

4th Annual Hypoxia Research Coordination Workshop

UPDATE

Stennis Space Center, MS

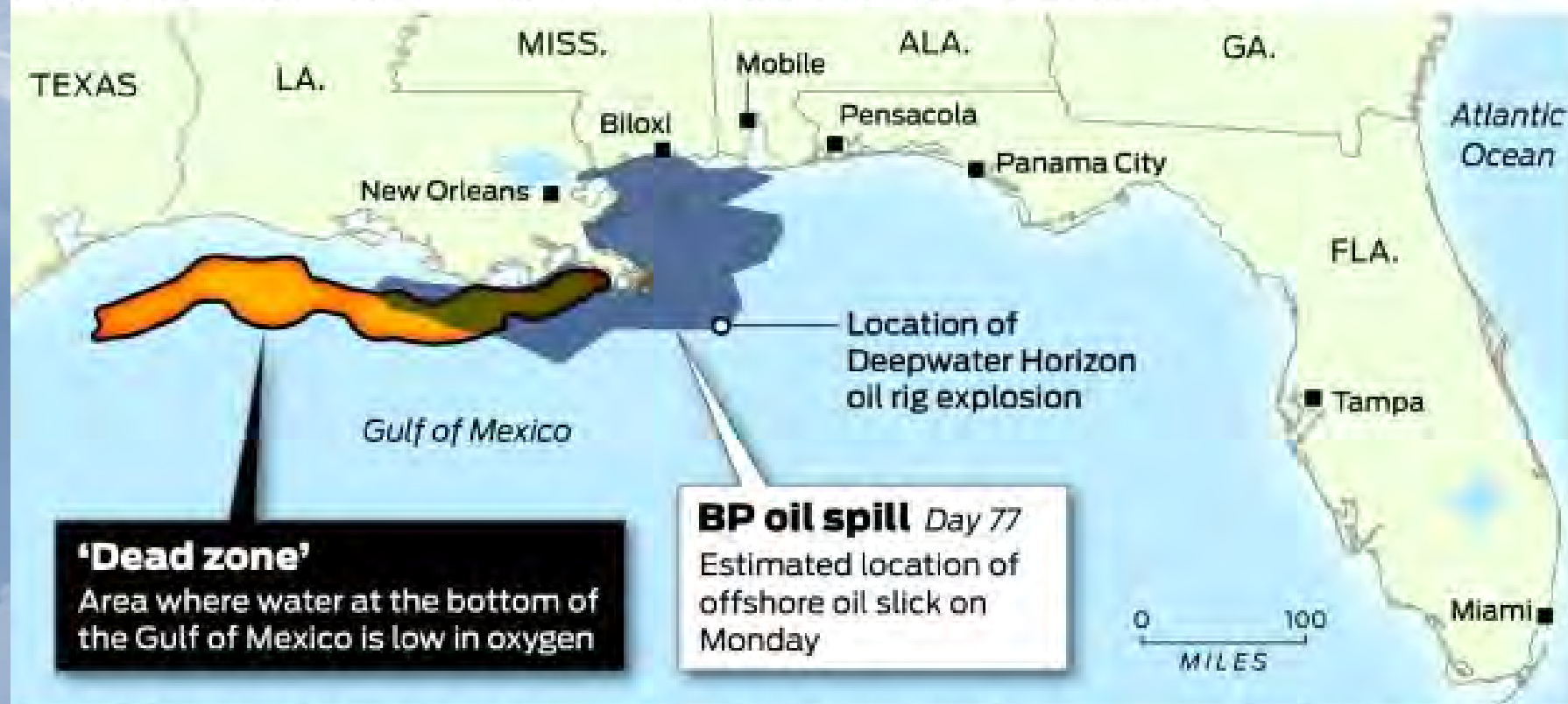
April 17, 2013

NGOMEX09 LUMCON, LSU, U Mich



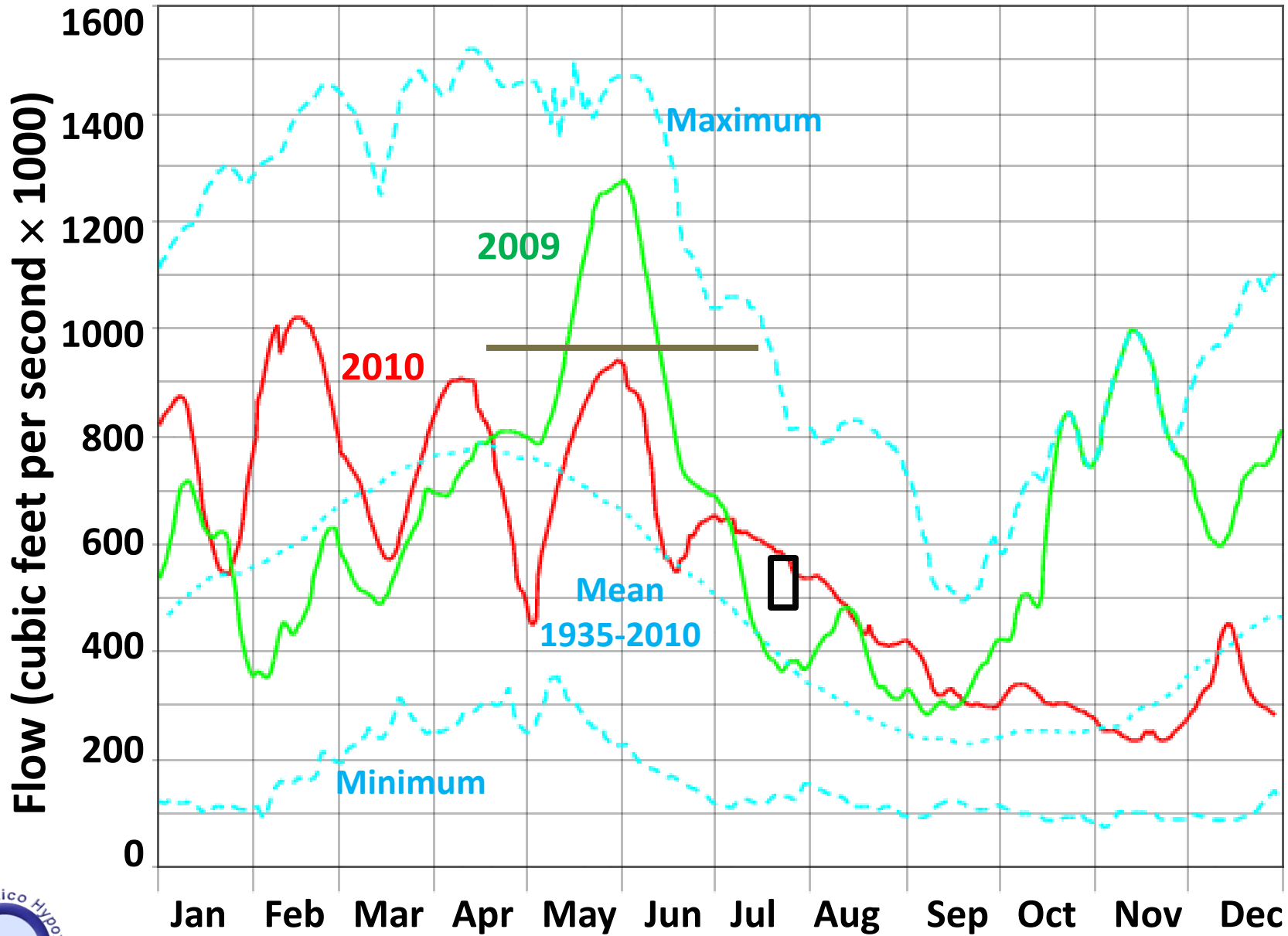
Oxygen-depleted 'dead zone' in Gulf of Mexico

Nitrogen-based fertilizer used on farms in the Midwest leaches into the Mississippi River and the Gulf of Mexico, where it feeds giant algae blooms. As the algae dies, it settles on the ocean floor and decays, consuming oxygen and suffocating marine life. Scientists have identified a "dead zone" where seasonal oxygen levels drop too low to support most life in bottom and near-bottom waters.



