



# CARICOOS

CARIBBEAN COASTAL OCEAN OBSERVING SYSTEM

## **Facilitating CARICOOS Goals and Activities for Coastal Ocean Observing in the US Virgin Islands**

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**Performance Period: June 1, 2020 – November 30, 2020**

### **LONG-TERM GOALS**

Facilitating CARICOOS goals and activities for coastal ocean observing in the US Virgin Islands while promoting understanding and maximum participation of USVI principals in all aspects of ocean, atmosphere and coastal observing and devising specialized approaches (technological, educational and managerial) to address local needs.

### **MILESTONES / OBJECTIVES**

In accordance with the Scope of Work approved for inclusion under CARICOOS grant # NA16NOS0120026, the following categories of service cover the objectives intended for primary focus during this performance period: (1) Extending education and outreach to the community with emphasis on educating the public more thoroughly, developing more local expertise such as can support ocean observation, and on providing access to CARICOOS information and observations during the hurricanes [Education & Outreach]; (2) Monitoring the functionality of observational assets and assisting in their restoration [Restoring Assets]; (3) Facilitating stakeholder use of buoys and observational assets and addressing their unmet information needs [Facilitating Use of Assets]; and (4) Applying advancements in technology to stakeholders needs and to new focus areas in the IOOS mission [Technology Advancement].

In addition, OCOVI commits to assisting CARICOOS Headquarters with local, regional and federal interactions as well as with international neighbors and in facilitating CARICOOS governance when requested.

### **WORK COMPLETED**

#### ***Education & Outreach***

- ***The COVID-19 Pandemic severely impacted our ability to do outreach, due to multiple closures of all institutions throughout the territory.***
- Published Instagram account for photographic updates of ocean-observing activities in the USVI (Example: <https://www.instagram.com/p/B9USF3VDpw-/>)



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- Used Trident micro-ROVs as an educational tool to introduce ocean-observation-related knowledge and skills through the university laboratory and to identify and recruit prospective student participants.
- Introduced ROV to stakeholders as a rapid ecological assessment tool for a university professor, and a rapid inspection tool of the port docks.
- Expanded OCOVI's educational agenda by supporting a new ROV partnership with a St. Croix educator in observation-related STEM skills.
- Continued addressing queries of stakeholders (fishers and recreational sailors) about prospects for replacing the "St. Thomas Buoy" (formerly NDBC # 41058), its return to service and its likely site reassignment.

## ***Assets – facilitating use***

- Maintained OCOVI's Glider Operations Warehouse.
- Also, for the second time in this subaward year, facilitated unscheduled repair of the "St. John Buoy" (NDBC # 41052) and its return to service.

## ***New technology for stakeholders***

- Four donated Trident micro-ROVs were used to test the effectiveness of these relatively inexpensive tools in conducting disparate kinds of observations. Trials for proof of concept were arranged on behalf of a dockmaster inspecting bulkheads of a major cruise dock as well as for a researcher counting species and monitoring seafloor conditions. These trials resulted in revelations of both advantages and disadvantages of the ROVs and evaluations of their usefulness for yet other observations such as for water quality assessment.

## ***Governance – reorganization***

- To broaden public participation in OCOVI decision making and leadership, OCOVI amended its Bylaws to increase Board size from 5 to 7 directors;
- A new Project Director was appointed and the services of an accountant were secured as means of freeing Co-Principal Investigator to focus more on education and outreach, on the OCOVI-CARICOOS relation and on long-range planning.

## **MAJOR OUTCOMES**

- Three recipients of the IOOS/CARICOOS/OCOVI Vembu Subramanian award are continuing towards fulfilling obligations to IOOS/CARICOOS/OCOVI that had been interrupted by COVID preventative measures.
- Retroactive review of successful 2019 hurricane glider studies has validated the use of the AUV for hurricane studies.



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## **RELATED ROJECTS**

Starting as a courtesy, OCOVI considered and then accepted a request for help in planning a NOAA/NOS VDATUM survey of observation sites for water level monitoring. This resulted in committing to a study on behalf of NOAA/NOS funded through JOA Surveys LLC. The engagement allowed OCOVI to address new stakeholder interests and its student interns to engage new observational projects and learn new skills. The JOA team has installed temporary tide gauges at Magens Bay and John Folly Bay.

## **CHANGES/PROBLEMS**

The upheaval resulting from the COVID-19 pandemic thwarted achievement of the majority of CARICOOS objectives scheduled by OCOVI in this reporting period. In addition to disrupting communication with shutdown university and government agencies and with stakeholders, it interrupted improvement and expansion of assets because of limitations on travel and moreover ability to interact with student interns and consultants that comprise much of OCOVI's workforce.

## **WORK PLAN FOR UPCOMING PERFORMANCE PERIOD (June 1, 2020 – November 30, 2020)**

The following will be facilitated by an anticipated no-cost extension of Year 4 Subward funds as well as by newly recruited funds:

- We participated in the CARICOOS-led 2020 Seaglider hurricane glider program and plan to do so for 2021.
- We facilitated the 2020 program of deployment of US Navy (NAVO) Slocum gliders in the Virgin Islands Basin; We deployed 3 gliders, 2 malfunctioned and were retrieved within days of deployment. The third gliders stayed at sea for a month.
- The COVID-19 caused a shutdown of all Caribbean Nations thus we were not granted access to areas outside of the US EEZ.
- The HR Radar lease is being revised by the Department of Property and Procurement and should be available for us to sign shortly.
- We recruited two new interns to replace those who moved from the USVI during the COVID disruption.
- We are continuing our efforts to assist CARICOOS Headquarters in installing an oceanographic data buoy to replace the St. Thomas buoy (NDBC #41058) that was destroyed by Hurricanes Irma and Maria.
- Complete permitting and contracting processes to allow deployment of Spotter wave buoy to service Hull Bay and Magens Bay beaches;
- Explore the feasibility of establishing an observational and interactive educational project at Coral World marine park; this was delayed by COVID-19
- Continue to serve as steward of CARICOOS network of observational assets in the USVI – validating operational status and recommending improvements;
- Finalizing of the Year 4 Vembu Subramanian award and establishing the Year 5 program;
- Assist CARICOOS-UVI as requested by CARICOOS Headquarters
- We executed the Year 5 CARICOOS Subaward.
- We submitted the EOI Proposal and SF 424A for FY 22-26



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## PUBLICATIONS & PRODUCTS

Mele, Daniel, OCOVI Hurricane Gliders, Part II, **YouTube**:  
[https://www.youtube.com/watch?v=ZruURL\\_JfRgM](https://www.youtube.com/watch?v=ZruURL_JfRgM), January 2020.

Wilson, W. Douglas, Oceans and hurricane intensification: Hurricane Glider observations impact, in Webinar, Oceans and hurricane intensification: Hurricane Glider observations impact, B. LaCour and G. Goni, organizers, April 29, 2020.

Respectfully submitted,

DocuSigned by:

*Luis A Sylvester*

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Luis A Sylvester, Co-Principal Investigator  
December 16, 2020