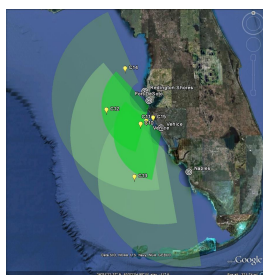


## A Coordinated West Florida Coastal Ocean Observing and Modeling System: Oceanographic Applications Where Society Meets the Sea

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### West Florida Coastal Ocean Observations Overview



A comprehensive coastal ocean observing and modeling system is maintained by USF, including *in-situ* moorings, overlapping high-frequency (HF) radar arrays, occasional glider transects and models that downscale from the deep-ocean, across the shelf and into the estuaries.

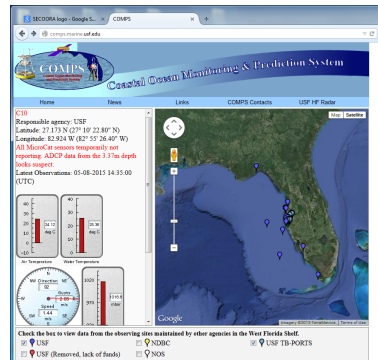
Real-time observations and daily, automated model nowcasts/forecasts are available on the internet, through SECOORA and through NOAA.

<http://ocgweb.marine.usf.edu>

### Surface and Subsurface Moorings



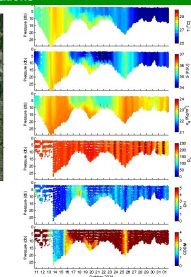
Long-term moorings collect ocean velocity, temperature and salinity data across the water column, along with surface meteorological data.



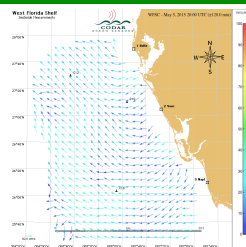
### Autonomous Underwater Glider Observations



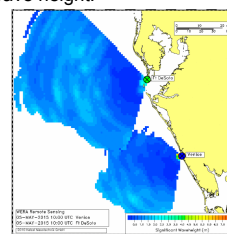
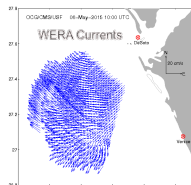
Complimentary observations include gliders, measuring water properties along planned transects, and an example being our response to the 2014 red-tide event.



### High-Frequency Radars



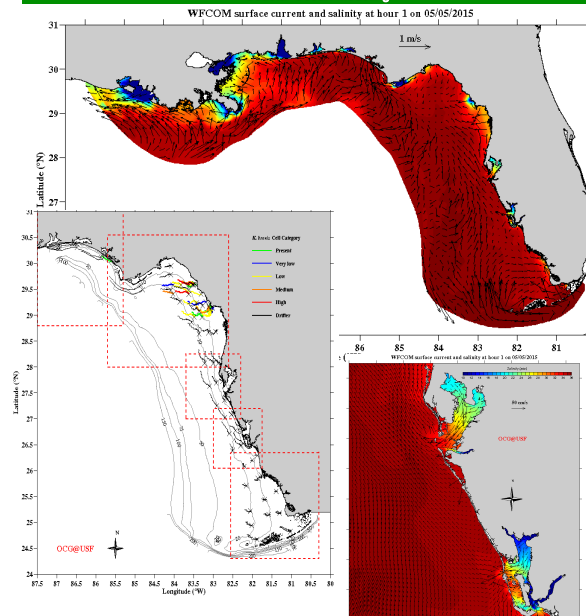
An HF-radar array consisting of three long-range CODAR SeaSonde (4.925 MHz) and two median-range WERA (12.23 – 13.20 MHz) systems, overlapping with each other and with the moorings, measures surface velocity and significant wave height.