Sources: Professor Nancy Rabalais, Louisiana Universities Marine Consortium; Associated Press

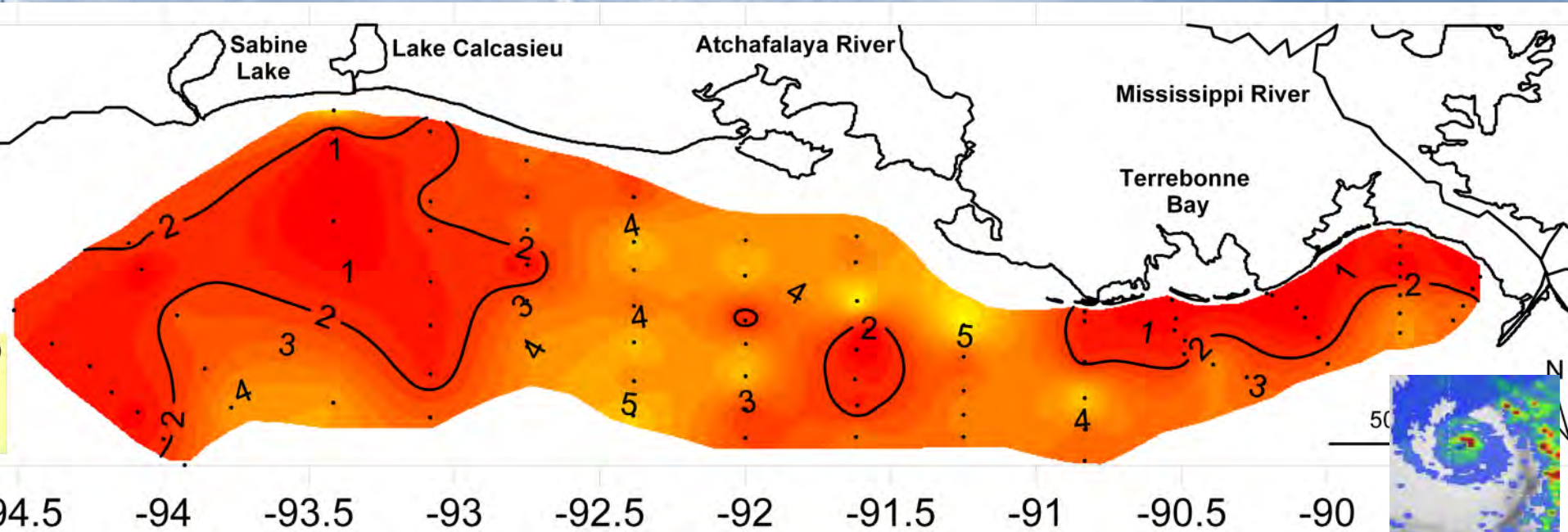
Todd Trumbull / The Chronicle



Source: N. Rabalais, LUMCON

<http://www.mvn.usace.army.mil/eng/edhd/tar.gif>

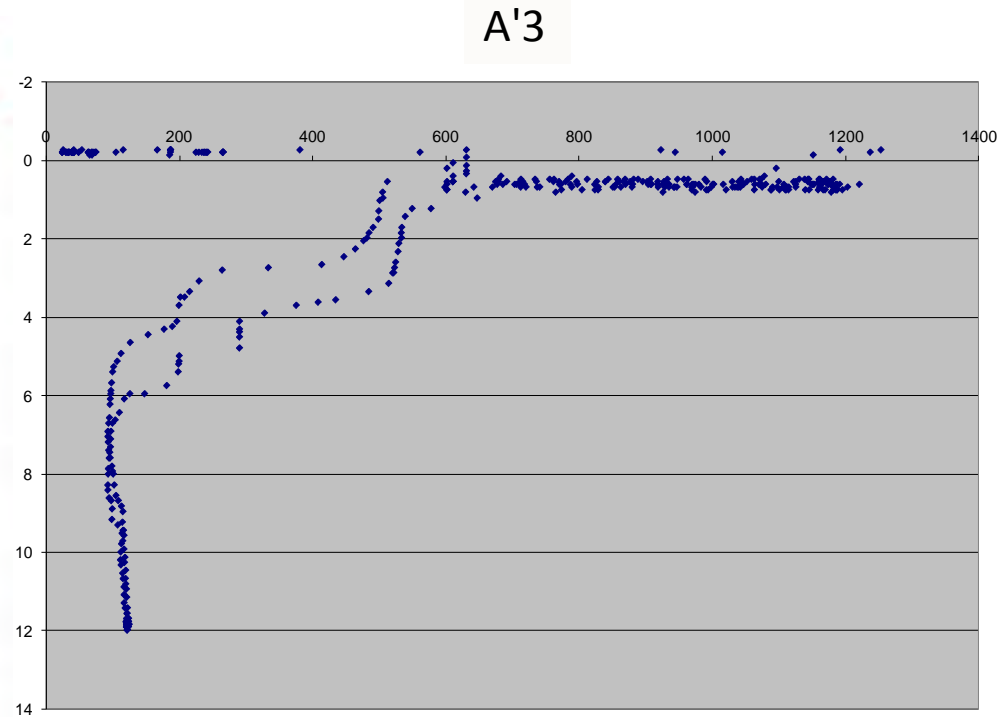
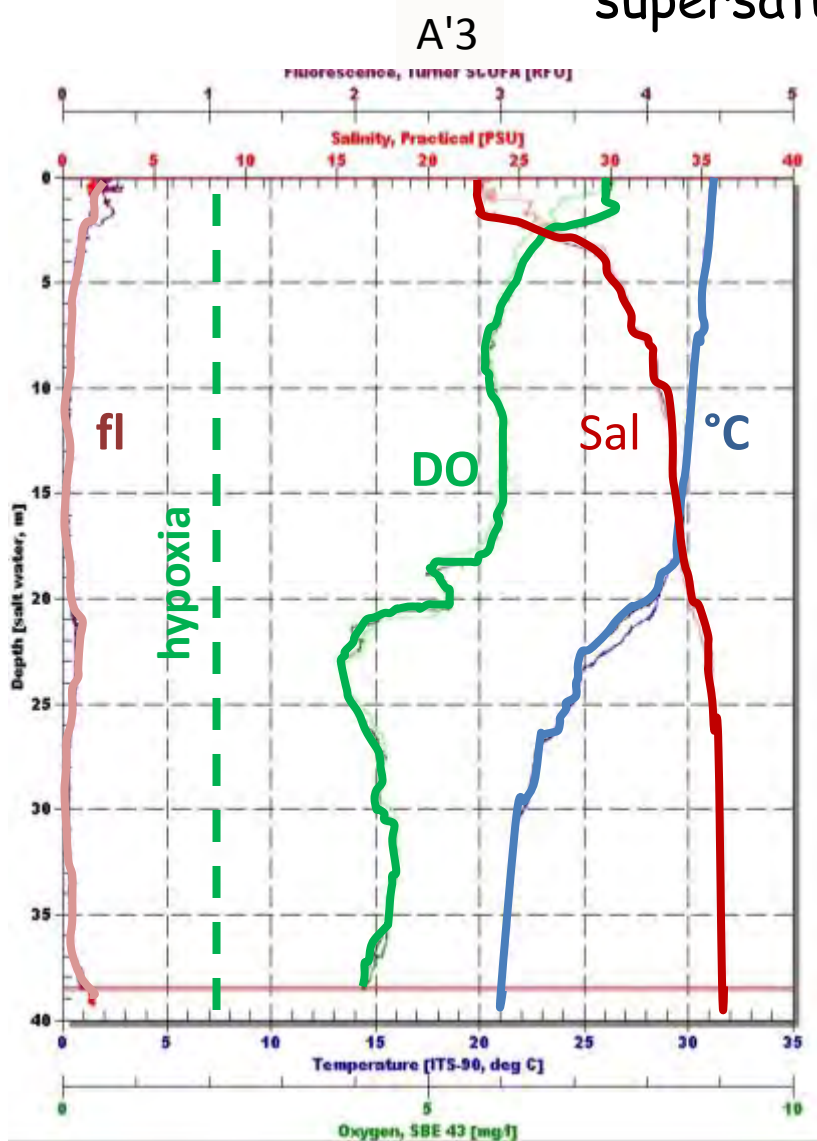
Bottom-water Dissolved Oxygen July 25-31, 2010



Data source: N.N. Rabalais, Louisiana Universities Marine Consortium, R.E. Turner, Louisiana State University
Funded by: NOAA, Center for Sponsored Coastal Ocean Research

