

NOAA TECHNICAL MEMORANDUM CRCP 5



REPORT ON THE STATUS OF LOCAL ACTION STRATEGIES TO CONSERVE AND PROTECT **CORAL REEFS** FOR YEARS 2002-2006

REPORT TO THE U.S. CORAL REEF TASK FORCE FROM THE TASK FORCE STEERING COMMITTEE

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Report to the U.S. Coral Reef Task Force from the Task Force Steering Committee

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National Oceanic and Atmospheric Administration

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The U.S. Coral Reef Task Force was established in June 1998 by Presidential Executive Order 13089 to lead, coordinate, and strengthen U.S. government actions to better preserve and protect coral reef ecosystems.

U.S. Coral Reef Task Force Steering Committee Members and state and territory points of contact to the U.S. Coral Reef Task Force reviewed, contributed to and endorsed the sections for their jurisdictions, including Lelei Peau (American Samoa), Fran Castro (the Commonwealth of the Northern Marianas Islands), Chantal Collier (Florida), Evangeline Lujan (Guam), Athline Clark (Hawaii), Bill Rohring and Janice Hodge (U.S. Virgin Islands), and Aida Rosairo and Mayra Garcia (Puerto Rico). We would also like to acknowledge Roger Griffis (NOAA Coral Reef Conservation Program), Takiora Ingram (U.S. All Islands Coral Reef Committee), and Kris McElwee and Mary Swift (NOAA's Office of Response and Restoration).

FOR MORE INFORMATION:

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EXECUTIVE SUMMARY



Students in Florida participate in a beach clean-up activity conducted as part of the Awareness and Appreciation Local Action Strategy. source: Florida DEP (credit: Marella Bradway)

LOCAL ACTION STRATEGIES

This report provides an overview of the progress that states, territories, federal agencies, and nongovernmental partners have made over the last five years (2002–2006) in developing and implementing Local Action Strategies (LAS) to reduce threats to the Nation's coral reef ecosystems. The United States Coral Reef Task Force (USCRTF) initiated development of Local Action Strategies in partnership with the U.S. All Islands Coral Reef Committee during the fall of 2002 to increase resources, coordination, and effectiveness of local coral reef conservation efforts in U.S. jurisdictions.

The LAS initiative was specifically designed to help increase and link the goals and objectives of the National Action Plan to Conserve Coral Reefs (U.S. Coral Reef Task Force 2000)¹ with priorities and actions that are relevant for particular areas. The Local Action Strategies are locally driven, short-range roadmaps for collaborative and cooperative efforts among federal,



Education and outreach to schools and local communities are incorporated into many Local Action Strategy projects in American Samoa.
source: American Samoa CMP

state, territory, and nongovernmental partners to identify and implement priority projects that reduce key threats to valuable coral reef ecosystems in each region. Together, the LAS from the seven U.S. coral jurisdictions (American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Florida, Guam, Hawaii, Puerto Rico, and the U.S. Virgin Islands) have identified approximately 760 projects under applicable LAS focus areas to address five priority threats to coral reef ecosystems: land-based sources of pollution; overfishing; recreational overuse and misuse; lack of public awareness; and climate change, coral bleaching, and disease. In addition, several jurisdictions have developed strategies to address three other significant threats within their jurisdictions: population pressure; aquatic invasive species; and maritime industry and coastal construction.

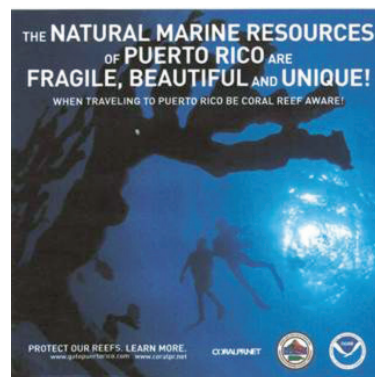
The LAS development process began in 2002 based on a core set of guidelines that were applied in different ways to meet the specific needs and priorities of each jurisdiction. Project implementation began in earnest in 2003-2004. Several jurisdictions

are now completing the core elements of their initial LAS and are beginning to examine how best to revise these strategies to more effectively achieve coral reef management objectives in the future. Some recommendations to help improve these efforts are provided in Section VI, “Next Steps and Recommendations.”

PROJECTS AND FUNDING

Of the 760 total projects identified in 2002-2003, 493 (65 percent) are currently under way or have already been completed, and approximately \$25 million from governmental and nongovernmental sources has been applied to project implementation. This funding represents approximately 40 percent of the total budget needed for implementation.

A considerable portion of this \$25 million was raised through programs or initiatives that existed prior to the LAS initiative but support the LAS effort including state fisheries research projects and enforcement programs, watershed initiatives and state Coastal Zone Management (CZM) programs. There are significant differences in LAS funding across jurisdictions (refer to Section 4, Overall Project and Funding Summary) and some jurisdictions such as Hawaii and Florida, have been able to leverage the federal funds used for LAS implementation nearly one to one with direct non-federal match funds.



¹ The U.S. Coral Reef Task Force National Action Plan was the first national blueprint for U.S. action to address the loss and degradation of U.S. and international coral reef ecosystems. Based on input from government and non-government organizations, scientists, resource managers and other stakeholders, the National Action Plan: (1) identified key threats and issues driving the loss and degradation of coral reefs, (2) established thirteen major goals to address these threats, and (3) outlined objectives and priority actions needed to achieve each goal.

In addition to direct funding support for LAS implementation from the range of federal, local, nongovernmental, and academic organizations for LAS implementation, local agencies have successfully leveraged significant volunteer services and in-kind resources, including time and skills, which have not been quantified in the total amounts of support received. One of the most remarkable accomplishments of the LAS process is the countless stakeholders (both individual and a diversity of organizations) who have been involved with LAS development and project implementation in each jurisdiction. More than 1,000 stakeholders have contributed to LAS development and implementation in Florida alone.

ACCOMPLISHMENT HIGHLIGHTS

The LAS process has resulted in a number of important accomplishments during the five years since this initiative was launched in 2002. Overall, the most significant progress made to date has been in the areas of developing new or expanded partnerships among numerous governmental, nongovernmental, and academic institutions, and increasing outreach and public awareness of coral reef issues.

For instance, in the area of new or expanded partnerships:

- An interagency watershed group has been working effectively in CNMI for the past few years on watershed protection.
- A partnership was established between the Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, and the National Coral Reef Institute to comprehensively map and initiate long-term monitoring of southeast Florida's reefs.
- An important partnership was established in Puerto Rico between the Department of Natural and Environmental Resources Coral Reef Initiative and the Puerto Rico Tourism Company to produce educational pamphlets for tourists.

In the area of increasing outreach and public awareness:

- A year-long "Rare Pride" education and outreach campaign was initiated in American Samoa, and the marine science program at the local community college was enhanced and expanded through LAS projects.
- In the U.S. Virgin Islands, a consortium of coral reef specialists assisted in designing a coral conservation campaign for several major U.S. East Coast airports.
- A "Guardians of the Reef" initiative was launched in Guam that gives high school juniors and seniors the opportunity to deliver coral reef education programs to elementary classes.
- The Southeast Florida Coral Reef Initiative sponsored a series of workshops for the local marine tourism industry to encourage sustainable marine tourism.

Progress has also been made to improve our understanding of coral reef processes and build local capacity to address management issues:

- A number of effective workshops were held to address various threats to coral reef ecosystems, including one highlighting innovative technologies for stormwater and wastewater management and watershed protection in Hawaii.
- A commercial and recreational fishers' workshop and enforcement training for coral reef protection was held in Puerto Rico.
- A summer internship program was successfully hosted in CNMI to introduce college students to natural resource careers and provide hands-on experience in coral reef resource management.

To increase understanding of coral reef ecosystems:

- The Southeast Florida Coral Reef Initiative,



Some of the most significant accomplishments of the Local Action strategy initiative are in increasing outreach and public awareness of coral reef issues. Source: Guam CMP

in partnership with the University of Central Florida, College of Charleston, Broward County Environmental Protection Department, and Haereticus Laboratories, completed the first phase of a biomarker study aimed at linking land-based sources of pollution to coral reef degradation, and initiated the second phase of this study.

- The Coral Reef Advisory Group in American Samoa completed development of a long-term territorial monitoring program and is working to create a research field station to focus on coral resilience.
- The aquatic invasive species team in Hawaii completed a series of surveys and is designing control techniques to better understand and address detrimental impacts of invasive species on Hawaii's reefs.

Moreover, the LAS effort has led to significant advancement and improvement in coral reef management in all jurisdictions:

- In Guam, eco-permit legislation was enacted to manage activities in Guam's marine preserves,

and a Conservation Officer Enforcement program ensures greater protection for natural resources in the marine preserves.

- A new framework for marine managed areas is under development in Hawaii.
- The U.S. Virgin Islands (USVI) Coastal Zone Management Commission recently adopted regulations to implement a management plan for the East End Marine Park on St. Croix. The park regulations are currently pending approval by the USVI governor's office.

CHALLENGES

Limited capacity of local institutions to manage activities that impact reefs continues to be a key obstacle to increasing the scope and effectiveness of coral reef conservation efforts, particularly in the territories. Another major challenge is funding for local initiatives. Although there has been some increase during the past five years in federal and state LAS funding (as well as the commitment of private and volunteer resources), additional funding is needed to complete all of the proposed LAS projects. While close to \$25 million in implementation funds has been committed during the past five years, almost \$37 million, representing 60 percent of the total cost for project implementation, is still needed to complete the LAS projects originally proposed. Part of the funding needed represents project costs for new Local Action Strategies that have recently been developed and are just beginning implementation, such as the climate change, coral bleaching, and marine disease strategies in Hawaii and Guam. This funding figure does not, however, include other anticipated out-year costs for developing and implementing a second cycle of LAS. A particular ongoing concern is the need for new sources and increased funding for large-scale projects such as watershed restoration projects to address land-based sources of pollution, long-term water quality monitoring, and a marine laboratory in American Samoa. Support for such projects may require the development of new and innovative finance strategies if we are to successfully understand the state of the coral ecosystem resources and

abate major land-based sources of pollution that are harming coral reef health.

REPORT ORGANIZATION

This document describes the overall status of the LAS initiative in five sections and additional background and contact information is provided in two appendices:

I. Introduction and Background – The LAS Status Report opens with an introduction to the need for locally-led action to protect coral reefs and a description of LAS development in each jurisdiction.

II. Accomplishments of the Local Action Strategy

Process – A comprehensive account of the key accomplishments during the initial four years of LAS project implementation (2003–2006) follows the introduction. Notable activities fall into areas such as public outreach and participation, local capacity building, and improved coral reef management actions.

III. Overall Project and Funding Summary – This section presents a general summary of the status of LAS project funding and completion across all jurisdictions.

IV. Summary of the Local Action Strategy

Processes and Current Project Funding for Each Jurisdiction – A more detailed description of the LAS approach for each jurisdiction is provided, including a breakdown of current project funding and project implementation status.

V. Next Steps and Recommendations – The LAS Status Report closes with an overview of “lessons learned” from the overall LAS effort. Recommendations were generated from information provided by the states and territories in the spring of 2006 and during discussions at a half-day workshop held at the May 2006 USCRTF meeting in Washington, D.C. The lessons learned section offers insights on how the future development, implementation, and tracking of new or revised strategies can be improved based on the experiences of the last five years.

VI. Appendix I – Puerto Rico Resolution – At its December 2001 meeting, the U.S. Coral Reef Task Force identified a need to revise some of its procedures in order to move from planning to implementation of the National Action Plan to Conserve Coral Reefs (NAP). The resulting recommendations that inspired the development of the Local Action Strategy initiative are documented in the 2002 Puerto Rico Resolution.

VII. Appendix II – State and Territory Points of Contact – Contact information is provided in Appendix II for USCRTF points of contact leading the LAS initiative in the U.S. coral jurisdictions.

I. INTRODUCTION AND BACKGROUND



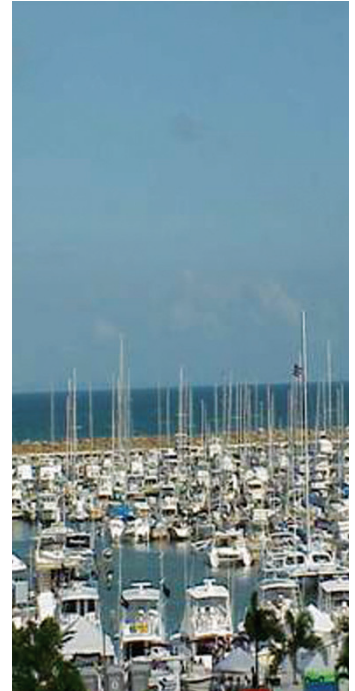
Source: NCRI



Hawaii DAR



NOAA



Puerto Rico DNER

Coral reefs are unique and complex ecosystems that support the cultural, social, and economic interests of those who live near them, and there is significant national interest in protecting them. Shallow-water (less than 18 meters water depth) tropical ecosystems in the United States cover approximately 37,000 square kilometers of the U.S. territorial sea and exclusive economic zone. Shallow-water coral reef ecosystems in the U.S. include the coral reefs themselves as well as a mosaic of associated habitats, such as seagrass and macroalgae beds, mangroves and other emergent vegetation, sand patches, and areas of uncolonized hardbottom. Coral reef habitats have traditionally played a central role in many U.S. islands where community-based conservation, subsistence fisheries, and protected areas have been successfully managed for generations (National Action Plan, 2000).



Land clearing for coastal development leads to increased sedimentation on coral reefs delivered in stormwater runoff. Source: NOAA (credit: J. Kozłowski)

Multiple human-related stressors increasingly threaten these fragile ecosystems, overwhelming their ability to survive. Reefs are deteriorating worldwide. An estimated 10 percent of the world's reefs have already been lost and another 60 percent are threatened.

