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

Alabama Benefits

The numbers below are from fiscal year 2015.

DIGITAL COAST BY THE NUMBERS

4,433 Alabama visitors to the Digital Coast website

115 Alabama communities that used the Digital Coast

248 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

Alabama 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 Alabama-based data are highlighted below.

Coastal Lidar

coast.noaa.gov/digitalcoast/data/coastallidar

Over 248 gigabytes of high-resolution elevation data covering Alabama'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 Alabama'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. Alabama'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. Alabama's managers have found this data helpful while conducting the Coastal Watershed Survey Program, which analyzes water quality, land use, and more.

Economics: National Ocean Watch Explorer

coast.noaa.gov/digitalcoast/tools/enow

Making Alabama'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 Alabama'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 Alabama 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, 24 Alabama coastal professionals received training on 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 coastal inundation mapping, risk communication, and using flood exposure maps.

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 and processing 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 Alabama.

Identifying Priority Habitats for Conservation and Restoration in Coastal Alabama

coast.noaa.gov/digitalcoast/stories/mobilebay

Protecting coastal habitats for long-term sustainability is a concern for Mobile and Baldwin Counties. To support the common goal of protecting locally and regionally strategic marine habitats, local managers needed geospatial data and analysis. Using information from local stakeholders on habitat conservation and restoration goals, selection criteria, and available data, managers used NOAA's Office for Coastal Management's Habitat Priority Planner for the analysis. The office then took these data and developed the Alabama-Mississippi Habitat Mapper to make the data available to anyone without a desktop GIS application. The mapper has been used at public meetings, workshops, and related education and outreach opportunities. Impacts from the Deepwater Horizon Oil Spill heightened the need and broadened the use of the tool.

Analyzing the Impacts of Hurricane Katrina on Forest Ecosystem Services

coast.noaa.gov/digitalcoast/stories/katrinaforest

Trees are a good indicator of ecosystem health. Hurricane Katrina destroyed forests and habitats, significantly changing the land cover of the region. Loss in forest cover from 2001 to 2006 was analyzed using the NOAA Office for Coastal Management's C-CAP land cover data. A report was developed that outlined tree cover loss, the value of air-quality ecosystem services each year, and changes in those values due to changes in land cover. The report informed several post-Katrina restoration efforts, including the planting of 265 trees to help one area recover.

Creating Fisheries Regulatory Boundaries in the Gulf of Mexico

coast.noaa.gov/digitalcoast/stories/fisheries-boundaries

NOAA's National Marine Fisheries Service Southeast Regional Office (SERO) works with local fisheries management councils to manage the fishing stocks and develop fisheries management plans. Developing geographic information files for these fishing areas is part of these plans and allows for spatial analysis and public communications of closures and other regulatory boundaries. SERO uses regulatory data from MarineCadastre.gov to develop geographic representations of fisheries closures in the Gulf of Mexico, South Atlantic, Puerto Rico, and U.S. Virgin Islands. GIS-based maps of these closure areas provide a quick and easy way for commercial fishermen, fishery managers, and the U.S. Coast Guard to visualize closures without having to analyze the Code of Federal Regulations.

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.