



Can Florida's Coral Reefs Adapt to Global Climate Change?

A Guide to the
Florida Reef Resilience Program

What Exactly is Reef Resilience?

Even before this era of rapid, human-caused climate change, coral reefs experienced a variety of stresses. “Resilient” is one way of describing those reefs and corals that could withstand or recover from natural disturbances, like hurricanes, and chronic human-caused impacts, like water pollution.

But not all reefs are resilient, and in the worst cases the living coral reef may be replaced by a different and less desirable natural community. The proliferation of algae-covered rock where vibrant, living coral once held sway is a classic example that many Florida divers are all too familiar with.



The Florida Reef Resilience Program area encompasses the Dry Tortugas to Martin County.

The Florida Reef Resilience Program is seeking answers to fundamental questions:

- Are any of Florida’s reefs resilient to climate change?
- If so, where are reefs resilient and where are they not?
- What factors influence a reef’s resilience?
- Who depends on reefs, and what do reef users want and need from coral reefs?
- What actions can people take to maintain the resilience of healthy reefs and improve the resilience of unhealthy reefs?





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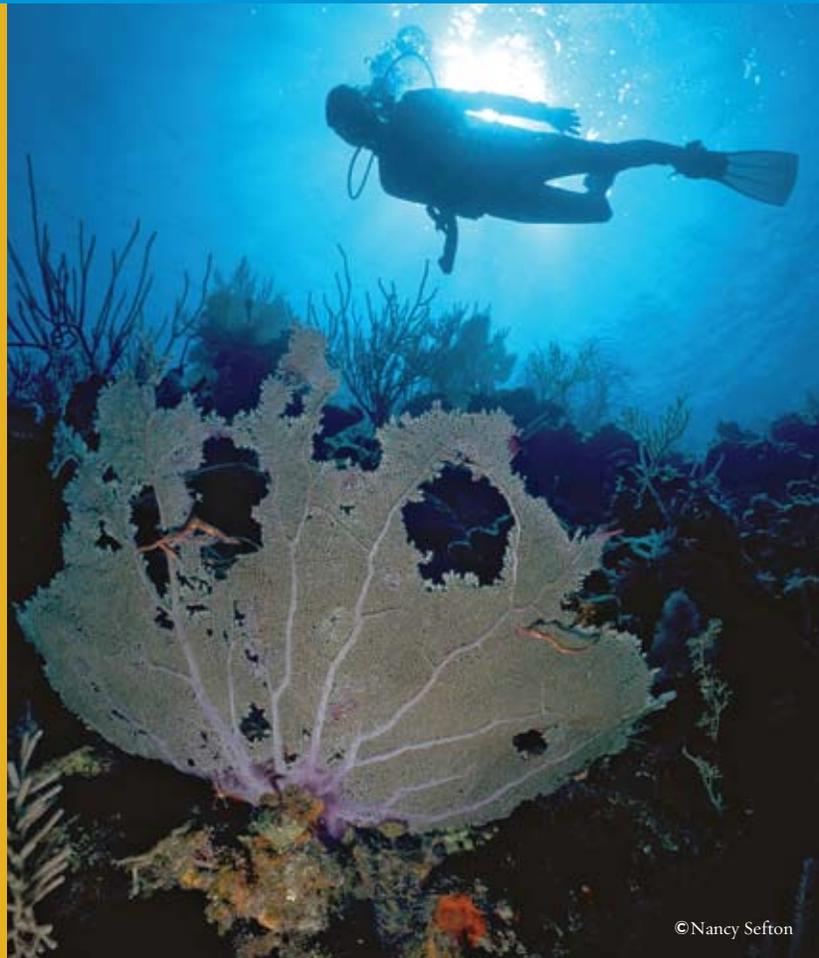
Florida's coral reefs

Coral reefs are one of the Earth's most productive and biologically diverse natural systems. They provide habitat for more than 1 million species of plants and animals — about 25 percent of all marine life combined — and nearly one-third of all fish.

It is estimated that 500 million people rely on coral reefs for food and income. Reefs also supply physical protection from storm damage and coastal erosion that no amount of modern engineering can provide. Life as we know it would not be the same without coral reefs.

Florida boasts one of the world's most significant coral reef ecosystems. This scattered chain of individual reefs stretches from the remote Dry Tortugas west of Key West offshore from Monroe, Miami-Dade, Broward and Palm Beach counties to its northern terminus in Martin County.

