



REPORT TO CONGRESS

IMPLEMENTATION OF THE NATIONAL CORAL REEF ACTION STRATEGY

REPORT ON U.S. CORAL REEF TASK FORCE AGENCY ACTIVITIES FROM 2004 TO 2006

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Produced in Cooperation with the U.S. Coral Reef Task Force



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<http://www.coralreef.gov/>

This document was produced by the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, in cooperation with the U.S. Coral Reef Task Force, to fulfill requirements of the Coral Reef Conservation Act of 2000 (P.L. 106-562; 16 U.S.C. & 6401 et seq.).

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For information on the U.S. Coral Reef Task Force, see <http://www.coralreef.gov>.

Commonwealth of Puerto Rico

Commonwealth of the Northern Mariana Islands

DHS/USCG Department of Homeland Security/U.S. Coast Guard

DOC/NOAA Department of Commerce/National Oceanic and
Atmospheric Administration

DoD Department of Defense

DOI Department of the Interior

DOJ Department of Justice

DOS Department of State

DOT Department of Transportation

EPA Environmental Protection Agency

Federated States of Micronesia

NASA National Aeronautics and Space Administration

NSF National Science Foundation

Republic of Palau

Republic of the Marshall Islands

State of Florida

State of Hawai'i

Territory of American Samoa

Territory of Guam

Territory of the U.S. Virgin Islands

USACE Army Corps of Engineers

USAID Agency for International Development

USDA Department of Agriculture

Executive Summary





Healthy coral reefs are among the most biologically diverse and economically valuable ecosystems on earth. In the United States and around the world, coral reef ecosystems provide economic and environmental benefits worth billions of dollars in the form of food, jobs, natural products, recreation, and shoreline protection. The beauty and biodiversity of coral reefs attract millions of tourists making tourism the top industry in many coral reef areas. With 10.5 million people living adjacent to a U.S. coral reef in mainland coastal communities or on islands (U.S. Census 2002), coral reefs are an integral part of the culture, heritage, and economies of these regions. With effective management, healthy reef ecosystems can continue to provide these valuable services to current and future generations.

However, many coral reef ecosystems are being degraded by natural and anthropogenic impacts including overfishing, pollution, disease, invasive species, climate change,



Fish surveys conducted by Navy civilian marine ecologist off Marine Corps Base, Hawaii

physical damage, and ship groundings. This combination of stressors has caused a rapid global decline in the health of many coral reef ecosystems, with significant social, economic, and environmental consequences. According to the *Status of Coral Reefs of the World: 2004* (Australian Institute of Marine Science, 2005), 70 percent of the world's coral reefs are threatened, and 20 percent of those reefs are damaged beyond repair. In 2005, coral reefs in the wider Caribbean suffered a widespread and severe bleaching event resulting in extensive coral death in much of the region. This decline and loss of coral reefs has significant impacts on people and communities in the United States and around the world.

In 1998, the United States Coral Reef Task Force (USCRTF) was established by Presidential Executive Order 13089 to coordinate government efforts to protect, restore, and sustain coral reef ecosystems. The USCRTF – composed of 12 federal agencies, seven states and territories, and three Freely

Associated States – oversees implementation of the Executive Order and the federal agency responsibilities it sets forth. In 2000, the USCRTF adopted the *National Action Plan to Conserve Coral Reefs (National Action Plan)*, the first national blueprint for U.S. domestic and international action to address the growing coral reef crisis. *The National Action Plan* calls for U.S. action towards 13 goals in order to protect and conserve valuable coral reef ecosystems. In 2002, the USCRTF developed the *U.S. Coral Reef National Action Strategy (National Action Strategy)* to further implement the *National Action Plan* as called for in the Coral Reef Conservation Act of 2000 (CRCA) (16 U.S.C. §6401 et seq.). These documents provide the guiding framework for the priorities, strategies, and actions of the USCRTF and its members.

The CRCA requires the National Oceanic and Atmospheric Administration (NOAA) to report to the U.S. Congress every two years regarding implementation of the *National Action*

The National Action Plan identified 13 priority goals falling into two key themes:

Understanding Coral Reef Ecosystems

1. Create comprehensive maps of all U.S. coral reef habitats.
2. Conduct long-term monitoring and assessments of reef ecosystem conditions.
3. Support strategic research to address the major threats to reef ecosystems.
4. Increase understanding of the social and economic factors of conserving coral reefs.

