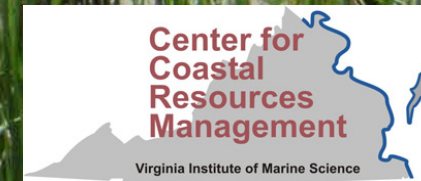


# Sustainable Shorelines On the Rise: Positive actions toward coastal resilience

Pamela Mason  
Wetlands Workshop  
May 2, 2017



# In the Beginning : Promote Living Shorelines

## CCRM/ VIMS Report to Governor and General Assembly 2010

### Recommendations:

- State Legislative Requirement
- State Regulation to prefer natural shorelines for erosion control
- General Permit
- Exemption from state permit
- Design Assistance
- Cost-share/low-no interest loans
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- Permit fee waiver
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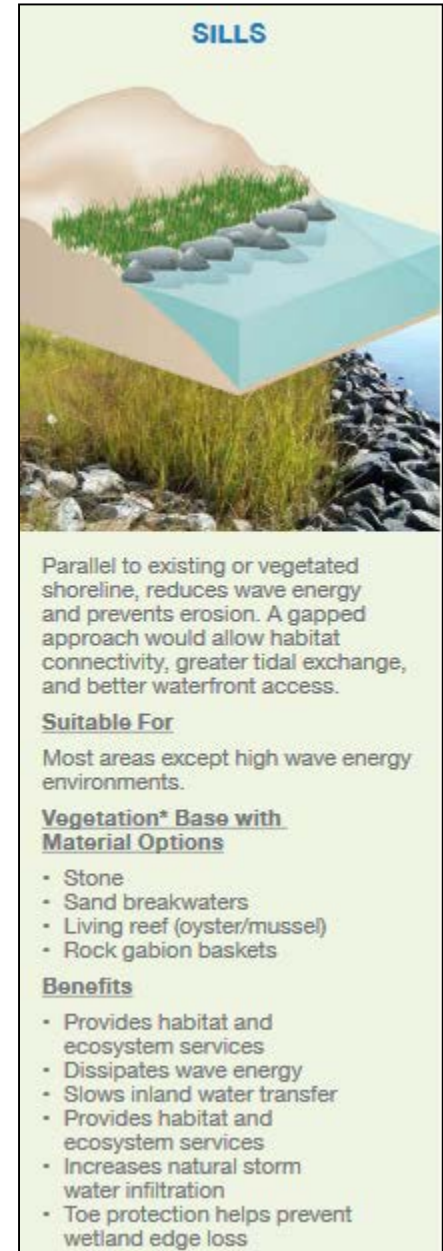
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# State Legislative Requirement

Legislation January 2011, effective July 1, 2011

Preference NOT Requirement

*...“it is the policy of the Commonwealth to support living shorelines as the preferred alternative for stabilizing tidal shorelines”...*

**§ 28.2-104.1 C1 Living shorelines; development of general permit; guidance.**



# General Permit

Legislation January 2011, Clarifying legislation 2014

Lead: VMRC

Workgroup Members: CCRM, Shoreline Studies, DCR, DEQ, Corps

*“The Commission, in cooperation with the Department of Conservation and Recreation and with technical assistance from the Virginia Institute of Marine Science, shall establish and implement a general permit regulation that authorizes and encourages the use of living shorelines as the preferred alternative for stabilizing tidal shorelines in the Commonwealth. In developing the general permit, the Commission shall consult with the U.S. Army Corps of Engineers to ensure the minimization of conflicts with federal law and regulation.”*

**§ 28.2-104.1. Living shorelines; development of general permit; guidance.**



# Design Assistance

## On-Line Tools:

**Living Shoreline Design - A class for marine contractors**

**Living Shorelines Website** <http://ccrm.vims.edu/livingshorelines/>

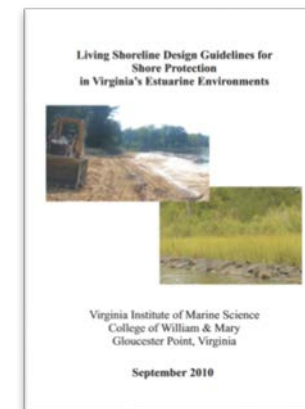
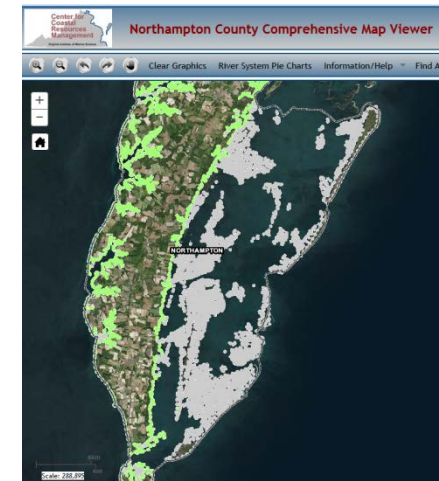
**Shoreline Management Model – Site Suitability** <http://ccrm.vims.edu/ccrmp>

