



Virginia Commonwealth University
Coastal Management GIS Support & Coastal GEMS
Maintenance: **FY20 Annual Report**
October 1st 2020 – September 30th 2021
NOAA Grant # NA20NOS4190207
Grant Year FY2020, Task #1.04



Virginia Coastal Zone
MANAGEMENT PROGRAM



Acknowledgements

This report was prepared by the Virginia Coastal Zone Management Program's Coastal GIS Coordinator. The Coastal GIS Coordinator position is provided through a contract with Virginia Commonwealth University and is funded by the Virginia Coastal Zone Management Program at the Virginia Department of Environmental Quality through Grant #NA20NOS4190207 from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Introduction

This report provides a summary of tasks performed and products created under task #1.04 by the Virginia Coastal Zone Management Program's Coastal GIS Coordinator and by staff of Virginia Commonwealth University Life Sciences during the grant year FY2020 (October 1st 2020 – September 30th 2021). Links are provided for web-based products where applicable. For full-resolution map images, spatial data, or further documentation of tasks summarized in this report, contact nick.meade@deq.virginia.gov.

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Coastal GEMS Mapping Application

Hosting and Maintenance

Virginia Commonwealth University Life Sciences continued to host the Coastal GEMS online mapping application through the FY20 grant period and VCU Life Sciences staff performed routine maintenance and updates on Coastal GEMS during this time.

Tasks included refreshing map services, updating data and cartography in the map file per CZM staff request, and installing software and security upgrades. Coastal GEMS remained operational throughout the FY20 grant period and was only offline to install software/security updates or to refresh map services. Coastal GEMS can be accessed at: www.coastalgems.org.

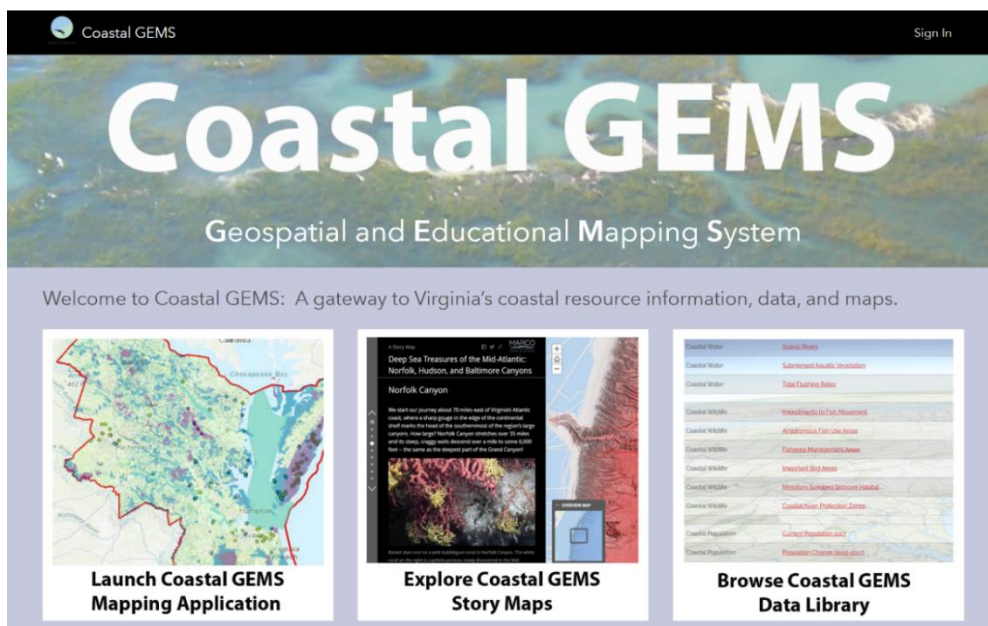
Coastal GEMS v4

VCU staff and the Coastal GIS Coordinator completed the new Coastal GEMS version 4 landing site and mapping application during the FY20 grant period.

The entirely new mapping interface features powerful new functionalities including the ability to share links to interactive maps, add data from outside sources, access and manipulate attribute information, and filter data spatially.

The new Coastal GEMS landing site was built by the Coastal GIS Coordinator using ArcGIS Hub. The site is designed to be a simple interface to access the suite of Coastal GEMS products including the mapping application, as well as data library and story maps pages created by the Coastal GIS Coordinator. The data library is another way to explore the data layers available on Coastal GEMS. It includes brief data abstracts and links to data sources, as well as the ability to view the full Coastal GEMS factsheets and open each layer in the Coastal GEMS map.

