



Introducing the North Carolina Coastal Atlas

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Department of Geography, Environment, & Planning, East Carolina University

Identify Track
Ballroom C
11:00-11:30am

Introducing the

North Carolina Coastal Atlas



- History of multidisciplinary coastal hazards research
- Neighbors to the north, south, and globally developing web atlases
- Provide NC-specific map data
 - Data catalog - ability to customize maps
- Develop and refine communicative and analytic functionality
 - Thematic maps
 - Decision support tools
- Improve research discovery through library partnership
 - → Geotagged bibliographic searches

What

- Online mapping and investigation system
 - Static and interactive maps
 - Spatial data, basemaps, and reference layers
 - Research and literature

How

- Integrates online services and GIS databases
- Provides custom maps and tools, search and discovery
- Exploring, analyzing, and learning about North Carolina's **coastal issues** and **resources**

Who

- Students, managers, scientists, teachers, & the public

Oregon Coastal Atlas

search...

Thursday, 02 February 2012 14:03:19

Home Maps Tools Learn Search

Home > Maps

Oregon Coastal Zone



1:3000000



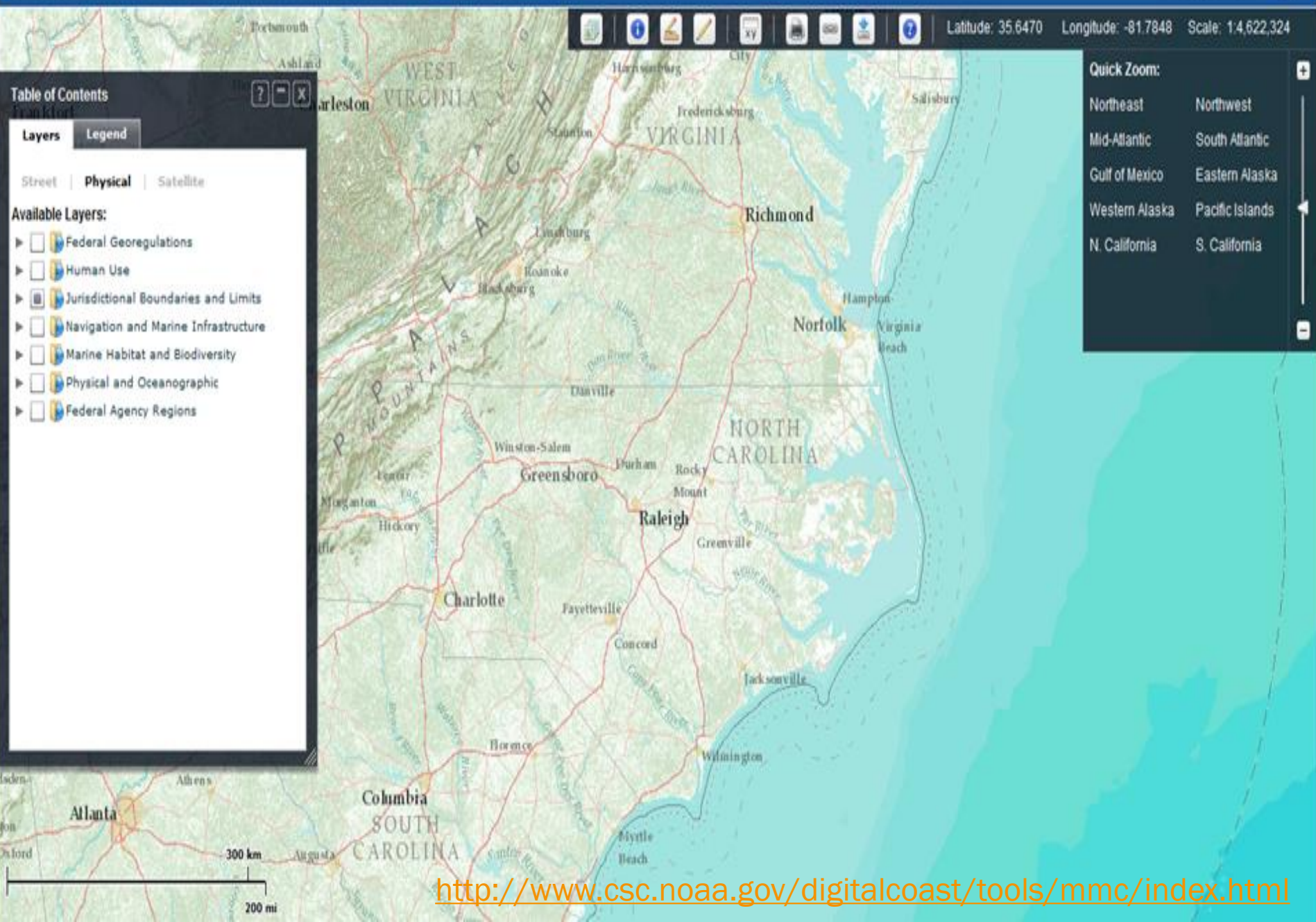
Zoom to a Location

HELP



Multipurpose Marine Cadastre

BUREAU OF OCEAN ENERGY MANAGEMENT AND NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



Navigation toolbar with icons for home, info, pan, zoom, and other map functions.

Latitude: 35.6470 Longitude: -81.7848 Scale: 1:4,622,324

Table of Contents

Layers Legend

Street | **Physical** | Satellite

Available Layers:

- Federal Georegulations
- Human Use
- Jurisdictional Boundaries and Limits
- Navigation and Marine Infrastructure
- Marine Habitat and Biodiversity
- Physical and Oceanographic
- Federal Agency Regions

Quick Zoom:

- Northeast
- Northwest
- Mid-Atlantic
- South Atlantic
- Gulf of Mexico
- Eastern Alaska
- Western Alaska
- Pacific Islands
- N. California
- S. California