Some 3,000 years old, today's living reefs are as much a part of south Florida's cultural landscape as they are a foundation of our biological and ecological seascape. Since the earliest Floridians settled here, people have derived sustenance from the sea. In 2001, anglers, divers and other reef users spent almost \$4.4 billion in Florida, and reef-related activities employed about 81,300 people.



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Threats to Florida's Reefs From Climate Change

- Warming seas and coral bleaching
- Rapidly rising seas
- Ocean acidification
- More powerful, more frequent storms
- Coral diseases

Other Threats to Florida's Reefs

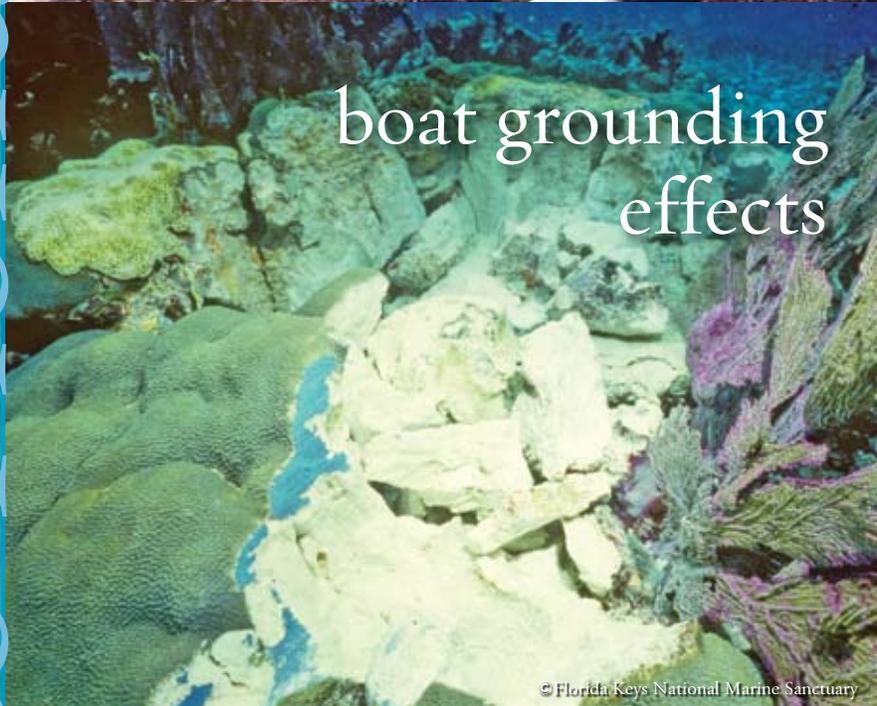
- Overfishing
- Fishing gear impacts
- Water pollution
- Coastal development
- Boat groundings
- Anchor damage
- Diver and swimmer impacts

coral bleaching



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boat grounding effects



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diver and swimmer impacts



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Florida Reef Resilience Program

The Florida Reef Resilience Program brings scientists, reef managers and the people whose livelihoods and recreational pursuits depend upon healthy coral reefs together to achieve a common goal. The program is designed to improve our collective understanding of coral reef resilience by exploring the biological and environmental aspects of reef health and by asking a fundamental question of society: “What is it that people want and need from coral reefs?” Ultimately the Florida Reef Resilience Program seeks to develop strategies to improve the health of Florida’s reefs and to enhance the sustainability of reef-dependent commercial and recreational enterprises.



What is it that people
want and need
from coral reefs?

How can I get involved?

Everyone who knows and loves the reef has a role to play in the Florida Reef Resilience Program and in addressing global climate change.

- Divers, fishers and boaters can report coral bleaching, disease outbreaks, algal blooms and other sightings that are out of the ordinary.
- Reef users should know and obey rules and regulations designed to prevent damage to living corals.
- Everyone should become informed about the causes and consequences of global climate change.
- All of us must take steps to reduce our contributions to global climate change.

For more information contact:

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nature.org/florida



Get out there.®



Australian Government
Great Barrier Reef
Marine Park Authority



Florida Institute of Technology
High Tech with a Human Touch

The Florida Reef Resilience Program is the product of discussions between the state of Florida, the National Oceanic and Atmospheric Administration, The Nature Conservancy and the Great Barrier Reef Marine Park Authority. A parallel program is in progress at Australia's Great Barrier Reef, and the two programs are designed to complement one another and to inform coral reef conservation around the globe. The Nature Conservancy thanks The Ocean Fund of Royal Caribbean International and Celebrity Cruises, the Darden Restaurants Foundation, the Curtis and Edith Munson Foundation, and the Brunckhorst Foundation for their generous financial support of the Florida Reef Resilience Program.