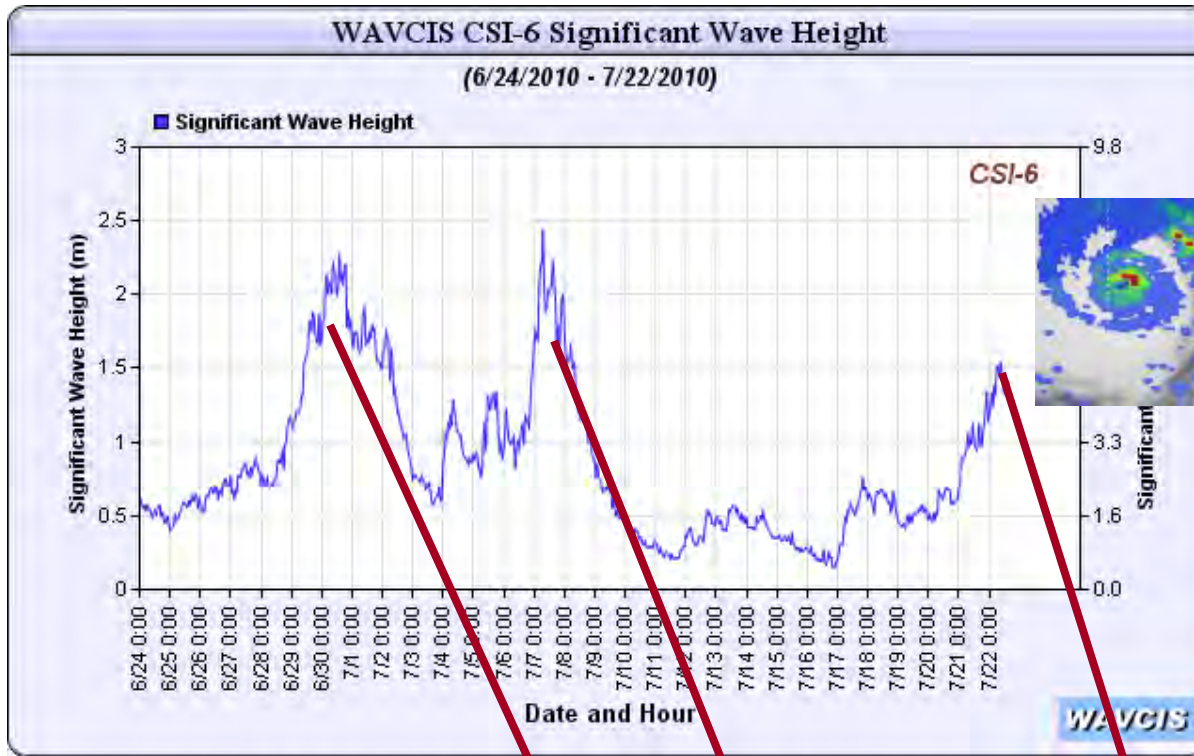


Fluorescence data from July 2010 indicated high oil presence at many stations directly to the west of the Mississippi River delta; yet dissolved oxygen levels at the same depths were typical for summer and often supersaturated in DO.

