

# AMERICAN SAMOA'S

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## CORAL REEF MANAGEMENT PRIORITIES



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The Territory of American Samoa and NOAA Coral Reef Conservation Program. 2010. *American Samoa's Coral Reef Management Priorities*. Silver Spring, MD: NOAA.

*The NOAA Coral Reef Conservation Program would like to thank all those involved in the process to identify and publish the coral reef management priorities for American Samoa. The commitment, time and effort invested in this process is greatly appreciated. These priorities will play an important role in defining NOAA's partnership with the jurisdiction to work towards coral reef conservation. Special thanks to Zhe Liu for graphic design and Lauren Chhay for photo support.*

*Cover Photo Credit: Dan Barshis*

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# INTRODUCTION

The purpose of this Priority Setting document is to articulate a set of strategic coral reef management priorities developed in consensus by the coral reef managers in American Samoa. NOAA will use this document in conjunction with its 2010–2015 Coral Reef Conservation Program National Goals and Objectives (available at [www.coralreef.noaa.gov](http://www.coralreef.noaa.gov)) to direct its investment in activities in each jurisdiction through grants, cooperative agreements and internal funding. NOAA will also make the document available to other potential funders (NGOs, federal partners, etc.) and encourage leveraging and new or expanded partnerships to build common coral reef conservation goals.

The work presented here is being facilitated by the NOAA Coral Reef Conservation Program (NOAA CRCP) as part of an ongoing effort to develop place-based, local coral reef management priorities in each of the seven U.S. state and territorial coral reef jurisdictions (American Samoa, Commonwealth of the Northern Mariana Islands, Florida, Hawaii, Guam, Puerto Rico and the U.S. Virgin Islands) and conduct capacity assessments to identify the support needed to accomplish those priorities. The first step in this effort has been to work with the core group of coral reef managers (local, place-based) in each jurisdiction to articulate a set of strategic coral reef management priorities among existing management needs. The second, and next, step will be to complete a capacity needs assessment that helps each state and territory realize these priorities.

This priority setting process stems from an external review of NOAA CRCP conducted in 2007 to independently assess how effectively the program has met its goals. The review included recommendations for future improvements. In response to the review, NOAA CRCP developed a “Roadmap for the Future,” laying out new principles and priorities. A key part of this new Roadmap includes developing management priorities for each and all of the coral reef jurisdictions and conducting capacity assessments to achieve these priorities. NOAA CRCP is providing support to the jurisdictions to coordinate with the broader management community in each place to determine these strategic goals and objectives for each state and territory. Priority setting initiatives began in 2009 with implementation phased in two to three jurisdictions per year. The capacity assessments will follow, beginning in 2011.

This Priority Setting document is divided into the following sections:

1

**Scope, Development and Prioritization Process:** This section details the process by which the Priority Goals and Objectives were reached, including the preparation for the workshop, work done at the workshop and post-workshop refining.

2

**Management Framework and Guiding Principles:** This section provides a framework and guiding principles for implementing the priorities and coral conservation work in general.

3

**Strategic Coral Reef Management Priorities:** This section presents the entire framework of goals and objectives developed and agreed upon by the core managers group. In this section, the Priority Goals and Objectives are highlighted. These are the top priorities for management action as identified in the workshop.

4

**Priority Sites:** This section lists priority sites for applying the priority management goals and objectives (as appropriate). It also describes the process by which the sites were determined at the workshop.

5

**Linkages to NOAA's National Goals and Objectives:** This section describes how the local jurisdiction management priorities align with NOAA CRCP's national priorities and future direction.

# SECTION ONE: SCOPE, DEVELOPMENT AND PRIORITIZATION PROCESS

This document captures the final set of priorities agreed upon by the core managers group at the priority setting workshop. The core managers group is defined as the “place based” coral reef managers who have the direct responsibility for managing the coral reef ecosystem in a particular geographic location. In addition to those place-based or core managers, NOAA’s jurisdictional Points of Contact (POCs) were encouraged to invite the participation of additional individuals not meeting this definition to ensure appropriate local representation. The workshop participants as well as those who were asked to participate in the initial analysis and review of this document are listed in Appendix One.

In preparation for the workshop, previously identified goals and objectives were taken from current management documents and presented in the Situation Analysis. The Situation Analysis is a preparatory document that summarizes: coral reef threats, condition and trends; key management issues; and key agencies’ management goals. Its primary purpose is to compile and consolidate available management documents from various management bodies and geographic localities ahead of interviews and meetings.

Appendix Two presents a summary of the Situation Analysis findings.

