

# NEW INITIATIVES IN NORTH NORTH-EAST NC COAST" "OBSERVATORY"

Robert Y. George Ph.D.  
President, George Institute for  
Biodiversity and Sustainability  
and Research Director, CERSER,  
ECSU

Nov 1, 2017

# 1970 Gov. Bob Scott

- 1, Commercial Fisheries
2. Recreational Fisheries
3. Oil and Gas
4. Wind Mills, Farms and Parks
5. Climate Change/Research
6. Public Education
7. Military Interest
8. Nature –Biodiversity Study-area.

THE UNIVERSITY OF NORTH CAROLINA

General Administration

CHAPEL HILL 27514

September 24, 1975

WILLIAM FRIDAY  
President

Dr. Robert George  
Associate Professor  
Biological Oceanography  
Institute of Marine Biomedical Research  
7205 Wrightsville Avenue  
Wilmington, North Carolina 28401

Dear Dr. George:


I have recently been informed of activities being planned by the Bureau of Land Management in connection with leasing of tracts in the South Atlantic Region for oil exploration. The University of North Carolina Marine Science Council has been in close contact with persons working with the Bureau of Land Management and have been meeting to determine what the response of the University should be to these plans.

Upon the advice of the Marine Science Council, I am asking that you work with a group that is being formed to formulate a State policy document. This document will relate to the interests of both the State and the University. I am asking you to work with the group to insure proper representation from the standpoint of biological oceanography.

Dr. Ernie Carl, Director of the State's Office of Marine and Coastal Affairs, will assist us in coordinating activities in connection with the conference scheduled in Atlanta in October. The Research Triangle Institute will be working with the Bureau of Land Management in organizing and conducting this conference. I understand that Dr. Carl will be in touch with you soon to establish a time and place for a meeting.

Thank you in advance for any assistance you might give to the group in preparing for effective participation in the Atlanta Conference. If you have questions, please contact Dr. B. J. Copeland at North Carolina State University or Dr. Ernie Carl.

Cordially,



William Friday





# -Key-

District numbers are represented by the following colors:

Dist 1 = [Red square]

Dist 2 = [Light Red square]

Dist 3 = [Orange square]

Dist 4 = [Light Orange square]

Dist 5 = [Yellow square]

Dist 6 = [Light Green square]

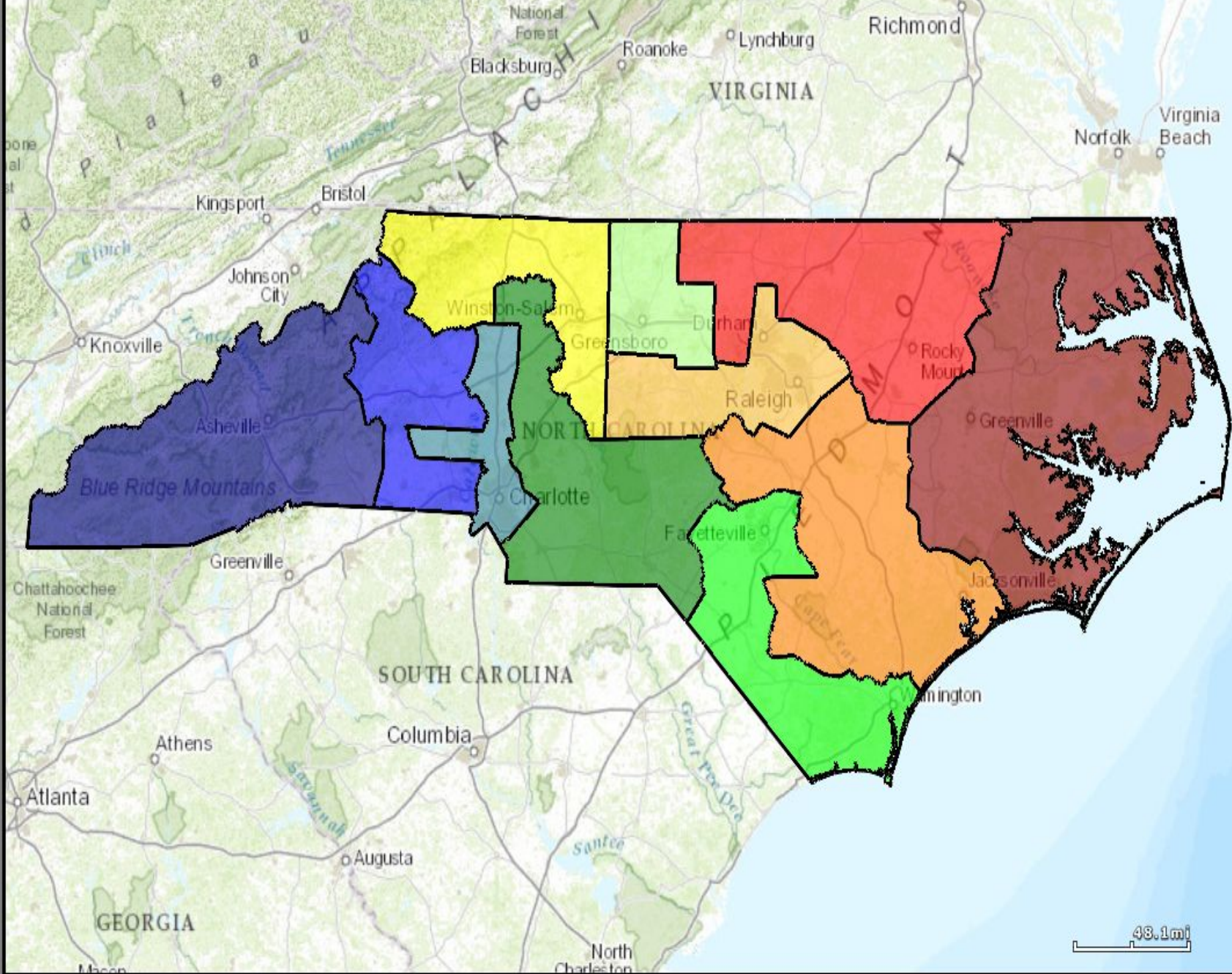
Dist 7 = [Green square]