<http://www.csc.noaa.gov/digitalcoast/tools/mmc/index.html>

Virginia Coastal GEMS

Firefox | Virginia DEQ - Virginia CZM Program... | COASTALGEMS.ORG

www.coastalgems.org

Most Visited | Getting Started | Remote Access and Re... | Web Slice Gallery

Virginia Coastal Zone MANAGEMENT PROGRAM VCU

Map Results

Tools | Print | Bookmarks

- Coastal Water
 - Healthy Waters
 - Healthy Streams (Locations)
 - Healthy Streams (Reach)
 - Healthy Watersheds
 - Benthic Index of Biotic Integrity
 - Threatened & Endangered Species Waters
 - 303D Waters (DEQ Impaired)
 - Scenic Rivers
 - Submerged Aquatic Vegetation
 - Tidal Flushing Rates
- Coastal Wildlife
- Coastal Land
- Shellfish Management
 - Commercial Shellfish Aquaculture Sites
 - Oyster Gardening Sites
 - State Constructed Oyster Reefs
 - Private Oyster Leases
 - Oyster Aquaculture Vulnerability Model
 - Clam Aquaculture Vulnerability Model
 - Oyster Aquaculture Suitability Model
 - Optimal
 - Suitable
 - Unsuitable
 - Clam Aquaculture Suitability Model
 - Seaside Oyster Density
 - Condemned Shellfish Areas
 - Baylor Grounds (Public Oyster Grounds)
- Conservation Planning
- Coastal Access
- Atlantic Coast Recreational Use
- Reference Layers

10 mi

Decimal Degrees | Lon (X): -76.52615 | Lat (Y): 37.52307



DEPARTMENT OF NATURAL RESOURCES

Search

[Email Friend](#) [print page](#)

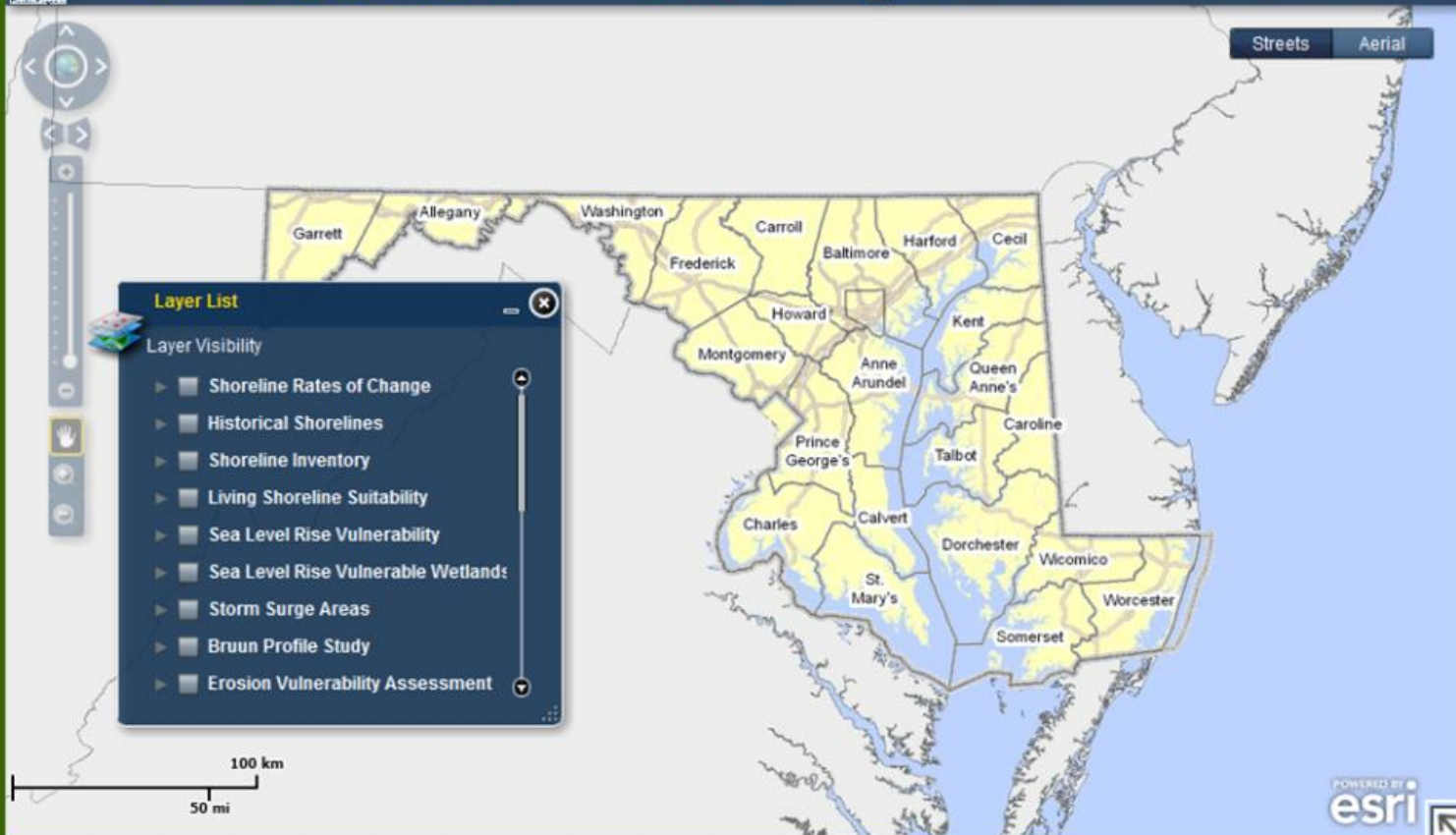
[DNR HOME](#) [COASTAL ATLAS HOME](#) [OCEAN](#) [SHORELINES](#) [ESTUARIES](#) [DATA](#)



