U.S. Virgin Islands 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 U.S. Virgin Islands. The site was launched in 2008.

U.S. Virgin Islands Benefits

The numbers below are from fiscal year 2015.

DIGITAL COAST BY THE NUMBERS

218	U.S. Virgin Islands visitors to the Digital Coast website
4	U.S. Virgin Islands communities that used the Digital Coast
115	Gigabytes of high-resolution elevation data available for the territory
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/1O8fFDa*

DATA

U.S. Virgin Islands 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 U.S. Virgin Islands-based data are highlighted below.

Coastal Lidar
coast.noaa.gov/digitalcoast/data/coastallidar

Over 115 gigabytes of high-resolution elevation data covering the U.S. Virgin Islands' 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 U.S. Virgin Islands' coastal protection and restoration efforts.

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.

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. U.S. Virgin Islands managers have found these data helpful while analyzing water quality, land use, and more.

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 the U.S. Virgin Islands 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, over 1,500 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 how to apply GIS tools and methods to coastal issues, and how to develop data sets that model the extent of 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*). 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 $1.4 million was awarded to private geospatial firms to conduct mapping projects in the Caribbean coastal zone, including the acquisition and processing of lidar data.

DIGITAL COAST IN ACTION

The following stories illustrate how Digital Coast users are applying geospatial information resources to address coastal issues in the U.S. Virgin Islands and the Southeast U.S.

Identifying Sources of Pollution That Impact Coral Reef Communities in the Virgin Islands

coast.noaa.gov/digitalcoast/stories/coralreef-vi

Land-based sources of sediment and pollution are a major threat to coral reefs. Local resource managers have the difficult task of identifying watersheds that contribute runoff leading to coral reef decline. The U.S. Environmental Protection Agency used NOAA's land cover data from the Digital Coast, combined with coral reef survey data, to analyze the relationship between runoff and reef health in the U.S. Virgin Islands. This information was then used to inform land use decision-making processes in the area to decrease runoff and improve coral reef resilience.

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, building codes, and permit process modifications; and accelerating existing restoration efforts to help protect the community against rising sea levels.

Developing an Economic Baseline for Recreation and Tourism on the Atlantic Coast
coast.noaa.gov/digitalcoast/stories/economic-baseline

In many areas of the U.S., tourism and recreation from the coast are major contributors to the local economy. With the prospect of offshore wind farms, the Bureau of Ocean Energy Management wanted an economic baseline for tourism and recreation in the areas that have the most potential for wind energy development. After developing a "scorecard" for 113 counties, researchers used Economics: National Ocean Watch data and information from the Ocean Jobs County Snapshot to develop community profiles for the most vulnerable counties. The bureau has included this information in the National Environmental Policy Act process and used it to inform decision makers.

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.