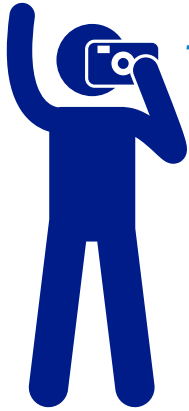


MASSACHUSETTS RELIES ON THE DIGITAL COAST



*That's because the **Digital Coast** has a lot to offer **Massachusetts**.*

19,328

Massachusetts visitors to the Digital Coast. (560,176 nationwide)



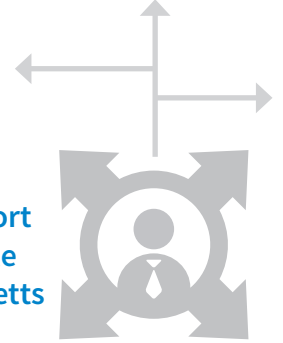
DATA

2,023 gigabytes of high-resolution elevation data available for Massachusetts.



TOOLS

50+ decision-support tools applicable for Massachusetts challenges.



TRAINING

82 leaders in the state used a Digital Coast training program.



GEOSPATIAL SERVICES

Over **\$590,000** in private-sector geospatial services awarded for the Northeast region.



INFORMATION



- Sixteen percent of the population in Plymouth County lives in a floodplain.
- Forestry is the state's largest land cover category (38.78%).
- Tourism and recreation is the largest employer among the state's ocean-dependent economic sectors.



SAVING TIME AND MONEY

411% was the return on investment calculated for the Digital Coast.

IT'S A WEBSITE.

NOAA owns the Digital Coast, but the resources inside, while vetted by NOAA for applicability and quality, come from various organizations with one common but important thread: content is solely focused on coastal community needs. The site contains not only data, but also the tools, training, and information communities need to make data truly useful. Three out of four Digital Coast users surveyed say they couldn't do their jobs without this important resource!

The short report that follows highlights Digital Coast interactions with the State of Massachusetts.

Digital Coast
coast.noaa.gov/digitalcoast



Massachusetts Recap

NOAA and the Digital Coast are devoted to supplying Massachusetts with the data, tools, and information most needed by coastal communities. This report highlights the resources frequently used during this reporting period. Please visit the website (coast.noaa.gov) to learn more or contact NOAA (coastal.info@noaa.gov) with your questions or suggestions.

DATA

Data represent the core component of the Digital Coast. For Massachusetts, data holdings include elevation, land cover, aerial imagery, and county-level socioeconomic data. Examples are highlighted below.

Coastal Lidar

coast.noaa.gov/digitalcoast/data/coastallidar

Over 2,023 gigabytes of high-resolution elevation data covering Massachusetts's entire coastal zone are available. These types of data are critical for all types of modeling, including those that predict flooding potential.

Land Cover

coast.noaa.gov/digitalcoast/data/ccapregional

This satellite imagery is used to inventory and categorize the landscape—wetlands, development, forests, agriculture use, etc. Nothing provides a big picture view of a region like land cover data. These data are used to identify high-priority landscapes for Massachusetts's coastal protection and restoration efforts. Comparing one year to another is also a good way to spot and document trends.

Economics

coast.noaa.gov/digitalcoast/data/enow

Information about the ocean-dependent economy in Massachusetts helps people understand how the decisions that impact the coast can also impact the bottom line.

TOOLS

"Data alone is not enough" is a frequent Digital Coast refrain. Going the extra step and including the tools and training needed to make data truly useful is a hallmark of the Digital Coast website. Users have access to over 50 data analysis, visualization, and other decision-support tools. Examples are highlighted below.

Coastal County Snapshots

coast.noaa.gov/digitalcoast/tools/snapshots

Pick a county and hit a button to generate easy-to-understand handouts. Behind the simple charts and graphs are complex county-level data about flooding, wetlands, and economics. Local officials use the snapshots as a planning and communication tool.

Land Cover Atlas

coast.noaa.gov/digitalcoast/tools/lca

This tool 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 (salt marsh losses to open water, for instance) can be documented. This type of information is useful for planning purposes. Massachusetts officials found it particularly helpful as they worked to assess ecosystem health and identify areas for preservation.

