

## 'Dead Zone' Again Rivals Record Size

Press Release

Louisiana Universities Marine Consortium (LUMCON)

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The size of the low oxygen "Dead Zone" off the Louisiana/Texas coast again rivals the largest ever, reported Nancy Rabalais and a team of scientists from aboard the research vessel *Pelican*, as they sailed back to port in Cocodrie, Louisiana on Monday evening. The area of low oxygen expands over 20,720 square kilometers or 8,000 square miles of Gulf of Mexico seabed, similar to last year's size, but slightly smaller than the prediction of a record size of 8,800 square miles. The 2008 size ranks 2<sup>nd</sup> in size, along with that of 2001, for the area of hypoxia since mapping began in 1985.

The "Dead Zone" is an area in the Gulf of Mexico where seasonal oxygen levels drop too low to support most life in bottom and near-bottom waters. It is caused when phytoplankton growth, stimulated by nutrients such as nitrogen and phosphorus from the Mississippi and Atchafalaya rivers, settles and decays in the bottom waters. The decomposition of these algae consumes oxygen faster than it can be replenished from the surface, leading to decreased levels of dissolved oxygen.

Hypoxia began to develop early in 2008 with above average Mississippi River discharge in February and near maximum flooding in April. The recent June floods in the mid West just aggravated an already worsening situation offshore. "Low oxygen conditions were present off Terrebonne and Barataria Bays since March, and continued to increase through the spring and summer," reported Nancy Rabalais of Louisiana Universities Marine Consortium.

This year's area of low oxygen was predicted by Dr. R. Eugene Turner of Louisiana State University to be the largest to date (8,800 square miles) based on the flux of nitrate-nitrogen from the Mississippi River in the May preceding the July mapping cruise. Another forecast by Dr. Donald Scavia of the University of Michigan was to fall between 8,300 and 8,700 square miles. Both forecasts are driven by the high nitrate loads from the Mississippi and Atchafalaya rivers. The nitrogen loading to the Gulf of Mexico in May of this year was 37% higher than 2007 and the highest since measurements began in 1970. "The intensive farming of more land, including crops used for biofuels, has definitely contributed to this high nitrogen loading rate," reported Turner.

Tropical storms and hurricanes have the potential to disrupt hypoxia and aerate the bottom waters, which is exactly what Hurricane Dolly did as it crossed the Gulf of Mexico from Yucatan to Brownsville, Texas on July 21-23. "Hurricane Dolly's winds and waves caused reaeration of parts of the Dead Zone, especially along its western and shoreward edges," said Dr. Rabalais. "If it were not for Hurricane Dolly, the size of the Dead Zone would have been substantially larger." Still, "an amazingly large area of hypoxia persisted" despite the mixing from the hurricane. A similar large area was mapped during groundfish surveys by the National Marine Fisheries Service during June 11 – July 16, 2008.

The 12-member research team of scientists and graduate students from the Louisiana Universities Marine Consortium (LUMCON), Louisiana State University (LSU) and the University of Iowa mapped the ever-present 'Dead Zone' along with conducting scientific experiments and collecting data for several research and modeling programs. Funding for the research program is provided by the NOAA Center for Sponsored Coastal Ocean Research, Coastal Ocean Program, Grant No. NA06NOS4780197 to Louisiana Universities Marine Consortium and Louisiana State University.

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For further information, visit:

<http://www.gulfhypoxia.net>

2008 Forecast

<http://www.gulfhypoxia.net/news/documents/HypoxiaForecast13July2008.pdf>

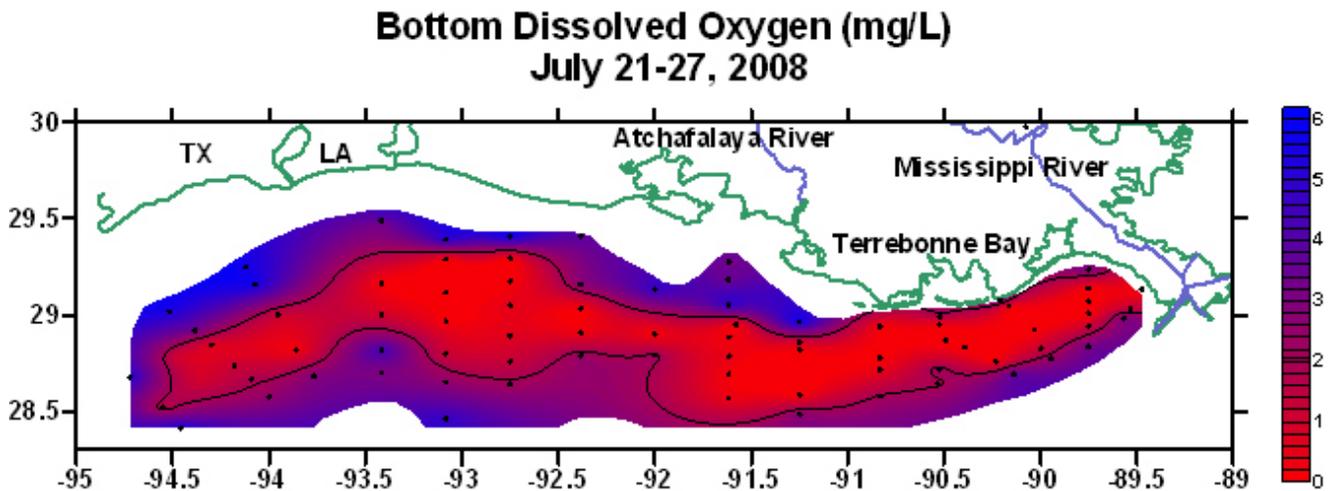
[http://www.sitemaker.umich.edu/scavia/files/2008\\_gulf\\_of\\_mexico\\_hypoxic\\_forecast.pdf](http://www.sitemaker.umich.edu/scavia/files/2008_gulf_of_mexico_hypoxic_forecast.pdf)

NOAA/NCCOS/CSCOR Gulf of Mexico Hypoxia Research:

[http://www.cop.noaa.gov/stressors/extremeevents/hab/features/hypoxiafs\\_report1206.html](http://www.cop.noaa.gov/stressors/extremeevents/hab/features/hypoxiafs_report1206.html)

NOAA National Marine Fisheries Groundfish Surveys Hypoxia Watch

<http://ecowatch.ncddc.noaa.gov/hypoxia>



Map of bottom water oxygen levels in mg/L (or ppm). Black line is less than 2 = Hypoxia. Data source: N. Rabalais, Louisiana Universities Marine Consortium, map by B. Babin.