



The State of Virginia and the Digital Coast

The Digital Coast is a partnership effort and community resource for organizations that manage the nation's coastal resources.

Initiated and led by the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management, the Digital Coast provides geospatial data and the tools and methods needed to turn these data into useful information. Digital Coast resources range from high-resolution data to on-site training opportunities. People use these resources to address timely coastal issues, including land use, coastal conservation, hazards, ocean planning, community resilience, and coastal economics, all of which are of critical importance to the state of Virginia. The site was launched in 2008.

Virginia Benefits

The numbers below are from fiscal year 2015.

DIGITAL COAST BY THE NUMBERS

17,962 Virginia visitors to the Digital Coast website

226 Virginia communities that used the Digital Coast

3,663 Gigabytes of high-resolution elevation data available for the state

456,615 Total visitors to the Digital Coast website

411% Return on investment*

*More information on the benefits and costs of the Digital Coast can be found here: <http://1.usa.gov/1O8fFDa>

DATA

Virginia elevation, land cover, aerial imagery, and county-level socioeconomic data, provided by various trusted sources, are available through the Digital Coast's Data Access Viewer. Some of the most commonly accessed Virginia-based data are highlighted below.

Coastal Lidar

coast.noaa.gov/digitalcoast/data/coastallidar

Over 3,663 gigabytes of high-resolution elevation data covering Virginia's entire coastal zone are available. This type of data is critical to the development of models that examine potential local flooding impacts from coastal storms and sea level rise.

Land Cover

coast.noaa.gov/digitalcoast/data/ccapregional

Land cover data provide inventories of coastal intertidal areas, wetlands, and adjacent uplands for the coastal regions. These data are used to identify high-priority landscapes for Virginia's coastal protection and restoration efforts.

Economics: National Ocean Watch

coast.noaa.gov/digitalcoast/data/enow

This program provides time-series data on the ocean and Great Lakes economy, which includes six economic sectors dependent on the oceans and Great Lakes. Virginia's coastal counties can use this information to gain insight into their local coastal economies.

TOOLS

The Digital Coast website provides access to over 50 data analysis, visualization, and other decision-support tools that assist coastal managers in deriving critical information from coastal data sets. Many of these tools are web-based, which extends the reach of GIS functions to anyone with an Internet connection.

Coastal County Snapshots

coast.noaa.gov/digitalcoast/tools/snapshots

Complex local data sets are automatically formatted into easy-to-understand stories, complete with charts and graphs, with this web tool. Local officials use the snapshots as a planning tool, since the information helps them assess their county's resilience to flooding and understand the benefits provided by natural resources.

C-CAP Land Cover Atlas

coast.noaa.gov/digitalcoast/tools/lca

This tool from the Coastal Change Analysis Program (C-CAP) makes land cover data easier to access and understand by eliminating the need for desktop GIS software. General trends in land cover change (such as forest losses or new development) are summarized, and specific changes of interest (salt marsh losses to open water, for instance) can be highlighted. This type of information is useful for planning purposes. Virginia's officials found it particularly helpful as they worked to assess water resource health and stability.

Economics: National Ocean Watch Explorer

coast.noaa.gov/digitalcoast/tools/enow

Making Virginia's economic data easier to use is the goal of this tool. The economic data provided by the Digital Coast focus on six sectors that depend on the oceans and Great Lakes: living resources, marine construction, marine transportation, offshore mineral resources, ship and boat building, and tourism and recreation. This tool helps users discover which sectors are the largest contributors to Virginia's coastal economy in various parts of the state, which sectors are growing and declining, and which account for the most jobs, wages, and gross domestic product.

CanVis

coast.noaa.gov/digitalcoast/tools/canvis

This visualization tool helps users "see" potential impacts from coastal development or water level change. Users can download background pictures and insert objects (hotels, houses, and other features) of their choosing. This tool can help Virginia officials visualize sea level rise and green infrastructure techniques.