## Manual:

**Living Shoreline Design Guidelines for Shore Protection in Virginia's Estuarine Environments**

[http://www.vims.edu/research/departments/physical/programs/ssp/docs/living\\_shorelines\\_guidelines.pdf](http://www.vims.edu/research/departments/physical/programs/ssp/docs/living_shorelines_guidelines.pdf)

## Training Opportunities via CCRM Outreach



# Cost-share/(low-no interest loans)

**Lead: Soil and Water Conservation Districts  
Virginia Conservation Assistance Program  
(VCAP)**

**Cost-share for non-agriculture lands for Best  
Management Practices  
Funds- EPA Chesapeake Bay Implementation  
Grant**



**Virginia Conservation  
Assistance Program**

Presented by Virginia Association of Soil & Water Conservation Districts

## Eligible Practices...

Most practices are eligible for 75% cost-share and some practices provide a flat incentive payment up to the installation cost.



Conservation Landscaping



Impervious Surface Removal



Permeable Pavement Installation



Dry Wells



Rainwater Harvesting



Vegetated Conveyance System



Constructed Wetlands



Bioretention



Rain Gardens



Infiltration



Green Roofs



Living Shorelines

# (Cost-share)/low-no interest loans

## Water Quality Revolving Loan - Nonpoint sediment control

### Legislation 2015

#### Lead: Local Government

“Loans may be made from the Fund, in the Board's discretion, (i) to a local government for the purpose of establishing living shorelines, as defined in § 28.2-104.1” ...

“to a local government that has developed a funding program ...to facilitate the establishment of living shorelines”

#### **§ 62.1-229.5. Loans for living shorelines**



# Tax Incentives (Waiver)

## Local Government Taxation

### Living Shorelines added to existing exemption 2016

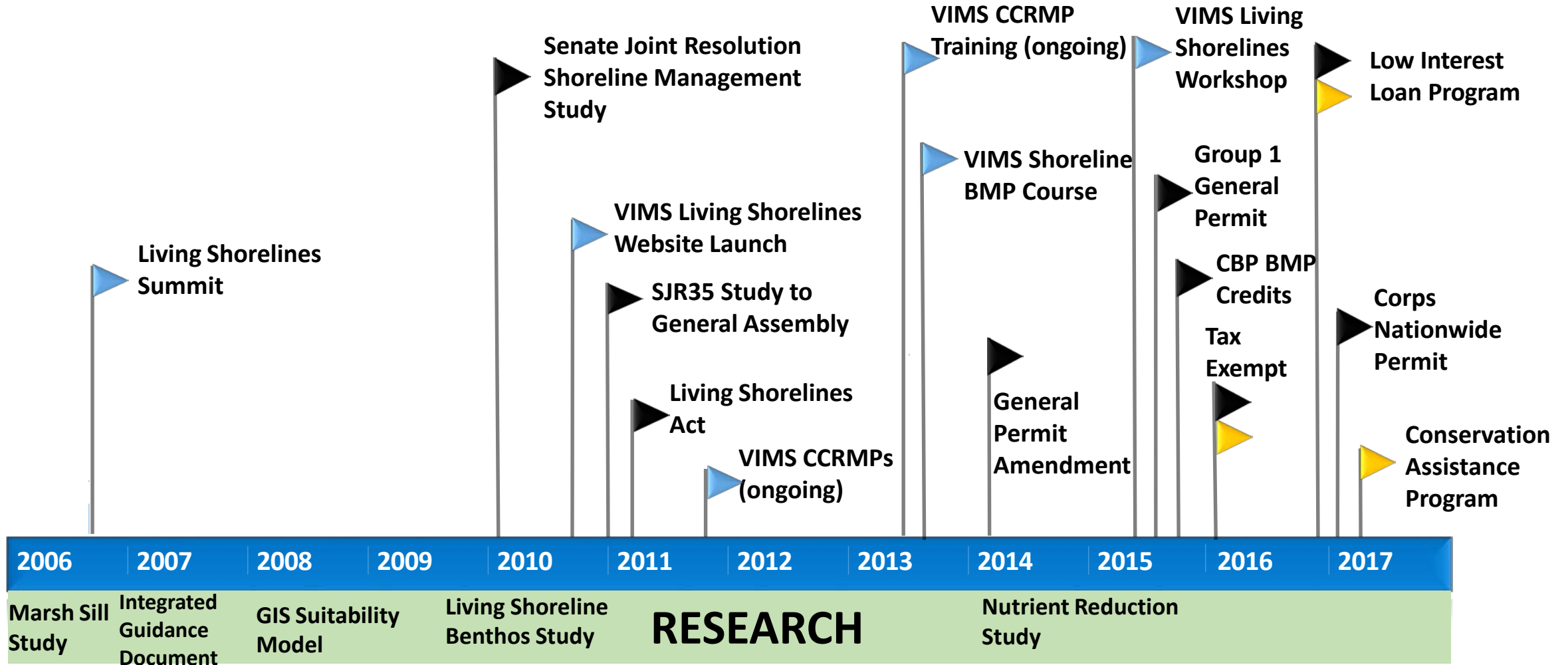
*...“any living shoreline project approved by the Virginia Marine Resources Commission or the applicable local wetlands board and not prohibited by local ordinance that satisfies the definition of a living shoreline consistent with § 28.2-104.1 shall qualify for full exemption from such taxation by local governments.”*

