

# Virginia Coastal Geospatial and Educational Mapping System

...a gateway to information on the location, value and management of Virginia's coastal resources



## What Is Coastal GEMS?

- A **gateway** to Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to **collaborating agencies** responsible for current data. Access Coastal GEMS at [www.deq.virginia.gov/coastal/coastalgems.html](http://www.deq.virginia.gov/coastal/coastalgems.html) or [www.coastalgems.org](http://www.coastalgems.org)
- A **growing inventory** of water and land based natural resources, conservation planning tools, and planning examples that can help us to protect Virginia's coastal ecosystems.
- A tool to promote **community involvement** and environmental education.

## How Coastal GEMS came to be...

During a Virginia CZM Program workshop in 2001, state and local partners expressed the need for a "vision" of Virginia's Coastal Zone or a comprehensive inventory of Virginia's coastal resources. Many questions were raised. What is the current status of Virginia's coastal resources? How can these coastal resources be managed in a sustainable fashion in light of increasing development pressures?

As a first step in achieving this "vision," our partners agreed it was important to identify and map the best remaining blue (water-based) and green (land-based) natural resources within Virginia's coastal zone. We began collecting spatial data and creating management tools to be included in Coastal GEMS.

The idea grew into the concept of providing a gateway, or starting point, for accessing more comprehensive coastal resource information from all of our natural resource agencies and coastal partners for consideration in planning efforts and management decisions.

In addition to funding data layer development by CZM partners, we contracted with Virginia Commonwealth University's Center for Environmental Studies and WorldView Solutions, Inc. to create the Coastal GEMS application. Additional data layers will be incorporated into Coastal GEMS as agencies continue to develop data and make it available for inclusion.



## Who Should Use Coastal GEMS?

A major goal of Coastal GEMS is to foster stronger understanding of how activities on the land and in the water affect each other. It is the intent of Coastal GEMS to create a stronger linkage between local land use plans and state and federal water use policies.

Coastal GEMS can be used by:

- **Local and regional planning agencies** to better manage growth by determining the most suitable areas for conservation and development.
- **State and federal agencies** to better manage projects such as roads and major facilities, habitat restoration, and public access plans. They could also use Coastal GEMS as a starting point for the environmental review process in order to quickly access agency data.
- **Academic institutions** to educate students about coastal resource use and values and to provide a basis of information for classroom projects and/or research.
- **Private citizens, advocacy groups, and businesses** to formulate their positions on the potential impacts of projects on coastal resources.
- **General public** to learn more about Virginia's coastal resources.

Coastal GEMS is an evolving tool. Your feedback will help us improve its usefulness and usability. We would also like to hear your 'success stories' - how GEMS has aided and positively impacted your work, project or efforts. Provide your comments and suggestions to Nick Meade, Virginia CZM Program, at [Nick.Meade@deq.virginia.gov](mailto:Nick.Meade@deq.virginia.gov).

Virginia Coastal Zone Management Program  
Department of Environmental Quality  
629 East Main Street  
Richmond, Virginia 23219



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## Version Two: Contributing Partners and Data Layers

VCU

WorldView  
SOLUTIONS



WILLIAM & MARY  
VIMS  
VIRGINIA INSTITUTE OF MARINE SCIENCE  
SCHOOL OF MARINE SCIENCE

DEQ  
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY



DCR  
Virginia Department of Conservation and Recreation



The Nature Conservancy  
SAVE THE LAKE. BEAT THE PLAINS IN COVA.



VDH  
VIRGINIA DEPARTMENT OF HEALTH  
Protecting You and Your Environment

DHR  
Department of Historic Resources

Audubon

Middle Peninsula Planning District Commission

HAMPTON ROADS  
PLANNING DISTRICT COMMISSION

### Water Features

- Fisheries Management Areas
- Baylor Grounds (Public Oyster Grounds)
- Private Oyster Leases
- State Constructed Oyster Reefs
- Commercial Shellfish Aquaculture Sites
- Oyster Gardening Sites
- Submerged Aquatic Vegetation (SAV)
- Seaside SAV Planting Sites
- Anadromous Fish Use Areas
- Threatened & Endangered Species Waters
- Seaside Oyster Density
- Healthy Streams

### Shoreline Features

- Beaches Above High Water
- Chesapeake Bay Dunes
- Wetlands (Tidal & Non-Tidal)
- Restored Riparian Buffer Sites

### Land Features

- Conservation Lands
- Forest Cover
- Barrier Island Ownership

### Wildlife Features

- Essential Wildlife Habitat
- Important Bird Areas
- Migratory Songbird Stopover Habitat

### Recreational Features

- VDGIF Boat Ramps
- Scenic Rivers
- Birding & Wildlife Trail Sites and Loops
- Seaside Eastern Shore Water Trail
- Public Access Sites

### Conservation Planning Tools

- Clam/Oyster Aquaculture Suitability Models
- Accomack County Buffer Classification
- Invasive Reed (Phragmites)
- Historic & Cultural Value Model
- Predicted Growth Model
- Ecological Cores & Landscape Corridors
- Marina Siting Suitability Model
- Impediments to Fish Movement
- Impaired Waters
- Biotic Stream Assessment (INSTAR) Locations
- Recreational Value Model
- Watershed Integrity Model
- Agricultural Value Model
- Forest Economics Model
- Tidal Flushing Rates
- Clam/Oyster Aquaculture Vulnerability Models
- Benthic Index of Biotic Integrity
- Condemned Shellfish Areas
- Potential Wetland Restoration Sites

### Conservation Planning Examples

- Special Area Management Program Boundaries
- Hampton Roads Conservation Corridors
- Priority Conservation Areas