OpenNSPECT

coast.noaa.gov/digitalcoast/tools/opennspect

This tool is being used to investigate potential water quality impacts from development, other land uses, and climate change. The tool simulates erosion, pollution, and their accumulation from overland flow. Uses include helping communities identify areas for restorable wetlands and riparian buffers to reduce pollution and flooding in watersheds.

TRAINING

In fiscal year 2015, 45 Virginia coastal professionals received training on a variety of technical and process-based topics through the Digital Coast (coast.noaa.gov/digitalcoast/training/list). Courses taught participants a variety of skills, such as climate adaptation for coastal communities and fostering behavior change for coastal management.

GEOSPATIAL CONTRACTING

Through the Digital Coast, coastal organizations in need of geospatial data or services benefit from the use of the NOAA Office for Coastal Management's Coastal Geospatial Services Contract (coast.noaa.gov/idiq/geospatial.html). This contracting vehicle provides a way for local, state, and federal agencies to take advantage of a streamlined process to obtain services from the nation's top geospatial firms. In fiscal year 2015, over \$3 million was awarded to private geospatial firms to conduct mapping projects in the Mid-Atlantic region coastal zone, including the acquisition and processing of imagery data.

DIGITAL COAST IN ACTION

The following stories illustrate how Digital Coast users are applying geospatial information resources to address coastal issues in Virginia.

Assessing the Vulnerability of Transportation Infrastructure on the Eastern Shore

<https://coast.noaa.gov/digitalcoast/stories/eastern-shore> coast.noaa.gov/digitalcoast/stories/eastern-shore

Several areas in coastal Virginia are already vulnerable to road closures during severe storms. With sea level rise projected to increase along the East Coast, coastal managers in Virginia wanted to analyze the at-risk infrastructure throughout the area. Using NOAA Digital Coast's Sea Level Rise Viewer and lidar data, managers analyzed critical infrastructure, highways, and roads that would be compromised with sea level rise. The analysis found that 33 miles of roads in the region would be vulnerable to inundation with just a one-foot rise in sea level, and almost 25 percent of all roads with a six-foot rise.

Identifying Environmental Concerns from Mid- and South Atlantic Offshore Drilling

coast.noaa.gov/digitalcoast/stories/offshore-drilling

The U.S. Department of the Interior proposed to open areas of the Atlantic Ocean to offshore drilling as part of the 2017-2022 oil- and gas-leasing plan. Environmental impacts of offshore drilling were a major concern for many stakeholders in the region. The Southern Environmental Law Center used data from NOAA Digital Coast's MarineCadastre.gov to analyze sea turtle and marine mammal data, fish habitat, and habitat areas of concern for the Mid- and South Atlantic Ocean. The analysis found that 90 percent of waters off the coast of South Carolina and 95 percent of waters off the coast of North Carolina are critical habitat areas for a variety of species.

Mapping Recreational Uses of the Ocean in the Mid-Atlantic Region

coast.noaa.gov/digitalcoast/stories/marco

With the prospect of offshore energy development in the Atlantic Ocean, planners needed data to balance ocean uses. The Mid-Atlantic Regional Council on the Ocean worked with NOAA's Digital Coast to hold participatory mapping workshops in Virginia and gather information on things like wreck diving, fishing, sailing, and more. The council also applied the process in other locations to build stakeholder relationships and fill data gaps. This information is now used to inform ocean planning for the waters off the coast of Virginia.

The Digital Coast Partnership

One of the goals of the Digital Coast is to unify groups that might not otherwise work together. As a result, the Digital Coast Partnership is building not only a website, but also a strong collaboration of coastal professionals intent on addressing common needs. Currently, the eight members of the Digital Coast Partnership include the 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, Nature Conservancy, and Urban Land Institute. The responsiveness of these organizations and the direct lines of communication fostered by the effort have proven essential for ensuring the success and continuing relevance of the Digital Coast, and for allowing the platform to evolve and adapt to changing needs and priorities.