**§ 58.1-3666 Wetlands and riparian buffers; living shorelines.**

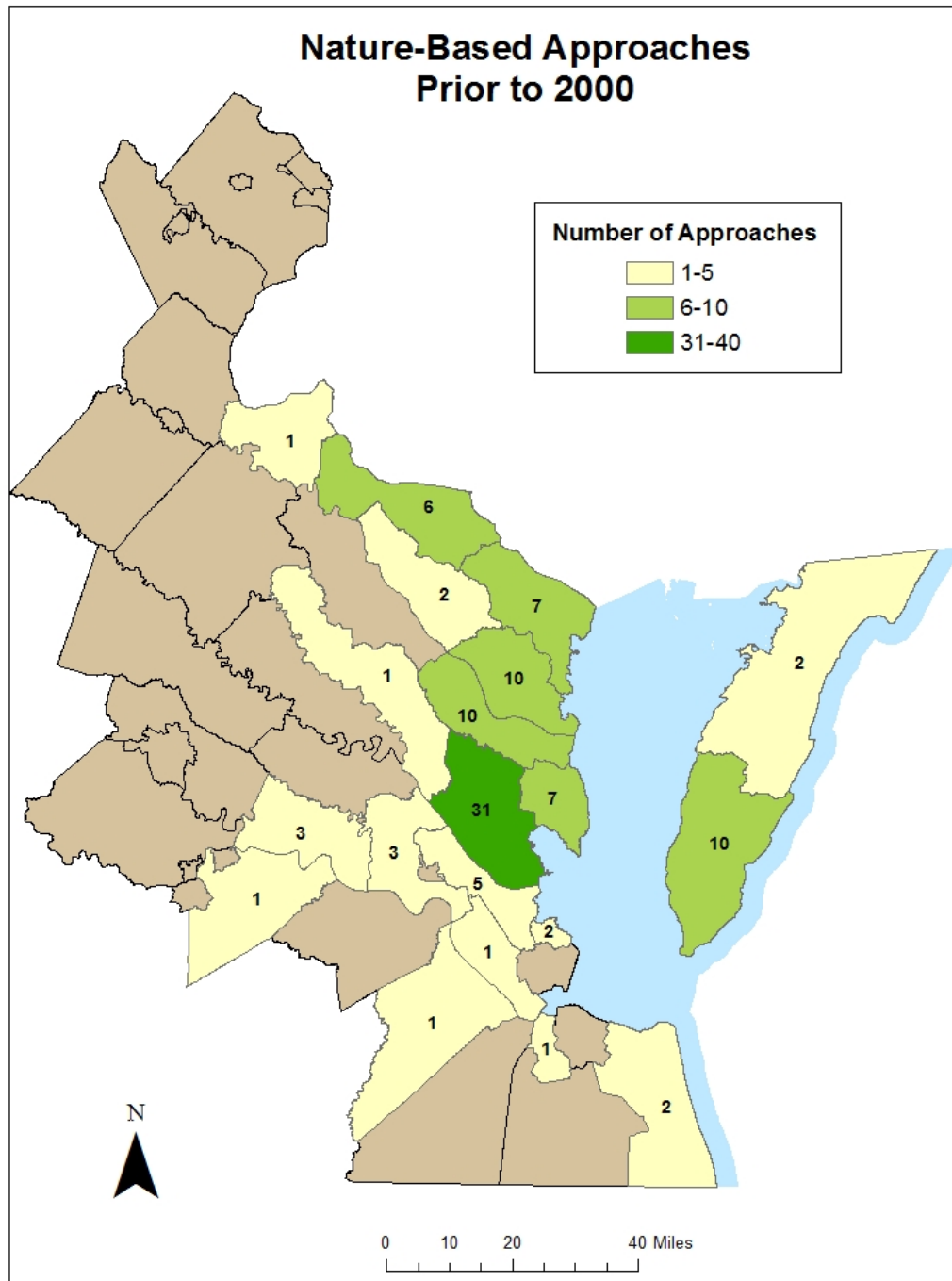


- ▶ Law & Policy
- ▶ Outreach
- ▶ Funding

