

Update: Habitat Classification and Ocean Mapping Subcommittee

HCOM Leadership:
Mark Finkbeiner, NOAA Office for Coastal Management
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Habitat Classification and Ocean Mapping (HCOM)

Subcommittee 2022-2023 Work Plan

Regional Mapping

- ❖ Advancing methods and mapping product derivatives: Seascape Model
- ❖ Connecting mapping capacity with needs
 - Identify priority mapping areas/needs in the region (workshop)

Community of Practice around mapping classification

- ❖ Participation in updates to the Coastal and Marine Ecological Classification System (CMECS)

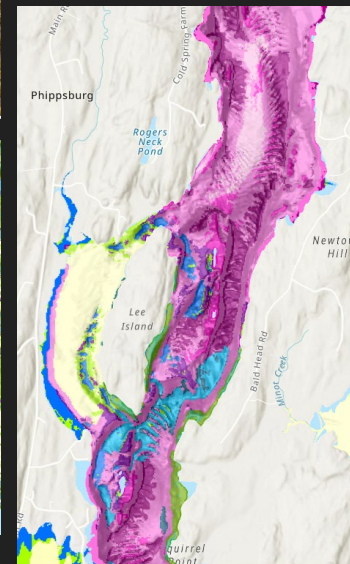
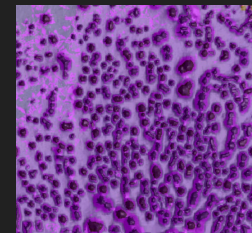
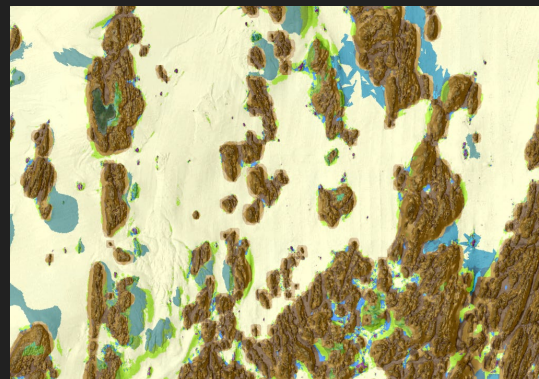
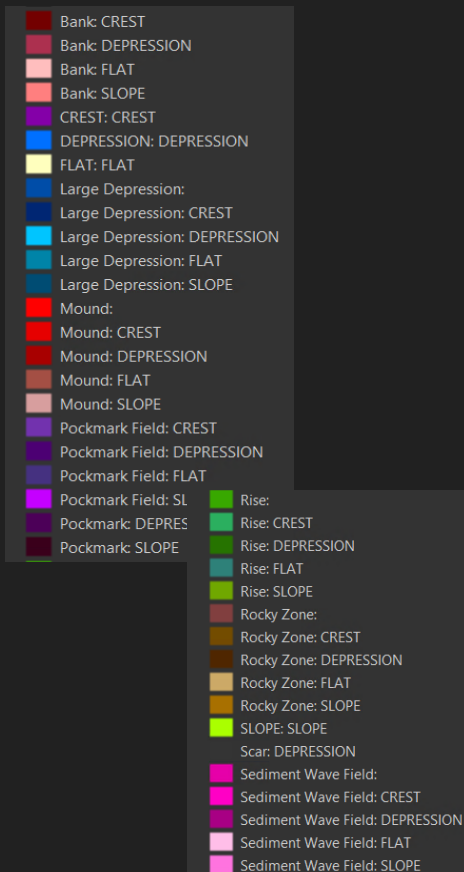
Work Plan Item 1: Gulf of Maine Seascape Map

Provides a regional view of the Gulf of Maine from the highest annual tide out to 24 nautical miles

Based on CMECS

Bathymetry derived using BRESS, vector ruggedness model, and topographic position index