In 1998, Executive Order 13089 established the U.S. Coral Reef Task Force (USCRTF), to strengthen the nation's stewardship of coral reef ecosystems through increased collaboration of federal, state, and territorial governments responsible for coral reef conservation. In response to this coordinated effort, the USCRTF developed a National Action Plan in 2000 (NAP) to identify the major threats to coral reef health. Key threats include coral bleaching, disease, and a variety of human activities including shoreline development, polluted runoff from agricultural and land-use practices, ship groundings, over-harvesting, recreational impacts, destructive fishing practices, and global climate change. The NAP also lays out a road map to address these threats to coral reefs, ideally leading to improved coral reef health and sustainability for future generations.

While the aim of the NAP is to provide overarching guidance to the USCRTF members in order to improve research and management of coral reefs, several challenges exist that prevented adequate response to the identified threats. Among these challenges were the following:

- Limited funding targeted for project implementation;
- Lack of locally-based strategic vision to determine the best use of limited funds;
- Inadequate coordination among various levels of government seeking to address coral reef issues;
- Limited local institutional capacity to address complex issues; and
- Lack of understanding of coral reef issues by the general public.

To contend with these challenges, the USCRTF chose to focus more attention on implementation strategies that support the overall NAP through coordinated, locally-led initiatives. Based on a comprehensive assessment of ongoing local initiatives, past experience, expert consultation, recommendations from the All Islands Coral Reef Committee, and diverse constituent input, the USCRTF passed the "Puerto Rico Resolution" in October 2002 (Appendix I). This resolution calls for the following actions:



Physical contact from anchors, vessel groundings, fishing gear and divers can harm fragile coral polyps. Source: FDEP (credit: Jerry Metz)

- 1) Improve implementation of the NAP by focusing on five priority threats:
 - a. Land-based sources of pollution (LBSP)
 - b. Overfishing²
 - c. Lack of public awareness (focus on user groups)
 - d. Recreational overuse and misuse
 - e-1. Climate change and coral bleaching, and
 - e-2. Disease
- 2) Increase coordination among federal, state, territorial, and local stakeholders to develop cooperative and locally-focused, three-year action strategies for applicable focus areas giving due consideration to local priorities, federal agency mandates, and contribution toward the goals of the NAP;
- 3) Develop a system to track progress toward achievement of the NAP; and
- 4) Increase human resources to implement the proposed process through the establishment of a USCRTF Secretariat and adequate support for the Secretariat of the All Islands Coral Reef

Committee, in addition to other capacity needs assessments and strategies to address those needs.

As a result of this resolution, the USCRTF launched the development of three-year Local Action Strategies in each of the seven member states and territories. The strategies are locally-driven roadmaps for collaborative and cooperative action among federal, state, territory, and nongovernmental partners, which identify and implement locally relevant priority actions and projects needed to reduce the top five key threats as identified in the Puerto Rico Resolution: overfishing; land-based sources of pollution; recreational overuse and misuse; lack of public awareness; and climate change, coral bleaching, and disease. Several jurisdictions also recognized the need to address unique local priority threats: aquatic invasive species in Hawaii; population pressure in American Samoa; and maritime industry and coastal construction impacts in Florida.

Table 1 depicts the various LAS threat areas that were selected as priority areas for each of the seven coral jurisdictions.

Table 1. Overview of LAS threat areas addressed by each jurisdiction.

LAS Threat	American Samoa	CNMI	Guam	Hawaii	Florida	USVI*	Puerto Rico
Land-based Pollution	◆	◆	◆	◆	◆	◆	◆
Overfishing	◆	◆	◆	◆	◆ ^a	◆	◆
Recreational Overuse		◆	◆	◆		◆	◆
Public Awareness	◆	◆	◆	◆	◆	◆	◆
Disease, Bleaching, and Climate	◆		◇	◆			
Other**	◆			◆	◆		

◆ LAS complete and being implemented

◇ LAS still under development

^a Florida's overfishing LAS includes fishing, diving, and other uses.

* All USVI LAS projects for the first 3-year period are focused specifically on the St. Croix East End Marine Park

** "Other" threats include population pressure (American Samoa); aquatic invasive species (Hawaii); maritime industry and coastal construction (Florida).

² For the purposes of this report, the term "overfishing" refers to significant depletion of reef species by commercial, recreational, or artisanal fisheries. It does not necessarily imply that a status of overfishing or overfished as defined by the Magnuson-Stevens Fisheries Conservation and Management Act has been determined.

DEVELOPMENT OF THE LOCAL ACTION STRATEGIES

The development of Local Action Strategies began soon after the October 2002 announcement of the Puerto Rico Resolution. Each jurisdiction developed individual strategies through an approach that was appropriate to the local resource situation, governmental structure, and capacity. All strategies were created through a collaborative planning process that relied heavily on committees and work groups. This approach provided a means to include the views and voices of hundreds of stakeholders, including representatives of local and international nongovernmental organizations (NGOs), academia, industry, and concerned citizens. Stakeholders had numerous opportunities to offer input through extensive workshops, briefings, and public meetings.

Federal USCRTF member agencies offered assistance to the LAS development process in various ways. The National Oceanic and Atmospheric Administration (NOAA), the Department of the Interior (DOI), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture Natural Resources Conservation Service (USDA/NRCS), and other federal agencies provided representatives to the LAS working groups to serve as “navigators” who assisted in organizing and initiating the LAS development process. In addition, NOAA supplied contractual and staffing support in several jurisdictions (Florida, USVI, Puerto Rico, Guam, and CNMI) to help facilitate the myriad of stakeholders involved in the LAS development process. Finally, in 2005 and 2006, the DOI U.S. Fish and Wildlife Service (USFWS), with assistance from NOAA EPA and USDA/NRCS, held workshops in Puerto Rico, U.S. Virgin Islands, Hawaii, Guam, and CNMI on federal grant and other technical assistance opportunities that could potentially support LAS projects.

While the approach to LAS development was unique in each jurisdiction, all of the resultant strategies include targeted goals, objectives, and projects to reduce the impacts of specific threats. The processes took differing amounts of time; therefore, completion of the strategy documents and implementation years vary both among jurisdictions and among target threat areas within jurisdictions. The various strategies

also reflect the extent to which each jurisdiction had previously been managing coral reef ecosystems. In jurisdictions with limited management experience, the initial Local Action Strategies focus on developing a better understanding of the coral reef ecosystem and public outreach and education. Jurisdictions that already had management activities in place also chose to include activities in their LAS for near-term development of new or expanded coral reef management programs. Copies of LAS documents for all U.S. jurisdictions are available on the USCRTF Web site at <http://www.coralreef.gov/las/index.html>.

Although LAS project implementation generally began in 2003-2004 for all jurisdictions, significant time, resources, and effort went into planning and developing the LAS during 2002 and 2003. This LAS status report is inclusive of the years when LAS development took place, but some of the LAS budget statistics and summary information focus only on those years when funding was sought and expended for actual LAS project implementation (2003-2006).

II. ACCOMPLISHMENTS OF THE LOCAL ACTION STRATEGY PROCESS



The Laulau Bay Watershed Restoration Project aims to address erosion and sedimentation problems that are threatening the coral reefs in the bay. Source: CNMI DEQ

The LAS activities outlined in this report have addressed local coral reef management needs and resulted in on-the-ground achievements such as capacity building, effective use of marine protected areas, increased education and outreach, increased best management practices, and improved research and monitoring of coral reef health. These LAS efforts have provided a framework for U.S. Coral Reef Task Force (USCRTF) member agencies to connect local priorities to national goals and to coordinate federal agency actions with local management of reef resources to better address priority threats. This effort represents a significant step forward in advancing the goals of the Puerto Rico Resolution. The



Coral reef educational signage at beaches in Puerto Rico informs visitors what they can do to protect coral reefs. source: PR DNER (credit: Luis Encarnación)

accomplishments summarized in this section reflect the efforts of all seven jurisdictions to develop and implement their Local Action Strategies over the last five years (2002-2006).

IMPROVED CORAL REEF MANAGEMENT

All jurisdictions have made significant progress in improving coral reef management. New management plans or regulations for marine protected areas were developed in Guam, Puerto Rico, and the U.S. Virgin Islands; mooring buoys were installed in numerous places; and several jurisdictions have taken steps to reduce the effects of sedimentation and stormwater on corals, particularly during coral spawning periods.

American Samoa

- American Samoa Environmental Protection Agency 2005 Water Quality Standards revisions include **prohibiting activities that have the potential to adversely affect coral reproduction**, starting five days after the October full moon for a stoppage period of no less than 60 days to include the major coral reef and pololo spawning period.

Commonwealth of the Northern Mariana Islands (CNMI)

- CNMI completed **architectural and engineering designs for stormwater control into the Laulau Bay Area of Saipan** and will begin implementing certain portions of the design plans for stream crossings as more funding becomes available.
- A study on non-point source pollutant tracking for the **Garapan Watershed** has been completed, and a **Conceptual Stormwater Management Plan** was developed as a result of the study. The product is now utilized by the Department of Public Works as a guide for drainage improvements in the study area.
- A major accomplishment in conservation planning efforts in CNMI is the **management plan for the Mañagaha Marine Conservation Area**, which was completed in 2005. This plan outlines management strategies and an action plan for 15 years and includes management goals and objectives, as well as short- and long-term strategies for accomplishing those goals.

Florida

- Florida's Maritime Industry and Coastal Construction Impacts (MICCI) Team held a **workshop to develop "Guidelines for Rapid Response to, and Restoration/Repair of,**



Increased enforcement of marine and fisheries conservation regulations are part of several jurisdiction's Local Action Strategies. source: CNMI DLNR

Coral Reef Injuries in Southeast Florida.”

Among the 60 participants at the two-day workshop were agency representatives from Florida Department of Environmental Protection, NOAA, the National Park Service, the U.S. Army Corps of Engineers, the U.S. Coast Guard, and Miami Dade, Broward, Palm Beach, and Martin Counties, as well as representatives from local and national nongovernmental organizations (NGOs), and consulting, engineering, and legal firms. The MICCI Project Team released the final workshop proceedings report in May 2006, which can be downloaded from http://www.dep.state.fl.us/coastal/programs/coral/reports/MICCI/MICCI_Project3_Report.pdf.

- In Florida, a review of state and local water quality standards and available data was conducted to **identify and characterize the links between pollution and coral communities** and, where possible, to quantify the relative contributions of point and non-point pollution sources.

Guam

- Executive Order 2003-17, issued by the Governor of Guam, mandated a **government-wide recycling program**.
- Several legislative changes in Guam have resulted in the eco-permit, which requires a permit for all activities in the marine preserves.
- Guam’s Reserve Conservation Officer Program provides **additional enforcement** for the protection of the marine preserves and other natural resources.
- An **attorney dedicated to natural resource issues has been placed in the Office of the Attorney General**.

Hawaii

- The Hawaii Department of Land and Natural Resources (DLNR) is currently working on a **new framework for marine managed areas** in Hawaii. The framework will identify and

group areas with similar management goals and objectives as well as biological and socio-economic criteria. During the summer of 2005, the draft framework was presented to small focus groups in communities around the state to obtain input; most comments focused on increased and improved outreach and education, enforcement, and preservation of traditional methods. A revised draft is currently being circulated for DLNR review. The final draft will be presented at public meetings prior to final approval by the Board of Land and Natural Resources.

- In support of the Aquatic Invasive Species (AIS) LAS, **administrative rules for ballast water management** for the state of Hawaii have been drafted and sent to the state attorney general’s office for review.
- The Hawaii **Aquatic Invasive Species Team inspected several vessels** before they traveled to the Northwestern Hawaiian Islands. The July 2005 grounding of the M/V Casitas on Pearl and Hermes atoll required the use of a tug and barge from Honolulu to help remove the vessel from the reef. Prior to both vessels leaving Honolulu, the AIS Team inspected their hulls and found several non-native (and potentially invasive) species. Based on this finding, the vessel owners were requested to clean the hulls and undergo re-inspection.
- The Aquatic Invasive Species Team has undertaken the **eradication or removal of several** invasive species, including an intentionally introduced corallimorph, *Actinodiscus nummiformis*, the aquatic weed *Egeria densa* (Brazilian elodea) from a lake at the Hoomaluhia Botanical Garden, and the invasive octocoral *Carijoa riisei* from the island of Kauai in an attempt to prevent its introduction into the ecologically sensitive Northwestern Hawaiian Islands Papahānaumokuākea Marine National Monument.
- Hawaii’s land-based sources of pollution LAS has identified cesspools as a significant source

of nutrients that affect coral reefs. **Cesspool replacement criteria** for the Hanalei Watershed have been developed. Ten cesspools have been engineered, and permits applications submitted.

- Hawaii has published “Getting Involved in Caring for Hawaii’s Coastal Resources: A Community Guidebook,” a **guide to assist communities in engaging in coastal stewardship initiatives**.

Puerto Rico

- Puerto Rico installed **demarcation buoys and coral reef signage** in the Canal Luis Peña Natural Reserve in Culebra and Desecheo Island marine protected areas, comprising eight reefs. Coral reef protection signage based on the poster “Cuidado con los Arrecifes” was installed at Palominos and Icacos in the Cordillera Reefs Natural Reserve, Tamarindo and Flamenco beaches in Culebra, and Buyé in Cabo Rojo. Signs will soon be posted at Sardinera and Pájaros beaches, Mona Island, Balneario Pelicano, and the dock at Caja de Muertos Reserve, Ponce, and La Parguera, Lajas.
- A **final draft of the Puerto Rico Coral Reef Management Plan** is presently being reviewed for final approval and adoption by the Department of Natural and Environmental Resources (DNER) Coral Reef Committee.
- A **new regulation for the protection and management of the Puerto Rico coral reefs** was signed by the Secretary of DNER. The regulation is currently in the final stages of the approval process required for the enactment of new regulations.
- A number of **mooring buoys and aids to navigation have been installed** in three of Puerto Rico’s natural reserves: La Parguera, La Cordillera, and Canal Luis Peña, and at Desecheo Island marine reserve.

