



Global Warming's Effects on Florida's Oceans and Coasts Demand Immediate Action

Florida's sunny beaches, coral reefs and wetlands, and healthy fishing habitats are some of the reasons why Florida is such a great place to live and visit. But Florida's waters are under siege. Eroding beaches, threatened marine life, declining fish populations, and red tides—to name just a few—jeopardize our way of life, our health, and our state's economy. And global warming is contributing to these threats. NRDC and our partners are fighting to revive and protect Florida's thriving coastal and ocean economy by promoting measures that will reduce global warming pollution and protect coastal habitats and restore robust fisheries.

Florida's Economy Depends on A Healthy Ocean, At Risk from Global Warming

Florida's pristine beaches, miles of coral reefs, and vibrant fish and marine life make it one of the world's most popular—and valuable—tourist destinations. In 2005, 86 million tourists visited Florida, generating \$63 billion and almost 1 million jobs.¹ Recreational fishing contributes approximately \$8.3 billion per year in Florida²; commercial fishing \$1.1 billion and 15,000 jobs.³

And the Florida Keys are home to more marine species than any other region in the United States⁴ and the most extensive living coral reef system in North America (the third-largest in the world)—making it the number one scuba diving destination in the United States and one of the five most popular dive destinations in the world.⁵

The multi-billion dollar industries formed around fishing, diving, and beach-going, depend

on healthy beaches and coastal waters, vital coral reefs, and diverse and robust fish populations—all threatened by global warming.

More severe storms have ripple effects on marine life

Evidence indicates that hurricanes are becoming more intense due to the rising ocean temperatures caused by global warming,⁶ but the impacts of higher temperatures are far more widespread. Warmer oceans can affect some marine species and stimulate larger, longer lasting algal blooms⁷ which can close beaches and harm people and shellfish beds. Researchers predict that an increase of 1 degree Celsius could eliminate all males from Florida's breeding population of loggerhead turtles. (The gender of turtles is determined by temperature; cooler temperatures form males while warmer temperatures form females.)⁸ Rising ocean



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temperatures also cause “oral bleaching”—the expulsion of the algae that gives coral color—causing it to turn pale or white. Although bleaching is a natural phenomenon, it is expected to occur more frequently and with greater intensity and duration as ocean waters warm.⁹ Elevated sea surface temperatures, hurricanes, and disease—all linked to global warming—are considered major threats to elkhorn and staghorn corals, recently listed as “threatened” under the U.S. Endangered Species Act.¹⁰

Sea level rise erodes our beaches and fish breeding grounds

Sea level rise due to global warming will: affect beaches with erosion; lead to loss of key habitats that serve as nurseries for key sports and commercial fish; and result in more severe storm-surge flooding and intrusion of saltwater into the freshwater aquifers that the state relies on for its drinking water.¹¹ Research suggests that a 39 in. rise in sea level would cause beaches to erode from approximately 300 to 3,000 feet along the Florida coast.¹²

Sea level rise will also affect critical fisheries habitat. A 2006 study found that with only a 15 inch sea level rise, nearly 50 percent of saltmarsh and 84 percent of tidal flats in key coastal areas would be inundated and lost, further threatening populations of many commercially and recreationally valuable fish species in Florida including: bonefish, flounder, gag, grouper, grey snapper, permit, popano, red fish, snook, spotted sea trout, tarpon.¹³ Habitat migration inland is likely to be blocked by crowded coastal development.

Rising levels of CO₂ are making oceans more acidic

Oceans have absorbed much of the carbon dioxide emitted by the burning of fossil fuels, making them more acidic, which interferes with, and stunts the growth of creatures with calcium carbonate shells or skeletons.¹⁴ Corals, shellfish, and some plankton are at great risk. Scientists are especially concerned about the cumulative effects that “acidification” and ocean warming will have on corals.¹⁵

NRDC's Solutions to Address the Threats of Global Warming on Oceans

By implementing comprehensive, sustainable policies that address both energy and coastal and ocean management, Florida can become part of the solution to global warming by protecting the natural resources that drive its economy. NRDC and our partners recommend that:

- The Florida legislature should increase energy efficiency programs and incentives statewide with updated building codes and appliance standards, and utilize the clean renewable energy potential of Florida's resources by developing solar energy and biofuels to reduce carbon dioxide emissions that contribute to global warming, and its impact on our oceans and coasts.

- The Governor and the Cabinet should avoid construction of new fossil fuel generation, especially pulverized coal plants which pollute the air and contribute to global warming.

- The Florida legislature should require emissions reporting so the state can conduct a statewide inventory of greenhouse gas emissions and develop a plan to reduce CO₂ emissions.

- The Governor, Cabinet, and legislature should implement the recommendations made in the Blueprint for Florida's Coastal and Ocean Future—a report endorsed by 160 coastal and ocean businesses, civic, outdoor and conservation organizations that identifies the major problems threatening Florida's ocean waters and coastlines and the actions needed to solve them.¹⁶

- The Governor's office should coordinate programs and provide unified leadership, with citizen involvement, for coastal and ocean management.

- The Governor should host a coasts and oceans symposium that will form the basis of a plan of action for better coastal and ocean management and make implementation of the plan a top priority.

- Fisheries managers should maintain and restore fish populations to healthy levels so that they are more resilient to the impacts of climate change.

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