



Virginia Commonwealth University, Center for Environmental Studies
Coastal Management GIS Support: FY09 Annual Report

October 1st 2009 – September 30th 2010

NOAA Grant #NA09NOS4190163

Grant Year FY2009, Task #1.02



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's Center for Environmental Studies and is funded by the Virginia Coastal Zone Management Program at the Virginia Department of Environmental Quality through Grant #NA09NOS4190163 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 outlines tasks performed and products created under task #1.02 by the Virginia Coastal Zone Management Program's Coastal GIS Coordinator during the grant year FY2009 (October 1st 2009 – September 30th 2010).

In past grant years (FY2007 and FY2008) the final product for task #1.02 has consisted of a completed final project summary form submitted to NOAA with additional final product files (map images, presentations, spreadsheets, etc.) attached separately. Submitted as final product for FY2009, this report consolidates the final project summary narrative and additional final product attachments into one file.

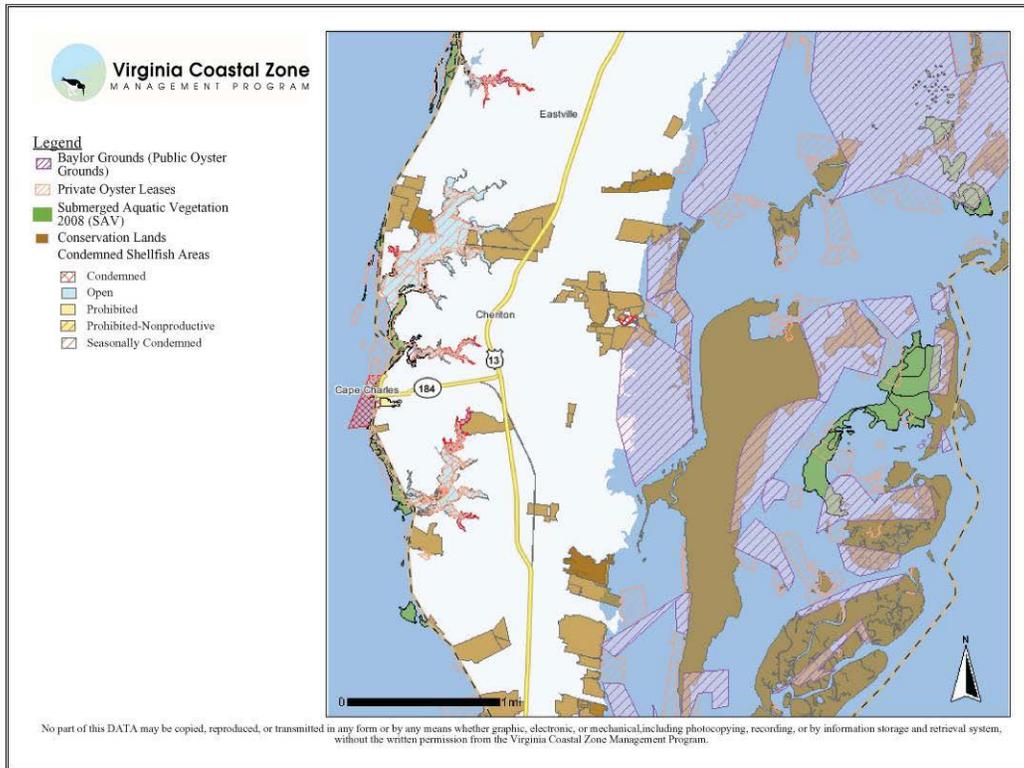
This report does not include an image of every map product created for task #1.02 during FY2009. Instead, the images in this report are a sample of the map products created selected to best illustrate each product description.