- **Community-based processes have resulted in draft management plans for three of Puerto Rico’s natural reserves:** Tres Palmas Marine Reserve, La Cordillera Natural Reserve, and Canal Luis Peña Reserve.
- DNER is leading the effort to develop **management plans for three additional natural reserves:** Mona Island, Humacao, and Vieques Bioluminescent Bay.
- An exercise was completed to develop a **list of priority natural reserve sites for management plan development in Puerto Rico**.
- A **legal analysis of community participation in management planning** for the protection of marine protected areas in Puerto Rico is being finalized in collaboration with the University of Puerto Rico – Río Piedras Campus. This legal analysis provides one viewpoint for describing and interpreting the basis for community participation in the development of management plans and in management of marine protected areas.

U.S. Virgin Islands

- The territory is in the final stages of **adopting regulations to implement the management plan for the East End Marine Park on St. Croix**. This park, which covers 60 square miles, is the first site in the U.S. Virgin Islands’ system of marine parks.
- The territory completed the **installation of mooring buoys within the East End Marine Park**. The locations of the buoys were selected based on an analysis of use patterns to ensure that the most heavily visited areas for boaters contained adequate moorings to protect important benthic habitats.

New or Expanded Partnerships and Collaborations to Implement LAS Projects

In every jurisdiction, LAS efforts have brought together groups of diverse organizations and people to develop comprehensive LAS plans that address

specific problems, such as invasive species or coastal construction practices. The LAS process has also had substantial success in leveraging small amounts of funding from additional sources, particularly in Florida and Hawaii. The jurisdictions also report a high degree of volunteer effort in various areas.

American Samoa

- The American Samoa Governor's Coral Reef Advisory Group (CRAG), consisting of the agencies locally involved in resource management issues, recently signed an interagency **cooperative agreement**, enhancing the group's ability to uphold its mission. The agreement outlines how the participating agencies will: coordinate amongst themselves, build capacity, recognize each agency's respective expertise, commit staff, and ensure timely reporting and accountability. The signatory agencies include American Samoa Department of Marine and Wildlife Resources, American Samoa Environmental Protection Agency, American Samoa Department of Commerce (including Coastal Management Program and Fagatele Bay National Marine Sanctuary (NMS) local component), and the American Samoa Community College. Several locally active federal programs also play critical roles, namely, the National Park of American Samoa and Fagatele Bay NMS. Because threats to American Samoa's coral reefs cross the mandates of the signatory agencies and programs, coordination and cooperation is critical for effective management.
- CRAG participates in a **broader governmental effort** to protect and improve management of the territory's ocean resources as an advisory group within the Ocean Resources Management Council. This participation serves to enhance collaboration between CRAG agencies and other governmental and nongovernmental organizations.
- The CRAG assisted in formulating **linkages between concurrent monitoring and research**

efforts, particularly the Territorial Monitoring Program and the coral disease surveys.

- The LAS process in American Samoa brought about **three new programs** through gap identification, funding, or partial funding: the Territorial Monitoring Program, the Marine Science Program at the American Samoa Community College, and Marine Protected Area Program support.

Commonwealth of the Northern Mariana Islands (CNMI)

- The CNMI's coral reef protection LAS was a product of **significant collaborative effort** between CNMI public agencies, non-profit groups, business owners, interested members of the community, and federal agency partners. Through the LAS effort, coral reef management throughout the Commonwealth has notably improved.
- CNMI and federal natural resource agencies and stakeholders have been working together over the past several years with the **Interagency Watershed Group**. Through this group, agencies coordinate ongoing projects and develop new ideas regarding land-based sources of pollution in CNMI's watersheds. Numerous strategic planning sessions have taken place. Currently, the agencies are working on several watershed-based approaches to curbing pollution.
- An LAS project in the **Laolao Bay** area has attracted many **stakeholders and volunteers** in assisting the resource agencies with a revegetation project, and the volunteers have since been involved in a variety of restoration projects throughout the CNMI.

Florida

- A **partnership was established** between the Florida Department of Environmental Protection (FDEP), the Florida Fish and Wildlife Conservation Commission, and the National

Coral Reef Institute (NCRI) at the Nova Southeastern University Oceanographic Center to comprehensively map and initiate long-term monitoring of southeast Florida's reefs.

- The FDEP's **Coral Reef Conservation Program (CRCP)** was established in Miami in May 2004 to plan, direct, and coordinate the implementation of Florida's LAS – the Southeast Florida Coral Reef Initiative. The CRCP promotes and coordinates research, monitoring, partnerships, and stakeholder participation toward the protection of southeast Florida's reefs.

Guam

- Guam **strengthened existing environmental education partnerships.** The results of this increased collaboration include, but are not limited to, the following: public/private partnership of aluminum recycling in Guam schools, and eco-friendly events such as the Guam Liberation Day Parade, Annual Earth Day/Island Pride Festival, Guam Fisherman's Festival, Manaka Run, Kids' Fishing Derby, and the Sleep with the Sharks program.
- Guam partnered with The Nature Conservancy to begin developing **conservation action plans, thus incorporating a holistic, site-based, ecosystem approach to coral reef conservation.**

Hawaii

- Through the aquatic invasive species LAS, Hawaii's Division of Aquatic Resources (DAR) has **increased partnerships with numerous agencies and organizations to address the problem of aquatic invasive species.** Some of the partners include the University of Hawaii, The Nature Conservancy, National Park Service, the city and county of Honolulu, Hawaii Department of Agriculture, and Hawaii Department of Health.

- An **Aquatic Invasive Species Response Team** was established by the Hawaii Department of Land and Natural Resources /DAR to respond to and begin to mitigate impacts from alien species.
- Hawaii's **climate change and marine disease (CCMD) LAS steering committee was formed** in 2005 with representatives from federal and state agencies, research institutions, and NGOs. The steering committee assisted in collecting information and developing an initial background paper on coral bleaching and disease. The steering committee developed goals and objectives for the CCMD LAS and prioritized the actions in the LAS.
- **The recreational impacts LAS partnered with the Hawaii Ecotourism Association** to develop the goals, objectives, and priorities of the LAS. Project implementation is under way.
- The **coral reef fisheries LAS coordinator in Hawaii partnered with the Waikiki Aquarium** to submit a proposal for a NOAA education mini-grant to create a "Threats to Hawaiian Reefs" exhibit at the aquarium. If the proposal is funded, the LAS threats to coral reefs will be featured at the aquarium, with interactive and traditional aquarium displays as well as live exhibits.
- The **land-based sources of pollution (LBSP) LAS is assisting with organizing and facilitating a local advisory committee** for Honolua Bay, Maui. The LAS coordinator discussed formation of the committee with the Maui Reef Fund, Project SEA Link, and Maui Land & Pineapple (MLP) Company. MLP is planning to establish several committees that deal with cultural issues, recreational use, and other issues within the bay.

Puerto Rico

- Puerto Rico **strengthened partnerships** with U.S. Department of Agriculture Natural Resources Conservation Service (USDA/

NRCS), EPA, U.S. Army Corps of Engineers, Puerto Rico Environmental Quality Board, and Puerto Rico Planning Board among others **to address land-based sources of pollution. Pilot projects are being implemented at the Jobos Bay National Estuarine Research Reserve watershed** to reduce sediment and pollutant loadings to coastal waters by implementing and assisting private landowners in applying best management practices (BMPs) and preventative management measurements for land use and activities.

- The **Puerto Rico Coral Reef Initiative Program** partnered with the **Puerto Rico Tourism Company through NMFS' Caribbean Field Office** to address LAS recreational overuse priorities. Through this partnership, a number of educational pamphlets aimed at tourists were produced and distributed to local businesses and tourist information centers. These pamphlets include "Coral Reef: Precautions for Recreational Users in Puerto Rico and the U.S. Virgin Islands," "Coral Reefs and Tourism," "Mangrove Forests and Tourism," and "Tourism and Seagrass Beds."
- **Partnerships between the Department of Natural and Environmental Resources, the Caribbean Fishery Management Council, and the NOAA National Marine Fisheries Service Caribbean Field Office were strengthened** by the LAS effort through cooperative work on projects to develop strategies for overfishing and lack of awareness.

INCREASED OUTREACH AND PUBLIC AWARENESS

Almost every jurisdiction has made great progress in addressing the need to better inform the public of the importance of coral reefs, their status, and threats to their health. Many jurisdictions have developed comprehensive outreach and education efforts where none existed before. For example, Hawaii, American Samoa, Guam, and the U.S. Virgin Islands have developed comprehensive coral reef outreach

programs, with many partners, utilizing multiple products and media outlets.

American Samoa

- In American Samoa, funding for the coral reef education and outreach coordinator **improved coral reef programs in schools and increased media** coverage.
- The coral reef education and outreach coordinator attended training for and began implementation of a year-long **Rare Pride Campaign**.
- Through the LAS, the Coral Reef Advisory Group (CRAG) supported the continued development and expansion of the **Marine Science Program** at the American Samoa Community College.
- CRAG supported the production and distribution of several editions, in both English and Samoan, of the **American Samoa Natural History Guide**. This guide has served as a valuable resource to students and teachers and has increased public understanding of the territory's unique resources.

Commonwealth of the Northern Mariana Islands (CNMI)

- An outreach and education group called the **CNMI Organization for Conservation Outreach (COCO) was formed** and has carried out a number of successful **coral reef-related outreach and education** activities. Resource agencies have involved students and the community at large in coral reef protection issues through school visits, the annual Environmental Symposium, the Boater's Awareness Campaign, and coral reef stakeholder meetings related to LAS development, and a call for proposals to develop a coral reef curriculum was issued.
- The CNMI completed a **fisheries regulation booklet** and has initiated quarterly **forums** with fishermen.

- CNMI's **Interagency Marine Monitoring Program** has revised and expanded its Web site (<http://cnmicoralreef.net>) to provide improved information regarding monitoring activities and improve program data access.

Florida

- Florida's coral program in partnership with NOAA and NGOs developed and launched **a marketable identity for the Southeast Florida Coral Reef Initiative (SEFCRI)**. The identity includes a logo and tagline, "Acting Above to Protect What's Below," which provides a consistent point of reference for the community as they begin to see SEFCRI messages, brochures, exhibits, Web site, and other outreach products. A seven-page media kit containing key SEFCRI messages was completed in conjunction with the identity.
- The SEFCRI conducted a needs assessment to determine **the best approach and public outreach messages** for a campaign targeting increased awareness and appreciation of southeast Florida's reefs. Results of the study are available online at <http://www.dep.state.fl.us/coastal/programs/coral/reports/>.
- The SEFCRI Awareness and Appreciation Team sponsored a series of free **workshops for the marine tourism industry** during May 2006 entitled "Coral Reefs & Sustainable Marine Tourism: Protect Your Business by Protecting Your Reef." The workshops featured international and local experts discussing the socioeconomic value of the coral reefs, innovative local solutions, and market sustainability. Interactive discussions explored emerging issues and encouraged reef conservation as a best management practice.

Guam

- **A series of environmental education and outreach products** were developed to promote coral reef awareness as part of a larger social marketing campaign. The campaign prominently features Professor Kika Clearwater,

a cartoon spokesperson, on a variety of merchandise. Outreach products include an airline video played on all incoming flights to Guam, patches, pins, pencils, posters, restaurant tent cards, a quarterly newsletter, environmental calendars, a recycling guide, fish and wildlife fact sheets, public service announcements for radio, newspaper, and television, teacher guides, and school curriculums.

- There has been a significant **increase in the number of community-driven activities, including volunteer cleanups, tree plantings**, aluminum can recycling drives, and stormwater drainage painting. The natural resource agencies have provided support in the form of plastic bags, work gloves, recycling guides, trees, and paint.
- The government of Guam established two **annual awards to commend environmental stewardship**. These formal government awards are the Environmental Steward of the Year and the Governor's Green School Award.
- The Guam Coastal Management Program has developed "**Guardians of the Reef**," a group of eleventh- and twelfth-graders who will produce and present a program regarding coral reefs to every third-grade classroom on Guam.
- An **Environmental Education Strategy**, a dynamic document intended to provide guidance to all government agencies, **was developed through the collaborative efforts of the Environmental Education Committee**. This document is a direct result of Guam's lack of awareness LAS.
- The Guam Coastal Management Program contracted QMarck, Inc., a marketing research firm, to conduct a **marketing survey in 2005 to establish baseline data regarding public perceptions concerning the environment** and most popular sources of information. The results of this survey have been used to allocate "lack of awareness" funding appropriately, in order to maximize the benefits.

Hawaii

- Hawaii's **"Living Reef" campaign** provides a comprehensive approach to addressing the lack of public awareness regarding the significance of coral reefs. Over 40 organizations and government agencies developed a multi-media approach to present a clear and simple message to the public about the importance of protecting coral reefs.
- Two Living Reef awards luncheons have been held to honor individuals and organizations that have exhibited outstanding leadership to conserve and care for the reefs. Over 30 individuals and organizations from across the state have been nominated and honored at these annual awards, which have been attended by over 200 people each year.
- A **fisherman outreach project** was developed to better understand the interests and recommendations of fishermen for fisheries management. The program collected and analyzed interviews with 55 fishermen on Maui and the island of Hawaii. The interviews reflected that fisheries in Hawaii have declined; fishermen want to see healthy and abundant fish stocks in the future; and they recommended that awareness-raising, improved enforcement, and community involvement be used to accomplish that vision. Additional program information and a report of the summarized findings are available from the Community Conservation Network at www.conservationpractice.org.
- **Numerous outreach activities were conducted in the Hanalei watershed** including: quarterly Hanalei Watershed Hui (HWH) meetings which were video-recorded and broadcast on a public television station; the HWH Web site was updated regularly and the Hui newsletter was published twice a year; and HWH taught 688 schoolchildren in 2005 and gave presentations at Save Our Seas, Taro Festival, Earth Day, and World Water Quality Monitoring Day.
- In partnership with For the Sea Productions, Snorkel Bob Foundation, and Hawaii's Living Reef Program, a seven-minute, **international award-winning video** entitled **"Hawaii Reef Etiquette"** was produced and **is now being shown on all cruise ships and at other key locations statewide**.

