

THE HEAT IS ON

Species feeling the effects of climate change



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American Lobster

Homarus americanus

Region:

Atlantic Ocean

Area affected:

Southern New England

Climatic change:

Warming waters

Impact:

Heat stress

ABOUT THIS SPECIES

Lobsters are one of our best known marine species and a tremendously important fishery—in Maine alone, the catch was valued at \$495 million in 2015. Their range extends from New Jersey northward along the shallow waters of the Atlantic continental shelf. Like other crustaceans, lobsters molt (shed their exoskeletons) multiple times during their lives in order to grow. Juveniles resemble tiny shrimp and live near the surface, eating plankton and being eaten by other organisms. After their fourth molt, lobsters settle on the ocean floor to feed on other invertebrates and algae. They are highly susceptible to pollutants like nutrients and pesticides and to dredging, trawling and other activities that disturb the ocean floor.

DESCRIPTION OF IMPACT

Lobsters are temperature-sensitive throughout their life cycles. Eggs, juveniles and adults all survive best at a fairly narrow range of temperatures. Adults, for instance, seem to prefer waters of about 60 degrees F and avoid waters colder than 40 degrees F or warmer than about 70 degrees F. **The warmer the water, the higher a lobster's metabolic rate and the more challenging it is for the animal to get enough food to maintain itself.** Unfortunately, temperatures that exceed the upper threshold are now common in areas off the coast of Massachusetts. In 2012 and 2013, areas south of Cape Cod recorded multiple days with temperatures close to 77 degrees F. Lobster stocks in this region are now considered “critically depleted” by the Atlantic States Marine Fisheries Commission, with landings of less than 10 percent of 1980s levels. The peak area for lobster production appears to be moving northward to the Gulf of Maine, an area that saw record high abundance in 2015, while southern New England had record low abundance. That is good news for Maine in the short term, but continued warming could eventually move the lobster's stronghold even farther north and out of American waters.

References

Anderson, J.C. 2016. Maine fishermen landed a record \$616.5 million catch last year. *Portland Press Herald*. March 4. <http://www.pressherald.com/?p=812869>

Atlantic States Marine Fisheries Commission. 2014. Addendum XXIII to the Amendment 3 to the Interstate Fishery Management Plan for American Lobster: Habitat Considerations. http://www.asmfc.org/uploads/file/53ebd78bamLobsterAddendumXXIII_Habitat_Aug2014.pdf

Atlantic States Marine Fisheries Commission. 2015. American Lobster Assessment Yields Mixed Stock Status Results (press release). August 5. <http://www.asmfc.org/uploads/file/55c27bffpr25AmLobsterStockAssmt.pdf>



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