This platform leaves room for additional content in the future and can be quickly edited and updated by the CZM GIS Coordinator to highlight new data and events. Access Coastal GEMS at www.coastalgems.org.



Left: A screenshot of the new Coastal GEMS landing site created by the Coastal GIS Coordinator.

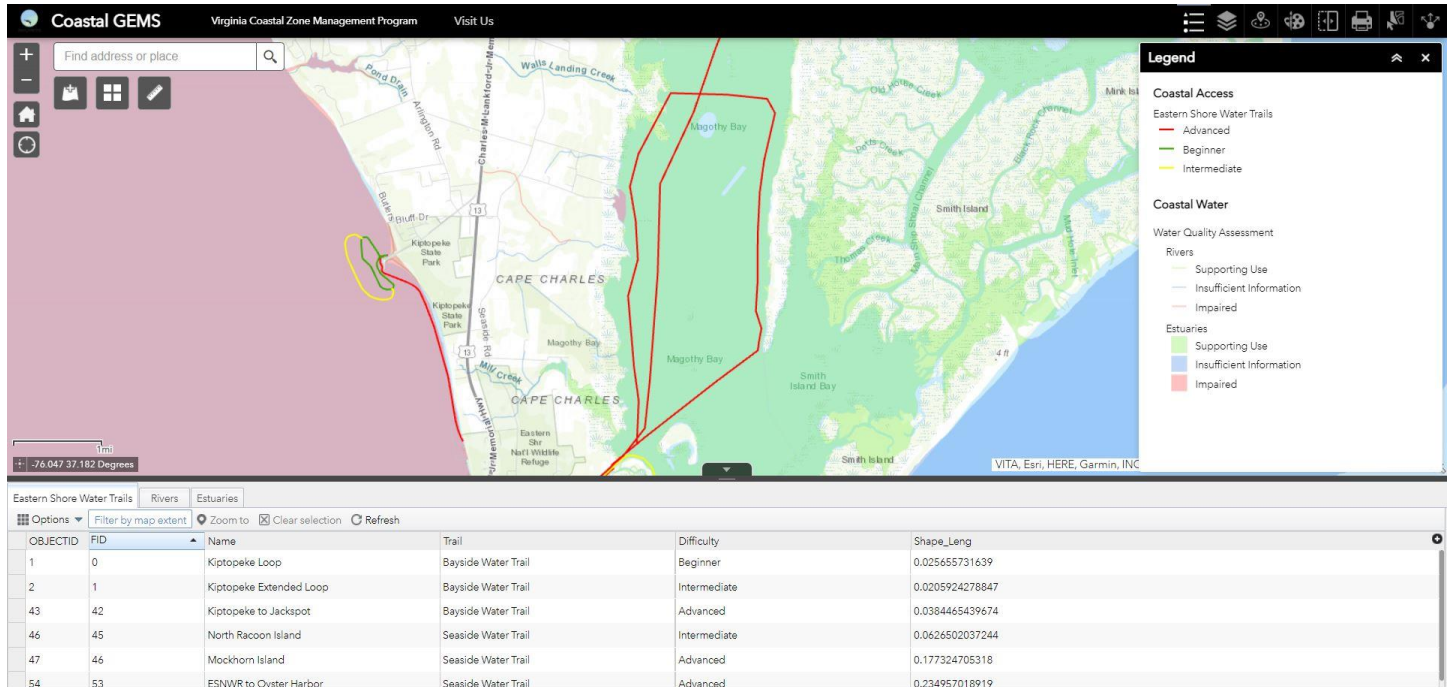
Click on the icons above to launch the new Coastal GEMS v4 mapping application, explore Coastal GEMS growing collection of story maps, or browse the new Coastal GEMS data library. Contact us for a demo/training on these new tools and resources. Tutorial pages are currently under construction and will be added to this site soon. The Coastal GEMS v3 mapping application will remain available [here](#) for a limited time.

