

# Tidal Wetlands Management Technical Support Grant

*Center for Coastal Resources Management*

*Virginia Institute of Marine Science*

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## Table of Contents

Product 1: Education / Outreach.....	4
Tidal Wetlands Workshop.....	4
Publications.....	5
Rivers and Coast.....	5
CCRM e-News.....	6
Facebook.....	6
Product 2: General Technical Guidance.....	9
Summary.....	9
Advisory Database - Advisory Requests Details.....	10
Shoreline Permit Database - Data Requests Details.....	11

# Product 1: Education / Outreach

## Tidal Wetlands Workshop

### Keeping Up With Shoreline Changes: status, trends, and legislation

The Center for Coastal Resources Management staff planned, organized, and presented our annual Tidal Wetlands Workshop. This year's workshop was held on July 14, 2022, in person at the Virginia Institute of Marine Science for the first time in three years. There were 105 interested participants representing local governments (21), non-profit organizations (22), wetlands boards (23), state agencies (19), private consulting and engineering firms (15), other individuals (4), and federal agencies (1).

Participants attended lectures, breakout sessions and field experiences to learn about new legislation, programs, and policies that are now in effect in Virginia and require managers at all levels to consider climate change and sea-level rise while planning and permitting shoreline stabilization projects. This workshop examined implementation progress with an increased emphasis on living shorelines, funding support programs, and new guidelines to support consideration of present and future conditions during project design and permitting stages. The program included various regulatory updates to assist the coastal region with coordinated shoreline management as well as shoreline field experiences on the VIMS campus.

Listed below, all presentations and other related workshop materials are available online:

<https://www.vims.edu/ccrm/outreach/workshops/2022/index.php>

### Handouts

- Agenda
- Breakout Sessions

### Presentations

#### Tidal Shoreline Program Updates:

- Workshop Introduction & Upcoming Events-Announcements  
Karen Duhring, VIMS-CCRM
- Tidal Wetlands Permitting Update  
Mark Luckenbach, Associate Dean of Research & Advisory Service, VIMS
- Chesapeake Bay Preservation Act Amendments & Guidelines Update  
Heather Mackey, Chesapeake Bay Act Program, VA DEQ
- 2022 Resilience Policy Updates  
Skip Stiles, Wetlands Watch
- Virginia Coastal Resilience Master Plan Update  
Pamela Mason, VIMS-CCRM

#### Living Shorelines & Tidal Wetlands: Status and Trends:

- Living Shoreline Trends for Virginia's Watershed Implementation Plan  
Aaron Wendt, Shoreline Erosion Advisory Service, VA DCR

- Shoreline Professionals' Perspectives & Training Support Programs  
Shereen Hughes, Assistant Director, Wetlands Watch  
Stacie McGraw, Wetlands Watch
- Tidal Wetland Project Updates & Marsh Migration  
Molly Mitchell, VIMS - CCRM
- Regional Wetlands Conservation & Restoration Plan  
Cirse Gonzalez, CBNERR-VA

#### Shoreline Management Funding Support Program Updates:

- Elizabeth River Project Cost-Share Program  
Barbara Gavin, Elizabeth River Project
- Living Shoreline Collaborative Cost-Share Program  
Ryan Walsh, James River Association
- Virginia Conservation Assistance Program (VCAP)  
Darby Reed, VCAP

#### Breakout Sessions

- Tidal Marsh Plants and Marsh Migration  
Christine Tombleson, VIMS-CCRM  
Sean Gregory, VIMS-CCRM
- Living Shoreline Adaptive Management  
Scott Hardaway, VIMS Shoreline Studies Program
- Wetlands for the Future  
Pamela Mason, VIMS-CCRM
- Building Climate-Resilient Rural Communities  
Molly Mitchell, VIMS-CCRM  
Kelsey Ruckert, NOAA Mid-Atlantic RISA

## [Publications](#)

Center staff annually produces our *Rivers & Coast* newsletter. The *Rivers & Coast* covers one relevant topic in detail through the use of charts, graphs, maps and photos in an 8-page color publication. The newsletter was mailed to local wetlands boards, is available online and announced through CCRM's quarterly e-newsletter to nearly 3,000 email addresses which include local and state agency personnel, General Assembly members, and interested private citizens. *CCRM e-News* summarizes and communicates a variety of issues that support integrated management of coastal zone resources, announces pertinent publications, programs and events, and points the reader to more detailed information on our website (and others).

