

National Seashores, including Cape Cod, endangered by climate change

By [Carolyn Y. Johnson](#) | GLOBE STAFF AUGUST 30, 2012

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Beachgoers headed to Cape Cod National Seashore over the coming decades may find themselves baking in hotter temperatures, and sections of beach and wetlands could be lost or altered as climate change fuels sea level rise, according to a new report by two environmental groups.

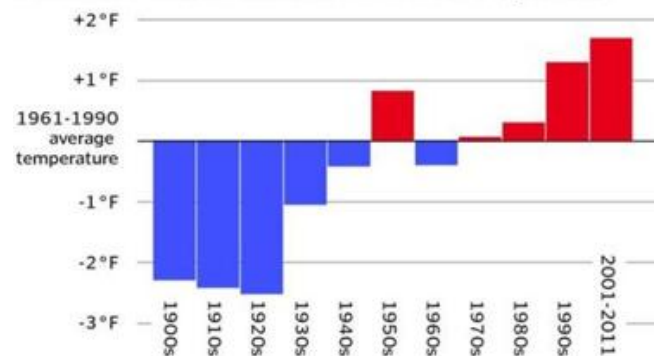
The [report](#), authored by the Natural Resources Defense Council and the Rocky Mountain Climate Organization, found that a majority of the land in five national seashores along the East Coast are at risk of being lost. Overall, the elevation of the Cape makes it less vulnerable than other seashores, but key sections, in the southeast elbow and near Provincetown, are especially threatened, in part because the land in the area is sinking as ocean levels rise.

“In a relative sense, Cape Cod is not as vulnerable as many of the other national seashores that were studied, but many places within Cape Cod National Seashore are vulnerable to sea level rise, as well as storm activity,” said S. Jeffress Williams, an emeritus scientist with the US Geological Survey who reviewed the report.

The report painted a picture of future beach-going that could be dramatically altered if nothing is done to reduce the emissions of greenhouse gases. It found five national seashores have more than half their land a meter or less above sea level,

TEMPERATURES AT CAPE COD NATIONAL SEASHORE

The average temperature on Cape Cod was 1.7 degrees warmer this decade than it was for 1961 through 1990.



SOURCE: Rocky Mountain Climate Organization and National Resources Defense Council report using data from National Climatic Data Center

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making them vulnerable to rising oceans: Fire Island in New York, Assateague Island in Maryland and Virginia, Cape Hatteras and Cape Lookout in North Carolina, and Canaveral in Florida. Sections of Cape Cod and Cumberland Island national seashores would also be affected.

Cape Cod will experience higher sea level rise than is predicted globally because of the added fact that the land is sinking, due to natural shifting of the Earth's crust.

Greg Berman, a coastal processes specialist at Woods Hole Sea Grant and Cape Cod Cooperative Extension who was not involved in the report, said that it can be difficult to draw direct comparisons between the national seashores because of the specific makeup of each one. He also said that the systems of barrier beaches and wetlands are dynamic and constantly responding to coastal erosion, storms, and sea level rise, and that it is too simplistic to assume that all areas below a certain elevation would be filled in with water.

Sea level rise is "happening a bit more rapidly in the last 100 years," Berman said, "so really one of the points they get at within this document is: Are we reaching thresholds with which these natural processes can't keep up?"

For example, he said, barrier beaches or islands naturally migrate. "That works great, as long as there's nothing manmade behind it," Berman said. "But there is likely some sea level rise rate where the increased frequency of flooding and storm effects could lead to regime change," meaning that the natural processes wouldn't be able to keep up and a beach or wetlands could be lost.

The rise in temperature and sea level could be lessened, the report authors said, if measures were taken to reduce the levels of greenhouse gases produced.

The report found temperature rise could make the beach an unattractive summer destination, with many of the ones studied reaching temperatures at or near 90 degrees by 2081 under one scenario, assuming greenhouse gases are emitted at medium or high levels.

In Cape Cod, annual temperatures have already risen; the last decade was 1.7 degrees warmer than the average temperature between 1961 and 1990. But the hotter summer temperatures predicted on the Cape are not as extreme; the report projected that the Cape's summertime temperatures in the year 2081 could be in the low 80s — as hot as recent summers in Cape May, N.J.

In a statement, US Representative Edward Markey said the report is a timely reminder that climate change is something that touches the lives of everyday people. “By ignoring climate change, we risk depriving future generations of the pleasures that many families visiting the Cape will enjoy this Labor Day weekend,” Markey said. “Climate change isn’t a distant threat to Massachusetts and the Atlantic coast — it is our reality now. . . . Congress needs to turn its attention back to creating effective solutions to cut the harmful pollution causing climate change or we jeopardize turning these iconic national parks from what nature intended into what man interrupted.”

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