

**National Centers for Coastal Ocean Science
Center for Sponsored Coastal Ocean Research
2nd Coral Reef Program Review Meeting**

Honolulu, HI
April 7 – 8, 2004

Meeting Report

Background

The NOAA Center for Sponsored Coastal Ocean Research (CSCOR) held an internal program management meeting April 7 – 8, 2004 for the four coral reef programs that it currently administers. The major goal of the program review meeting is to bring together the Lead Principal Investigator and Project Manager from each project so that they could collectively hear first-hand what their counterpart coral reef programs are doing. A second goal is to promote communication between programs so that individual projects can benefit from their collective successes and failures. A third goal is to inform the representatives from the programs of any revisions in NOAA's internal processes and grants management practices in order to facilitate their grant proposal writing, project implementation, and project reporting requirements.

The CSCOR projects participating in the meeting were: Coral Reef Ecosystem Studies-Caribbean; Coral Reef Ecosystem Studies-Micronesia; Coral Reef Research for Hawaii's Managers; the Hawaii Coral Reef Initiative Research Program (HCRI – RP); and the National Coral Reef Institute. The non-NOAA participants in the meeting consisted of the Lead PI's and the Project Managers of all CSCOR's Coral Reef Programs. This year CSCOR also invited representatives from the Hawai'i chapter of The Nature Conservancy (TNC – HI) to attend the meeting. NOAA participants in the meeting included CSCOR's Program Officers, a representative from the National Centers for Coastal Ocean Science (NCCOS) headquarters and the NCCOS / Center for Coastal Monitoring and Assessment (CCMA) each, and two representatives for NOAA's Coral Reef Conservation Program from the National Ocean Service's Office of Response and Restoration (ORR). Table 1 provides a list of the participants.

As part of the 2004 meeting, the participants attended the most recent HCRI – RP Quarterly PI Meeting held on April 6th, 2004. The purpose of attending this event was to allow CSCOR's other coral programs to experience firsthand one of the mechanisms that HCRI – RP utilizes to determine if and how its research priorities need to be modified in order to fulfill its mission more effectively. Field site visits and other activities were also planned. Some of the participants had the opportunity to visit some of the HCRI – RP research sites on the Kona Coast and the North Shore of the Big Island, as well as visiting the collections of the Bishop Museum in Honolulu and the Hanauma Bay Beach Park (HBBP) in East Oahu. The HBBP is the most visited beach in the State of Hawaii and presents an excellent example of a challenging but effective management of a natural resource.

Presentation Summaries

Current Programs:

Coral Reef Ecosystem Studies / Micronesia (CRES – Micronesia) *Robert Richmond, Principal Investigator, University of Guam.*

The main goals of CRES-Micronesia are to understand the effects of water quality on coral reefs, the role that MPAs have in protection of coral reefs, and how can the science be best implemented to manage coral reef resources. The project is particularly focused on taking the proven knowledge of traditional systems from the Pacific Islanders and applying it to modern policy decision and resource management. Work continues at two main study sites, Guam (Fouha Bay) and Palau (Ngerikill Bay). Two additional sites (one in Pohnpei and Yap each) have been added by direct request of the communities in the Federated States of Micronesia. Water quality issues arise from poor upland forest management practices where native forests are cleared for hunting (Guam) and farming (Pohnpei), filling of mangrove habitats (Yap) and oil spills (Yap). Surface runoff brings in sediments that smother the live coral and sea grass beds. Sediment persists in the bay ecosystems where re-suspension by periodic wave action prevents re-colonization by coral larvae. This project is also continuing its work on the use of biomarkers to determine exposure to pollutants. In collaboration with researchers at John Hopkins University and EnVirtue, a private company, they have been able to identify genetic markers that indicate when a coral has been exposed to a pollutant even if the substance is no longer present in the coral's tissue.

The work of CRES – Micronesia has and continues to build on collaborative work funded by other entities such as the National Institutes of Health's SCORE Program, the US Environmental Protection Agency's STAR Program, the National Science Foundation, and the Department of Interior's Office of Insular Affairs.

Coral Reef Ecosystem Studies / Caribbean (CRES – Caribbean) *Rich Appeldoorn, Principal Investigator, University of Puerto Rico (UPR – Mayaguez)*

The CRES-Caribbean project looks at processes responsible for the decline of coral reefs and is studying the feasibility of alternative management strategies with the ultimate goal of offering advice to resource managers. They are focusing on the effects of sediment loads on the coral reef ecosystem. Sediments are carried onto the reefs by surface runoff. Watershed characteristics and the amount of rainfall determine the sediment loads. Longshore transport of sediments and re-suspension due to wave action are also being considered. Another component of the projects is looking at the role of cross-shelf movement and habitat use by organism in the structure and function of coral reef ecosystems. CRES-Caribbean is also conducting work to develop better understanding of user perceptions of management practices and their impacts to improve MPA development. The socioeconomic work is being done at three sites, one being the location of a new marine reserve. The results will be incorporated into a decision model using ecological and socio-economical data to evaluate alternative management scenarios when creating MPAs.

