

Coastal Ocean Monitoring and Prediction System:

COMPS Buoy C14 and Related Products

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COMPS Buoy C14 is an ocean-atmosphere buoy reporting meteorological and ocean variables (winds, currents, temperature and others) to the public in real time. Applications include weather and storm surge forecasting, recreational and commercial boating, fisheries management, red tide and other ecological and water quality applications, search and rescue, oil and other harmful substance tracking.

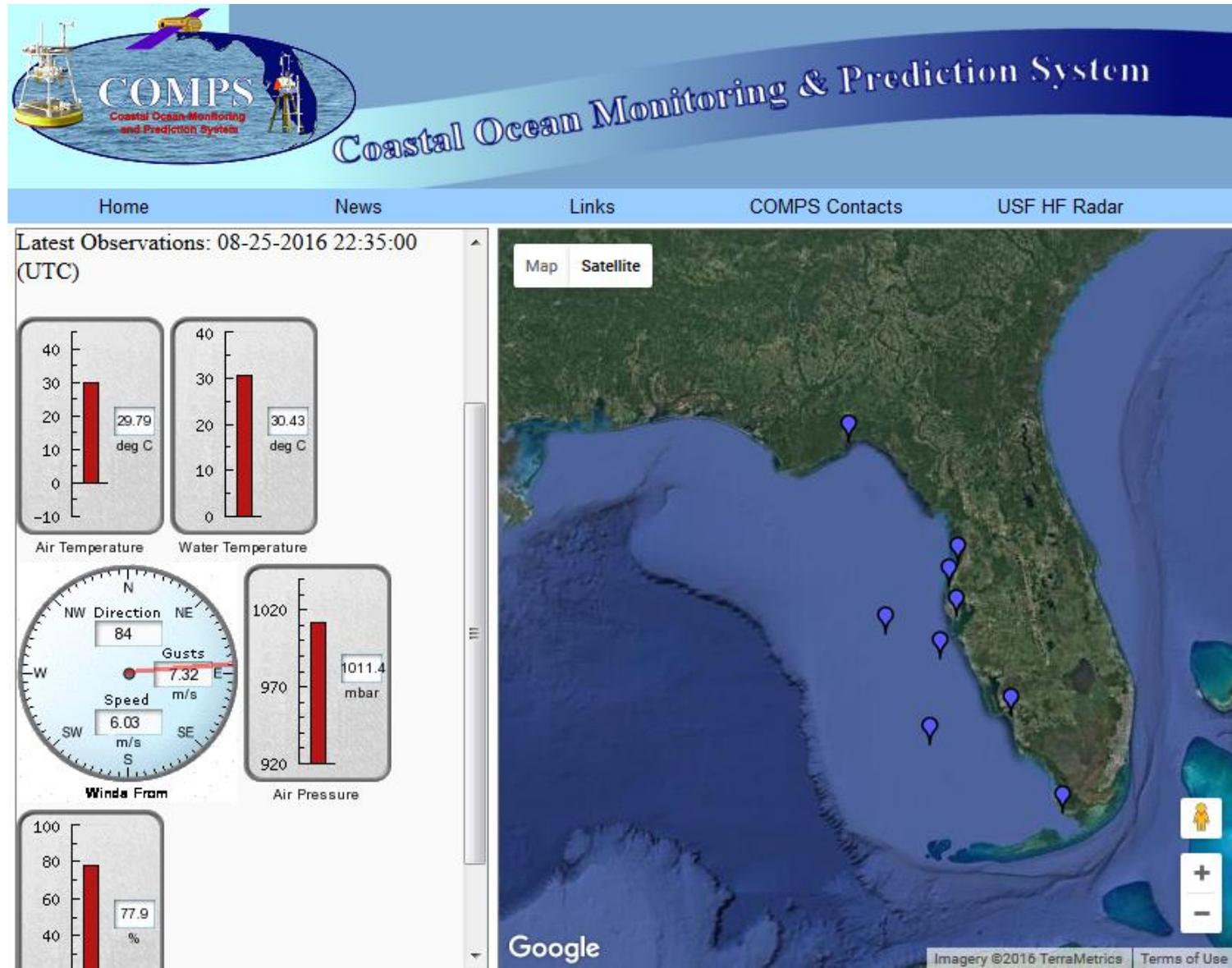


C14 History: Initiated by Pasco Co. OEM in 2002 through a 2-year DCA grant, COMPS Buoy C14 was part of a coordinated coastal ocean observing and modeling program for west Florida until 2012. Regular servicing ceased in 2009, and we subsequently ran out of funds.