## Rivers and Coast

**Summer 2022, Vol. 17 – Drones in the Coastal Zone.** This issue of *Rivers & Coast* highlights how drones are used for coastal and shoreline observations. Various system components, pilot qualifications, image and data processing, and data collection tips are described as necessary steps to get ready to fly safely and legally. The Center for Coastal Resources Management at VIMS uses drones in combination with other research techniques to collect field data. Two CCRM projects that use drones to monitor tidal shorelines and bank erosion were included as examples. Highlighting potential uses of this technology and showing how low-altitude aerial vehicles can complement ground-level observations and satellite imagery, will hopefully inspire others to develop more drone applications in Virginia’s coastal zone. <https://scholarworks.wm.edu/reports/2836/>

## CCRM e-News

- **December 2021** – Sustainable Shorescapes Storymap, CORPS public notice; Crab Trap App volunteers, VA’s Coastal Resilience Master Plan and Marine Debris Reduction Plan, Catch the King Tide results, CCRM peer-reviewed publications, GCA scholarship, and coastal conferences. <https://conta.cc/3e538qK> (809 opens)
- **April 2022** – Workshop survey, Hampton Resilience Award, EPA Selects SCHISM, Sea-Level Report Cards updated, CCRM peer-reviewed publications, Coastal volunteers, and Marine Science Day. <https://conta.cc/3j4mJKm> (870 opens)
- **June 2022** – Shoreline Management Webinar registration, CCRM peer-reviewed publication, Nature-Based Solutions webpages, VA Coastal Resilience Master Plan, GCA Awards, and New Shoreline Guidelines. <https://conta.cc/3kvzrni> (893 opens)
- **September 2022** – New Rivers & Coast, New Coastal Living Guides webpages – flooding, Catch the King, Shoreline workshop materials online, CCRM in the news, CCRM on TikTok, upcoming events and Nainoa Thompson. <https://conta.cc/3DWbxee> (866 opens)

## Facebook

CCRM staff continued a social media campaign by posting content to the CCRM Facebook page to inform our followers about CCRM activities and coastal issues in Virginia. We ended the performance period with 649 followers, an increase of 60 for the year. In mid-September 2022, we initiated an effort to increase followers and engagement by selecting a few posts highlighting CCRM tools and webpages to boost with paid advertisements. In a short time, this effort increased our current followers to 676. CCRM Facebook page fans mostly live in the United States (639), although we reached another 37 people in countries worldwide. Slightly more than half of our fans are women (58.6%). We continue to share posts from and tag other entities (mostly State Agencies) that are in the CZM networked program including VMRC, DEQ, DCR, Sea Grant, MPPDC as well as CCRM partners including Wetlands Watch, Virginia Coastal Policy Center, Master Naturalists, Master Gardeners and others and they have tagged CCRM. CCRM “Posted” statuses, photos, links, videos and more 116 times this grant period, an average of 2.25 times per week. Our greatest post engagement was 1,337 on a post about Tidewatch that coincided with Hurricane Ian’s arrival. This post also had the most post impressions (10,652) and post reach (8952). These numbers are an order of magnitude higher than unpromoted posts which range in the hundreds, and they seem to demonstrate the benefits of doing Facebook ads. *[Facebook engagement is any action someone takes on your Facebook Page or one of your posts. The most common examples are reactions (including likes), comments and shares, but it can also include saves, viewing a video or clicking on a link. Impressions are*

the number of times any content from your page or about your page entered a person's screen. Reach is the number of people who saw any content from your page or about your page - this metric is estimated.]

