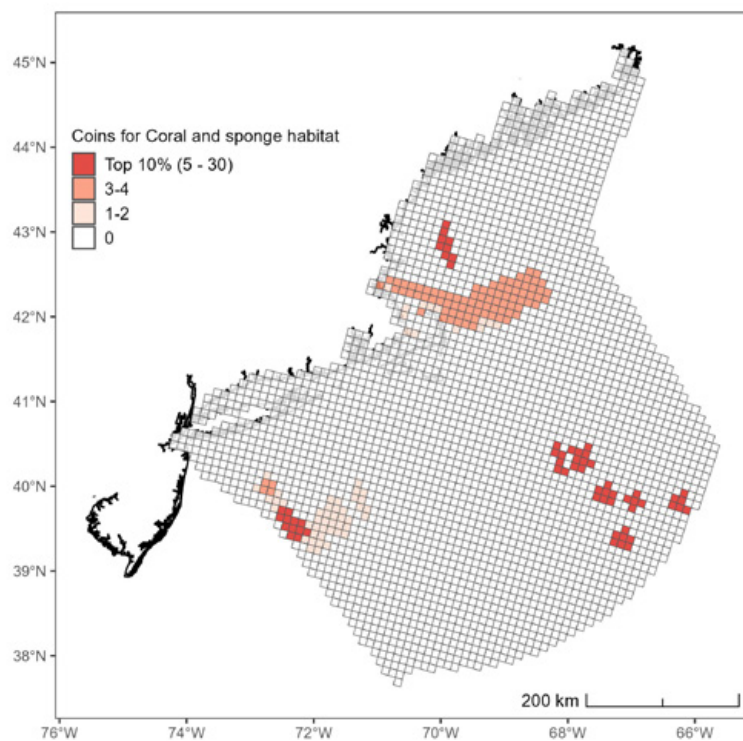
Management Frame: Offshore Wind Siting: Sum of all votes in each cell for the management priority Offshore Wind Siting.



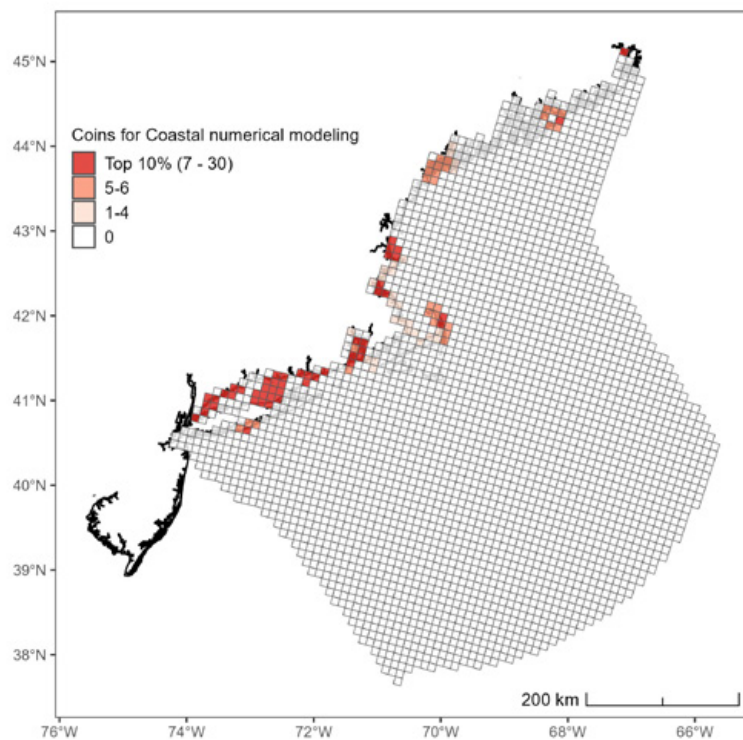
APPENDIX B: Continued

All maps show votes made by participants at the primary level.

Coral and Sponge Habitat: Sum of all votes in each cell for the management priority Coral and Sponge Habitat.



