

# ***Estuarine Shoreline Mapping Project***

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N.C. Division of Coastal Management

Identify Track  
Ballroom C  
2:00 – 2:30pm



# Project Background





# Project Goals

1. To delineate an accurate estuarine shoreline and quantify the mileage of various shoreline types and the number of shoreline structures.
2. To begin to understand the cumulative effects of development along the estuarine shoreline (productivity, ecosystem function, shoreline stabilization trends, etc.).
3. To aid our understanding of how permitting activities affect property owners and the environment.



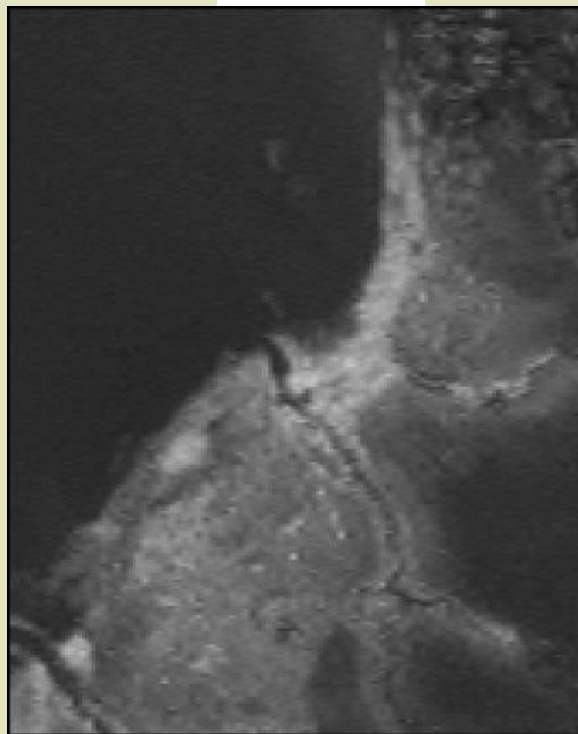


# Imagery Selection

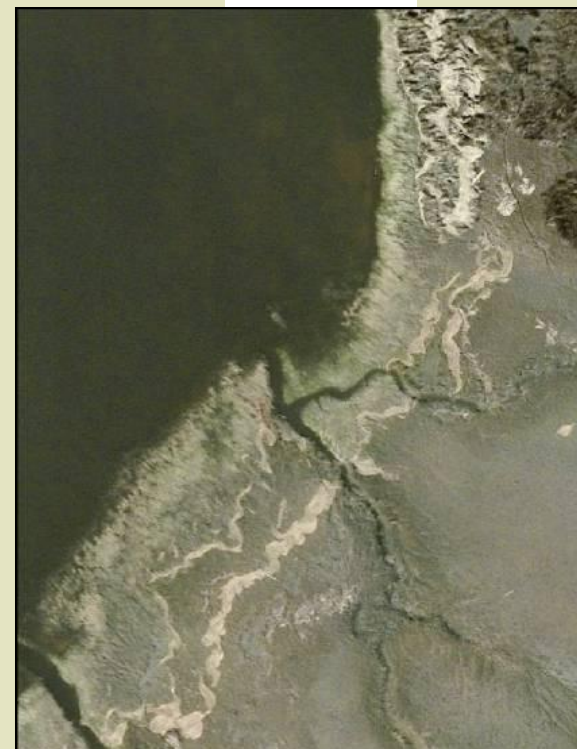
**1-meter**



**2-foot**

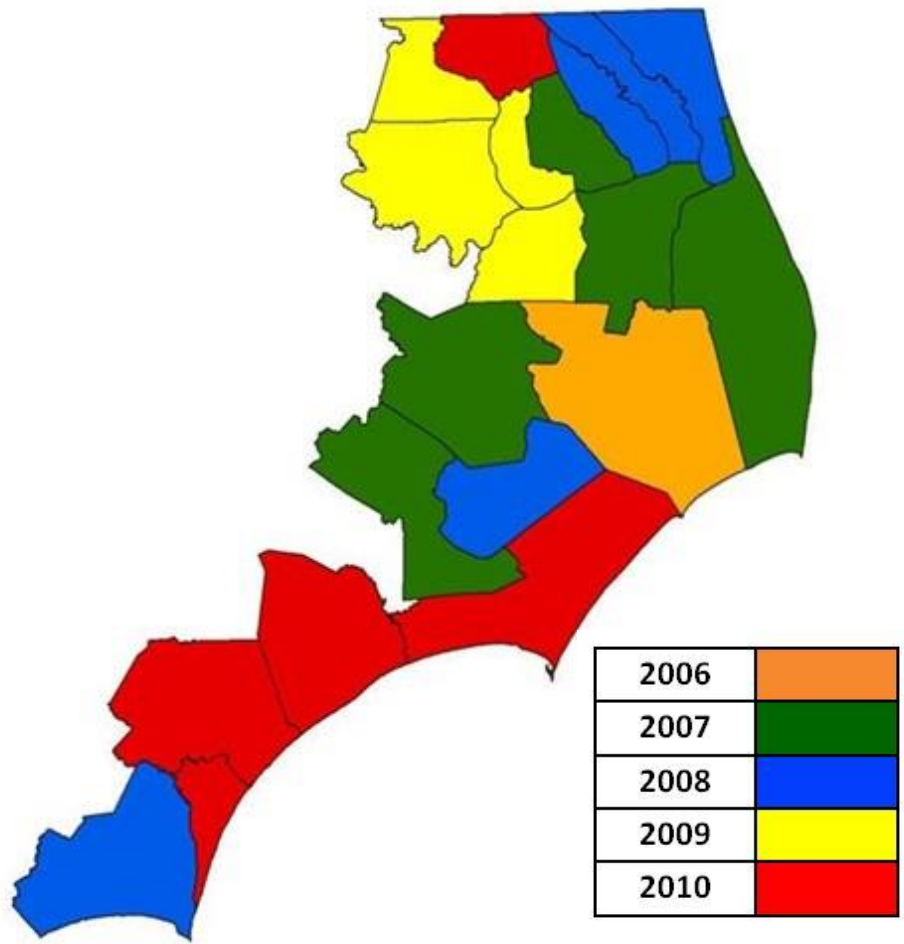


**6-inch**





# Imagery Selection



County	Resolution	Imagery Date
Beaufort	3 inch & 6 inch	2007
Bertie	6 inch	2009
Brunswick	6 inch	2008
Camden	6 inch	2008
Carteret	6 inch	2010
Chowan	6 inch	2009
Craven	6 inch	2007
Currituck	6 inch	2008
Dare	3 inch & 1 foot	2007
Gates	6 inch	2010
Hertford	6 inch	2009
Hyde	6 inch & 1 foot	2006
New Hanover	6 inch	2010
Onslow	6 inch	2010
Pamlico	6 inch	2008
Pasquotank	6 inch	2008
Pender	6 inch	2010
Perquimans	6 inch	2007
Tyrrell	1 foot	2007
Washington	6 inch	2009