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The work of CRES-Caribbean is being done in collaboration with NOAA's CCMA and National Marine Fisheries Service, the USGS's Biological Resources Division, the Universities of Miami, Rhode Island, and South Carolina, CARICOMP, and the Island Resources Foundation.

National Coral Reef Institute (NCRI) *Richard Dodge, Project Principal Investigator and Bernhard Riegl, Co-Principal Investigator; Nova Southeastern University (NSU).*

The purpose of the NCRI is to conduct coral reef assessment, monitoring, and restoration. The program identifies gaps and constraints in coral reef knowledge and conducts active research as well as funding extramural hypothesis-based studies. NCRI ongoing projects are focused on mapping and classification of southeast Florida coral reefs using innovative remote sensing techniques, restoration of reefs from catastrophic events such as groundings, and the assessment of marginal reef systems present in cool subtropical waters as potential refugia from sea temperature rise due to the effects of climate change. Additional work is looking at creating tissue-based bioindicators that can serve as early warning of coral stress, effects of artificial reefs on fish populations, taxonomy of pantropic octocorals, and the use of sclerochronology to determine the effects of climate change on disease and growth of corals. NCRI is also involved in developing an international monitoring network.

The work of NCRI is done in conjunction with multiple county, state, federal, and international partners, at the academic, private and governmental level. Collaborators include Florida's Broward County, the Florida Institute of Technology, the US Geological Survey, NASA, other NOAA programs, the Nature Conservancy, the Commonwealth of the Northern Mariana Islands, and universities in South Africa, Egypt, and the United Arab Emirates.

Hawaii Coral Reef Initiative Research Program (HCRI – RP) *Michael Hamnett, Project Principal Investigator; University of Hawaii (UH)*

The HCRI-RP supports coral reef research and monitoring projects in order to provide timely information to resource managers and help in building capacity for more effective management. The program is a collaborative effort between the Division of Aquatic Resources and UH. The project is managed by UH's Social Science Research Institute and is run as an extramural competitive funding program in which projects are selected through an external peer-review process. Research priorities for the annual Request for Proposals are determined by HCRI – RP's Management Committee in consultation with managers, academics, and other stakeholders during the program's quarterly Principal Investigators meetings. Priorities for FY2004 are centered on the main Hawaiian Islands and include non-economic valuation of the coral reefs, effects of stressors, status of the coral reefs, population dynamics of key reef species, and development of an interactive game representing key processes of the coral reefs. The HCRI-RP is also continuing its outreach component, producing several technical documents and videos, hold regular meetings with resource managers, and organizing educational activities.

Beside the constituting partners, HCRI – RP actively collaborates with other federal and state agencies, academic institutions, and non-governmental organizations

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such as NOAA, National Park Service, USFWS, Washington state University, University of California – Berkeley, the Bishop Museum, the Hawaii Chapter of the Nature Conservancy.

Developing Programs:

Caribbean Coral Reef Institute (CCRI) *Richard Appeldoorn, Principal Investigator, UPR – Mayaguez*

A new institution is being established in FY2004 to conduct coral reef research and monitoring activities in the Commonwealth of Puerto Rico. After consultation between NOAA's Center for Sponsored Coastal Ocean Research (CSCOR), the University of Puerto Rico – Mayaguez (UPR – M), and the Puerto Rico Department of Natural and Environmental Resources (PRDNER), the UPR – M is creating the Caribbean Coral Reef Institute (CCRI). The CCRI will be implemented through a Cooperative Agreement with CSCOR and will be based at the Magueyes Island Marine Laboratory in facilities provided by UPR – M. The goal of CCRI is to integrate the research and monitoring capabilities of the UPR – M, the PRDNER, and the scientific community at large with PRDNER informational needs to fulfill the agency's management requirements. The CCRI will be managed jointly by UPR – M and the PRDNER through a formal Management Committee (co-chaired by UPR – M and PRDNER) and a Technical Advisory Committee. Day-to-day management of CCRI will be the responsibility of an Executive Director appointed from the DMS faculty by the Management Committee and a Program Manager to be hired through a competitive process.