COASTAL ATLAS: Shorelines



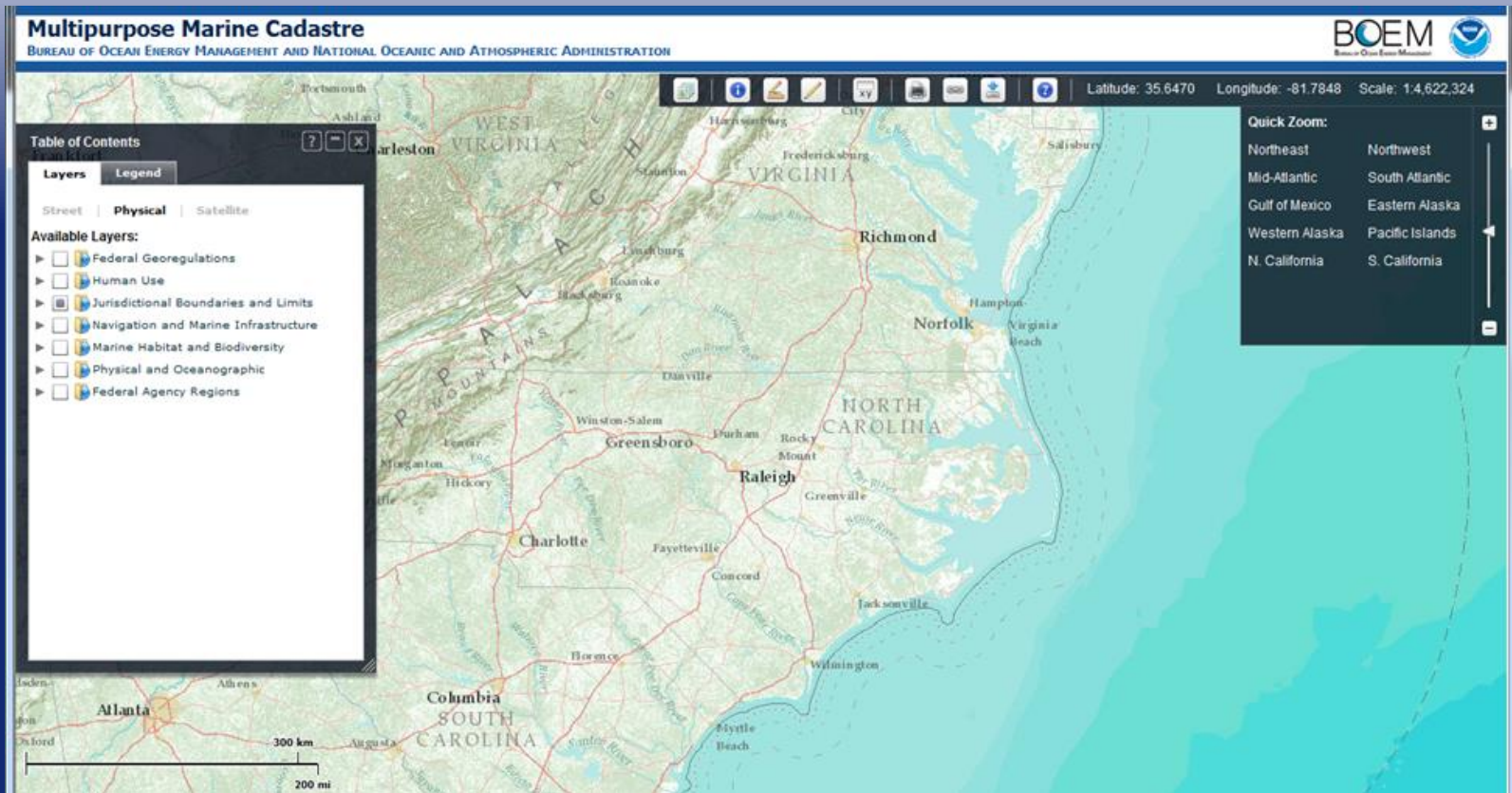
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580 Taylor Avenue - Annapolis, MD 21401 - 1-877-620-8DNR (8367)

NOAA Multipurpose Marine Cadastre

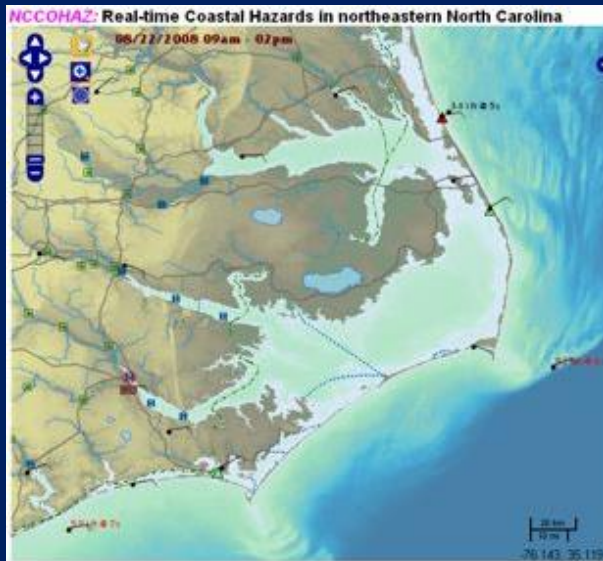


<http://www.csc.noaa.gov/digitalcoast/tools/mmc/index.html>

ECU NCCOHAZ Portal

NC Coastal Hazards

<http://www.coastal.geology.ecu.edu/NCCOHAZ/>



Storm Surge Vis Tools

- Landmarks
- Place-based
- Hyper-local

- GoogleEarth
- 3D warehouse
- NHC SLOSH

Home About News Locations Data Types Intensity Help

renci at East Carolina UNIVERSITY

SurgeVis 2010



Image © 2009 DigitalGlobe
© 2009 Europa Technologies
Image © 2009 TerraMetrics

© 2009 Google

Category 4 Hurricane Storm Surge

WELCOME to RENCi@ECU's Inundation Animation Portal!
Located here are a variety of animations created by Faculty, Students, and Staff at RENCi@ECU that attempt to provide a greater understanding of the devastating effects of storm surges related to extrem coastal storms and hurricanes.

Select Animation by Location

- Kitty Hawk
- Nags Head
- Oregon Inlet
- Chicamacomico
- Cape Hatteras

Featured Animations:

Chicamacomico



Category 1 Storm Surge

Select Animation by Data Type

- Google Earth (KMZ)
- Animation (WMV)
- Online GIS

Cape Hatteras Light House



Category 4 Storm Surge

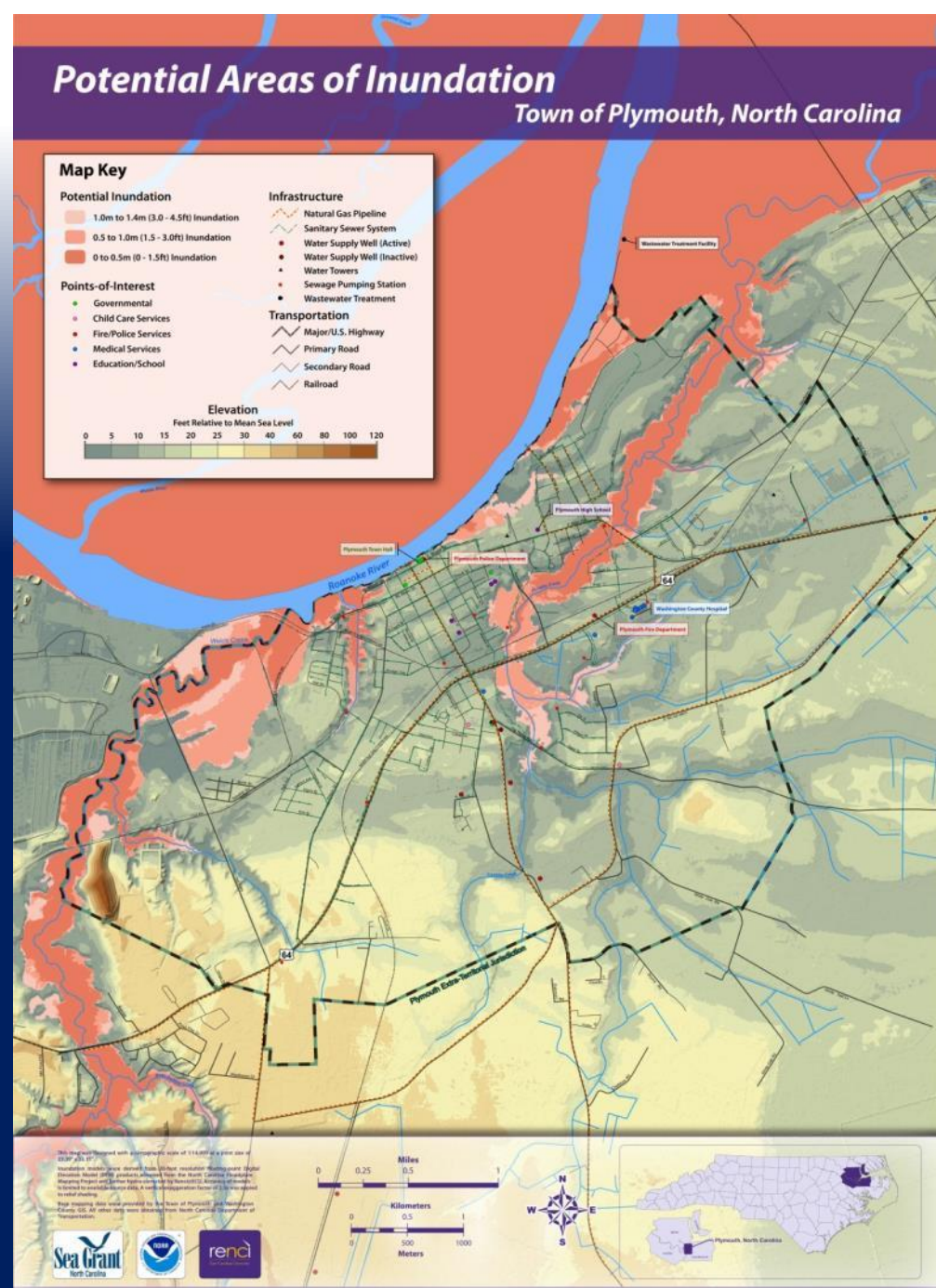
Select Animation by Storm Intensity

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Hazard Mapping

Town of Plymouth, North Carolina

- Problem:
 - How can our community evaluate infrastructure vulnerability?
- Solutions:
 - Risk awareness
 - Build capacity
 - Reveal vulnerabilities



Under the Hood

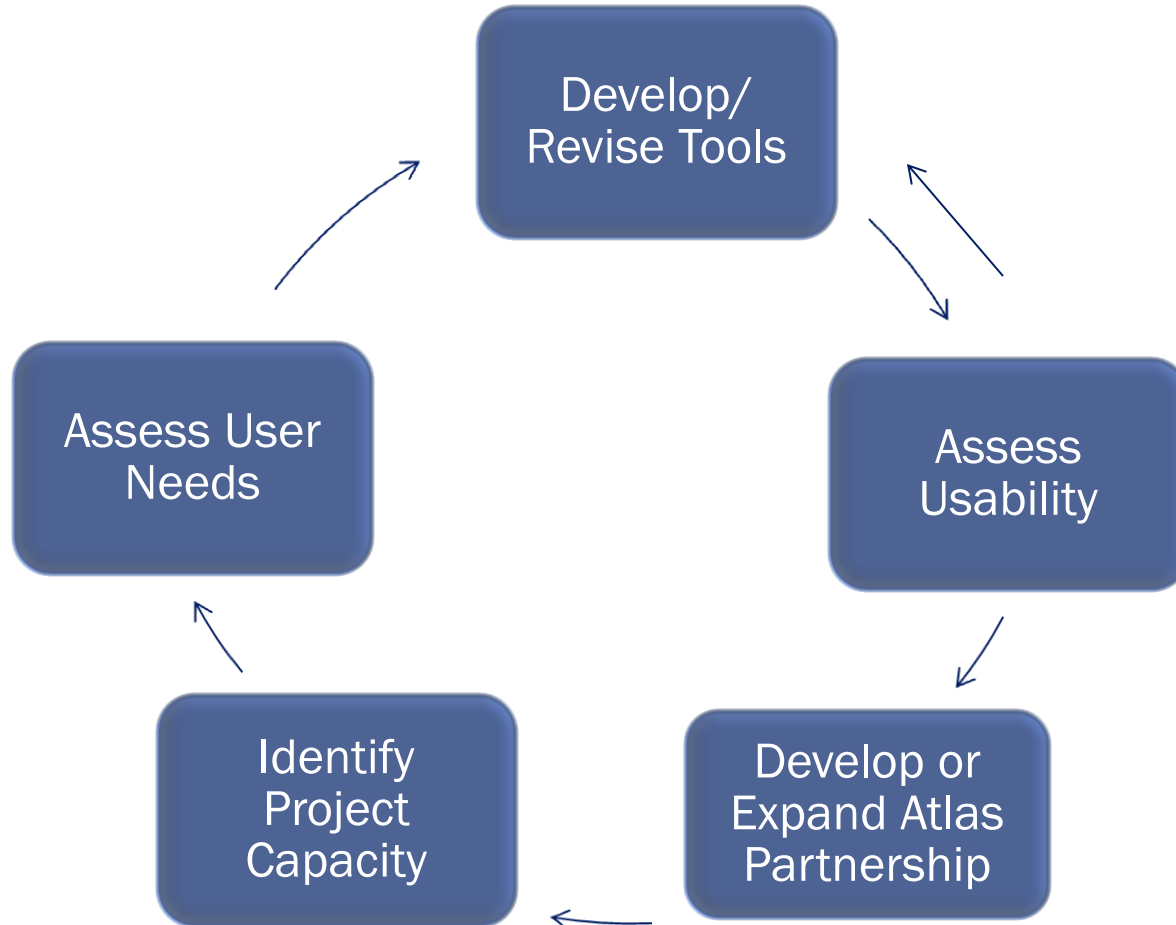
- **Extent**
 - NC CAMA counties, coastal plain, rivers, estuaries and adjoining marine area
 - Selected scale-dependent map layers and web services
- **Technology**
 - ArcGIS webGIS technology, Adobe Flex
 - Client-side browsers with Flash
 - Compatible and interoperable with other **OGC** map services and servers (WMS, WFS, etc.)
 - View data and maps in ArcMap, GoogleEarth etc.
 - Bibliographic search and databases with ECU Joyner Library
- **Partnership**
 - Steering committee and MOA
- **Disclaimer**