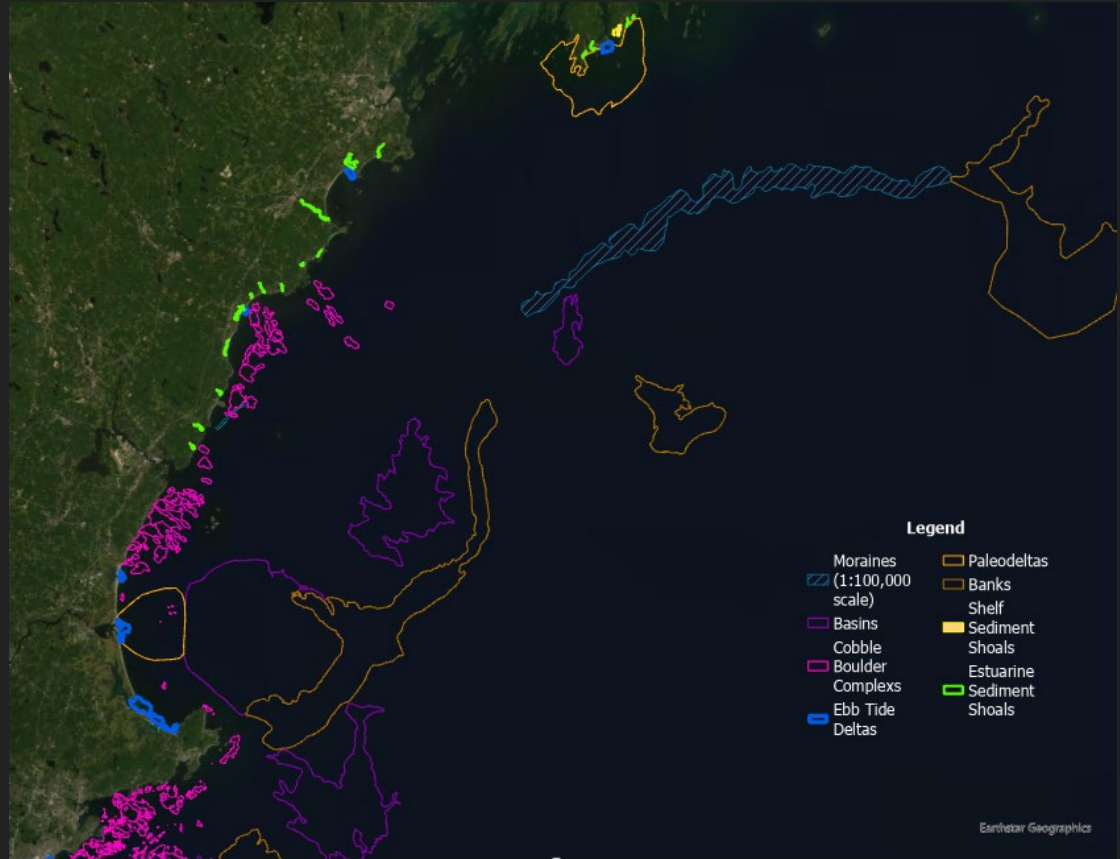
Will be available on the Northeast Ocean Data Portal spring 2023.



Gulf of Maine SEASCAPE

Also provides stand-alone layers for manually-derived geoforms:

- Moraines (1:100k scale)
- Basins
- Cobble-Boulder Complexes
- Ebb Tide Deltas
- Paleodeltas
- Shelf Sediment Shoals
- Estuarine Sediment Shoals