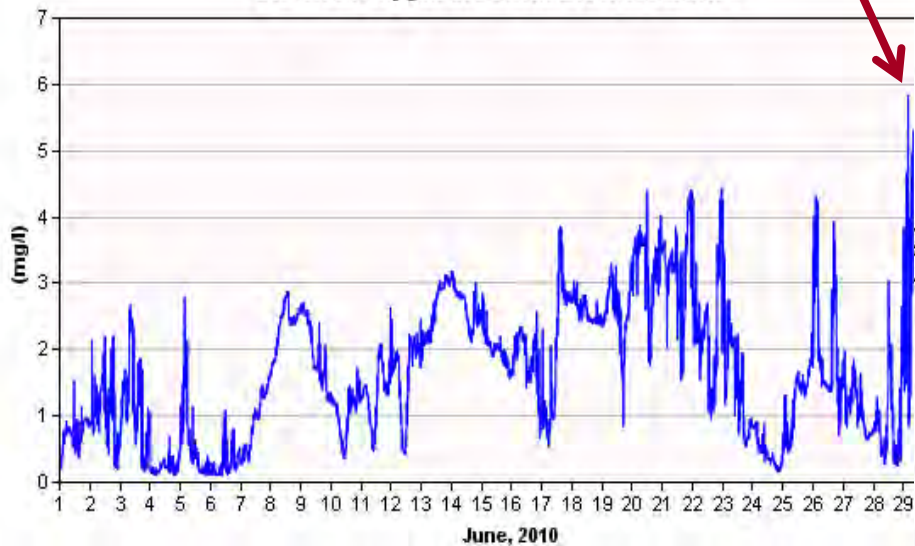


Rabalais et al. unpubl. data

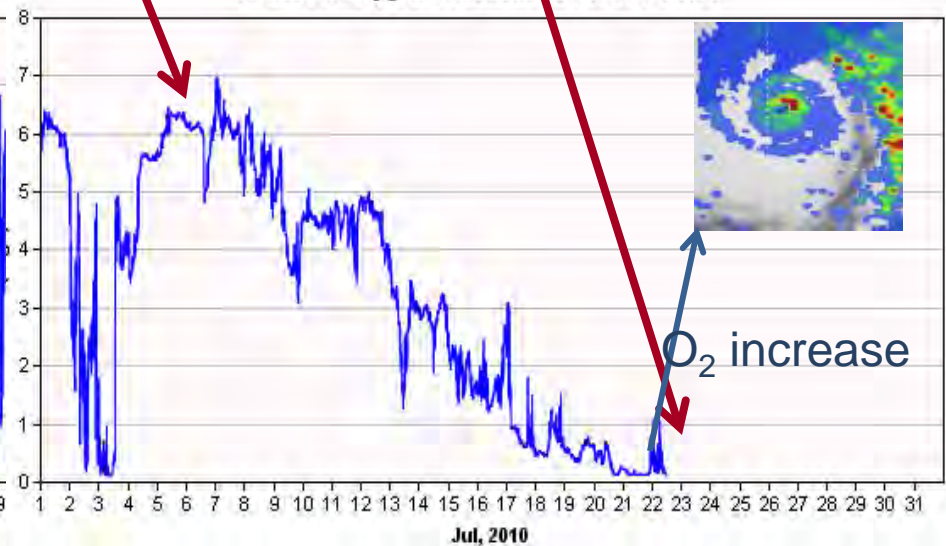
Rabalais et al. unpubl. data



Dissolved Oxygen at Bottom Level at Station 6

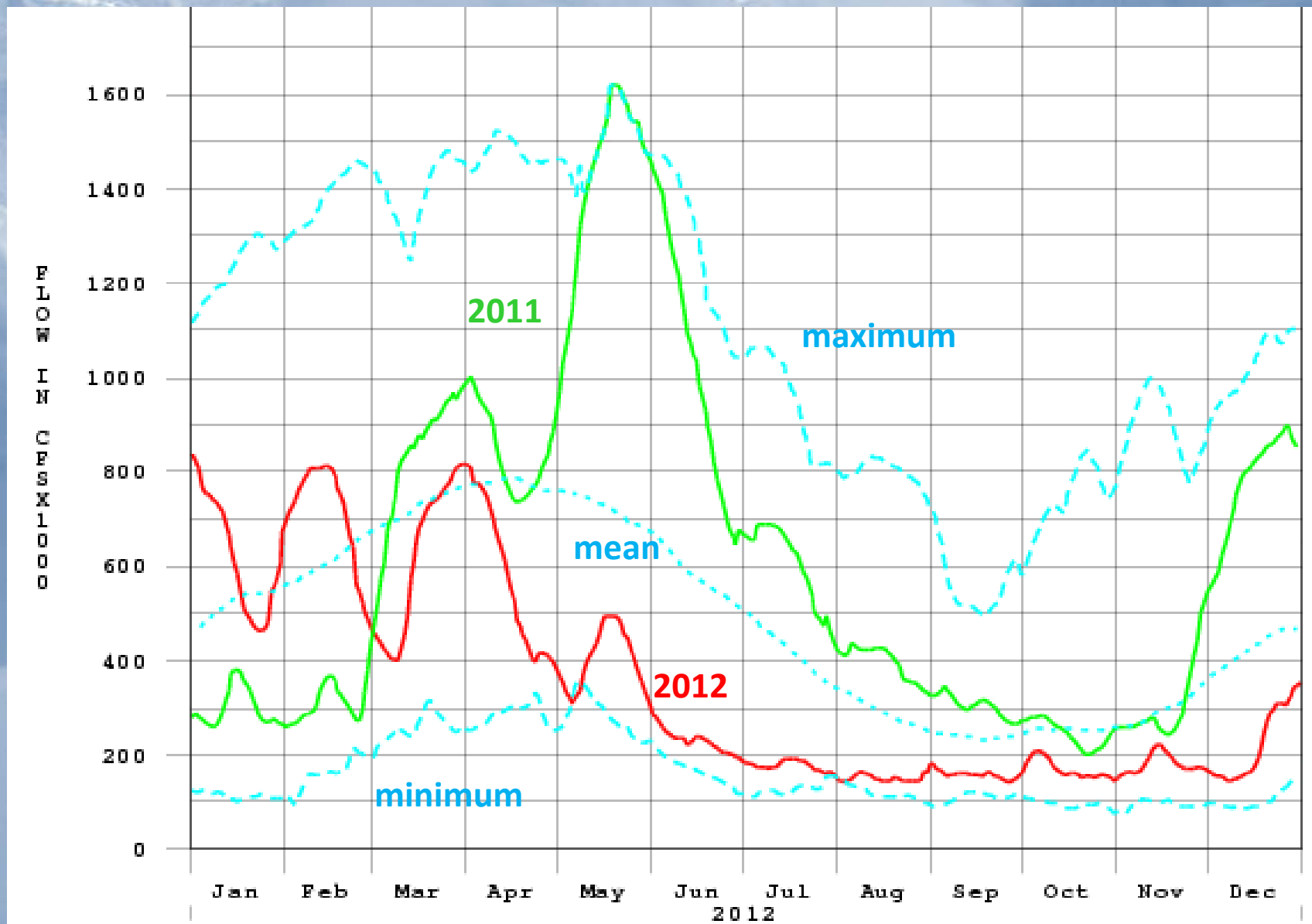


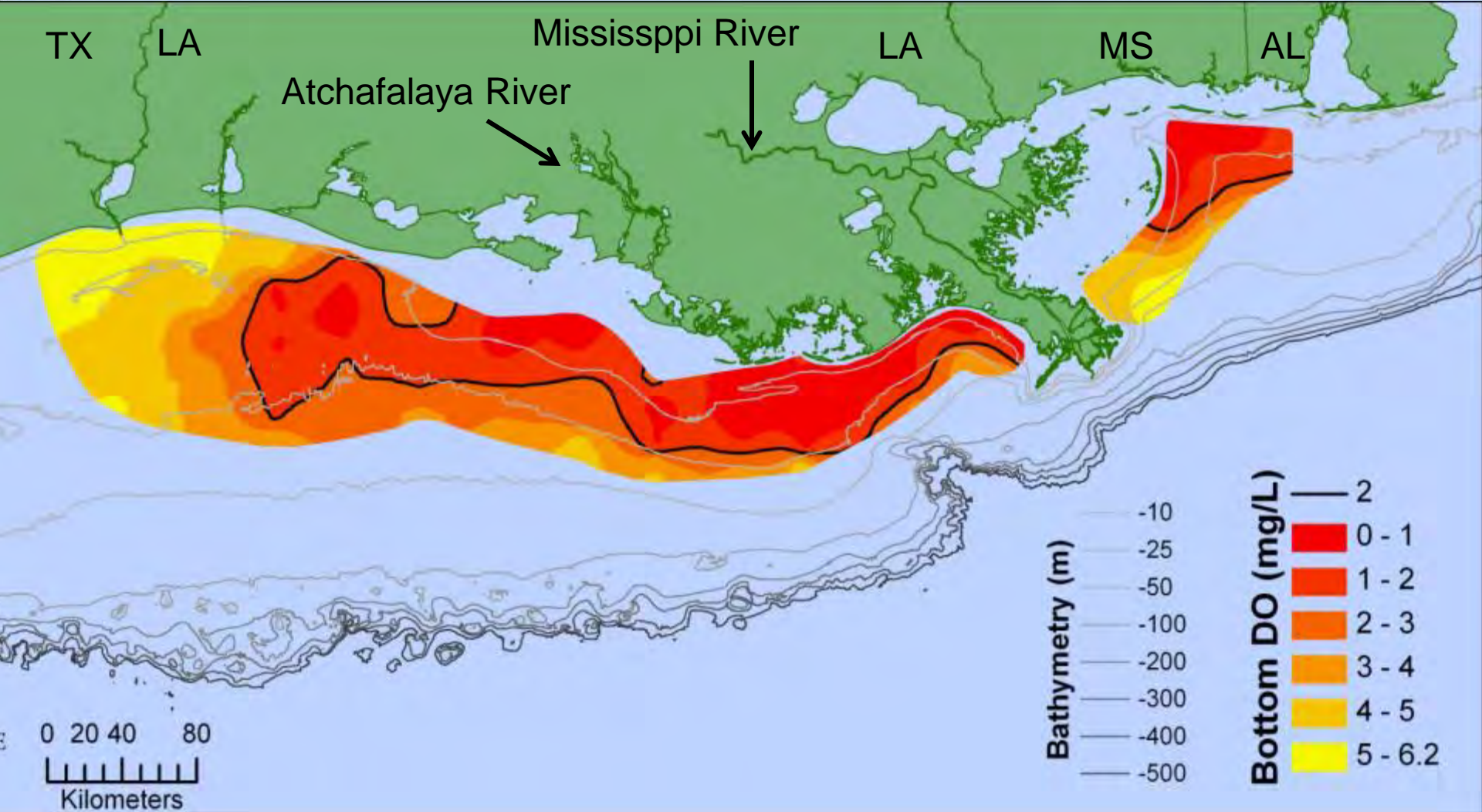
Dissolved Oxygen at Bottom Level at Station 6



(Rabalais et al., unpubl data)

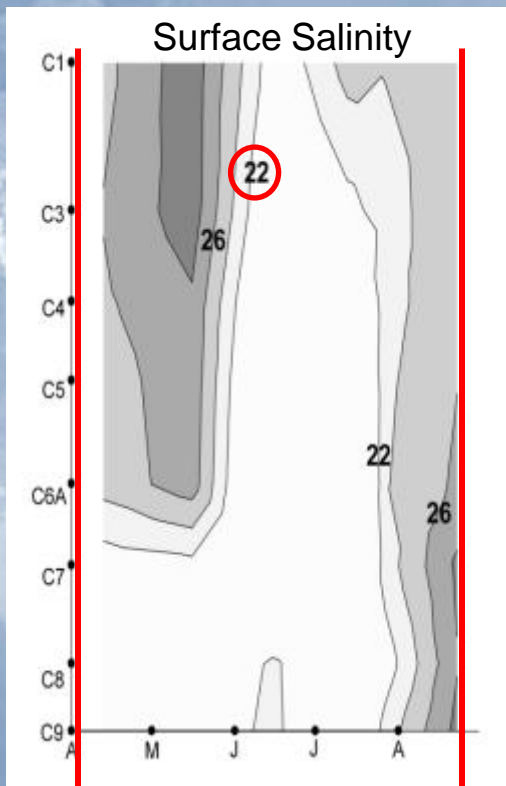
Mississippi River Discharge, Tarbert Landing, MS, 1935- 2012





Distribution of bottom-water dissolved oxygen July 18-21 (east of the Mississippi River delta) and July 24-30 (west of the Mississippi River delta), 2011. Black line indicates dissolved oxygen level of 2 mg/L. Data source: Nancy N. Rabalais, LUMCON, and R. Eugene Turner, LSU. <http://www.gulfhypoxia.net>