International Coastal Web Atlas Network



- <http://ican.science.oregonstate.edu/>
- Facilitate development of atlases through community of practice
- Technical and assessment working groups

Map Tool Compilation Process



Needs Assessment

- 85 participants: planners, project managers, biologists, natural resource managers, engineers, real estate, etc.
- Visualization and communication most popular projected use
- Ecosystem health, natural resources data and shorelines -highly ranked thematic maps
- Essential categories: wetlands, water bodies, shorelines, flood and hazard zones

Expanding Partnerships

- After preliminary atlas development, workshops in May explored early feedback from potential users
- Steering committee expanding beyond Division of Coastal Management to include APNEP, NC Sea Grant, NOAA, UNCW, NC EM, NC OneMap

Welcome



About the Atlas

The North Carolina Coastal Atlas is a collaborative effort to enable access to coastal data and inform coastal managers, scientists, students and the interested public. We provide selected geospatial data, visualization tools, and thematic maps focused on coastal resources and hazards.

[Learn more ...](#)

Connect Socially, Follow Us!



Recent & Upcoming Events

- SEP 11** Webinar Demonstration
September 11th, 2013 @ 10:00 AM
World Wide Web
- OCT 9** North American Cartographic Information Society
October 9th, 2013 to October 11th, 2013
Greenville, South Carolina
- OCT 18** N.C. Coastal Atlas Open House @ ECU
October 18th, 2013 @ 3:30 PM
Greenville, North Carolina
- OCT 23** N.C. ArcGIS Users Group Meeting
October 23th, 2013 to October 25th, 2013
Carolina Beach, North Carolina
- NOV 3** Coastal & Estuarine Research Federation Meeting
November 3rd, 2013 to November 7th, 2013
San Diego, California

[See all events ...](#)



Explore the Coast

Launch interactive maps and tools to access geospatial data layers for on-line mapping and download.



View Thematic Maps

Examine estuarine shorelines, potential impacts of flooding, and other natural and cultural resource thematic maps.

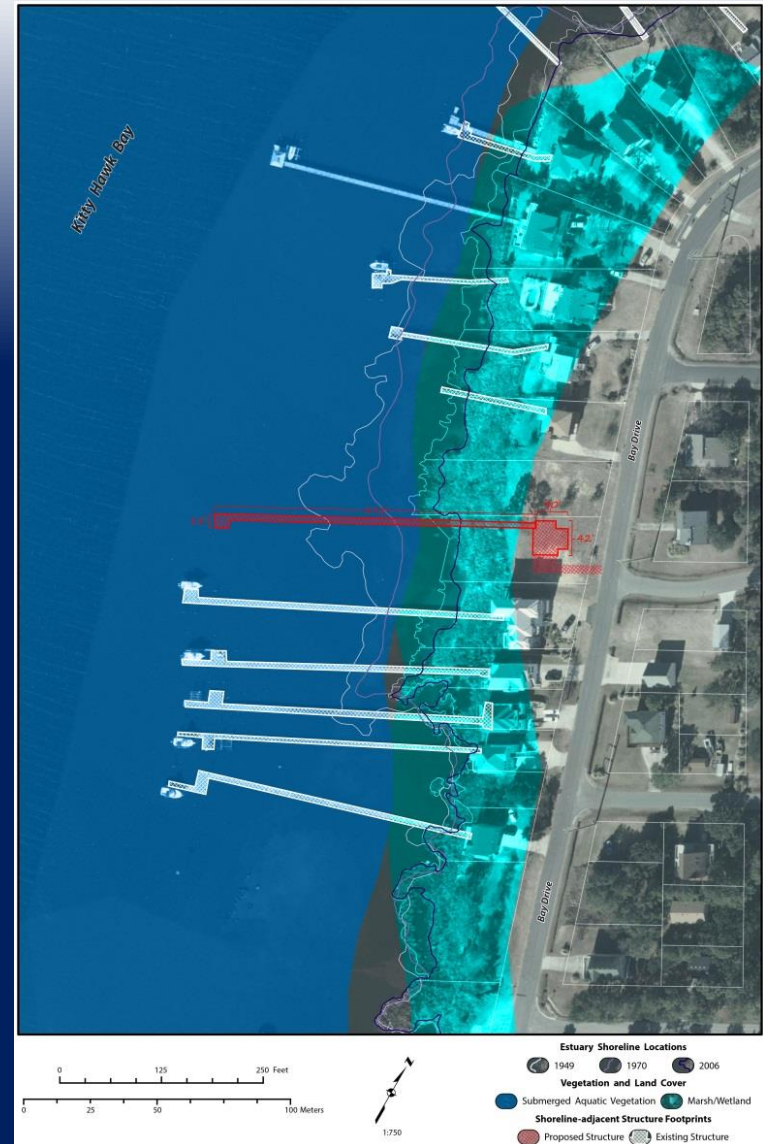


Learn More

Discover research papers, scientific reports, articles, data and other digital products with a bibliography provided by Joyner Library.