Proposed: **Reinstate and sustain C14**

COMPS observations are at <http://comps.marine.usf.edu>.

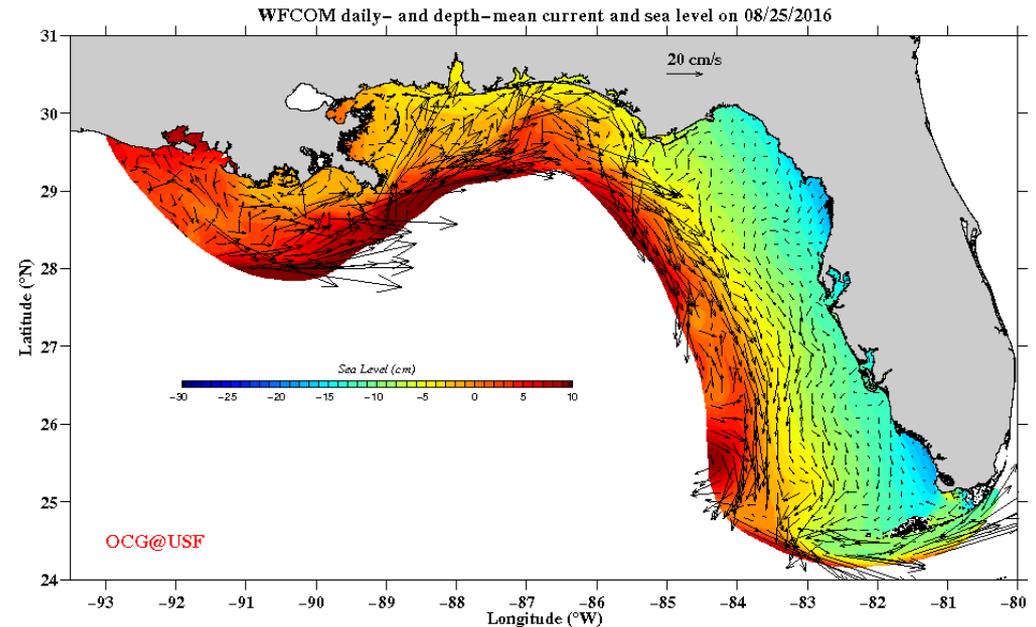
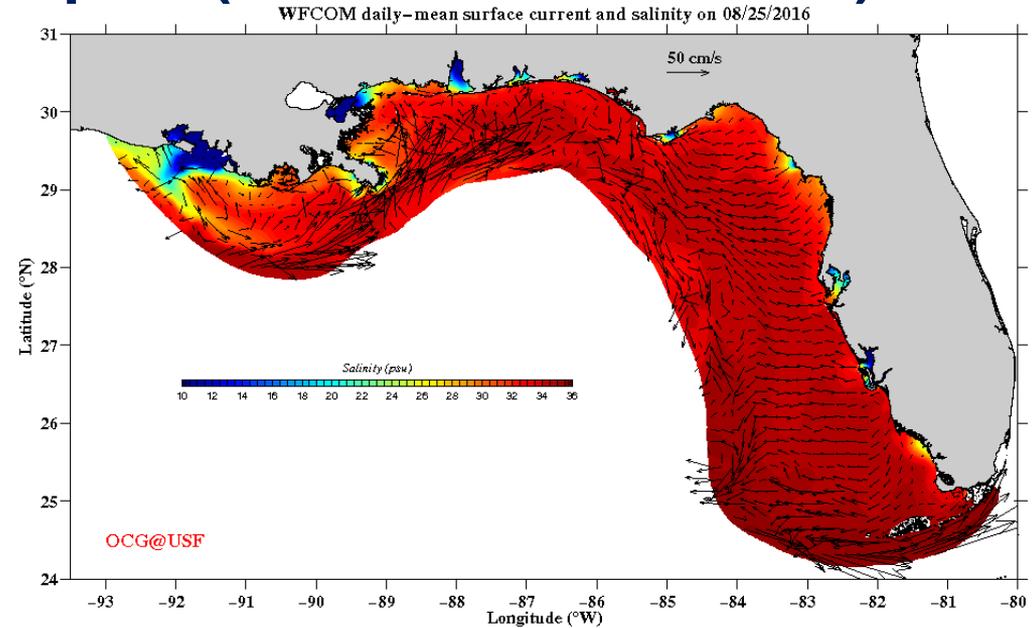
Three buoys are presently deployed. An example from one of these offshore of Sarasota (C10) is displayed below for 8/25/16, a nice day to be out on the water.



