

Research: Climate change affecting mussel survival

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(PhysOrg.com) -- Warmer air and water temperatures along the U.S. East Coast are shrinking the geographic region where blue mussels can survive, according to findings by University of South Carolina researchers published in the August *Journal of Biogeography*.

Mytilus edulis, or blue [mussels](#), a popular seafood, used to live along the East Coast as far south as Cape Hatteras, N.C., but now exist only as far south as Lewes, Del., according to Sierra Jones, a Ph.D. student in the department of biological sciences at USC. Moreover, populations to the North experience higher rates of mortality than in the past.

Most plants and animals have geographic ranges defined by northern and southern limits. In many cases, ranges are thought to be controlled by temperature, and if it becomes too hot, the limits will shift. However, linking changes in geographic range to changes in climate is difficult unless long-term records in distribution are compared to equally long-term records of weather.

Jones and colleagues explored more than 300 miles of coastline to determine how changing temperatures affected survival of mussels in different latitudes.

The findings are significant because they show that recent [climate change](#) is affecting the organisms along our coast.

“These mussels are a very important part of the food chain,” Jones said.

“They help clean the water and are farmed commercially. If temperatures continue to increase, we can expect range changes of species like blue mussels to continue, and the health of our oceans is at risk.”

“Understanding the link between organism and environment is essential for making predictions of how future climate change will affect species and [ecosystems](#),” Jones said. “Where organisms might be in the future is crucial to planning for marine reserves and the future of the fishing and aquaculture industries.”

Provided by University of South Carolina

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