

**WRITTEN TESTIMONY OF
TIMOTHY R.E. KEENEY
DEPUTY ASSISTANT SECRETARY FOR OCEANS AND ATMOSPHERE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE**

**HEARING ON
REAUTHORIZATION OF THE CORAL REEF CONSERVATION ACT OF 2000**

**BEFORE THE
COMMITTEE ON NATURAL RESOURCES
SUBCOMMITTEE ON FISHERIES, WILDLIFE AND OCEANS
U.S. HOUSE OF REPRESENTATIVES**

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Madam Chairwoman and Members of the Committee, thank you for inviting me to appear before you today. I am Timothy Keeney, Deputy Assistant Secretary for Oceans and Atmosphere at the National Oceanic and Atmospheric Administration (NOAA), in the Department of Commerce. I also serve as co-chair of the United States Coral Reef Task Force (CRTF).

We are pleased to see that many Committee members are interested in working on reauthorization of the Coral Reef Conservation Act, as evidenced by the recent introduction of H.R. 1205 and the support of Representatives Faleomavaega, Bordallo, Christensen, and Abercrombie. NOAA is actively working with our federal partners on an Administration bill to reauthorize the Act. We are reviewing H.R. 1205 and request an opportunity to supply comments on the bill.

NOAA's mission is to understand and predict changes in the Earth's environment and to conserve and manage coastal, marine, and Great Lakes' resources to meet our nation's economic, social, and environmental needs. Today, I will be discussing the contributions made by NOAA to coral reef conservation as authorized by the *Coral Reef Conservation Act (CRCA) of 2000*.

Why Coral Reefs Are Important

Coral reefs, often called the "rainforests of the sea," are among the oldest and most diverse ecosystems on the planet and have become an integral part of the culture, heritage, and economies of societies around the world. These ecosystems are important for economic and environmental benefits they provide in the form of food, jobs, natural products, pharmaceuticals, and shoreline protection.

Coral reef ecosystems have survived for millions of years, weathering impacts of natural disturbances like severe storm events and tsunamis. However, natural stressors are now being compounded by the warming of oceans associated with natural and anthropogenic climate change, and human-induced factors including pollution, overfishing, and physical

damage such as ship groundings. A combination of stressors has caused a rapid decline in the health of many coral reef ecosystems globally, and if left unchecked this decline will lead to significant social, economic, and environmental consequences. For example, staghorn and elkhorn corals, once the dominant shallow-water corals in Florida and the Caribbean, have declined an estimated 97 percent throughout their range in the 1980s and 1990s. This led NOAA to list these species as threatened in May 2006; they were the first coral species to be listed under the *Endangered Species Act*. The Global Coral Reef Monitoring Network estimated in the 2004 edition of the *Status of Coral Reefs of the Worlds Report* that 20 percent of the world's coral reefs have been destroyed and predicts that 24 percent face impending destruction from adverse human activities.

What NOAA Has Accomplished Under the CRCA of 2000

In 2000, Congress enacted the *CRCA*, which established a national program to conduct activities to conserve coral reefs, leading to the creation of the NOAA Coral Reef Conservation Program (CRCP). The *CRCA* authorizes NOAA to carry out a number of activities to promote the wise management and sustainable use of coral reef ecosystems, to develop sound scientific information on the condition of coral reef ecosystems, and to assist in the preservation of coral reefs by supporting external conservation programs. The *CRCA* also calls for the creation of a national strategy.

The CRCP, through efforts across NOAA, supports and implements coral reef conservation projects within U.S. jurisdictions and waters with shallow-water coral reefs. This includes Florida, Hawaii, Puerto Rico, the U.S. Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, Navassa Island in the Caribbean, the remote U.S. island territories in the Pacific, and the surrounding U.S. exclusive economic zone. The CRCP also works with partners to support coral reef conservation projects outside U.S. jurisdictions.

In the six years since its inception, the CRCP has worked to build capacity locally within U.S. coral jurisdictions and internationally in key areas: to map, monitor, characterize, restore, research, and assess the condition of coral reef ecosystems; provide management support; understand the threats to healthy coral reef ecosystems; and promote public awareness and education on the value of and threats to coral reef ecosystems. To accomplish its statutory requirements, the CRCP relies heavily on a network of governmental and non-governmental partners to assist in the cooperative conservation and management of coral reef ecosystems. The Program operates under an ecosystem-based management philosophy, keeping in mind the interconnectedness of terrestrial and marine ecosystems and striving to proactively protect these resources.

In 2002, NOAA, in cooperation with the CRTF, published *A National Coral Reef Action Strategy*. I would like to discuss some of our successes in implementing the *CRCA* and the action strategy.

