

NOAA-AOML Sea Gliders Collaboration

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LONG-TERM GOALS

Our long-term goal is to continue the collaborative efforts with NOAA-AOML by assisting in the deployments, recoveries and refurbishment of SeaGliders. However, as part of the fill the gaps programmatic initiative, this year CARICOOS expanded the glider observations with the addition of 10 US Navy gliders to the 4 NOAA-AOML gliders deployed over the last years. The gliders were deployed during the 2018 hurricane season and provided highly valuable open ocean data towards the improvement of hurricane intensity forecasts. Moreover, the collected data is being used to assess the skill of numerical ocean models in the CARICOOS region.

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	Q4	EXPECTED COMPLETION DATE	CURRENT STATUS
MONITORING UPPER OCEAN PROPERTIES AND CLIMATE VARIABILITY						
Deployment, emergency rescues, retrieval and shipping of 10 USN Gliders					November 2018	Completed
Deployment, retrieval and refurbishment of NOAA-AOML Gliders					November 2018	Completed
Secure and equip a facility to operate as a GLIDER maintenance, storage and ops center					May 2019	On Schedule
Deployment of underwater 14 gliders in the region					November 2018	Completed
Seaglider refurbishment and piloting training sessions at AOML/UPRM facilities					February 2019	Completed in September 2018

WORK COMPLETED

10-15 July 2018

- Mission preparation procedures and tests were performed on NOAA-AOML gliders.
- NOAA-AOML SG635 glider had some technical issues with the Prime compass. Kongsberg notified about a possible issue with such compass. The MEMS sensor on the

compass can fail over time due to vibration or shock. Therefore, Kongsberg sent 5 new Sparton units to replace the existing Prime compasses in NOAA-AOML gliders.

- While replacements were being sent from Sparton, preparations continued using Prime compasses. Ballasting, self-tests, and sim dives were completed. We had 1 spare Sparton from previous missions which was installed and tested in SG635.

16 July 2018

- Deployment of NOAA-AOML SG630 (Prime compass) and SG 635 (Sparton) south off La Parguera, Lajas, PR.
- The new compasses from Sparton arrived and were tested. The Prime compasses in SG609 and SG610 were replaced with the Sparton compasses and gliders were then calibrated.

17 July 2018

- Deployment of Navy NG616 and NG617 north off Arecibo, Puerto Rico.

18 July 2018

- Pre-deployment preparation procedures and tests were performed for NOAA-AOML SG609 and SG610.

19 July 2018

- Deployment of NOAA-AOML SG609 and SG 610 off San Juan, PR.
- Deployment of Navy NG302 and NG618 off San Juan, Puerto Rico.

20 July 2018

- Emergency recovery of Navy NG616 off Arecibo, Puerto Rico due to water leakage. Navy NG619 glider was deployed in its place.

21 July 2018

- NOAA-AOML SG630 was recovered off La Parguera to replace the Prime compass with a Sparton.

22 July 2018

- NOAA-AOML SG630 was deployed off La Parguera with the new Sparton.

23 July 2018

- NOAA-AOML SG649 was repaired after the SciCon board, that splits the pressure sensor signal, was failing. Kongsberg sent replacement parts.

24 July 2018

- NOAA-AOML SG609 was repaired with a new pressure sensor.

31 July 2018

- Deployment of NOAA-AOML SG649 glider off Rincón, PR.

6 September 2018

- Emergency recovery of Navy NG619 and NG 617 gliders due to communication and ballasting issues.

19 September 2018

- An emergency recovery attempt of Navy NG302 was carried out because glider dropped weight, however there was an incident and the glider was not recovered.

21 September 2018

- Emergency recovery of NOAA-AOML SG635 glider was carried out because glider had problem with oilpump.

24 September 2018

- Emergency recovery of Navy NG618 glider was carried out because glider dropped weight.

12 November 2018

- NOAA-AOML SG630 glider was recovered off La Parguera, Lajas, PR.

13 November 2018

- NOAA-AOML SG610 and SG649 gliders were recovered off Arecibo, Lajas PR.

29 November 2018

- NOAA-AOML gliders (SG649, SG635, SG610 and SG630) were shipped with lithium batteries to AOML facilities for refurbishment.

MAJOR OUTCOMES

- CARICOOS, in collaboration with NOAA-AOML and the US Navy, contributed to the improvement of hurricane forecasting tools through the deployment of 14 underwater gliders in the US Caribbean region.

RELATED PROJECTS

- NOAA-AOML and CARICOOS personnel participated in the Seaglider refurbishment and piloting training session held at NOAA-AOML facilities in Miami, FL on September 25 to 27, 2018.

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

- Secure and equip a facility to operate as a glider maintenance, storage and ops center
- Ship US Navy gliders to Stennis Space Center, MS

PUBLICATIONS & PRODUCTS

None