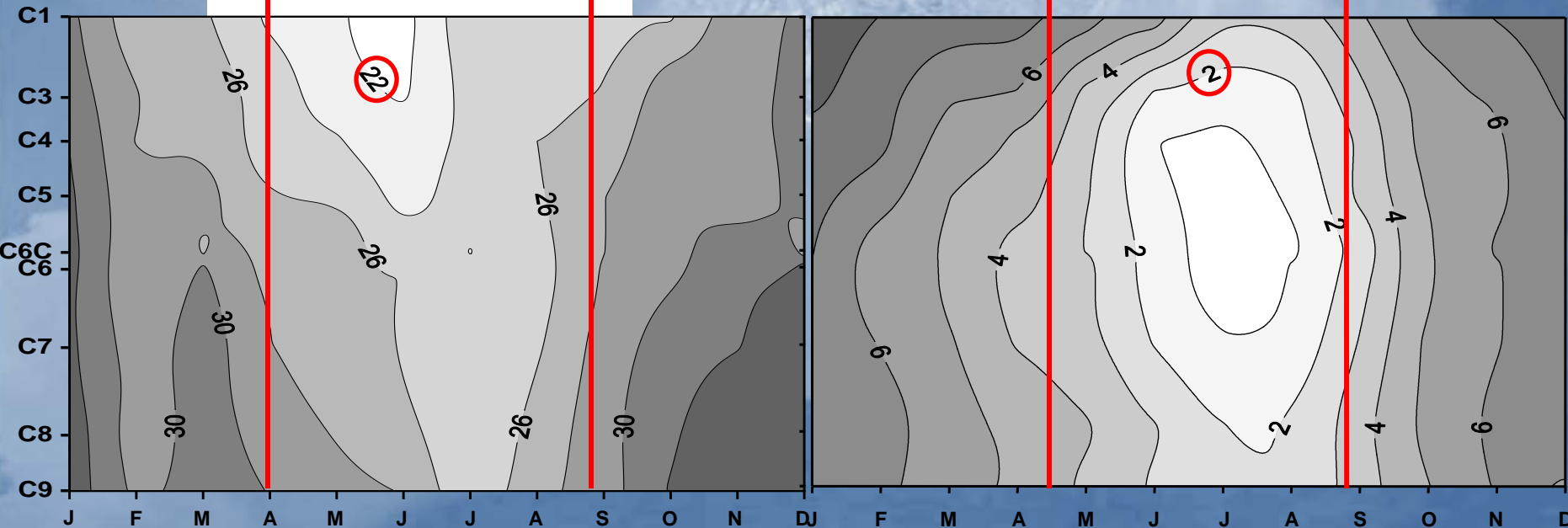
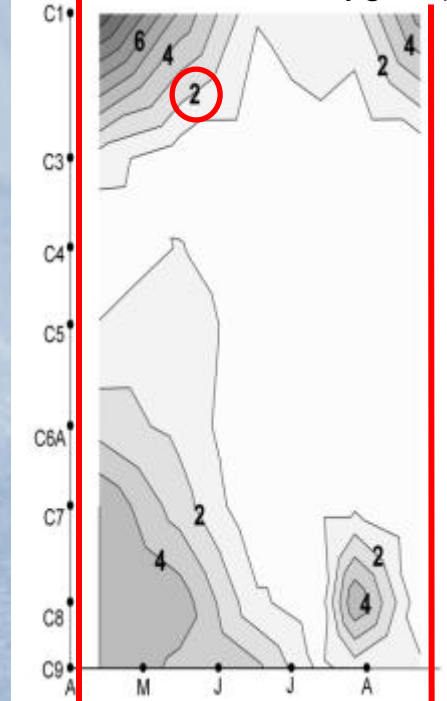


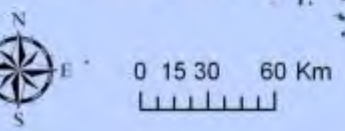
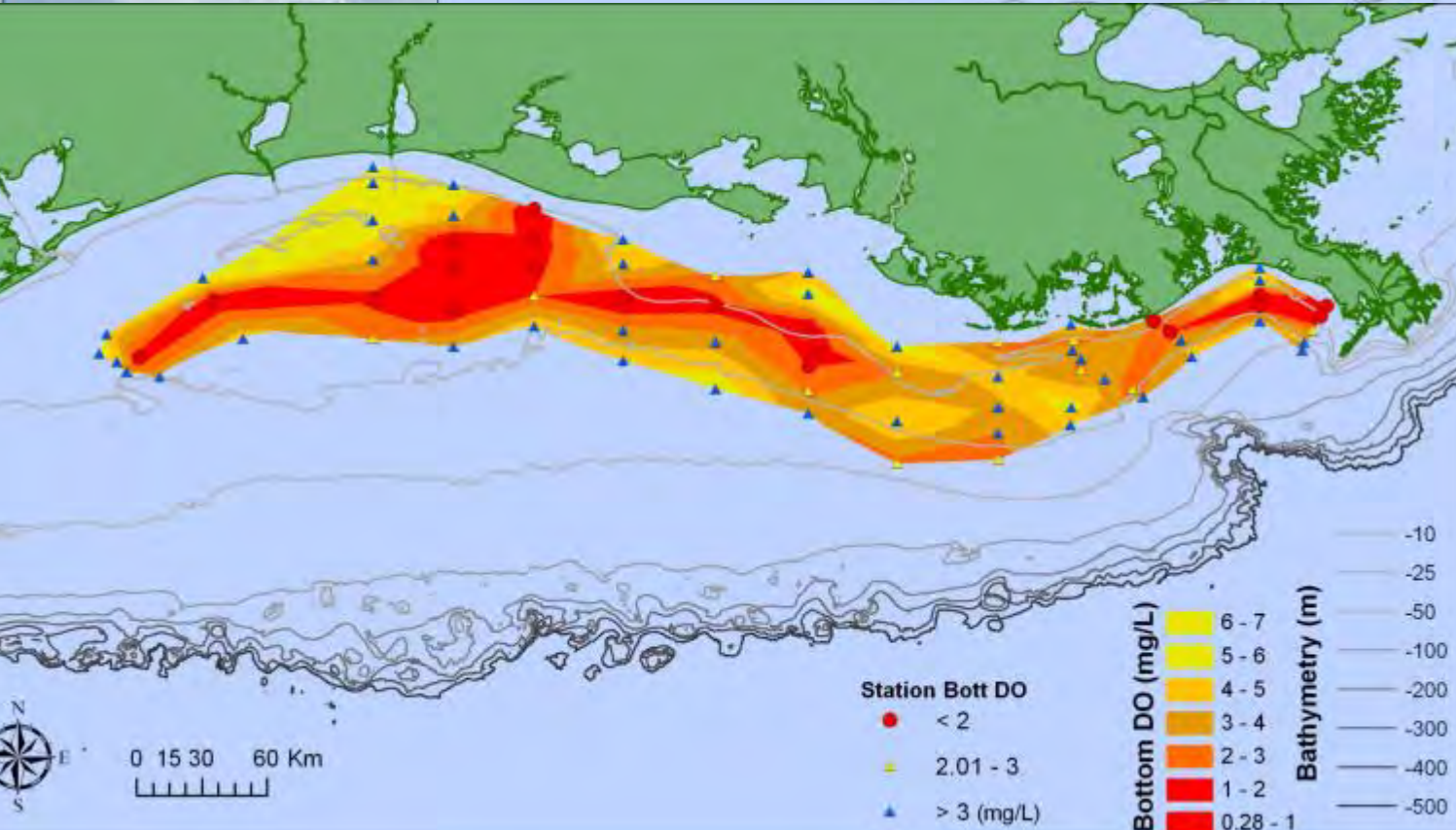
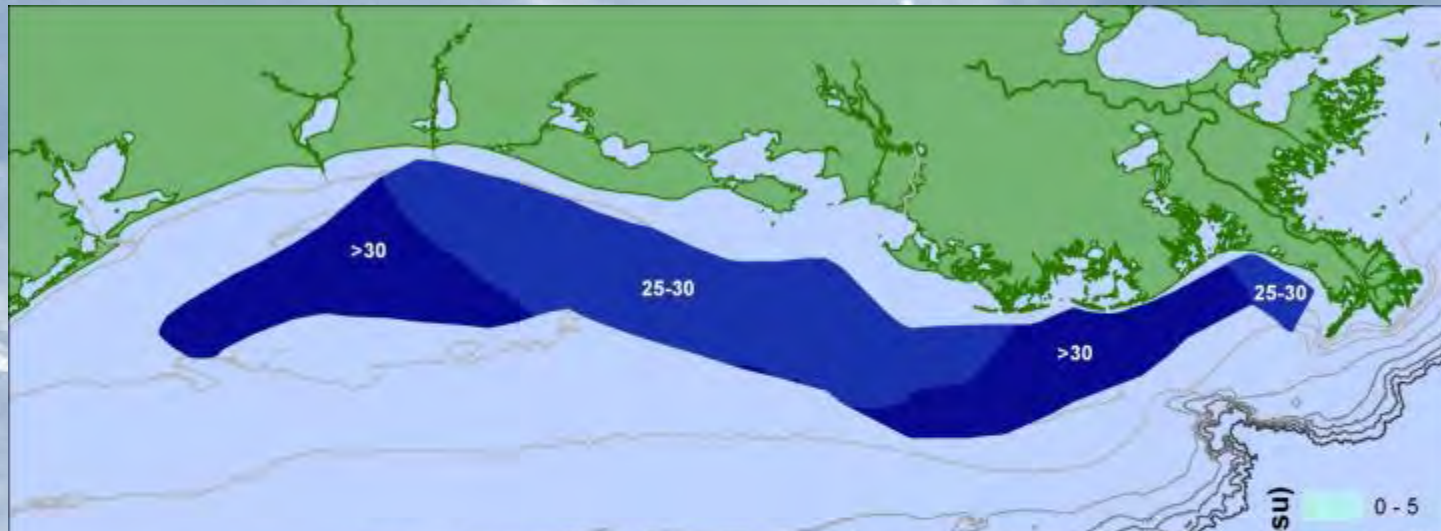
Transect C 2011 Miss R Flood