This Situation Analysis was augmented by a series of interviews that captured managers’ working perceptions of management goals as they are stated in management documents. In addition to commenting on current management documents, interviewees were given the opportunity to provide their professional perspectives on threats to coral reef resources and management actions needed to abate those threats, published or otherwise. Taken together, this information formed the basis for the workshop discussions by offering an initial set of goal areas to consider.

During the interviews with the coral reef managers and management advisors in American Samoa, facilitators identified challenges to and current deficiencies in achieving stated goals and objectives, noting specific capacity gaps that likely will need attention. This information will serve as the starting point for the capacity assessment, to be completed in the following year. It is summarized in Appendix Three.



*White-spotted surgeonfish schooling over a reef. Photo Credit: D. Paul Brown*

Workshop participants worked from the Situation Analysis, current Local Action Strategy (LAS) goals and interview results to develop specific and time-bound goals and objectives to address each of these need areas. Participants were asked to develop goals and objectives for the coral reefs for all of American Samoa, rather than for the mandated area of each workshop participant.

### FOR THE PURPOSE OF THIS EXERCISE, THE FOLLOWING DEFINITIONS WERE USED:

**Goals** are defined as the highest-level result the jurisdiction seeks to achieve (e.g., stable, sustainable coral reef ecosystems) in the next five to seven years.

**Objectives** are defined as the environmental, social and institutional outcomes the jurisdiction must achieve

to reach the end goal. Objectives are generally actionable within a three- to five-year time frame.

This document presents (1) the comprehensive set of goals and objectives based on existing Local Action Strategies and other management plans, revised by the core group, and (2) a subset of Priority Goals and Objectives within that larger list. The workshop participants identified the Priority Goals and Objectives as those that require immediate attention over the short term (3–5 years). These Priority Goals and Objectives will help guide NOAA CRCP funding allocations for management activities. The CRCP understands and respects the flexibility required by coral reef managers in implementing complex conservation and management programs. Should the partners seek funding for projects related to off-priority issues (either in the comprehensive framework of goals and objectives in this document or a new emerging issue not reflected in this document)



Left Image: Participants in the priority-setting workshop review a vote on the priority sites for American Samoa. Photo Credit: CRAG Right Image: An example of some of the corals that can be found on American Samoa's reefs. Photo Credit: Dave Burdick

it will need to be fully explained why the requested funding is most appropriate for the off-priority work versus efforts to address the priority Goals and Objectives identified through this process.

The Priority Goals and Objectives are identified by **seafoam/bold** and *seafoam/italic* font, respectively. The attendees voted on the Priority Objectives for only the identified Priority Goals. Objectives under the other goals not identified as priority were not voted upon for the purpose of this process.

The top three Priority Goals as identified by the workshop participants are:

- To maintain and, where necessary, improve the status of fish stocks through protection and sustainable use.
- To improve coastal watershed quality and enhance coral reef ecosystem function and health by reducing land-based sources of pollution.

- To plan for and mitigate the effects of global climate change—including changes in sea temperature, ocean acidification and sea level rise.

# SECTION TWO: MANAGEMENT FRAMEWORK AND GUIDING PRINCIPLES

## MANAGEMENT FRAMEWORK

To comprehensively and effectively address threats to coral reefs and carry out priority management goals, it is important that management agencies and organizations involved in coral reef conservation approach their work collaboratively and with a shared set of guiding principles. As such, the management framework proposed in this document is one that fosters coordination, information sharing and resource sharing among the various resource management agencies through: the American Samoa Coral Reef Advisory Group (CRAG), and groups such as the Two Samoa's Initiative and Le Tausagi.

The American Samoa Coral Reef Advisory Group (CRAG) is the working body of the Coral Reef Initiative. CRAG is a formalized collaboration of five different agencies in the territory, all of which have links to the coral reef environment and its management: the Department of Marine and Wildlife Resources (DMWR), the Department of Commerce (DOC), American Samoa Environmental Protection Agency (ASEPA), American Samoa

Community College (ASCC) and the National Park of American Samoa. The group receives its mandate via the governor's office as a functioning advisory task force. CRAG member agencies work together via mutual consensus to manage coral reefs in American Samoa by planning achievable programs, identifying and collaborating with other partners, obtaining funding for projects, tracking project compliance, promoting public awareness and developing local capacity for eventual self-sustainability.

