

Basic Observation Buoy Workshop, Construction, and Deployment for Schools in the Albemarle Pamlico Sound Region

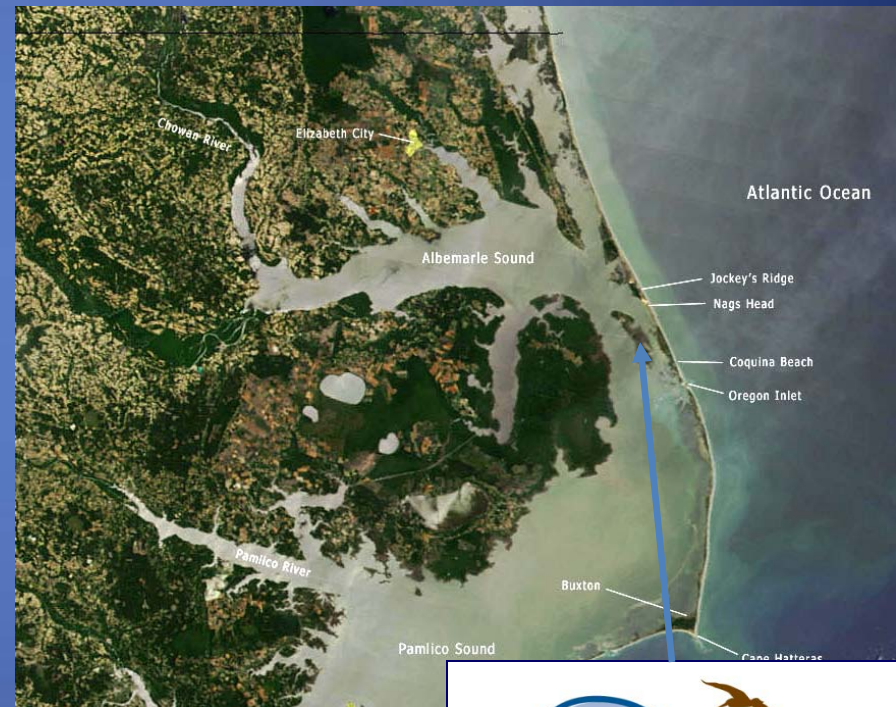
David Sybert, UNC Coastal Studies Institute Education Associate



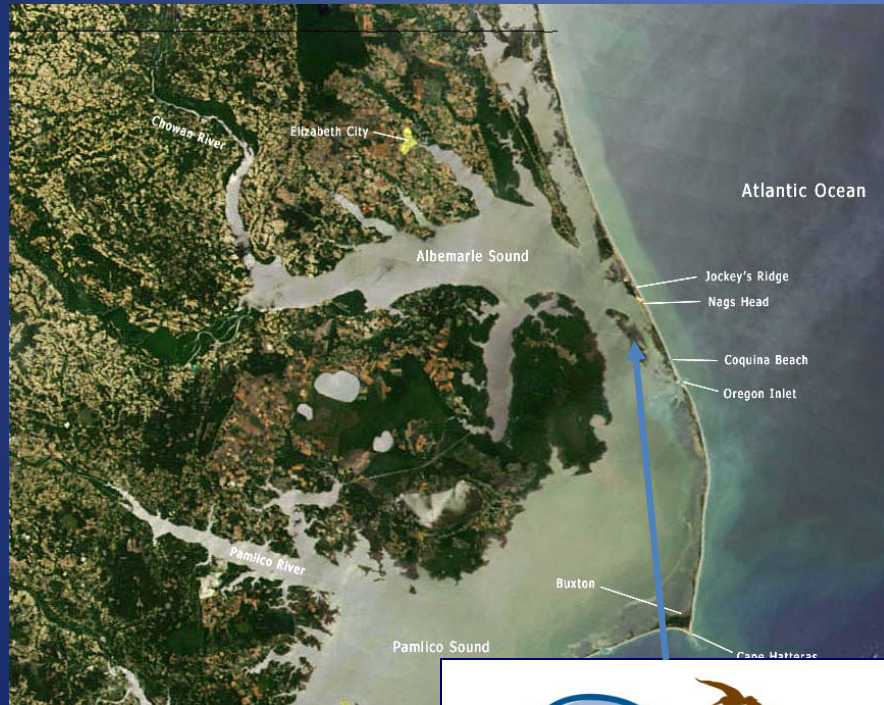
UNC Coastal Studies Institute



UNC-CSI is an inter-university coastal and marine science institute focusing on applied research and education programming to serve Northeastern North Carolina and beyond...



