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**For More Information**

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**Contributors**

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**A Climate Change Action Plan for the Florida Reef System**

The Florida Reef System is the third-largest coral reef ecosystem in the world, spanning more than 556 km (300 nautical mi) from Martin County, Florida, on the Atlantic coast, south through the Keys, to the Dry Tortugas (Figure 1). It includes a rich diversity of sensitive coral habitats ranging from hardbottom, nearshore patch reefs to reef flats to deep and outlier reefs, as well as associated seagrass, beach, and mangrove habitat. For decades, overfishing, land-based pollution, and direct habitat degradation from human activities—along with climate-related threats, such as extreme water temperatures and ocean acidification—have threatened this system (Figure 2).

The Florida Reef Resilience Program (FRRP), established in 2004 in response to these threats, brings together diverse interests, expertise, and management authorities. The FRRP evolved organically across disciplines, user groups, and resource management entities that leveraged resources and focused efforts on the emerging challenges. A steering committee representing fishing, diving, science, management, and the environmental community spearheaded the development of a holistic five-year plan: the *Climate Change Action Plan for the Florida Reef System 2010–2015*.

The plan is designed to accomplish three main goals (1) increase reef resilience through active management, (2) reduce impacts from reef-dependent communities and indus-

tries via outreach and adaptation planning, and (3) execute targeted research. It outlines a coordinated response to climate change-related threats, including efforts by state, federal, and local partners working across political, social, and jurisdictional boundaries. Built on well-established principles for helping corals resist, tolerate, and recover from negative impacts, the plan describes actions that reef managers can undertake, in collaboration with stakeholders and other partners, to minimize the damage and associated impacts caused by climate change on reefs and reef-dependent industries, such as tourism and fishing.

The plan includes a range of detailed recommended actions addressing outreach, social resilience, research, and management which, if implemented, should increase the overall resilience of the entire Florida reef system. Top actions include the following:

- Continue and expand the FRRP disturbance response monitoring.
- Implement a marine zoning plan that incorporates resilience and connectivity between reefs.
- Include sea level rise adaptation and mitigation planning in local land use comprehensive plans.
- Evaluate and revise existing monitoring programs to optimize their effectiveness in the context of climate change
- Decrease negative user impacts.
- Target outreach across sectors.



Figure 1. The extent of the Florida Reef System with respect to Florida's reef management jurisdictions. Map courtesy of The Nature Conservancy.



Figure 2. Florida coral reefs in good condition (A) and bleached (B, C). Photos courtesy of the National Oceanic and Atmospheric Administration (A) and the Florida Keys National Marine Sanctuary (B, C).

- Forecast and project impacts to dependent communities to help develop a response plan.
- Increase understanding in the region regarding potential climate change impacts on coral reefs.
- Ensure a long-term water quality monitoring program throughout the entire reef tract.
- Map areas of high and low resilience to prioritize investment of management effort.

This plan, building on the concept of resilience to help a region cope with the reality of climate change, is the first of its kind in Florida and may act as a catalyst to spur climate adaptation up the Florida peninsula, throughout the Caribbean, and beyond. The plan and its process are being actively disseminated via presentations at regional and international trainings, science and policy meetings, and via online knowledge-sharing sites such as the Climate Adaptation Knowledge Exchange (see related vignette, this issue). The FRRP concept and framework can be used by watershed or other professionals faced with complex challenges that span jurisdictions, management authorities, and interest groups and in cases for which meaningful solutions rely on collaboration and the targeting of limited resources. It is particularly appropriate when integrated, multisector action is needed in an environment of little legislative or governmental guidance and leadership.

The plan was released in June 2010; the FRRP will oversee its implementation, and The Nature Conservancy will provide primary coordination. Core FRRP partners include the Florida Department of Environmental Protection, the National Oceanic Atmospheric Administration, and Australia's Great Barrier Reef Marine Park Authority along with several other agencies, universities, and organizations, including: EcoAdapt, University of South Florida, University of Miami, Rosenstiel School of Marine and Atmospheric Sciences, Florida Fish and Wildlife Conservation Commission, Southeast Florida Coral Reef Initiative, Florida Institute of Technology, Mote Marine Laboratory, Nova Southeastern University, and the Florida Keys National Marine Sanctuary.

### For More Information

For more information, please visit <http://www.frrp.org> or contact EcoAdapt at [info@EcoAdapt.org](mailto:info@EcoAdapt.org) or The Nature Conservancy at [info@tnc.org](mailto:info@tnc.org).

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