

NOAA'S DIGITAL COAST

Actionable Information for Coastal Communities

Todd Davison

NOAA Office for Coastal Management



Digital Coast - 3 Things Memo

- Information and Data Delivery – access to relevant coastal data, integrated tools, and training
- Partnership – a constituent-driven approach driving content
- Enabling Platform – resources that help users address their issues



Digital Coast Partnership



NOAA Office for Coastal Management

American Planning Association

Association of State Floodplain Managers

Coastal States Organization

National Association of Counties

National Estuarine Research Reserve Association

National States Geographic Information Council

The Nature Conservancy

Urban Land Institute



OFFICE FOR COASTAL MANAGEMENT
DIGITAL COAST

<https://coast.noaa.gov/digitalcoast>

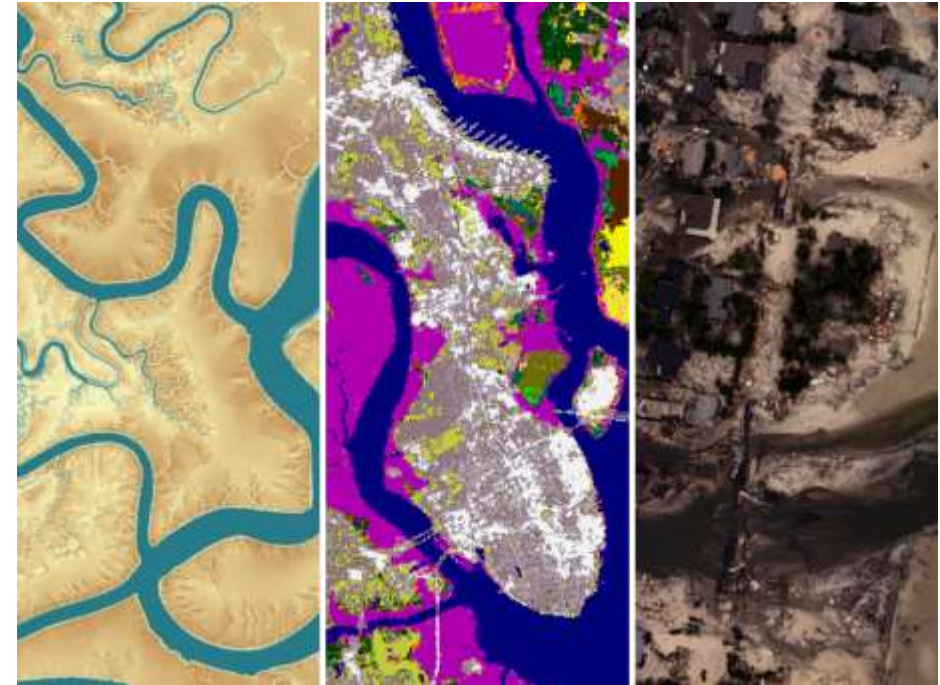
A Small Sampling of Contributors

Federal	State	NGO	Academic	Private
				
				
				
				
				



- **Data**—70+ terabytes of high-resolution elevation and land cover data, and orthoimagery. Linkages to 40+ national-level coastal data sets.
- **Tools**--An inventory of 60+ tools – many provide visualization and analysis capabilities without need for GIS software
- **Training**--140 learning resources, including several instructor-led and self-paced web-based courses
- **Stories from the Field**—100+ narratives that demonstrate the application of geospatial information to coastal issues

