# The North Carolina Coastal Atlas as a Tool for Estuarine Research and Communication

## Robert Howard, Tom Allen and Michelle Covi

#### Introduction

East Carolina University is collaborating with the North Carolina Division The North Carolina Coastal Atlas is currently providing four interactive of Coastal Management and other partners to develop the North Carolina thematic maps via our website: Ocean & Estuarine Shorelines; Wetlands, Coastal Atlas (www.nccoastalatlas.org), a web-based mapping and investigation platform that provides both static and interactive maps and relat- Research Projects. Additional data and tools will be added to these maps ed data for exploration and analysis. The N.C. Coastal Atlas combines as they become available. We are working with our partners to develop physical, ecological and human use data to support education, manage- additoinal thematic maps to meet their needs. ment and decision-making.

The process by which the N.C. Coastal Atlas has been developed incorporates user objectives and reviews usability iteratively. A needs assessment of coastal planners, managers and other potential users revealed a desire for thematic maps in the areas of ecosystem health, biological resources, shoreline change and hazards such as flooding and storm surge. Multiple datasets are now available including estuarine shoreline and associated structures, submerged aquatic vegetation, wetlands extent, and FEMA designated flood risk areas. A unique partnership with East Carolina University's Joyner Library is also making scholarly research discoverable using geotagging and spatial search.

This poster will highlight flooding and estuarine shoreline thematic maps, demonstrating use cases for planners in high flood risk coastal communities and the identification of protected resource areas, such as wetlands, for waterfront property owners interested in obtaining development permits. Future capabilities of the N.C. Coastal Atlas include decision support tools and public engagement programs that have the potential to help make coastal and estuarine research more accessible and relevant to managers and the public.

### Thematic Maps

Habitat and Threats; Flood Inundation Vulnerability; and ECU Coastal



Figure 2 [above]: A diagrammatic representation of how the North Carolina Coastal Atlas interacts with data providers and information consumers. The N.C. Coastal Atlas aggregates data from a variety of providers, including federal and state agencies, and scholarly databases, providing information consumers with carefully designed thematic maps and bibliographic references to support decision making and research.





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**Figure 1** [above]: Screenshots of N.C. Coastal Atlas website (from left-top in clockwise order); the North Carolina Coastal Atlas homepage with featured content slider, upcoming and recent events list and social media connections; the Thematic Maps landing page with map thumbnail images, summaries and quick links; the Data Catalog landing page with featured content slider, catalog search and usage metrics; the Bibliography landing page showing faceted search capabilities.

Modern intertidal foraminifera of the outer banks, North Carolina,

Flood retrofit of coastal residential structures: Outer banks, North Reference Typ

Harton, () PJ: Politat, W R; Cultur, S. J; Diverminend, R; Elegisthert, S. C; Namp, A C; Mellman, D; Thieter, J. R; Riggs, S-R; Annes, D V; Thermon, K

U.S.A., and their applicability for sea-level studies

their implications for glacial isostatic adjustment models

Fock, Plant A; Rogers, Jr., Spinner H; Oslemme, Rab

Joyner Library The North Carolina **Coastal Atlas ArcGIS Server** WMS, KML/KMZ, data Web Service geo-located bibliography, data catalog, social me integration, APIs sualizers Real-Time ucators and t Information rested pub Decisions the viewer.







*Figure 4* [above]: A screenshot of the N.C. Coastal Atlas map viewer's "Add Data to Map" feature. From this window, a user can see all entries from the Data Catalog displayed as thumbnail representations. Once an item is selected, an information area appears near the bottom of the window that gives a brief description of the selected data and allows the user to add the data to the map view. Filtering by type is supported as is keyword searching to narrow down the list of available data.

More Info Add to Ma

*Figure 3* [left]: A screenshot of the N.C. Coastal Atlas map viewer with the Wetlands, Habitat and Threats thematic map loaded. Visible layers include the newly finished statewide estuarine shoreline dataset (red line), the NC-CREWS wetland significance dataset (translucent shades of yellow), and an orthoimagery basemap from Esri. Along the left side of the screen, the viewer's controls for managing the contents and display of the map can be seen.

The Wetlands, Habitats and Threat map can be used to locate the types and quality of wetland areas in coastal North Carolina. It can be used to support decisions about protection of lands, the placement of roads and other infrastructure and to locate appropriate areas for research projects.



Go to http://www.nccoastalatlas.org in your web browser to leave us feedback.

TOUCH your NFC enabled device to this corner of the poster! If you don't have NFC, scan this QR CODE instead.

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