Dist 8 = [Dark Green square]

Dist 9 = [Light Blue square]

Dist 10 = [Blue square]

Dist 11 = [Dark Blue square]



United States Congressional Districts in North Carolina: 1973 – 1982

Data source: <http://cdmaps.polisci.ucla.edu>, *Digital Boundary Definitions of United States Congressional Districts, 1789 – 2012*.

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INSHORE

NEAR SHORE

OFFSHORE

HIGH SEAS

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## **GEORGE-WATZIN REPORT**

MINUTES OF THE SEPTEMBER 14, 2016 "CONVERSATIONS ABOUT NUTRIENT OVER-ENRICHMENTS IN NC WATERSHEDS WITH FOCUS ON NEUSE RIVER BASIN:

PREPARED BY ROBERT Y. GEORGE

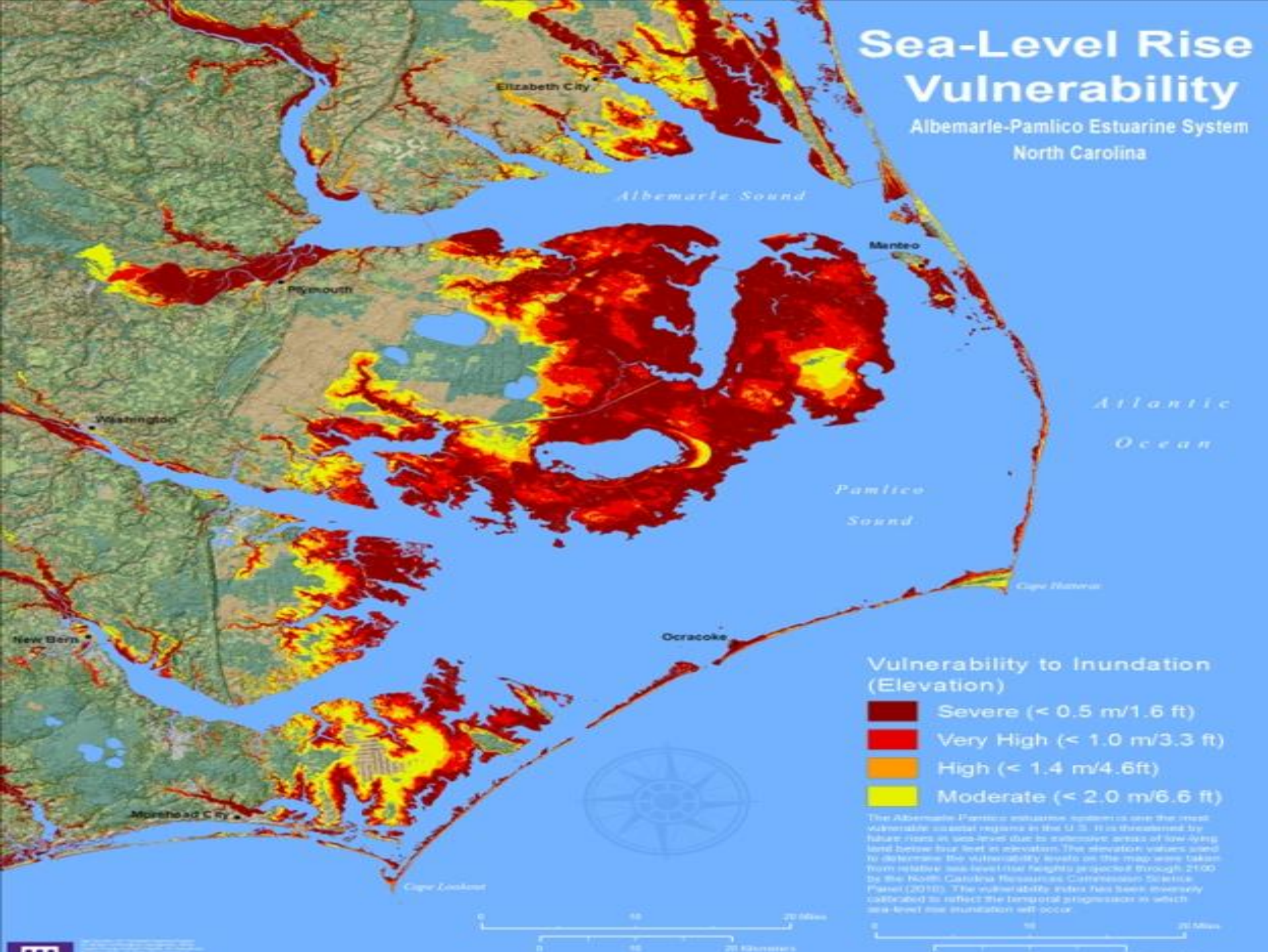
RESULTS OF A CONFERENCE ORGANIZED AT NCSU BY DEAN MARY WATZIN  
(NCSU) AND PROF. ROBERT Y. GEORGE GIBS/ECSU)