### Some Recent Publications

- Weisberg, R.H., L. Zheng, Y. Liu, S. Murawski, C. Hu, and J. Paul (2015) Did Deepwater Horizon hydrocarbons transit to the west Florida continental shelf? *Deep-Sea Res.*, II, doi:10.1016/j.dsr2.2014.02.002 (in press).
- Weisberg, R.H., L. Zheng, and Y. Liu (2015) Basic tenets for coastal ocean ecosystems monitoring: A West Florida perspective. In *Coastal Ocean Observing Systems*, Elsevier (in press).
- Merz, C.R., Y. Liu, K.-W. Gurgel, L. Petersen, and R.H. Weisberg (2015) Effect of Radio Frequency Interference (RFI) noise energy on WERA performance using the "Listen Before Talk" adaptive noise procedure. In *Coastal Ocean Observing Systems*, Elsevier (in press).
- Liu, Y., R.H. Weisberg, and C. Lembke (2015) Glider salinity correction for unpumped CTD sensors across a sharp thermocline. In *Coastal Ocean Observing Systems*, Elsevier (in press).
- Liu, Y., H. Kerkering, and R.H. Weisberg (Editors) (2015) *Coastal Ocean Observing Systems*. ISBN 978-0-12-802022-7, Elsevier (in press).
- Weisberg, R.H., L. Zheng, Y. Liu, C. Lembke, J.M. Lenes, and J.J. Walsh (2014) Why a red tide was not observed on the West Florida Continental Shelf in 2010. *Harmful Algae*, 38, 119-126.
- Weisberg, R.H., Zheng, L., and Peebles, E. (2014). Gag grouper larvae pathways on the West Florida Shelf. *Cont. Shelf Res.*, 88, 11-23, doi:10.1016/j.csr.2014.06.003.
- Liu, Y., R.H. Weisberg, and C.R. Merz (2014) Assessment of CODAR and WERA HF radars in mapping currents on the West Florida Shelf. *J. Atmos. Oceanic Technol.*, 31, 1363-1382, doi:10.1175/JTECH-D-13-00107.1.
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- Pan, C., L. Zheng, R.H. Weisberg, and Y. Liu, and C.E. Lembke (2014) Comparisons of different ensemble schemes for glider data assimilation on West Florida Shelf. *Ocean Modelling*, 81, 13-24.
- Dzvornovskaya, A., C.R. Merz, Y. Liu, R.H. Weisberg, T. Helzel, and L. Petersen (2014) Initial surface current measurements on the West Florida Shelf using WERA HF ocean radar with multiple input multiple output (MIMO) synthetic aperture. *Proc. of MTS/IEEE OCEANS 2014*, doi:10.1109/OCEANS.2014.7003235.
- Dzvornovskaya, A., T. Helzel, L. Petersen, C. R. Merz, Y. Liu, and R.H. Weisberg (2014) Initial results of ship detection and tracking using WERA HF ocean radar with MIMO configuration. *Proc. of Int. Radar Symposium IRS-2014*, pp. 1-3, doi:10.1109/IRS.2014.6869265.
- Gomez, R., T. Helzel, L. Petersen, M. Kniephoff, C.R. Merz, Y. Liu, and R.H. Weisberg (2014) Real-time quality control of current velocity data on individual grid cells in WERA HF radar. *MTS/IEEE Oceans 2014*, Taipei, doi:10.1109/OCEANS-TAIPEI.2014.6964502.

### Coastal Ocean Modeling



The West Florida Coastal Ocean Model (WFCOM) extends from west of the Mississippi River Delta to south of the Florida Keys. WFCOM downscales from the deep ocean, across the continental shelf and into the estuaries by nesting the unstructured grid, FVCOM in the Gulf of Mexico HYCOM. Resolution varies from that of HYCOM in the nesting zone to as fine as 150m in the estuaries. A series of subregions and tracking products, including a red tide tracking tool joint with FWRI, are also developed from the nowcast/forecast output.

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### Acknowledgements

The USF Coastal Ocean Monitoring and Prediction System (COMPS) has been supported by a variety of sources, beginning with the USGS at its inception, continuing with MMS, ONR and NOAA support, along with that from the State of Florida through USF. Current support to the *in situ* moorings and the HF radar observations are by NOAA IOOS through SECOORA. Data analysis is also supported by NASA.