



# The State of New Jersey 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 New Jersey. The site was launched in 2008.

## New Jersey Benefits

The numbers below are from fiscal year 2015.

### DIGITAL COAST BY THE NUMBERS

**10,314** New Jersey visitors to the Digital Coast website

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**359** New Jersey communities that used the Digital Coast

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**3,226** Gigabytes of high-resolution elevation data available for the state

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**456,615** Total visitors to the Digital Coast website

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**411%** Return on investment\*

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\*More information on the benefits and costs of the Digital Coast can be found here: <http://1.usa.gov/1O8fDa>

## DATA

New Jersey 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 New Jersey-based data are highlighted below.

### Coastal Lidar

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

Over 3,226 gigabytes of high-resolution elevation data covering New Jersey'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](https://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 New Jersey's coastal protection and restoration efforts.

### Economics: National Ocean Watch

[coast.noaa.gov/digitalcoast/data/enow](https://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. New Jersey'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](https://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](https://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. New Jersey 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](http://coast.noaa.gov/digitalcoast/tools/enow)

Making New Jersey'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 New Jersey'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](http://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 New Jersey use this tool to help stakeholders visualize the effects of sea level rise.

## OpenNSPECT

[coast.noaa.gov/digitalcoast/tools/opennspect](http://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](http://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, 32 New Jersey coastal professionals received training on a variety of technical and process-based topics through the Digital Coast ([coast.noaa.gov/digitalcoast/training/list](http://coast.noaa.gov/digitalcoast/training/list)). Courses taught participants a variety of skills, such as coastal restoration project design and evaluation and developing data sets to model 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](http://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 elevation data.

## DIGITAL COAST IN ACTION

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

### Visualizing Coastal Flooding Vulnerabilities to Plan for Resilience in New Jersey

[coast.noaa.gov/digitalcoast/stories/visualizing-coastal-flooding](https://coast.noaa.gov/digitalcoast/stories/visualizing-coastal-flooding)

Sea level rise is a global phenomenon that needs local solutions to effectively address the impacts. Managers in New Jersey used local data to create a customized version of NOAA Digital Coast's Sea Level Rise Viewer. This tool allows coastal planners to compare storm surge from Sandy to various levels of sea level rise and to look at future flood zones.

### Planning for Sea Level Rise Adaptation at the Site Scale in New Jersey

[coast.noaa.gov/digitalcoast/stories/slr-site-scale](https://coast.noaa.gov/digitalcoast/stories/slr-site-scale)

Providing public access to coastal resources in the New York-New Jersey Harbor Estuary, the most urban estuary in the nation, is a challenge, and this task will become more difficult with sea level rise. This issue calls for site-specific application of sea level rise adaptation techniques, of which there are limited examples. Using data from NOAA's Digital Coast, the New York-New Jersey Harbor and Estuary Program assessed vulnerability and provided recommendations for three publicly accessible waterfront recreation areas. This project provided a platform for discussion of how sea level rise might affect communities at the local level.

### Assessing Beach and Dune Susceptibility in Coastal New Jersey

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

Richard Stockton College's Coastal Research Center received a grant through the NOAA Office for Coastal Management to adapt a program that incorporates and analyzes data—lidar, beach profile, nearshore bathymetry, vegetation, and descriptive site—within a single user interface. The GIS-compatible program, developed by private mapping industry partners, creates parcel-level site characteristics that are used to generate beach and dune parameters for 250-foot analysis zones along the shore. Results of this effort show that many areas along the New Jersey coastline are very susceptible to the effects of coastal storm events, which recur on average every 10 years. These storm events can negatively affect coastal environments and the residents of these areas.

## 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.