# Virginia Living Shorelines Initiative Timeline







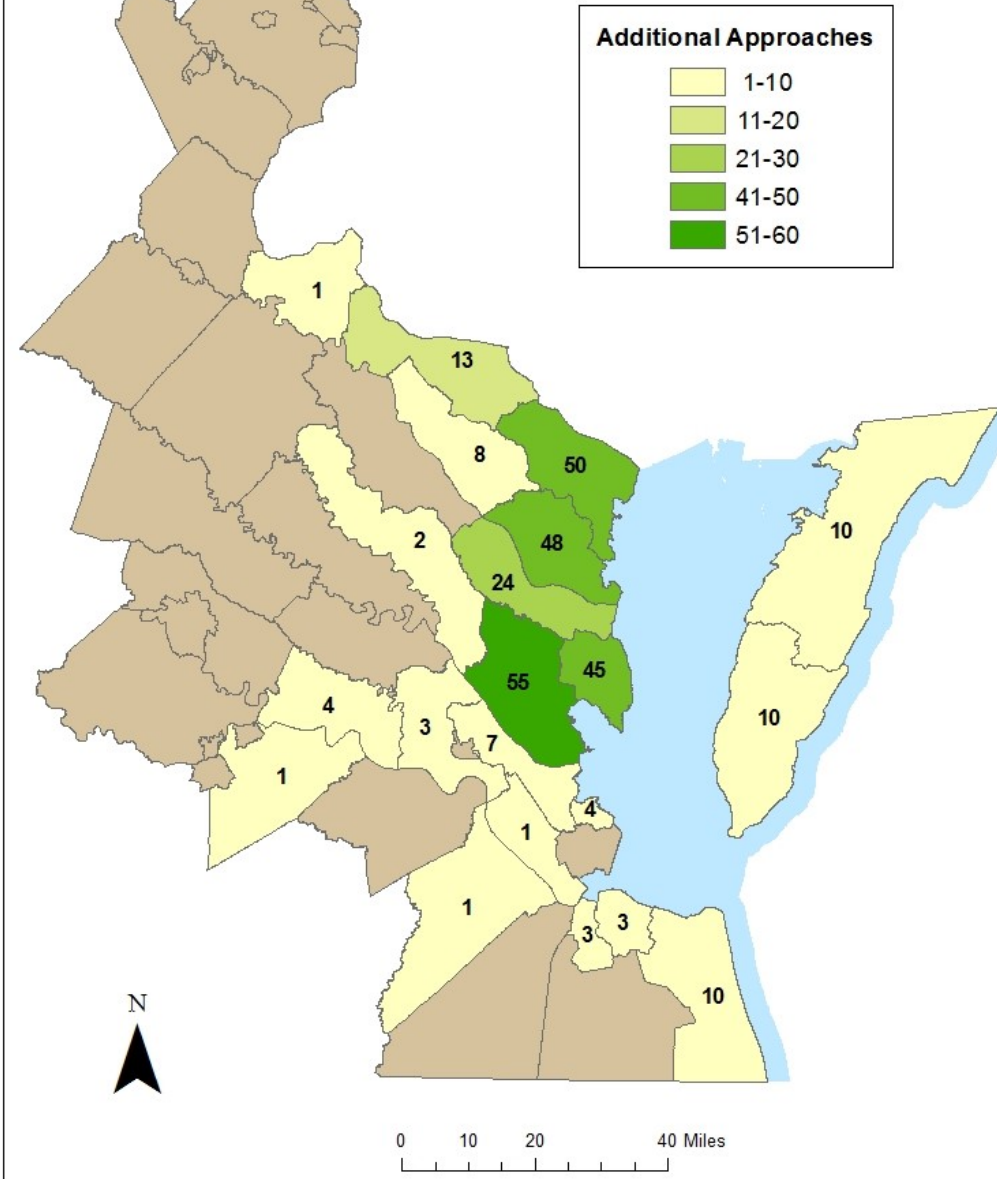
**Tracking Nature-Based Projects  
Includes:**