More
Fresh
water

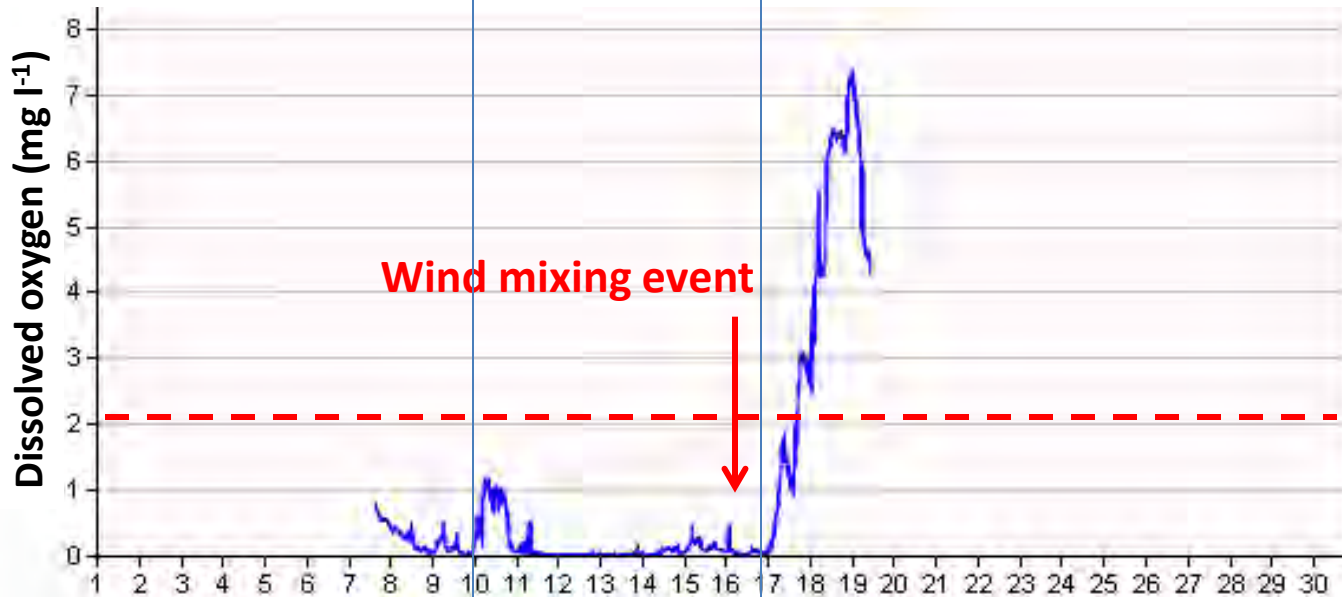
More
hypoxia

Bottom Dissolved Oxygen (mg l^{-1})





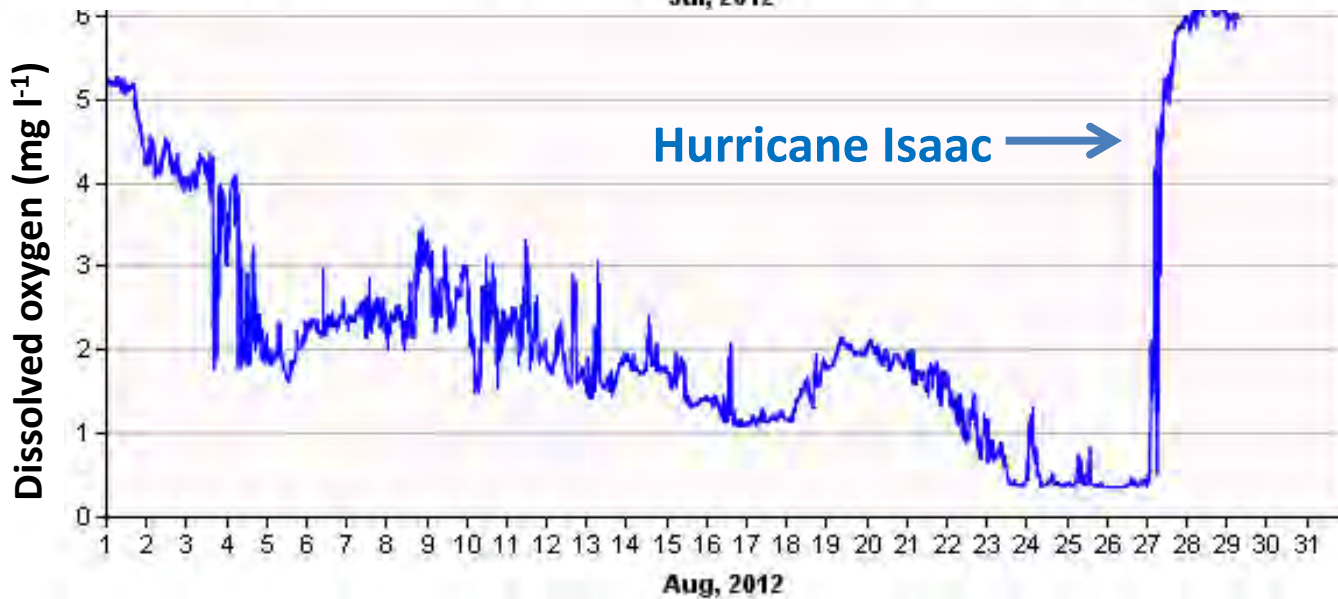
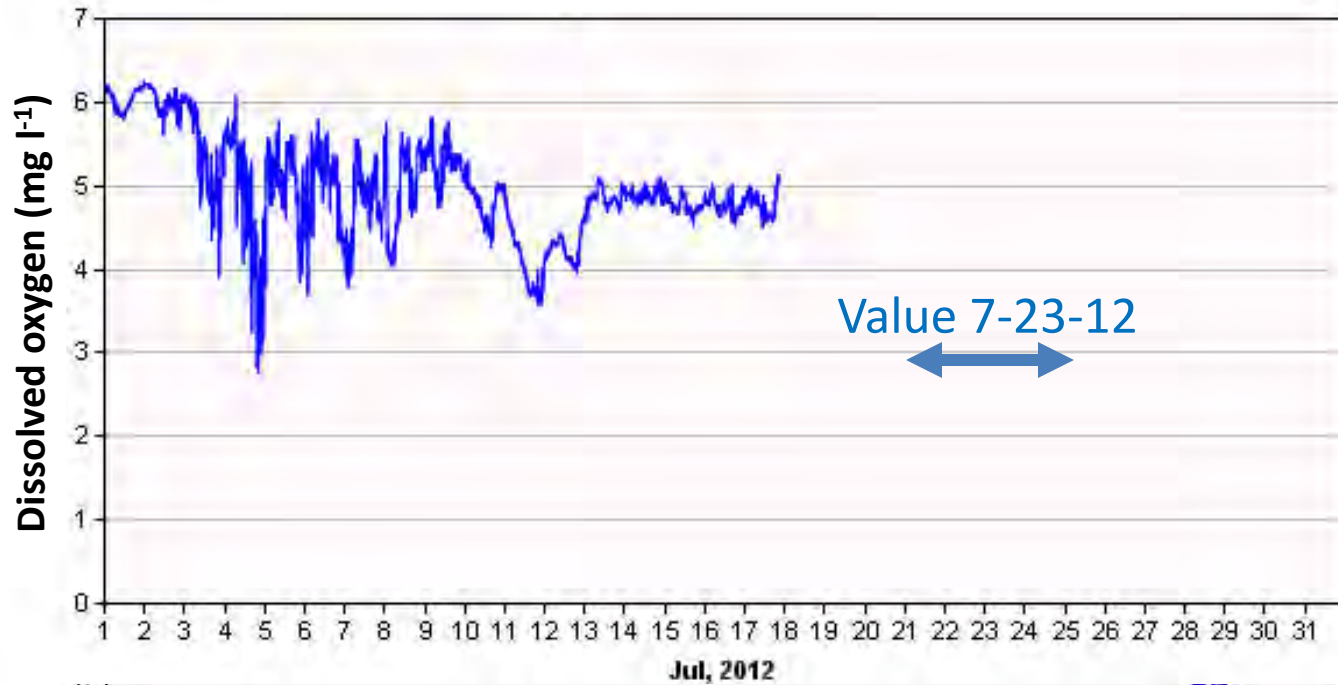
Dissolved Oxygen at 20 m, Station C6C