 Virginia Coastal Zone MANAGEMENT PROGRAM	Coastal GEMS	About <ul style="list-style-type: none">• Virginia CZM Program• Coastal GEMS	Contact Us <ul style="list-style-type: none">• Email: nick.meade@deq.virginia.gov• Phone: 804-698-4297
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Coastal GEMS Data Management

The Coastal GIS Coordinator requested and obtained available data updates for current Coastal GEMS mapping application and story map layers from data providers, processed/prepared data for display, packaged symbolized data and uploaded to VCU Life Sciences to update map services. Coastal GEMS fact sheets were updated as necessary. The Coastal GIS Coordinator worked with Virginia CZM and MARCO partners to create new story maps. Coastal GEMS can be accessed at: www.coastalgems.org.

Coastal GEMS Layers updated during the FY20 grant period: SAV Coverage, Boating Access Sites, ES Water Trails, Condemned Shellfish Areas, Private Oyster Leases, Oyster Gardening, Conservation Lands, Public Access Sites, Coastal Population, and DEQ Water Quality Assessment.



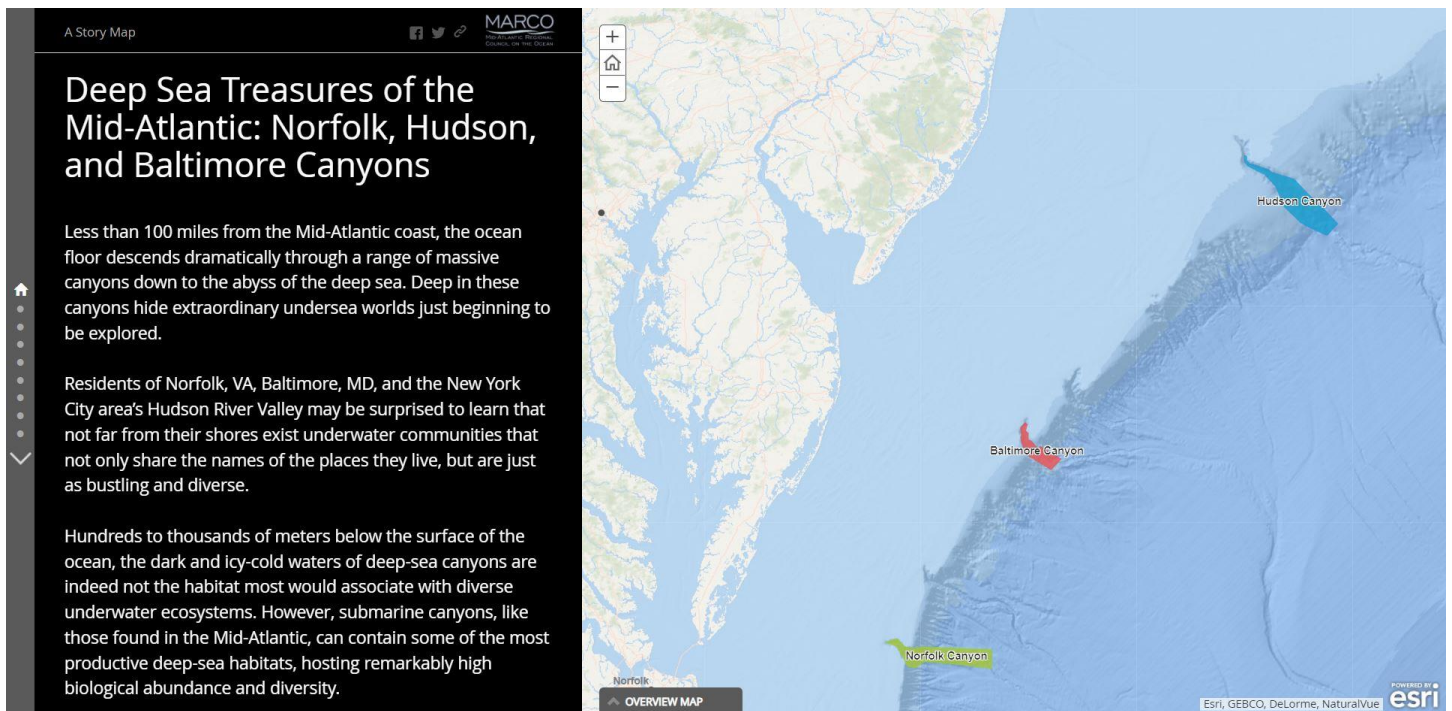
Above: A screenshot of the Coastal GEMS v4 mapping application showing two layers that received updated data and symbology during the FY20 grant period, Water Quality Assessment and Eastern Shore Water Trails.