Contents

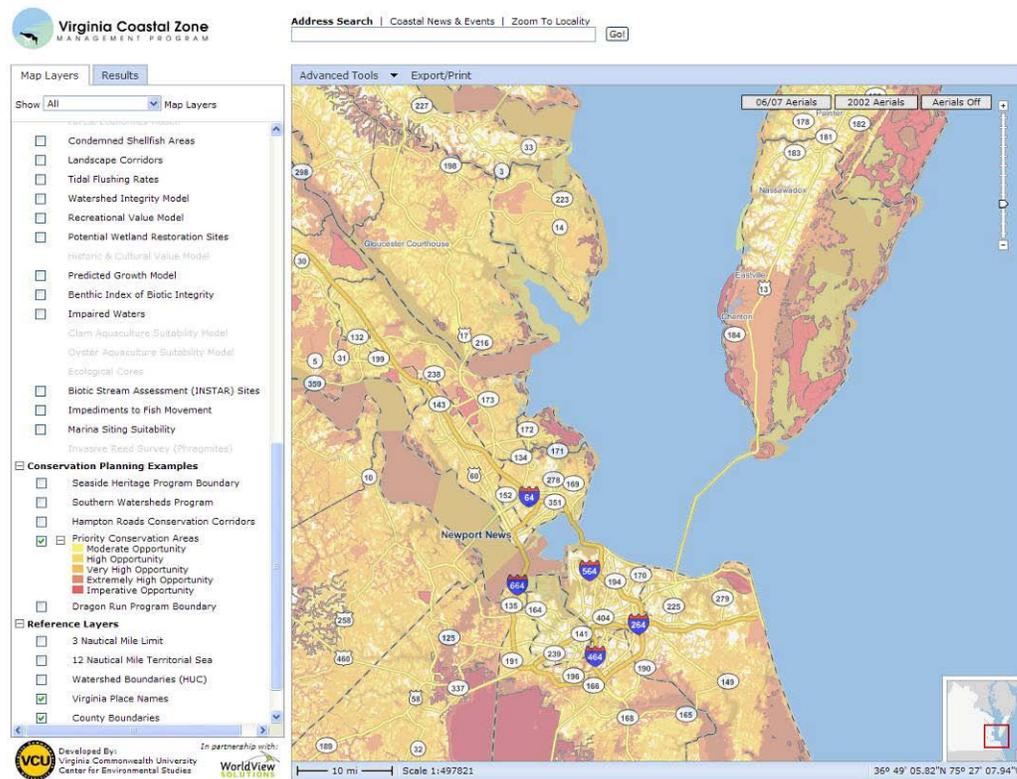
- Coastal GEMS Mapping Application
 - Updates.....3
 - Training.....4
- GIS Support
 - VMRC.....4-5
 - VA DEQ.....6
 - VA CZM.....7-10

The Coastal GIS Coordinator processed GIS data layers for effective display on Coastal GEMS and uploaded layers to VCU to be added to Coastal GEMS. GEMS fact sheets were added/updated where applicable.

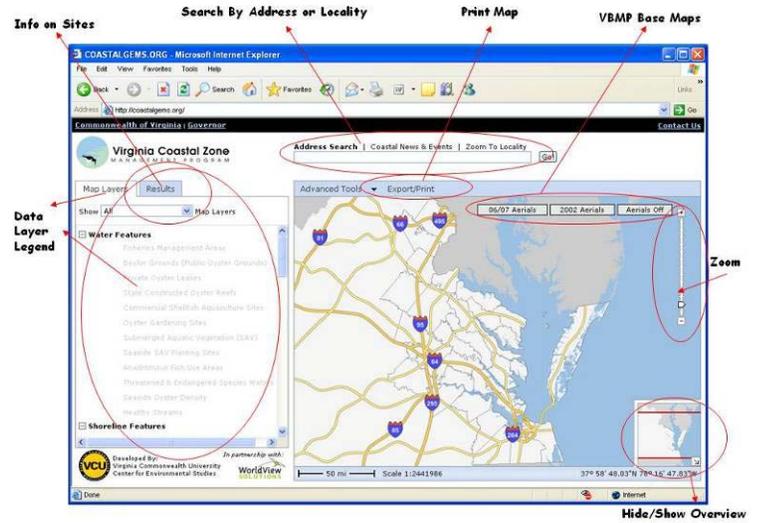
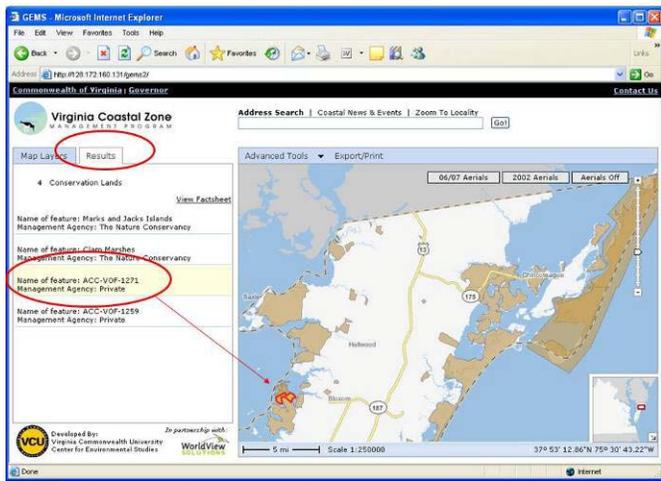
Layers updated in this period include: SAV Coverage, Seaside Phragmites, Conservation Lands, Public Oyster (Baylor) Grounds, Private Oyster Leases, and Condemned Shellfish Areas
 Layers added in this period include: 3 Nautical Mile and 12 Nautical Mile reference layers, Priority Conservation Areas. and Potential Wetland Restoration