The Two Samoa's Initiative is a program established between environmental organizations in American Samoa and neighboring independent Samoa to collaborate more effectively on shared environmental issues and concerns. Leaders of these two jurisdictions called for an annual forum to discuss environmental issues, along with the creation of an archipelago-wide Marine Protected Area Network; sharing of knowledge on U.S. Coral Reef Task Force activities, Coastal Management Programs and National Parks; and the development of compatible regulations for the protection of

certain marine species. Established in 2007, progress of the Initiative has been limited to date. Those involved have identified the lack of similarly available and collaborative funding streams as creating difficulty in establishing projects between both countries.

Additionally, resource management is more successful when stakeholders are engaged. As such, American Samoan communities should be included as constituents and stakeholders in the planning and implementation of management activities. This management framework also promotes the engagement of communities in ways that encourage an understanding of the numerous values of and threats to near-shore resources, and that empower them with skills to be stewards of the reefs. Le Tausagi is the interagency group of environmental educators working to educate the American Samoan public on the importance of protecting, preserving and restoring the natural environment and its limited resources. Le Tausagi has been successfully implementing a coordinated environmental education program in the territory. As a part of this management framework, Le Tausagi should be supported in their mission to promote public awareness and education on critical issues impacting the American Samoan environment and natural resources, with all due respect to cultural and traditional values.

As agreed to in this management priority framework, the CRAG, and groups such as the Two Samoa's Initiative and Le Tausagi, should facilitate coordination, information sharing and leveraging of funds to support these priorities.

## GUIDING PRINCIPLES

To determine the management priorities for coral reefs in American Samoa, core principles and practices were identified as crucial for success during development of the Situation

Analysis, the interview process and the priority setting workshop. The following core set of principles will serve as the foundation for how work will be conducted to address the primary threats to coral reefs in American Samoa.

These principles will guide the development of coral reef management projects and programs to address the stated Priority Goals and Objectives and maximize the effectiveness of these efforts. These principles can also assist decision-makers in the allocation of resources to address the key threats. Those efforts that incorporate these principles should be considered more likely for success and therefore higher priority over those efforts that do not take these principles into account.

Coral reef management efforts in American Samoa should aim to:

- Foster coordination, share information and share resources among the various territorial or federal resource management agencies in the territory (and with Samoa where appropriate). With the very limited financial and human capacity among the territory, it is crucial that projects and programs work collaboratively to achieve these common goals. Even where projects and programs have autonomy in their work, efforts should be made to incorporate those initiatives and/or findings into the larger/big-picture endeavors (e.g., priority territorial objectives or Two Samoa's Initiative).
- Integrate and foster land/sea (reef to ridge) connections. These efforts should ensure stakeholders understand these connections and their impacts to coral reef management.



*Left Image: Reef to ridge connections are an important part of the Two Samoas Initiative. Photo Credit: Dan Barshis Right Image: Natural resource managers from Samoa and American Samoa develop collaborative regional efforts under the Two Samoas Initiative. Photo Credit: CRAG*

- Incorporate village needs and priorities in project planning, implementation and evaluation. It is essential that villages be engaged in site and project planning from the beginning in order to foster trust with government agencies and empower local citizens to actively participate in managing reefs. This is particularly important in American Samoa because of land/sea tenure traditions and should be recognized as not only important but as an asset for promoting conservation. This includes incorporating traditional ecological knowledge by directly engaging American Samoan traditional leaders, practitioners, ocean-users and villages.
- Build local capacity, enabling on-the-ground managers and villages to increase their respective abilities to conduct local-level management. To build long-term success of American Samoa's coral reef management, capacity building of students and young staff should be of utmost importance in project and program development.
- Foster communication that is locally and culturally appropriate and effectively conveys information to various stakeholders. This should include both visual tools for conveying important concepts and models to demonstrate "how to" and/or "management effectiveness potential" of certain best management practices.

# SECTION THREE: STRATEGIC CORAL REEF MANAGEMENT PRIORITIES

This section presents the entire framework of goals and objectives developed and agreed upon by the workshop participants. In this section, the Priority Goals and Objectives are identified by **seafoam/bold** and *seafoam/italic* font, respectively. These are the top priorities for management action as agreed upon by the workshop participants. These Priority Goals and Objectives will guide funding allocations for management activities.

## **GOAL 1: TO MAINTAIN AND, WHERE NECESSARY, IMPROVE THE STATUS OF FISH STOCKS THROUGH PROTECTION AND SUSTAINABLE USE. [10]<sup>1</sup>**

Objectives:

*1.1: Effectively enforce regulations to sustainably manage marine resources. [12]*

*1.2: To promote and facilitate the development of a network of no-take Marine Protected Areas (MPAs) to assist the territory in efforts to meet the 20% goal<sup>2</sup>, in addition to continuing the development and incorporation of other MPAs, some of which may be designated for purposes other than improving the status of fish stocks (e.g., resource protection) into a wider network to ensure the long-term health and sustainability of the region's coral reef resources. [11]*

*a. Conduct studies to identify critical physical and biological parameters affecting ecological processes in coral reefs for better design and management of MPAs.*

*1.3: Strengthen fisheries regulations to increase stock abundance and occurrence of large coral reef fish on local reefs. [7]*

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<sup>1</sup>The numbers in brackets [ ] indicate the total number of votes received during the priority setting process.

