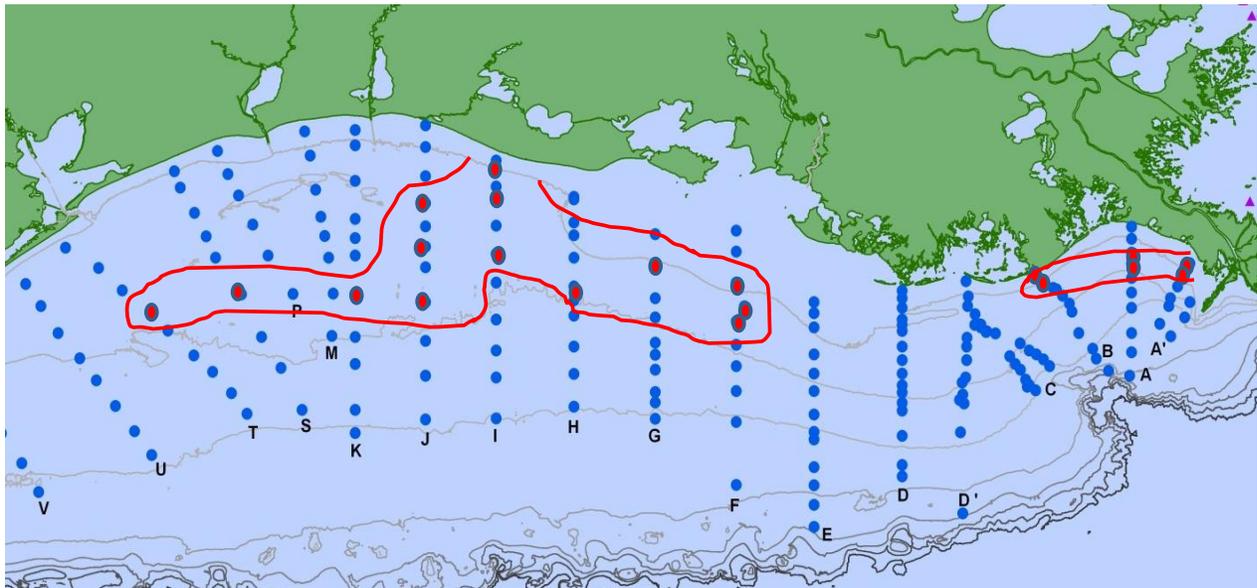


PRESS RELEASE  
LOUISIANA UNIVERSITIES MARINE CONSORTIUM  
July 27, 2012

Record drought across the United States in 2012 followed a year of record flooding in the Mid-West in 2011, producing two very different areas of hypoxia, or oxygen deficient water, on the Louisiana continental shelf. The 2012 area of low oxygen, commonly known as the ‘Dead Zone,’ measured 7,480 square kilometers (= 2,889 square miles) in this summer’s mapping expedition. This is the fourth smallest area of hypoxia measured since the mapping began in 1985.

The smaller area reflects the drought conditions across the US in that the freshwater discharge and associated nutrients delivered to the Gulf of Mexico was mostly below average in spring and approached the 80-year minimum discharge as the mapping cruise neared its end. Chief Scientist, Dr. Nancy Rabalais, reported that “the smaller area was expected this July 2012, but the distribution across the shelf differed from any other documented to date.” There was a narrow band close to the Mississippi River and large, non-hypoxic area between there and the Atchafalaya River. From the Atchafalaya River to the west, there were one to three stations on each line from there to off Galveston Island in water depths mostly of 15 to 20 m.