Puerto Rico

- Puerto Rico created a **full-color poster on impacts to coral reefs** caused by the illegal collection of ornamental fish and invertebrates.
- A **series of education and outreach materials** was produced by Consultutores Educativos Ambientales C.S.P. with funding from a NOAA Coral Program general grant. Materials include, "Cuidado con los Arrecifes" poster and comic book, and two booklets originally produced by the Virgin Islands Marine Advisory Service that were adapted and translated into Spanish, "Detective Goo Too Preventing Water Pollution" – a 12-page comic book addressing point and non-point source pollution – and "Children and the Sea: A Coloring Book on Ocean Care and Conservation" – a 16-page coloring book.
- Puerto Rico assisted the Urban Arts Institute in the design of a **coral reef conservation campaign for airports**, including developing messages and translating them into Spanish. The campaign will expand to include Puerto Rico's international airport and roadside billboards.
- Through a project funded by the NOAA coral reef conservation general grant program, a contractor **developed a television and radio public service announcement campaign** to be broadcast on local television and radio stations.

U.S. Virgin Islands (USVI)

- The LAS process helped launch the **Virgin Islands Network of Environmental**

Educators (VINE), an outreach and education network with members representing 28 natural resource agencies on the islands of St. John, St. Croix, and St. Thomas. Network members collaborate on outreach and education planning throughout the islands.

- The Virgin Islands Coral Conservation Consortium (VICCC) was formed to assist the Urban Arts Institute in crafting outreach strategies and messages for the LAS focus area of public awareness. VICCC helped design a **coral conservation campaign for airports** in New York, Miami, and Washington, D.C. A follow-up campaign in the USVI for tourists and residents is being developed.
- A **Snorkeling Excursion Program** has been implemented in partnership with local NGOs. Future implementation will be done in conjunction with local dive shops.
- A commercial van has been purchased and is being retrofitted for use as a **portable kiosk for coral reef education** at the St. Croix East End Marine Park.
- A quarterly newsletter sponsored by members of VINE is distributed in the community and to schools in an effort to **integrate coral reef education in public and private schools**.
- An **informational website** was designed and implemented **for the St. Croix East End Marine Park** (www.stxeastendmarinepark.org) to provide information regarding park programs and policies to the public. Pages present material on the park's history, ecosystems, publications, park activities, and LAS initiatives. Information on LAS is intended to facilitate project implementation and focus efforts by identifying priority areas for participation and collaboration in both park management and research activities.

CAPACITY BUILDING TO ADDRESS MANAGEMENT ISSUES

Jurisdictions have taken numerous actions to increase human capacity, such as hiring new staff and providing training for staff involved in coral reef issues. In addition, NOAA has funded Coral Reef Management Fellows in six of the jurisdictions and is working in each jurisdiction to develop a proposal for capacity needs assessments.

American Samoa

- American Samoa obtained funding to **expand human capacity and develop key skills** in several departments (GIS specialist at Department of Marine and Wildlife Resources (DMWR), MPA Coordinator, Monitoring Coordinator, Coral Reef Initiative Coordinator, Coral Reef Management Fellows, Education and Outreach Coordinator).
- American Samoa **provided training opportunities and workshops** addressing natural resource law enforcement, education and outreach, climate change adaptation, community-based monitoring, and MPA development. **Participatory Learning and Action** workshops were held for several villages participating in the DMWR Community Fisheries Management Program. Community members were provided with tools to develop community action plans for improving their MPA sites and resources.
- An **internship program** for marine science students from American Samoa Community College was established to generate opportunities for community college students to develop skills and gain experience in management and science projects related to the effects of land-based sources of pollution on coral reefs. The internship program has also served to increase youth involvement in reef conservation activities.

Commonwealth of the Northern Mariana Islands (CNMI)

- Through CNMI's **internship program**, the resource management agencies hosted 22 college-level interns during the summers of 2003 to 2006. The internship program introduces CNMI post-secondary students to natural resource careers and gives them an opportunity for hands-on involvement in coral reef resource management.
- CNMI agencies have **expanded capacity** with a Watershed Coordinator, MPA Coordinator, Education and Outreach Coordinator, Coral Reef Monitoring Assistant, and Coral Reef Management Fellows.

Florida

- The Florida Coral Reef Conservation Program's (CRCP) capacity was strengthened by establishing **a partnership with Florida Gulf Coast University to provide staffing services and the subsequent addition of three new staff to the CRCP**. This expanded capacity has enabled the CRCP to create new and collaborative relations with stakeholders, develop and implement additional LAS projects, and increase community outreach efforts.



CNMI's summer intern internship program provides college students with hands on experience in coral reef management. Source: CNMI DEQ



Educational programs are conducted at the St. Croix East End Marine Park to teach school children about coral reef ecosystems and other park resources. Source: USVI DPNR

Guam

- Guam provided **training opportunities** for managers, teachers, and stakeholders. Several stakeholder workshops were held to educate various levels of stakeholders on public outreach, coral reef management, and proper recreational use practices.
- Two **scholarships were created for graduate study in marine biology and natural resource management**. The scholarships require recipients to work for the government of Guam for two years upon completion of master's degrees.

Hawaii

- The Hawaii land-based sources of pollution (LBSP) LAS projects have been helping to build the capacity of stakeholders in the three priority watersheds, as well as statewide. The LAS coordinator has provided **technical assistance to stakeholders on LBSP issues related to coral reef protection** and coordinated workshops and training on stormwater, wastewater, and erosion control practices. The coordinator has also assisted local watershed groups with grant applications and identifying funding sources.
- A **workshop series on land-based pollution threats** to coral reefs was held as part of Hawaii's LAS development. A

workshop on “Innovative Technologies for Stormwater and Wastewater Management” was held in Hawaii in October 2005. In addition, the Center for Watershed Protection conducted training and workshops in Maui and Molokai in February 2006.

- In addition to the **Aquatic Invasive Species Response Team** that was formed on Oahu, a **Monitoring Specialist and Aquatic Invasive Species Technician** have been hired for the island of Hawaii.
- The Aquatic Invasive Species Coordinator has undergone USFWS **Hazard Analysis and Critical Control Point training** to identify possible sources of AIS introduction through state activities.
- The state has partnered with the U.S. EPA to utilize the services of **two EPA presidential fellows** to assist on various projects related to the LBSP LAS.
- A NOAA-sponsored **workshop** was held in Hawaii to begin a Pacific and Indopacific regional dialogue on protocols, nomenclature, and assessment of **marine disease**.

Puerto Rico

- A workshop provided classroom and field **training for administrative hearing officers** and the Puerto Rico Department of Natural and Environmental Resources (DNER) Coral Reef Ranger Team on the biology and importance of coral reefs.
- Two **orientation workshops** were offered to **recreational fishers** in Puerto Rico concerning state and federal fisheries laws.
- **Commercial and recreational fishers workshops** were conducted in numerous communities throughout Puerto Rico in collaboration with the Puerto Rico Sea Grant College Program, Puerto Rico DNER, NOAA National Marine Fisheries Service (NMFS) Highly Migratory Species Division,

and NOAA Enforcement. Commercial fisheries workshops were held in San Juan, Arecibo, Ponce, Mayagüez, Guánica, Puerto Real, Humacao, Aguadilla, Lajas, Fajardo, Guayama, Vieques, and Culebra. Workshops for recreational fishers were held in San Juan, Arecibo, Boquerón, and Ponce.

- Key technical staff from the Puerto Rico DNER that evaluate proposed development projects benefited from **two courses on the use and management of information and data available in the DNER's GIS Data Management Center**. Course participants were introduced to ArcGIS software and provided with basic training to use ArcView, ArcEditor, and ArcInfo to view and interpret spatial coral habitat data as related to proposed coastal development.
- A **series of short workshops on coral reef-related issues** was offered for **personnel of DNER, Environmental Quality Board, and other stakeholders**; topics included fishing regulations, the Coral Reef Conservation Act of 1999, the Puerto Rico Fisheries Law 278, basic coral reef ecology, determination of development impacts on coral reefs, and results of recent research on coral reefs in Puerto Rico. DNER's scientific personnel, including the coral reef staff technical advisory committee, the Auxiliary Secretary for Permits unit, and personnel of the Bureau of Scientific Affairs, conducted the workshops.



Teachers' Challenge Awards in American Samoa provide small grants to teachers for the materials and supplies to carry out coral reef lessons and projects. Source: American Samoa CMP

- The **first DNER symposium on coral reefs was conducted by coral reef researchers in Puerto Rico**. The key participants were members of both the Interagency and Internal Coral Reef Committees, contributors to the LAS effort, and other interested stakeholders. Additionally, there was strong participation by students from several universities with representation from environmental research, management, architectural, and engineering academic tracts. The symposium had wide written and television media coverage.

U.S. Virgin Islands

- U.S. Department of Agriculture Natural Resources Conservation Service (USDA/NRCS) provided an **Area-wide Conservation Planning Workshop** to technical staff working in USVI territorial government agencies and local NGOs.
- The Virgin Islands Coastal Zone Management program has hired **additional permit inspectors** to assist in technical review of site design and inspection.
- A **Caribbean Workshop on MPA Effectiveness and Adaptive Management** was held by NOAA, TNC and the Ocean Conservancy to build interest, momentum, and capacity for Caribbean-based marine managers and conservation practitioners to adaptively manage MPAs in the region. The workshop strengthened efforts to develop and improve management plans in selected U.S. Caribbean and Wider-Caribbean MPAs. Participants included MPA managers and leaders from the USVI, Puerto Rico, the British Virgin Islands, Grenada, Bonaire, and the Bahamas.

INCREASED UNDERSTANDING OF CORAL REEF ECOSYSTEMS

Jurisdictions have undertaken applied research to better understand coral reef ecosystem processes and develop better management techniques. Examples include expanded coral reef monitoring, the

development of bio-markers, and studies of sediment loadings in watersheds that affect coral reefs.

American Samoa

- LAS funds have enabled the American Samoa Coral Reef Advisory Group (CRAG) to attract graduate students and highly qualified researchers to the territory to conduct **management-driven scientific studies and monitoring**.
- Utilizing LAS funds, CRAG developed a **long-term territorial monitoring program**.
- LAS funds have supported the creation of a **research field station on Ofu**, where unique coral reef lagoons and species are the focus of research on coral resilience.
- The American Samoa EPA, in partnership with CNMI, is at the forefront in **developing coral reef biocriteria** and is implementing a diagnostic coral reef monitoring program. This program, now supported in part by LAS funds, has been developed to inform managers, the public, and politicians of the impacts of watershed-based pollution on reef communities around Tutuila Island. It also serves to guide curative, restorative, and preventive management actions.

Commonwealth of the Northern Mariana Islands (CNMI)

- CNMI's **long-term monitoring program** has entered its seventh year and has expanded survey coverage from the outer reefs to include reef-associated lagoon habitats on Saipan and reef flats on Saipan, Rota, and Tinian.
- Two manuscripts describing the relationships between changing environmental variables (both natural and human-generated) and lagoon and coral reef communities have been submitted for peer review and publication. Since the initiation of CNMI's contemporary monitoring program (2000), four manuscripts have been accepted or are currently in review; these manuscripts communicate the program's

monitoring methods and techniques. This process has facilitated the review of CNMI's methods and goals by the international science community, and subsequently improved monitoring effectiveness.

- Local government and NGO contributors created an ecologically-based habitat map of Saipan Lagoon to complement existing NOAA maps, providing an enhanced level of detail to support management planning and decisions.
- An inshore creel survey was initiated, including training in species identification and data collecting. The surveys will be expanded in the future to include boat-based nearshore fishing activities and include additional areas in Saipan, Tinian, and Rota.

Florida

- The Southeast Florida Coral Reef Initiative (SEFCRI) completed **the Southeast Florida Coral Biomarker Local Action Study** which successfully tested the feasibility of using cellular diagnostics to link land-based sources of pollution to coral reef degradation. The study report is available online at <http://www.dep.state.fl.us/coastal/programs/coral/reports/>.
- Florida also completed four years of monitoring for the Southeast Florida Coral Reef Evaluation and Monitoring Project (SECREMP). This **long-term, comprehensive monitoring program**, initiated in 2003, is providing important status and trends data for the northern extension of the Florida reef tract in Miami-Dade, Broward, and Palm Beach counties. SECREMP reports were published online at <http://www.dep.state.fl.us/coastal/programs/coral/reports/>. In 2006, the SECREMP was expanded to include three new sites in Martin County, bringing the total number of SECREMP sites to 13.
- A **benthic habitat map** of the shallow seafloor (0-35 meters) of Broward County in southeastern Florida was developed. Data collected using Laser Airborne Depth Sounder

(LADS) bathymetry, multi- and single-beam sonar, acoustic seafloor discrimination, ecological assessments, and ground-truthing were integrated to produce this first in a series of habitat maps for the southeast Florida region. Mapping of adjacent Palm Beach County commenced in winter 2004 and will be completed in spring 2007.