<sup>2</sup>In 2000, late Governor Tauese Sunia directed the CRAG to develop a plan for protecting 20% of territorial coral reefs as "no take" MPAs. (Sunia, 2000 in Oram, 2008).



Left Image: Effective regulation of marine resources is one method to increase fish stocks in the territory. Here, DMWR enforcement officers check for undersized invertebrate species in cargo arriving in American Samoa. Photo Credit: DMWR Right Image: Sedimentation from streams after heavy rainfall on Tutuila Island. Photo Credit: NPS

- 1.4: Conduct studies to identify factors impacting the coral reef fisheries in order to improve the effectiveness of management. [4]
- 1.5: Monitor long-term trends in population parameters of key fish and invertebrate species for adaptive management. [2]
- 1.6: Reduce commercial fishing pressure on coral reef fish by redirecting fishing efforts off of coral reefs and introducing alternative sources of marine-based protein. [0]

**GOAL 2: IMPROVE COASTAL WATERSHED QUALITY AND ENHANCE CORAL REEF ECOSYSTEM FUNCTION AND HEALTH BY REDUCING LAND-BASED SOURCES OF POLLUTION.**  
[10]

#### Objectives:

- 2.1: Improve our understanding of the links between land-based sources of pollution and coral reef health through focused scientific research and monitoring so that site-specific actions and practices can be developed and implemented. [12]
- 2.2: Reduce runoff and resulting sedimentation loads to surface water and reef systems by developing and implementing best management practices. [9]
- 2.3: Reduce nutrient and bacterial loading to surface and groundwater. [9]
- 2.4: Effectively enforce the existing land use regulations to manage causes of land-based sources of pollution and improve the marine environment. [9]
- 2.5: Target activities and projects to improve the status of ecologically or culturally



Left Image: Research, monitoring, and adaptive management are a selection of tools American Samoa has identified to combat the effects, like the coral bleaching pictured, of climate change on its reefs. Photo Credit: Doug Fenner Right Image: Encouraging a communal 'sense of guardianship' of the environment is one goal to improve the health of American Samoa's reef resources. Photo Credit: CRAG

*significant habitats and species, such as sea grass, wetlands, turtles, reefs, mangroves, fish and sharks. [3]*

*2.6: Reduce solid waste pollutant loads to surface water through actions and best management practices. [1]*

*2.7: Assemble existing water quality data and establish a long-term status and trends water quality monitoring program for the coastal and offshore waters. Compile this information and distribute a biannual summary of American Samoa's water quality status and issues/concerns. [1]*

### **GOAL 3: PLAN FOR AND MITIGATE THE EFFECTS OF GLOBAL CLIMATE CHANGE—INCLUDING INCREASES IN SEA TEMPERATURE, OCEAN ACIDIFICATION AND SEA LEVEL RISE. [10]**

#### **Objectives:**

*3.1: Increase research and monitoring to identify, implement and support management strategies for reducing climate change and its impacts. [13]*

*3.2: Establish adaptive management strategies tailored for American Samoa so as to maximize resilience of coral reef ecosystems and conduct scenario planning for ecosystem alterations. [8]*

*3.3: Establish and foster adaptation and resilience of human communities and economic systems to respond to climate change impacts. [5]*

*3.4: Create a populace that is informed about climate change and is taking steps to reduce climate change causes and impacts. [3]*

*3.5: Reduce American Samoa's carbon footprint to provide a regional and international model of progress toward a low carbon sustainable economy. [1]*

*Note: Objectives 3.3, 3.4 and 3.5 above may not be the highest Priority Objectives, but the team felt they were important for climate change and the ability to reduce the effects.*

**GOAL 4: TO DEVELOP SOCIAL, CULTURAL AND ECONOMIC INITIATIVES THAT ENHANCE OPPORTUNITIES FOR AMERICAN SAMOA'S COMMUNITIES TO PARTICIPATE IN MANAGEMENT AND CONSERVATION ACTIVITIES, THEREBY ENCOURAGING A COMMUNAL "SENSE OF GUARDIANSHIP" OF THE ENVIRONMENT. [7]**