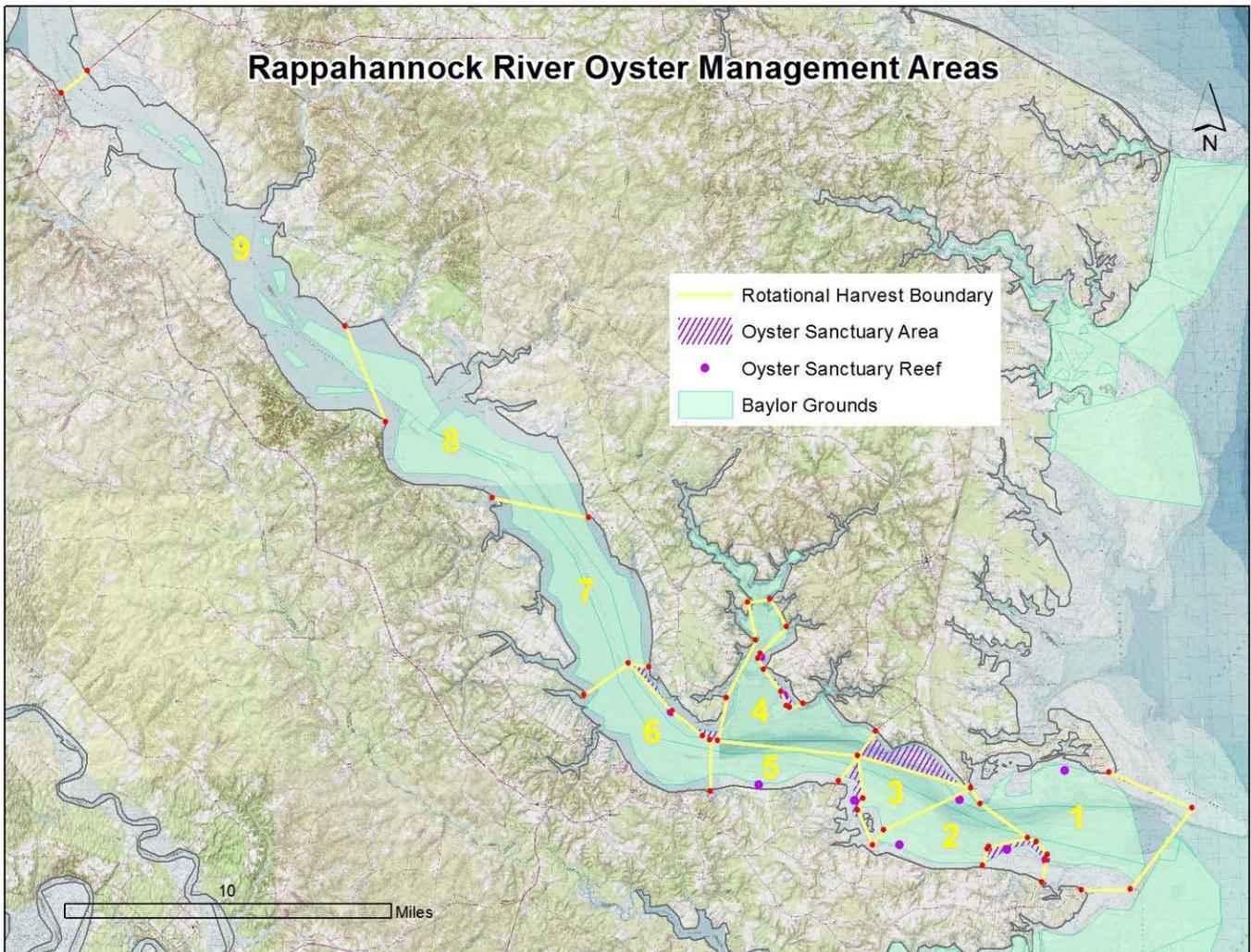
The map above was exported from Coastal GEMS and displays the layers updated during the FY2009 grant year. Below is a screenshot from the GEMS application showing the Priority Conservation Areas layer. To see more visit Coastal GEMS at www.coastalgems.org.



