



CARICOOS

CARIBBEAN COASTAL OCEAN OBSERVING SYSTEM

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

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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

- Reached out to and successfully engaged significant persons of the St. Croix community by holding OCOVI's Annual Meeting in St. Croix and by recruiting new Crucian collaborators and Board members.
- Published Instagram account for photographic updates of ocean-observing activities in the USVI (Example: <https://www.instagram.com/p/B9USF3VDpw-/>)



- 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.
- 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.
- Responded to alerts about cessation of access to the St. John Buoy" (NDBC # 41052) from stakeholders (fishers and recreational sailors) and continued informing them of its progress.

Assets – facilitating use

- Conducted a second round of unscheduled repairs on WeatherFlow® meteorological station at Mountain Top, St. Thomas;
- Maintaining and improving 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.

RELATED PROJECTS

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. This engagement allowed OCOVI to address new stakeholder interests and its student interns to engage new observational projects and learn new skills.

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.

The long-term impact of the pandemic period may be the expulsion of some of the university's personnel pool from which OCOVI draws interns, faculty collaborators and consultants.

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:

- Participating in the CARICOOS-led 2020 Seaglider hurricane glider program;
- Facilitating the 2020 program of deployment of US Navy (NAVO) Slocum gliders in the Virgin Islands Basin;
- Recruiting external funds and resuming the Challenger glider program outside of the US Caribbean EEZ, sharing access to new international relations with other CARICOOS principals;
- Re-establish schedule for installing HF Radar antenna on Water Island to assist expansion of CARICOOS surface current observations;
- Identifying and recruiting new interns and collaborators to replace those who moved from the USVI during the COVID disruption.
- Secure a new data portal to assure public sharing from all CARICOOS assets in the USVI and for publishing locally-focused data and trial products;
- 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;
- 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;



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- Initiating the activities of the Scope of Work of the Year 5 CARICOOS Subaward, including preparation of an overview review, analysis and report of the five subaward years.

PUBLICATIONS & PRODUCTS

Mele, Daniel, OCOVI Hurricane Gliders, Part II, **YouTube**:
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

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May 29, 2020