

NGO Initiatives & Citizen Science Projects *for Coastal Resilience*



Karen Duhring

Virginia Institute of Marine Science
Center for Coastal Resources Management

Non-Governmental Organizations - Living Shoreline Supporters



Chesapeake Bay Foundation
Elizabeth River Project
Friends of Indian River
Friends of the Rappahannock
James River Association
Lafayette Wetlands Partnership
Lynnhaven River Now
Nansemond River Preservation Alliance
Virginia Master Gardeners
Virginia Master Naturalists
Wetlands Watch
& others



Building Adaptive Shorelines and Resilient Communities in the Lower James

Living shoreline demonstrations in rural localities

Isle of Wight – Surry – Prince George

Green Infrastructure Project in City of Hampton

Workshops & training classes

Living Shoreline Collaborative



*JRA training workshop
Chippokes Plantation State Park*

Other Partners





Proposed Living Shoreline Collaborative
a Regional Community of Practice
to build capacity within local governments in the tidal James River

James River Association
City of Hampton
Hampton Roads Planning District Commission
Prince George County
Surry County
Isle of Wight County
Elizabeth River Project
Virginia Institute of Marine Science
Wetlands Watch
Virginia Association of Soil and Water Conservation Districts



Northern Neck Master Gardeners' Shoreline Evaluation Program



Volunteer support for shoreline property owners
since 2012

On-site shoreline evaluations
to assess vegetation, stormwater runoff patterns & erosion

Soil test & nutrient management plan
by Virginia Soil & Water Conservation District

Written recommendations
based on VIMS mapping and decision tools

Educational materials & programs
now include climate change & resilience



<https://shorelinennmg.weebly.com/>



Virginia Master Naturalists

A community-based natural resources volunteer program



7 Coastal Chapters *including new Middle Peninsula chapter*

Organized network of trained volunteers

Ready to assist with outreach education, stewardship & citizen science related to nature & natural resource management

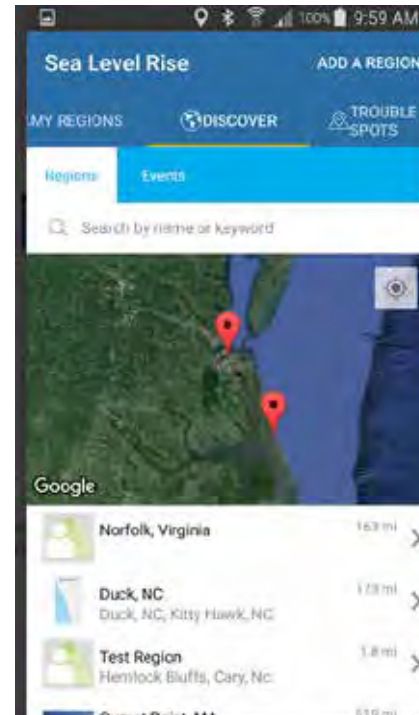




Catch the King Tide Citizen Science Flood Mapping

High tide extent captured simultaneously
across large geographic region

using Sea Level Rise app on smartphones & tablets



*Middle Peninsula Master Naturalists
2018 Catch the King*

<http://kingtide.whro.org/>

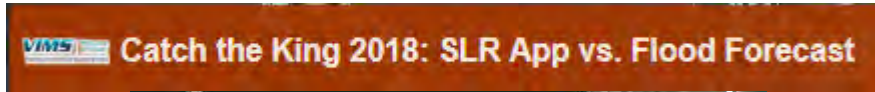


Catch the King Tide Citizen Science Flood Mapping

Data points are used to validate and improve hydrodynamic models & mapping tools



*Karen Duhring, Tide Captain
Derek Loftis, Chief Scientist*



**Learn More at Breakout Session 3
Validating Flood Models
with Sensors & Citizen Science**





Catch the King Tide Citizen Science Flood Mapping

Nov. 5, 2017 Catch the King Guinness World Record

*most contributions to an environmental survey
722 volunteers collected 59,718 measurements*

Catch the King catches
Guinness World Record



D. Malmquist, VIMS

The king is back!

Let's get out there and track it!

Sunday October 27, 2019

3rd annual public mapping event

<http://kingtide.whro.org/>



Catch the King Tide Water Quality Testing

As High-Tide Flooding Worsens, More Pollution Is Washing to the Sea

As sea levels rise, high-tide flooding is becoming a growing problem in many parts of the globe, including cities on the U.S. East Coast. Now, new research shows that as these waters recede, they carry toxic pollutants and excess nutrients into rivers, bays, and oceans.

BY JIM MORRISON · MARCH 14, 2019

YaleEnvironment360

Published at the Yale School of Forestry & Environmental Studies



October: Margaret Mulholland collects a water sample from high-tide flooding in Norfolk in January. JIM MORRISON/YALE 360

ODU Scientist Margaret Mulholland collects a water sample from high-tide flooding in Norfolk in January 2019. Jim Morrison/Yale 360



2017 Catch the King Guinness World Record

“....it shows that a lot of people in coastal Virginia don't want to just sit on the sidelines when it comes to flooding and sea level rise....

....They want to be part of the solution.”

Dave Mayfield, Catch the King Founder



2017 Catch the King training session at Gloucester Point

What NGOs & Citizen Scientists Can Do

Free Labor

Share property owner experiences & perspectives

Deliver network communication to membership

Participate in public work sessions & public decisions

With training & oversight:

Conduct shoreline surveys & monitor living shorelines

Help validate & ground-truth GIS models and maps for local areas

Locate & describe road-side ditches or other features

Provide public education & outreach experiences

Questions?



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