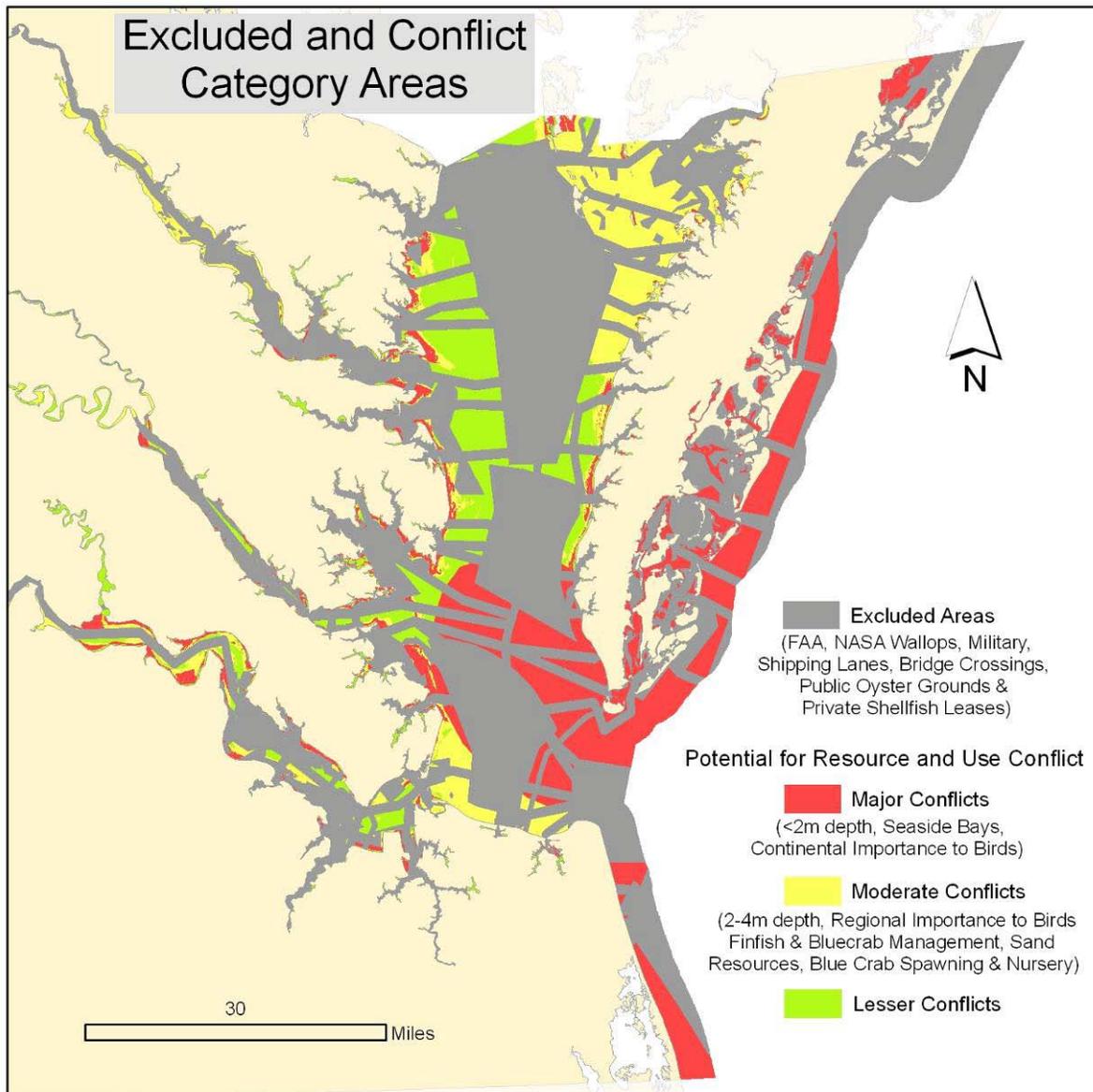
Although no live demos were requested, the Coastal GIS Coordinator provided, per request, slides outlining the main features and functions of Coastal GEMS for DEQ Environmental Education staff and CBNERRVA staff to utilize in presentations. Up to date Coastal GEMS factsheets were made available at all events attended by VA CZM staff.



The Coastal GIS Coordinator worked with VMRC staff to digitize coordinate data and convert CAD data to create polygon shapefiles. Shapefiles created include rotational oyster harvest areas in the Rappahannock and oyster sanctuaries on the seaside.



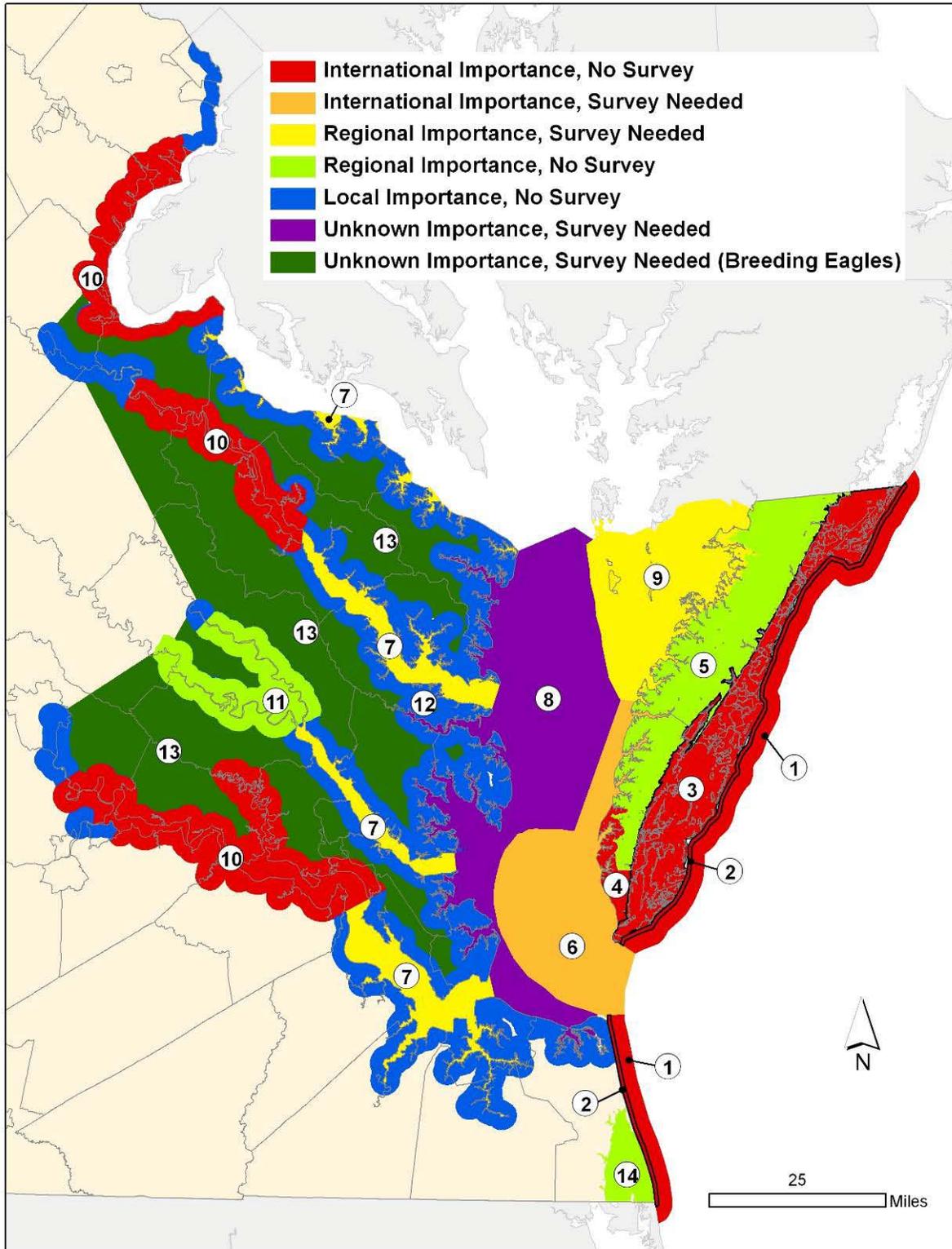
The Coastal GIS Coordinator provided GIS support to VMRC as they worked to create a report identifying subaqueous lands appropriate for renewable energy citing in response to SB 1350. The GIS Coordinator prepared eighteen maps that were included in the VMRC SB1350 report of Virginia waters showing conflicts or potential conflicts for offshore wind turbines. The maps combined data on wind speed, bathymetry, military exclusions, navigation channels, public and private shellfish grounds and estimated bird conflicts.