## Features Digitized

### Shoreline Types

Swamp Forest

Marsh

Sediment Bank

Modified

### Linear Structures

Boat Ramps

Breakwaters

Groins & Jetties

Sills

Bulkheads

Rip-Rap Revetments

### Polygon Structures

Bridges

Piers

Docks

Wharves

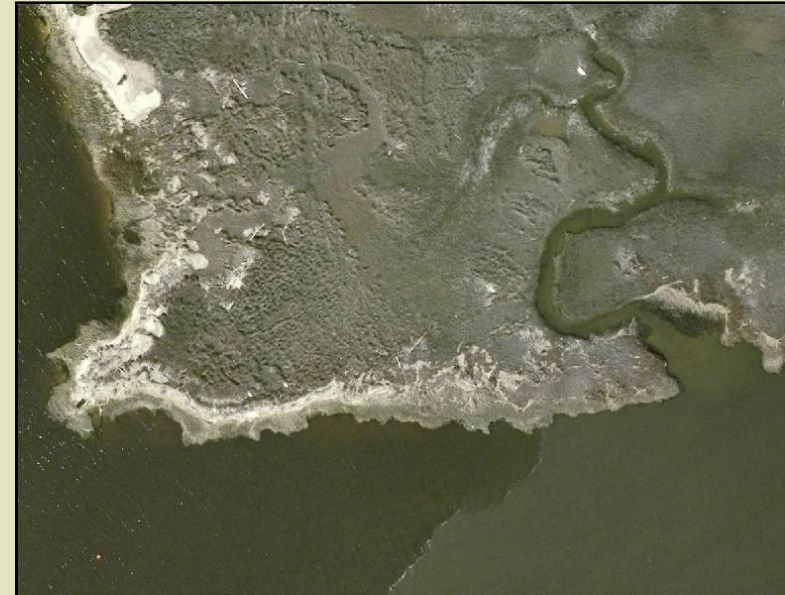


# Shoreline Types: Swamp Forest





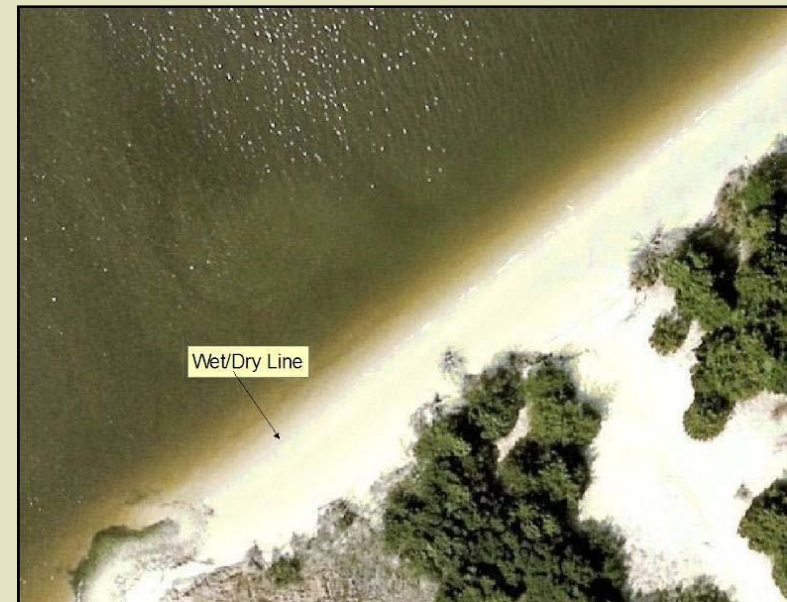