CCRM Facebook: <https://www.facebook.com/CCRM10/>

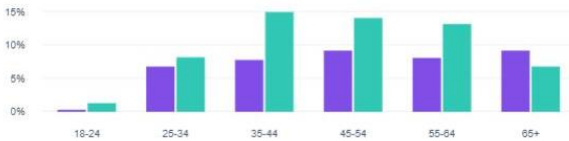


## Center for Coastal Resources Management (CCRM)

### Audience

#### Age and Gender

Men 41.40%  
Women 58.60%



#### Location

Cities Countries

Location	Cities	Countries
United States	639	
Mexico	5	
Philippines	5	
Taiwan	4	
Canada	2	
Ethiopia	2	
India	2	
Indonesia	2	
Spain	2	
Thailand	2	

#### Location

Cities Countries

Location	Cities	Countries
Virginia Beach, VA	41	
Norfolk, VA	25	
Richmond, VA	20	
Newport News, VA	19	
Chesapeake, VA	17	
Gloucester, VA	15	
Williamsburg, VA	14	
Yorktown, VA	14	
Hampton, VA	13	
Hayes, VA	11	

## Top Post

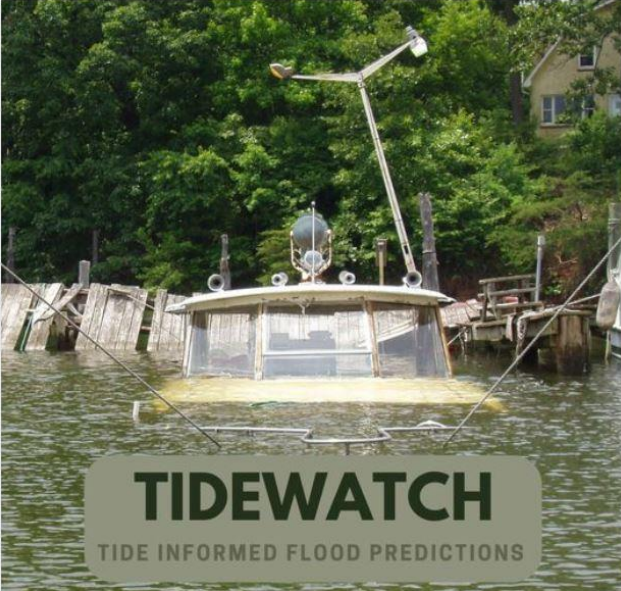
**Center for Coastal Resources Management (CCRM)**  
 Published by Amy Nicholson · September 29 · 🌐

With some bad weather in sight, we wanted to highlight Tidewatch! Tidewatch is a great way to visualize the magnitude and impacts of coastal flooding within the Chesapeake Bay and along Virginia's Eastern Shore. The data are generated in 36 hour forecasts each morning and evening.

Learn more about how to use Tidewatch here:  
<https://www.vims.edu/ccrm/topics/flooding/tides/index.php>

We hope our tools help and everyone stays safe as the rain comes in this weekend!

#ccrm10 #tidewatch #tides #flooding #hurricaneian #weather #virginia #gloucestercounty #poquosonva #mathewsva #virginiabeach



**TIDEWATCH**  
 TIDE INFORMED FLOOD PREDICTIONS

**With some bad weather in sight, we wanted to highlight Tidewatch! Tidewatch is a great way to visualize the...**  
 Published by Amy Nicholson · September 29 · 🌐

Post Impressions ⓘ	Post reach ⓘ	Post Engagement ⓘ
<b>10,652</b>	<b>8,952</b>	<b>1,337</b>

### Interactions ⓘ

👍	👎	😄	😮	😭	😡	
209	8	1	5	2	0	
😊 Reactions						225
💬 Comments						22
🖱️ Link Clicks						248
➦ Shares						44
🖱️ Other Clicks						715