# Sea-Level Rise Vulnerability

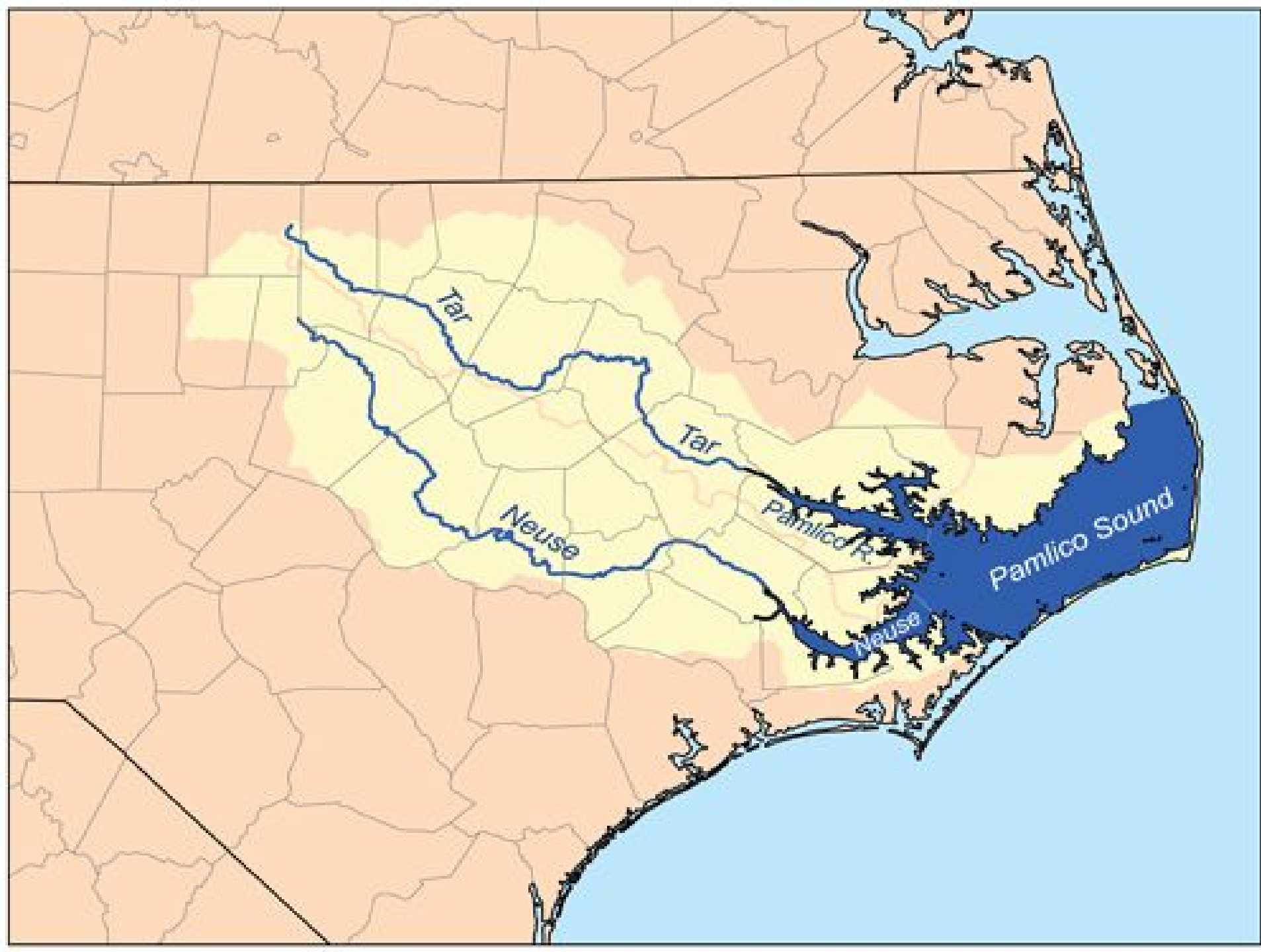
Albemarle-Pamlico Estuarine System  
North Carolina