Addressing the threat of coral bleaching

Coral bleaching occurs when corals are stressed by temperature and light, and expel the symbiotic algae living in their tissues. Bleaching that lasts longer than one week can lead

to coral death and loss of coral reef habitats for other marine life. In August 2005, the CRCP's new Coral Reef Watch Satellite Bleaching Alert system sounded the warning of an oncoming warming event in the Caribbean, which led to an unprecedented cooperative response. The alerts mobilized local efforts to monitor the bleaching as it happened, and gave scientists critical advance warning to develop response strategies and minimize additional stress to reefs. NOAA scientists took the lead in coordinating the documentation of the coral bleaching event, collecting and mapping over 3,600 bleaching, disease, and mortality observations from more than 100 collaborators in 25 jurisdictions. This event, the most documented in history, has increased our understanding of bleaching events. The data showed that record-breaking thermal stress had caused the worst bleaching event on record in the Caribbean, with as much as 90 percent of corals bleached and 40 percent mortality or greater at many sites throughout the region. It also showed that bleached corals were frequently attacked and killed by coral diseases following the bleaching event. Through the CRCP, NOAA is working with the Environmental Protection Agency, the Department of the Interior (DOI), and other partners to understand the causes and solutions to coral diseases that have devastated reefs in the Caribbean. To respond to future events, the bleaching alert system will be expanded from six Caribbean sites to 24 sites throughout the wider Caribbean, and a total of 96 worldwide.

Working in partnership

NOAA, in collaboration with state and territory partners, conducted the first comprehensive, nationwide inventory and assessment of all coral reef protected areas managed by states and territories. This assessment, unveiled at the CRTF meeting held here in Washington, DC last week (February 28th - March 2nd), further supports the development of networks of effectively managed protected areas, which will help ensure the long-term viability, ecological integrity, and sustainable use of coral reefs. The inventory identified 207 Coral Reef Ecosystem Marine Protected Areas found in seven jurisdictions (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Hawaii, the U.S. Virgin Islands, Puerto Rico, and Florida). The majority of sites identified five main challenges that need to be addressed to help them achieve management goals and objectives including enforcement, funding and resources, management capacity, monitoring, and public support.

NOAA's efforts under the CRCA have also addressed the threat to reefs from marine debris and abandoned vessels. Derelict fishing gear from distant water fisheries is the greatest anthropogenic impact to the coral reefs surrounding the Northwestern Hawaiian Islands (NWHI). NOAA leads a partnership with the State of Hawai'i, DOI, the U.S. Coast Guard, and nongovernmental and local organizations to remove derelict fishing gear from NWHI. Since 2001, this large-scale effort has removed over 542 tons of marine debris, and in 2005 completed removal of all major accumulations of debris from the Northwestern Hawaiian Islands. NOAA continues to monitor and remove additional marine debris accumulation. Because derelict fishing gear continues to accumulate in this area, in 2006 CRCP scientists led efforts to assess the extent and impact of marine debris in the main Hawaiian Islands for the first time. Hot-spot debris areas were located via aerial surveys, and these data were used to create maps of debris distribution and

abundance. These maps will aid communities and federal, state and local coastal managers to identify and prioritize clean-up areas and target sites for future monitoring. NOAA has also created an Abandoned Vessels Program, which developed a comprehensive database of abandoned vessels used to identify candidate wrecks for further attention and to initiate removal of the highest priority cases.

In 2006, NOAA's Coral Reef Conservation Program (CRCP) awarded almost \$10 million in grants to external partners in support of coral reef research, education, management, and conservation. Representing over 35 percent of the CRCP budget for 2006, these awards reflect NOAA's strong support for cooperative partnerships and conservation efforts outside the agency. Funds supported a range of activities, from community conservation projects to large-scale coral reef observation systems, and included support for three coral reef research institutes – one each in Hawai'i, Florida and Puerto Rico. Grants included NOAA's Coral Reef Conservation Grants Program, which supports grants in six domestic and international categories, and the jointly managed NOAA-National Fish and Wildlife Foundation Coral Reef Conservation Fund (Coral Fund). In its first five years, the Coral Fund provided over \$12 million in federal and non-federal matching funds for 140 coral conservation projects in 28 countries, seven U.S. trusts or territories, and four U.S. states. The Coral Fund is designed to foster public-private partnerships and to promote site-based conservation efforts.