**Objectives:**

- 4.1: Promote and enhance public participation through capacity building on coral reef management and conservation approaches with a specific focus on the priority threats identified herein.*
  - a. Assess the social, economic and cultural issues that contribute to priority threats and hinder management efforts.*
- 4.2: Develop and facilitate culturally appropriate education and outreach activities to increase and improve community awareness of, participation in, and support for coral reef conservation and management leading to environmental stewardship.*
  - a. Assess the social, economic and cultural issues that contribute to priority threats and hinder management efforts.*

**GOAL 5: ENSURE COLLABORATIVE MANAGEMENT TO EFFECTIVELY PROTECT CORAL RESOURCES BY FOCUSING CRAG'S EFFORTS AND ATTENTION ON PRIORITY THREATS AND ACTIONS. [7]**

**Objectives:**

- 5.1: Establish an effective communication strategy for each of the Local Action Strategies to share information among scientists, resource managers and the general public.*
- 5.2: Increase practical collaboration among resource agencies to better utilize and leverage limited resources and capacity.*
- 5.3: Increase transparency in formulating regulation and management actions.*
- 5.4: Conduct a regular (i.e., biennial) external evaluation of CRAG's operations, effectiveness and stewardship.*
- 5.5: Increase awareness about and participation in coral management decisions and implementation at the director level.*

**GOAL 6: BALANCE POPULATION GROWTH AND NATURAL RESOURCE UTILIZATION TO CREATE AND MAINTAIN A HIGH QUALITY OF LIFE. [5]**

**Objectives:**

- 6.1: Support and inform immigration reform that leads to revised immigration policies that ultimately reduce long-term population pressure.*
- 6.2: Encourage family planning and reproductive health knowledge by*



Students from the 2010 Enviro-Discovery Summer Camp show off their environmental wishes; the camp is run by Le Tausagi and CRAG every summer. Photo Credit: Sarah Tanuvasa, Natural Resources Conservation Service

*improving services and educational programs.*

- 6.3: *Implement final Population Policy in consultation with various agencies and external experts and present Population Policy to governor and Fono for adoption.*
- 6.4: *Develop a territorial health policy for the governor and Fono to review supporting culturally appropriate health education and outreach campaigns for the general public.*
- 6.5: *Increase awareness of the effects of population on the environment via population education and outreach to a broad range of audiences.*
- 6.7: *Develop ecologically sustainable planning, economic growth and infrastructure.*
- 6.8: *Identify and strengthen capacity building and mentorship programs for women and girls.*

## GOAL 7: SUPPORT AND FOSTER SHARING AND LEARNING BETWEEN THE TWO SAMOAS FOR ENVIRONMENTAL MANAGEMENT. [0]

Objectives:

- 7.1: *Enhance collaborative relationship between CRAG agencies in American Samoa with Departments of Fisheries and Agriculture and the Ministry of Natural Resource and Environment in Samoa.*
- 7.2: *Conduct joint monitoring and scientific research on an archipelagic scale.*
- 7.3: *Improve the understanding of larval dispersal, settlement and connectivity between all islands within the Samoan archipelago.*

# SECTION FOUR: PRIORITY SITES

To effectively manage the implementation of the stated goals and objectives, workshop participants identified high priority geographic areas to apply these goals and objectives. These areas represent a ridge-to-reef approach to coral reef management and include both coral reef habitat and associated watershed areas.

To select priority sites where the above goals and objectives—as well as other site-specific needs—could be implemented, the participants agreed to the following selection criteria:

- **Biological Value:** Coral health, critical function, diversity, resilience, scientific value for climate change research.
- **Degree of Risk and Threat:** Land-based sources of pollution, water quality, population pressures, global warming impacts, development.
- **Management Effectiveness:** Existing management, capacity, support, village organization, political will, opportunity for agency collaboration, cultural value.

Once participants agreed upon the criteria, they used a voting system that weighted the criteria. This allowed the participants to define the criteria they felt were most important to selecting priority geographic areas. The group agreed to the following weights, listed in order of priority:

- **Management Effectiveness:** *voting scale of one to five*
- **Degree of Risk and Threat:** *voting scale of one to four*
- **Biological Value:** *voting scale of one to three*

Participants then identified potential priority sites in American Samoa for coral reef conservation. This was done using data from the interviews that occurred in previous days as well as a cumulative brainstorm exercise, wherein each participant identified additional sites that met the criteria. Overall, 19 sites were identified by the core managers for consideration as priority sites. The group then reviewed each site with individuals commenting on the biological value, degree of risk and threat and management effectiveness of each place. Participants were provided with a worksheet to keep notes on and to tally their individual votes. Each participant was then asked to vote for each site using the weighted criteria noted above.