Story Maps

Story Maps created during the FY20 grant period: The Coastal GIS Coordinator completed two story maps for MARCO intended as educational resources for all audiences including:

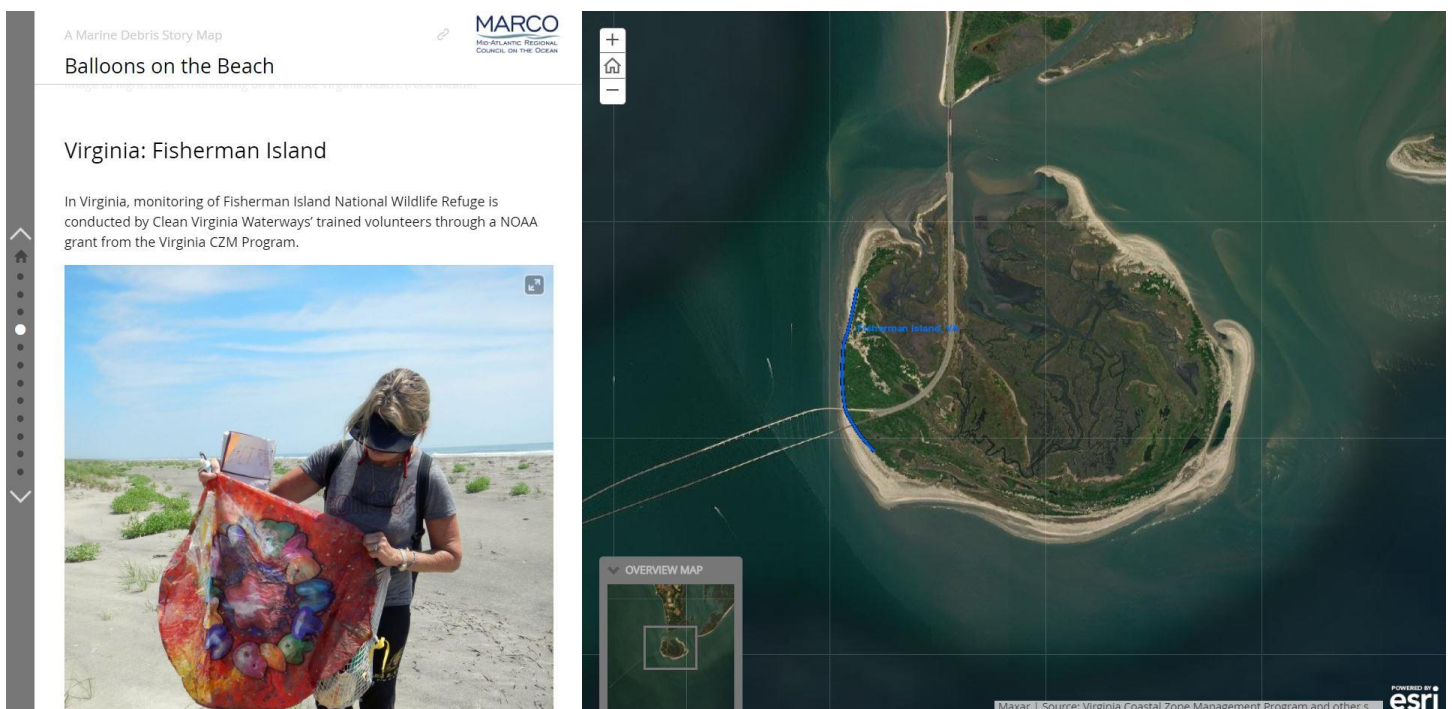
- A story map on marine debris with a focus on balloon litter highlighting beach monitoring programs in Mid-Atlantic States.
 - Available at <https://arcq.is/1HmSna>
- A story map highlighting three major deep-sea canyons in the Mid-Atlantic (Norfolk, Baltimore, and Hudson) with contextual information on deep-sea topography, canyons, exploration, corals, and protection.
 - Available at <https://arcq.is/Sb88r>

Story Maps continued:



Above: Screenshot of story map highlighting three major deep-sea canyons in the Mid-Atlantic.

Below: Screenshots of story map on marine debris with a focus on balloon litter highlighting beach monitoring programs in Mid-Atlantic States.



