



**Caribbean Coastal Ocean Observing System (CariCOOS)
University of the Virgin Islands - Center for Marine and Environmental Studies and
University of Puerto Rico Mayaguez Partnership**

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LONG-TERM GOALS

Our goals are to build a framework for the Caribbean regional association to sustain an integrated ocean and coastal observing system serving the waters surrounding the US Virgin Islands. The Virgin Islands observing system mission parallels the CariCOOS mission, which is to meet the informational needs of local, regional and federal decision makers, resource managers, entrepreneurs, educators, scientists and general citizenry.

MILESTONES / OBJECTIVES

Reporting period June 1 2017 – May 31 2018

The unprecedented disruption caused by two category five hurricanes, Irma on September 6th and Maria on September 19th, significantly disrupted our planned schedule of work in the US Virgin Islands. The University of the Virgin Islands St Thomas campus was severely damaged with 36 buildings receiving major damage. The MacLean Marine Science building, home of VI-CariCOOS operations, lost its roof and windows. While no significant injuries affected UVI marine science personnel, all workers had some damage to their homes, vehicles or offices. CariCOOS-related equipment was damaged. The most significant of these was the St Thomas buoy located 5 miles northwest of St Thomas. The buoy was placed in this location only a month before the storm. Forty foot waves and 70 mph winds were recorded before they swamped the buoy and rendered its electronics inoperable on September 6th. Other equipment such as the Crown Bay weather station and ADCP were not damaged, and the thermistor string scheduled to be deployed in September was not harmed despite the damage to the marine center.

These storms caused much damage to the Virgin Islands and Puerto Rico, and caused substantial delays in obtaining the completed sub-award documentation. A no-cost extension was requested and granted for this period. Nevertheless, VI-CariCOOS was

able to make some progress in this most difficult of years.

MILESTONES / OBJECTIVES

- Drs. Paul Jobsis and Sennai Habtes were appointed to manage the CariCOOS assets and ocean observing goals for the 2017-18.
- In October of 2017 Dr. Jobsis visited the St. John CariCOOS buoy to determine its status and report to CariCOOS in Puerto Rico.
- Mr. Andy Breton completed a re-design / re-arrangement of the display of CariCOOS prediction models of wind and wave forecasts on the monitors at the marine science building.
- In conjunction with Roy Watlington of OCOVI and WeatherFlow, the management of CariCOOS assets was conducted. This included inspection following the storms to determine if these assets were intact.
- UVI marine center provided storage of assets for the maintenance of the St John buoy, as well equipment and shipping crates for Rutgers University's Coastal Ocean Observation Laboratory. These items were not damaged by storms.
- UVI provided space for glider testing, and assisted with launch and recovery of a Rutgers University glider, however the buoyancy tank was not completed before the storms.
- UVI and CMES partnered with and participated in outreach and education events held by OCOVI. Mr. Howard Forbes from the Virgin Islands Marine Advisory Service also participated in CariCOOS-related outreach events, particularly the Reef Fest event in April of 2018 where CariCOOS materials were displayed and discussed. It is estimated that 1200 people participated in the 2018 Reef Fest event.
- In February of 2018 UVI signed a professional service agreement with Mr. Doug Wilson to provide assessment of the St Thomas buoy and to re-assess and make ready the thermistor string for deployment in the summer of 2018.
- Dr. Jobsis worked with University of Miami staff aboard the R/V Walton Smith to recover the severely damaged St Thomas buoy in April of 2018.
- Due to the damage from the hurricanes UVI was unable to display the CariCOOS website and provide feedback on the effectiveness of the website.
- In May of 2018 Dr. Jobsis re-visited the new mooring dolphin at the Crown Bay Cruise ship terminal to take measurements of the pilings to mount the ADCP.
- May 31st and June 1 UVI participated in the CariCOOS General Assembly meeting in San Juan PR where Dr. Sonaljit Mukherjee presented a poster on his modeling of ocean currents on the south side of St Thomas.

WORK COMPLETED

- Dr. Jobsis has taken on the responsibilities of Virgin Island CariCOOS coordinator, overseeing the US Virgin Islands CariCOOS observing assets and Dr. Habtes continues to work with UVI employee Andy Breton on QA/QC and

data storage. Dr. Sonaljit Mukherjee continues to work on the ROMS model, both 3km and 1km, for currents on the Virgin Islands/Puerto Rican shelf.

- Dr. Jobsis and Dr. Roy Watlington have met six times to discuss outreach and OCOVI's plans both before and after the storms.
- Doug Wilson of Caribbean Wind LLC has traveled to the Virgin Islands to assess the buoy and other CariCOOS assets.
- UVI has had discussions with Sutron to correct a data problem with the Crown Bay Dock weather station and ADCP system.
- The CariCOOS webpage with wind/wave predictions was displayed until September 6th 2017 when the large monitor was damaged by water.
- In August of 2017, the UVI oceanographic buoy was relocated to a new location northwest of St Thomas, 18.47609N, 65.15682W. The "as built" coordinates were 18.47653 N, 65.15663 W. As noted above, this buoy was damaged by hurricane Irma.
- Dr. Jobsis and Dr. Watlington investigated a potential HF radar site on the SW point of Water Island in June 2017. The former Navy gun emplacement at Flamingo Point has an unobstructed view to the west and south, and is near electrical power poles.

MAJOR OUTCOMES

The St Thomas buoy was moved to the location northwest of St Thomas. Following hurricanes Irma and Maria CariCOOS assets were inspected and the damaged St Thomas buoy was recovered. Partnerships with VI-EPSCoR, OCOVI and VIMAS were maintained and strengthened.

RELATED PROJECTS

VI-EPSCoR marine science funds supported research oceanographer Dr. Sennai Habtes, post-doc Dr. Sonaljit Mukherjee and oceanographic technicians Vanessa McKague and Andy Breton, as well as contracted with Doug Wilson to help maintain an Oceanography program at UVI, and supported these CariCOOS-related personnel while CariCOOS funds were not available due to disruptions following the storms. This continues the VI-EPSCoR and CariCOOS partnership that seeks to promote oceanographic research and ocean observing in the US Caribbean.

WORK PLAN FOR UPCOMING PERFORMANCE PERIOD (June 1, 2018 – May 31 2019)

- Continue bi-monthly meetings with Roy Watlington and OCOVI and assist in OCOVI outreach events.
- Deployment of thermistor string in July 2018.
- Continue discussion with UPRM CariCOOS leadership to address reoccurring delays in sub-award funding approval between UPRM and UVI.

Appendix 1 The location of the St Thomas buoy in the summer of 2017. The buoy was severely damaged during hurricane Irma on September 6th 2017.

