

SEAKEYS Progress Report

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Introduction

SEAKEYS is a long-term meteorological and oceanographic monitoring program in the Florida Keys, providing data for researchers and managers at NOAA's Florida Keys National Marine Sanctuary. Hourly data is available from automated environmental observing stations in the Keys, and is provided via the internet in cooperation with data managers at NOAA's Atlantic Oceanographic and Meteorological Laboratory and NOAA's National Data Buoy Center. These data have been invaluable in assessing impacts from algal blooms in Florida Bay and along the West Florida Shelf, hurricane impacts (direct and indirect), and the prediction of coral bleaching events in the Keys. These data also fulfill a valuable public service for boaters, harbor pilots, dive operators, and emergency managers.

This project is an on-going program for environmental monitoring in the FKNMS and continues the operation, maintenance, and enhancement of the SEAKEYS stations. The sensors on these stations require regular cleaning, ground-truthing, sensor calibration, and data transmission instrument upgrades and repairs. Additionally, the stations are test-beds for new instrumentation to assess the impact of UV radiation, CO2 monitoring levels in the water related to ocean acidification, and underwater cameras to monitor fish movements.

Throughout the year SEAKEYS personnel continued to work with NOAA NDBC and the USCG to have repairs made to several of the stations that have suffered structural damage dating back to the 2005 hurricane season. This included a two day visit to Stennis Space Center, home of NDBC and several trips to CG Sector Key West to meet in person with staff.

This report contains a summary of the needs and maintenance of the following stations:

1. Fowey Rocks (FWYF1)
2. Molasses Reef (MLRF1 and MLRF2)
3. Long Key (LONF1)
4. Sombrero Reef (SMKF1)
5. Sand Key (SANF1)
6. Pulaski Shoals (PLSF1)
7. NDBC off-shore buoy (#42080)
8. Tennessee Reef (TNRF1)
9. Carysfort Reef buoy (#42076)

Station Service History for January, 2010 to December, 2010

FWYF1: 1. NDBC service completed 12/8/10, access locks cut and replaced with NDBC locks

2. Repair to stainless steel conduit to oceanographic sensors not completed, no oceanographic data at this site.

MLRF1: 1. Nine visits made to this site for routine maintenance and to investigate why oceanographic data quit transmitting late summer.

2. NDBC service visit completed 12/1/10, visit did not restore oceanographic data, pending investigation.

MLRF2: 1. Datalogger and light sensors replaced in Spring. Light sensors cleaned during visits to MLRF1.

2. Light sensors serviced 12/1/10, data actively collected by AOML.

LONF1: 1. 12 visits made to this site for routine maintenance, installation of NWS hurricane probe in July, and to investigate loss of transmissions during the Fall.

2. NDBC service completed 11/30/10, new deck grating installed following collapse of old grating while FIO staff were servicing, payload replaced, new payload not recognizing oceanographic instruments, pending investigation.

3. NWS Hurricane probe installed in July was removed in December.

SMKF1: 1. NDBC visit 11/29/10, not serviced due to : need for replacement of access ladder, need for replacement of 1st deck boards, need for safety grating on upper widow's walk (USCG).

2. repair to stainless steel conduit to oceanographic sensors not completed, no oceanographic data at this site.

SANF1: 1. NDBC Service completed 12/2/10.

2. Need for repair to main support piling failure passed to USCG and NDBC again this year.

3. Shallow water issues remain at this site necessitating need for oceanographic equipment on local buoy. Discussion with NDBC yielded agreement to re-outfit 42080 with suite of oceanographic equipment and permission to moor at the USS Vandenburg artificial reef. Permission obtained from the City of Key West and the National Marine Sanctuary.

PLSF1: 1. FIO and NDBC did not visit this station.

2. Need for replacement of mooring dock grating.

3. Need for repair to conduit to oceanographic sensors.

4. Need to replace payload with one that supports oceanographic equipment.

42080: 1. Old buoy picked up from KML by NDBC. No time table to re-deploy this buoy with oceanographic sensors on the USS Vandenberg.

TNRF1: 1. NOAA GLERL complete oceanographic package and met probe installed during the Spring. Serviced 6 times during the summer before vandalism rendered the underwater package inoperable.

2. NWS Hurricane probe installed in July.

3. NWS Hurricane Probe removed in December.

4. GLERL equipment to be removed for service in Winter of 2011 pending funding. Both parties plan to re-install next Spring/Summer.

42076: 1. Buoy spent Fall in St. Pete for reconfiguration of satellite transmitter package, replacement of MET controller housing and testing. Re-deployed during January. Oceanographic sensor sent in for service.