Coastal GIS Coordination

Data Requests

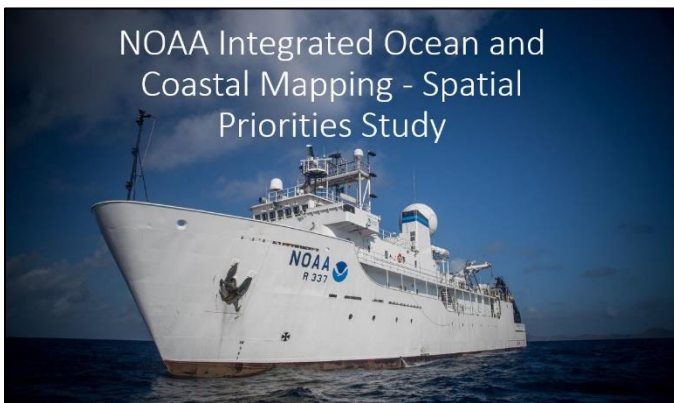
The Coastal GIS Coordinator responded promptly to all data and information inquiries. In the FY20 grant period this included requests from local, state, and federal agencies, academic institutions, and private contractors/companies.

Project Management

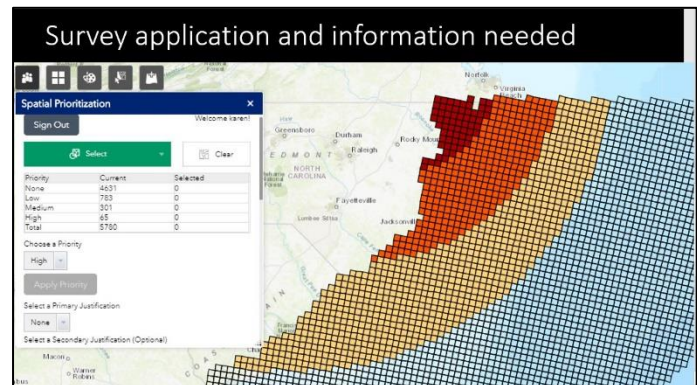
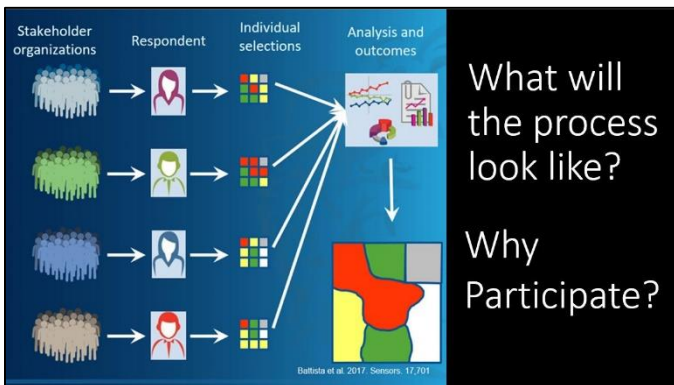
The Coastal GIS Coordinator performed VA CZM project manager duties in FY20 associated with Task 10 to VA DCR (Coastal Zone Natural Landscape Assessment High-Resolution Update) and Task 1.04 to VCU (Coastal Management GIS Support and Coastal GEMS Maintenance). In FY20, the Coastal GIS Coordinator also worked with CZM Coastal Planners to determine data product formats and need for data sharing plans for other CZM tasks as necessary.

Ocean Mapping

During the FY20 grant period the Coastal GIS Coordinator continued participation on the MARCO Ocean Mapping & Data Team (OMDT) and coordinated with NOAA Integrated Ocean and Coastal Mapping (IOCM) staff and other Mid-Atlantic state reps to engage state level stakeholders in identifying priority areas for mapping in the Mid-Atlantic region.