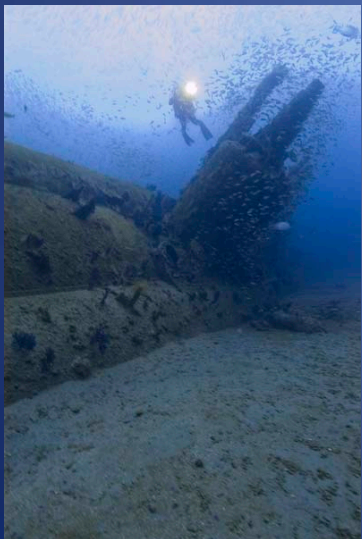
UNC- CSI Mission



...to undertake research, offer educational opportunities, provide community outreach programs, and enhance communication among those concerned with the unique history, culture and environment of the maritime counties of North Carolina.

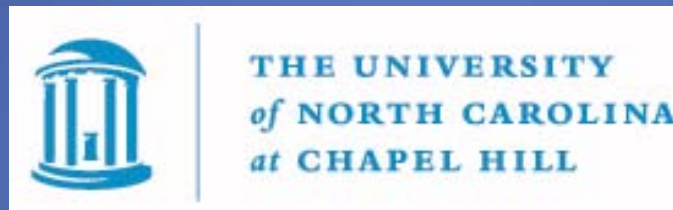
Research Program Areas

- Coastal Processes and Engineering
- Estuarine Ecology and Human Health
- Public Policy and Coastal Sustainability
- Maritime History





University Partners



UNC-CSI Campus



BOB Project Objectives

- Get students interested in local water resources
- Teach scientific concepts through project based learning
- Foster Science, Technology, Engineering and Math education
- Create a legacy science project
- Increase amount of data available for Albemarle and Pamlico regions
- Expand BOB program and create a written manual



BOB Project Partners



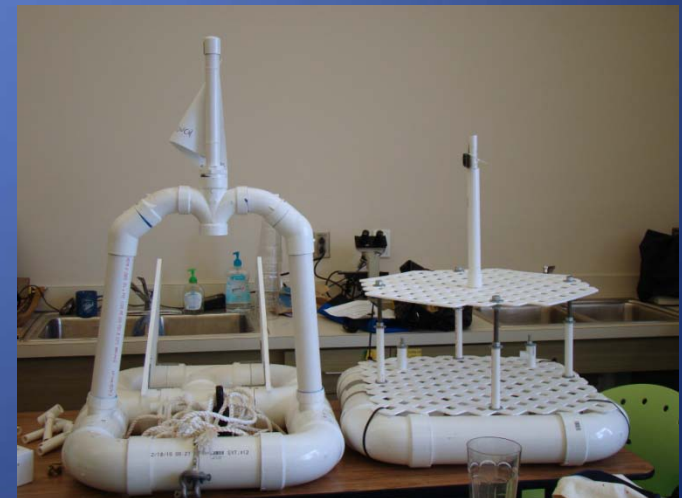
Science Education



- Aligns with NC Standard Course of Study
 - Select and use appropriate measurement tools
 - Analyze and interpret data
 - Enhancing understanding of science and technology
 - Understanding water parameters
 - Local water quality issues