The sites were then arrayed by their total score from highest to lowest. Table 1 on the next page includes a full list of sites and their rank. The top five sites are also listed on the next page. Once the top five sites were identified, the participants were asked to identify the two sites out of these five where they felt there was the highest chance of success and impact for a locally based coral



Amongst the top five priority sites identified during the priority-setting workshop, Faga'alu (left) and Vatia (right) are the two sites that participants identified as having the highest chance of success and impact from locally based coral management and conservation efforts. Photo Credits: Left image: Steve Frano Right image: Hideyo Hattori

management and conservation effort. The final two are noted in bold below:

- **Faga'alu**
- **Vatia**
- Ofu
- Aunu'u
- Nu'uuli

**Table 1: Priority Sites**

Sites In Priority Order	Total Points
Aunu'u	112
Faga'alu	109
Vatia	108
Ofu	108
Nu'uuli	107
Fagasa	104
Fagaitua bay	103
Amanave	102
Aua	98
Fagatele	95
Alofau	95
Utulei	93
Olosega	90
Tau	88
Fagalua	84
Coconut Point	84
Pago Pago	80
Fagamalo	79
Leone	59

# SECTION FIVE: LINKAGES TO NOAA'S NATIONAL GOALS AND OBJECTIVES

Table 2 shows how American Samoa's Priority Goals and Objectives correlate to the CRCP's National Goals and Objectives for coral reef conservation (available at <http://coralreef.noaa.gov/aboutcrctp/strategy/currentgoals/>). Table 2 was developed after the American Samoa Coral Reef Management Priority Setting Process was completed to explicitly identify potential partnerships between the managers in American Samoa and NOAA CRCP. Addressing both local jurisdictional priorities and national goals and objectives will increase efficiency and leveraging of the resources available for coral reef conservation. NOAA CRCP will use this table to inform future investments in coral reef conservation in American Samoa.

**Table 2. Correlation of American Samoa's Priority Goals and Objectives to CRCP's National Goals and Objectives for Coral Reef Conservation.**

American Samoa's Priority Goals and Objectives	NOAA's National Goals and Objectives for Coral Reef Conservation	Explanation of Correlation (as needed)
GOAL 1: TO MAINTAIN AND, WHERE NECESSARY, IMPROVE THE STATUS OF FISH STOCKS THROUGH PROTECTION AND SUSTAINABLE USE.		
Objective 1.1: Effectively enforce regulations to sustainably manage marine resources.	Fishing Impacts Objective 3.2: Strengthen local agency and community capacity for effective and consistent enforcement of regulations or behaviors that reduce impacts of fishing on coral reef ecosystems.	No explanation needed.
Objective 1.2: To promote and facilitate the development of a network of no-take Marine Protected Areas (MPAs) to assist the territory in efforts to meet the 20% goal <sup>3</sup> , in addition to continuing the development and incorporation of other MPAs, some of which may be designated for purposes other than improving the status of fish stocks (e.g. resource protection) into a wider network to ensure the long-term health and sustainability of the region's coral reef resources.	<p>Fishing Impacts Goal 2 Support effective implementation and management of marine protected areas (MPAs) and ecological networks of MPAs that protect key coral reef ecosystem components and functions.</p> <p>Fishing Impacts Objective 2.1: Identify, characterize and rank priority areas for protection within each jurisdiction, including (but not limited to):</p> <ul style="list-style-type: none"> <li>• spawning sites, nursery habitats, or other areas critical to particular life-history stages</li> <li>• biodiversity hotspots</li> <li>• areas with greatest resilience or potential for restoring resilience</li> <li>• areas facing the greatest threats</li> </ul> <p>Fishing Impacts Objective 2.2: Synthesize research on the performance of MPAs that protect key coral reef ecosystem components and functions.</p>	American Samoa's objective identifies both "no take" MPAs and the development of a network of MPAs in American Samoa, which correlates to the national fishing impact goal on MPA implementation and management. All the national objectives related to Fishing Impacts Goal 2 are listed, but the CRCP recognizes that American Samoan resource agencies may or may not find all of these objectives applicable to their efforts at the local scale.

<sup>3</sup> In 2000, late Governor Tauese Sunia directed the CRAG to develop a plan for protecting 20% of territorial coral reefs as "no-take" MPAs (Sunia, 2000 in Oram, 2008).