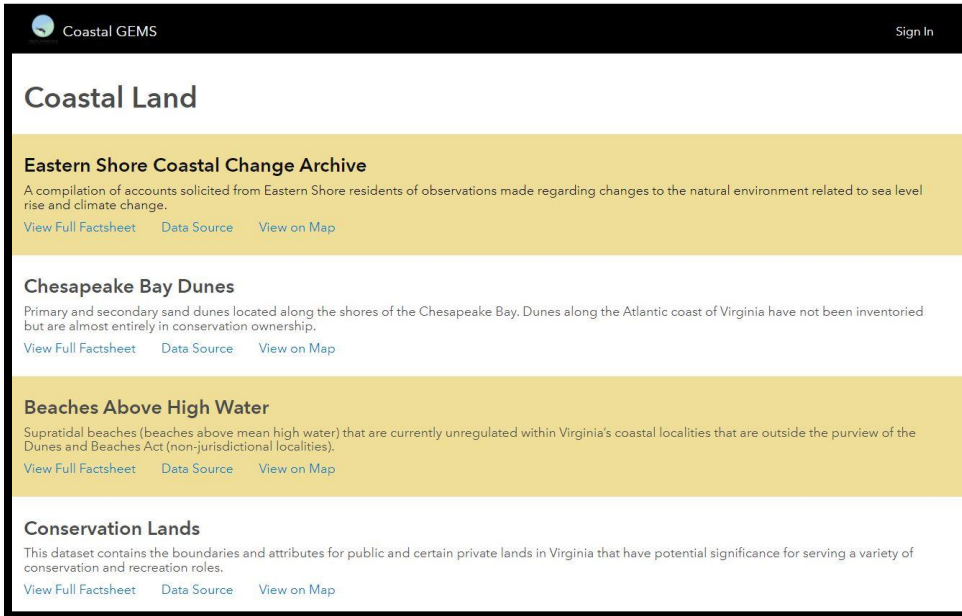
Left and Below: Slides created to explain NOAA IOCM Spatial Priorities Study process.



Training and Outreach

Coastal GEMS Demos

In FY20, the Coastal GIS Coordinator gave live demos of Coastal GEMS highlighting new features of the v4 mapping application and new landing site (including data library and story maps pages) at two CPT meetings and a GWRC Environmental Managers Meeting.



Left: Screenshot of the Coastal Land category page in the Coastal GEMS data library.

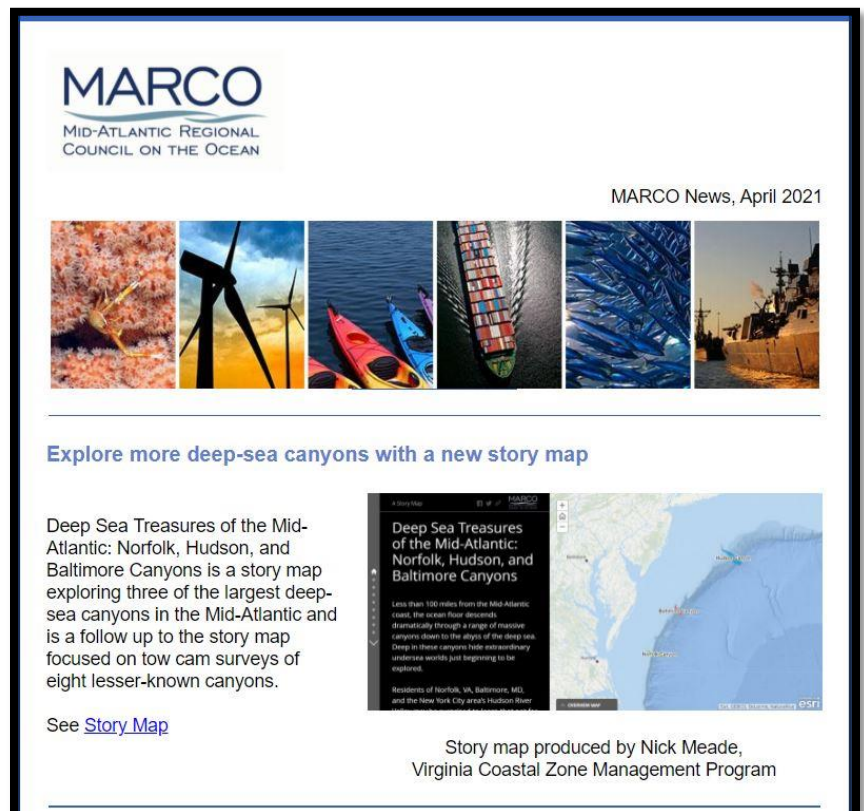
CZM Meeting Technical Assistance

The Coastal GIS Coordinator provided technical assistance to VA CZM and partners during the FY20 grant period including hosting WebEx meetings for Finance and Project ID subcommittees for Coastal Resilience Master Plan, setting up and running GoToMeeting for CPT meetings, making high-res screenshots for the CZM website and publications, and beta testing an offshore wind energy siting tool developed by TNC.