The research and monitoring priorities of CCRI will be determined through a formal consultation process between CCRI, appropriate Commonwealth agencies, stakeholders and the scientific community. After its first year, CCRI will move towards becoming a largely competitive program. The competitive portion of CCRI will be run through a partnership with the Caribbean Marine Research Center, which is affiliated with NOAA's National Undersea Research Program. The projects to be funded through CCRI will be selected through a rigorous formal peer-review process. CCRI will regularly review the impact of its activities through open quarterly Principal Investigators meetings and periodic strategic planning workshops. The CCRI meetings will be open for participants to provide comments and advice.

The CCRI through its research and monitoring program will encourage and develop collaborative efforts with other federal, state, territorial, and commonwealth agencies, academic institutions, and non-governmental organizations.

Affiliated Program:

The Nature Conservancy of Hawai'i: Marine and Coastal Conservation Program
Eric Co, Hawaii Chapter of the Nature Conservancy (TNC – HI)

The TNC – HI was instituted in 1980, but its marine program was not established until 2001. The Marine and Coastal Conservation Program (MCCP) was initially funded through a Congressional Appropriation. The MCCP has two primary objectives: 1) to

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enhance coral reef conservation and 2) to build a solid foundation for long-term conservation success. To achieve these objectives they have adopted three key strategies: 1) focus on forging partnerships, 2) expand its capacity with external contractors, and 3) contribute to large-scale efforts to address large-scale threats. Presently, the TNC – HI has grown into a full fledged program with a portfolio of 4 major projects to achieve their objectives. One project has the goal of generating sustainable financing for coral reef conservation through the collection of voluntary user fees from tourists, particularly recreational divers, to establish a conservation fund. A second project focuses on invasive species control using a two-prong approach: active removal by volunteers and outreach and education to prevent the spread of nuisance species. The other two projects aim to identify gaps in information necessary for a comprehensive ecosystem planning framework and determine the suitability of community based marine conservation strategies for Hawaii.

The TNC – HI works closely with multiple partners throughout Hawaii, such as state agencies and local, national and international NGO's. Their efforts are also directly supported by NOAA through Congressional appropriations and the HCRI – RP.

NOAA Presentations:

Evaluating Effectiveness of Coral Reef Management *Ruth Kelty (RK), National Centers for Coastal Ocean Science (NCCOS) / Headquarters*

RK provided a framework with which to evaluate the effectiveness of the programs being implemented to manage and conserve coral reef resources. Evaluating effectiveness provides accountability to the funding agency and provides information to stakeholders. Evaluation also informs decision making so that program goals, priorities, and methodology can be adjusted if necessary so that outcomes are cost-effective. Further benefits are increased understanding of management needs, effects social change by shaping and incorporating public opinion, and helps maintain consistency in effort. Evaluations should be done of:

1. *Program theory*: is the plan sound?
2. *Implementation effort*: are you accomplishing what you intended?
3. *Project impact*: did it have the intended impact?

RK presented a case study using the National Coral Reef Monitoring Program to evaluate the impact of the NOAA Coral Conservation Program.

Grants Management *David Hilmer (DH), NCCOS / CSCOR*

DH provided an update on NOAA's current grant processing and management requirements. The new milestone schedules for grant awards were presented. The number of days is now determined by date of proposal receipt or Congressional Appropriation. Of these schedules, 60 days are required by NOAA's Grants Office to process the application. When possible, projects lasting more than 1 yr awards should be made on a multi-year basis to avoid repeating the process. In other news, a 5% budget discrepancy in application / award documentation will not require a proposal revision, proposals under \$100K will be expedited, and Program Officers are now authorized to approve changes in Principal Investigator, extended absence of key personnel, foreign

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travel, equipment purchases, satisfaction of Special Award Conditions, and request of advance or reimbursement.

Finally, DH provided an update of the status of NOAA's Grants Online process with emphasis on the streamlining of grant application timelines and document submission, and progress reporting. It was noted that applicants will have ready access to documentation throughout the process.

NODC Data Reporting / Program Coordination *Michael Dowgiallo (MD), NCCOS / CSCOR*

MD discussed the requirements for communication of results by the coral reef projects. Besides formal progress and final reports, projects are expected to communicate their results to an external audience, such as resource managers and the community at large. MD also pointed out that as part of a NOAA funded effort, the projects need to make their data available to the National Oceanographic Data Center (NODC), NOAA's ocean meta-database, and to the Coral Reef Information System (CoRIS), NOAA's coral specific meta-database. Arrangements have been made so that projects only report their metadata to NODC, which in turn will pass along the metadata to CoRIS. A template for metadata reporting was handed out. Another, important point on project communication was the need for PI's to participate in the preparation of the bi-annual State of the Reef Report.