# Product 2: General Technical Guidance

## Summary

The Center for Coastal Resources Management (CCRM) continues to provide technical advice to the general public, regulatory and non-regulatory authorities. We provide general advice on shorelines and marine issues via phone, email, and/or when feasible on-site. To maximize the efficacy of site visit efforts, we focus on requests that involve living shoreline suitability assessments, proposed living shoreline projects and those from more rural localities. Advice draws from routinely used data and tools including on-line resources at CCRM/VIMS, from other coastal partners and agencies, aerial imagery, decision tools and decision models. All general technical guidance is tracked in the Advisory Database and all projects associated with a Joint Permit Application (JPA) are tracked in the Shoreline Permit Database.

**Advisory Database:** The Center continues to populate an advisory database to track our provision of technical advice outside of the joint permit application process so that we can adapt CCRM’s guidance development and outreach program to address issues identified through data analysis.

- Technical Advisory and General Information – 64

**Shoreline Permit Database:** This database is continuously updated to track Virginia tidal shoreline erosion control projects. Permitted projects and decisions made by regulatory officials are compared with the preferred shoreline best management approach derived from the Shoreline Management Model v.5.1, which is also displayed in the AdaptVA Comprehensive Map Viewer and located in the Virginia coastal zone locality portals. During this review, projects are categorized into CCRM-defined types, the location of the projects are geo-referenced, and project information is collected and entered into the database. This information is used to support various CCRM coastal resources management activities.

- Shoreline Project Updates – 168
- Shoreline Management Model v.5.1: <https://www.vims.edu/ccrm/advisory/ccrmp/bmp/smm/>
- AdaptVA Comprehensive Map Viewer: [http://cmap2.vims.edu/AdaptVA/adaptVA\\_viewer.html](http://cmap2.vims.edu/AdaptVA/adaptVA_viewer.html)
- Locality Portals: <https://www.vims.edu/ccrm/advisory/ccrmp/portals/>

**Historical Permit Records Database:** The Center for Coastal Resources Management also serves the historical records for tidal wetland Joint Permit Applications (JPA) in a searchable database online. These records include 31,130 original JPAs and all associated photos, public hearing notices, additional information, and VIMS Reports. All records prior to January 1, 2010 as well as a link to current records can be found on CCRM’s website.

- Shoreline Permit Records: <https://www.vims.edu/ccrm/advisory/ccrmp/permits/>

Information concerning the data collected and extracted from these databases is provided in detail in the next section.

## Advisory Database - Advisory Requests Details

### **Type of Advice Requested:**

- Living Shorelines (Design Assistance, Planting recommendations, Education/outreach, erosion control advice, where to buy oyster bag supplies, etc.) 14
- Climate Change/Resiliency (Sea level rise, projections, flood control, marsh migration, Intermediate High Curve, wetlands as carbon sinks/sources, MHW mark) 8
- Data (shoreline statistics, shoreline inventory, social vulnerability, NWI, SMM) 7
- Erosion Control/Shoreline Evaluation (Shoreline erosion control advice/shoreline evaluation, (not living shoreline related)) 7
- Marine Debris (Derelict crab trap removal, biodegradable PHA wads) 3
- Training/Workshops (New wetland board/staff training, Shoreline Mgt Webinar series) 3
- CCRM Maps/Tools (CCRMP Locality Portals, VIMS Shoreline Permit Website, Interactive Wastewater Map) 3
- Plant Recommendations (What/where to plant, how to manage, landscape professionals) 3
- Beaches and Dune (legal use, regulations, maintenance) 2
- Chesapeake Bay Preservation Act (Permitting, WQIA, tree removal, mitigation) 2
- Dredging (Permitting, Funding assistance) 2
- Water Quality (Pond water quality, sediment) 2
- Submerged Aquatic Vegetation (SAV) (Viewers/websites, commercial harvesting) 2
- Other (NNBFs, Coastal Development, SAV, organisms, habitat) 6

