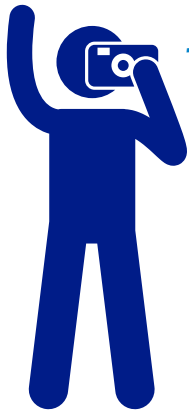


MICHIGAN RELIES ON THE DIGITAL COAST



8,154

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



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

DATA

2,674 gigabytes of high-resolution elevation data available for Michigan.



TOOLS

50+ decision-support tools applicable for Michigan challenges.



TRAINING

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



GEOSPATIAL SERVICES

Over **\$870,000** in private-sector geospatial services awarded for the Great Lakes region.



INFORMATION

- Twelve percent of the population in St. Clair County lives in a floodplain.
- The state has over 13,000 square miles of wetlands, a little less than half the area of Lake Michigan.
- Tourism and recreation is the largest employer among the state's Great Lakes-dependent economic sectors.

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

SAVING TIME AND MONEY

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 Michigan.

Digital Coast
coast.noaa.gov/digitalcoast



Michigan Recap

NOAA and the Digital Coast are devoted to supplying Michigan 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 Michigan, 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 2,674 gigabytes of high-resolution elevation data covering Michigan'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—coastal intertidal areas, wetlands, adjacent uplands, development, 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 Michigan'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 coastal economy in Michigan 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.

Lake Level Viewer (U.S. Great Lakes)

coast.noaa.gov/digitalcoast/tools/llv

Visualize lake level changes that range from six feet above to six feet below historical long-term average water levels in the Great Lakes, along with potential shoreline and coastal impacts. Communities can use the data behind the tool for habitat and hydrological analysis.

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.

Michigan officials found it particularly helpful as they worked to restore and manage wetlands and coastal habitat.

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 lake level change. Users can download background pictures and insert objects (hotels, houses, and other features) of their choosing. This tool helped Michigan visualize lake level changes and natural 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

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 \$870,000 was awarded to private geospatial firms to conduct mapping projects in the Great Lakes region, 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 Michigan and the Great Lakes.

Advancing Restoration in the Great Lakes Region

coast.noaa.gov/digitalcoast/stories/advancerestoration

The Great Lakes is the largest system of freshwater resources in the world, but development along the shoreline is degrading the quality of these resources and posing risks to the environment and human health. Improving the quality of the Great Lakes is a top priority for local, state, and federal managers, who used the Digital Coast's Habitat Priority Planner and accompanying data to analyze strategic areas for habitat restoration along the watersheds leading into the lakes. The tool allowed managers to look at sites for wetland restoration, as well as developed areas to be converted into green space and habitat. The tool expedited the process and allowed for prioritization of wetland and habitat restoration.

Locating and Assessing Western Lake Erie's Restorable Wetlands

coast.noaa.gov/digitalcoast/stories/lake-erie

The western edge of Lake Erie has lost 95 percent of its original wetlands over the years. To improve conservation efforts, coastal managers needed to identify areas suitable for restoration. Planners worked with land cover data from NOAA's Digital Coast to generate land use and wetland soil type classifications, which was used to develop a restorability scale for the area. This analysis enabled users to prioritize coastal wetland research, management, and restoration efforts within the basin.

Mapping Ecosystem Services and Economic Data to Inform Restoration Priorities in the Great Lakes

coast.noaa.gov/digitalcoast/stories/gleam

It's a given that the Great Lakes' natural resources and recreational benefits translate into local dollars --but until recently, no one had the economic data mapped with the range of services provided by the natural environment. Without that data, restoration planners could not know which proposed projects were likely to deliver the biggest bang for the buck for the coastal economy, ecosystem, and cultural activities. To help, the Great Lakes Environmental Assessment and Mapping Project developed a map bringing together NOAA's Digital Coast economic data on tourism and recreation with its own data. This map pinpointed the natural resources that support recreational boating, sportfishing, birding, beach use, and park visitation. Bringing these data sets together in a visual format enabled Great Lakes officials and planners to "see" where restoration actions could deliver potentially big economic, ecosystem, or cultural benefits. They also found that locations very high in recreational use often suffer greater environmental stressors and therefore might need more restoration attention. These discoveries and others are informing current and future restoration plans.

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.