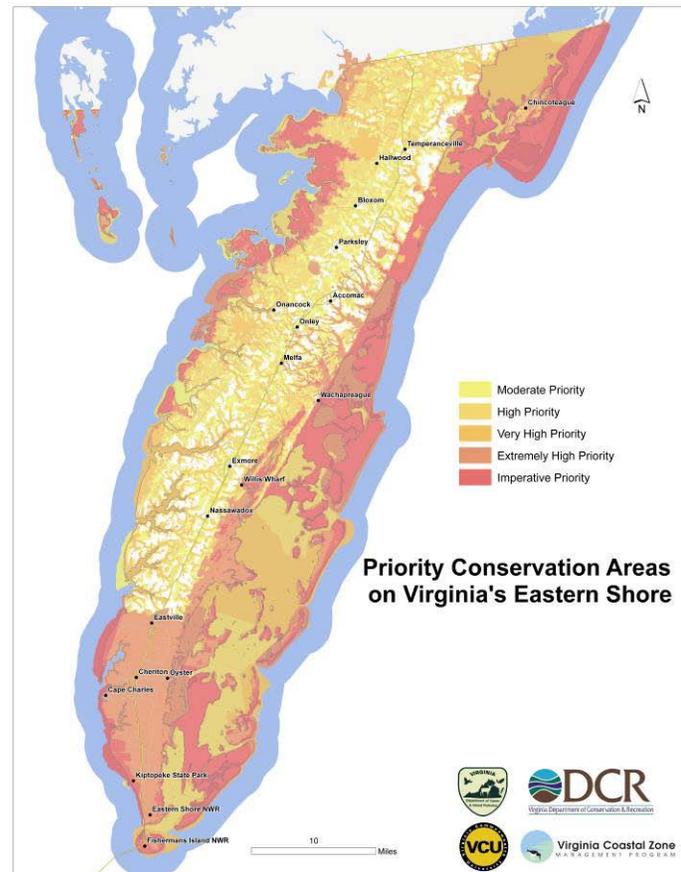
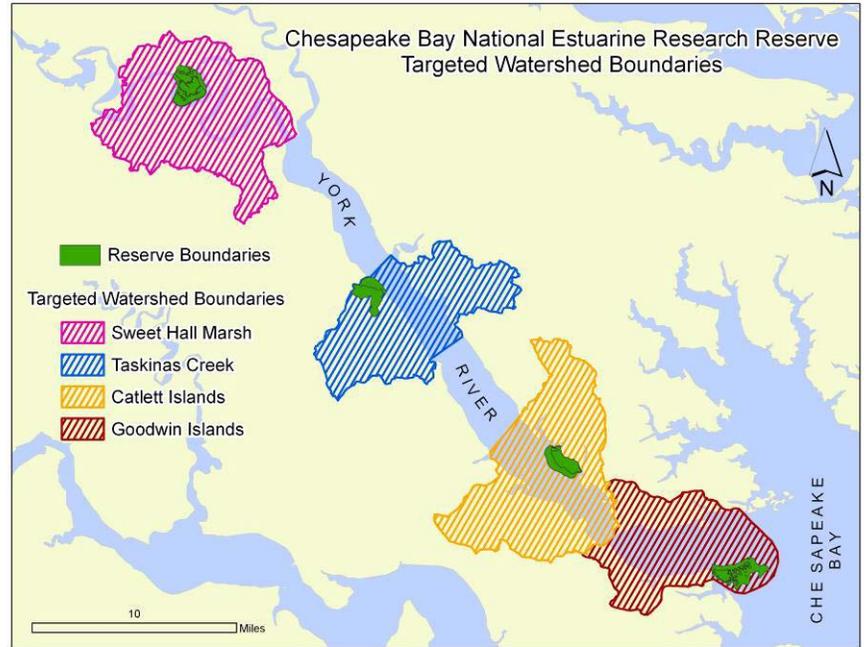
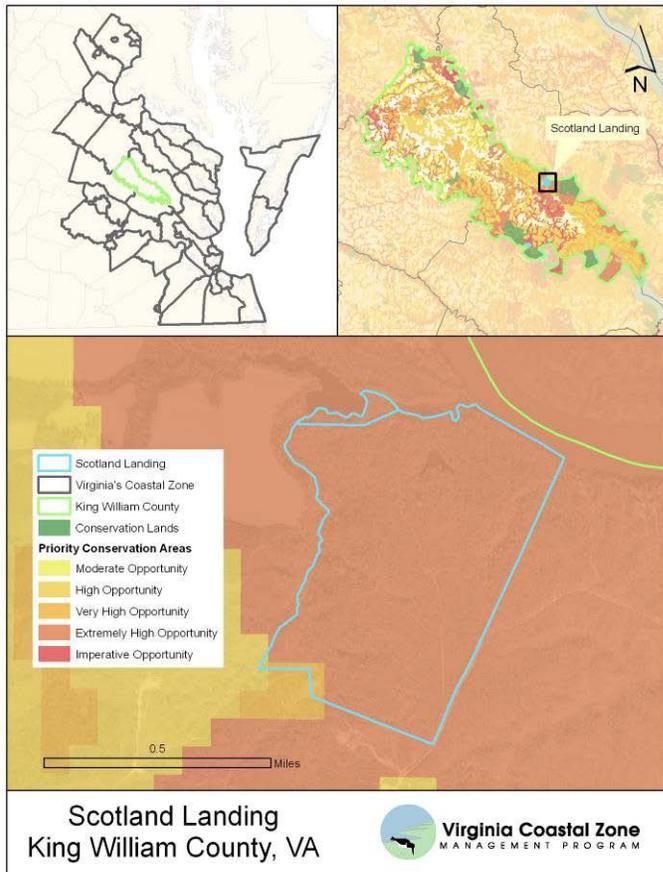
The above map, displaying the resource and use conflicts categories created as part of the report, is one of eighteen maps in the full report “Opportunities for Offshore Wind Energy in State Territorial Waters” (Senate Document No. 10) which can be found here:

[http://leg2.state.va.us/dls/h&sdocs.nsf/fc86c2b17a1cf388852570f9006f1299/6195a26e90b1329b852576d60076aa99/\\$FILE/SD10.pdf](http://leg2.state.va.us/dls/h&sdocs.nsf/fc86c2b17a1cf388852570f9006f1299/6195a26e90b1329b852576d60076aa99/$FILE/SD10.pdf)

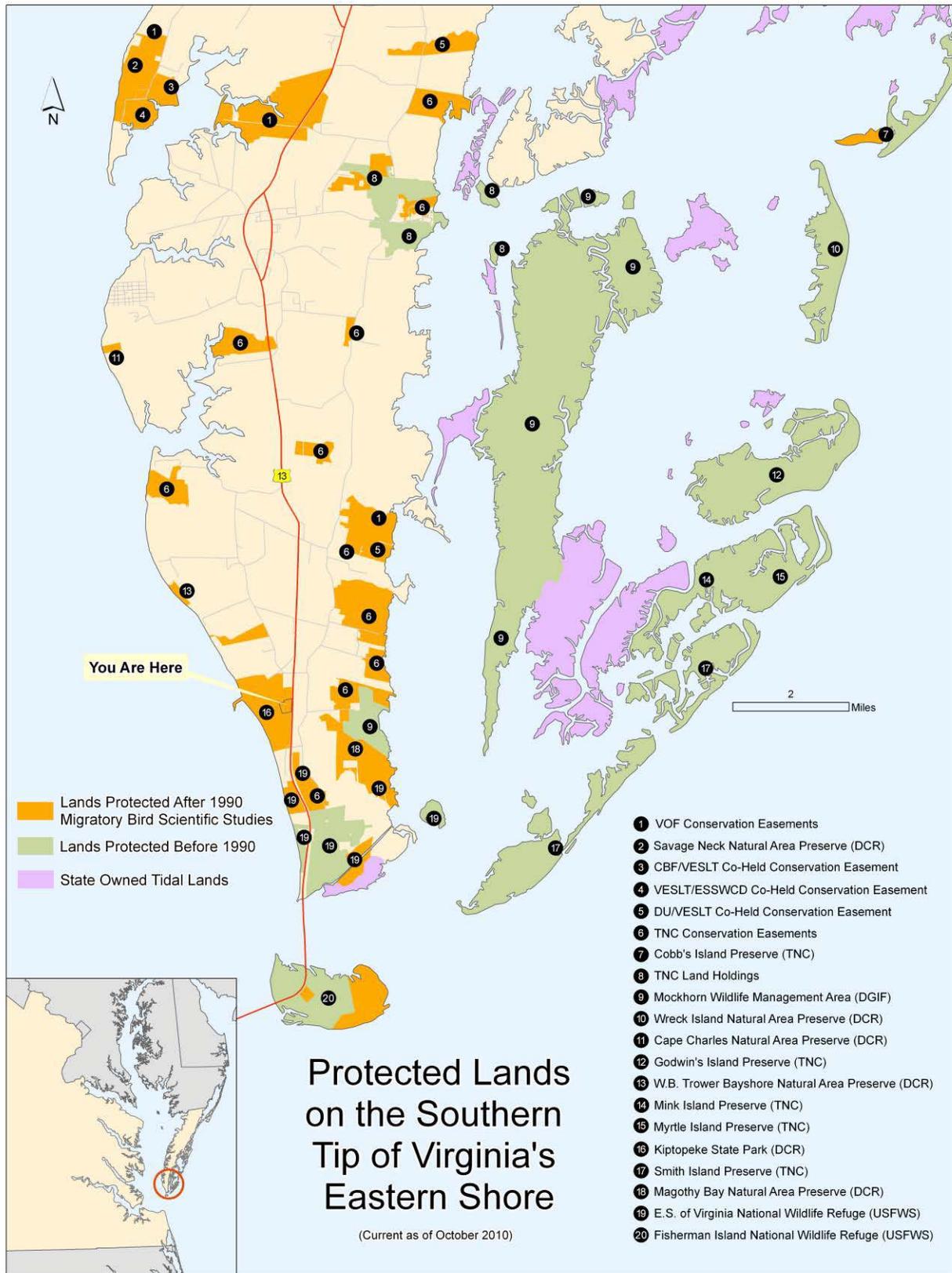
The Coastal GIS Coordinator provided GIS support to DEQ's Wind Energy Regulatory Advisory Panel as they worked to create proposed regulation to permit small renewable wind energy projects. The GIS Coordinator prepared a detailed list of available GIS datasets that would meet the spatial planning needs of the panel. The GIS Coordinator also worked with Center for Conservation Biology and DGIF staff to create a coastal avian protection zone