### **Advice Requested From:**

- Citizen/Property Owner 25
- Community/Non-Profit/NGO/Master Gardener/Master Naturalist 7
- Local Government/Wetland Board Staff or Member/Elected Officials 9
- Federal Agencies 3
- Academic/Research 4
- State Agencies (including VIMS) 5
- Consultant/Business Owner 4
- Journalist/Media 4
- Out of State Agencies 3

**Living Shoreline Requests:** Of all categories of advisory service requested this grant period, advice related to Living Shorelines topped the list and included a variety of topic areas about living shorelines (i.e. Erosion control/shoreline advice, design, plant recommendations, tools/resources, funding, training, effectiveness, regulatory guidance, suppliers, locations, contractor information).

Of the advisory requests associated with *shoreline erosion control*, 67% were related to the living shoreline management approach (14 out of 21). Citizens and property owners were the largest group (48%) requesting any information on living shorelines followed by a tie with Consultants and NGO groups. During the last grant period citizens and property owners were also the largest group requesting information on living shorelines, coming in second was a tie with Consultants and Marine Contractors.

**Locality Type of Living Shoreline Advice Requested:** The percent of living shoreline requests from citizens/property owners living in rural localities this grant period was 21%, down from 28% last year. The percent of living shoreline advisory requests from citizens/property owners from suburban localities increased from 21% last year to 50% this year. Requests in urban designated localities increased from

none last year to one this grant period. 21% of requests for living shoreline information came from out of state. Local governments (represented by local government staff, wetlands board, and elected officials) made no requests for living shoreline advice this grant period.

**Living Shoreline Advisory Request Summary:** 22% of all advisory requests received during this grant period were in reference to living shorelines, decreasing from last grant period, at 34%. The total number of living shoreline related requests from citizen/property owners, local governments and other groups all decreased from last grant period. Site visits were conducted for three living shoreline advisory requests this grant period. Not all requests warrant a site visit. Two site visits were conducted for non-living shoreline advisory requests.

**Living Shoreline Advice Requested By:**

LOCALITY	CITIZEN	LOCAL GOV'T	OTHER	TOTAL	LOCALITY TYPE *
Out of State			3	3	NA
Gloucester	1		1	2	Suburban
King and Queen	1			1	Rural
Newport News	2			2	Suburban
Norfolk			1	1	Urban
Northumberland	1			1	Rural
Virginia Beach	1			1	Suburban
York	1			1	Suburban
Multi-Locality		1	0	1	NA
<b>TOTAL</b>	<b>8</b>	<b>1</b>	<b>4</b>	<b>13</b>	

*\*Locality designation was defined by housing unit density; Rural tracts = less than 64 units per square mile, Suburban tracts = 64 to 1,600 housing units per square mile, and urban tracts = greater than 1600 housing units per square mile. Housing density information obtained from the U.S. Census.*

**Shoreline Permit Database - Data Requests Details**

CCRM developed a comprehensive database using Microsoft Access with fillable forms to store Virginia tidal shoreline erosion control permit and associated project information. The CCRM Shoreline Permit Database integrates Virginia project and permit information from a variety of existing sources into one master, searchable database. Center staff continues to populate the database with new information collected from a subset of Joint Permit Applications (JPAs) submitted to the Virginia Marine Resources Commission (VMRC), project shoreline site characteristics from local government websites, Google Earth and Bing maps.

Data has been preliminarily collected on 29,918 shoreline erosion control projects to date, with data entry and geolocation completed for 9,974 projects, including 168 projects during this grant period. This includes the following information:

- VMRC Number
- Applicant Name and Contact Information
- Property Owner Name and Contact Information
- Contractor Name and Contact Information
- Project Type
- Project Length

- Project Impacts
- Project Year Built
- Project Location (site address, locality, parcel ID, lat/long, fetch and waterway)
- Wetlands Board Decision
- Wetlands Board Meeting Minutes

And specific information that is required to support various aspects of CCRM projects, such as field site selection, comparative assessments, and a variety of surveys and analyses of social and natural systems.