North Carolina Coastal Atlas Summary

URL: *http://www.nccoastatlas.org*

Purpose of application

The North Carolina Coastal Atlas is an online mapping and investigation system that provides both static and interactive maps and related data for exploration, analysis and learning about the coastal environment. Coastal managers, researchers, teachers, students and the interested public can use the data catalog with metadata to create custom maps and geo-referenced bibliographic information to explore coastal issues.

The Atlas combines physical, ecological and human use data to support education, management and decision-making. Thematic maps allow non-technical and advanced users to examine and interact with geospatial information on topics such as coastal hazards or shoreline change. The maps will allow users to select their area of interest, cartographic layers, and also search for reference, archival, and research data. Careful cartographic design paired with GIS functionality allows for real-time remote access via a web browser or desktop GIS (via WMS and WFS services) and the ability to produce high-quality output maps for print or download. Most importantly, the users are provided with explanatory text, background information, and access to references and research that will enable them to delve as deeply as desired into the topic of choice.

Geographic extent

The NC Coastal Atlas covers the entire coastal plain, including the twenty Coastal Area Management Act (CAMA) counties, the estuaries and rivers, and adjacent marine areas.

Target audience

State, local and federal coastal resources managers, public and private land managers and planners, researchers, teachers, students, and interested coastal residents and property owners.

Data included (general categories)

Number of data sets: 20+

Information on:

- Estuarine and oceanfront shorelines and structures, historic shorelines and inlets
- Habitat features including wetlands, state significant wetlands, marshes, and submerged aquatic vegetation
- Coastal elevation, floodplains, and infrastructure
- Land use/land cover and population demographics
- A variety of basemaps, including orthoimagery, street maps, terrain, soils, and jurisdictions

Distinguishing features

Estuarine Shoreline Maps

- The Estuarine Shoreline thematic maps are the result of a multi-year project to create the first-ever continuous digital map of more than 12,000 miles of estuarine shoreline in North Carolina.

- The map allows users to distinguish between undeveloped and stabilized shorelines, and indicate where docks, piers and other structures are located. In selected areas, shoreline change is also depicted.

Geo- referenced bibliographic information

- The faceted search engine allows type, time range, author and keyword searches.
- Bibliography will include peer-reviewed publications, research white-papers and reports, theses and dissertations.

Technology used (web GIS, server, database, content management system)

- **WebGIS:** ArcGIS Sever 10.1
- **Database:** Microsoft SQL Server 2012
- **Server:** IIS Server 7.5
- **Content Management:** Drupal 7
- **Other:** PHP, Python, Apache Solr

Atlas support (financial/institutional)

The NC Coastal Atlas is produced by a team lead by East Carolina University (ECU) and partners committed to sharing and promoting the use of coastal geospatial data and technology for education, broad public use and decision-making. The Atlas is supported by grants and contracts from stakeholders and in-kind contributions from the North Carolina Division of Coastal Management (DCM), NOAA, North Carolina Sea Grant, ECU Center for Coastal Informatics and Modeling, ECU Academic Library Services, ECU Center for GIScience, and UNC Coastal Studies Institute.

Challenges encountered

- Securing long term funding commitments
- Setting up memoranda of agreement between data providers and atlas managers
- Addressing conflicting needs of research for timely data versus political restrictions of state coastal managers
- Limited technical staff
- Constantly evolving web standards
- Prioritizing thematic maps

Future directions (ongoing and future improvements)

- Increasing the number of natural resource GIS data layers
- Developing public participatory maps and GIS applications
- Enhancing bibliographic research and discovery capabilities
- Updating the existing data layers