Coastal Resiliency at the Virginia Coast Reserve

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What is the Virginia Coast Reserve?

- Nearly 45,000 acres owned and protected by TNC on Eastern Shore of Virginia
- 14 of 18 barrier islands
- Brownsville Preserve (1250 acres)
- Salt marshes, tidal mudflats, shallow bays, forested uplands
- Critical migratory bird habitat
Programs of the Virginia Coast Reserve

- Land Protection
- Marine Restoration
- Protecting, Managing and Monitoring Birds
- Community Outreach
- Coastal Resiliency
Eastern Shore is the Coastal Resiliency Laboratory for the Atlantic
Accelerated Sea-Level Rise plus Storm Surge = Coastal Hazards

Sea Level Rise 3’ Inundation and Confidence
Bring science and action together to sustain resilient coasts where nature is part of the solution to reduce risk from flooding, sea-level rise, and storm surge.
Coastal Resiliency and Risk Reduction
Conservation Outcomes

Communities are made safer and more resilient to natural hazards.

Ecosystem health and functionality are restored to benefit both humans and nature.

The benefits of natural solutions are well documented and embraced while damages from disasters and climate change are reduced.
Coastal Resilience Approach

TNC’s Coastal Resilience Approach

Communities at risk from coastal hazards
- Large storm waves

Raise awareness
- Identify options
- Assess risk
- Take action
- Smart development

Resilient coastal communities

Coastal ecosystems
- Hurricanes
Enhancing Coastal Resilience on Virginia’s Eastern Shore

Project cost $1.76 million
1. Collaborative Stakeholder Engagement in Coastal Resilience Process

2. Creation of Coastal Resilience Decision Support Tool: SLR, Storm Surge, Marsh Migration, Barrier Island Migration

3. Design and Build Oyster Reef Demo Projects and Create Wave Attenuation Model
Collaborative Stakeholder Engagement

Engage Stakeholders:

• WHO: Northampton and Accomack Counties, towns and villages
• WHEN: Before, During and After Resiliency Tool is Created
• WHAT: Determine, with communities, what they need and will use
• WHY: Engage these communities so tools are utilized
• HOW: Input, Workshops, Community Train-the-Trainer
Coastal Resilience Network

A global network dedicated to enhancing human and natural coastal communities

coastalresilience.org
Coastal Resilience network supports a community of practitioners around the world who are applying spatial planning innovations to coastal hazard risk, resilience and adaptation issues. This is a global network providing access to peer practitioners, tools, information and training focused on nature-based solutions.
Flood and Sea Level Rise App
Oyster Reef Demonstration Projects

• Build oyster reefs along eroded shorelines to demonstrate storm protection benefits.
• Set up long-term experimental field studies to document the wave attenuation effects of oyster reefs; pilot an oyster reef wave attenuation model.
Oyster Castle Wall

At Deployment

3 Years Post-Deployment
NFWF Coastal Resilience Project Timeline

- **August 18, 2014**: Kick-off stakeholder workshop
- **Fall 2014**: Project planning, contracting
- **Fall 2014**: Oyster reefs plants
- **Summer 2015**: Model development and CR tool creation, stakeholder mtgs tbd
- **Winter 2015**: Reef marsh studies
- **Spring 2015**: Draft model outputs and CR beta apps
- **Mid-project stakeholder workshop**: Fall 2015
- **Winter 2015**: Models and CR tool refinements and peer review
- **Spring 2016**: Oyster reef plants and research
- **Summer 2016**: CR training workshops
- **Summer 2016**: Final stakeholder workshop and public rollout of CR
- **August 18, 2016**: Reports on oyster, marsh research
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