



Semi-Annual Success Story ("Section C")  
*submitted to the*  
Office of Ocean and Coastal Resource Management/NOAA  
April 2010 – September 2010

### **Living Shoreline Design Guidance**

**Geographic Location:** Virginia's Coastal Zone; Congressional Districts 1-4, 7, 8, 10, 11

**CZMA Performance Measure Area:**  
Coastal Hazards

**How the Virginia CZM Program Was Involved:**



The Virginia CZM Program advocates a more natural approach to shore stabilization, termed "Living Shorelines" that uses marshes, beaches, and dunes to protect the shorelines along our creeks, rivers, and bays. As part of a Section 309 Shoreline Management Strategy, the Virginia CZM Program helped organize and support a Living Shoreline Summit. The Summit was a first step in a multifaceted strategy, and demonstrated that there was great interest in, and potential for, living shorelines. Summit participants noted that in order to be successful, waterfront property owners needed to be aware of the technique, the regulatory process needed to promote its use, and that consultants and contractors needed to be trained in the design and construction of living shorelines. In order to help meet this last goal, the Virginia CZM Program provided funding to the Virginia Institute of Marine Science (VIMS) to develop a living shoreline design guidance document, as well as a curriculum for a class on living shoreline design.

The VIMS publication, Living Shoreline Design Guidelines for Shore Protection in Virginia's Estuarine Environments was released in July, 2010, and is meant to address the need to educate consultants, contractors, local and state government staff, and other professionals in the use of living shoreline strategies. Much of the data to support the design guidelines was acquired through research funded by the Virginia CZM to document the habitat value and viability of living shorelines. The guidelines provide the necessary information to determine where living shoreline approaches are appropriate and what is involved in their design and construction. They focus on the use of created marsh fringes, but also touch on the use of beaches for shore protection.

The publication was created for the Virginia portion of the Chesapeake Bay estuarine system but may be applicable to other similar estuarine environments. Included in the report are design considerations for living shoreline strategies as well as case studies of different types of existing structures. These provide examples of successful projects in the Virginia-portion of the Chesapeake Bay. Also included are design examples of typical structures. Recommendations made in VIMS Shoreline Studies Program's Mathews County Shoreline Management Plan were used as a base for discussion. Site data was gathered for two sites where sills would be the preferred shore management strategy. Once designed, the sill cost was contrasted with the cost of a rock revetment, which often is used for shore protection in similar circumstances.

The Living Shoreline Design and Construction curriculum, test, and tools were developed by VIMS and applications were created in Google Earth to facilitate the use of specific data in structure design. A "Living Shoreline Design and Construction" class was held September 29, 2010. Twenty one consultants and contractors in the field of shore erosion control attended.

Other Virginia CZM Program Shoreline Strategy initiatives, including outreach materials, an improved living shoreline website at VIMS, and regulatory and policy changes have caused an increase in the demand for living shorelines in Virginia. The design guidelines and contractor training are intended to help meet that demand by increasing the supply of consultants and contractors that are qualified to design and install living shorelines. In the future, Virginia CZM efforts to promote the use of living shorelines will focus on development of local shoreline management plans that indicate specifically where these techniques are most appropriate and provide a vehicle to communicate local shoreline management policy.

The Living Shorelines Design Guidelines, along with training resources and links to other pertinent living shoreline information can be found at:

<http://web.vims.edu/physical/research/shoreline/LivingShorelineDesign.html>