Thematic Maps

- DCM Coastal permitting tool
 - Do you see what I see?
- Markup and review
- Map sharing for accurate and efficient decisions



Thematic Maps

Legend

Infrastructure - Plymouth, NC

Buildings

- Child Care Services
- Fire/Police Services
- Governmental
- Medical Services
- Education/School

Sewage Pumping Station

Water Tower

Water Supply Well

- <all other values>

Sewer Line

Railroad

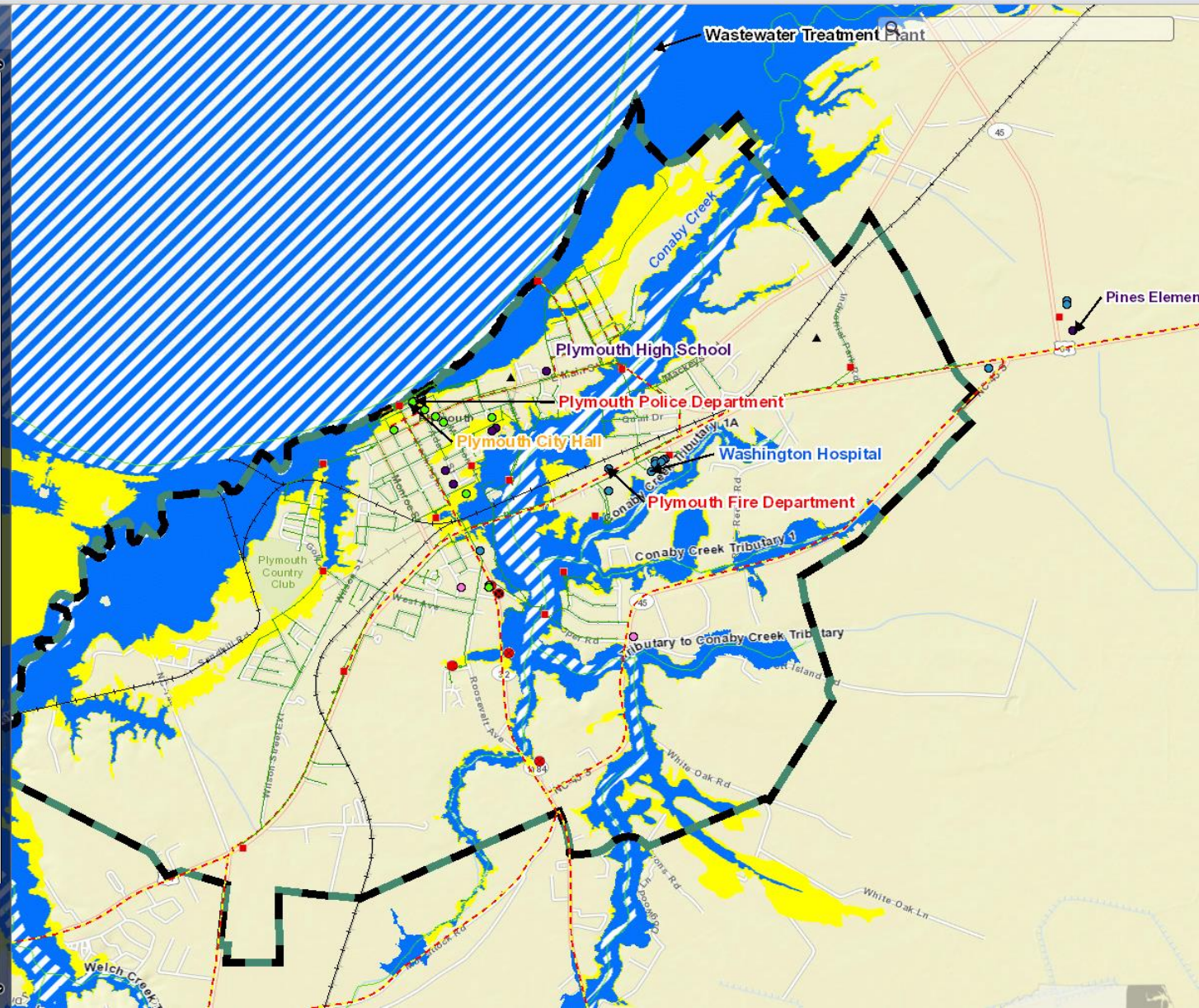
Natural Gas Pipeline

Extra-Territorial Jurisdiction

Flood Zones (FRIS)

