



CARICOOS Field Operations

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Performance Period: June 1, 2018 – November 30, 2018

LONG-TERM GOALS

Monitor, troubleshoot, report and evaluate CARICOOS network of observing assets.

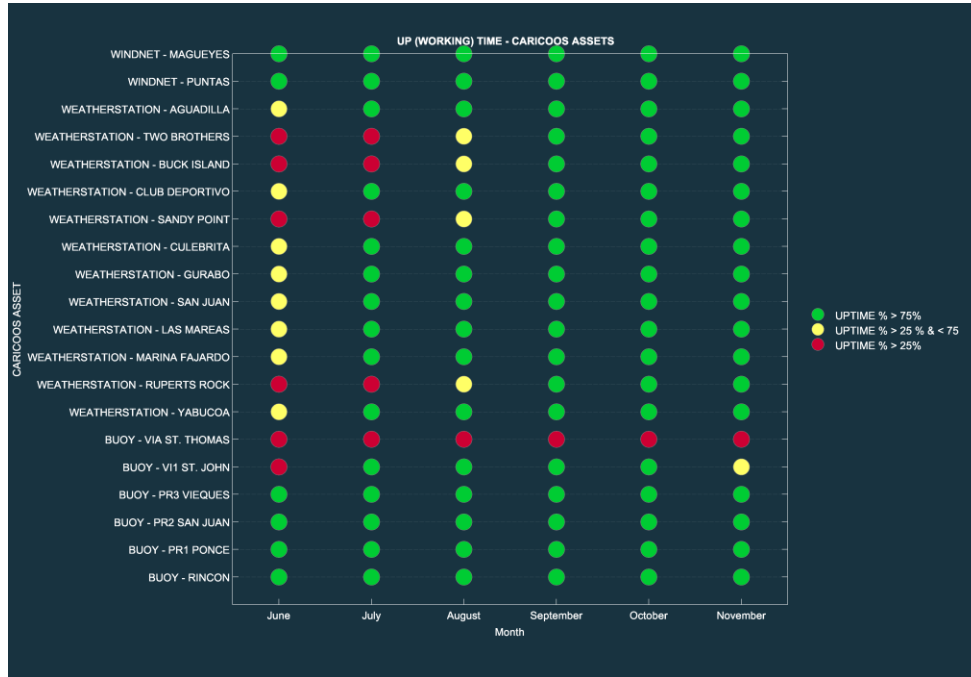
MILESTONES / OBJECTIVES

The following table includes the milestones/tasks as included in the FY18 scope of work and their current status.

MILESTONE / TASK	Q1	Q2	Q3	Q3	STATUS (%)	COMMENTS / NOTES
Operate the CARICOOS data buoy network					50	On Schedule
Operate the CARICOOS HF radar network					50	On Schedule
Operate the CARICOOS MESONET and WINDNET					50	On Schedule
Quarterly inspections of CARICOOS Rincón wave buoy					0	On Schedule
Yearly maintenance of the CARICOOS-U Maine data buoys					0	On Schedule
Yearly maintenance of the CARICOOS Rincón wave buoy					0	On Schedule
Yearly maintenance of the La Parguera MAP CO ² buoy					50	On Schedule
Operation and maintenance of CARICOOS MESONET / WINDNET					50	On Schedule
Maintenance of CARICOOS HF radar network					50	On Schedule
Operation and maintenance of CARICOOS MESONET / WINDNET					50	On Schedule
Attend the HF Radar operators and engineers meeting (ROWG)					100	Completed
Servicing visit to fix the issue with the external sensors installed on St. John buoy					75	In Progress
Install a new data buoy to replace the UVI owned buoy in St. Thomas destroyed by Hurricane Irma					0	On Schedule
Install HFR antenna in St. Thomas					0	On Schedule
Repair and replace the HFR equipment damaged by Hurricane María					75	On Schedule
Repair six meteorological stations damaged by Hurricanes Irma and María (WeatherFlow)					100	Completed
Deployment of underwater 14 gliders in the region					100	Completed
Seaglider refurbishment and piloting training sessions at AOML/UPRM facilities					100	Completed
Beach pathogen monitoring					50	On Schedule
Seasonal carbonate chemistry sampling					50	On Schedule

MAJOR OUTCOMES

After repairing most of CARICOOS observational assets, we were able to provide near-real-time oceanographic and meteorological data to our users and stakeholders.



BUOYS

University of Maine personnel (Bob Fleming and John Wallinga), assisted by CARICOOS personnel, traveled to Puerto Rico during April 18 - May 7, 2018, to perform maintenance to the oceanographic data buoys in Ponce, Vieques and San Juan. Later, in June 4, 2018, the group performed maintenance to the St. John buoy.

METEOROLOGICAL STATIONS

Personnel from Weatherflow came to Puerto Rico in June 2018 to perform repairs and maintenance to all CARICOOS meteorological stations in Puerto Rico. Stations at U.S. Virgin Islands were repaired in August 2018.

