Researchers to study why dead zone returned to Lake Erie

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A $2.5 million grant will fund a 5-year study examining why dead zones have returned to Lake Erie, and researchers hope the findings will allow them to detect the cause and stop the spread before the fishery and tourism industries suffer.

"This is a very serious problem," said University of Michigan's Donald Scavia, professor in the School of Natural Resources and Environment, and lead investigator of the project. "In the 1960s and 1970s the Lake Erie dead zone was a key driver for enacting the Clean Water Act and stimulating the environmental movement. We thought the problem was solved, and the surprise is in the last few years the dead zone is back."

Researchers from U-M, the Cooperative Institute for Limnology and Ecosystems Research, NOAA, and several other universities will study the possible causes of the dead zone, as well as develop management and policy options and guidance on a course of action to alleviate the problem. CILER is one of 11 National Oceanic and Atmospheric Administration joint institutes and is administered by the SNRE. The grant, funded by NOAA's Center for Sponsored Coastal Ocean Research, provides scientists $506,190 for five years.

A dead zone is an area of oxygen starved water that cannot sustain aquatic habitat, said Scavia, who is also the director of Michigan Sea Grant. In the Lake Erie case, researchers will examine three main culprits and the relationships among them: excess phosphorous; zebra mussels; and global warming.

Of the three causes, nitrogen from farm runoff and treatment plants is the most well known. The nitrogen in fertilizer causes algae blooms that sink to the bottom and are consumed by bacteria, which consumes oxygen.

The second theory is that the zebra mussels may shunt the oxygen-consuming organic matter from the near shore to the bottom waters. In the third scenario, global warming has caused the layer of bottom water to become thinner, with less oxygen.

The dead zone materialized in Erie's central basin and can cover as much as three quarters of the area, Scavia said. It was discovered through routine monitoring of the lake.

The Great Lakes contain 18 percent of the world's surface freshwater and 90 percent of the surface freshwater in the U.S. They serve as the focus for a multi-billion dollar tourist and recreation industry, supply 40 million people with drinking water, provide habitat for wildlife and fish, and support transportation and agriculture production. Lake Erie is the smallest of the five Great Lakes.

Source: University of Michigan