- The SEFCRI Land-based Sources of Pollution (**LBSP**) **Team established a LBSP technical advisory committee** (TAC) composed of expert scientists to provide guidance and technical **expertise in the design and development of LAS projects targeting land-based sources of pollution and water quality** in the coastal waters of Dade, Broward, Palm Beach, and Martin Counties. The LBSP TAC has developed conceptual scopes of work for critical research projects and prioritized the work effort developed by the LBSP focus team.

Guam

- Numerous LAS activities are aimed at improving and **increasing data collection** in support of management and legislative changes and proposals.
 - The local monitoring group was formed to coordinate comprehensive **data collection**.
 - The Coral Bleaching and Disease group will collect data on the issues related to **coral disease**.
 - The Environmental Monitoring and Assessment Program (EMAP) will identify specific long-term **water quality monitoring** sites along the coast and in Guam's rivers in an effort to identify non-point sources of pollution.
- An evaluation of **soft corals as bio-indicators of persistent contaminants** in Guam's waters has provided a potential less-expensive method to coastal managers for monitoring the health of Guam's coral reefs.

- A **GIS erosion potential model for Guam's Ugum watershed** will assist managers by providing rates of sedimentation from the Ugum watershed to Guam's coastal waters, taking into consideration variables such as amount of vegetation, rainfall rates, soils, and geology. Such information will help guide the allocation of resources to address land-based sources of pollution at that site.
- A study examining the **effects of personal motorized watercraft on marine ecosystems** was conducted.

Hawaii

- Along with partners, the state of Hawaii created an integrated **statewide coral reef monitoring** scheme for benthos and fish for the main Hawaiian Islands.
- The Aquatic Invasive Species Team in Hawaii completed a series of surveys along the south shore of Oahu to **map the distribution of *G. salicornia* in Maunalua Bay**. This information will be utilized to develop a strategic management plan to protect important areas, such as Hanauma Bay. The group is also defining the long-term potential **impact of the alien orange keyhole sponge** on coral reefs, designing **control techniques** for an invasive alga, looking at the impact of another invasive alga's mats on larval settlement, and investigating traditional practices adapted for use in **replanting Hawaiian seagrass** after an invasive alga has been removed.
- As part of Hawaii's land-based sources of pollution LAS, **the distribution of Igarol 1051, an antifouling paint used on boat hulls, in seawater and sediments and its impact on photosynthesis and cellular health are being assessed**. The group is also assessing a largely unknown, native Hawaiian, sand-producing alga, which impacts corals' susceptibility to uptake nutrients, and its potential as **a nutrient scrubber** in soft sediments.

- For a **study of sediment load to the Hanalei River**, a U.S. Geological Survey (USGS) gaging station was upgraded to a sediment collection station in the fall of 2004; and two radiometers were installed at the USGS gage and upstream of Weke Road in June 2004. Modeling training was conducted, and turbidity monitoring began August 2003. A draft map was completed and algorithms were developed for native and invasive trees using QuickBird imagery.
- Taape (an introduced snapper fish), native goatfish, opakapaka (Hawaiian snapper), and freshwater stream fish were systematically evaluated to **assess the likelihood that extraintestinal pathogens found in introduced fish are transmitted to native fish**.

Puerto Rico

- **A long-term monitoring program was developed** with funding from the NOAA State and Territorial Coral Reef Ecosystem Monitoring Grant. A Department of Natural and Environmental Resources contractor worked to characterize the coral reefs and continually monitors seven natural reserves around the coast of Puerto Rico.

USVI

- Since 2000, the USVI Department of Planning and Natural Resources (DPNR) Coastal Zone Management program has implemented **a long-term Territorial Coral Reef Monitoring Program** in partnership with the University of the Virgin Islands and the DPNR Division of Fish and Wildlife through support from NOAA. The monitoring program has enabled the Territory to document baseline conditions prior to the establishment of marine reserves and trends in benthic marine communities and fishery resources **as a basis for improved management and protection**. Throughout the life of the program, an increasing number of long-term sites (14 current sites) have been established throughout the territory.

III. OVERALL PROJECT AND FUNDING SUMMARY



School children learn about coral reefs and the marine environment during an annual CNMI Environmental Expo Source: NOAA (credit: J.Kozłowski)

A total of 760 LAS projects were identified as part of the initial U.S. Coral Reef Task Force LAS initiative (2002-2006). This section provides summary information on the overall funding status of LAS projects and the total annual LAS funding obtained as reported by each jurisdiction as of April 2006. The total number of projects originally planned in all jurisdictions for each LAS as well as the funding status for implementing these LAS projects are provided as well. This information was submitted by jurisdictions via a LAS funding tracker that NOAA monitors to keep track of project implementation and funding status for the LAS initiative.

The LAS funding tracker contains information on project cost, implementation timeframe, and funding status for all of the LAS projects for each jurisdiction. In some cases project costs have not yet been

estimated, and for many projects the exact sources of funding have not been explicitly documented. In addition, some of the projects do not have complete information on the total amount of funding required for implementation because the project scope and/or estimated budgets have not yet been determined, or because the action is ongoing and consequently difficult to quantify. Therefore, the budget-related statistics presented here include only those projects for which cost information has been provided by the jurisdictions (624 of the 760 projects, or 82 percent of the total number of projects).

LOCAL ACTION STRATEGY PROJECT COSTS AND COMMITMENTS

The total cost to implement all LAS projects with budgets presently assigned is estimated to be \$61.8 million dollars (total project costs for all seven jurisdictions). Approximately \$25 million, 40 percent of the total implementation budget needed (see Table 2), has been committed for implementation to date (FY2003–2006).

The \$25 million in committed funds is supporting the implementation of roughly 65 percent of all LAS projects identified. This includes both the 381 projects that are currently fully funded (50 percent of projects) and 112 projects that have received partial funding (15 percent of projects). Table 2 also clearly reveals that mostly low-cost projects were funded, while larger-budget items remain unfunded. One of the major challenges of the LAS effort continues to be obtaining funding for costly, large-scale projects such as long-term monitoring,

capital improvement projects, and watershed restoration activities.

Roughly 32 percent of the 624 total projects with cost estimates assigned are still in need of implementation support. This includes 131 projects that have received no funding to date (17 percent of projects) and 112 projects which are currently partially funded but need additional funds to fully cover implementation costs (15 percent of projects), for a total of \$36.8 million in funding needed. Approximately 136 LAS projects have not yet been budgeted (17 percent of the total 760 LAS projects).

The \$25.0 million that has been secured to date for LAS project implementation came from numerous sources. This funding reaches the jurisdictions through federal grants to local agencies and other direct assistance from federal agencies, as well as through state or local agency



Vessel groundings often crush delicate corals and Florida is developing appropriate procedures for response to and restoration of impacted coral reefs. Source: National Coral Reef Institute (credit: Dave Gilliam)

Table 2. Overview of total LAS project numbers and costs for four years of implementation (FY2003-2006).

	Total Cost	Number of Projects
Implementation Commitments to Date (FY03 – FY06)	\$25.0 million (40%)	493 (65%)
Additional Implementation Funds Needed	\$36.8 million (60%)	243 (32%)
Project Totals	\$61.8 million	760

matching funds, universities and research institutes, NGOs, national and international foundations, and private corporations. The primary sources of federal funding include NOAA, DOI, EPA, U.S. Department of Agriculture Natural Resources Conservation Service (USDA/NRCS), Department of Justice (DOJ), and USGS. In most cases the jurisdictions have been successful in attracting substantial funding from federal, state, or other sources beyond those specifically provided for LAS purposes; in some cases the amounts are more than the federal LAS-specific grant funds.

Table 3 shows the total annual LAS funding (2003–2006) as reported by each jurisdiction from all identified sources. As previously noted, the annual jurisdictional totals include funding from many sources: federal, state, and local agencies, as well as nongovernmental sources. Although the annual implementation funding across all jurisdictions averages just over \$1 million per jurisdiction, the annual expenditures vary considerably among the jurisdictions. The differences primarily reflect the ability of each jurisdiction to provide matching funds and garner other governmental and private sources of funding. The states of Hawaii and Florida generally have been the most successful at accessing diverse funding sources, although both Guam and the Commonwealth of the Northern Mariana Islands also have been effective in attracting other funding for

their LAS efforts. The ability to use state funds for matching federal monies as well as readily available scientific and technical expertise in various academic institutions have been a distinct advantage for Hawaii and Florida in seeking and securing grant funds. Likewise, local agencies have been very successful at leveraging significant resources in the form of volunteer services and in-kind contributions, time, and skills. This in-kind assistance has been a major contribution to project implementation in all jurisdictions. The exact value of in-kind support and volunteer services is extremely difficult to define and has not been quantified for this report. However, one of the greatest successes of the LAS initiative has been the ability of the local jurisdictions to bring together individuals from a range of entities to work together cooperatively and effectively.

LOCAL ACTION STRATEGY PROJECT NUMBERS

The following graphics (Table 4 and Figure 1) summarize the total numbers of projects identified to date for LAS implementation (reported as of April 2006). The total figures for each jurisdiction range from 43 to more than 200 projects. The LAS focus areas with the greatest project numbers are overfishing threats (29 percent) and land-based sources of pollution (22 percent). It is important to note that the total number of projects within each jurisdiction is

Table 3. Total funding for LAS implementation for each jurisdiction from all identified sources (2003–2006).

FUNDING YEAR	American Samoa	CNMI	Florida	Guam	Hawaii	Puerto Rico	USVI	TOTALS
2003	N/A	\$351,833	N/A	\$801,812	\$2,543,103	N/A	N/A	\$3,696,748
2004	\$694,974	\$1,079,712	\$1,990,869	\$584,460	\$2,704,631	\$1,089,193	\$577,266	\$8,725,285
2005	\$565,195	\$777,013	\$832,061	\$859,755	\$1,692,495	\$708,000	\$460,397	\$5,894,916
2006	\$505,028	\$259,000	\$852,562	\$1,219,871	\$1,466,538	\$2,195,000	\$190,007	\$6,688,006
TOTAL	\$1,769,197	\$2,467,558	\$3,675,492	\$3,466,078	\$8,406,767	\$3,992,193	\$1,227,670	\$25,004,955

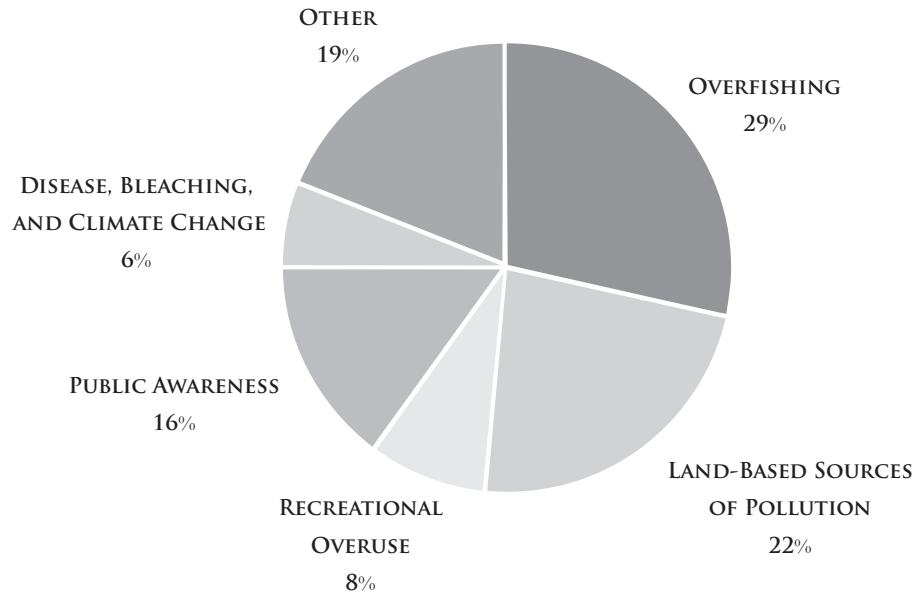
Note: All jurisdictions leveraged significant resources from sources other than federal funds

Table 4. Numbers of LAS projects by jurisdiction and threat area (2002-2006).

Threat	Jurisdiction							TOTALS	PERCENT
	AS	CNMI	GU	HI	FL	USVI	PR		
Land-based Pollution	23	6	21	47	32	7	35	171	20%
Overfishing	35	11	33	42	44 ^a	25	29	219	29%
Public Awareness	*	13	18	16	37	10	30	124	16%
Recreational Overuse/ Misuse		3	18	18	*	3	15	57	8%
Disease, Bleaching, and Climate	17		8	21				46	6%
Other**	27	10		79	27			143	19%
TOTAL	102	43	98	223	140	45	109	760	100%

^a LAS includes fishing, diving, and other uses.
* Included in other LAS
** Other threats include population pressure – American Samoa; aquatic invasive species – Hawaii; maritime industry and coastal construction – Florida; cross-cutting education and outreach and capacity needs in American Samoa; and coral reef resources management needs in CNMI.

Figure 1. Total number of LAS projects addressing each threat area in all jurisdictions (2002-2006).



not necessarily an indication of level of effort being put forward, as some projects are more complex than others. Projects span from the creation of outreach materials, conducting workshops and trainings, developing and implementing monitoring programs, and designing and implementing complex watershed protection and restoration projects. These figures are provided to give a sense of where the overall initial LAS effort has been directed in terms of threat areas being addressed.

Table 5 provides a summary of funding received as of spring 2006 to support LAS project implementation in each LAS threat area. Projects in four of the six threat areas have received more than 50 percent of the total anticipated funding needed. More than 70 percent of projects to address lack of awareness have received funding. Several jurisdictions are still finalizing the projects and budgets for their LAS for coral disease, bleaching, and climate change. Therefore, only a few initial projects to address these threat areas have been funded to date.