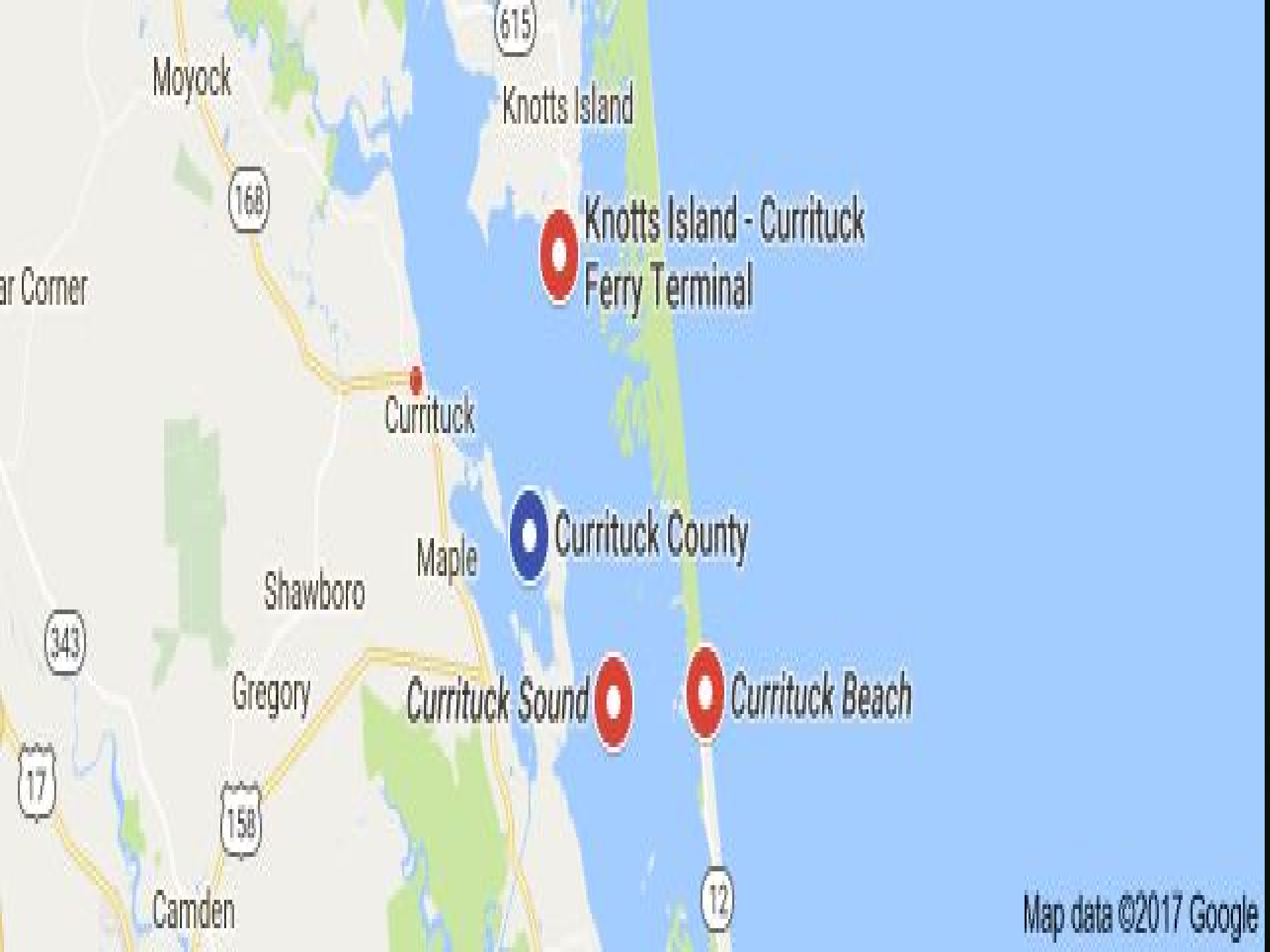


## Vulnerability to Inundation (Elevation)

- Severe (< 0.5 m/1.6 ft)
- Very High (< 1.0 m/3.3 ft)
- High (< 1.4 m/4.6 ft)
- Moderate (< 2.0 m/6.6 ft)

The Albemarle-Pamlico estuarine system is one of the most vulnerable coastal regions in the U.S. It is threatened by future rises in sea-level due to extensive areas of low-lying land below four feet in elevation. The elevation values used to determine the vulnerability levels on the map were taken from relative sea-level rise heights projected through 2100 by the North Carolina Resilience Commission Science Panel (2010). The vulnerability index has been conservatively calibrated to reflect the temporal progression in which sea-level rise inundation will occur.