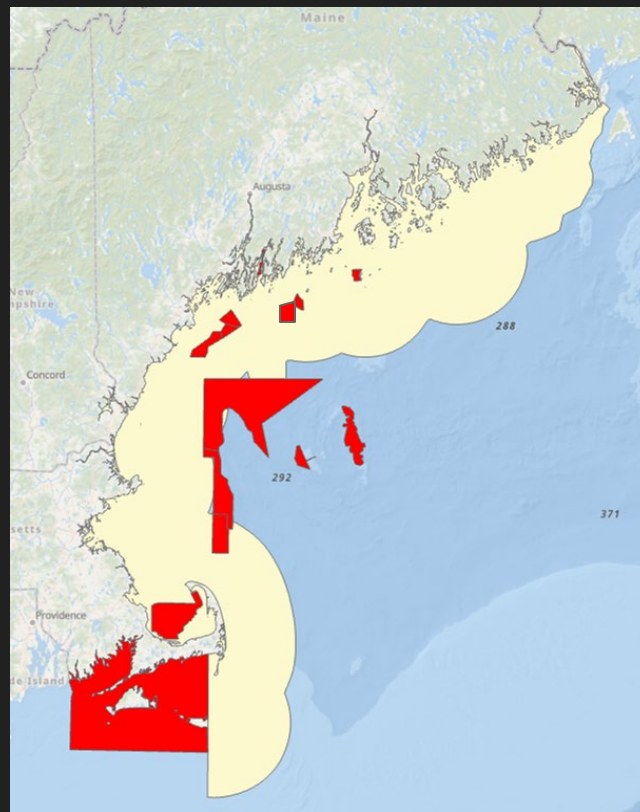


PARTNERS: NOAA's Office for Coastal Management, Maine Coastal Program, Maine Geological Survey, New Hampshire Coastal Program, Center for Coastal and Ocean Mapping, Massachusetts Coastal Zone Management, Tetra Tech, USGS

Updating and Expanding the Seascape Map

NOAA and MA and ME Coastal Programs working with Tetra Tech to include:

- Newly mapped bathymetry in Cape Cod Bay and ME coast
- South of Cape Cod to RI border
- Areas beyond 24nm with high-res bathymetry data



Work Plan Item 2: Multi-Partner Prioritization of Seafloor Acquisition Needs

Since 2012, significant areas of the Northeast seafloor have been surveyed, but large areas still lack adequate information

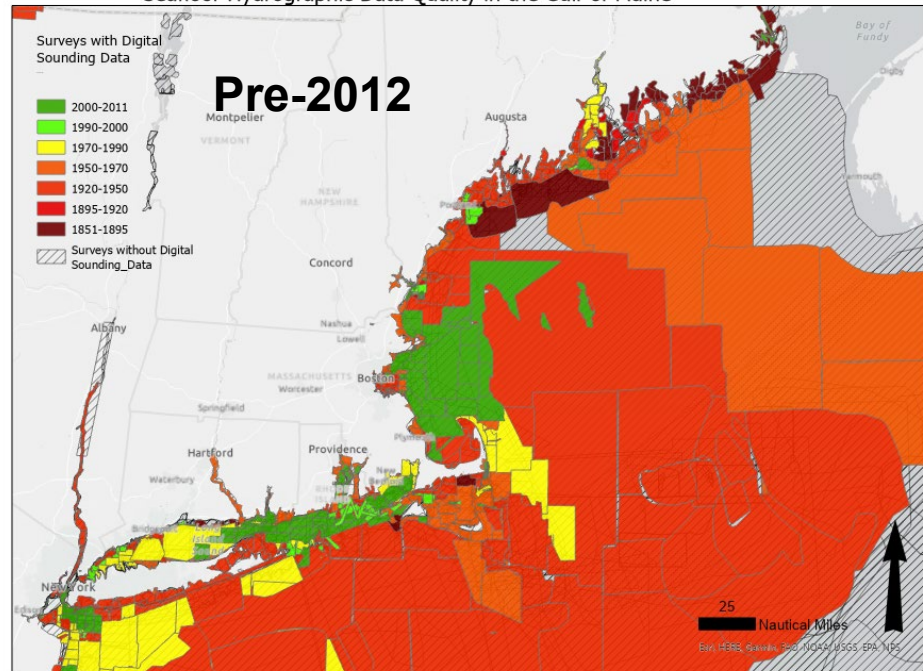
HCOM will engage in a participatory process to identify priority areas for new data collection using an National Centers for Coastal Ocean Science (NCCOS) Online App Support Tool

Data collection types considered (initially):