- Tidal wetland vegetation only
- Tidal wetland vegetation plus structure
- Breakwaters with beach nourishment

**N = 106**

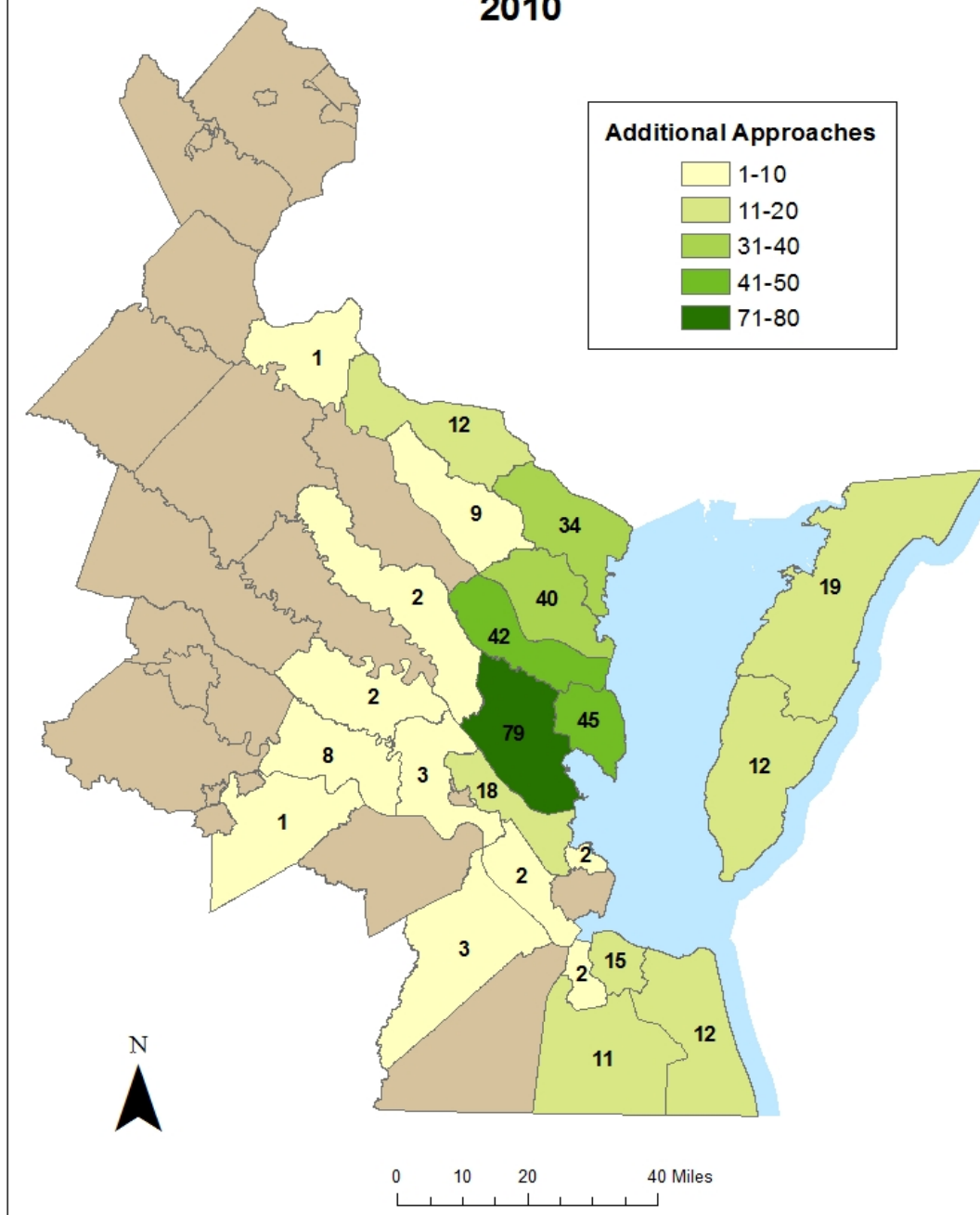


