# The State of Oregon 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.

## Oregon Benefits

The numbers below are from fiscal year 2015.

### DIGITAL COAST BY THE NUMBERS

**7,755** Oregon visitors to the Digital Coast website

**108** Oregon communities that used the Digital Coast

**12,705** 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

Oregon 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 Oregon-based data are highlighted below.

### Coastal Lidar

*coast.noaa.gov/digitalcoast/data/coastallidar*

Over 12,705 gigabytes of high-resolution elevation data covering Oregon'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 Oregon'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. Oregon'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. Oregon's officials found it particularly helpful as they worked to assess timber harvest activities.

### Economics: National Ocean Watch Explorer

*coast.noaa.gov/digitalcoast/tools/enow*

Making Oregon'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 Oregon'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 Oregon 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, six Oregon 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 planning for meaningful project evaluation 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 $1.5 million was awarded to private geospatial firms to conduct mapping projects in the West Coast coastal zone, 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 Oregon.

### Using Lidar to Plan for Sea Level Rise in Oregon

*coast.noaa.gov/digitalcoast/stories/oregon-dikes*

For centuries, farmers in Oregon have been diking their land for agricultural purposes. With the threat of sea level rise and very few marshes left, the dikes in existence needed to be found and planners needed to determine which ones should be kept and which should be left to flood. Using lidar data from the Digital Coast, the Oregon Coastal Management Program found and mapped all the dikes in the area and created a directory of the information. Nonprofits in the area have been able to use this directory to prioritize future projects and create more accurate predictions of what marshes and the coast will look like in the future.

### Identifying Historical Wetland Habitat Changes in Oregon

*coast.noaa.gov/digitalcoast/stories/columbia-river*

Effective conservation and management plans for the Lower Columbia River Estuary required the comparison of historical habitat information to present-day conditions. To determine these changes, managers used NOAA Digital Coast's Coastal Change Analysis Program data for accurate present-day conditions. The map was then compared to historical survey data. Mapping allowed managers to see the decline in natural habitat, as well as discover that the decline was due to agriculture and urban development. It also helped managers prioritize habitats for recovery.

### Determining Variations in Exposure Sensitivity to Tsunami Hazards in Oregon

*coast.noaa.gov/digitalcoast/stories/tsunami-or*

Although Oregon coastal areas are categorized as potential tsunami inundation zones, no one knew how this designation came about or what areas fell within the zone. The U.S. Geological Survey prepared a vulnerability assessment for Oregon's coastal cities and paired it with land use data from the Digital Coast's Coastal Change Analysis Program data set. The report enabled representatives from Oregon to further their dialogue on societal risk to tsunamis and help identify future preparedness, mitigation, response, and recovery planning needs.

## 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.