Data source:
N. Rabalais, LUMCON



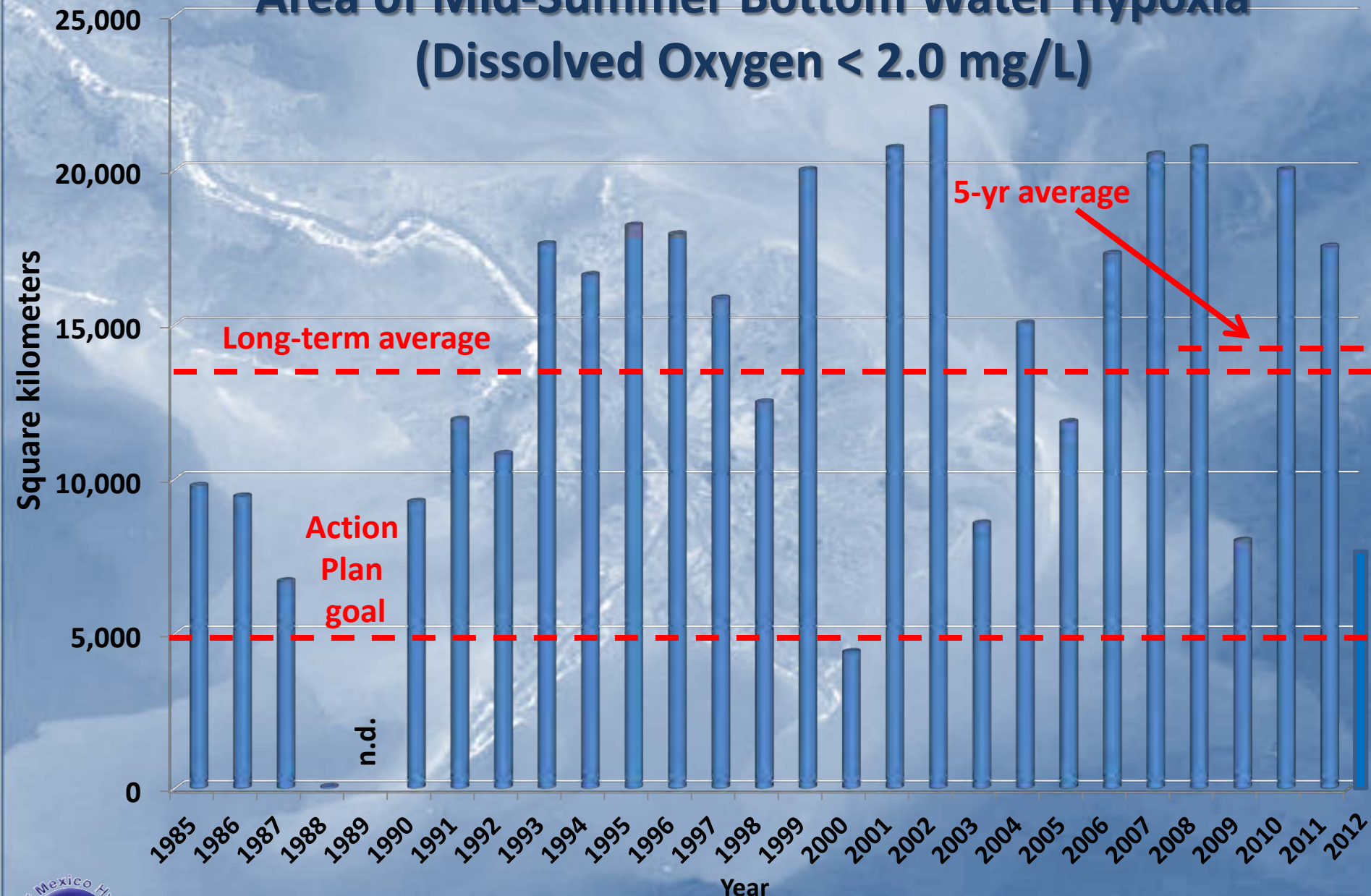
Dissolved Oxygen at 20 m, Station C6C



Data source: N. Rabalais, LUMCON



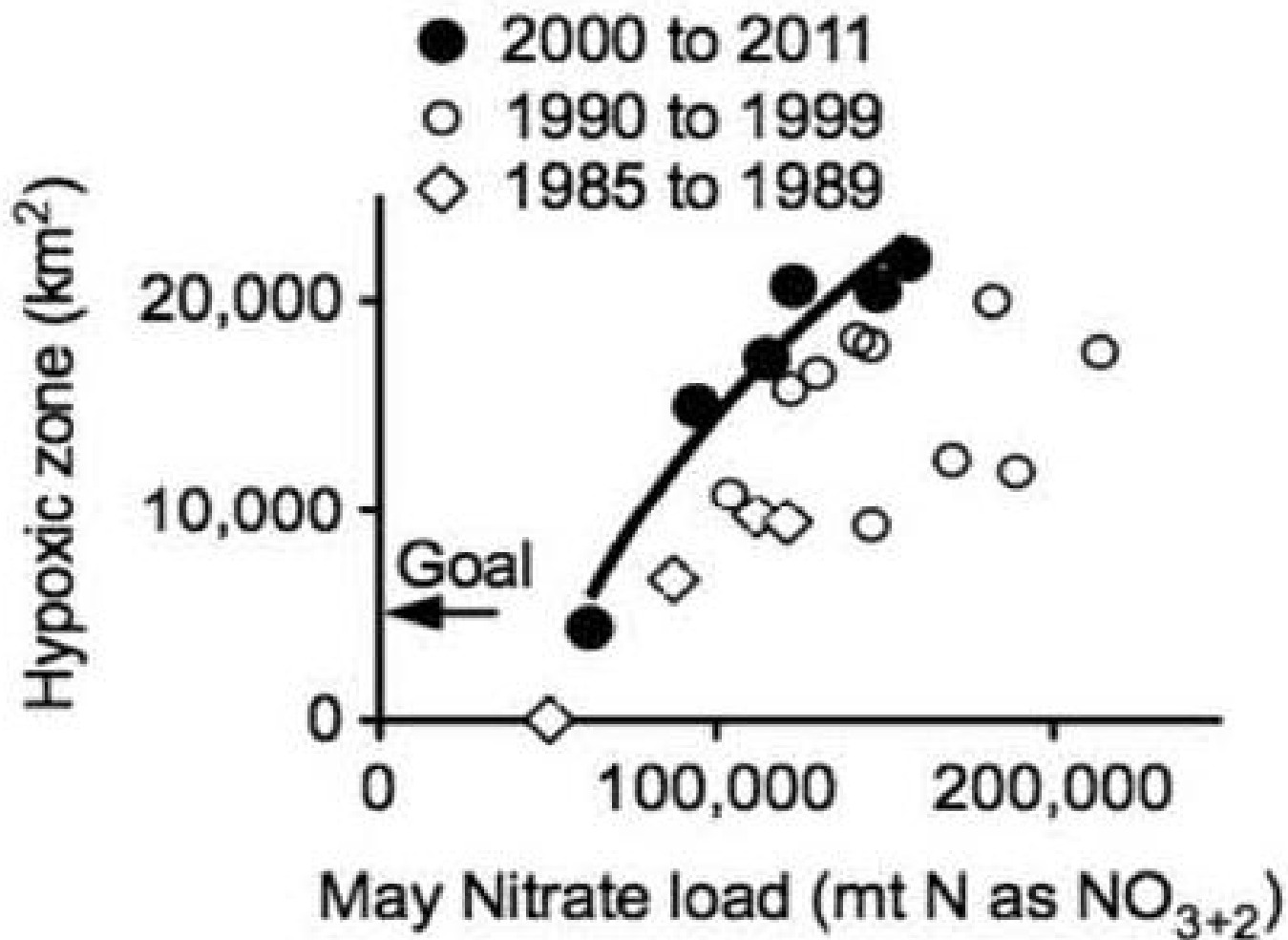
Area of Mid-Summer Bottom Water Hypoxia (Dissolved Oxygen < 2.0 mg/L)