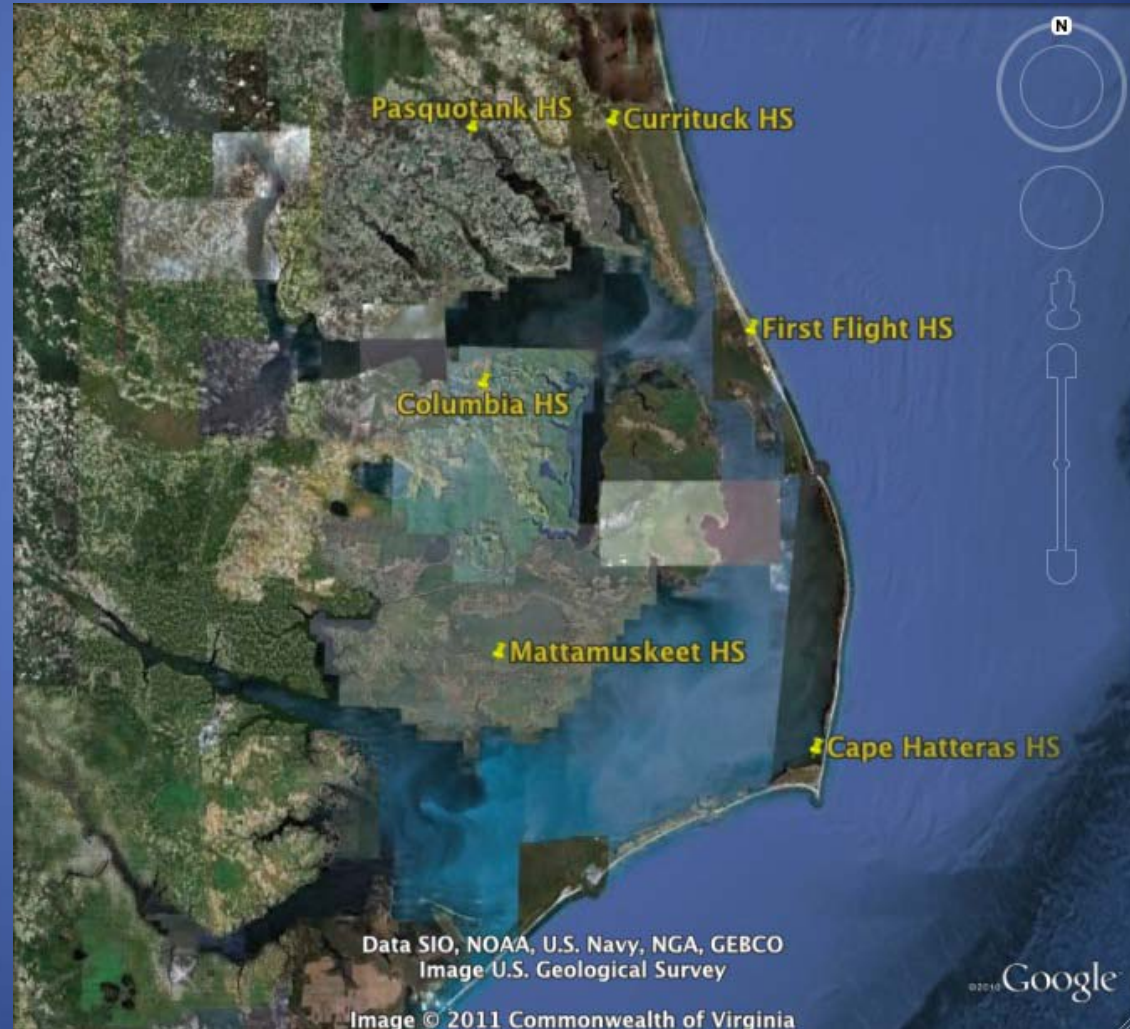
BOB – Basic Observation Buoy

- Expansion of program developed by Doug Levin formerly of NOAA
- Universities and High Schools in SC and FL
- New network in NC – 6 schools
- Updated buoy design
- APNEP grant - \$25,000
 - Supplemental funds - \$5,000



Schools Involved

- Pasquotank High School
- Currituck High School
- Columbia High School
- First Flight High School
- Mattamuskeet High School
- Cape Hatteras Secondary School



Teacher Workshop



BOB Program

- BAB Activity
- BOB Buoy Construction
- BOB Sensor attachment
- Buoy Deployment
- Buoy Recovery
- Maintenance and data download
- Redeployment