Economics: National Ocean Watch Explorer

coast.noaa.gov/digitalcoast/tools/enow

This tool makes economic data easier to use. The economic data provided by the Digital Coast focus on six business sectors dependent 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 growing and declining, and which account for the most jobs, wages, and gross domestic product for coastal communities, the state, and the nation.

CanVis Visualizations

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 officials in Massachusetts visualize impacts on docks and piers in local waterways, ponds, and lakes.

OpenNSPECT

coast.noaa.gov/digitalcoast/tools/opennspect

This tool is often used to investigate potential water quality and flooding impacts from climate change, development, and other land uses. Communities also use this information to reduce these impacts by identifying suitable areas for restoring wetlands and developing riparian buffers.

TRAINING

Coastal officials have to stay on top of their game, which is why the Digital Coast’s “training academy” provides over 125 learning resources, from online courses to training brought to your location. A few examples are provided below. To see the full suite, visit coast.noaa.gov/digitalcoast/training/home.

Coastal Inundation Mapping

coast.noaa.gov/digitalcoast/training/inundationmap

This classroom course provides baseline information about the various types of flooding and teaches methods for mapping current and potential flooding scenarios. The course offers 16 hours of continuing education credits for the GIS Professional (GISP) and American Institute of Certified Planners (AICP), and Certified Floodplain Manager (CFM) professional certifications.

Green Infrastructure Practices and Benefits Matrix

coast.noaa.gov/digitalcoast/training/gi-practices-and-benefits

Green infrastructure (also called natural infrastructure) is the way to go for communities looking to reduce flooding. This quick handout provides important information about some of the most common techniques in use.

Seven Best Practices for Risk Communications

coast.noaa.gov/digitalcoast/training/risk-communication

The title alone speaks to most people—this is a skill everyone benefits from. The Digital Coast has many resources devoted to this topic, but this online training course is particularly popular.

GEOSPATIAL CONTRACTING

Through the Digital Coast, coastal organizations in need of geospatial data or services benefit from the use of the Coastal Geospatial Services Contract (coast.noaa.gov/idiq/geospatial.html). This contracting vehicle provides a way for local, state, and federal agencies to use a streamlined process to obtain services from the nation's top geospatial firms. In fiscal year 2016, over \$590,000 was awarded to private geospatial firms to conduct mapping projects in the Northeast coastal zone, including the acquisition of land cover and imagery data.

DIGITAL COAST IN ACTION

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

Estimating the Economic Contribution of Gloucester, Massachusetts' Working Waterfront

coast.noaa.gov/digitalcoast/stories/gloucester

With a fishing industry in decline, the city of Gloucester, Massachusetts, knew it needed to reassess and enhance its working waterfront. Economic data from NOAA's Digital Coast allowed planners to determine that commercial fishing accounted for 10 percent of employment in the county's ocean economy. Economics: National Ocean Watch data also allowed the city to recognize emerging ocean industries and successfully plan for a successful working waterfront.

Communicating the Importance of Regional Marsh Systems in the Northeast

coast.noaa.gov/digitalcoast/stories/regional-marsh-systems

Coastal managers know the important role of regional marsh systems in combating the impacts of sea level rise and flooding. However, communicating those benefits can be difficult to do. By creating a customized Coastal County Snapshot from NOAA's Digital Coast, Massachusetts planners were able to show the value of wetlands for three counties in the Northeast U.S. Combining this snapshot with marsh migration data from the Sea Level Rise Viewer allowed managers to better understand benefits and effectively communicate them to stakeholders.

Using Coastal Inundation Scenarios to Advance Community Resilience

coast.noaa.gov/digitalcoast/stories/moris

The people in Massachusetts continue to experience loss and damages from flooding and coastal storms. With these events predicted to worsen because of climate change, sea level rise and resilience building needed to be included in city planning. The Massachusetts Ocean Resource Information System mapping tool already included state data sets vital to planning. By adding sea level rise data from NOAA's Digital Coast, planners were able to overlay this information onto aerial photos, critical infrastructure information, and more.

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.