American Samoa's Priority Goals and Objectives	NOAA's National Goals and Objectives for Coral Reef Conservation	Explanation of Correlation (as needed)
GOAL 1: TO MAINTAIN AND, WHERE NECESSARY, IMPROVE THE STATUS OF FISH STOCKS THROUGH PROTECTION AND SUSTAINABLE USE.		
<p>Objective 1.2 (<i>continued from previous page</i>): To promote and facilitate the development of a network of no-take Marine Protected Areas (MPAs) to assist the territory in efforts to meet the 20% goal<sup>3</sup>, in addition to continuing the development and incorporation of other MPAs, some of which may be designated for purposes other than improving the status of fish stocks (e.g. resource protection) into a wider network to ensure the long-term health and sustainability of the region's coral reef resources.</p>	<p>Fishing Impacts Objective 2.3: Using outputs of Objective 2.1 and 2.2, appropriate models and socioeconomic considerations, identify MPAs that require increased protections or improved management, and areas to be considered for siting of new MPAs that protect key coral reef ecosystem components and functions.</p> <p>Fishing Impacts Objective 2.4: Work with relevant agencies, offices and communities to create, implement and improve the management of MPAs that protect key coral reef ecosystem components and functions.</p> <p>Fishing Impacts Objective 2.5: Conduct biological and socioeconomic research and monitoring to assess the performance of MPAs with respect to protection and restoration of key coral reef ecosystem components and functions.</p>	<p>(continued from previous page)</p>
<p>Objective 1.3: Strengthen fisheries regulations to increase stock abundance and occurrence of large coral reef fish on local reefs.</p>	<p>Fishing Impacts Objective 1.1: Support the creation or improvement of coral reef fisheries management plans that address ecological, social and economic considerations.</p>	<p>American Samoa's objective to strengthen fisheries regulations correlates to the National Fishing Impact Objective 1.1. This national objective highlights the need to support improvements to fisheries management plans, which serve as a basis for fishery management regulations.</p>
GOAL 2: IMPROVE COASTAL WATERSHED QUALITY AND ENHANCE CORAL REEF ECOSYSTEM FUNCTION AND HEALTH BY REDUCING LAND-BASED SOURCES OF POLLUTION.		
<p>Objective 2.1: Improve our understanding of the links between land-based sources of pollution and coral reef health through focused scientific research and monitoring so that site-specific actions and practices can be developed and implemented.</p>	<p>LBSP Impacts Objective 1.4: Promote an integrated effort to fill strategic science gaps that directly inform management decisions related to planning and implementation activities in priority coral reef ecosystems and associated watersheds.</p>	<p>No explanation needed.</p>

Table 2 continued

American Samoa's Priority Goals and Objectives	NOAA's National Goals and Objectives for Coral Reef Conservation	Explanation of Correlation (as needed)
GOAL 2: IMPROVE COASTAL WATERSHED QUALITY AND ENHANCE CORAL REEF ECOSYSTEM FUNCTION AND HEALTH BY REDUCING LAND-BASED SOURCES OF POLLUTION.		
Objective 2.2: Reduce runoff and resulting sedimentation loads to surface water and reef systems by developing and implementing best management practices.	LBSP Impacts Objective 1.3: Implement watershed management plans and relevant Local Action Strategies (LAS) within priority coral reef ecosystems and associated watersheds to improve water quality and enhance coral reef ecosystem resilience. Where needed, develop (or update) watershed management plans that incorporate coral reef protection measures.	Best management practices referred to in the American Samoa objective are generally found in watershed management plans or in LAS.
Objective 2.3 Reduce nutrient and bacterial loading to surface and groundwater.	<p>GOAL 1: Reduce pollutant loading from watersheds to priority coral reef ecosystems.</p> <p>LBSP Impacts Objective 1.1: Identify and prioritize those coral reef ecosystems and associated watersheds, within each jurisdiction, that will benefit the most from implementing management conservation strategies to reduce land-based sources of pollution.</p> <p>LBSP Impacts Objective 1.2: Identify and prioritize coastal and upland areas for preservation, protection and restoration based on the coral reef ecosystems and associated watershed areas identified in Objective 1.1.</p> <p>LBSP Impacts Objective 1.3: Implement watershed management plans and relevant Local Action Strategies (LAS) within priority coral reef ecosystems and associated watersheds to improve water quality and enhance coral reef ecosystem resilience. Where needed, develop (or update) watershed management plans that incorporate coral reef protection measures.</p> <p>LBSP Impacts Objective 1.4: Promote an integrated effort to fill strategic science gaps that directly inform management decisions related to planning and implementation activities in priority coral reef ecosystems and associated watersheds.</p> <p>LBSP Impacts Objective 1.5: Determine the efficacy of management activities through coordinated baseline and performance monitoring to assess progress and adapt management actions as needed.</p>	No explanation needed.