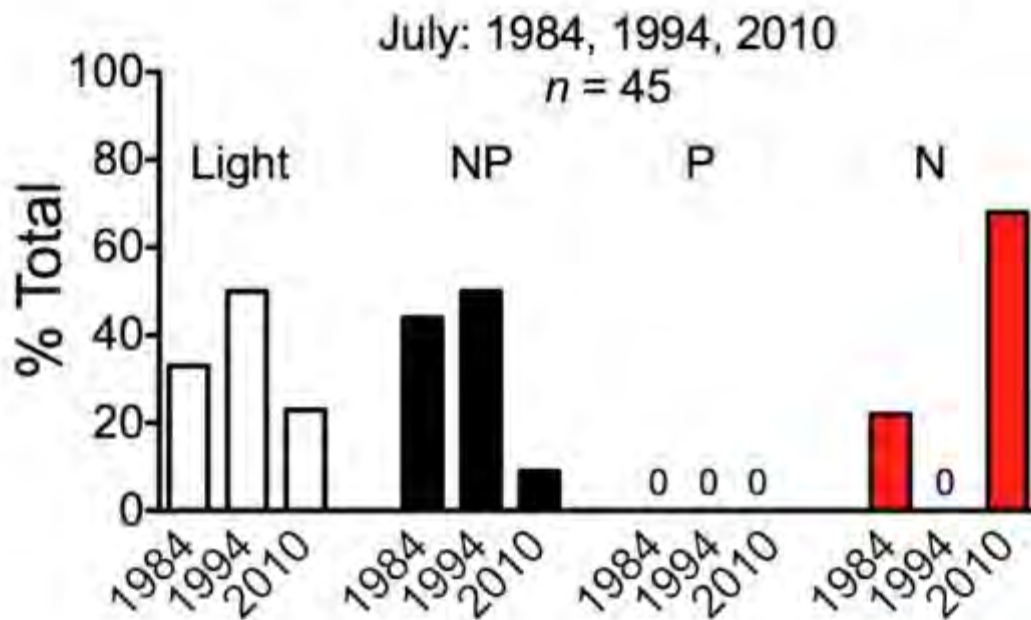
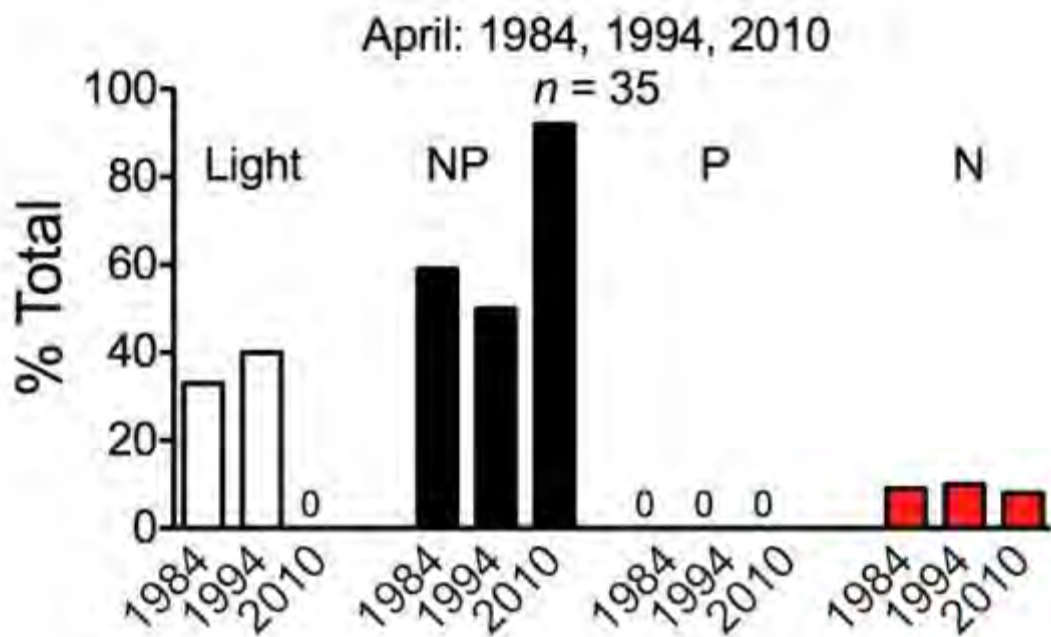


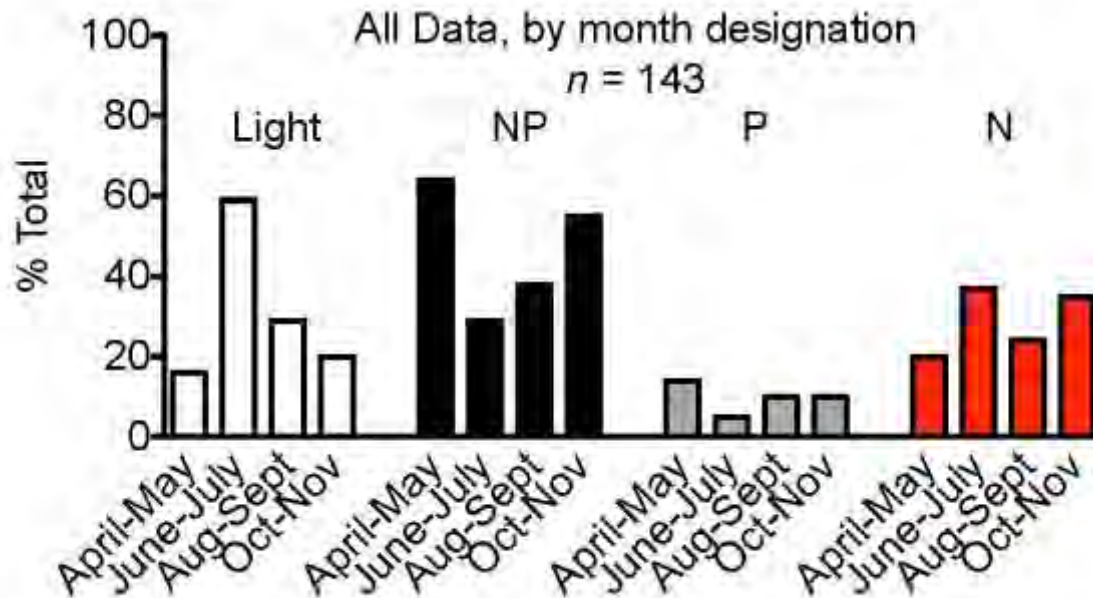
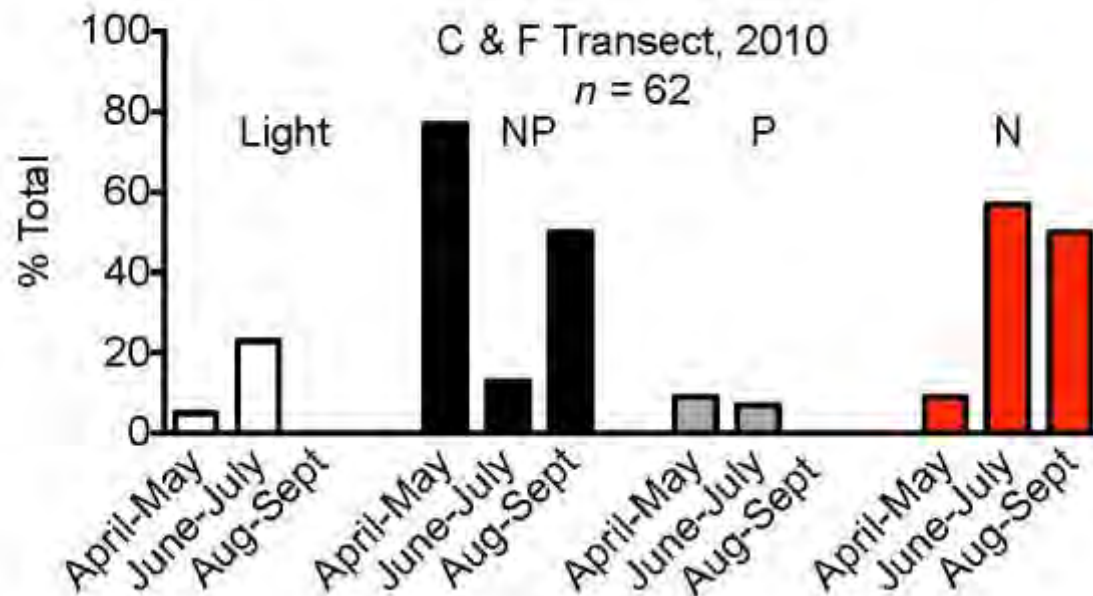
Data source: N.N. Rabalais, Louisiana Universities Marine Consortium, R.E. Turner, Louisiana State University
Funded by: NOAA, Center for Sponsored Coastal Ocean Research



Turner et al. 2012







THANK YOU

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<http://www.gulfhypoxia.net>