Digital Coast by the Numbers



A Broad Spectrum Approach: Facilitating Use and Application



DISCOVER



DOWNLOAD



MAP



ANALYZE



LEARN



SHARE

DATA

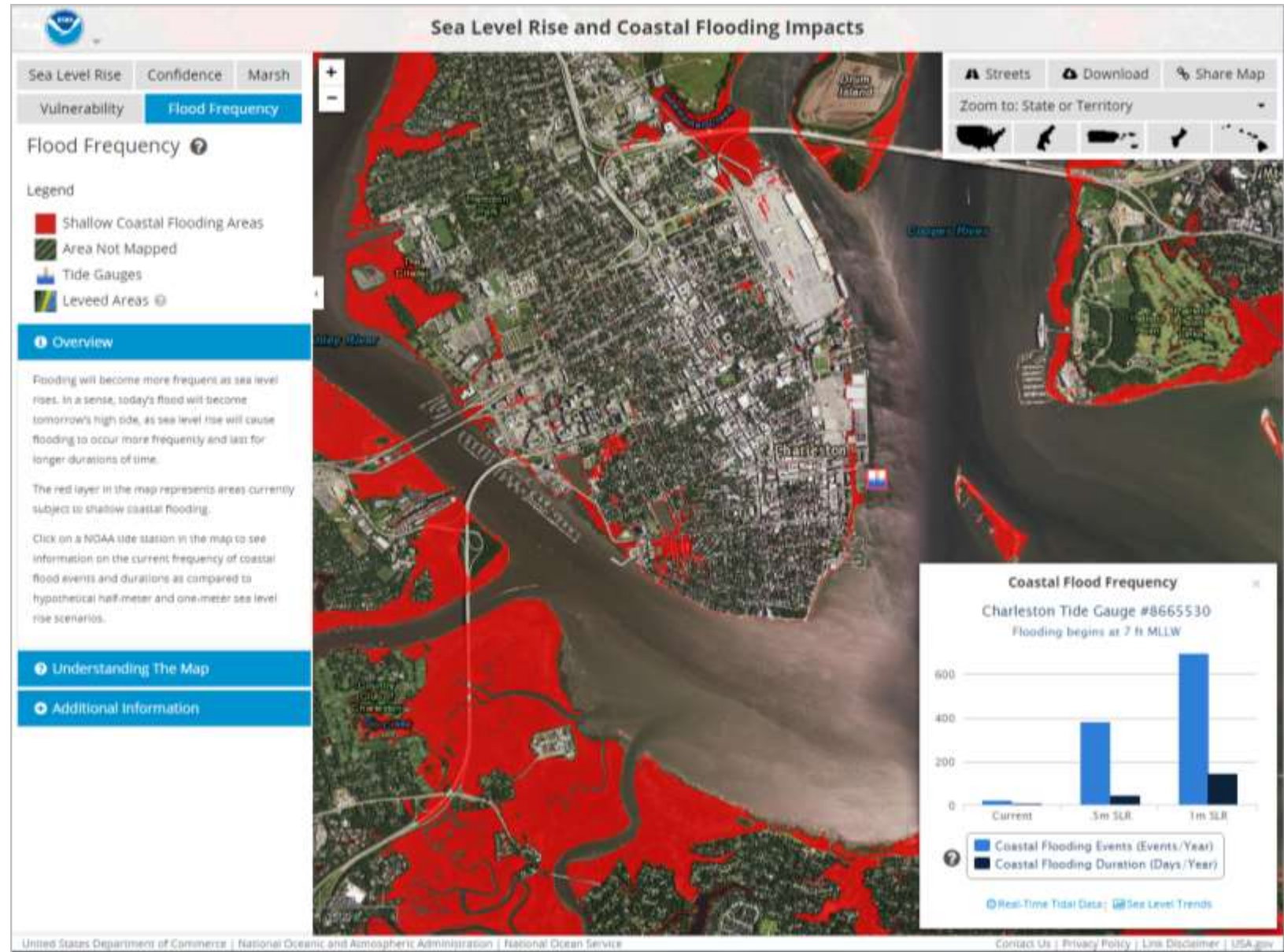
INFORMATION

ACTION



Sea Level Rise Viewer

- Simulate future sea level rise or coastal flooding 1 to 6 feet above MHHW
- Provides information about marsh impacts, nuisance flood frequency, and socioeconomic impacts.
- Confidence maps are also provided so users can visualize uncertainty levels in flooded areas.





Coastal County Snapshots

Complex Data Made Simple
 Flooding | Economics | Wetlands

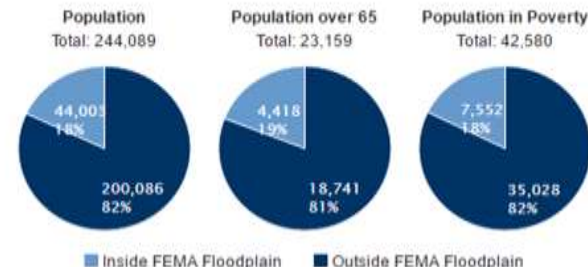


Flood Exposure Snapshot Norfolk city, Virginia

People + Floodplains = Not Good
High-Risk Populations + Floodplains = Even Worse

The more homes and people located in a floodplain, the greater the potential for harm from flooding. Impacts are likely to be even greater when additional risk factors (age, income, capabilities) are involved, since people at greatest flood risk may have difficulty evacuating or taking action to reduce potential damage.

Based on [2009-2013 American Community Survey 5-year Summary File data](#).

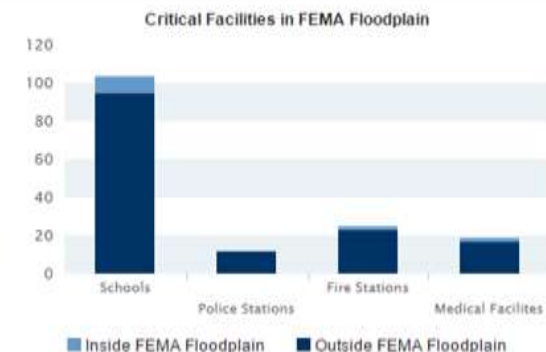


Community Infrastructure + Floodplains = Bad News

9% of critical facilities in Norfolk city, Virginia, are within the floodplain.

Hospitals, Roads, Schools, Shelters. These facilities play a central role in disaster response and recovery. Understanding which facilities are exposed, and the degree of that exposure, can help reduce or eliminate service interruptions and costly redevelopment. Incorporating this information into development planning helps communities get back on their feet faster.

