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## **NEW CORAL REEF MANAGEMENT GUIDE PROVIDES STRATEGIES TO CONSERVE WORLD'S CORAL REEFS**

Innovative strategies to conserve the world's coral reefs are included in a new guide released today by NOAA, the Australian Great Barrier Reef Marine Park Authority and The World Conservation Union (IUCN). "A Reef Manager's Guide to Coral Bleaching" will provide coral reef managers with the latest scientific information on the causes of coral bleaching and new management strategies for responding to this significant threat to coral reef ecosystems.

"Coral reef managers can play a critical role in helping reefs survive coral bleaching events," said retired Navy Vice Adm. Conrad Lautenbacher, Ph.D., undersecretary of commerce for oceans and atmosphere and NOAA administrator. "The reef manager's guide lays out key actions managers can take before, during and after bleaching events to help reduce impacts of bleaching and promote resilience of the reef ecosystem to help it recover from severe bleaching events."

"The Australian Government is proud to share its expertise with reef managers worldwide in this highly anticipated publication. Australia is at the forefront of developing new strategies and tools to respond to mass bleaching events, minimize impacts and build long-term coral reef resilience to climate change," said Andrew Skeat, Great Barrier Reef Marine Park Authority (GBRMPA) executive director.

The reef manager's guide, developed in partnership with the U.S. Environmental Protection Agency, The Nature Conservancy (TNC) and other organizations, grew out of a 2002 resolution by the U.S. Coral Reef Task Force calling for development of information and tools for coral reef managers to address threats from coral bleaching. The reef manager's guide can be found online at [www.coralreef.noaa.gov](http://www.coralreef.noaa.gov) and includes contributions from over 50 experts in coral bleaching and coral reef management.

"By implementing actions suggested in the guide, coral reef managers are in a unique position to increase our understanding of the phenomenon of coral bleaching, to take meaningful action during a bleaching event, and to develop strategies to support the natural resilience of reefs in the face of long-term changes in climate," said David Kennedy, manager of NOAA's Coral Reef Conservation Program, which helped produce the guide.

The reef manager's guide reviews management actions that can help restore and maintain resilience of coral reef ecosystems. This review draws on a growing body of research on ways to support the ability of coral reef ecosystems to survive and recover from bleaching events. The reef manager's guide includes specific guidance and case studies on how to prepare bleaching response plans, assess impacts from bleaching, engage the public, manage activities that may impact reefs during bleaching events, identify resilient reef areas, and incorporate information regarding reef resilience into marine protected area design.

The reef manager's guide also supports a major goal of the U.S. Administration's Climate Change Science Program – to "Understand the sensitivity and adaptability of different natural and managed ecosystems and human systems to climate and related global changes" – by providing managers with options for sustaining and improving ecological systems and related goods and services, given projected global changes.

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The guide identifies three key actions reef managers can take to help reefs survive and recover from mass bleaching events: (1) increase observations of reef condition before, during and after bleaching to increase information and understanding of impacts and areas that may be especially resistant to bleaching, (2) reduce stressors (e.g., pollution, human use) on reefs during severe bleaching events to help corals survive the event, and (3) design and implement reef management strategies to support reef recovery and resilience, including reducing land-based pollution and protecting coral areas that may resist bleaching and serve as sources of coral larvae for “reseeded” reefs.

Coral bleaching is associated with a variety of stresses including increased sea surface temperatures. This causes the coral to expel microscopic algae living in their tissues – algae that provide corals with food. Losing their algae leaves coral tissues devoid of color and thus appearing to be bleached. Prolonged coral bleaching (over a week) can lead to coral death and the subsequent loss of coral reef habitats and the vital services they provide to coastal communities including food, jobs and income, as well as protection from the impact of storms.

Mass coral bleaching events have increased in frequency and intensity since the first recorded event in 1982, resulting in significant coral mortality and other ecological, social and economic impacts in many reef ecosystems. In 1997-98, mass bleaching is estimated to have caused over 90 percent coral mortality in many reefs in the Indian and Pacific oceans, destroying 16 percent of the world’s coral reefs. These increases in coral bleaching over the past two decades have been attributed to ocean warming seen in tropical waters around the world. In 2005, Caribbean coral reefs experienced massive coral bleaching followed by coral disease outbreaks and high levels of coral mortality throughout the region. This was the most widespread and severe bleaching ever reported in the Caribbean Sea.

The Great Barrier Reef Marine Park Authority is the principal advisor to the Australian Government, through the Minister for the Environment and Heritage, on the care, development and management of the Great Barrier Reef Marine Park. The Authority works in partnership with other government agencies, industry, community groups and individuals to help preserve the social, economic and environmental values of the Great Barrier Reef.

The World Conservation Union strives to achieve significant improvement in the conservation of marine biodiversity and sustainable use of natural resources in marine and coastal ecosystems throughout the world.

In 2007 the National Oceanic and Atmospheric Administration, an agency of the U.S. Commerce Department, celebrates 200 years of science and service to the nation. From the establishment of the Survey of the Coast in 1807 by Thomas Jefferson to the formation of the Weather Bureau and the Bureau of Commercial Fisheries in the 1870s, much of America's scientific heritage is rooted in NOAA.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 60 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.

On the web:

Reef Manager’s Guide to Coral Bleaching: <http://www.coralreef.noaa.gov>

NOAA: <http://www.noaa.gov/>

Great Barrier Reef Marine Park Authority: <http://www.gbrmpa.gov.au/>

The World Conservation Union: <http://iucn.org/themes/marine/>