A Super Sucker device is used to vacuum alien invasive algae off coral reefs in Hawaii. source: Hawaii DAR

Table 5. LAS project funding breakdown by threat area for all jurisdictions (2002–2006).

LAS Threat Area	Total Number of Projects	Total Cost	Funding Received	% of Total Funding Received
Overfishing ^a	219	\$12,307,122	\$6,937,626	55.7%
Land-based Pollution	171	\$32,466,630	\$10,085,175	32.2%
Public Awareness	124	\$3,055,191	\$2,449,365	71.1%
Recreational Overuse/Misuse	57	\$2,391,500	\$1,688,000	67.4%
Disease, Bleaching, and Climate	46	\$5,243,480	\$227,743 ^b	4.3%
Other**	143	\$6,323,333	\$3,617,055	57.2%
TOTAL	760	\$61,787,255	\$24,622,845	40.3%

^a Florida's overfishing LAS includes fishing, diving, and other uses.

^b Hawaii's climate change and marine disease LAS was finalized in fall of 2006; thus, implementation has just begun.

* Other threats include population pressure—American Samoa; aquatic invasive species—Hawaii; maritime industry and coastal construction—Florida; cross-cutting education and outreach and capacity needs in American Samoa; and coral reef resources management needs in CNMI.



Additional funding is needed in all jurisdictions to implement long-term water quality monitoring and projects that address coral disease, bleaching, and climate change. Source: Hawaii DAR

FUTURE LAS IMPLEMENTATION NEEDS

Table 6 provides a detailed breakdown of funding still needed for project implementation within each LAS threat area. The project numbers and budget information include projects that have received no funding to date (131 projects) as well as projects that are still in need of partial funding (112 projects). The greatest remaining funding needs are clearly for implementing projects that address land-based sources of pollution (\$22 million), overfishing (\$5.3 million), and coral disease, bleaching, and climate change (\$5 million).

Of the \$22 million needed for land-based pollution projects, \$15.9 million represents the cost to carry out seven specific projects, including capital improvements and long-term water quality monitoring projects. Another \$4.5 million is requested to fund the construction of a marine lab in American Samoa, under their local response to global climate change LAS. Funding such projects may require the identification of new funding sources and the development of innovative long-term finance strategies.

As stated previously, for each jurisdiction there are many projects for which cost estimates have yet to

be determined. As 136 projects have not yet been assigned implementation budgets (18 percent of all 760 LAS projects identified), the total funding needed to fully implement all proposed LAS projects is likely to be significantly higher than the current estimate of \$36.8 million.

A listing of all LAS projects and funding status for each jurisdiction is available upon request from NOAA's Office of Ocean and Coastal Resource Management (OCRM).



Expanding urban areas and coastal construction contribute increasing amounts of sediment, sewage discharge, and urban stormwater runoff to coral reefs. Source: PR DNER

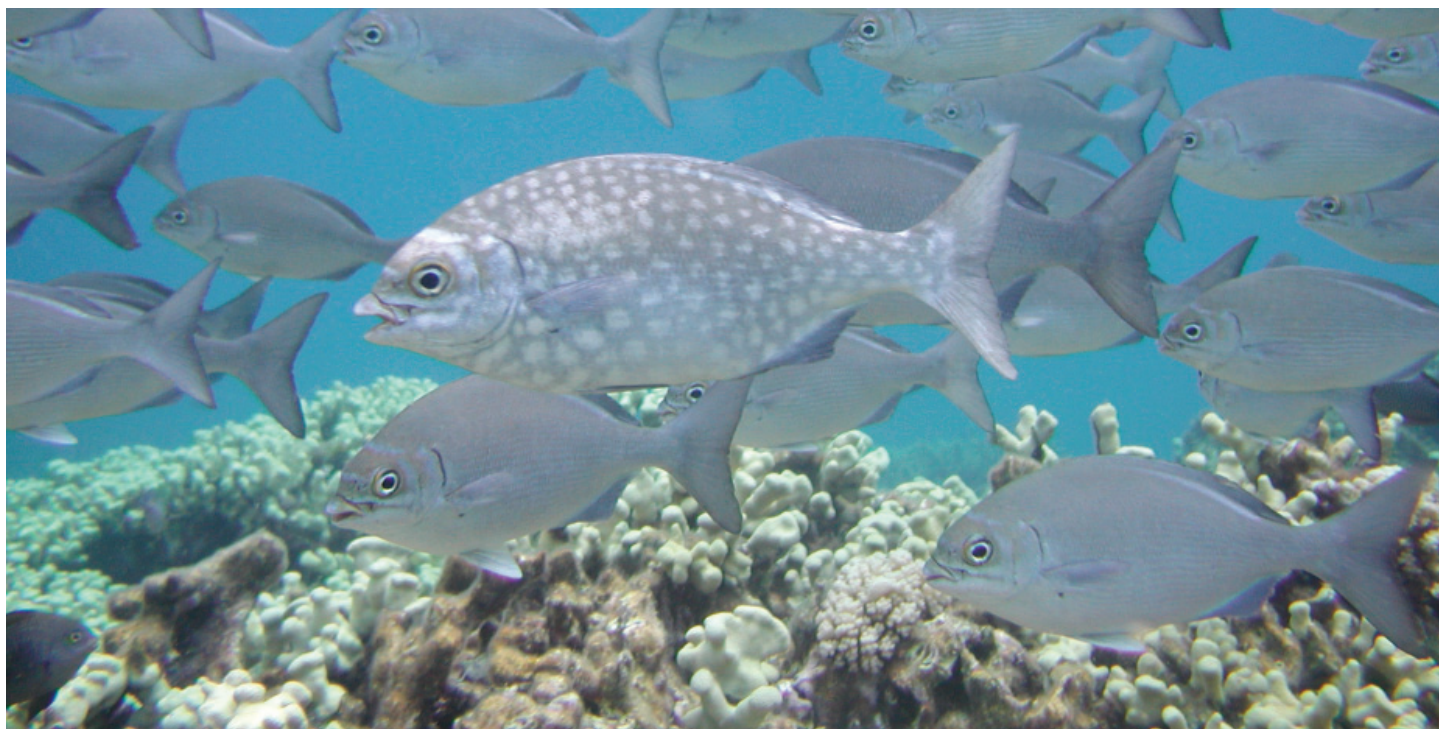
Table 6. Remaining project numbers and funding needed for LAS implementation in all jurisdictions for each threat area.

LAS Threat Area	Projects Needing Funding	Funding Needed	Projects with No Funding Amount Assigned
Overfishing ^a	88	\$5,369,496	24
Land-based Pollution	58	\$22,381,455	17
Recreational Overuse	13	\$703,500	13
Public Awareness	33	\$704,631	4
Disease, Bleaching, and Climate	8	\$5,015,746	22
Other*	43	\$2,706,278	56
TOTAL	243	\$36,881,105	136

^a Florida's overfishing LAS includes fishing, diving, and other uses.

* Other threats include population pressure - American Samoa; aquatic invasive species – Hawaii; maritime industry and coastal construction - Florida; cross-cutting education and outreach and capacity needs in American Samoa; and coral reef resources management needs in CNMI.

IV. SUMMARY OF THE LOCAL ACTION STRATEGY PROCESSES AND CURRENT PROJECT FUNDING FOR EACH JURISDICTION



Kure Atoll, Northwestern Hawaiian Islands. Source: NOAA Center for Coastal Monitoring and Assessment Biogeography Branch.

In this section, a brief summary is provided for each jurisdiction describing the process for developing their Local Action Strategies followed by a funding and project summary table. This summary table offers a snapshot of the total number of projects for each LAS threat area, budget information for each LAS threat area, and project funding status.

AMERICAN SAMOA

The American Samoa LAS are the result of a nearly two-year process of gathering input from territorial agencies, non-profit groups, stakeholders such as local fishers and federal agency partners, and other interested individuals. This process was initiated through the American Samoa Coral Reef Advisory Group (CRAG), a committee composed of territorial and federal agencies and the territorial academic institution concerned with coral reef issues. Since its inception in 1994, CRAG has overseen many successful management and science activities, increased member-agency collaboration, and improved alignment and cooperation with non-CRAG agencies that have common interests. To address LAS focus areas, CRAG developed both short- and long-term action plans to prioritize activities for funding. Working groups were formed under the umbrella of CRAG to facilitate the development and implementation of LAS focus areas. These working groups include members from territorial and federal government agencies, nongovernmental organizations (NGOs), academia, and community groups. Where possible, current and ongoing activities were incorporated into each LAS to provide continuity and networking and to underscore that individual agency mandates and projects are supported by CRAG as a whole. Each LAS consists of goals, success indicators, projects, and timelines. The strategies were designed to be adaptive and will continue to evolve and develop as new resources are brought to bear and as projects are completed.

Focus Areas:

- Fisheries management
- Land-based sources of pollution
- Local response to global climate change
- Population pressure
- Cross-cutting themes: American Samoa identified a number of cross-cutting activities determined as essential for effective implementation of the LAS projects in all focus areas. Projects that address these issues have been identified and their funding incorporated within the main LAS focus areas.
 - Monitoring
 - Improving personnel and institutional capacity
 - Education and outreach



Source: American Samoa CMP

**Table 7. American Samoa LAS project and budget information
(2002–2006).**

	Project Funding			Project Numbers				
	Total Cost	Funded	Unfunded	Funded	Partially Funded	Unfunded	Not Budgeted	Total
Fisheries Management	\$814,617	\$325,114	\$489,503	25	0	7	3	35
LBSP	\$672,172	\$472,172	\$200,000	20	0	3	0	23
Global Climate Change	\$5,013,311	\$124,565	\$4,888,746	11	0	5	1	17
Population Pressure	\$51,460	\$51,460	\$0	13	0	0	0	13
Cross-Cut	\$168,565	\$123,717	\$44,848	7	0	0	0	7
Other Capacity Needs	\$734,108	\$672,169	\$61,939	6	1	0	0	7
Totals	\$7,454,232	\$1,769,197	\$5,685,035	82	1	15	4	102

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

The CNMI Local Action Strategies were developed through a coordinated effort among the CNMI's three principal natural resource management agencies, the Division of Environmental Quality (DEQ), the Division of Fish and Wildlife (DFW), and the Coastal Resources Management Office (CRMO). To initiate this process, several meetings with the CNMI Watershed Group and local Coral Reef Initiative Advisory Group were held to discuss background information relevant to the five focus areas. A series of stakeholder meetings were then held on the CNMI's three main populated islands of Tinian, Rota, and Saipan. Participants brainstormed coral reef protection challenges and needs related to each focus area and potential activities to address them. A lead agency staff person for each focus area led the effort to develop draft goals, objectives, and projects using the information gathered from the stakeholder meetings. The preliminary LAS drafts then served as a basis for further development and refinement of the strategies during a two-day stakeholder workshop. Over 60 participants from the three islands, representing local and federal government agencies, NGOs, and businesses, worked in focus groups to develop the final LAS.

Focus Areas:

- ☐ Fisheries management
- ☐ Land-based sources of pollution
- ☐ Recreational use
- ☐ Increased awareness and involvement
- ☐ Coral reef resources management: This LAS focus area was developed as a result of analyzing the cross-cutting issues and capacity needs of the Northern Mariana Islands natural resource management agencies, including program planning and management staff, enforcement officers, diver training, and interagency coordination.

Table 8. CNMI LAS project and budget information (2002–2006).

Focus Area	Project Funding			Project Numbers				
	Total Cost	Funded	Unfunded	Funded	Partially Funded	Unfunded	Not Budgeted	Total
Fisheries Management	\$1,227,500	\$792,500	\$435,000	5	1	4	1	11
LBSP	\$3,279,500	\$344,349	\$2,935,151	4	2	0	0	6
Recreational Use	\$103,000	\$17,000	\$86,000	1	0	2	0	3
Awareness & Involvement	\$459,750	\$282,000	\$177,750	3	8	2	0	13
Management	\$1,700,500	\$1,031,709	\$668,791	3	6	1	0	10
Totals	\$6,770,250	\$2,467,558	\$4,302,692	16	17	9	1	43

FLORIDA

The Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission coordinated the formation of a team of interagency marine resource professionals, scientists, NGOs, and other interested stakeholders. This group, named the Southeast Florida Coral Reef Initiative (SEFCRI) Team, first gathered in May 2003 to develop Local Action Strategies that targeted coral reefs located north of the Florida Keys and Biscayne National Park: from Miami-Dade County, through Broward and Palm Beach, to Martin County. This region was chosen because its reefs lie close to an intensely developed coastal region with a large and diverse human population. Even though southeast Florida reefs are exhibiting the same signs of degradation that have been documented in other parts of the world, prior to the creation of the SEFCRI there was no coordinated public education or management plan proposed for the reefs located north of the Florida Keys. The public was invited to provide comments on the LAS throughout its development. The SEFCRI LAS was completed in December 2004 and addresses four priority threat areas.

Focus Areas:

- ☐ Fishing, diving, and other uses
- ☐ Land-based sources of pollution
- ☐ Maritime industry and coastal construction impacts
- ☐ Awareness and appreciation

Table 9. Florida LAS project and budget information (2002–2006).