BABs – Build a Buoy Program



BOB – Buoy Construction



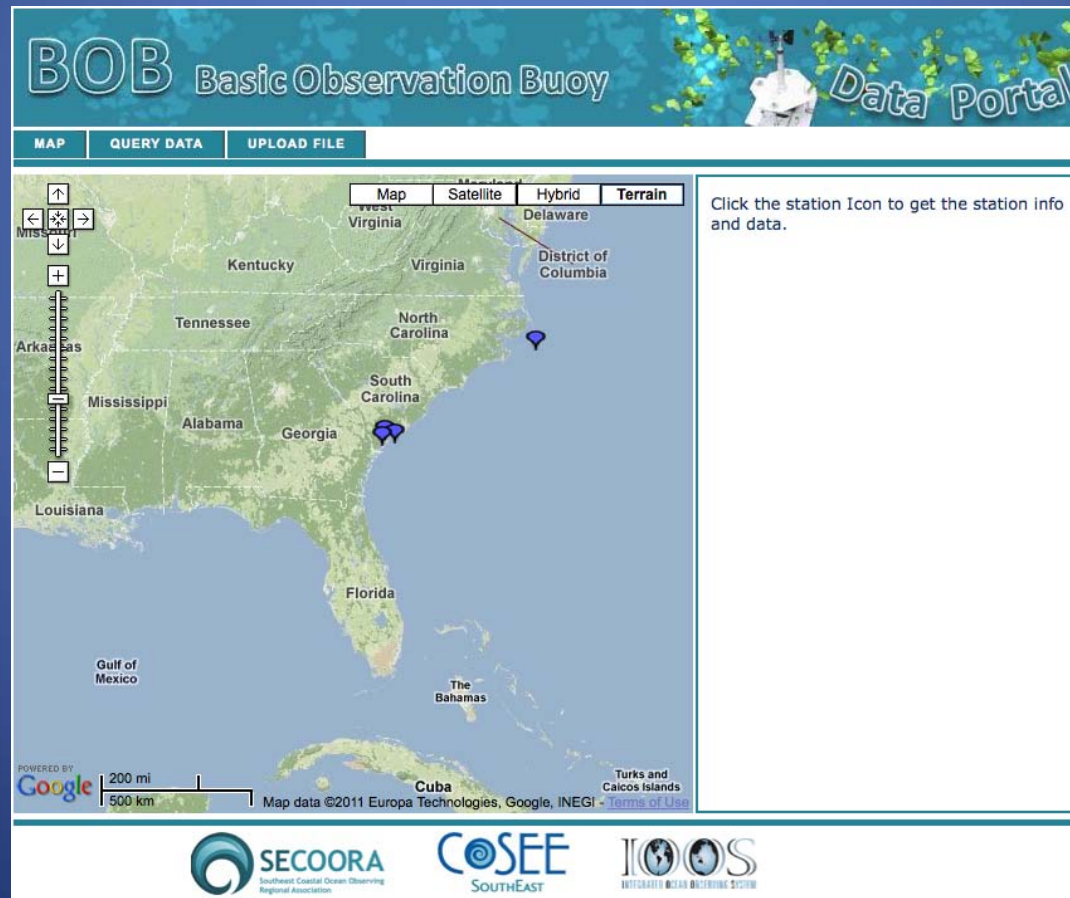
BOB – Sensors

- Pasco Explorer GLX
- Atmospheric Data
 - Humidity
 - Air temperature
 - Wind speed and wind chill
 - Barometric pressure
 - Dew point
- Water Quality
 - pH
 - Dissolved Oxygen
 - Conductivity (salinity)
 - Water temperature



Data Sharing

- Add data to existing network supported by the Southeast Coastal Ocean Observing Regional Association (SECOORA)



The screenshot displays the BOB Basic Observation Buoy Data Portal interface. At the top, the title "BOB Basic Observation Buoy Data Portal" is shown in a stylized font. Below the title are three main navigation tabs: "MAP", "QUERY DATA", and "UPLOAD FILE". The "MAP" tab is currently selected, showing a map of the Southeastern United States and the Gulf of Mexico. The map includes state names (Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Kentucky, Tennessee, West Virginia, Delaware, District of Columbia) and a scale bar (200 mi / 500 km). A legend at the top right of the map area indicates map styles: "Map", "Satellite", "Hybrid", and "Terrain". A text box on the right side of the map area contains the instruction: "Click the station Icon to get the station info and data." The bottom of the interface features logos for SECOORA (Southeast Coastal Ocean Observing Regional Association), COSEE SOUTH EAST, and I/OOS (INTEGRATED OCEAN OBSERVING SYSTEM).

Challenges

- School year calendar
 - Semester classes
- Long term funding
- Hurricane Irene
 - Cape Hatteras Secondary School
 - Mattamuskeet High School
- Battery life – sensors
- Appropriate Locations
 - Equipment safety
 - School logistics



Long Term Goals

- Secure long term funding
- Develop stable network of schools
- Host symposium for students
- Data sharing and identifying trends
- Upgrades to buoys
 - Real time data transfer
 - Research grade sensors
 - Additional water quality parameters



Questions

For more information, please visit us on the web:
<http://csi.northcarolina.edu>
Or find us on facebook

