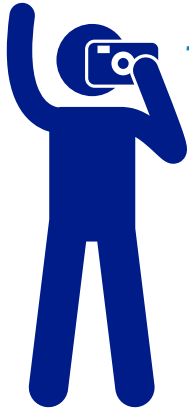


# PENNSYLVANIA RELIES ON THE DIGITAL COAST



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

**11,470**

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



## DATA

**2,614** gigabytes of high-resolution elevation data available for Pennsylvania.



## TOOLS

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



## TRAINING

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



## GEOSPATIAL SERVICES

Over **\$870,000** in private-sector geospatial services awarded for the Great Lakes region.



## INFORMATION

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- Three percent of the population in Erie County lives in a floodplain.
- Forestry is the state's largest land cover category (57%).
- Tourism and recreation is the largest employer among the state's ocean and Great Lakes-dependent economic sectors.

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**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 Pennsylvania.*

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



# Pennsylvania Recap

*NOAA and the Digital Coast are devoted to supplying Pennsylvania 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 Pennsylvania, 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 2,614 gigabytes of high-resolution elevation data covering Pennsylvania'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 Pennsylvania'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 Pennsylvania 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.

### Lake Level Viewer (U.S. Great Lakes)

[coast.noaa.gov/digitalcoast/tools/llv](http://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](https://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. 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](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. This tool helped Pennsylvania visualize sea level rise and green infrastructure techniques.

## 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.

## 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 \$870,000 was awarded to private geospatial firms to conduct mapping projects in the Great Lakes region, 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](http://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](https://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](https://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.