map and narrative. The proposed regulation lists Coastal GEMS as one of the online data portals where applicants for permit by rule wind energy projects in Virginia's coastal zone can obtain natural resource spatial data. When it becomes final, Coastal GEMS will house the Coastal Avian Protection Zone spatial data created as part of the regulation.



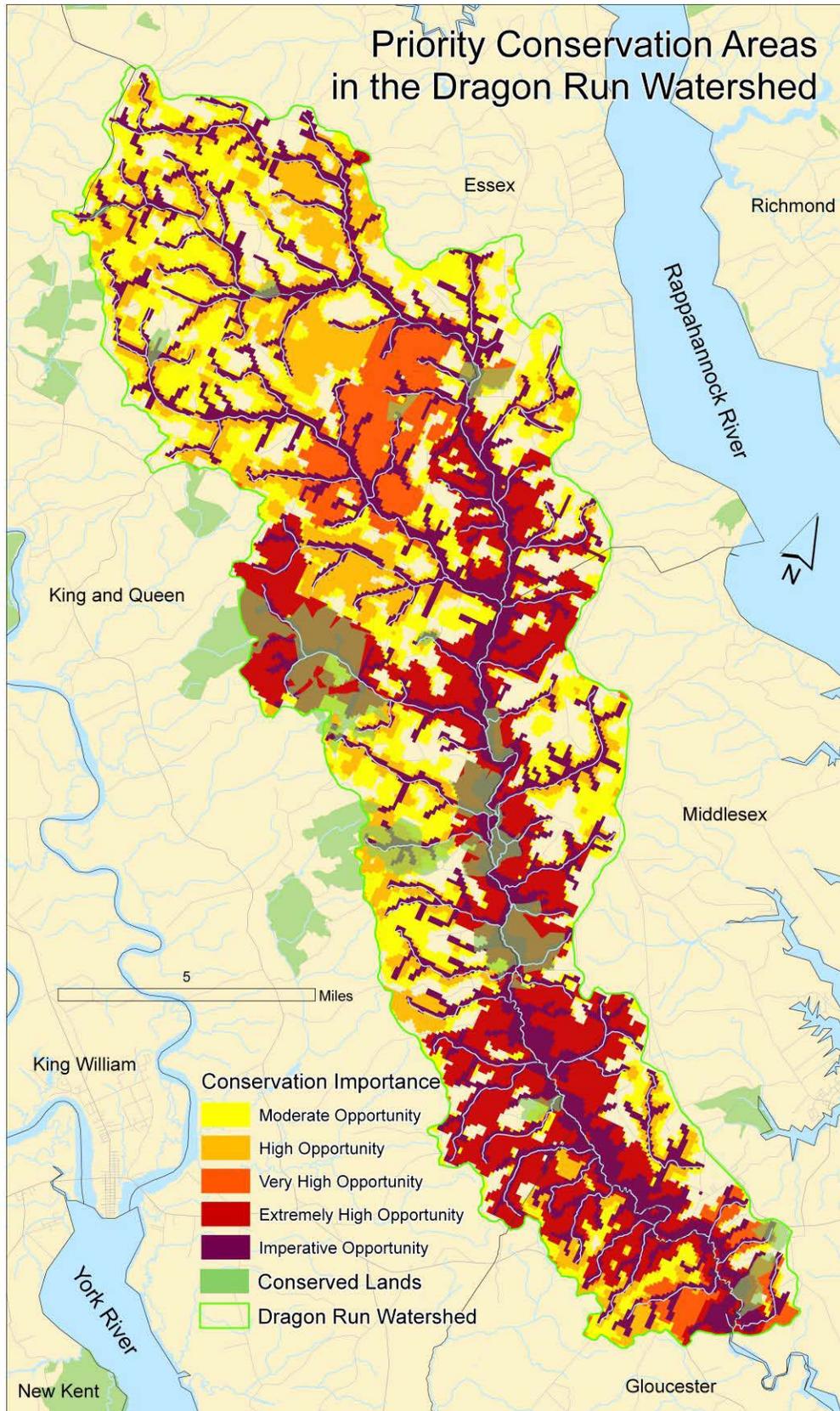
The Coastal GIS Coordinator produced coastal resource maps and made GIS based calculations as needed for CZM staff to utilize in meetings, presentations, and publications. This includes maps produced for the VA CZM FY11 CELCP application, the VA CELCP Plan, the VA CZM Magazine, and large scale printouts for use in presentations.



