Virginia Coastal Geospatial & Educational Mapping System (Coastal GEMS)

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.

• 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.

Coastal GEMS version 3 coming summer 2012
Upgrade from ESRI ArcIMS service to ArcGIS 10

New features including:
• Additional basemaps
• Improved cartography
• User markup functionalities
• Search layers function

www.deq.virginia.gov/Programs/CoastalZoneManagement/CoastalGEMSGeospatialData.aspx
Who Is Using 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 is 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 also use Coastal GEMS as a starting point for the environmental review processes 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.

For more details about Coastal GEMS:

Nick Meade  
Virginia CZM Program  
(804) 698-4297  
Nick.Meade@deq.virginia.gov  
www.deq.virginia.gov/Programs/CoastalZoneManagement/CoastalGEMSGeospatialData.aspx  

**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  
- Public Access 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  
- Coastal Virginia Ecological Value Assessment  
- Coastal Avian Protection Zones