Publications

In FY20 the GIS Coordinator wrote an article for the VA CZM Magazine detailing features of new Coastal GEMS mapping application and landing site and an article for the MARCO newsletter promoting the story map on deep-sea canyons in the Mid-Atlantic. .

Right: MARCO News highlighting story map on deep-sea canyons in the Mid-Atlantic.

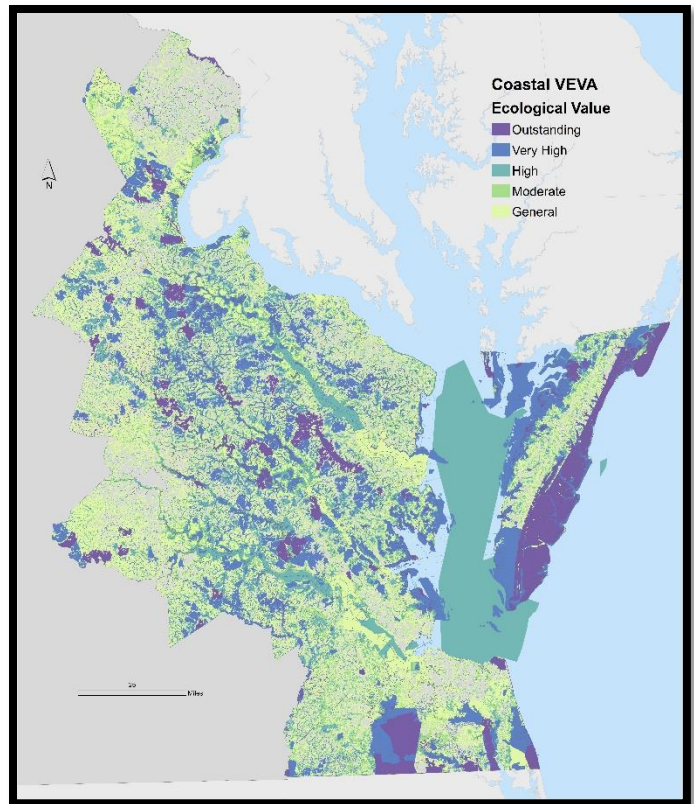


GIS Map Products and Services

The Coastal GIS Coordinator continued to provide technical support to VA CZM staff and partners in FY20, including:

- Creating a Coastal VEVA map for Office of the Governor Coastal Adaptation and Protection staff to use in Coastal Master Plan.
- Creating a series of map layouts and sharing packaged data of potential lease scenarios for DMME staff working to identify best locations for new commercial wind areas offshore of VA.
- Creating a large-scale map of offshore wind turbine array for CZM Fisheries Coordinator to utilize in meeting with state and fishing industry reps.
- Creating initial draft maps of ADV locations for a CZM Coastal Planner to present to the ADV Work Group.
- Creating a large-scale draft map for VA Aquarium showing human use data for VA Beach kiosk focusing on “What’s Out There” in the ocean.

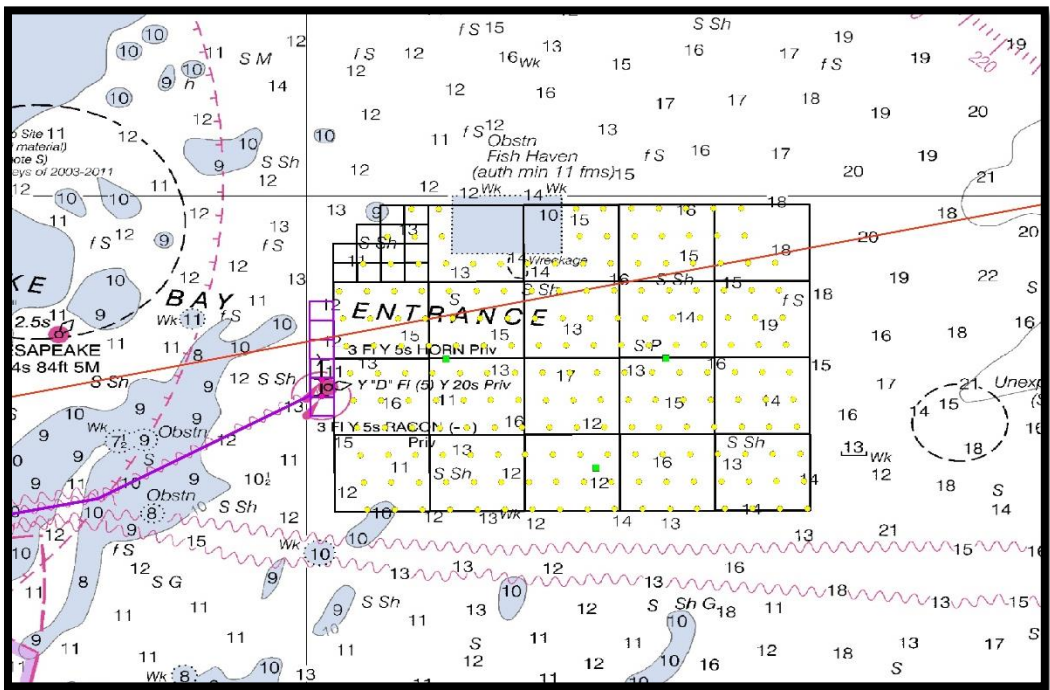
Right: Coastal VEVA map layout created for use in Coastal Master Plan.



