

'Dead Zone' kills billions of mussels

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A 2001 "dead zone" that formed in Rhode Island's Narragansett Bay reportedly killed billions of mussels and destroyed at least one reef.

The so-called dead zones are caused by hypoxia, or oxygen depletion, which literally suffocates sea life. While some evidence of the "dead zone" could be seen on the bay's surface, Brown University ecologists went underwater and discovered an estimated 4.5 billion mussels -- about 80 percent of the reefs' population -- died in the event, which also damaged nine other reefs.

"What we saw was a local extinction," said Andrew Altieri, a co-author of the report. "The mussel population was devastated. If the magnitude of this die-off was visible from the surface, there would've been public alarm."

Researchers said hypoxia can start when fertilizer or sewage spills into coastal waters, carrying nitrogen, phosphorus and other nutrients. Often fueled by high summer temperatures, the nutrients produce algae blooms. When the alga dies, it sinks to the bottom, where it is consumed by bacteria -- along with dissolved oxygen. That is what happened in Narragansett.

The study, conducted with Associate Professor Jon Witman, was published in the journal *Ecology* and also appears online.

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