Reduce the Adverse Impacts of Human Activities

5. Improve the use of marine protected areas (MPAs) to reduce threats.
6. Reduce adverse impacts of fishing and other extractive uses.
7. Reduce impacts of coastal uses.
8. Reduce pollution.
9. Restore damaged reefs.
10. Improve education and outreach.
11. Reduce international threats to coral reef ecosystems.
12. Reduce impacts from international trade in coral reef species.
13. Improve coordination and accountability.

Strategy. In 2005, NOAA, with assistance from USCRTF member agencies, compiled and submitted to the 109th Congress the first such report entitled *The Report to Congress on Implementation of the National Coral Reef Action Strategy: Report on U.S. Coral Reef Task Force Activities from 2002-2003*. A companion document, *The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States*, provides an assessment of the current ecological condition of coral reef ecosystems and is produced in alternating years to this report. The next assessment report will be available in July 2008.

This document is the second report on implementation of the *National Action Strategy* submitted to Congress as required by the CRCA. The report highlights USCRTF activities and accomplishments from 2004 to 2006 with particular emphasis on collaborative

efforts among USCRTF members and partner organizations. The report addresses each goal from the *National Action Plan* and *National Action Strategy* and charts annual funding by federal agencies for activities directly related to the *National Action Strategy*. Federal obligations for coral reef conservation efforts totaled 166.4 million in 2004, 203.2 million in 2005, and 180.42 million in 2006 (see Appendix B).

This report is not intended to be a comprehensive list of agency programs and activities directly or indirectly affecting coral reefs. More comprehensive information on USCRTF accomplishments and future challenges can be found on the USCRTF website (<http://coralreef.gov>) or by contacting USCRTF members directly.

The report is organized by the 13 goals of the *National Action Plan* and *National*



Action Strategy to reduce threats to coral reef ecosystems worldwide.

Much progress has been made to meet the National Action Strategy's goals and objectives, and much of this progress is due to partnerships among USCRTF members and the involvement of nongovernmental organizations. These partnerships have been successful at coordinating efforts and leveraging resources to more effectively understand and address threats to coral reef ecosystems. These partnerships are a major focus of this report and are included as highlights wherever possible.

Some highlights of USCRTF member activities in 2004-2006 include:

Mapping all shallow coral reefs. The USCRTF's goal is to produce comprehensive digital maps of all U.S. shallow coral reefs (<30 m) by 2009. Benthic habitat maps for

Hawai'i, released in 2003, characterized about 60 percent of shallow-water habitats in the Main Hawaiian Islands, while a separate product characterized shallow-water habitats for most of the islands, banks, and atolls in the Northwestern Hawaiian Islands (NWHI). In 2004-2005, work focused on mapping American Samoa, the CNMI, and Guam. Benthic habitat maps for those jurisdictions were released in 2005.

Monitoring coral reef health. In 2004-2006 USCRTF members continued to develop long-term coral reef monitoring programs as components of the national coral reef monitoring system. The results of these long-term monitoring activities form the backbone of a comprehensive, periodic monitoring report entitled, *The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States*. The second report in the series, released in August of 2005, characterized the condition of shallow-water



A NOAA /Biogeography Branch diver with a 1m² quadrat examining a bleached *Montastraea* colony in St. Croix, US Virgin Islands, October 2005.

coral reef ecosystems based on quantitative results of assessment and monitoring activities conducted by federal, state, territory, Commonwealth, non-governmental, private, and academic partners.

2005 Caribbean Coral Bleaching Event and Interagency Response. In 2005, coral reefs in the wider Caribbean suffered a widespread and severe bleaching event resulting in extensive coral death in much of the region. The USCRTF collaborated to mobilize efforts across the Caribbean to monitor, assess, and research short- and long-term impacts of the bleaching event.

Important Management Actions Taken for Coral Species in the Atlantic and Caribbean Listed as Threatened Under the Endangered Species Act. On May 4, 2006, elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) were officially listed as threatened under the Endangered

Species Act (ESA). This is significant as these two *Acropora* species were some of the most common reef building coral species in the Caribbean, and are the first species of coral listed under the ESA. Monitoring has shown an 80 to 90 percent decrease in the population of elkhorn and staghorn coral from a 1970s baseline throughout the Caribbean region. To provide for the conservation of these two species, NOAA must develop recovery plans and designate critical habitat to help restore these species. (As of publication date, the critical habitat designation is open for public comment through May 6, 2008.)