## Additional Nature-Based Approaches 2005



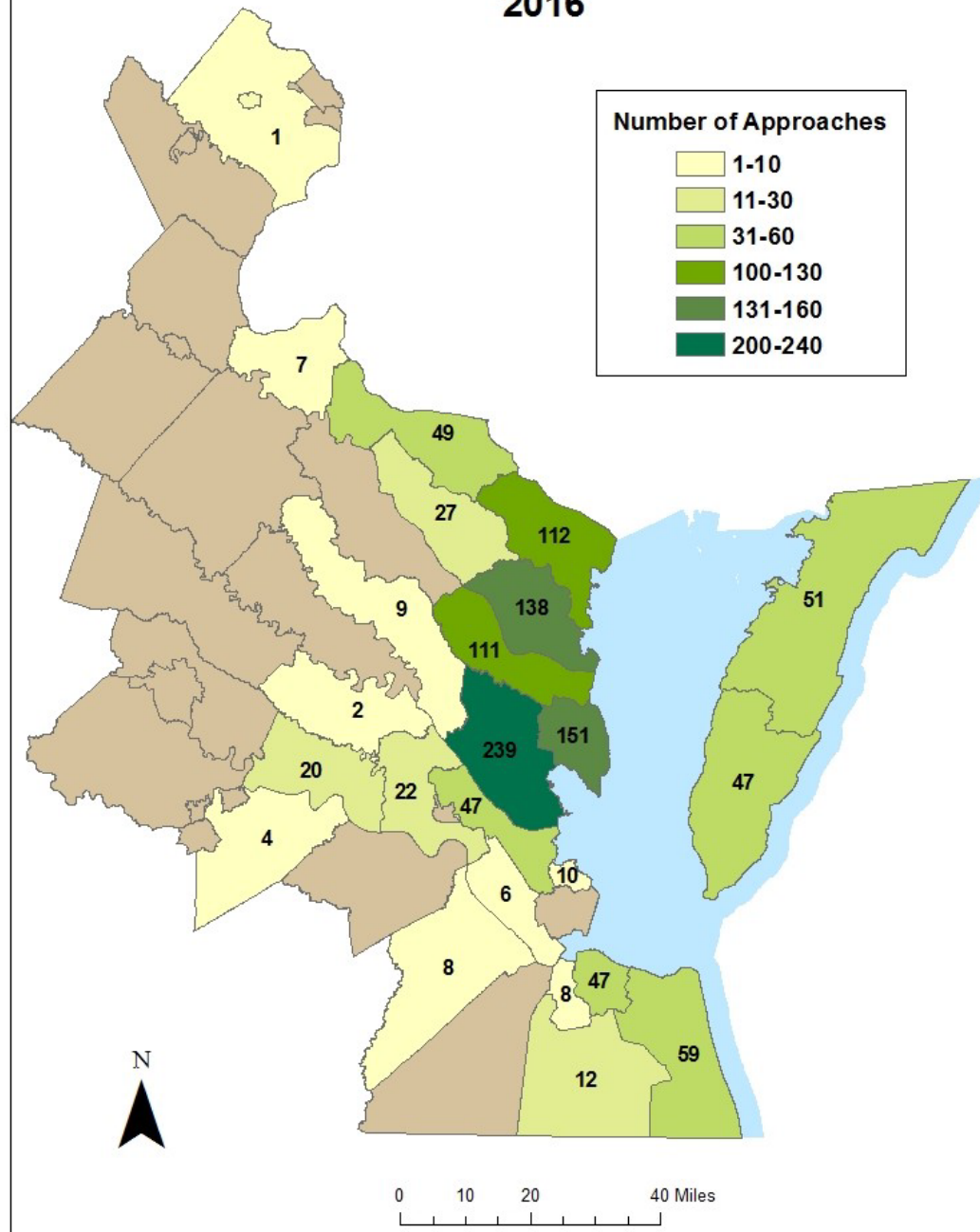
**Tracking Nature-based Projects**  
**Number of additional projects**  
**since 2000**  
**5 year interval**

