Nutrient Delivery to the Gulf of Mexico Among Highest Measured

Spring nutrient delivery to the northern Gulf of Mexico is among the highest measured by the U.S. Geological Survey (USGS) in thirty years.

Too many nutrients, which are essential for plant growth, are not necessarily a good thing. Excessive nutrients can be harmful by decreasing the amount of oxygen in the water, also known as hypoxia. This can result in an area experiencing stress or death of near or bottom dwelling organisms called a hypoxic zone, or “dead zone.”

Hypoxia, along with overfishing, habitat loss and toxic contamination, can significantly impact the Gulf of Mexico coastal region, an important resource for the Nation providing about 1.2 billion pounds of fresh seafood every year.

The amount of nutrients transported from the Mississippi River Basin to the Gulf during the spring is a major factor controlling the size of the hypoxic zone. The northern Gulf of Mexico hypoxic zone is the second largest in the world, and threatens the economic and ecological health of one of the nation's largest and most productive fisheries.

Nutrients can come from many sources, such as fertilizers applied to agricultural fields, golf courses, and suburban lawns; atmospheric contributions; erosion of soils containing nutrients; and sewage treatment plant discharges.

USGS releases estimates of nutrients from the Mississippi and Atchafalaya Rivers to the Gulf of Mexico in early June each year. The estimates are used by the National Oceanic and Atmospheric Administration, Louisiana Universities Marine Consortium, and other researchers to predict the areal extent of the hypoxic zone.

Predictions of the size of the 2009 hypoxic zone, to be released this week, reflects USGS estimates of about 295,000 metric tons of nitrogen (in the form of nitrate) delivered in April and May 2009 to the northern Gulf. In 2008, the hypoxic zone exceeded 20,000 square kilometers, an area similar in size to the state of New Jersey. Spring delivery of nitrogen in 2009 was about 23 percent lower than what was measured in 2008, but still about 11 percent above the average from 1979 to 2009.

The amount of nutrients delivered to the Gulf each spring depends, in large part, on precipitation and the resulting amounts of nutrient runoff and streamflow in the Mississippi-Atchafalaya River Basin. Streamflows in spring 2009 were about 17 percent above average over the last 30 years. Last year’s elevated levels were most likely due to the flooding during the spring.

States and Federal partners serving on the Gulf of Mexico Hypoxia Taskforce are trying to reduce nutrients transported to the Gulf to reduce the size of hypoxic zone to less than 5,000 square kilometers by 2015. Tracking nutrient levels every year is important to determine if partners are on target with that goal.

USGS has monitored streamflow and water quality in the Mississippi River Basin for decades, to access more information visit the USGS nutrient flux webpage.

For more than 125 years, the USGS has served as the Nation's water monitoring agency, including flow and (or) quality in selected streams and rivers across the U.S. Access data from more than 7,400 streamgages, many of which provide real-time data in 15 minute increments at the USGS WaterWatch site.

For an even larger variety of USGS data, such as for ground water and water quality, access the National Water Information System Web Interface, which contains over 1.5 million sites, and averages over 25 million hits per month.

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