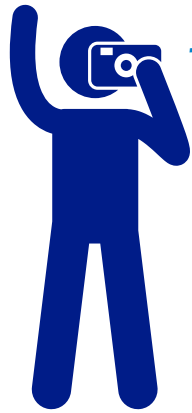


# MARYLAND RELIES ON THE DIGITAL COAST



# 14,402

Maryland visitors to the Digital Coast. (560,176 nationwide)



*That's because the Digital Coast has a lot to offer Maryland.*

## DATA

**1,539** gigabytes of high-resolution elevation data available for Maryland.



## TOOLS

**50+** decision-support tools applicable for Maryland challenges.



## TRAINING

**130** leaders in the state used a Digital Coast training program.



## GEOSPATIAL SERVICES

Over **\$1 million** in private-sector geospatial services awarded for the Mid-Atlantic region.



## INFORMATION

110010001010100010100000111010110010001010100000111101010101000101001011

- Twenty-five percent of the population in Worcester County lives in a floodplain.
- Agriculture is the state's largest land cover category (26.93%).
- Tourism and recreation is the largest employer among the state's ocean-dependent economic sectors.

1100100010101000101000001111010101010001010010111010101010001010

**SAVING TIME AND MONEY**

**411%** was the return on investment calculated for the Digital Coast.

### IT'S A WEBSITE.

NOAA owns the Digital Coast, but the resources inside, while vetted by NOAA for applicability and quality, come from various organizations with one common but important thread: content is solely focused on coastal community needs. The site contains not only data, but also the tools, training, and information communities need to make data truly useful. Three out of four Digital Coast users surveyed say they couldn't do their jobs without this important resource!

The short report that follows highlights Digital Coast interactions with the State of Maryland.

**Digital Coast**  
[coast.noaa.gov/digitalcoast](http://coast.noaa.gov/digitalcoast)



# Maryland Recap

*NOAA and the Digital Coast are devoted to supplying Maryland with the data, tools, and information most needed by coastal communities. This report highlights the resources frequently used during this reporting period. Please visit the website ([coast.noaa.gov](http://coast.noaa.gov)) to learn more or contact NOAA ([coastal.info@noaa.gov](mailto:coastal.info@noaa.gov)) with your questions or suggestions.*

## DATA

Data represent the core component of the Digital Coast. For Maryland, data holdings include elevation, land cover, aerial imagery, and county-level socioeconomic data. Examples are highlighted below.

### Coastal Lidar

[coast.noaa.gov/digitalcoast/data/coastallidar](http://coast.noaa.gov/digitalcoast/data/coastallidar)

Over 1,539 gigabytes of high-resolution elevation data covering Maryland's entire coastal zone are available. These types of data are critical for all types of modeling, including those that predict flooding potential.

### Land Cover

[coast.noaa.gov/digitalcoast/data/ccapregional](http://coast.noaa.gov/digitalcoast/data/ccapregional)

This satellite imagery is used to inventory and categorize the landscape—coastal intertidal areas, wetlands, adjacent uplands, development, agriculture use, etc. Nothing provides a big picture view of a region like land cover data. These data are used to identify high-priority landscapes for Maryland's coastal protection and restoration efforts. Comparing one year to another is also a good way to spot and document trends.

### Economics

[coast.noaa.gov/digitalcoast/data/enow](http://coast.noaa.gov/digitalcoast/data/enow)

Information about the coastal economy in Maryland helps people understand how the decisions that impact the coast can also impact the bottom line.

## TOOLS

"Data alone is not enough" is a frequent Digital Coast refrain. Going the extra step and including the tools and training needed to make data truly useful is a hallmark of the Digital Coast website. Users have access to over 50 data analysis, visualization, and other decision-support tools. Examples are highlighted below.

### Coastal County Snapshots

[coast.noaa.gov/digitalcoast/tools/snapshots](http://coast.noaa.gov/digitalcoast/tools/snapshots)

Pick a county and hit a button to generate easy-to-understand handouts. Behind the simple charts and graphs are complex county-level data about flooding, wetlands, and economics. Local officials use the snapshots as a planning and communication tool.

## Land Cover Atlas

[coast.noaa.gov/digitalcoast/tools/lca](https://coast.noaa.gov/digitalcoast/tools/lca)

This tool 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 (salt marsh losses to open water, for instance) can be documented. This type of information is useful for planning purposes. Maryland's officials have found it particularly helpful as they work to use green infrastructure to mitigate the impacts of flooding and climate change.

## Economics: National Ocean Watch Explorer

[coast.noaa.gov/digitalcoast/tools/enow](https://coast.noaa.gov/digitalcoast/tools/enow)

This tool makes economic data easier to use. The economic data provided by the Digital Coast focus on six business sectors dependent 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 growing and declining, and which account for the most jobs, wages, and gross domestic product for coastal communities, the state, and the nation.

## CanVis Visualizations

[coast.noaa.gov/digitalcoast/tools/canvis](https://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](https://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.

## VDatum

[coast.noaa.gov/digitalcoast/tools/vdatum](https://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

Coastal officials have to stay on top of their game, which is why the Digital Coast's "training academy" provides over 125 learning resources, from online courses to training brought to your location. A few examples are provided below. To see the full suite, visit [coast.noaa.gov/digitalcoast/training/home](https://coast.noaa.gov/digitalcoast/training/home).

## Coastal Inundation Mapping

[coast.noaa.gov/digitalcoast/training/inundationmap](http://coast.noaa.gov/digitalcoast/training/inundationmap)

This classroom course provides baseline information about the various types of flooding and teaches methods for mapping current and potential flooding scenarios. The course offers 16 hours of continuing education credits for the GIS Professional (GISP) and American Institute of Certified Planners (AICP), and Certified Floodplain Manager (CFM) professional certifications.

## Green Infrastructure Practices and Benefits Matrix

[coast.noaa.gov/digitalcoast/training/gi-practices-and-benefits](http://coast.noaa.gov/digitalcoast/training/gi-practices-and-benefits)

Green infrastructure (also called natural infrastructure) is the way to go for communities looking to reduce flooding. This quick handout provides important information about some of the most common techniques in use.

## Seven Best Practices for Risk Communications

[coast.noaa.gov/digitalcoast/training/risk-communication](http://coast.noaa.gov/digitalcoast/training/risk-communication)

The title alone speaks to most people—this is a skill everyone benefits from. The Digital Coast has many resources devoted to this topic, but this online training course is particularly popular.

# GEOSPATIAL CONTRACTING

Through the Digital Coast, coastal organizations in need of geospatial data or services benefit from the use of the Coastal Geospatial Services Contract ([coast.noaa.gov/idiq/geospatial.html](http://coast.noaa.gov/idiq/geospatial.html)). This contracting vehicle provides a way for local, state, and federal agencies to use a streamlined process to obtain services from the nation's top geospatial firms. In fiscal year 2016, over \$1 million was awarded to private geospatial firms to conduct mapping projects in the Mid-Atlantic region, 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](http://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](https://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.

## **Consolidating Data Sets to Simplify Climate Risk Communication**

[coast.noaa.gov/digitalcoast/stories/vizonomy](https://coast.noaa.gov/digitalcoast/stories/vizonomy)

Climate change communication depends on powerful tools that are easy to use and understand. Using data from NOAA's Digital Coast, the company Vizonomy created a tool for the entire U.S. showing sea level rise scenarios combined with economic losses for infrastructure. Using the tool, stakeholders can assess building risks and potential economic losses from flooding or sea level rise; the amount of infrastructure such as roads, schools, and hospitals exposed to flooding risks; and the specific infrastructure assets at risk.

## **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.