# Shoreline Types: Marsh







# Shoreline Types: Sediment Bank





# Shoreline Types: Modified





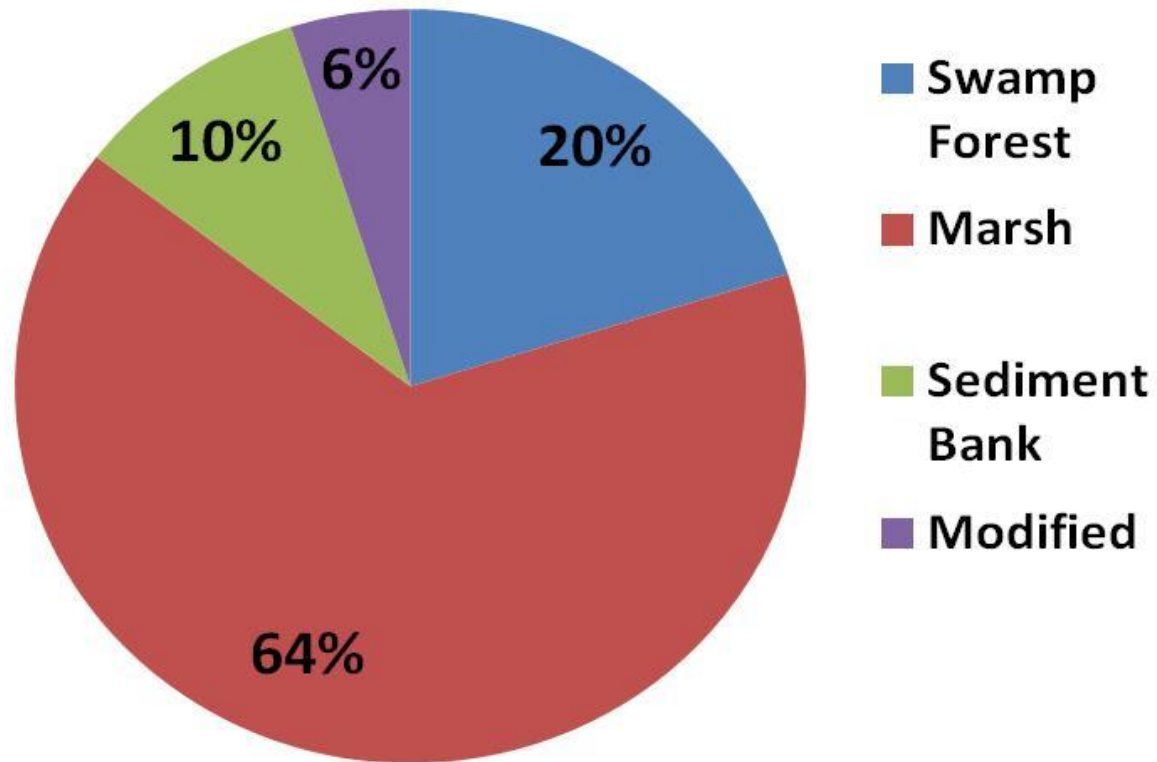
<20ft





# Statewide Estuarine Shoreline Types

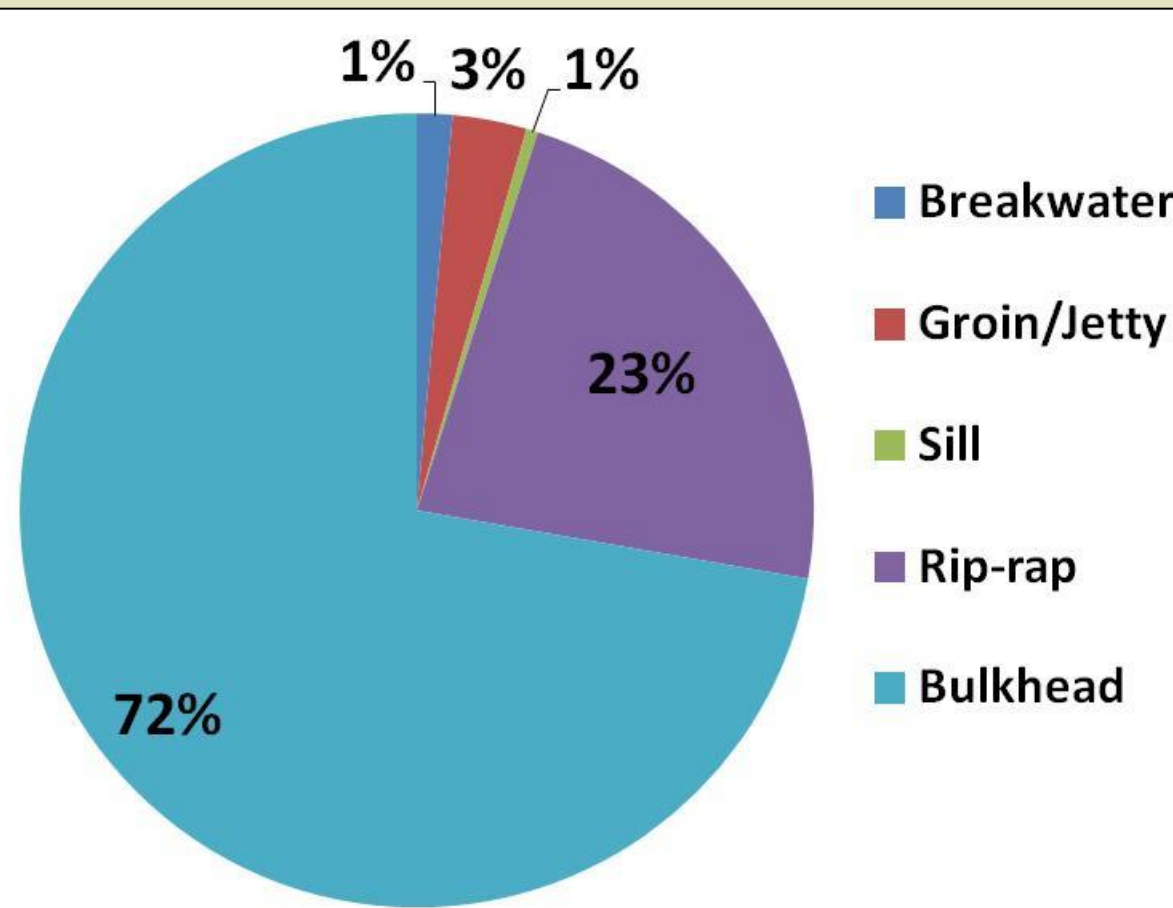
	Miles
Swamp Forest	2,490
Marsh	7,962
Sediment Bank	1,189
Modified	685
<b>Total</b>	<b>12,326</b>