## Additional Nature-Based Approaches 2010

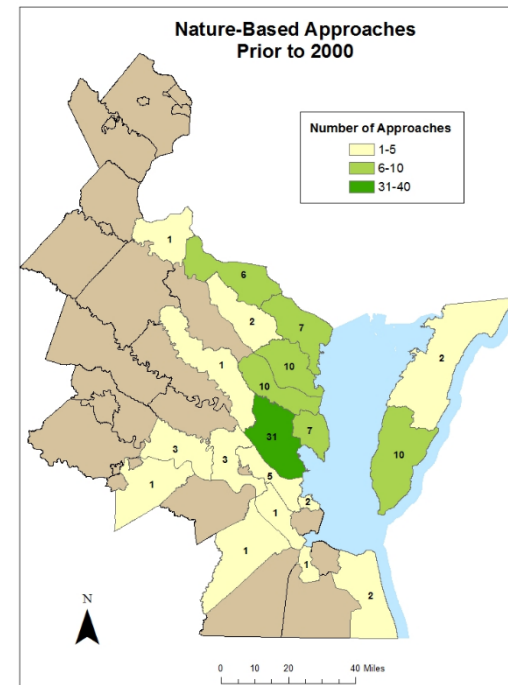


**Tracking Nature-based Projects**  
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**5 year interval**

## Nature-Based Approaches 2016



## Tracking Nature-based Projects All Projects through 2016 projects N = 1187



**N = 106**

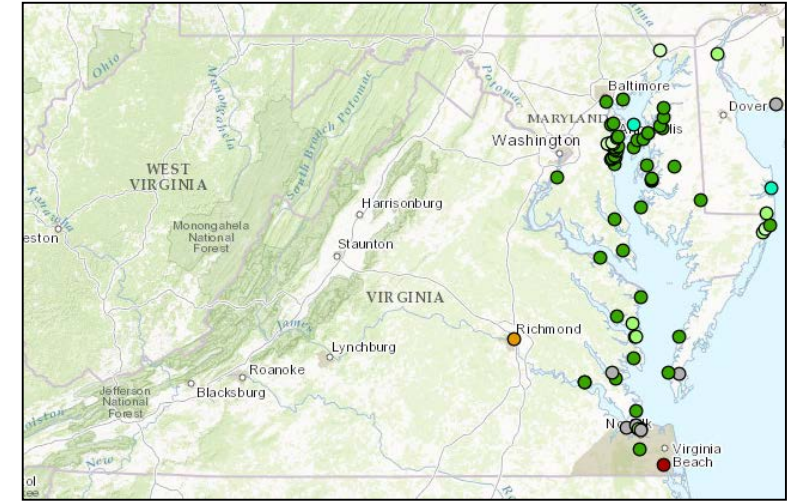
# Large Scale and Cumulative Benefits

## Urban Retrofits

### Multi-Goal projects:

- Erosion Control
- Nutrient Reduction
- Aquatic Habitat
- Wildlife
- Open Space

**SAGE- Use and promote green-gray approaches for coastal community and shoreline resilience**  
**Cumulative effect of many small projects**



**SAGE Mapper. Shows project locations**



# New and Developing Incentives: Where are we going?

- 💧 **Financial -**
  - Flood Insurance Incentive: Community Rating System**
  - TMDL: Nutrient Trading via the Virginia Nutrient Credit Exchange**
  - Watershed Implementation Plan Credits (Dept. Env. Quality)**
- 💧 **Partners -**
  - Funding/ Assistance– Landscape Conservation Cooperatives**
  - Federal and State Restoration (FWS, NOAA)**
- 💧 **Flood reduction/ Storm Protection**
- 💧 **Carbon sequestration – Blue Carbon**
- 💧 **Ecotourism**



A photograph of a wetland area. In the foreground, there is a body of water reflecting the sky and the surrounding vegetation. The middle ground shows a dense patch of tall, green grasses growing in shallow water. The background is a calm body of water reflecting the sky. The text "May is America Wetlands Month Learn and Explore" is overlaid on the lower half of the image.

May is America Wetlands Month  
Learn and Explore