NOAA Coral Reef Program Overview *Roger Griffis (RG), Office of Response and Restoration / Coral Reef Conservation Program (CRCP)*

RG provided an overview of NOAA's Coral Reef Program, paying particular attention to the new Matrix Management structure and the CRCP responsibilities. The Coral Matrix serves as a mechanism to effectively implement NOAA's \$30M coral reef budget, assuring that priorities and needs are addressed and avoiding effort duplication. The CRCP also acts a NOAA's liaison with Congress, reporting on the accomplishments of all the programs, internal and extramural, and lobbying for additional support for coral reef initiatives.

Integrative Mapping, Monitoring, and Assessment *Jenny Waddell (JW), NCCOS / CCMA*

JW provided an overview of CCMA's ongoing work creating an inventory of the coral reefs under US jurisdiction and of its monitoring and assessment program. The presentation provided an example of the technologies that CCMA employs and how the resulting products offer managers much needed information on their resources. JW highlighted their work performed in the Hawaiian Islands. Most of CCMA's mapping work is done in collaboration with local agencies to guarantee the right information is provided and to help the agencies build their monitoring capacities.

NOAA Coral Reef Ecosystem Research Plan *Ruth Kelty (RK), National Centers for Coastal Ocean Science (NCCOS) / Headquarters*

RK's presentation was an overview of the status of the development of a NOAA Coral Reef Ecosystem Research Plan (CRERP). The goal of the research plan is improve

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the link between NOAA's coral research efforts and its application to management needs. The plan will identify the kind of intervention needed (i.e., mapping, assessment, etc.), expand management options (i.e., tool and technology development), guide implementation of the management programs, and track and evaluate program success.

Discussion Topics

2008 International Coral Reef Symposium – US Bid Proposal *Richard Dodge (RD), NSU*

RD communicated to the group that the US is putting together a proposal for a bid to host the 11th International Coral Reef Symposium (ICRS) in 2008. The ICRS was last held in the US in 1977. The bidding team is spearheaded by the National Coral Reef Institute, in collaboration with state and Federal agencies. The proposal considers Florida, specifically Ft. Lauderdale, as the logical place to hold the meeting. Businesses in the Ft. Lauderdale, along with City officials, have endorsed the idea and have already put together a cost package for the team. Benefits from hosting the ICRS in Florida include ready access to coral reefs, the region acts as the gateway to the Caribbean so that field workshops could be scheduled at neighboring developing countries. The official bid presentation will be June 29th at the 2004 ICRS in Okinawa, Japan.

Meeting Outcomes

The meeting proved again to be a major success. The opportunity for the projects to present their work to their peers resulted in new collaborative efforts, for example NCRI was able to gain access to satellite imagery from NOAA to use in their fine scale habitat mapping. Face to face contact between CSCOR representatives and the projects proved an effective way for NOAA to get feedback from the PI's on grant management issues such as the grants online process. The participation by TNC – HI presented a good example of the value of CSCOR coral reef programs partnering with non-governmental organizations to leverage their efforts particularly in the socioeconomic arena of coral reef management.

It was agreed by the participants to hold the 3rd annual meeting in Florida at the end of April 2005, hosted by the NCRI.

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Table 1. The list of meeting participants including their position relative to their institutional or project affiliation.

Name	Position	Affiliation
David Ballantine	Back-up Lead Project PI	CRES-Caribbean
Richard S. Appeldoorn	Lead Project PI	CRES-Caribbean
Robert Richmond	Lead Project PI	CRES-Micronesia
Kristine Davidson	Project Manager	HCRI-RP/CRRHM
Michael P. Hamnett	Lead Project PI	HCRI-RP/CRRHM
Jenny Waddell	NOAA Staff	NCCOS/CCMA
David Hilmer	NOAA Staff	NCCOS/CSCOR
Felix Martinez	NOAA Staff	NCCOS/CSCOR
Michael Dowgiallo	NOAA Staff	NCCOS/CSCOR
Ruth Kelty	NOAA Staff	NCCOS/Headquarters
Bernhard M. Riegl	Study PI	NCRI
Carol Fretwell	Project Manager	NCRI
Richard Dodge	Lead Project PI	NCRI
Roger Griffis	NOAA Staff	ORR / Coral Program
Seema Balwani	NOAA Staff	ORR / Coral Program
Nilda Jimenez	Biologist	PRDNER
Eric Co	Marine Program Coordinator	TNC – HI
Nilda Aponte	Director-DMS	UPR/Mayaguez