

Student Data Collection: The Basic Observation Buoy (BOB)

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BOB Project Partners





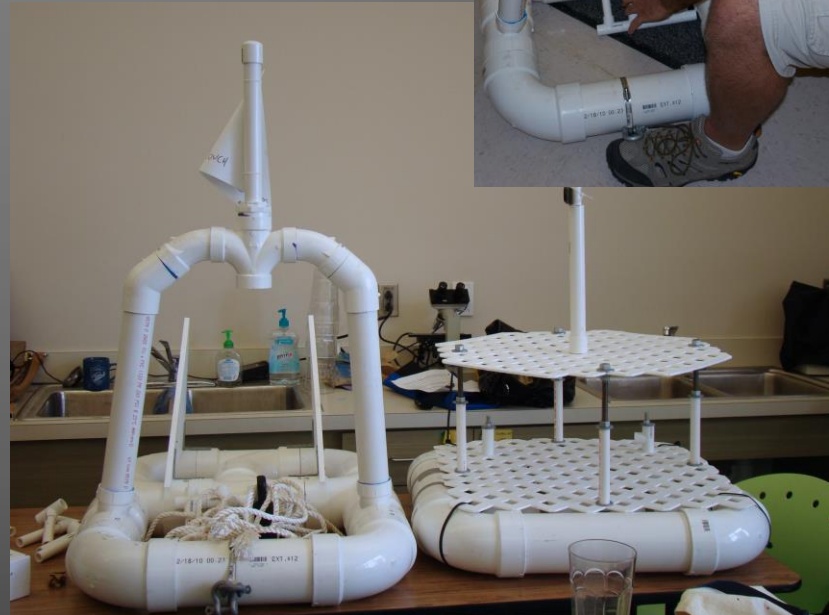
Coastal Studies Institute
UNIVERSITY OF NORTH CAROLINA

- Overview of project - 2011
- 2013 - Updates



BOB – Basic Observation Buoy

- Expansion of program developed by Doug Levin formerly of NOAA
- Universities and High Schools in SC and FL
- NC Network established in 2011 – 5 schools
- Funded through APNEP



