



Final Report

on



Responding to Climate Change: A Workshop for Coral Reef Managers

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Section 1. Overview

The American Samoa workshop was the second in a series of capacity-building presentations based on *A Reef Manager's Guide to Coral Bleaching (Manager's Guide)*. This book provides a response framework for mass bleaching and the cumulative impacts of climate change. It brings together world-class tools and expertise:

- **NOAA's Coral Reef Watch Program (CRW)**, which uses satellite imagery to predict the on-set and severity of mass bleaching events globally;
- **The Nature Conservancy's (TNC) Reef Resilience initiative**, which seeks to estimate reef resilience to climate change and integrate resilience into marine protected area design;
- **The Coral Reef Targeted Research Program (CRTR)**, researching climate change impacts on coral reef ecosystems and methods for restoring ecosystem resilience;
- **The Great Barrier Reef Marine Park Authority's (GBRMPA) innovative implementation of practical, science-based management strategies for climate change;**
- **The NOAA Florida Keys National Marine Sanctuary's (FKNMS) experience with mass bleaching events, including efforts to implement restoration strategies and a grass-roots approach to building support;**
- **The Global Socioeconomic Monitoring Initiative for Coastal Management (SocMon)**, an initiative supported by the CRCP and the Global Coral Reef Monitoring Network (GCRMN) that facilitates community-based socioeconomic monitoring of coral reef areas.

Funding was provided by the CRCP, NOAA International Program Office, and IM Systems Group. In-kind contributions by CRW, TNC, FKNMS, and GBRMPA supported staff time and materials, and the Fagatele Bay NMS provided a reception venue. Staff from the American Samoa Department of Commerce and the Coral Reef Advisory Group were essential to the workshop's success.

1.1 Goals

This effort aimed to present a capacity-building program around the *Manager's Guide*. This workshop was a refinement of the first presentation of these materials in Australia earlier in 2007.

The training package aims to provide coral reef managers with a working understanding of:

- Impacts of climate change on coral reef ecosystems
- Strategies for responding to mass bleaching events
- Approaches for building resilience into coral reef management

1.2 Participants

The workshop was mainly attended by coral reef management practitioners. Other attendees serve in roles where they directly influence the design and implementation of coral reef management initiatives. Fourteen participants were from American Samoa, three from Hawaii, and three from Guam. These US attendees were mostly from federal and territorial government. Three participants came from Samoa, and three from Fiji. The international attendees represented nonprofits, universities, and national governments.

The American Samoa workshop brought together many of the same instructors from Australia, plus a few new NOAA instructors that will play an integral part in future US training. We were especially grateful to have Lizzie McLeod from TNC, who greatly improved the modules on reef resilience and MPA planning.

1.3 Structure

The workshop's modules were delivered in lectures, hands-on activities, and field exercises. The participants added lively discussion from their personal experience; this enhanced the value of the workshop, and also provided several additions that have been incorporated into the workshop syllabus.

Module 1 was a synthesis of the latest science about observed and expected climate change impacts on coral reef ecosystems. It also presented a strategy for responding to mass bleaching from the *Manager's Guide*.

Modules 2-5 presented the components of a mass coral bleaching response: predicting mass bleaching; monitoring ecological and socio-economic impacts; and implementing management interventions. These components were brought together when participants worked in teams to develop draft bleaching response plans for their regions.

Module 6 was for communicating about mass bleaching to constituents, decision makers, and the general public. As part of this module, participants developed their own key messages on coral bleaching and climate change.

Module 7 included lectures, discussions, and a field exercise on factors that may confer resilience to climate change. Working in groups, participants drafted resilient MPAs for their region. The field exercise took the group to two reefs in Pago Pago harbor, and asked participants to evaluate the expected resilience of the sites.

In Module 8, participants began drafting bleaching response plans for their regions. This exercise synthesized the lessons learned in the other modules, and many participants considered this the best part of the workshop.

Section 2. Outcomes

2.1 Curriculum

In addition to providing training, this workshop also produced an improved library of presentations for future use. The agenda and presentations have been improved based on feedback from Australia and American Samoa participants. The materials are now publicly available on the CRW website: <http://coralreefwatch.noaa.gov/satellite/education/workshop/> .

The workshop has been given again by GBRMPA, in December 2007. The CRCP plans to present this workshop at least twice in 2008 – at FKNMS, and after the US Coral Reef Task Force meeting in Hawaii.



2.2. Participant Feedback

Participants were asked to complete evaluations at the close of the workshop. Feedback was overwhelmingly positive. 92% of participants either agreed or strongly agreed that the modules presented were useful, interesting, clearly delivered, and helpful to their jobs. Examples of comments included:

“Speeches were well-prepared and articulate. Objective of the workshop to help others develop response plans accomplished and very helpful! Good job!”

“The majority of my impressions about this workshop were positive and I think it had real value in giving us a focus on this for 4 days, allowing ideas to become more cohesive and encouraging formation of real action plans. However, a lot of the greatest value was from

discussion between participants and more opportunities for such discussion would have been welcome (got better later in week).”

“Overall, I felt that this workshop was very beneficial and applaud your efforts to provide this training and to create network of practitioners across the Pacific region and beyond.”

A number of participants made suggestions to improve the workshop and these changes will be incorporated into future trainings. Most of these comments focused on the workshop materials, and many participants asked for more time to complete the hands-on activities and group discussions.