# Statewide Estuarine Shoreline Stabilization

	Miles
Breakwater	6.5
Groin/Jetty	21.8
Sill	5.4
Rip-rap	164.7
Bulkhead	520.7
<b>Total</b>	<b>719.1</b>





# Rip-Rap and Bulkheads

23% of total NC shoreline structures

72% of total NC shoreline structures





# Statewide Estuarine Shoreline Access

	<b># of Structures</b>	<b>Acres</b>
<b>Bridge</b>	<b>578</b>	<b>339.2</b>
<b>Pier/Floating Dock/Wharf</b>	<b>29,864</b>	<b>598.8</b>
<b>Total</b>	<b>30,442</b>	<b>938</b>







# 2012 Update



**2008 Imagery**






**2012 Imagery**



# 2012 Update: Changes in Shoreline Type



-  - Modified Shoreline
-  - Natural Shoreline
-  - Pier/Dock




# 2012 Update: Digitizing Tree Canopies





# 2012 Update: Modified behind Natural Shoreline



 **Shoreline**

 **Bulkhead**



## 2012 Update: Shoreline Attributes

### Attribute      Shoreline Type

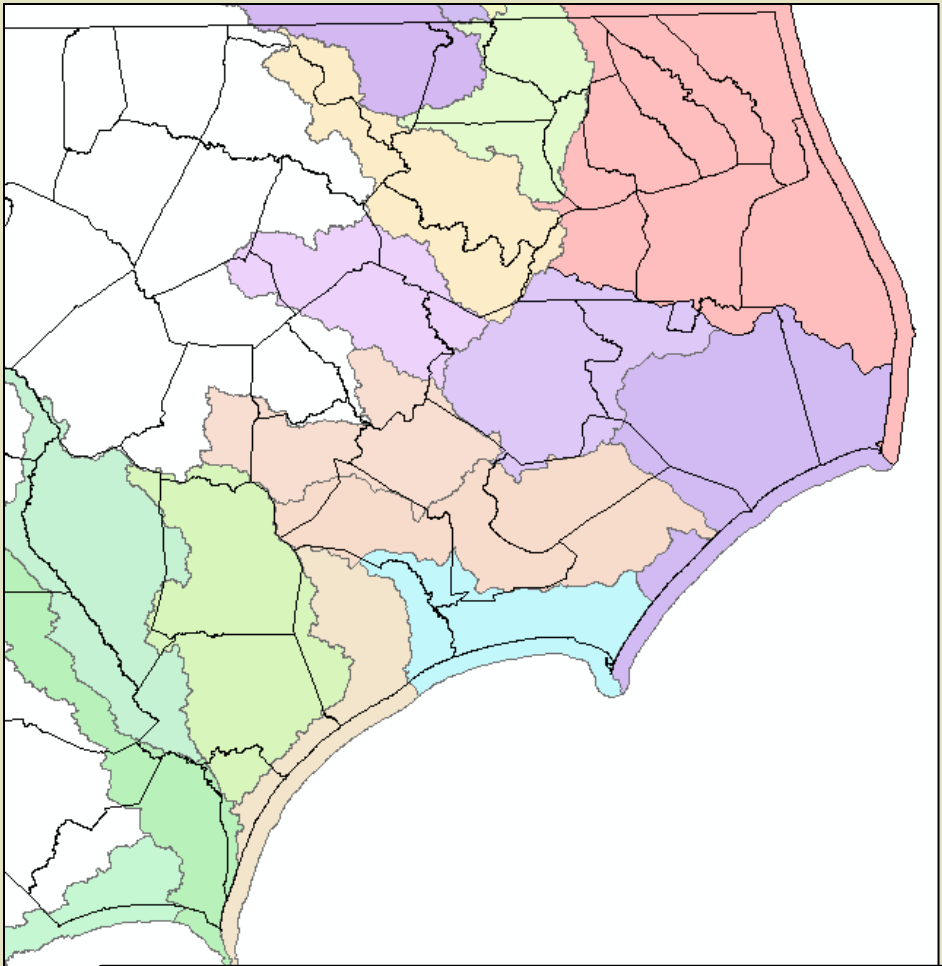
10	Swamp Forest
20	Marsh
20.71	Marsh shoreline waterward of a sloped structure
20.91	Marsh shoreline waterward of a vertical structure
30	Sediment Bank
30.71	Sediment Bank shoreline waterward of a sloped structure
30.91	Sediment Bank shoreline waterward of a vertical structure
40	Modified
99	Miscellaneous

