That’s because the Digital Coast has a lot to offer Minnesota.

**DATA**

3,467 gigabytes of high-resolution elevation data available for Minnesota.

**TOOLS**

50+ decision-support tools applicable for Minnesota challenges.

**TRAINING**

Over 2,000 leaders in the U.S. used a Digital Coast training program.

**GEOSPATIAL SERVICES**

Over $1.6 million in private-sector geospatial services awarded for the Great Lakes region.

**INFORMATION**

• Four percent of the population in St. Louis County lives in a floodplain.
• Tourism and recreation is the largest employer among the state’s Great Lakes-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 Minnesota.

Digital Coast

cost.noaa.gov/digitalcoast
Minnesota Recap

NOAA and the Digital Coast are devoted to supplying Minnesota 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 Minnesota, 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 3,467 gigabytes of high-resolution elevation data covering Minnesota'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 Minnesota'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 Minnesota 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

cost.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

cost.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. Minnesota officials found it particularly helpful as they worked to monitor watershed health along with land use changes.

Economics: National Ocean Watch Explorer

cost.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.

OpenNSPECT

cost.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

cost.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

cost.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.

cost.noaa.gov/digitalcoast
Seven Best Practices for Risk Communications

cost.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 (cost.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 2018, over $1.6 million was awarded to private geospatial firms to conduct mapping projects in the Great Lakes region, including mapping land use patterns in the Great Lakes.

DIGITAL COAST IN ACTION

The following stories illustrate how Digital Coast users are applying geospatial information resources to address coastal issues in Minnesota and the Great Lakes.

Identifying Watershed Stressors along Minnesota's North Shore

cost.noaa.gov/digitalcoast/stories/hovland

Natural land cover assessments are useful for determining water quality and watershed health issues. Officials working in the Flute Reed watershed combined NOAA's land cover data with their own to identify landscape stressors. The analysis uncovered a variety of issues and was useful for charting a recovery and protection approach.

Restoring and Monitoring Lake Superior Coastal Wetland Manoomin

cost.noaa.gov/digitalcoast/stories/manoomin

Tribal partners and organizations across the Lake Superior basin set out to better understand wild rice (manoomin), including where restoration should occur and how best to monitor changes. Wild rice is an important part of the Great Lakes landscape, both ecologically and culturally. Partners convened a workshop and used NOAA land cover data to analyze land cover types and changes. This information helped determine restoration and monitoring initiatives.

Assessing the Value of Nature's Benefits in the St. Louis River Watershed

cost.noaa.gov/digitalcoast/stories/stlouis-watershed

Partners within the St. Louis River watershed set out to better understand the value of the resource’s ecosystem services. Partners used NOAA data to assess land cover classes and place a value on each class. They determined that the St. Louis River watershed provides approximately $5 to $14 billion in benefits to people each year. The asset value is $273 to $687 billion, which includes the net present value of ecosystem service benefits and carbon storage in land cover types calculated over 140 years.
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.