The State of North Carolina 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 North Carolina. The site was launched in 2008.

North Carolina Benefits

The numbers below are from fiscal year 2015.

DIGITAL COAST BY THE NUMBERS

12,903 North Carolina visitors to the Digital Coast website

258 North Carolina communities that used the Digital Coast

8,685 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/1O8fFDa*

DATA

North Carolina 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 North Carolina-based data are highlighted below.

Coastal Lidar

coast.noaa.gov/digitalcoast/data/coastallidar

Over 8,685 gigabytes of high-resolution elevation data covering North Carolina'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 North Carolina'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. North Carolina'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. North Carolina's officials found it particularly helpful to model potential future growth and land cover change.

Economics: National Ocean Watch Explorer
coast.noaa.gov/digitalcoast/tools/enow

Making North Carolina'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 North Carolina'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 North Carolina 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, 11 North Carolina 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 designing data sets for coastal inundation mapping and fostering behavior change for coastal management.

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 million was awarded to private geospatial firms to conduct mapping projects in the Mid-Atlantic coastal zone, including the acquisition of GIS and elevation data.

DIGITAL COAST IN ACTION

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

Using Spatial Data and Web Mapping Tools to Support Wind Energy Planning off the North Carolina Coast

coast.noaa.gov/digitalcoast/stories/wind-nc

North Carolina is exploring the idea of producing renewable wind energy offshore. The Bureau of Ocean Energy Management and other parts of the federal government are working to spur the rapid and responsible development of this resource and create task forces to discuss wind energy area designations. Using NOAA Digital Coast's Marine Cadastre National Viewer, each task force can create an interactive map, as opposed to a static map, that includes all relevant data. In North Carolina, this interactive map allowed members to pan, zoom, and add additional data sets as needed to fully determine if there were use conflicts with the proposed area.

Partnering to Map Oceans and Coasts for Multiple Needs in North Carolina

coast.noaa.gov/digitalcoast/stories/mappingneeds

Ocean and coastal maps are in high demand and can be used for a variety of purposes. As various agencies respond to the increased demand for geospatial data, they run a high risk of duplicating their efforts. To combine and coordinate NOAA's ocean and coastal mapping activies, and to disseminate data, NOAA formed the Integrated Ocean and Coastal Mapping program. This program has since gone on to gather lidar data from Cape Hatteras to Virginia Beach and the Currituck Banks National Estuarine Research Reserve. The partners have succeeded in increasing efficiency, eliminating duplication, and increasing the use of important data sets.

Modeling Future Development for Eastern North Carolina

coast.noaa.gov/digitalcoast/stories/modelgrowth

Civilian and military growth in North Carolina is causing loss of natural resources and encroachment on the region's military installations. Managers in North Carolina needed to work to preserve the function of the military bases while protecting vital ecosystems—and therefore needed to understand population and land use trends. NOAA Coastal Change Analysis Program data and other land cover aided managers with predictive urban growth models to simulate where population growth would occur. The results of the models provided the foundation for sustainable growth and resource management.

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.