### Stations with Bottom-Water Hypoxia, 22-27 July 2012

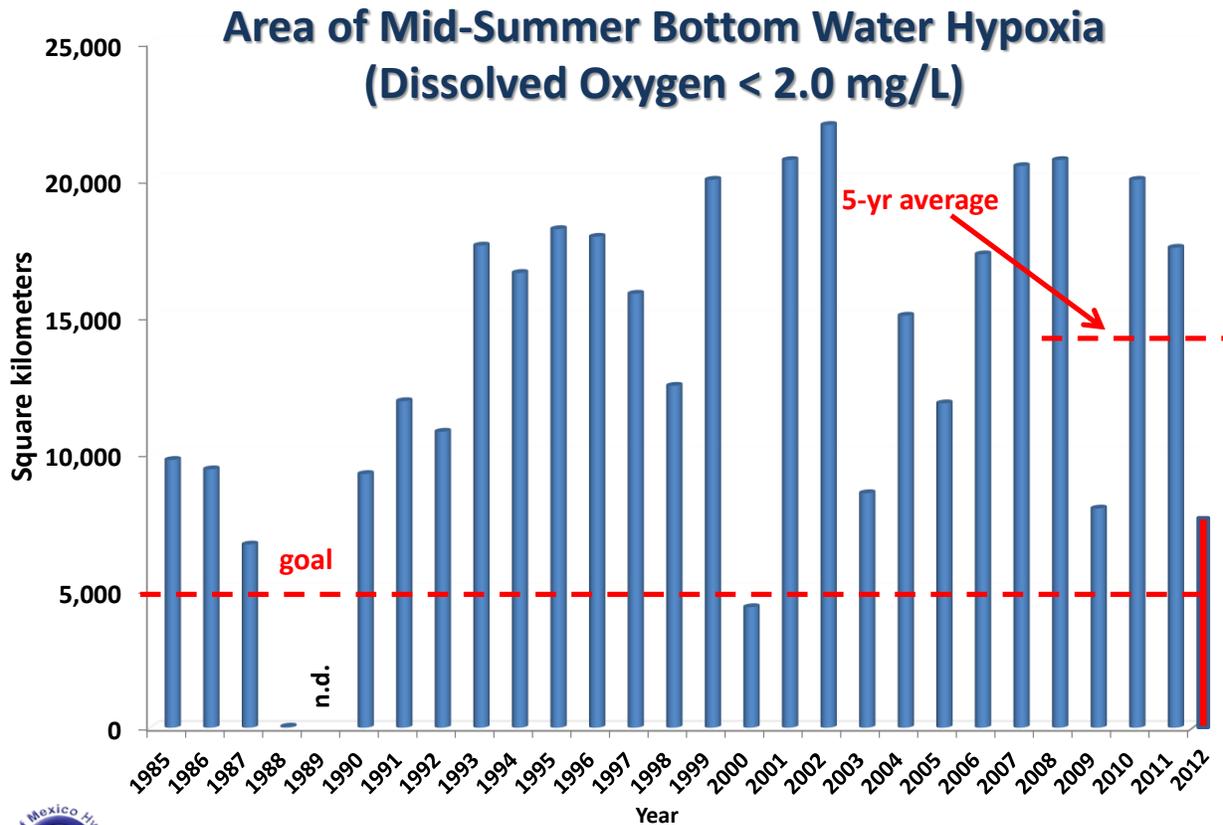


● Stations for which the bottom-water oxygen concentration was less than 2 mg/L  
Not all stations were sampled, but all transects from A' next to the Mississippi River delta through T off Galveston Bay Texas were sampled.



