



**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 in the waters surrounding the US Virgin Islands. The Virgin Islands observing system mission parallels that of 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. The purpose of this mid-year report is to report on progress towards advancing the overall mission of CariCOOS at the local level in the US Virgin Islands, during the June 1 – December 1, 2016 reporting period.

## **MILESTONES / OBJECTIVES**

Most of the University of the Virgin Islands milestones and objectives were founded on receiving the completed MOA with the University of Puerto Rico Mayaguez to allow funds to be spent and transferred. As of December 1<sup>st</sup> 2016 the MOA between the two universities has not been completed. Despite this Drs. Jobsis and Habtes have worked to complete this work when possible with no or limited funds. To over come the reoccurring delays in completing the MOA between the two administrations, Dr. Jobsis has suggested that UVI and UPRM CariCOOS go to a multi-year MOA that would cover this project for the remainder of the NOAA funding cycle with appropriate clauses to insure completion of objectives.

- Dr. Paul Jobsis appointed to manage UVI's projects and observing assets that support CariCOOS goals and with assistance of Dr. Sennai Habtes will deliver the data or products to CariCOOS managers.
- June 1, 2016 through May 31, 2017, meet with Roy Watlington bimonthly (6 times per year) to discuss outreach.
- October 31, 2016 or when the funds become available from UPRM, whichever is later, UVI will sign a Personal Service Agreement with Doug Wilson of Caribbean Wind, LLC

to provide the maintenance of the UVI Oceanographic buoy and thermistor string with work to be completed by May 15 2017.

- June 1, 2016 through May 31, 2017 – UVI CMES will display the CariCOOS website's wind, waves and temperature models in the MacLean Marine Science center and provide feedback on its use by CMES personnel. In December 2016 and May of 2017 UVI will provide UPRM feedback on the effectiveness of the CariCOOS website.
- August 2016 move the St Thomas (UVI 1) oceanographic buoy into Brewers Bay for replacement of WQM and testing (it is unclear why the WQM has failed). Maintain buoy in Brewers Bay until deployment to Northside of the St Thomas.
- December 1<sup>st</sup> 2016 or within 6 months of receiving funding for 2016-2017 from UPRM, UVI will move the St Thomas buoy to the A location northwest of St Thomas, 18.47609N, 65.15682W, for the buoy has been determined after multiple surveys, see figure.
- Permits have been requested and should be in place for the movement of the buoy.
- August 15, 2016 and every two months afterwards UVI will inspect the ADCP and Weather station on the Crown Bay mooring dolphin to insure it working correctly.
- March 2017 UVI will arrange travel of UVI representatives and stakeholders to CariCOOS annual meeting in Puerto Rico.
- December 2016 and May 2017 UVI will provide data from the thermistor string to UPRM DMAC with our mid-year and final reports.
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## **WORK COMPLETED**

- Dr. Jobsis has taken on the responsibility of overseeing the US Virgin Islands CariCOOS observing assets and Dr. Habtes has worked with UVI employee Andy Breton to create and automated process for transferring data to CariCOOS. Mr Breton is currently undergoing QA/QC procedures on the data processing procedures.
- Dr. Jobsis and Dr. Roy Watlington have met and exchange emails regularly to discuss outreach.
- Doug Wilson of Caribbean Wind LLC has traveled twice to assist with the maintenance of the UVI oceanographic buoy and assist with the ADCP and weather station in Crown Bay.
- The CariCOOS webpage with wind/wave predictions have been displayed at the MacLean Marine Science Center. In late October of this year the computer running the displays was damaged. A new computer order is waiting for the completion of the UVI/UPRM MOA. A survey of its effectiveness has not been completed.

- In August of 2016 the UVI oceanographic buoy was relocated to Brewers Bay for maintenance and to be stored until it can be moved to its new location northwest of St Thomas. The WQM was refurbished and it is collecting data within Brewers Bay.
- UVI has received all necessary permits to move the bouy to the new location northwest of St Thomas, 18.47609N, 65.15682W. A new modem has been installed, a new driver now needs to be installed to allow real-time data transmission. Following the download of the new drivers the buoy will be tested. The appropriate sinker and chain has been purchased and UVI is awaiting the update of the modem software drivers, and an appropriate weather window to re-deploy the buoy.
- UVI inspects the ADCP and weather station at Crown Bay every two months. This has been done more often as multiple trips were made to adjust the angle of the ADCP and validate the data.
- UVI researchers including Dr. Jobsis, Dr. Habtes, and Dr. Sonaljit Mukerjee, the new physical oceanography and ocean circulation post-doc met with Dr. Miguel Cannals and aided in his research teams search for appropriate sites for a High Frequency (HF) radar to be installed on St. Thomas.
- UVI looks forward to attending the CariCOOS annual meeting in Puerto Rico.
- The thermistor string has not been deployed. Permit approval has been received by UVI, however delivery has been delayed by the manufacturer, Sound Nine. Apparently they discovered a flaw in their designed data reporting “wake-up” call causing the inductive modem to be repeatedly signaled to be on alert for data delivery. This caused the batteries to not last sufficiently for deployment. The completed order originally was to arrive in September, is now scheduled to arrive in December.

## **MAJOR OUTCOMES**

The permits for the thermistor string and northwest buoy have been received. Crown Bay ADCP measurements have been validated. Buoy maintenance has been completed, with the exception of downloading of a driver for the new modem.

## **RELATED PROJECTS**

Storing the oceanographic buoy in Brewers Bay has allowed the continuous collection of oceanographic conditions in the bay which will be helpful to UVI's Mare Nostrum project. Funded by VI-EPSCoR, the Mare Nostrum project has been doing monthly oceanographic measurements within the bay to correlated oceanographic and metrological conditions to animal movement. An array of 40 Vemco acoustic receivers is installed in the bay. Fifteen species of fish and two species of sea turtles have been tagged with acoustic transmitters. The movement of these organisms throughout the bay is part of eight graduate student research theses.

## **WORK PLAN FOR UPCOMING PERFORMANCE PERIOD (Dec. 1 – May 31 2016)**

We will continue bi-monthly meetings with Roy Watlington and OCOVI. Bi-monthly cleaning and inspection of the Crown Bay ADCP and weather station will also continue. Once the MOA is



completed and funding is restored deployment of the thermistor string and northwest buoy will be completed. We hope to work with UPRM web designers to host the wind and currents in Crown Bay and make a product that can aid the pilot boat captains.