Teacher Workshop - 2011



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

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

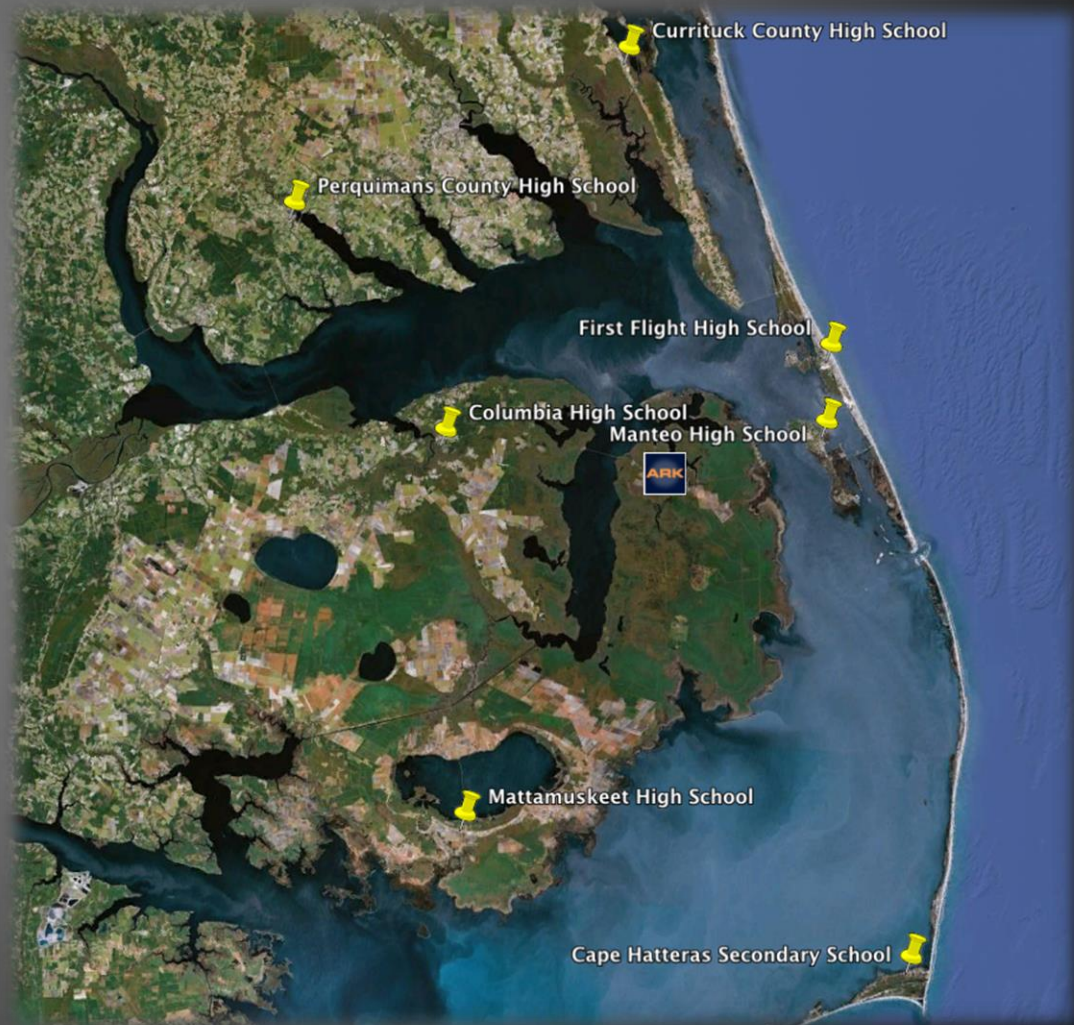
BOB Program

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



Schools Involved - 2013

- Perquimans County High School
- Currituck High School
- First Flight High School
- Columbia High School
- Manteo High School
- Mattamuskeet High School
- Cape Hatteras Secondary School



Teacher Workshop - 2013

- Working dinner
- Teachers required to fill out questionnaire
- Group discussion on logistics
- Prepared teachers for quick start in 2013 - 2014 school year
- Commitment from each teacher



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
 - Conductivity (salinity)
 - Water temperature



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



The screenshot shows the BOB Basic Observation Buoy Data Portal interface. At the top, the title "BOB Basic Observation Buoy Data Portal" is displayed in a stylized font. Below the title are three navigation tabs: "MAP", "QUERY DATA", and "UPLOAD FILE". The main content area features a map of the Southeastern United States, showing states from Virginia to Florida. Several blue buoy icons are plotted along the coast. A legend on the right side of the map states: "Click the station Icon to get the station info and data." The map includes standard navigation controls (pan, zoom, map style selection) and a scale bar at the bottom left. The footer contains logos for SECOORA (Southeast Coastal Ocean Observing Regional Association), COSEE SOUTH EAST, and IIOOS (INTEGRATED OCEAN OBSERVING SYSTEM).

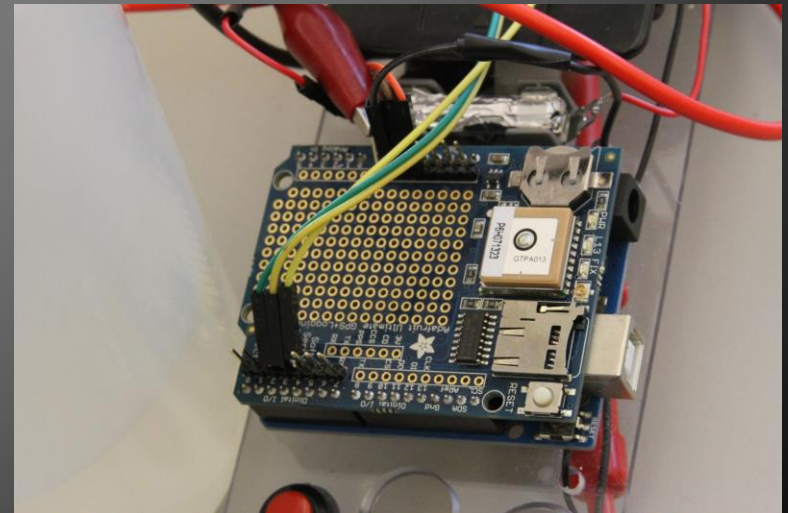
Challenges

- School year calendar
 - Semester classes, commitments
- Teacher turn over
- DO sensor inaccuracies
- Battery life – sensors
- Appropriate Locations
 - Equipment safety
 - School logistics



Upgrades for 2013

- Lighter, smaller BOB – replace 3 broken models
- Added additional school – Perquimans High School
- Designed and built a DO sensor at UNC CSI
- Improved water proof design – dry bags and descant



Future Upgrades

- Solar panels – Dominion Power
- Real time data
- Additional water quality parameters
- Student inspired buoy redesigns
- Waterproofing



Questions

