



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

Florida Benefits

The numbers below are from fiscal year 2015.

DIGITAL COAST BY THE NUMBERS

38,516 Florida visitors to the Digital Coast website

437 Florida communities that used the Digital Coast

9,023 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

Florida 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 Florida-based data are highlighted below.

Coastal Lidar

coast.noaa.gov/digitalcoast/data/coastallidar

Over 9,023 gigabytes of high-resolution elevation data covering Florida'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 Florida'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. Florida'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. Florida'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 Florida'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 Florida'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 Florida 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 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, 317 Florida 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 developing data for modeling coastal inundation and climate adaptation for coastal communities.

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 \$3.6 million was awarded to private geospatial firms to conduct mapping projects in the Southeast coastal zone, including the acquisition of GIS data.

DIGITAL COAST IN ACTION

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

Developing Consistent Methods for Mapping Sea Level Rise in Southeast Florida

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

The peninsular shape and low elevation of Southeast Florida make it vulnerable to inundation, particularly inundation from sea level rise, and the region's high population adds urgency to mapping and understanding this phenomenon. To assist the Southeast Florida counties of Monroe, Miami-Dade, Broward, and Palm Beach in developing a unified set of methods and criteria for creating sea level inundation maps, a two-day technical workshop was held in April 2010. Upon the conclusion of this workshop, the counties and the South Florida Water Management District worked together, via the Southeast Florida Regional Climate Change Compact, to develop a vulnerability assessment of the Southeast Florida region for one-, two-, and three-foot sea level rise scenarios. In terms of dollar amounts, taxable property values vulnerable across the region in the one-foot scenario are greater than \$4 billion, with values rising to over \$31 billion in the three-foot scenario.

Adapting to Sea Level Rise in Miami-Dade County, Florida

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

Miami-Dade County, Florida, contains some of the most populated cities in the state. The population, combined with the location and topography, makes this county particularly vulnerable to sea level rise. The Miami-Dade Office of Sustainability worked with the NOAA Office for Coastal Management to host a workshop at which county department representatives learned how sea level rise could affect the county and generated ideas for how to adapt to these changes. To help participants understand how sea level rise might impact the work of each county department, maps were developed showing how predicted sea level rise might interact with saltwater intrusion, land cover and land use, zoning, emergency facilities, human infrastructure, and important natural features. Participants used the information from these maps to identify specific actions to adapt to climate change, including creating a centralized location for recording and sharing data representing hazards, climate, and vulnerabilities; developing and implementing climate-adaptive zoning and building codes and permit process modifications; and accelerating existing restoration efforts to help protect the community against rising sea levels.

Assessing Seagrass Vulnerability Along Florida's Gulf Coast

coast.noaa.gov/digitalcoast/stories/seagrass

As sea level rises, limited exposure to sunlight decreases the survival rate of seagrass in deeper waters. Hard stabilization projects used to protect against sea level rise are also posing a threat to seagrass. Using the Digital Coast's Sea Level Rise Viewer, researchers from the University of South Florida analyzed the potential gain of habitat from inundation of the shoreline. Using these data, researchers were able to compare habitat gain and the effects of using hardened structures to protect against sea level rise within an integrated management plan.

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.