Focus Area	Project Funding			Project Numbers				
	Total Cost	Funded	Unfunded	Funded	Partially Funded	Unfunded	Not Budgeted	Total
Fishing, Diving and Other Uses	\$585,000	\$340,000	\$245,000	15	6	8	15	44
LBSP	\$6,593,605	\$2,474,306	\$4,119,299	9	9	7	7	32
Maritime Industry and Coastal Construction Impacts	\$905,000	\$445,000	\$460,000	10	2	15	0	27
Awareness and Appreciation	\$698,067	\$416,186	\$281,881	19	12	3	3	37
Totals	\$8,781,672	\$3,675,492	\$5,106,180	53	29	33	25	140

GUAM

In August 2002, the Guam Coral Reef Initiative Coordinating Committee (GCRICC) began the process of prioritizing and selecting the main threats to local coral reefs on which to focus LAS efforts for the following three years. By February 2003, the GCRICC had identified local navigators and drafted LAS for the five chosen focus areas. Among the numerous benefits realized through these efforts, the LAS process significantly expanded and enhanced the network of stakeholder groups working on coral reef issues. Members of the Guam Watershed Planning Committee, a group of local, federal, and nongovernmental agencies involved primarily with watershed restoration, have become involved in the LAS development, and members of GCRICC now participate in the Watershed Planning Committee. In addition, the University of Guam Marine Laboratory and Water and Environmental Research Institute, guided by the needs of local natural resource agencies, have shifted much of their focus toward management-driven research. The Guam Visitors Bureau and the tourism industry also began working with natural resources agencies to market Guam's coral reefs and marine preserves to the one million visitors that come to the island yearly. A new awareness of the economic value of Guam's coral reef resources spawned a sense of stewardship in the tourism industry that was absent during the economic boom of the 1980s and recession of the 1990s. Ultimately, these new partnerships and increased support for improving the health of Guam's coral reefs have resulted in the following Local Action Strategies.

Focus Areas:

- ☐ Fisheries management
- ☐ Land-based sources of pollution
- ☐ Recreational misuse and overuse
- ☐ Lack of public awareness
- ☐ Coral disease, bleaching, and global climate change

Guam has been able to fund 58 percent of its LAS projects over the last five years. Funds from the NOAA State and Territory Coral Reef Monitoring and Management grants account for \$1,829,465, while the remaining \$1,636,613 was leveraged from other sources. Guam has been very successful in leveraging funds from local and other federal monies directed at LAS projects and priorities. The above figures do not reflect any in-kind contribution or staff time and do not include other costs associated with Guam's Coral Reef Initiative support (e.g., NOAA coral reef management fellowship, administrative costs, or technical support).

Beginning in 2007, Guam will be updating its LAS to include site-based approaches and more regional goals to address coral reef conservation efforts.

**Table 10. Guam LAS project and budget information
(2002–2006).**

Project Funding				Project Numbers				
Focus Area	Total Cost	Funded	Unfunded	Funded	Partially Funded	Unfunded	Not Budgeted	Total
Fisheries Management	\$2,021,626	\$1,206,919	\$814,707	18	2	13	0	33
LBSP	\$2,677,132	\$1,423,886	\$1,253,246	12	8	1	0	21
Recreational Misuse and Overuse	\$663,500	\$296,000	\$367,500	9	0	9	0	18
Lack of Public Awareness	\$436,104	\$436,104	\$0	18	0	0	0	18
Coral Disease, Bleaching, and Global Climate Change	\$230,169	\$103,169	\$127,000	5	1	2	0	8
Totals	\$6,028,531	\$3,466,078	\$2,562,453	62	11	25	0	98

HAWAII

Hawaii used a collaborative planning process to develop Local Action Strategies for the five selected focus areas, as well as one for aquatic invasive species. This process supported and expanded existing efforts already under way in the state. In cases where coordinating bodies did not already exist, steering committees were formed to facilitate the development and implementation of the particular LAS. These committees include members from state and federal government agencies, nongovernmental organizations, academia, businesses, and community groups. The committees assessed the effectiveness of current management strategies and existing monitoring protocols and held a series of stakeholder workshops to discuss the issues, gaps, and needs for addressing focus issues. Outcomes of these efforts were used to develop Hawaii's LAS. The planning process for specific LAS varied in the extent to which new initiatives were developed or existing efforts were supported or enhanced. This ranged from advocating for existing planning efforts such as the State of Hawaii Aquatic Invasive Species Action Plan, to the development and establishment of the land-based sources of pollution LAS through a steering committee specifically organized for the effort. All of Hawaii's LAS steering committees, however, considered the input and priorities of various local stakeholder groups. Overall, Hawaii's LAS have fostered the coordination and collaboration of multiple partners working towards more efficient and effective ways to protect Hawaii's coral reef ecosystems. Each LAS was developed through a collaborative statewide process, and the public was invited to provide comments on the draft LAS before it was finalized. Each LAS was developed with the input of over 100 stakeholders.

Focus Areas:

- ☐ Main Hawaiian Island coral reef fisheries management
- ☐ Aquatic invasive species
- ☐ Lack of public awareness (Hawaii's Living Reef Program)
- ☐ Land-based sources of pollution
- ☐ Recreational overuse
- ☐ Climate change and marine disease

**Table 11. Hawaii LAS project and budget information
(2002–2006).**

Project Funding				Project Numbers				
Focus Area	Total Cost	Funded	Unfunded	Funded	Partially Funded	Unfunded	Not Budgeted	Total
Main HI Fisheries Management	\$3,675,000	\$2,479,000	\$1,196,000	25	4	8	5	42
Aquatic Invasive Species	\$2,763,700	\$1,293,000	\$1,470,700	5	18	0	56	79
Lack of Awareness	\$513,500	\$513,500	\$0	15	0	0	1	16
Land-based Sources of Pollution	\$11,922,721	\$3,769,462	\$8,252,064	24	14	5	4	47
Recreational Overuse	\$253,000	\$253,000	\$0	5	0	0	13	18
Climate Change and Marine Disease	N/A	N/A	N/A	0	0	0	21	21
Totals	\$19,127,921	\$8,307,962*	\$10,918,764	74	36	13	100	223

Note: Hawaii is in the final stages of writing the Climate Change and Marine Disease LAS.

* An additional \$98,805 has been provided as matching funds for the lack of awareness LAS. This \$98,805 represents donations of airtime for public service announcements, Living Reef Award sponsors, and publication donations. The combined total funding received is therefore \$8,406,767, and is the figure that is used for statistics and funding calculations throughout this report.

PUERTO RICO

In Puerto Rico, local and federal agency representatives were identified as leads in the development of individual LAS for each focus area. In early 2003, kickoff meetings were held to develop draft LAS to address issues affecting coral reefs in Puerto Rico. A core group of people was convened to help draft the Puerto Rico LAS document, which serves as the backbone for a long-term Puerto Rico Coral Reef Management Plan. The LAS build on the experience of many different stakeholders and strengthen Puerto Rico coral reef management efforts through increased coordination between state and federal partners and local agencies.

Focus Areas:

- ☐ Overfishing
- ☐ Land-based sources of pollution
- ☐ Recreational use and misuse
- ☐ Lack of awareness

Table 12. Puerto Rico LAS project and budget information (2002–2006).

Project Funding				Project Numbers				
Focus Area	Total Cost	Funded	Unfunded	Funded	Partially Funded	Unfunded	Not Budgeted	Total
Overfishing	\$2,278,693	\$1,321,693	\$957,000	18	3	8	0	29
LBSP	\$6,582,500	\$1,244,000	\$5,338,500	21	2	6	6	35
Recreational Use and Misuse	\$1,213,000	\$993,000	\$220,000	14	0	1	0	15
Lack of Awareness	\$528,500	\$433,500	\$95,000	25	0	5	0	30
Totals	\$10,602,693	\$3,992,193	\$6,610,500	78	5	20	6	109

These budget figures include federal funds primarily from NOAA and DOI, as well as from the Natural Resources Conservation Service (NRCS)* and EPA. Funding totals do not include in-kind allocations of personnel from the above-mentioned federal agencies and state personnel (Department of Natural and Environmental Resources and the Puerto Rico Tourism Company, among others).

*USDA / NRCS funds are used to support projects that provide benefit to aquatic ecosystems through nonpoint source, nutrient, and sediment reduction from land-based sources.

U.S. VIRGIN ISLANDS

In January 2003, the U.S. Virgin Islands government established its first marine park, the St. Croix East End Marine Park (EEMP). This is a significant local contribution to U.S. efforts to implement the National Action Plan to conserve coral reefs. To ensure the long-term success of this newly established park, the Virgin Islands chose to continue a bottom-up approach for initiating conservation activities within the boundaries of the EEMP. The USVI government also decided that the EEMP would be the focal point for the local action strategy for the first three-year period. The LAS process began with an initial meeting in July 2003, which was attended by a large number of local stakeholders and officials from the Virgin Islands government. The LAS documents drafted by the core working groups were then presented to the public for review and further input. Project leads, proposed partners, expected costs, and funding sources were identified for all of the Local Action Strategies.

Focus Areas:

- ☐ Overfishing
- ☐ Land-based sources of pollution
- ☐ Recreational use
- ☐ Lack of awareness

Table 13. U.S. Virgin Islands LAS project and budget information (2002–2006).

Focus Area	Project Funding			Project Numbers				
	Total Cost	Funded	Unfunded	Funded	Partially Funded	Unfunded	Not Budgeted	Total
Overfishing	\$1,704,686	\$472,400	\$1,232,286	1	10	14	0	25
LBSP	\$739,000	\$739,000	\$0	6	0	1	0	7
Recreational Use	\$159,000	\$129,000	\$30,000	2	0	1	0	3
Lack of Awareness	\$419,270	\$269,270	\$150,000	7	3	0	0	10
Totals	\$3,021,956	\$1,227,670	\$1,749,286	16	13	16	0	45

V. NEXT STEPS AND RECOMMENDATIONS



Source: Puerto Rico DNER



NOAA



Hawaii DAR



Hawaii DAR

During the spring 2006 meeting of the USCRTF in Washington, D.C., a half-day facilitated working session was held to discuss lessons learned from the initial LAS development process and early project implementation. Work session participants talked about what worked and what did not, prioritized issues and recommendations for the future, and discussed what elements are needed for a strong LAS. Below is a summary of the working session recommendations and discussion topics.



Increasing cooperation and partnerships to address key threats to coral reefs is critical for successful local action strategies in the future: NOAA (credit: J. Kozłowski)

LAS PROCESS RECOMMENDATIONS

The following recommendations for improving the LAS process are based on priority lessons learned gathered from two sources: 1) information submitted by state and territory POC's in a pre-workshop questionnaire regarding the effectiveness of the LAS development and implementation processes, and 2) through individual conversations with key LAS participants. At a May 2, 2006 LAS working session, a group composed of representatives from the USCRTF Steering Committee, including coral reef POC's and the All Islands Committee Secretariat, and other stakeholders discussed in more detail various aspects of the initial LAS process. The group expressed opinions on priority LAS issues and what approaches and activities did or did not work. A preliminary selection of priority "Lessons Learned" was compiled and then formulated into recommendations for consideration and incorporation into future LAS efforts. The group further noted that these recommendations are not necessarily applicable across all jurisdictions.

The LAS Development Process

- Use LAS to elevate the coral reef conservation agenda in all levels of government and to support existing and new environmental policies.
- Use LAS to expand and improve existing partnerships and to increase awareness, coordination, and participation in coral reef protection and conservation.

- Do not limit the scope of the LAS based on availability of existing funds; expand the scope and leverage the LAS to create new funding at federal, state, and local government levels.
- Use LAS to help focus local programs and prioritize projects on key threats.
- Develop a mechanism for prioritizing projects based on limited staff time and resources.
- Consider a site-based approach for new LAS development.
- Write LAS as a living document with a longer-term horizon in mind.
- Before beginning a new LAS development process, assess and budget the staff time and resources that will be required.
- Facilitate experience- and information-sharing between jurisdictions on how their LAS processes are working.
- Use LAS to promote dialogue between managers and scientists and to focus research agendas on priority coral reef conservation needs.



Runoff from upland areas causes excessive sedimentation that can smother near-shore coral reefs. Source: Guam CMP (credit: D. Limtiaco)

- As a final step in the LAS development process, include an assessment of local capacity to implement the LAS so that needs are clarified from the beginning.

The LAS Implementation Process and Funding

- Identify funding needs to expand human capacity where needed for project implementation, oversight, and coordination.
- Develop “fund-shopping” meetings and other marketing tools to help secure small pots of funding from different agencies that can be easily committed to particular projects.
- Perform periodic evaluations of LAS implementation processes, products, and outcomes.
- Coordinate LAS with longer-term initiatives, such as the Coastal Non-Point Source Pollution Program and Coastal Zone Management Program.
- Balance available resources between funding projects and funding staff.

LAS Tracking and Reporting

- Improve and simplify the LAS funding tracker so that it requires the minimum amount of information and effort.
- Develop short- and long-term measures of success for evaluation purposes.
- Track information from the beginning of each LAS project and establish regular tracking schedules so up-to-date information is readily available and there is adequate time to collect information from LAS coordinators and working groups.
- Develop a database to organize all tracking and reporting information for LAS.

Other Recommendations

- Create a sense of ownership of the LAS among partner agencies and organizations.
- Take advantage of available skills and resources found in local and regional NGOs to both develop and implement LAS.
- Involve the right people throughout the LAS process, e.g., dedicated local leaders and long-term local agency staff, NGOs, other local stakeholders, and partners who can help with project implementation and ensure continuity of the effort if there are changes in agency leadership.
- Consider revising National Action Plan goals and threats on a periodic basis to better align the LAS as a mechanism for implementing the NAP goals.

KEY ELEMENTS OF A LOCAL ACTION STRATEGY

The following key elements of an effective LAS were drawn from the jurisdictions’ collaborative experience during the first phase of the LAS initiative. It was agreed that these elements serve as a set of principles that can be used to ensure future LAS are poised for success.

A Successful Local Action Strategy:

- Is strategic:
 - It identifies threats, goals, and measurable objectives.
 - It includes actions that are aimed at addressing and reducing threats.
 - It identifies areas where additional funding is needed.
- Is not limited to existing funding; it develops strategies that include all of the actions needed to reduce a threat but identifies priority actions that either will be taken if funding for all projects is not identified or can be completed with existing funds.

