



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

Pennsylvania Benefits

The numbers below are from fiscal year 2015.

DIGITAL COAST BY THE NUMBERS

9,344 Pennsylvania visitors to the Digital Coast website

455 Pennsylvania communities that used the Digital Coast

2,089 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

Pennsylvania 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 Pennsylvania-based data are highlighted below.

Coastal Lidar

coast.noaa.gov/digitalcoast/data/coastallidar

Over 2,089 gigabytes of high-resolution elevation data covering Pennsylvania'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 Pennsylvania'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. Pennsylvania'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.

Lake Level Viewer (U.S. Great Lakes)

coast.noaa.gov/digitalcoast/tools/llv

Visualize lake level changes that range from six feet above to six feet below historical long-term average water levels in the Great Lakes, along with potential shoreline and coastal impacts. Communities can use the data behind the tool for habitat and hydrological analysis.

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. Pennsylvania officials found it particularly helpful as they worked to balance land and water uses with development and other impacts on the area.

Economics: National Ocean Watch Explorer

coast.noaa.gov/digitalcoast/tools/enow

Making Pennsylvania'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 Pennsylvania'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 helped Pennsylvania 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, 1,500 coastal professionals across the county 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 how to use the Digital Coast's Nonpoint Source Pollution and Erosion Comparison tool.

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 \$1.85 million was awarded to private geospatial firms to conduct mapping projects in the Great Lakes coastal zone, including facilitation of climate adaptation data.

DIGITAL COAST IN ACTION

The following stories illustrate how Digital Coast users are applying geospatial information resources to address coastal issues in Pennsylvania and the Great Lakes.

Building Community Resilience in Pennsylvania

coast.noaa.gov/digitalcoast/stories/chester

Smaller, financially challenged coastal communities need help and guidance when it comes to planning for climate change, hazards, and resilience. The city of Chester, Pennsylvania, worked with the NOAA Office for Coastal Management to use the Roadmap for Adapting to Coastal Risk framework to integrate resilience to hazards and climate change into community planning. Following the workshop, Pennsylvania Sea Grant was awarded grant money to be able to pursue some of the efforts identified in the roadmap framework. The roadmap guidance educated citizens on the risks of hazard and climate change impacts and helped them plan for the future.

Revealing the Effects of High-Rise Condominiums on Water Views in Pennsylvania

coast.noaa.gov/digitalcoast/stories/waterpa

The historic port of Philadelphia, Pennsylvania, affords picturesque views of the Delaware River, and when a developer proposed the construction of 30- to 60-floor condominiums on the port's finger piers, residents and managers raised concerns about the effects on scenic vistas. The Pennsylvania Department of Environmental Protection's Coastal Resource Management Program wanted to protect resident's access to the water and the view and therefore turned to the Digital Coast's CanVis tool to help visualize the development. Using these photos, the review board was able to "see" the effects of the high-rise condominiums and ultimately rejected the development proposal.

Using Lidar to Determine Bluff Recession Rates for Lake Erie

coast.noaa.gov/digitalcoast/stories/lakeerie

Pennsylvania law states that all residential, commercial, and industrial structures must be set back from dangerous areas prone to bluff recession. In the past, bluff recession rates were determined by on-site measurements that took significant time and investment. Managers began using lidar data from the Digital Coast to create elevation data sets and models within ArcGIS that would accurately predict bluff recession rates without requiring researchers in the field. Using lidar has reduced monitoring costs and increased the resolution and overall accuracy of the generated bluff erosion rates.

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.