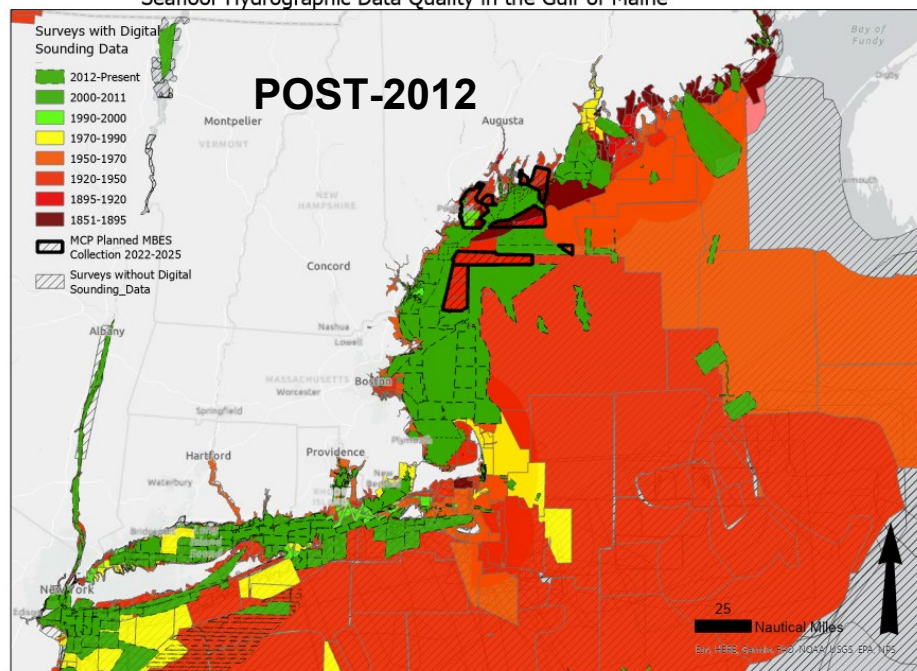
- Bathymetry, seafloor hardness, sediment composition & benthic community structure

Where do we prioritize seafloor surveys?

Seafloor Hydrographic Data Quality in the Gulf of Maine



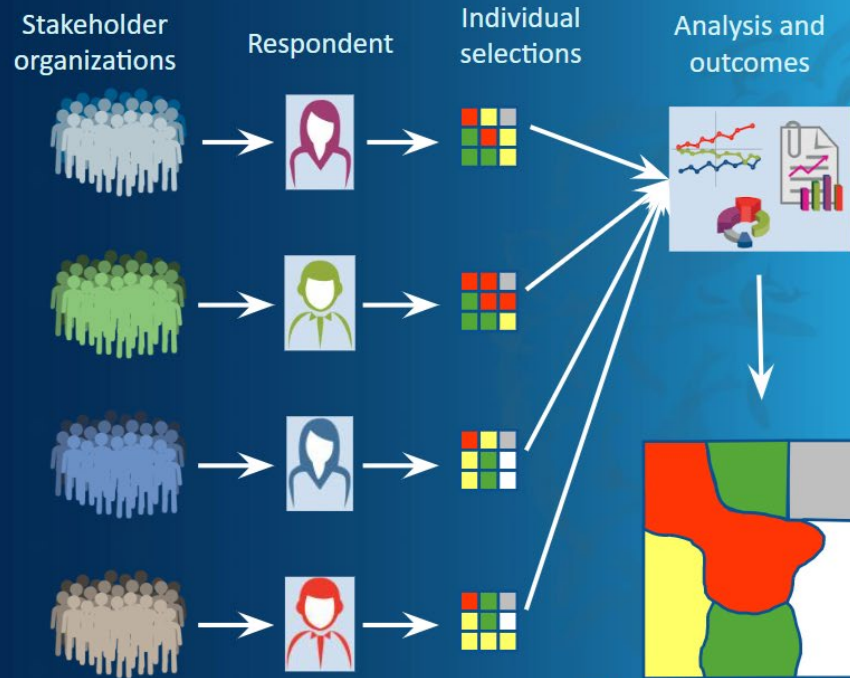
Seafloor Hydrographic Data Quality in the Gulf of Maine



Participatory Effort to Prioritize Mapping Areas

Methods overview

- Participatory GIS (PGIS) used to survey the mapping interests of a diversity of stakeholder organizations
- Respondents prioritize specific areas, needs, and reasons for future mapping
- Selections from the respondents are summarized using descriptive statistics, cluster analysis, and other approaches