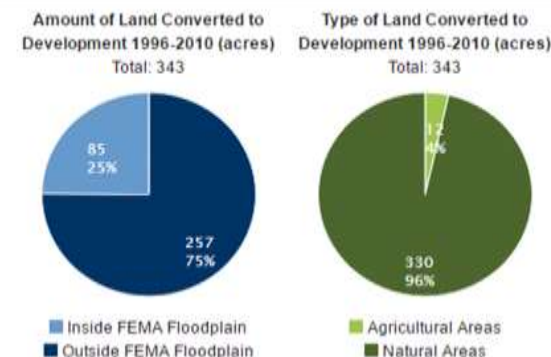
Based on [USGS Structures Database](#).



Increasing Development in Floodplains = More People in Harm's Way
Loss of Natural Buffers = Less Protection

A county with more natural areas (wetlands, forests, etc.) and less development within floodplains typically has lower exposure to flooding. A county that monitors land cover changes within the floodplain will detect important trends that indicate whether flood exposure is increasing or decreasing. Armed with this information, local leaders can take steps to improve their safety and resilience.

Based on [NOAA Land Cover Data](#).



Coastal County Snapshots

- Turns complex data into easy-to-understand handouts, complete with charts and graphs
- Three snapshots available – County's Flood Exposure; Ocean or Great Lakes Economy; Wetland Benefits
- Allows users to download a PDF report for the snapshot of their choice

Print

Total: 2 sheets of paper (3 pages)

Destination:

Pages:

Copies:

Layout:

Color:

Options: ☐ Simplify page ☒ Two-sided

[More settings](#)

Print using system dialog... (Ctrl+Shift+P)


Cleaner: Wetlands Improve Water Quality

Runoff associated with concrete, asphalt, rooftops, and other impervious surfaces is a leading cause of water pollution.

Wetlands near developed and agricultural areas trap pollutants and excess nutrients in surface runoff, keeping water bodies cleaner. This natural filtering helps prevent water use restrictions, such as beach and shellfish closures, and reduces the need for costly treatment systems.

Based on 2010 NOAA land cover:

- Wetland
- Developed
- Agriculture
- Other (grasslands, forests, scrub vegetation, and barren land)



Next Steps

Understanding how wetlands benefit a coastal community can provide strong incentives for wetland protection. The following suggestions and resources provide guidance in moving forward with these efforts.

Integrate wetland protection priorities into community planning – Encouraging wetland protection and development in appropriate places makes communities more resilient. Resources are available to help communities incorporate wetland protection considerations into existing planning efforts.

- [Introducing Green Infrastructure for Coastal Resilience training](https://coast.noaa.gov/digitalcoast/training/green/)
- [Coastal Flood Exposure Mapper](https://coast.noaa.gov/digitalcoast/tools/flood-exposure/)
- [Using Flood Exposure Maps webinar](https://coast.noaa.gov/digitalcoast/training/flood-exposure/)

Prioritize wetlands for protection – Additional factors can influence wetland protection priorities. Consult local experts regarding wetland size, location, and quality; fish and wildlife considerations; regulatory requirements; and tourism, recreation, and other benefits. Resources are available to help communities with the selection and prioritization process, including:

- [C-CAP land cover data](https://coast.noaa.gov/data/registry/search/collection/info/ccaregional/) and [online atlas](https://coast.noaa.gov/digitalcoast/tools/ica/)
- [National Wetlands Inventory data](http://www.fws.gov/wetlands/)
- [Habitat Priority Planner tool](https://coast.noaa.gov/digitalcoast/tools/hpp/)
- [Green Infrastructure Mapping Guide](https://coast.noaa.gov/digitalcoast/training/gi-mapping/)

Discover additional helpful resources – More tools, data, and information, including funding sources, are highlighted on the [frequently asked questions page](https://coast.noaa.gov/snapshots/faq/wetland-benefits.pdf).

Data Sources for This Snapshot

- [Land Cover Data](https://coast.noaa.gov/data/registry/search/collection/info/ccaregional/) – NOAA Coastal Change Analysis Program
- [Flood Zones](http://www.fema.gov/flood/) – Federal Emergency Management Agency 1% Annual Chance Flood Zones
- [Economics Data](https://coast.noaa.gov/data/registry/search/collection/info/enow/) – NOAA Economics: National Ocean Watch
- [Self-Employed Workers](https://coast.noaa.gov/data/registry/search/collection/info/enow-nex/) – NOAA Economics: National Ocean Watch for Self-Employed Workers



Scheduled Courses

- 7 Classroom, instructor-led
- 3 Online, instructor-led
- 2 Mixed delivery

On-Demand Products

- 17 Self-guided resources
- 7 Case studies
- 47 Publications
- 17 Quick References
- 27 Videos and webinars

Training



Green Infrastructure Planning



Using Flood Exposure Maps



Community Planning and Development



Adaptation for Coastal Communities



Stories from the Field

- 100+ place-based narratives highlighting the application of Digital Coast resources to coastal management issues
- Focus on partners and outcomes



Connect with the Digital Coast

<https://coast.noaa.gov/DigitalCoast>



Digital.Coast@noaa.gov



<http://www.facebook.com/NOAADigitalCoast>



@NOAADigCoast