- Leverages new funds from traditional and non-traditional sources.
- Complements and integrates with institutionalized planning regimes, including CZM, CWA, 6217, etc., where the LAS and the existing programs share similar goals.
- Is flexible and adaptive in its time horizon, allowing for different project durations and reserving an option to amend or revise project priorities.
- Includes a written LAS plan with:
 - Clearly framed goals and clear, S.M.A.R.T. objectives. S.M.A.R.T is an acronym that describes the key characteristics of meaningful objectives: Specific (concrete, detailed, well-defined), Measurable (numbers, quantity, comparison), Achievable (feasible, actionable), Realistic (considering resources), and Time-Bound (a defined timeline);
 - Guiding principles and definitions of terms;
 - Performance measures that include outcomes and outputs;
 - A realistic assessment of required resources (funding, staff, capacity needs);
 - A timeline appropriate to the scale of objectives;
 - Support for programmatic issues, legislation, policy needs, new or revised ordinances, etc.; and
 - Clear connections to USCRTF National Action Plan, with additional focus areas to cover NAP gaps.
- Provides adequate stakeholder participation. It is important to analyze issues along with relevant stakeholder groups within the geographic scope of the LAS that are

associated with the issues. Stakeholders provide key insights into the issues and possible solutions.

FUTURE LAS TRACKING AND REPORTING

The final topics of discussion during the May 2006 LAS working session were tracking and reporting LAS efforts. Attendees agreed unanimously that the current system for tracking and reporting is extremely cumbersome and complicated and that reporting requirements should be clearly defined and simplified considerably. The following ideas were generated to detail the information necessary to successfully track Local Action Strategies and communicate key accomplishments and outcomes..

The LAS Tracking and Reporting Story Should:

- Report progress on how goals are being met and communicate the continued effort that is needed (in terms of resource status).
- Contain year-by-year project tracking.
- Include total needed funding.
- Convey challenges as well as successes.
- Provide statistics on resource status.
- Address the appropriate audience(s) for LAS project status and accomplishment reporting and clearly define the message(s) we wish to convey.
- Articulate partnerships and stakeholder commitments throughout the LAS development and implementation processes.
 - Determine how to measure time spent on collaboration with federal, state, local agencies, NGOs, academics, etc.
 - Determine how to quantify and track the time and effort of numerous stakeholders involved with planning and project implementation.

-
- Developing a Web accessible database is necessary to simplify LAS tracking, sorting, and querying of projects costs, status, and partnership information. The following aspects need to be tracked in the database:
 - multiple funding sources for single projects;
 - costs to develop and implement LAS;
 - priority funding needs to help LAS partner programs and agencies target their funding to LAS; and
 - information for responding to Congressional queries to justify sustained or increased funding requests.

APPENDIX I – 2002 PUERTO RICO RESOLUTION

Resolution 1: Improving Procedures of the U.S. Coral Reef Task Force

I. Background:

At its December 2001 meeting, the U.S. Coral Reef Task Force identified a need to revise some of its procedures in order to move from planning to implementation of the National Action Plan to Conserve Coral Reefs (NAP). Based on recommendations from the All Islands Committee, constituent input, assessment of similar initiatives, expert consultation, and its experience over the past two years, the Task Force, through its Steering Committee, has identified the need to:

1. Improve NAP implementation by identifying threat-based priorities and key actions developed from the 13 goal areas;
2. Increase coordination to implement the NAP among government agencies, and across local, regional, and national levels;
3. Develop a system to track progress toward achievement of the NAP's goals and objectives; and
4. Increase human resources supporting the Task Force, All Islands Committee, and state, territory, and commonwealth coral reef conservation efforts to implement the proposed process.

Part II outlines procedural changes needed to improve implementation of the NAP. Part III provides an overview of how these revisions integrate into the existing Task Force process and structure. Table 1 provides a quick summary of needs, procedural

revisions, and resource requirements. Representatives to the Task Force from the Freely Associated States (Palau, Federated States of Micronesia, and the Marshall Islands) are invited to participate in the procedures outlined below.

II. Procedural Revisions:

1. Improve Prioritization of Needs. The Steering Committee found that there is not currently a clear prioritization of needs among the 13 goal areas outlined in the National Action Plan. Recognizing that resource constraints may preclude implementing all 13 areas concurrently, there is an urgent need to proceed strategically by focusing on the most urgent and pressing threats to coral reefs. Thus, it is recommended that the Task Force should identify and endorse five threat-based Focus Areas for priority implementation.

The identification of five areas will provide better focus for implementation, while allowing locally appropriate management actions to be developed at the jurisdictional (state, territory, and commonwealth governments) and regional levels. This prioritization does not constrain the need for Task Force members to support actions to address other significant threats. Focus Area selection should consider the severity and scale of key threats to reefs as well as the extent to which collaborative efforts can make tangible progress toward identified goals (see procedure #2 regarding three-year action strategies).

The Steering Committee further found that some of the 13 goal areas outlined in the National Action Plan do not have specific targets clarifying how the goal should be achieved. Thus, it is recommended that, if they do not already exist within the National Action Plan, specific targets, which include timelines and performance indicators, should be established for the Focus Areas endorsed by the Task Force and other areas as appropriate.

In developing the National Action Strategy for Coral Reef Conservation and through more recent assessments by the All Islands Committee, the Steering Committee finds that the preliminary information needed to identify Focus Areas is currently available. Analysis of this information suggests the following areas should be endorsed by the Task Force as Focus Areas for 2003-2006:

- a. Land-based sources of pollution
- b. Overfishing
- c. Lack of public awareness (focus on user groups)
- d. Recreational overuse and misuse
 - e-1. Climate change and coral bleaching, and
 - e-2. Disease

2. Improve Coordination. The Steering Committee found that improved coordination would help fulfill the Task Force mission, implement the National Action Plan, and increase support for coral reef conservation efforts at state, territory, and local levels. Several areas for improvement were identified: (1) improve coordination between state/territory and federal priorities and implementation activities, (2) better engage important federal partners locally and regionally, (3) increase coordination and collaboration among agencies at local and regional levels, and (4) increase coordination with stakeholders. Thus, it is recommended that the Task Force should establish Regional Subcommittees of the Steering Committee in the Caribbean and the Pacific with membership to include, at a minimum, representation from each individual U.S. Coral Reef Task Force member.

The Steering Committee further found that there is a need to improve inter-agency coordination to implement actions to achieve the goals identified in the National Action Plan, including recommended Focus Areas. Thus, it is recommended that each state/territory and its federal partners work cooperatively to develop, locally focused, three-year action strategies for applicable Focus Areas giving due consideration to local priorities, federal agency mandates, and contribution toward the goals of the NAP. Based on the development of local action strategies, the All Islands Committee, in coordination with the state of Florida, will review and coordinate between the regions, and make recommendations to the regional subcommittees to ensure linkages between the regions.

Regional Subcommittees will:

- Coordinate jurisdictional and federally-managed area action strategies into regional action strategies;
- Identify common issues for regional actions;
- Explore opportunities for the sharing of institutional, financial, and human resources among federal and local agencies and partners;
- Seek funding and resources for development of local action strategies and their implementation;
- Report to the Task Force on development and implementation;
- Develop mechanisms for engaging stakeholders; and
- Provide linkages to international efforts.

Each Task Force member will identify appropriate representatives to Regional Subcommittees within one month from adoption of the resolution. The Regional Subcommittees will be established and provide an initial update on key gaps and opportunities

for implementation in Focus Areas by the next Task Force meeting. The Regional Subcommittees will provide three-year pilot action strategies within one year based on the local input available at that time. Nothing in this paragraph will prejudice the functioning of the All Islands Committee.

3. Improve Mechanisms for Tracking

Progress. The Steering Committee found that there is not currently a systematic tracking system to articulate progress toward implementation of the NAP. Past efforts to report accomplishments have been inefficient and taxed available human resources. Furthermore, unclear goals and indicators have made reporting and implementation difficult. Thus, it is recommended that the Task Force develop a Web-based system to facilitate reporting accomplishments and actions toward meeting the goals and objectives of the NAP, using performance indicators identified by the local and regional action strategies. Task Force members will populate and maintain this database as a current record of accomplishments and future plans and activities. The Steering Committee will report back to the Task Force with details of the reporting system.

Using this tool, the Regional Subcommittees, the Steering Committee, and, as needed, Working Groups will develop an annual report documenting progress toward the goals and objectives of the NAP. Recognizing that the Focus Areas are not the only areas requiring reporting, the new tracking mechanisms will be also available to support the development of annual work plans and other accomplishment reports by all Task Force members.

4. Address Human Resource Limitations.

The Steering Committee found that limitations in available human resources and current funding mechanisms, at both the local and national levels, are significant impediments to fulfilling the mission of the U.S. Coral Reef Task Force. In order to implement these revised procedures, the Steering Committee will

work with the All Islands Committee to assess human resources needs required. Furthermore, the Steering Committee should recommend strategies for increasing human resource capacity and funding to support Task Force, All Islands Committee, and state, territory, and commonwealth coral reef conservation efforts to implement the proposed process. This shall include both the establishment of a U.S. Coral Reef Task Force Secretariat and adequate support for the All Islands Committee Secretariat. Task Force members should evaluate their ability to contribute to these efforts. The Steering Committee will report back to the Task Force with further details for a proposed Secretariat.

5. Amend the Oversight Policy and Charter. In light of the revisions to the Task Force process proposed here, it is recommended that the Oversight Policy and Charter be amended, as necessary, to reflect this new process.

6. Charge to Working Groups and Steering Committee. Working Groups are tasked to assist the Steering Committee with implementing the changes put forth in this document. The Steering Committee will evaluate the role and function of the Working Groups and report recommendations at the next U.S. Coral Reef Task Force meeting.

III. Overview of the U.S. Coral Reef Task Force

Process The recommendations outlined here are intended as revisions to the existing structure of the Task Force. The following is a brief summary of some of the key components of the existing and revised structure:

- **The National Action Plan to Conserve Coral Reefs and the National Action Strategy.** The NAP and NAS remain relevant and comprehensive blueprints for coral reef conservation in the United States. The recommendations here are intended to implement strategically the NAP.
- **Steering Committee.** The Steering Committee will continue to serve as the

primary working body of the U.S. Coral Reef Task Force, providing assistance and coordination for Task Force activities.

- **State/Territory Planning and Implementation.** Ultimately, coral reef management must be implemented in local reef areas, which relies on effective planning and implementation by states and territories with support from federal partners.
- **Federal Agency Planning and Implementation.** Working within its mandates, each federal member of the Task Force has relevant responsibilities for reef conservation, ranging from prevention of harm to active stewardship to addressing key threats.
- **All Islands Committee.** The All Islands Committee has provided essential policy guidance to the Task Force since its inception. The Committee is critical in bringing local reef issues into the national dialogue at the Task Force and also increasing coordination among federal, state, territory, and commonwealth efforts.
- **International Policy Work and Support for Management.** The International Working Group has made notable achievements in international policy arenas, notably regarding coral trade and no-anchoring zones. While contributing to national Focus Areas, the International Working Group will continue its existing policy work.
- **USCRTF Working Groups.** The Steering Committee will work with the Working Group chairs to develop a working group structure compatible with the new Regional Committee structure.
- **Regional Subcommittees.** The roles of the regional subcommittees include: 1) to support coordination and implementation of projects of local and regional significance; 2) to explore opportunities for the sharing of institutional, financial, and human resources

among federal and local agencies and partners; 3) to engage regional program directors to participate in joint activities directed at coral reef management and protection; and 4) to assist in the preparation of materials that meet the reporting requirements of the individual jurisdictions. The Regional Sub-committee will include representatives of U.S. Coral Reef Task Force Members.

Table 1. Mechanisms for improving USCRTF prioritization, coordination, reporting, and human resources.

Area to Improve	Current Status	Proposed Mechanism	Resources Required (Estimates)	Expected Outcome
Prioritize Needs	<ul style="list-style-type: none"> - There is no prioritization across the 13 goal areas - Some goal areas lack specific targets 	USCRTF to endorse five threat-based, Focus Areas from the National Action Plan		Specific, threat-based goals based on local priorities
Improve Coordination	<ul style="list-style-type: none"> - Need to better synchronize state/territory and federal priorities, implementation - Need to better engage the regional level to support local implementation - Need for inter-agency coordination to address key threats - Need to develop specific actions to implement NAP - Need to coordinate among and between regions 	Regional Subcommittees and All Islands Committee to support local and regional development and implementation of action strategies;	[estimates] <ul style="list-style-type: none"> - Support for staff to the two Regional Subcommittees and All Islands Committee - Lead/sponsor workshops to develop action strategies 	<ul style="list-style-type: none"> - Three-year, action strategies for Focus Areas - Increased federal agency support for local implementation
Report Progress	<ul style="list-style-type: none"> - Reporting is inefficient and taxes available human resources - Unclear goals and indicators make reporting difficult - There is no current tracking system 	Web-based database	Funding to establish system; staff time to input and synthesize data	<ul style="list-style-type: none"> - Annual Task Force Report - Database available for other reporting
Human Resources	<ul style="list-style-type: none"> - Need to establish a Task Force Secretariat - Need to significantly strengthen the All Islands Committee Secretariat - Need to strengthen capacity, and funding at all levels 	Increase dedicated support for staff (e.g. details, funding, internships, fellowships, etc)	[estimates] Support for: <ul style="list-style-type: none"> - Two staff for Task Force Secretariat - One to two staff for All Islands Secretariat - Other needs TBD 	<ul style="list-style-type: none"> - Enhanced capacity to implement the National Action Plan - Active Task Force Secretariat - Strengthened All Islands Secretariat

APPENDIX II

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