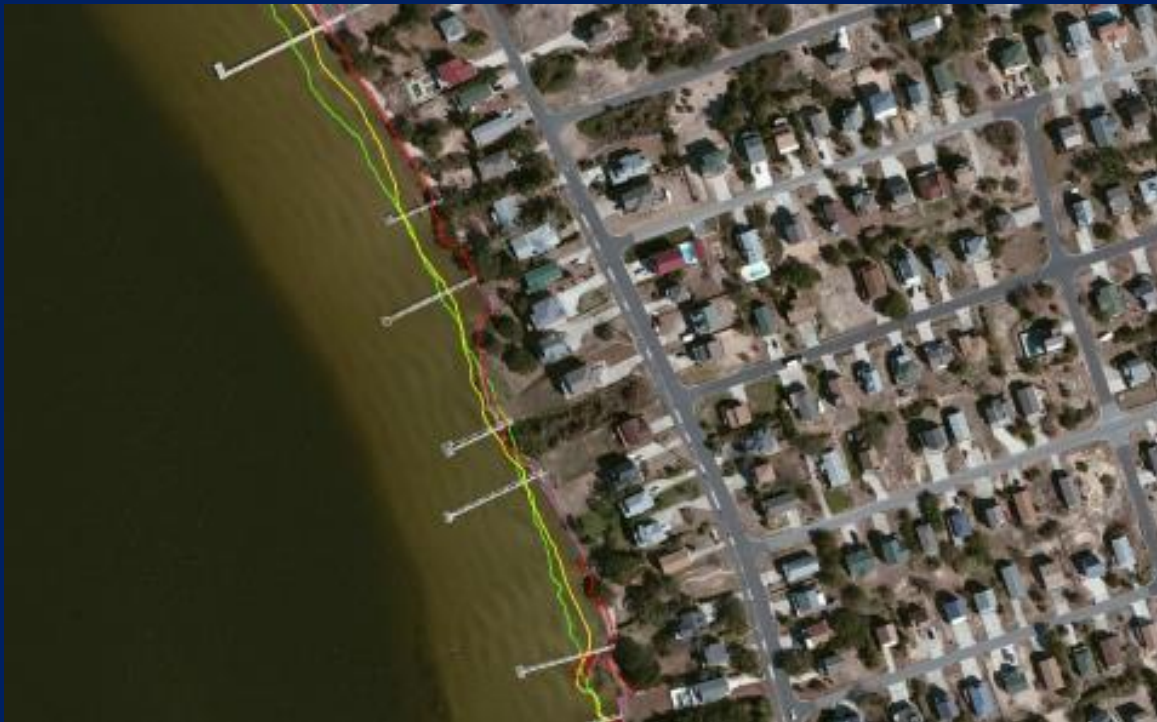
Flood Hazard Areas

- FLOODWAY
- AE, 1 PCT FUTURE CONDITIONS
- 1 PCT FUTURE CONDITIONS
- ZONE AE
- ZONE VE
- ZONE AO



Thematic Maps

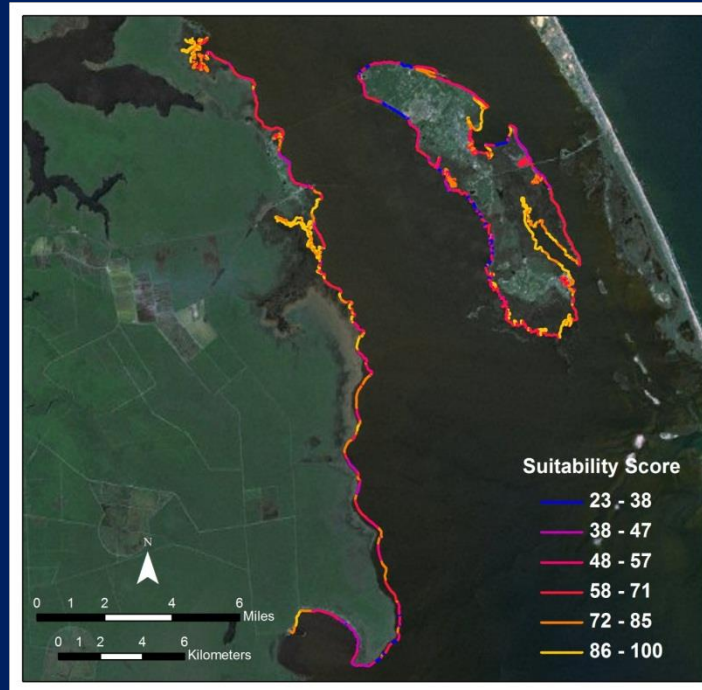
- Estuarine shorelines, erosion rates, “hotspots,” and resilience



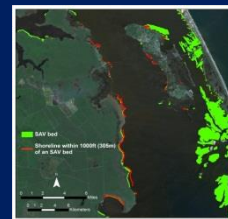
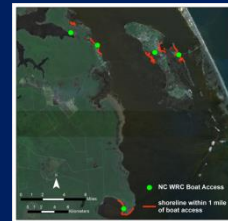
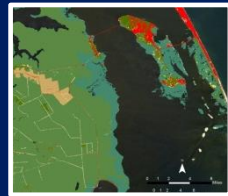
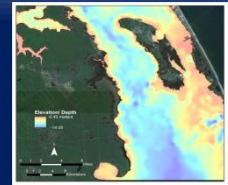
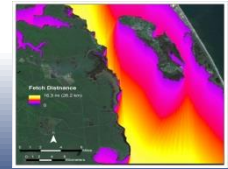
Living Shoreline Screening Tool

Matt Carey, MA Geography (2013), NOAA Coastal Services Center

- Multi-Criteria Evaluation
 - Depth
 - Fetch and wave energy
 - Erosion rate
 - Marsh type
 - Boat wake
 - Water clarity & SAV

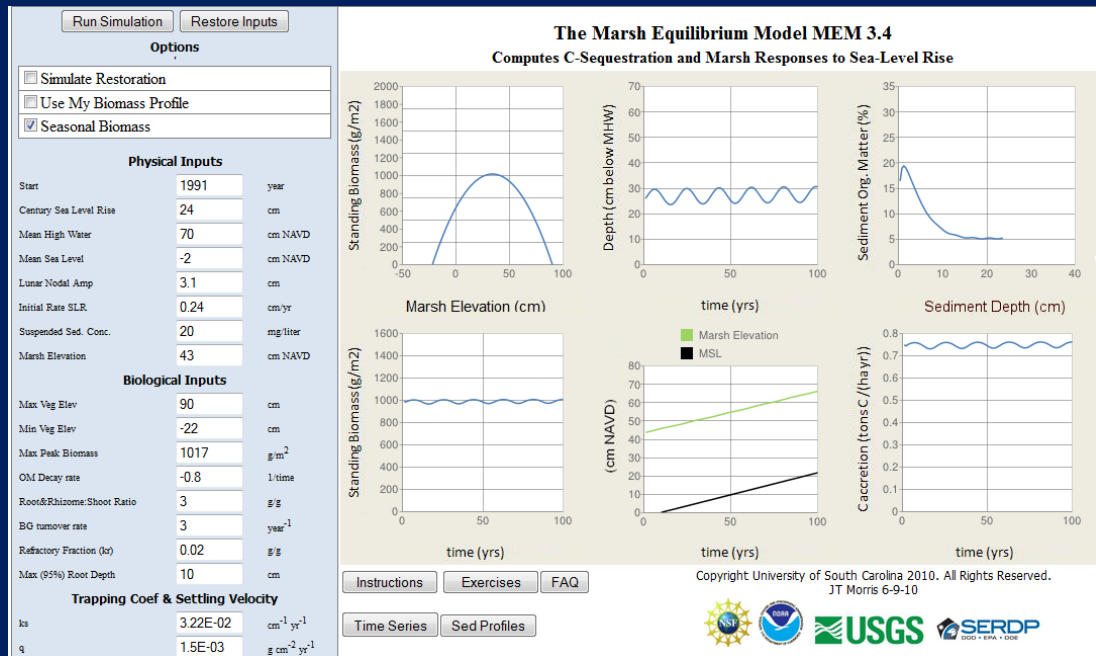


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Wetlands: Inventory, Monitor, Restore, and Adapt

- NC CREWS wetland priority habitats
- NC Natural Heritage Program
- Community water resource infrastructure vulnerability (CISA)
- Marsh mapping (SALCC)
- Marsh response modeling (MEM II)