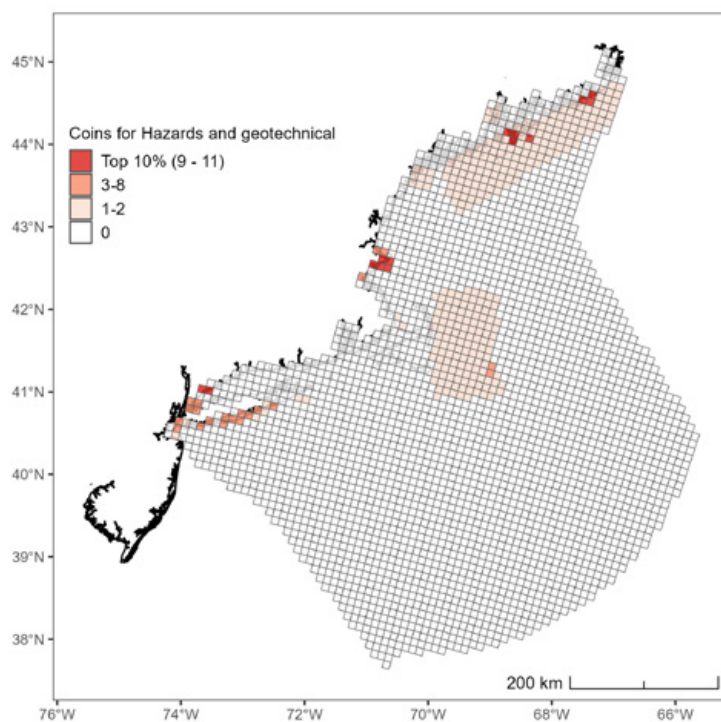
Management Frame: Coastal Numerical Modeling: Sum of all votes in each cell for the management priority Coastal Numerical Modeling.



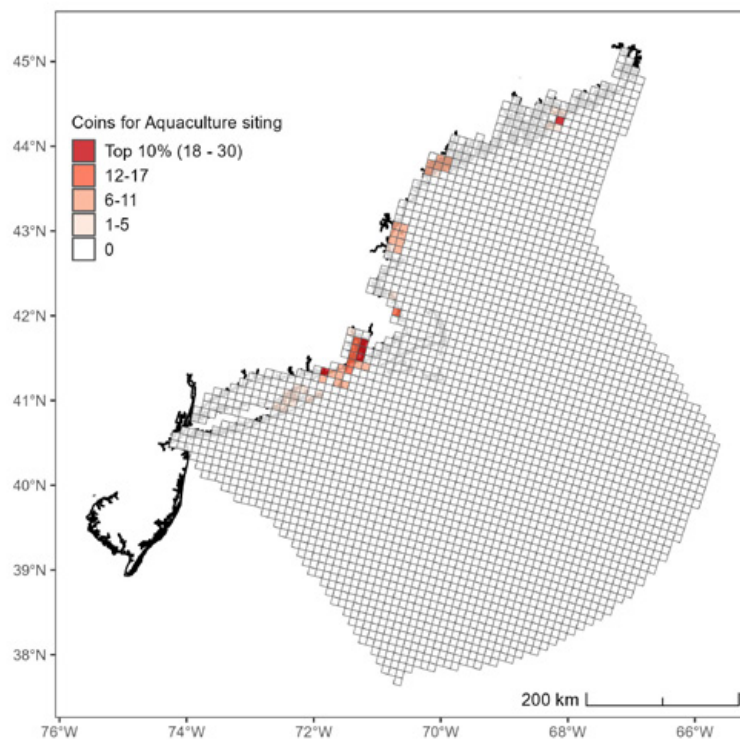
APPENDIX B: Continued

All maps show votes made by participants at the primary level.

Management Frame: Hazards and Geotechnical: Sum of all votes in each cell for the management priority Hazards and Geotechnical.



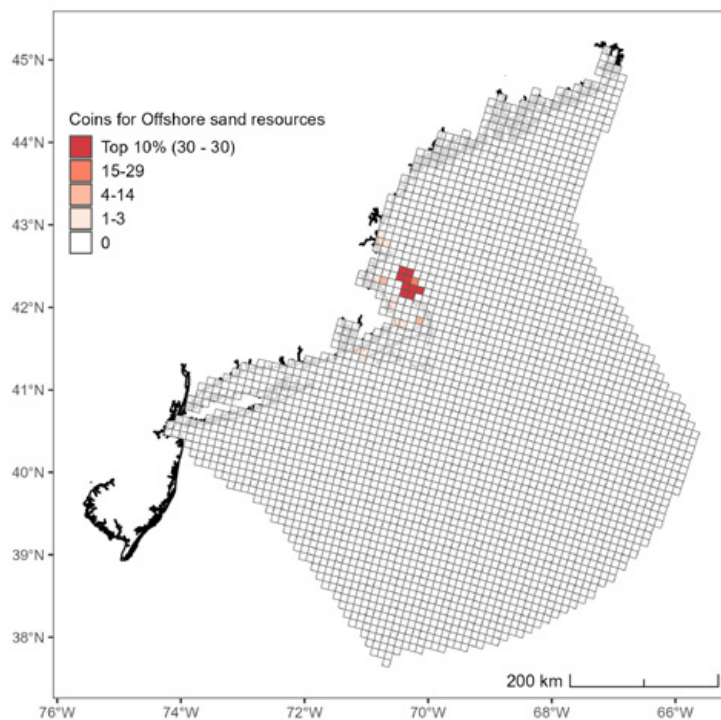
Management Frame: Aquaculture Siting: Sum of all votes in each cell for the management priority Aquaculture Siting.