This map has been blurred to comply with current confidentiality agreements. This work is ongoing and these maps have not yet been made public. Once maps are made public, likely by Spring 2022, this image will be replaced with the original map.

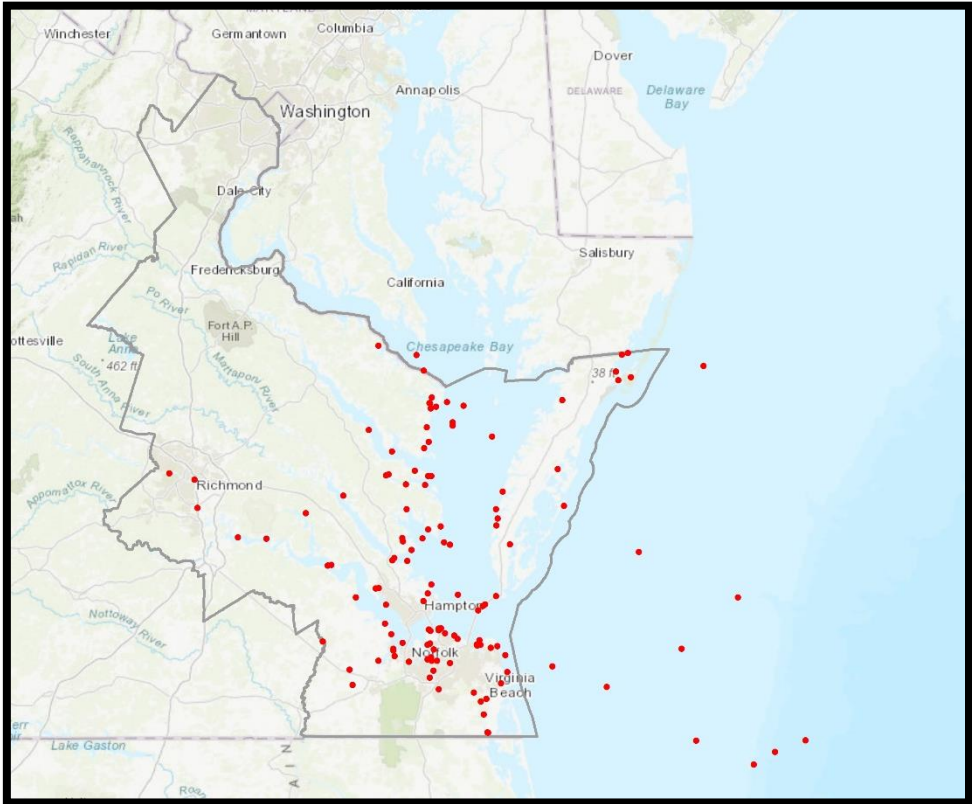
Left: One of a series of potential lease scenario maps created to assist DMME staff.

GIS Map Products and Services continued:



Left: A crop of a large-scale map of Virginia's planned offshore wind turbine array created for the CZM Fisheries Coordinator.

Right: An initial draft map of ADV locations created for a CZM Coastal Planner.



CZM Program Support Continued:

Below: A large-scale map created for the VA Aquarium showing human use data for a VA Beach kiosk.