Battista et al. 2017. Sensors. 17,701

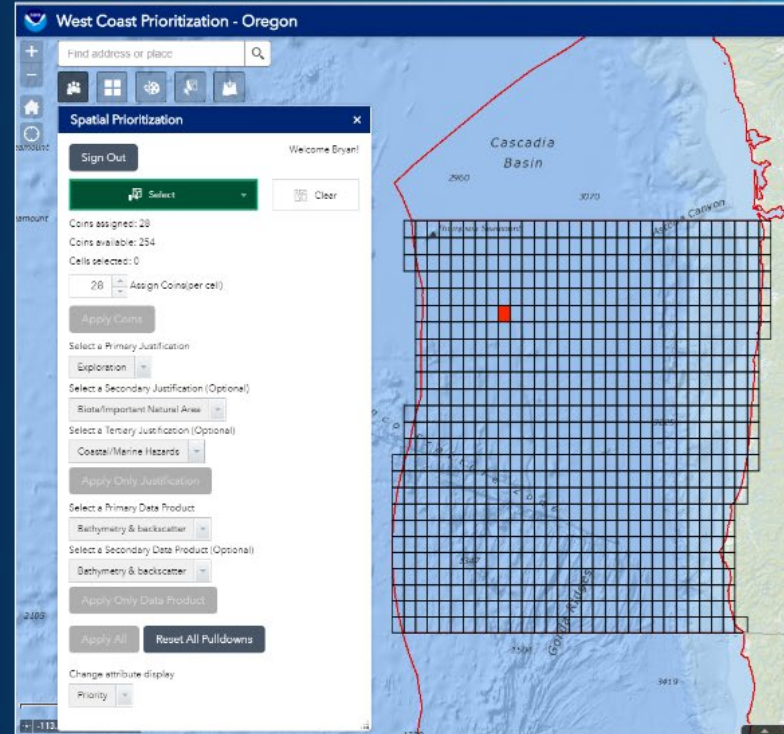


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Prioritization Tool PGIS: where, when, what, why

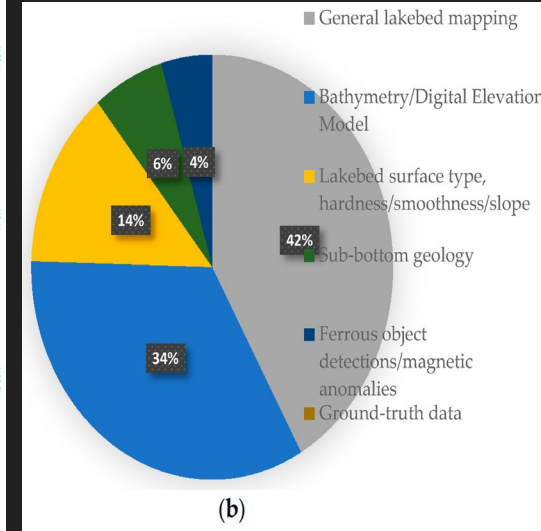
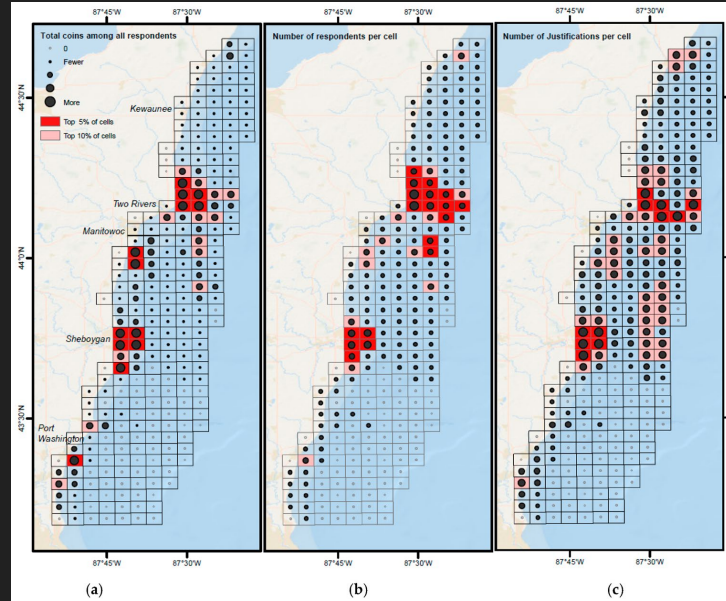
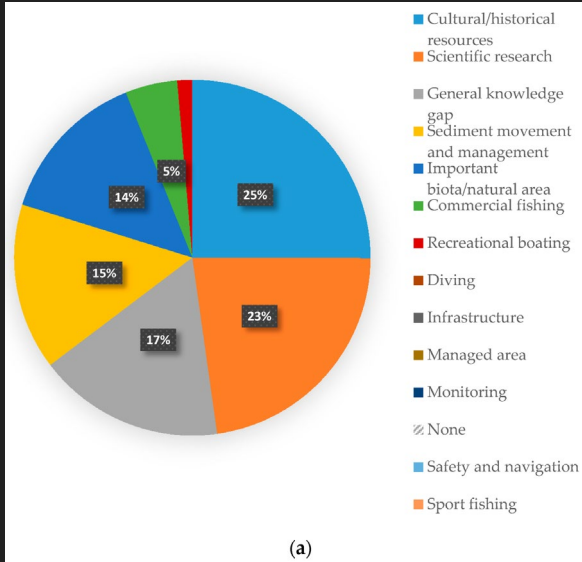
- Developed by Ken Buja using Web AppBuilder for ArcGIS
- Customizable with local input
- Customizable spatial framework
- Pre-populated pull-down menus for easy attribution
- Responses saved as they are made
- Automated QA/QC enforcement