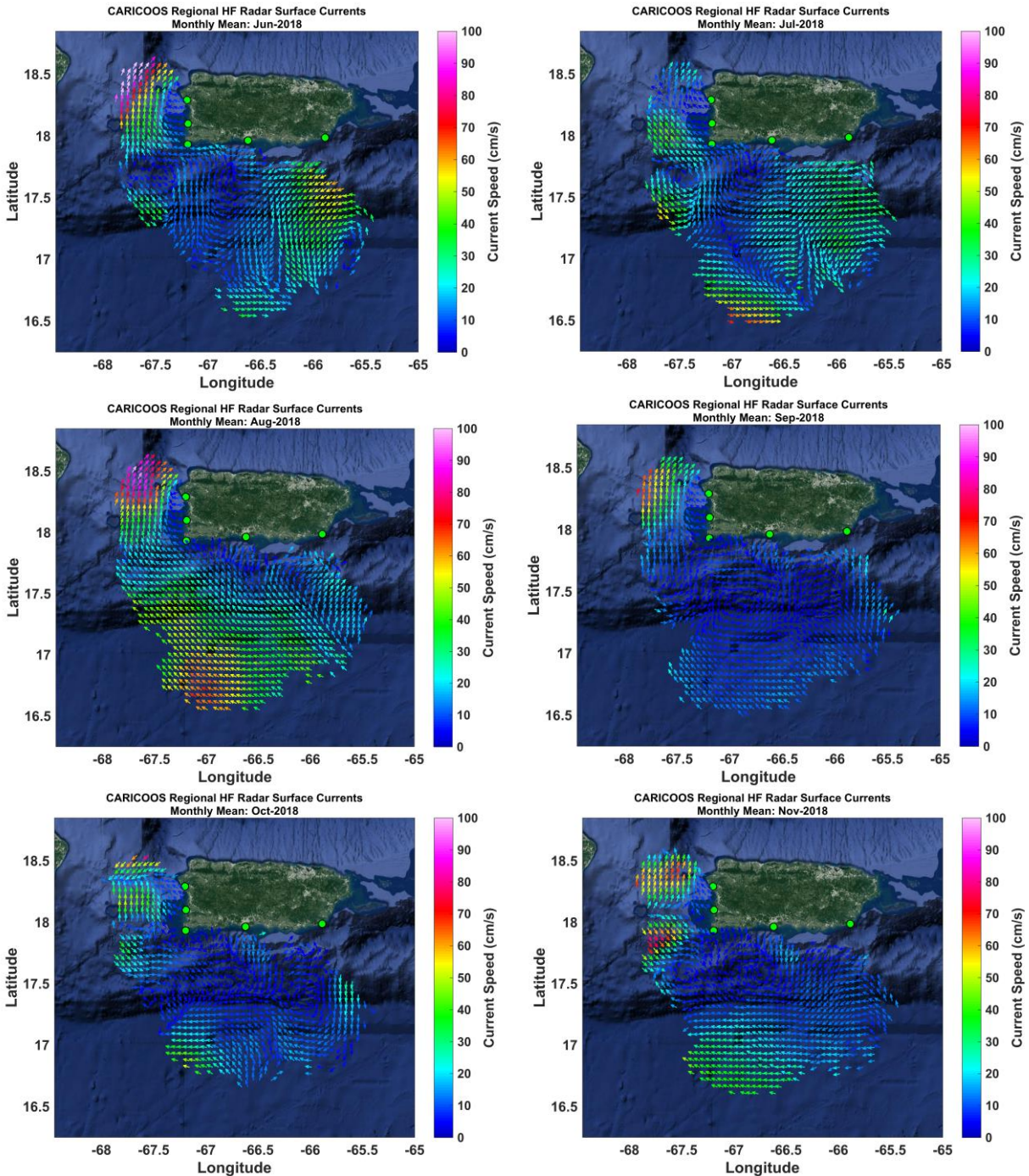
HF RADARS

Monthly-averaged surface currents were generated for the high-frequency radar network, comprised of low and mid-resolution systems on a 6 km grid. A 10% coverage threshold with a GDOP (Geometric Dilution of Precision) limit of 1.2 were implemented as a means



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of quality control. Mean N/NE flows in the Mona Passage with velocities exceeding 100 cm/s are shown up until October where the flow alters towards the SE, south of Mona Island. The jet seen approximately 200 km offshore to the south shows a mean flow towards the W/WNW for all months except for July. Mesoscale eddies are also evident within the monthly-mean flows, which are often seen south of Puerto Rico.





WORK COMPLETED

The repair/refurbishment of CARICOOS observational assets partially damaged during hurricanes Irma and María was performed during this performance period

- CARICOOS buoys were recovered from their current location and transported to the closer facilities to perform maintenance. University of Maine personnel, with assistance of CARICOOS personnel, replaced all external sensors and components with new ones. A new mooring system was installed on each buoy to avoid the movement/drifted during future events. All buoys were relocated to their original location.
- CARICOOS Mesonet was repaired by Weatherflow Inc. The maintenance entailed the replacement of 5 weather stations in US Virgin Island and 1 in Puerto Rico. The stations in Savana Island (XSAV) and in Crown Mountain (XWGO) in USVI were not repaired.
- CARICOOS personnel repaired the damaged equipment of CARICOOS Windnet assets.
- Several components (antenna and electronic chassis) of CARICOOS HF Radars were replaced with new ones. The servicing was performed by CARICOOS HFR technician, Colin Evans.
- Deployment and recovery of the 14 underwater gliders during the 2018 Atlantic hurricane season.

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

- Install HF Radar antenna in St. Thomas to expand CARICOOS surface current observations.
- Install a new oceanographic data buoy to replace the UVI owned buoy in St. Thomas destroyed by Hurricane Irma.
- Operate and perform maintenance of CARICOOS observational assets.

REFERENCES

NONE



PUBLICATIONS & PRODUCTS

Chardón-Maldonado, P., Fleming, B. And Wallinga, J., (2018). Riders on the Storm – CARICOOS Moored Oceanographic Data Buoys during the 2017 Hurricane Season, in: Oceans, 2018.

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Chardón-Maldonado, P. (2018) “From PI’s to RA’s – Advancing CARICOOS Project and Administration of a Large Cooperative Agreement NOAA Project”. SAI 20th Annual Conference – Ponce, PR.