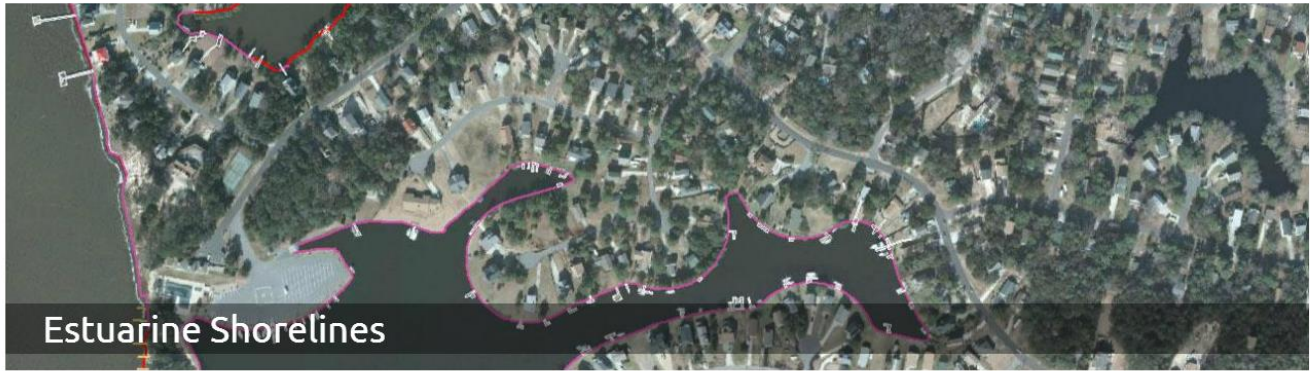


Building a Data Catalog


SIGN IN

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Data Catalog



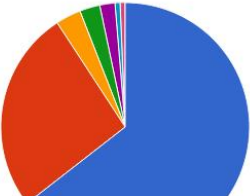
Estuarine Shorelines

Search the Data Catalog

Search

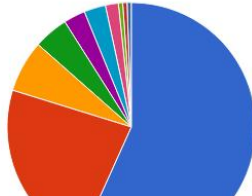
BASEMAP
ORTHOPHOTOGRAPHY
ORTHO PHOTOGRAPHY
SHORELINE
OCEAN
LIDAR
WETLANDS
IMAGERY

Most Popular Data (past 7-days)



- Statewide Orthoimagery (2010)
- Estuarine Shorelines
- Dare County Partial Estuarine Shoreline (1949)
- Ocean Basemap
- NOAA Nautical Charts
- Submerged Aquatic Vegetation (2008)
- National Wetlands

Most Popular Data (past month)



- Statewide Orthoimagery (2010)
- Estuarine Shorelines
- National Wetlands Inventory
- Ocean Basemap
- World Imagery
- Dare County Partial Estu...
- NOAA Nautical Charts
- NAIP Statewide Imagery...

A Geotagged Bibliography

- Enable spatial and topical search and discovery
- Create a bibliography of journal articles, technical reports, books, theses, dissertations, and other works
- Display citations and abstracts (if present)
- Provide links to electronic texts

Get Mendeley

What is Mendeley?

Papers

Groups

Groups ▾

Search...



North Carolina Coastal Atlas

In this group: 45 papers · 2 members

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Share



Mendeley

Earth Sciences ▾

Groups

- Bibliography created using **Mendeley**, a reference manager permitting free individual accounts.
- Mendeley allows anyone to view citations and provides links to electronic texts
- Future sharing of sources, geotagging in maps

Sample citation:

AN INTEGRATED HYPOTHESIS FOR REGIONAL PATTERNS OF SHORELINE CHANGE ALONG THE NORTHERN NORTH CAROLINA OUTER BANKS, USA

E.D. Lazarus; B. Murray

Abstract

Combining analyses of plan-view shoreline change and shoreline curvature with existing nearshore geologic and bathymetric data and the results of a recent theoretical, large-scale shoreline-evolution model that couples geologic framework to alongshore sediment transport, we propose an integrated explanation for persistent patterns of shoreline change observed on the northern Outer Banks of North Carolina, USA. Concentrated sources of coarse-grained sediment, derived from relict fluvial stratigraphy or densely grouped relict inlet channels excavated from the shoreface, may both enable persistence of nearshore bathymetric anomalies and control multi-km-scale undulations in shoreline curvature, which in turn affect gradients in wave-driven alongshore sediment transport that drive long-term shoreline change. 2010 Elsevier B.V.

Place Published: Senator George J. Mitchell Center for Environmental and Watershed Research, University of Maine, 5710 Norman Smith Hall, Orono, ME 04469-5710, United States

Complete Citation

Lazarus, E. D., & A Murray B. (2011). *An integrated hypothesis for regional patterns of shoreline change along the Northern North Carolina Outer Banks, USA*. *Marine Geology* *281*(1-4), 85-90.

Data

Information

Decisions

Data Providers



FEMA



and others

Scholarly Databases



East Carolina
UNIVERSITY
Joyner Library

The North Carolina Coastal Atlas



ArcGIS Server
geoprocessing tools,
WMS, KML/KMZ, data
download.



Web Services
geo-located
bibliography, data
catalog.

Desktop GIS

Managers,
researchers, and
GIS professionals

Visualizers

property owners,
educators and the
interested public

Data

Information

Decisions

Data Providers



FEMA

esri
ArcGIS Online



nc
ONE
map
Geospatial Portal

and others

Scholarly Databases



MENDELEY

**Citizen
Science and
Observation**

East Carolina
UNIVERSITY
Joyner **Library**

The North Carolina Coastal Atlas

ArcGIS Server
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WMS, KML/KMZ, data
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catalog, social media
integration, APIs.

**Real-Time
Information**

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Managers,
researchers, and
GIS professionals

Mobile
on-the-go
information access
and submission

Visualizers
property owners,
educators and the
interested public

Thematic Map Priorities

- Estuarine Shoreline
 - DCM coastal permit application use case
- Sea Level Rise impacts on wetlands/ pilot communities/ demographics
- Natural resource maps/tools
- Coastal public health impacts
- External projects: SALCC marshes, Sentinel sites, CISA and Sea Grant

Longer Term Planning

- 2014 priorities
- MOU draft
 - See About page
 - Steering committee vs. partners vs. stakeholders/end-users
- Sustainable support
 - Partners
 - Projects
 - ECU

What is there for you?

- Search, discover, and share coastal geospatial data
- Enhance your research data management plans
- Access to easy-to-use location or thematic maps
- Help develop a theme or tool for the atlas
 - Partnership between university researchers, students, and external entities
 - Priority case study/tool for an unmet need
- Use the atlas for teaching and raising awareness
- Visit the atlas and give feedback

Social Media

Connect Socially? Follow Us!

The North Carolina Coastal Atlas can be found on a variety of popular social media sites! Like us on Facebook, or follow us on Twitter to be sure you've got the latest updates from the Atlas. We will also be support Google+ and Instagram very soon! If you want to contact us by email, use our Contact Us form.



- Twitter, Facebook launched 10-15-2013
 - 136 Likes (11-15-13)
 - 13 followers (11-15-13)



www.nccoastalatlases.org