COMPS is a coordinated observing and modeling system: Model application examples (forecasts for 8/25/16)

Currents, salinity and temperature for:
search and rescue, water quality,
spill tracking, boating, fishing,
diving, red tide tracking,
aquaculture and other fisheries
ecology applications.

Sea level and depth averaged
currents for storm surge
prediction and safe navigation.



How the COMPS C14 Buoy Project Addresses The Scoring Criteria

1. Provides Restoration and Protection of Natural Resources (NR)

The ocean circulation determines the water properties in which organisms live, including nutrients fueling primary productivity. All RESTORE Act Restoration and Protection of NR goals are critically tied to the ocean circulation that we address through observations and model simulations distributed in real time to the public.

2. Mitigates damage to fish, wildlife or natural resources

The response to 1 equally applies to 2. Failure to understand how a natural system works equates to failure at effectively managing and protecting that system. For instance, the circulation determines the occurrence of major red tide blooms as is now predictable. Pasco Co. shellfish and finfish are impacted by red tide, which in turn impacts tourism and hence the hospitality industry. Red tide also provides a public health risk through consumption of tainted seafood or inhalation of aerosolized toxins.

3. Implements a federally approved marine or coastal conservation plan

Establishing MPAs, contributing to Marine Spatial Planning, developing aquaculture, and dealing with invasive species are all predicated on understanding how the coastal ocean system works. Arbitrary placements will fail, waste resources and cause public strife. This project will therefore benefit development and management of Pasco Co. NRs.

4. Workforce Development and Job Creation

COMPS employs technical staff; trains graduate students, post-docs and undergraduate interns. By promoting the safe enjoyment of tourist activities, COMPS will enhance the Pasco Co. workforce by enhancing tourism and tourist-related coastal ocean activities.

5. Improvements to an impacted coastal State Park

Beach parks will benefit from real time marine weather and ocean condition data. This will assist residents/tourists in planning and enjoying their outings.

6B. Infrastructure Projects Benefitting Ecological Resources

Benefits derived through predictive water quality and salinity capabilities of importance to coastal ocean ecology, e.g., providing guidance for land-based infrastructure projects affecting fresh water inflows known to impact shell fish and finfish. Ability to predict consequences is critical to assessing how infrastructure projects may impact NRs and hence the ecosystem services (economics) attendant thereto.

7. Coastal Flood Protection and Related Infrastructure

The C14 buoy was originally implemented to provide hurricane storm surge insights. Improving flood protection must be predicated on understanding how surge evolves in time and space. Bringing C14 back on line as part of a larger Florida west coast network will enhance Pasco Co. storm surge preparedness benefiting emergency managers, city planners and the public.

9. Promotes Tourism and Recreational Fishing

Providing real-time ocean and atmosphere data, C14 will be a powerful online information tool. Beach tourism, recreational and commercial fishing, boating and diving will benefit from safer and more productive marine outings.

10. Promotes Seafood Consumption Harvested from Gulf Coast Region

Sustaining commercial stocks and siting MPAs to enhance the fishing industry must be predicated on understanding what controls fish distributions annually and interannually. COMPS now predicts major red tide blooms and has explained the basis for gag grouper recruitment through science-based coastal ocean observing and modeling.

SUMMARY

- **Proposed is re-deploying buoy C14 as part of the COMPS Program.**
- **Real-time Measurements:**
 - Surface meteorology
 - Redundant wind sensors
 - Currents, T and S.
 - Newly designed, robust telemetry.
- **Real time data and models will be available to the public.**
- **Proposal covers initiation & maintenance over 5 years, with annual costs beginning at ~193K and reducing to ~148K in year 5.**
- **Re-establishing the collaboration begun in 2002 will also facilitate other environmental applications.**
- **We will also engage in education and outreach.**
- **Finally, the C14 buoy is an integral part of an overall COMPS plan in need of Pasco Co. support. By joining Pinellas Co. in setting RESTORE Act precedent, Pasco Co. will provide leadership and impetus for other west coast counties to enhance the COMPS Program to the environmental and ecological benefit of the State of Florida and its ecosystems services.**

