# Researchers confirm dead zone off Texas coast since 1985

April 2 2008

Researchers at Texas A&M University have confirmed for the first time that a "dead zone" has existed off the Texas coast for at least the past 23 years and will likely remain there, causing potential harmful effects to marine life in the area.

Steve DiMarco, associate professor in Texas A&M's College of Geosciences who has studied dead zones in the Gulf of Mexico for more than 15 years, believes the dead zone area off the Texas coast extends from the Texas-Louisiana border area to Brownsville. A dead zone occurs when there is hypoxia, or oxygen-depleted water.

Such low levels of oxygen are believed to be caused by pollution from farm fertilizers as they empty into rivers and eventually the Gulf, or by soil erosion or discharge from sewage treatment plants.

"Not all of the area from the Texas-Louisiana coast to Brownsville is a dead zone area, but very much of it is," DiMarco explains. "The Texas dead zone appears to be more patchy and not as continuous as the Louisiana dead zone to the east, but much of the region there has very low oxygen levels, some extremely low."

DiMarco recently presented his findings to the 2008 Ocean Sciences Meeting in Orlando, Fla.

DiMarco examined water samples – provided by Texas Parks and Wildlife, NOAA (National Oceanic and Atmospheric Administration)

and other groups – from the area taken since 1985 and found that, with few exceptions, dead zone areas have occurred almost every year since that time.

Key areas sampled included Sabine Pass, Matagorda Ship Channel, Galveston-Boliver Pass, Aransas Pass and Brazos-Santiago (Brownsville) Pass.

Water samples contained low oxygen levels, and in some years, alarmingly low, DiMarco said. When a dead zone occurs, marine life can be severely threatened, especially commercial fishing areas.

"The low oxygen levels since 1985 are frequent and persistent," he noted.

"It proves that a dead zone occurrence is not a one-year or two-year event, but it has happened just about every year for at least the last 23 years."

Previous dead zones have been recorded off the Louisiana coast for years, near the Mississippi delta region, and a dead zone there has been measured at more than 7,900 square miles, or about the size of Delaware and Connecticut combined.

DiMarco was the first to discover a Texas-created dead zone area off the Texas coast last summer, a result of unusually heavy rains that poured water into the Brazos River. Where the water emptied into the Gulf off the Texas coast, it created the first proven dead zone area that originated from Texas rivers.

"The new results show that another 'fingerprint' from Texas is the cause of dead zones since 1985," he adds.

"Hypoxia – oxygen-depleted water – occurs when the oxygen levels fall below 2 milligrams per liter, but we found numerous samples that were even one-half of that, meaning severe hypoxia has occurred."

DiMarco says a comparison would be that of standing on top of a mountain. "You know the air is going to be thin up there because of the altitude," he says. "The thin air has low oxygen levels making it uncomfortable and sometimes deadly to humans. That's similar to what happens to marine organisms along the Texas coast."

He notes the dead zone is believed to extend about 20 miles off the coast in these areas, but could be larger. "That's one big question we need to find out – how large an area is being affected by this dead zone"" he says.

DiMarco plans to go to the affected areas off the Texas coast in July for more samples and to test the concentration levels of hypoxia from several sites.

Source: Texas A&M University