



The State of Maryland 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 Maryland. The site was launched in 2008.

Maryland Benefits

The numbers below are from fiscal year 2015.

DIGITAL COAST BY THE NUMBERS

12,853 Maryland visitors to the Digital Coast website

212 Maryland communities that used the Digital Coast

472 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/1O8fDa>

DATA

Maryland 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 Maryland-based data are highlighted below.

Coastal Lidar

coast.noaa.gov/digitalcoast/data/coastallidar

Over 472 gigabytes of high-resolution elevation data covering Maryland'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 Maryland'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. Maryland'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. Maryland's officials have found it particularly helpful as they work to use green infrastructure (natural areas) to mitigate the impacts of flooding and climate change.

Economics: National Ocean Watch Explorer

coast.noaa.gov/digitalcoast/tools/enow

Making Maryland'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 Maryland'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. Managers in Maryland use this tool to help stakeholders visualize the effects of sea level rise.

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 for riparian buffers to reduce pollution and flooding in watersheds.

VDatum

coast.noaa.gov/digitalcoast/tools/vdatum

This tool converts elevation data among tidal, orthometric, and ellipsoidal vertical datums, allowing users to establish a common reference system for all elevation data sets. VDatum is also used with other bathymetric data sets to address issues related to dredging.

TRAINING

In fiscal year 2015, 124 Maryland 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 adaption for coastal communities and how to map coastal inundation.

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 \$1.8 million was awarded to private geospatial firms to conduct mapping projects in the Northeast coastal zone, including the acquisition 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 Maryland.

Identifying Conservation Priorities for Sea Level Rise Adaptation in Coastal Maryland

coast.noaa.gov/digitalcoast/stories/slr-maryland

To better understand the impacts that sea level rise may have on the state's coastal wetland system, the Maryland Department of Natural Resources conducted wetland migration modeling using data and tools available through the Digital Coast website. The agency incorporated a variety of spatial criteria into the model to help identify coastal lands that provide adaptation opportunities under a sea level rise projection of 1.04 meters by year 2100. The results of this analysis include methods and data that will allow the state of Maryland and the coastal program to make informed decisions and investments about land conservation in the face of sea level rise and climate change.

Picturing Living Shorelines in Maryland

coast.noaa.gov/digitalcoast/stories/canvis-md

Personnel with the Living Shorelines Project at Maryland's Department of Natural Resources wanted to provide state residents with a clearer picture of how living shorelines look and function. Some landowners, engineers, and contractors had expressed concern about how these projects might look once completed. Using the CanVis visualization tool and accompanying online training available through the Digital Coast, agency staff members developed visualizations that illustrated the likely visual impact of living shorelines on specific properties. As a result, many landowners, builders, and contractors who had previously expressed concern about living shorelines have come away from CanVis presentations feeling reassured and better informed.

Using Green Infrastructure Planning to Prioritize Coastal Resources in Maryland

coast.noaa.gov/digitalcoast/stories/greenmaryland

Coastal managers in Maryland, looking to improve their efforts to restore and conserve the Chesapeake Bay, are using methods learned in the GIS Tools for Strategic Conservation Planning course to implement a new green infrastructure approach to help guide its land targeting and conservation efforts throughout the state's lands. More recently, the Maryland Department of Natural Resources' Chesapeake and Coastal Program expanded the existing statewide green infrastructure program to the coast to better incorporate aquatic priorities near tidal waters of the Chesapeake and Atlantic Coastal Bays and their tributaries. The goal is to expand the interconnected natural resource network while at the same time helping to preserve coastal habitats that protect coastal communities from storm surge, erosion, and sea level rise.

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.