615

Moyock

Knotts Island

168

Knotts Island - Currituck  
Ferry Terminal

ar Corner

Currituck

Currituck County

Maple

Shawboro

343

Gregory

Currituck Sound

Currituck Beach

17

158

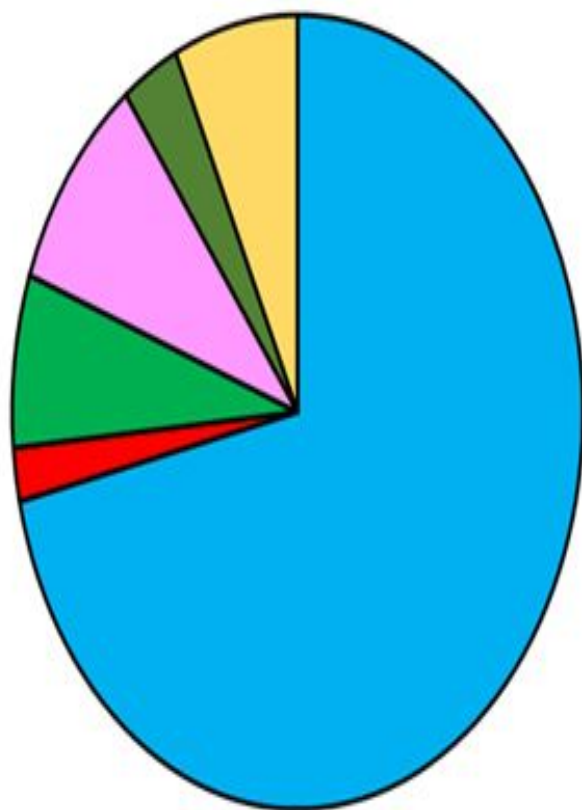
Camden

12

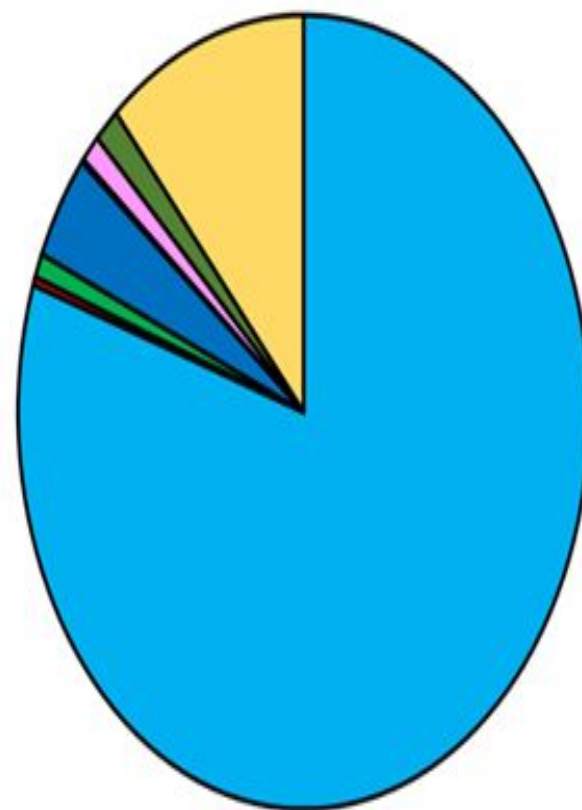
Map data ©2017 Google



### Urbanized



### Agriculturalized



- |               |                  |
|---------------|------------------|
| Reference     | WWTF effluent    |
| WWTF influent | Poultry leachate |
| Swine lagoon  | Septic outflow   |
| Street runoff | Soil leachate    |