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Participatory Prioritization Using a Web-Based App



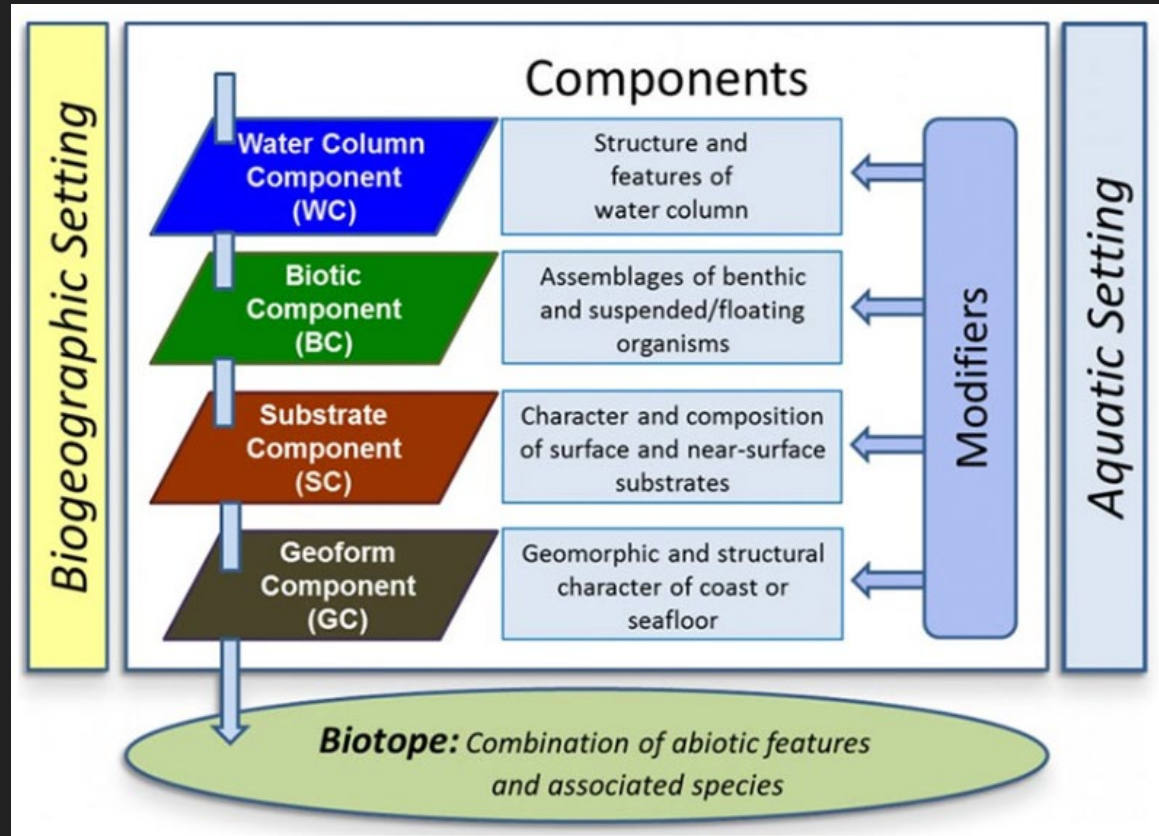
Source: Kendall, M.S.; Buja, K.; Menza, C.; Battista, T. *Where, What, When, and Why Is Bottom Mapping Needed? An On-Line Application to Set Priorities Using Expert Opinion*. *Geosciences* 2018, 8, 379. <https://doi.org/10.3390/geosciences8100379>