The Coastal GIS Coordinator worked with other CZM staff as well as members of the Southern Tip Partnership to create a map of lands conserved on the southern tip since the partnership was formed. The map was incorporated into signage at Kiptopeke State Park.



CZM staff participated in Dragon Run Day with an exhibit displaying work that the VA CZM Program has supported in the Dragon Run watershed. VA CZM has supported new data development by working with VA DGIF, VA DCR and VCU to create the Priority Conservation Areas (PCA) dataset. The Coastal GIS Coordinator created a map layout for the exhibit displaying the PCA data in the Dragon Run Watershed.

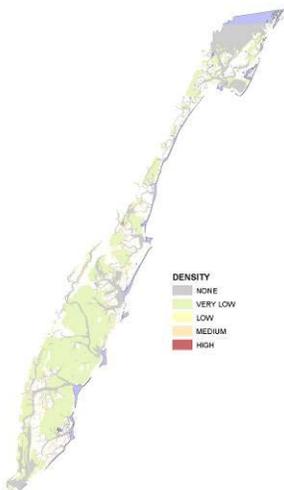


The Coastal GIS Coordinator has been involved in the Seaside Special Area Management Plan (SAMP) advisory group meetings. Involvement has included performing GIS calculations and creating maps using existing data to stimulate preliminary discussions, actively participating in discussion on current in progress Seaside SAMP grants designed to analyze GIS data on seaside resources, and drafting a data sharing agreement for use by the group.

Seaside Aquatic Spatial Analysis (Rough!)



	Total (Acres)	% of Total Open Water
Total Seaside Open Water	153,176	
Public Oyster Grounds (Baylor)	50,256	33%
Private Oyster Leases	19,059	12%
Unassigned Areas	83,861	55%
Total	153,176	100%
<i>SAV Coverage (2007)</i>	3,863	2.5%
<i>SAV set aside area</i>	728	0.5%
<i>SAV restoration goal (coverage prior to 1930)</i>	?	?
<i>Number of State Constructed Oyster Reefs</i>	43	



Oyster Density	Total (Acres)	% of Total Open Water
High	875	0.6%
Medium	5,314	3.5%
Low	1,741	1.1%
Very Low	90,131	58.8%
None	41,728	27.2%

Oyster Density in Baylor	Total (Acres)	% of Total Baylor
High	336	0.7%
Medium	1,272	2.5%
Low	329	0.7%
Very Low	37,581	74.8%
None	8,816	17.5%

Oyster Density in P.O.L.	Total (Acres)	% of Total P.O.L.
High	223	1.2%
Medium	142	0.7%
Low	34	0.2%
Very Low	16,122	84.6%
None	2,451	12.9%

Oyster Density in Unassigned Areas	Total (Acres)	% of Total Unassigned Areas
High	316	0.4%
Medium	3,900	4.7%
Low	1,378	1.6%
Very Low	36,428	43.4%
None	30,461	36.3%

Percentages for all oyster density data do not add up to 100% in this analysis because the oyster density data covers a slightly smaller geographic extent than the open water area.