- |               |                  |
|---------------|------------------|
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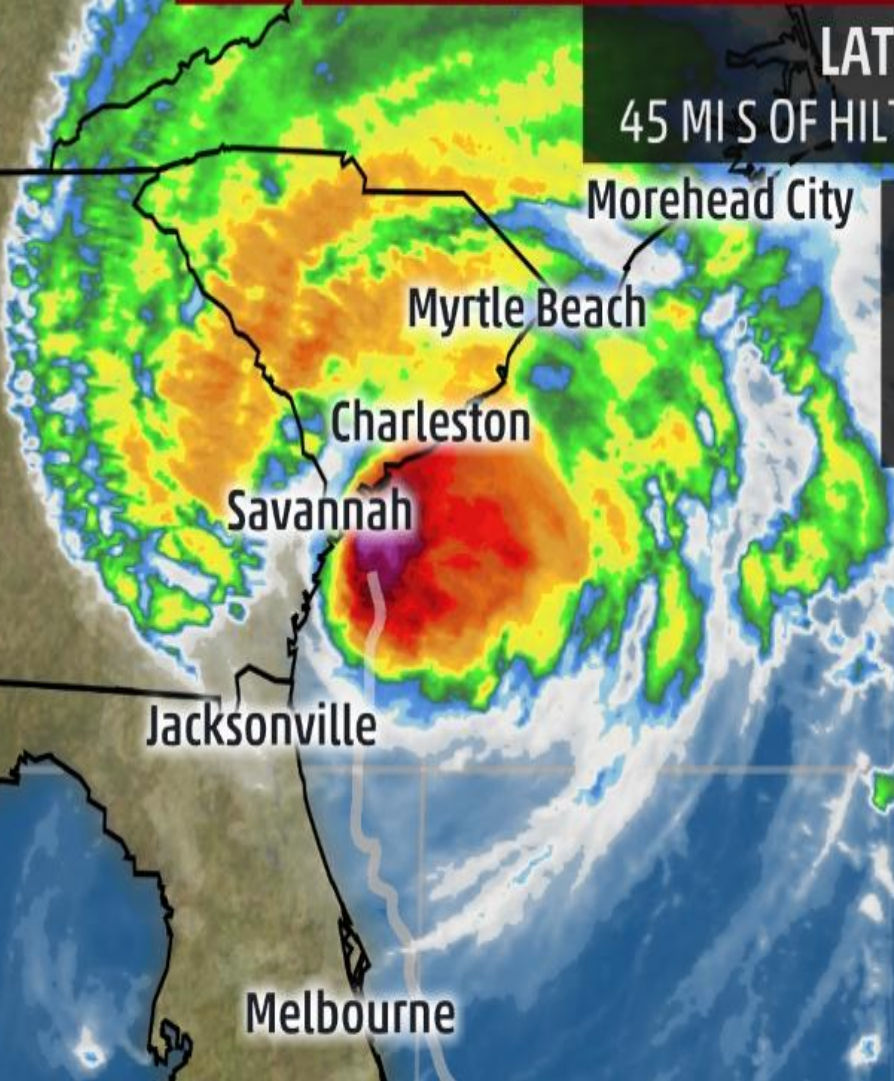