Work Plan Item 3: Provide Input in CMECS Update Process

Process

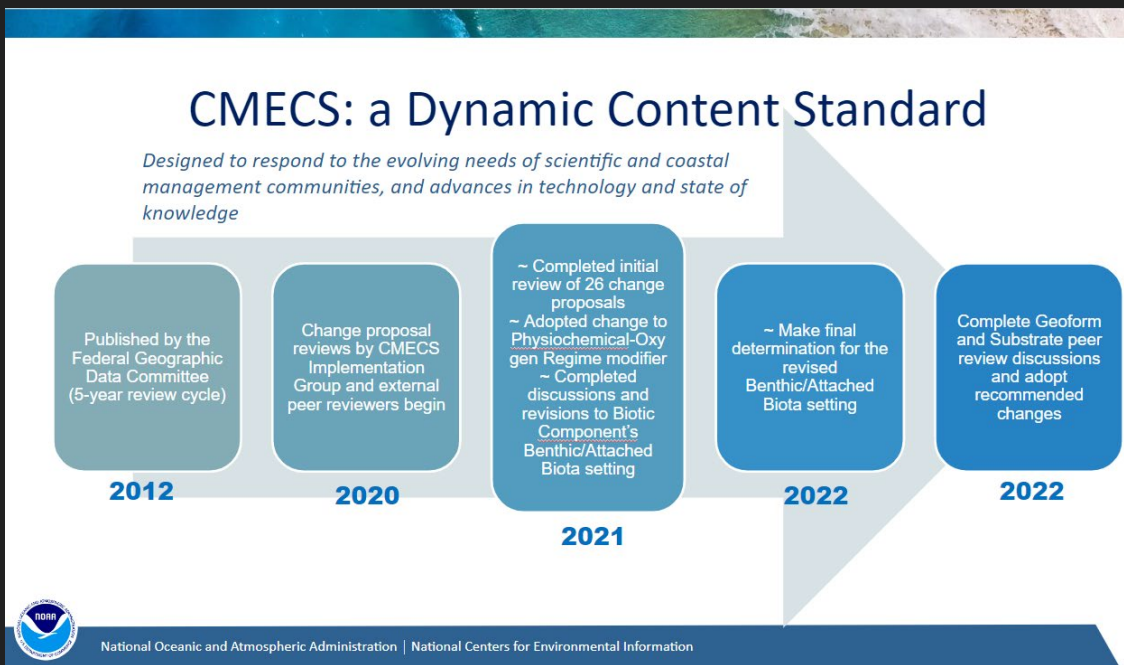
Structured catalog of ecological terms that provides a framework for interpreting, classifying, and inter-relating observational data

Describes coastal and marine environments from the head of tide in estuaries to the depths of the oceans



Work Plan Item 3: Provide Input in CMECS Update Process

HCOM Members providing input on changes to sediment and geoform classifications including adopting hierarchy adopted by the Gulf of Maine Seascape map



Summary

❖ Seascape Model:

- 2023 Data Portal release
- Model extension and revision

❖ Participatory priority mapping

- HCOM and external participation

❖ CMECS updates for sediment and geoform components