Conducting Strategic Research. USCRTF agencies and their partners have significantly expanded the understanding of processes affecting the structure, function, and health of coral reef ecosystems, which has improved coral reef ecosystem threat response and reduction. This increased understanding has improved the ability to respond to and reduce



Divers prepare substrate for placement of mooring buoys.

threats to coral reef ecosystems in some areas. For example, the Coral Disease and Health Consortium is coordinating scientific resources to investigate coral health, coral bleaching, and factors affecting the emergence, transmission, and impact of coral diseases.

Improving the use of coral reef-protected areas. USCRTF members and partners increased the use and effectiveness of coral reef Marine Protected Areas (MPAs). For example, new coral reef-protected areas were established or proposed in federal waters and several jurisdictions, including the U.S. Virgin Islands (USVI), Hawai'i, Puerto Rico, Florida, American Samoa, and CNMI. Other key accomplishments include: In conjunction with state, territory, and federal partners on the USCRTF, NOAA completed the first assessment of U.S. coral reef protected areas: *Report on the Status of Marine Protected Areas in Coral Reef Ecosystems of the U.S. Volume 1: Marine Protected Areas Managed by U.S.*

States, Territories, and Commonwealths.

The assessment focuses on the 207 identified MPAs managed by state and territory governments in the seven USCRTF state and territory member jurisdictions. This report provides an inventory of existing coral reef MPAs and MPA management efforts in these seven jurisdictions, and is the first of several assessments designed to comprehend the scope and effective use of MPAs for coral reef conservation in the United States.

One of the World's Largest Marine Conservation Areas is Established in the Pacific: The Papahānaumokuākea Marine National Monument. On June 15, 2006, Papahānaumokuākea Marine National Monument in the NWHI was created under a proclamation by President Bush. The Monument is one of the largest conservation areas under the U.S. flag, encompassing 362,062 square kilometers. The coral reefs in Papahānaumokuākea are home to over



Turtle in the Northwestern Hawaiian Islands

7,000 marine species, one quarter of which are endemic to the Hawaiian Archipelago. Papahānaumokuākea is also of great cultural importance to Native Hawaiians. The Monument is jointly managed by USCRTF members Hawai‘i, NOAA and the Department of the Interior (DOI) (U.S. Fish and Wildlife Service (USFWS)).

Reducing the impacts of coastal uses. Ship groundings and anchor damage continue to affect coral reef health throughout U.S. waters. USCRTF agencies have improved planning for and response to grounding events and implemented measures to avoid vessel impacts by improving navigational aids and installing permanent moorings that obviate the need to anchor on coral reefs.

Reducing the impacts of pollution on reefs. Land, sea, and air pollution continue to seriously affect coral reef ecosystems. Many actions have been taken to reduce these impacts, including the removal of more

than 511 metric tons of marine debris from coral reef ecosystems and shorelines in the Northwestern Hawaiian Islands (1996-2006).

Reducing the International Threats to Reef Ecosystems. In an effort to strengthen management of coral reef resources; preserve coastal biodiversity by preventing habitat destruction, pollution, and over-exploitation; and promote sustainable use of coral resources, the United States provides funding and expertise to developing countries. The USCRTF has supported coral reef activities in Latin America, the Caribbean, Southeast Asia, the Middle East, and East Africa. For example:

Response to the Indian Ocean Tsunami. On December 26, 2004, the Indian Ocean Tsunami struck throughout the Indian Ocean basin, affecting hundreds of thousands of people in 12 countries throughout the region and causing widespread devastation. Following the initial disaster response, U.S. efforts were



Mangrove zone, in Roatán, Honduras for Project USAID/MIRA.

shifted to rebuilding lives, livelihoods, and communities through medium- and long-term rehabilitation, with an emphasis on securing and protecting the future of coastal communities, and the natural resources upon which many communities depend. In response to the tsunami event, USCRTF members and partners supported an assessment of the impact of this natural disaster on coral reefs and associated ecosystems. The results were published in a report entitled *Status of Coral Reefs in Tsunami Affected Countries: 2005*.

Micronesia Challenge. USCRTF jurisdictions in Micronesia committed to expand effective conservation of marine and terrestrial resources through the Micronesia Challenge. The Micronesia Challenge aims to conserve 30 percent of nearshore marine and 20 percent of forest resources across Micronesia by 2020. This challenge is due to the leadership of the President of Palau and includes the Republic of the Marshall Islands, the Federated States of Micronesia (FSM), the Commonwealth of the Northern Mariana Islands (CNMI), and Guam.