# HURRICANE MATTHEW

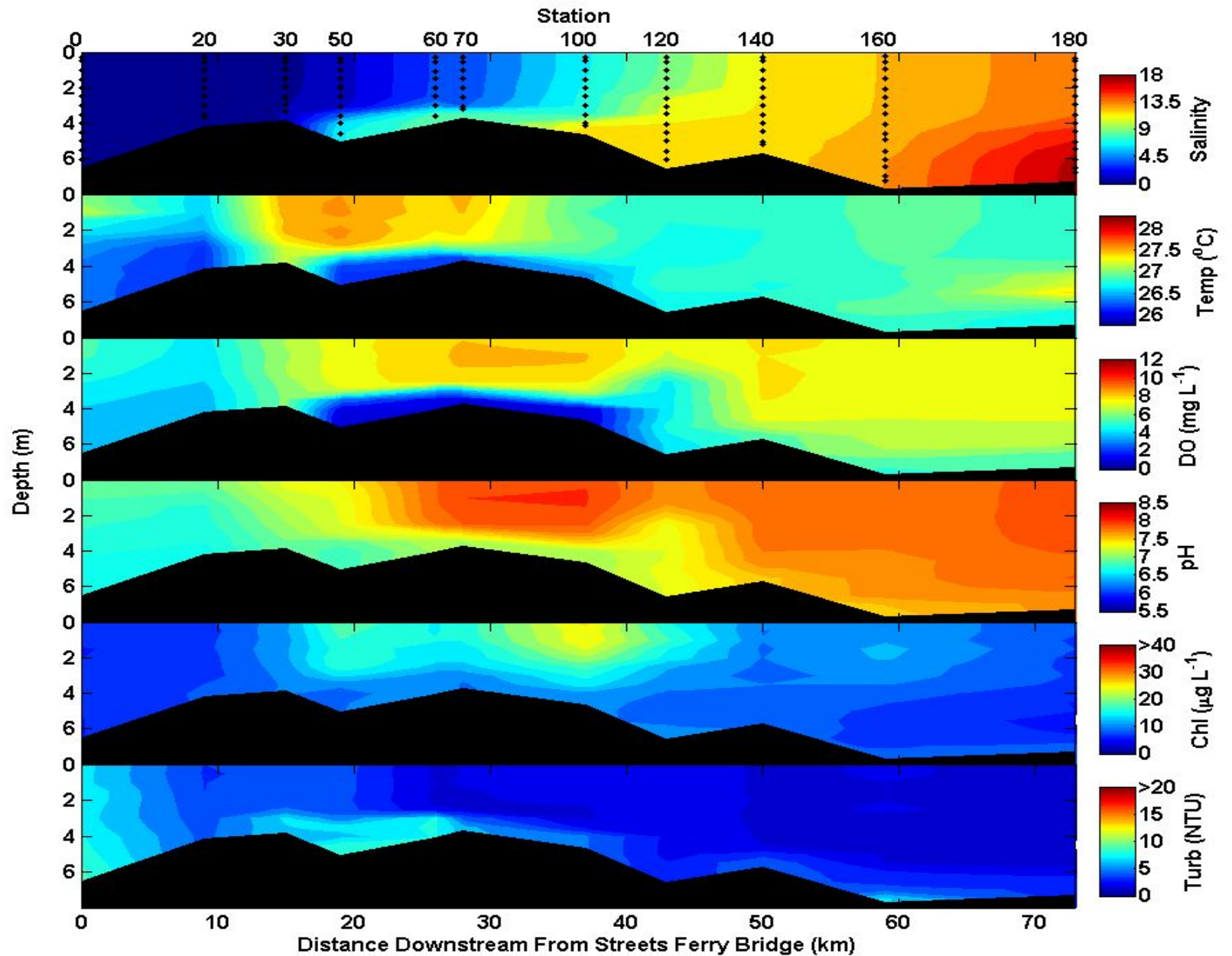
2:00 AM EDT

LAT: 31.6°N LON: 80.6°W  
45 MI S OF HILTON HEAD SOUTH CAROLINA

WINDS: 105 MPH  
PRESSURE: 955 mb  
MOVING: N at 12 MPH

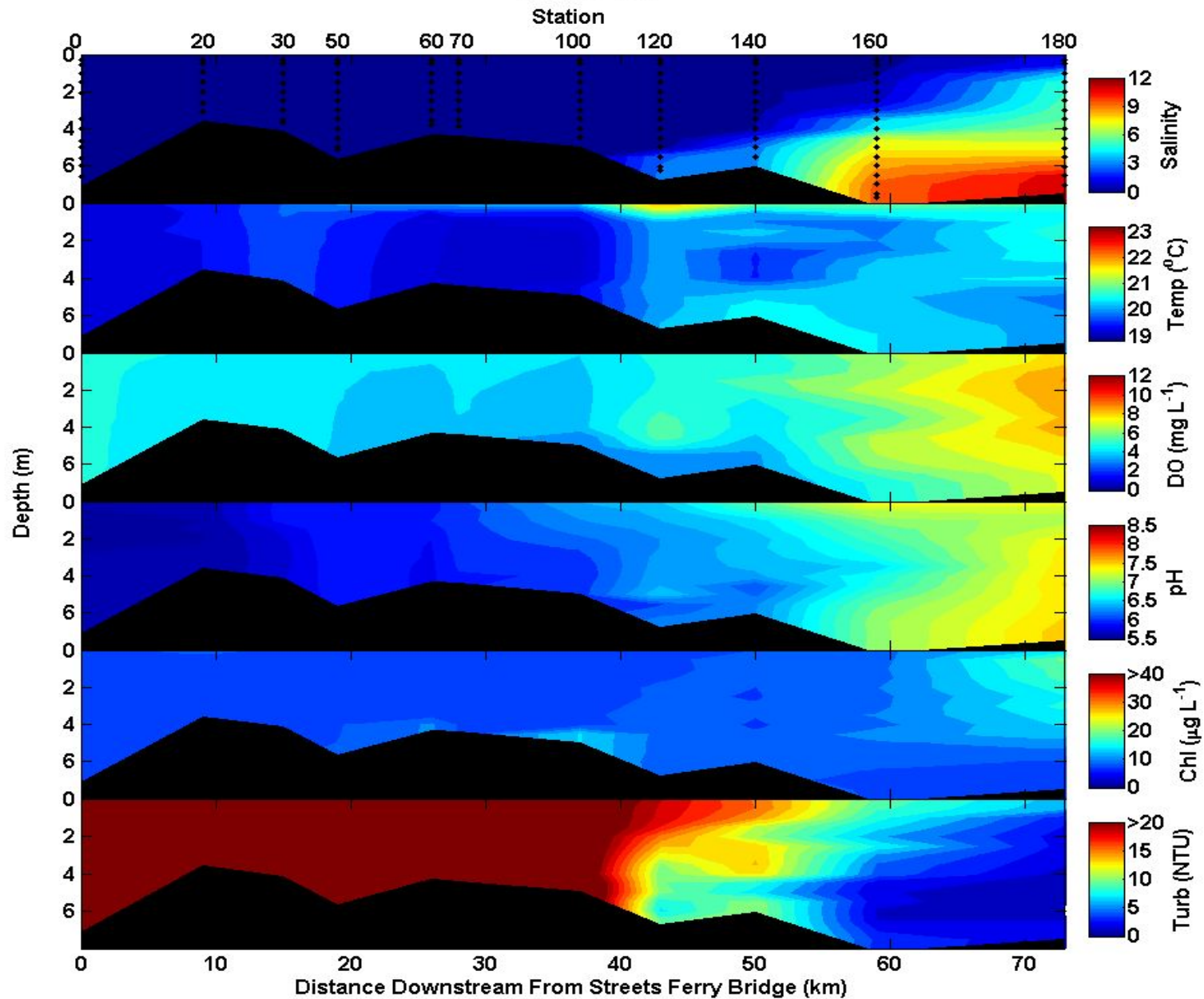


19-Sep-2016





17-Oct-2016



ECSU- VALUABLE RESOURCE  
AND INTELLECTUAL CAPITAL FOR  
STATE AND NATION.

TO ADDRESS ENVIRONMENTALLY  
SENSITIVE NEEDS FOR  
NORTHEAST NORTH CAROLINA

NENCI –NORTHEAST NORTH  
CAROLINA INTTIATVE

Besides thermal increase, there are other coastal threats:

1. Ocean Acidification
  2. Deoxygenation
  3. Salinification
  4. Oyster reef shrinkage
  5. Loss of Marshes
- etc

How do we mitigate?



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**PROPOSAL TO NSF DIRECTORATE OF EDUCATION (Feb.. 2018)**

**“Marine-STEM PROJECT FOR HIGH SCHOOL STUDENTS AND TEACHERS (2018-2020) IN NINE NC COASTAL COUNTIES”**

**PIs: Dr. Timothy Goodale (Assistant Professor, Dept. of Education, ECSU) and Dr. Robert Y. George (Research Director, CERSER, ECSU)**

**Collaborators: Dr. Sue Kezios (Watson School of Education, UNCW); Dr. Darnell Johnson (CERSER, ECSU), Dr. Reide Corbett (ECU-CSI) and Dr. David Eggleston (CMAST, NCSU)**



CERSER, ECSU

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“OBSERVATORY”

NSF-BIG DATA PROJECT

IBM, GEORGIA TEC. &  
SMITHSONIAN

Encyclopaedia of Life (EoL)

KRILL  
BASE





# ECSU OBSERVATORY ELIZABETH CITY

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1. Citizens Observatory
2. Scientists and Scholars
3. Policy/Decision Makers
4. DATA HUB-SPOKE (NSF/IBM)

# Our Philosophy for Multiple-Use/ Benefit-sharing Framework

1. Coming together is legacy.
2. Keeping together is progress.
3. Working together is success.