NOAA, in cooperation with its partners, plays a major role in international coral reef conservation and we participate in efforts such as the International Coral Reef Initiative (ICRI). ICRI supports international coral reef research and management efforts, including the Global Coral Reef Monitoring Network. In fact, the CRTF and NOAA's partnership with the global scientific community led to the U.S.'s successful bid to host the 2008 International Coral Reef Symposium, which is the largest international gathering of coral reef scientists and managers. NOAA is also taking an integral planning role in the 2008 International Year of the Reef.

Collecting and disseminating data and information to better understand reefs

Partnering with other federal agencies as well as state and territorial governments, NOAA has helped build a national integrated reef monitoring system. Integrated monitoring programs measure and evaluate the condition of the ecosystem over time, help assess the efficacy of management actions, and provide comparable data sets and products that can be used to adapt these measures. In 2005, NOAA produced the second *State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States*. This report established the first quantitative baseline of the conditions of U.S. shallow coral reef ecosystems. More than 160 scientists and resource managers contributed to the report, which documents the geographic extent of reef ecosystems and the status of water quality, benthic habitats, associated biological communities, and key threats to coral ecosystem health. The third report, scheduled for publication in 2008, will focus on changes in data over time.

Another of NOAA's goals is to produce comprehensive digital habitat maps of all U.S. shallow-water coral reefs (those found at less than 30 meters or 98 feet in depth). Habitat

maps provide information about coral reef ecosystems to scientists and managers, assisting them in designing research and management plans, assessing damaged habitats, monitoring reef health, and evaluating the results of their work. As of 2006, scientists in the CRCP, in cooperation with our partners, and coordinated through the Coral Reef Task Force, have completed the mapping of shallow-water coral reefs for American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, the Northwestern Hawaiian Islands, the U.S. Virgin Islands, Puerto Rico, and nearly all of the shallow-water coral ecosystems of the main Hawaiian Islands; only Florida remains. These efforts bring mapping of shallow-depth U.S. coral reef areas to over 3,475 square miles. To complete shallow-water mapping efforts by 2009, NOAA scientists are assessing approximately 3,282 square miles of high-resolution satellite imagery for Florida to prepare for mapping there.

Outreach and education activities to build public awareness and local capacity are another way NOAA promotes sustainable management of coral reef ecosystems. NOAA has reached out to stakeholders both by creating and distributing educational materials and conducting workshops and training modules. NOAA has also assisted state and territorial governments in enhancing their human resource capacity for marine resource management by providing technical trainings and workshops for managers, by creating internship and fellowship programs within the jurisdictions and in Washington, D.C., and by providing direct funding to support management staff.

The value of the U.S. Coral Reef Task Force (CRTF)

NOAA continues to play an active role in the CRTF. CRTF was established by Executive Order in 1998 and is composed of twelve federal agencies, seven states and territories, and the three freely associated states. As co-chair of the CRTF with DOI, NOAA leads the planning of the biannual CRTF meetings, which provide an important venue for the exchange of information in which members can voice concerns about their coral reef conservation efforts and collaborate with colleagues to find more effective alternatives. Many of NOAA's coral reef conservation efforts are the result of partnerships with the various federal agencies and state and territory governments on the CRTF.

To assist with on-the-ground management of threats to coral reefs, the CRTF adopted a resolution in 2002, which called for the development of Local Action Strategies (LAS) by each of the seven U.S. coral reef jurisdictions (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Hawaii, the U.S. Virgin Islands, Puerto Rico, and Florida). The LAS are locally-driven roadmaps for collaborative and cooperative action among federal, state, territory, and non-governmental partners that identify and implement priority actions needed to reduce key threats to valuable coral reef resources. Approximately 760 total projects have been identified to address nine threat areas across the seven jurisdictions. Roughly 65 percent of all LAS projects identified are currently being implemented (493 total projects). These projects have produced significant results in areas such as improved public awareness of coral reefs, building local capacity, and improving local management of coral reefs. In addition to direct LAS funding assistance from many sources, local agencies have been very

successful at leveraging hundreds of thousands of dollars in volunteer services and in-kind resources for assistance with project implementation. NOAA led the coordination of this initiative on a national level and, along with DOI and other CRTF federal agencies, provided support both in the form of funding and capacity building toward the implementation of the LAS.

As I have outlined, the authority provided to NOAA under the CRCA has yielded many benefits to coral reef management and protection. The President's FY 2008 budget request includes \$25.8 million for the Coral Reef Conservation Program. Funding at this level would provide an additional \$1.0 million over what was enacted in 2006 that would be used to further implement LAS mentioned earlier. NOAA's continuing coral reef conservation efforts will include forming new international partnerships and fostering coral protection by recreational interests.