\* There are no instances where swamp forest shoreline is located waterward of structures

**[Yellow Box]** = new attribute to shoreline type classification



# Data Summaries



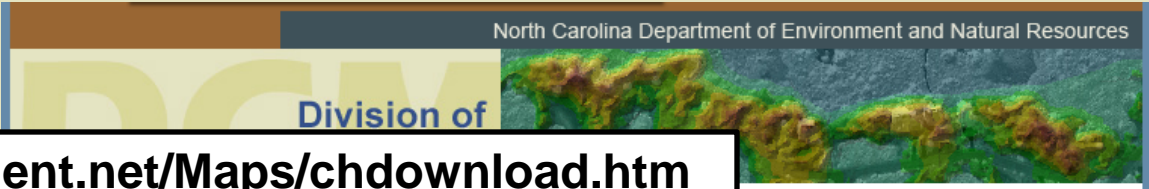
Hydrologic Unit Codes



Counties



Municipalities



# Data Download

<http://www.nccoastalmanagement.net/Maps/chdownload.htm>

## Download Spatial Data & Maps (*Oceanfront*)

These digital data are to be used as reference materials only. Property specific decisions should be made only after qualified professionals have collected applicable field measurements.

These data are projected in NC State Plane NAD 83 Feet

Last update was on Tuesday, June 19, 2012. What's available?

- Estuarine Shorelines (*Shapefiles*)
- Sandbags (*Shapefiles*)
- Oceanfront Shorelines (*Shapefiles*)
- Inlet Shorelines (*Shapefiles*)
- Erosion Rates & Coastal Hazards (*Shapefiles*)
- Oceanfront Setback Factors (*Shapefiles*)
- Static Vegetation & Setback (*Shapefiles, Prepared Maps, AutoCAD files*)
- Miscellaneous (*Shapefiles*)

View these data at DCM's *Oceanfront Shoreline and Setback Mapping* site

or

Get free GIS software to view these data? Free Download *ESRI's ArcExplorer®*

Estuarine Shorelines	Type	Zipped File	View Info
Estuarine Shoreline - Coastal North Carolina	GIS (line Shapefile)	Download	More Info
	KML (use w/ Google Earth)	Download	
Estuarine Shoreline Structures - lines - Coastal North Carolina	GIS-line	Download	More Info
	KML (use w/ Google Earth)	Download	
Estuarine Shoreline Structures - Coastal North Carolina	GIS (polygon Shapefile)	Download	More Info
	KML (use w/ Google Earth)	Download	

# Division of Coastal Management



http://ims.ncdenr.org/Website/ncshore/viewer.htm - Windows Internet Explorer

http://ims.ncdenr.org/Website/ncshore/viewer.htm

File Edit View Favorites Tools Help

North Carolina Department of Environment & Natural Resources [HOME](#) | [REFRESH MAP](#) | [QUESTIONS/COMMENTS](#)

## Division of Coastal Management

Shorelines & Oceanfront Setback Mapping

x: 2067284.99 y: 494032.36

**Map Tools** **Need Data?**

**Map Navigation**

zoom to a beach ...

zoom to an inlet ...

**Map Information**

NC DCM - Copyright (C) 2013 0 24mi

Active Map Tool: "Zoom In"

### LEGEND & LAYER LIST

- ALL MAP LAYERS
  - SETBACK FACTORS - OCEANFRONT
    - 2011-Setback Factors
    - 2004-Setback Factors
    - 1997-Setback Factors
    - 1988-Setback Factors
    - 1983-Setback Factors
    - 1979-Setback Factors
  - STATIC VEGETATION LINES
  - SHORELINES - OCEANFRONT
  - SHORELINES & STRUCTURES - ESTUAR
    - Estuarine Shoreline
    - Estuarine Structures - Lines
    - Estuarine Structures - Footprint
  - COASTAL HAZARDS
  - PHOTOGRAPHY
    - 1998 Oceanfront Photos
    - 2003 Photos
    - 2004 Oceanfront Photos

Auto Refresh

[How to use Legend/Layer List:](#)

<http://ims.ncdenr.org/Website/ncshore/viewer.htm>





## Maps



## Ocean & Estuarine Shorelines

<http://www.nccoastalatlasc.org/>



# Questions?

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