A Reef Manager's Guide to Coral Bleaching articulates the state of knowledge on the causes and consequences of coral bleaching and presents management strategies to help local and regional reef managers prepare for and respond to mass coral bleaching. In 2003, the USCRTF committed to the development of an interagency partnership for planning a comprehensive, integrative program for understanding local and system-wide coral reef responses to climate change, including application of this knowledge for local reef management. Developed as an output of this effort, *A Reef Manager's Guide to Coral Bleaching* provides information on responding to mass bleaching events; developing bleaching response plans; assessing

ecological, social, and economic impacts; and applying tools for identifying and building long-term reef resilience.

Improving coordination and accountability.

The USCRTF has worked to increase coordination among its members, assess current efforts, and improve effectiveness of these actions. For example, in 2002, state and territory members of the USCRTF, with assistance from federal agency members, developed 3-year local action strategies to identify and implement priority actions to reduce land-based sources of pollution, overfishing, recreational misuse and overuse, lack of public awareness, disease, and coral bleaching and climate change – six key threats to coral reefs. These Local Action Strategies (LAS) help link local action to the national goals and objectives in the National Action Plan. This LAS effort includes approximately 760 projects across the seven jurisdictions and has generated \$25 million from numerous government and non-governmental sources applied to project implementation to date (2003-2006). The LAS framework has allowed the USCRTF to more clearly identify and address local needs, connect local priorities to national goals, and coordinate federal agency actions to better support each local jurisdiction's needs and management of reef resources.

Federal Agency Grant and Opportunities Workshops.

To better meet the capacity and funding needs of jurisdictions, USCRTF federal agencies with grants and funding opportunities for coral reef ecosystem conservation participated in training workshops to assist stakeholders in U.S. island states and territories in understanding, applying, and competing for federal grants aimed at coral reef ecosystem conservation.



LOOKING TO THE FUTURE

The above highlights provide only a brief overview of the USCRTF member activities and accomplishments during 2004 to 2006. The activities included in this report represent significant achievements by government and non-governmental partners to reduce the threats to coral reefs and conserve healthy, coral reef ecosystems, and the human communities depending on them. However, these accomplishments represent only intermediate steps toward achieving the goals of the *National Action Strategy*. Much remains to be done.

NOAA and the USCRTF remain committed to building on this foundation of achievement and collaboration to meet the goals and objectives set forth in the *National Action Strategy*. This will require the development of new partnerships and opportunities, and developing specific targets for coordinated action to address the *National Action Strategy*'s goals and objectives. Important opportunities include:

International Coral Reef Initiative. The United States and Mexico will serve as co-hosts of the International Coral Reef Initiative Secretariat from July 2007 to July 2009.

2008 International Year of the Reef. There continues to be an urgent need to increase awareness and understanding of coral reefs. To further conserve and manage valuable coral reef and associated ecosystems, the International Coral Reef Initiative designated 2008 as the International Year of the Reef (IYOR

2008). The USCRTF will celebrate its ten-year anniversary by leveraging planned activities in IYOR 2008 to strengthen and enhance its efforts and collaborative USCRTF activities.

2008 International Coral Reef Symposium. Every four years the International Coral Reef Symposium (ICRS) convenes a major scientific conference to provide the latest knowledge about coral reefs worldwide. Natural scientists, resource managers and users, conservationists, and students meet to advance and share information on coral reef ecosystems. The 11th ICRS will be held in Ft. Lauderdale, FL, USA, July 8-11, 2008. This is the first time in over 30 years the ICRS has been held in the continental United States. Over 2,000 attendees are expected from the international marine science, management, and conservationist communities, making this the largest ICRS ever:

Reauthorization of the Coral Reef Conservation Act. In May 2007, the Administration proposed legislation to reauthorize the Coral Reef Conservation Act of 2000. The proposal would strengthen U.S. Coral Reef Conservation efforts by continuing the provisions of the existing Act and adding new authority for the Secretaries of Commerce and the Interior to hold those responsible for mechanical damage to coral reefs, including vessel groundings and anchor impacts, liable for damages. This new authority would fill an existing gap in current coral reef protection strategies.

Achieving the goals and objectives of the *National Action Strategy* will also build on future opportunities to continue and improve government efforts at federal, state, territory, and local levels, such as strengthening of existing and new legislation.



Swimmer off the coral reefs of Palmyra Atoll National Wildlife Refuge.