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LONG ISLAND

Dead zones in LI waters

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A combination of low oxygen and low pH found in some bodies of water — known as dead zones — together pose a greater threat to marine life, according to a study published this month by researchers at Stony Brook University.

In a series of experiments, the researchers found that when young bay scallops were raised in water that was low in pH, more than half of them died. When the mollusks were raised in water with low oxygen, more than 40 percent had a slow growth, said the lead researcher, Christopher Gobler, who teaches at Stony Brook's School of Marine and Atmospheric Science.

And when the young bay scallops were exposed to water that was low in both oxygen and pH, more than half of the bivalves died, and the ones that survived experienced slow growth, Gobler said.

"When you combine these factors, you have the worst of all worlds," he said.

Dead zones — water regions with levels of oxygen too low to sustain marine life — have expanded in recent years, Gobler said. Scientists have identified about 400 dead zones around the world. A portion of the Long Island Sound turns into a dead zone in late summer, he said.

Until now, scientists have investigated the effects of low oxygen on marine life but devoted little attention to understanding the effects of pH level, a measure of acidity or alkalinity, Gobler said. And no one had studied their combined effect on ocean life until his team tackled the issue, he said.

"I think there is growing recognition that oxygen is important, but pH is just as important, and in some cases can be more important," he said.

For his experiments, Gobler said the team used water from the Forge River in Brookhaven, which has both low oxygen and low pH. Researchers also replicated these conditions in a lab at the college's Southampton campus.

"We produced essentially the same result with both ap-

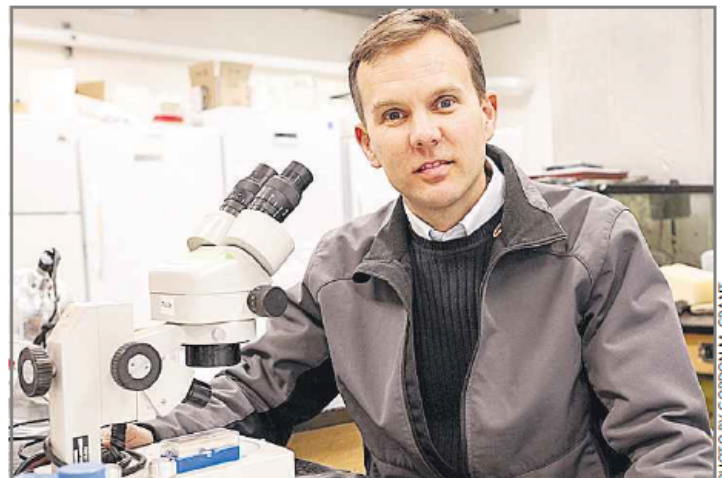


PHOTO BY GORDON M. GRANT

Christopher Gobler, a Stony Brook University marine researcher, studied the effects of low oxygen and low pH on young mollusks.

proaches," Gobler said.

Gobler and his team also used clams in the study. When more mature clams were exposed to water that contained either low oxygen or low pH level, the clams survived and grew as they normally would. But when the bivalves were exposed to water with both low oxygen and low pH level, more than 40 percent of the population experienced slower

growth, Gobler said.

Because of his team's findings, Gobler predicted more researchers will explore the relationship between pH level and dead zones. And, state and federal regulators will need to adjust how they measure water quality.

"Some of the standards need to be redrafted and redrawn to protect marine life," Gobler said.