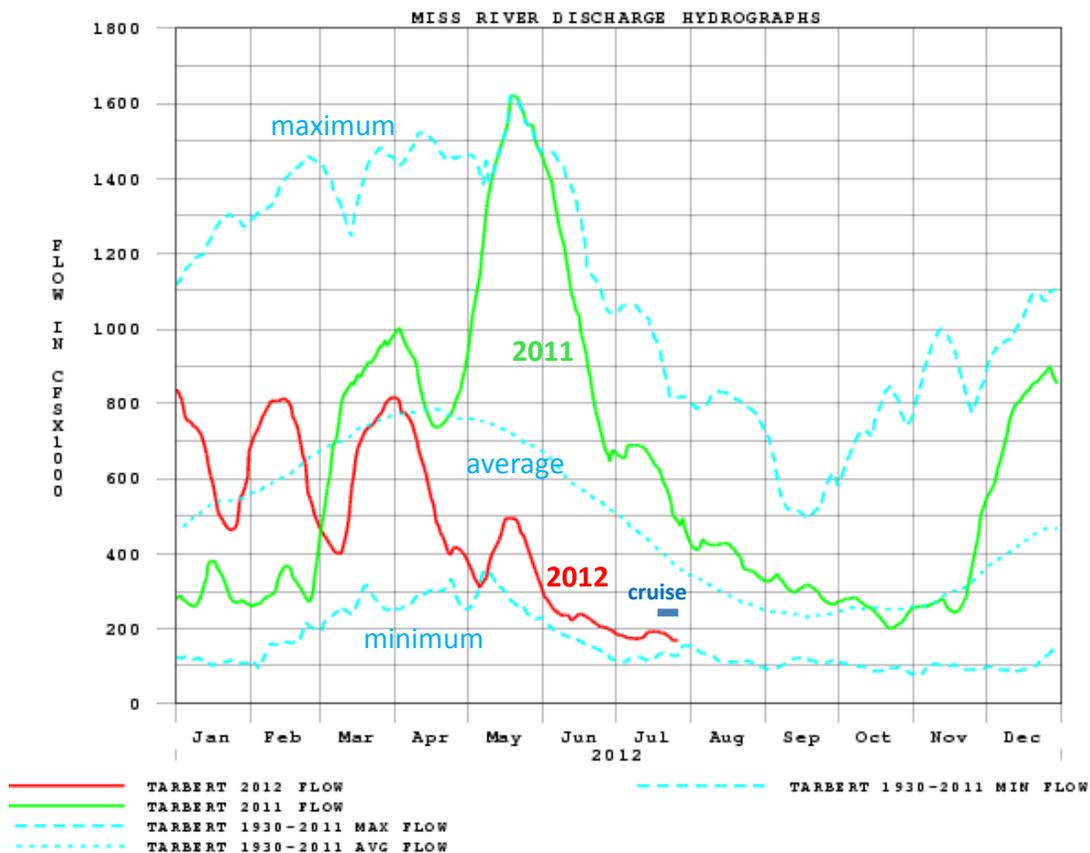
Data source: N.N. Rabalais, Louisiana Universities Marine Consortium, and R.E. Turner, Louisiana State University; funding from NOAA, CSCOR, NGOMEX09





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 Funded by: NOAA, Center for Sponsored Coastal Ocean Research

Low oxygen (hypoxia is dissolved oxygen < 2 milligrams per liter, or 2 ppm) was present as early as April 2012 and was also severely low up to mid-June off Terrebonne Bay, illustrating that the Mississippi River nutrients stimulated the production of phytoplankton in spring. The minimal continued freshwater discharge into July was not sufficient to maintain the stratification (layering of the water column) that prevents oxygen from the surface waters moving into the bottom waters to balance loss by bacterial decomposition of organic matter.



The Hypoxia Research Team led by researchers from Louisiana Universities Marine Consortium (LUMCON) and Louisiana State University (LSU) has been conducting mid-summer mapping cruises since 1985, and the areas determined on these cruises form the basis of the Mississippi River/Gulf of Mexico Nutrient Task Force Hypoxia Action Plan to reduce the size of the low oxygen area to 5,000 square kilometers (about 1,930 square miles). The 5-year running average upon which the environmental goal is based is now 14,744 square kilometers or 5,695 square miles.

As a reminder, hypoxia is not just something that happens at the end of July when the full area is mapped. It occurs from spring through late summer most years, and disrupts the coastal ecosystem when it is present with fish, shrimp and crabs fleeing the low oxygen waters and animals that remain in the sediments dying off.

Although the size of the hypoxic area was small this July 2012, this is not because sufficient actions have been taken within the watershed's landscape to reduce nutrient pollution. The issue of nutrient overload, of both nitrogen and phosphorus, remains a critical issue for the health of water bodies within the Mississippi River Basin and in the northern Gulf of Mexico. Efforts should continue in full force to reduce nutrient loads.

Hypoxia is a recurring environmental problem in Louisiana (and sometimes Texas and Mississippi) offshore waters. It forms as a result of the nutrient-overloaded waters of the

Mississippi River stimulating the excess growth of phytoplankton. Not all of the phytoplankton is consumed by higher levels of the food web, and it sinks to the seabed where bacteria decompose the remains and deplete the oxygen. The low oxygen forms in the lower half of a stratified water column (warmer, fresher water overlying cooler, saltier water), which keeps the plentiful oxygen in the surface waters from reaching into the lower layer and replenishing the oxygen depleted by the microbial activity.

For further information, contact:

Dr. Nancy Rabalais, [nrabalais@lumcon.edu](mailto:nrabalais@lumcon.edu), or

Dr. Gene Turner, [eturne@lsu.edu](mailto:eturne@lsu.edu)

Visit the Gulf Hypoxia web site at <http://www.gulfhypoxia.net> for additional graphics and information concerning this summer's research cruise, and previous cruises.

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