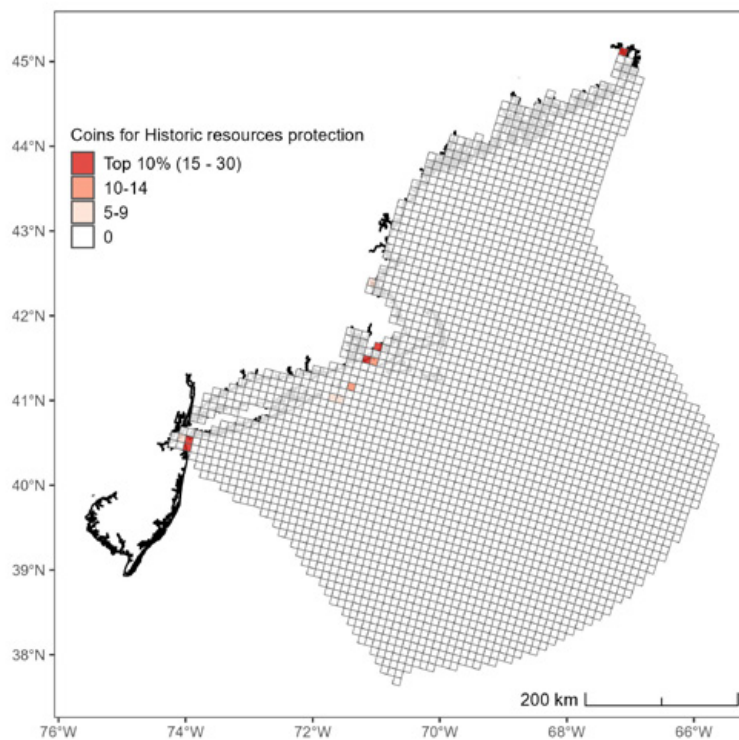
APPENDIX C: TECHNICAL REQUIREMENT – PRIMARY JUSTIFICATION MAPS

All maps show votes made by participants at the primary level.

Management Frame: Offshore Sand Resources: Sum of all votes in each cell for the management priority Offshore Sand Resource.

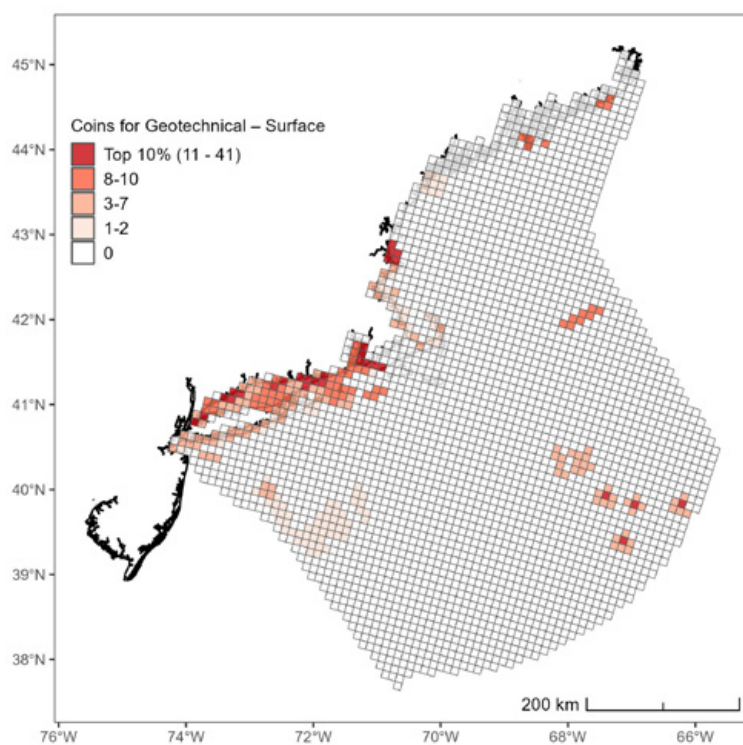


Management Frame: Historic Resources Protection: Sum of all votes in each cell for the management priority Historic Resources Protection.



APPENDIX C: Continued

Geotechnical – Surface: Sum of all votes in each cell for the data need Geotechnical – Surface.



Geotechnical – Cores: Sum of all votes in each cell for the data need Geotechnical - Cores.

