

# THE HEAT IS ON

Species feeling the effects of climate change



## Atlantic Puffin

*Fratercula arctica*

### Region:

Northeast

### Area affected:

Gulf of Maine

### Climatic change:

Warming oceans

### Impact:

Food web changes

### ABOUT THIS SPECIES

With their brightly colored bills and penguin-like appearance, Atlantic puffins are one of the most readily recognized and beloved of seabirds. They can dive up to 200 feet deep into the ocean to prey on schools of small fish and marine invertebrates. Puffins breed in colonies on cliffs and islands along the coasts of Canada, Greenland, Iceland and Scandinavia and were recently reintroduced to former strongholds along the coast of Maine. Pairs are monogamous and will often return repeatedly to the same nest site, usually a burrow that they dig in a grassy spot or a natural crevice in rocky areas. Each season they lay a single egg, and both parents share incubation and feeding duties. Atlantic puffins reach breeding age at around four or five years and can live up to three decades.

### DESCRIPTION OF IMPACT

In the Gulf of Maine, the southern extent of their breeding range, puffins rely on a food web characterized by phytoplankton specialized to live in the Gulf's very cold, nutrient-rich waters. These plankton feed an assortment of puffin prey—herring, hake, capelin, sand lance and other small, slender fish that thrive in cold water. In 2012, an exceptionally warm period heated the Gulf of Maine early in the spring, and most of these prey species responded by moving northward to colder waters, leaving only rounder-bodied butterfish for puffins to offer their chicks. The warm spring also triggered a plankton “bloom” very early in the season, so the butterfish were larger than usual by the time the puffins hatched—too wide for the young birds to swallow. Thus only 31 percent of pairs successfully raised a chick in 2012 (in cooler years the rate is closer to 77 percent). **2013 was almost as warm, and the numbers were even worse: Only 10 percent of puffin chicks survived, causing the population in the Gulf of Maine to drop by a third.**

### References

Jacobsen, R. 2014. Something is seriously wrong on the East Coast—and it's killing all the baby puffins. *Mother Jones*. May/June. <http://www.motherjones.com/environment/2014/04/gulf-maine-puffin-climate-change>

Natureserve Explorer. Atlantic Puffin (species profile). <http://explorer.natureserve.org>



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