Reauthorization of the CRCA

The above sample of recent accomplishments represents intermediate steps towards achieving the goals of the *National Coral Reef Action Strategy*. Much remains to be done to halt the degradation of coral reefs. Reauthorization of the *CRCA* is an important step for continuing our work to protect and restore coral reefs in the United States and abroad. While the *CRCA* has allowed NOAA to develop an effective coral program, there are some limitations to the current *CRCA* that if addressed could significantly advance efforts to reduce threats and conserve our valuable coral reef resources.

One of the significant threats to coral reefs is mechanical injury to reefs from ship groundings, improper anchoring, and other events that can destroy the physical reef structure. When these activities take place, it is critical to be able to respond to the incident as quickly as possible. Response within 72 hours is important to mitigate the damage by righting and reattaching broken live coral and stabilizing the reef structure. In addition, any grounded vessel should be removed by trained experts as soon as possible to minimize the damage to the coral. Finally, once the initial response is completed, it is important to be able to restore the reef as close to its previous state as possible. Although the *CRCA* provides the authority for NOAA to give emergency grants for addressing unforeseen or disaster-related circumstances, we have never implemented this provision. Due to the amount of time that it takes to process a grant, this is not an appropriate vehicle for responding to an emergency situation. In some instances, when the threat of an oil spill exists, some funding may be available under the *Oil Pollution Act*, but we have numerous examples where NOAA has no jurisdiction or funding to respond.

In Fort Lauderdale, three cargo freighters greater than 500 feet in length ran aground on coral reefs between March and September of 2006. One of the most recent groundings, the 650 foot long M/V Clipper Lasco, was investigated by the state of Florida. It was determined that the reef and its biological community suffered significant damage. In addition to the damage sustained by the reef substrate (e.g., stony corals), soft-bodied organisms such as sponges were dislodged or crushed. The vessel also left significant amounts of toxic bottom paint on the reef substrate. An earlier grounding that occurred

in almost the exact same location resulted in significant coral injury to nearly 60,000 square feet of coral reef.

Five coral reef groundings were reported to the U.S. Coast Guard (widely believed to be only a small percentage of the actual number) in Puerto Rico between January 1st and February 21st of this year. The most significant of these was a 58-foot trimaran that ran aground on a reef north of Isleta Marina near Fajardo, Puerto Rico in January. The vessel's hull ruptured upon impact and was partially submerged. Since there is no apparent pollution threat from this vessel, salvage is the responsibility of the vessel owner. Puerto Rico's Department of Natural and Environmental Resources (DNER) was contacted to ascertain if they had any plans to respond in order to coordinate salvage efforts and facilitate triage of impacted corals. At that time, DNER was aware of the situation, but did not have resources available to respond. Later reports from Puerto Rico indicated that 2,100 square feet of reef was impacted, resulting in hundreds of coral fragments, corals covered in anti-fouling paint, and a large portion of the reef being buried under sediment stirred up by the response vessel's propeller and debris from the vessel's break-up. If trained experts had been able to respond, many of the coral fragments could have been salvaged and reattached. In addition, with the proper oversight, further reef damage could have been prevented during response.

Although the federal government has clear statutory authority to address coral reef damage from groundings in designated protected areas such as national parks and national marine sanctuaries, our authority to respond to groundings that occur outside of such areas is more limited. The Administration believes that making such authority applicable to appropriate Federal agencies involved in coral reef conservation would enable the Federal government to more effectively respond to damaging events. Appropriate authority would allow agencies to respond to events and recover from the responsible party the costs for both this response and carrying out, where necessary, comprehensive damage assessment and restoration activities on injured coral reefs.

The Administration and Congress have recognized the value of the CRCP. It would be appropriate to recognize this support by authorizing the CRCA at the President's FY 2008 request level of \$25.8 million, and ensure that an adequate portion of this funding is available for effective program administration. Further, the current language allocating the appropriations between the grant and the national programs is confusing and contradictory. This language requires clarification, which could be accomplished by either outlining how funding should be allocated across all sections of the CRCA or by providing NOAA the flexibility to make allocation decisions to meet the highest priority national needs.

Under the authorities provided in the CRCA much progress has been made toward understanding and protecting coral reefs. Addressing the issues mentioned above would greatly enhance NOAA's ability to meet the goals set forth in the Action Strategy.

Conclusion

The *CRCA* is an important tool that provides us with authority and funding authorization for the scientific understanding, protection, and management of these highly important and fragile ecosystems. We strongly encourage you to reauthorize the *CRCA* *and look forward to working with you as you further develop your bill*. Thank you for your time and consideration. I would be happy to answer any questions you might have.