Table 2 continued

American Samoa's Priority Goals and Objectives	NOAA's National Goals and Objectives for Coral Reef Conservation	Explanation of Correlation (as needed)
GOAL 2: IMPROVE COASTAL WATERSHED QUALITY AND ENHANCE CORAL REEF ECOSYSTEM FUNCTION AND HEALTH BY REDUCING LAND-BASED SOURCES OF POLLUTION.		
Objective 2.4: Effectively enforce the existing land use regulations to manage causes of land-based sources of pollution and improve the marine environment.	LBSP Impacts Objective 3.4: Ensure that the necessary and consistent regulatory and programmatic framework exists and is enforced to implement watershed management strategies necessary to protect coral ecosystems.	Both the jurisdictional and national objectives highlight the need to effectively enforce existing rules related to reducing land-based sources of pollution.
GOAL 3: PLAN FOR AND MITIGATE THE EFFECTS OF GLOBAL CLIMATE CHANGE—INCLUDING CHANGES IN SEA TEMPERATURE, OCEAN ACIDIFICATION AND SEA LEVEL RISE.		
Objective 3.1: Increase research and monitoring to identify, implement and support management strategies for reducing climate change and its impacts.	<p>Climate Impacts Objective 1.5: In collaboration with reef managers, develop, test and apply the best available science to provide new and innovative tools to help managers prepare and respond to climate change and ocean acidification related impacts.</p> <p>Climate Impacts Objective 2.1: Characterize physical and chemical changes in coral reef environments by enhancing question-based monitoring to fill gaps in our current observations. This both establishes a baseline to assess climate change impacts on coral reef ecosystems and reveals changes through time.</p> <p>Climate Impacts Objective 2.2: Characterize the responses of coral reef ecosystems and their related components to climate change and ocean acidification to separate impacts from climate change and ocean acidification from impacts of other environmental threats and to test the effectiveness of management actions.</p> <p>Climate Impacts Objective 4.1: Facilitate the identification, development and testing of intervention measures to reduce stress from climate change and ocean acidification on coral reef ecosystems in field settings.</p>	National Climate Objectives 2.1 and 2.2 each identify aspects of research and monitoring that will support management strategies as identified in American Samoa's objective. Further, National Climate Objectives 1.5 and 4.1 both address the need to develop, apply and test new management strategies for reducing the impacts of climate change, which correlates to the section of the American Samoa objective "identify [and] implement... management strategies for reducing climate change and its impacts."

Table 2 continued

American Samoa's Priority Goals and Objectives	NOAA's National Goals and Objectives for Coral Reef Conservation	Explanation of Correlation (as needed)
GOAL 4: Increased public stewardship of coral reef ecosystems.		
Objective 3.2: Establish adaptive management strategies tailored for American Samoa so as to maximize resilience of coral reef ecosystems and conduct scenario planning for ecosystem alterations.	<p>Climate Impacts Objective 1.5: In collaboration with reef managers, develop, test and apply the best available science to provide new and innovative tools to help managers prepare and respond to climate change and ocean acidification related impacts.</p> <p>Climate Impacts Objective 3.2: Through process studies and modeling, develop integrated impact models of changes in coral reef ecosystems in response to the physical and chemical processes associated with climate change and ocean acidification, and the interactions of these processes with local stressors.</p>	<p>National Climate Objective 1.5 identifies the need to use the best available science and work with managers to develop new tools for managers to respond to climate related impacts. These tools are likely to include adaptive management strategies for maximizing reef resilience. National Climate Objective 3.2 correlates with the portion of the American Samoa objective to conduct scenario planning for the effects of climate change in reef systems. Both objectives also call out the need for this work to occur at the local level.</p>
Objective 3.3: Foster adaptation and resilience of human communities and economic systems to respond to climate change impacts.	<p>Climate Impacts Objective 2.3: Characterize socioeconomic effects of climate change impacts on coral reef ecosystems to identify vulnerable reef-dependent human communities and understand the impacts to these communities.</p> <p>Climate Impacts Objective 3.3: Forecast and project climate change and ocean acidification related impacts on reef-dependent social and economic systems. Coupling of physical, chemical, ecosystem and socioeconomic models will be required to project future impacts.</p>	No explanation needed.

Table 2 continued

# APPENDIX ONE: PRIORITY SETTING PROCESS PARTICIPANTS AND SUMMARY OF INSTITUTIONAL RESPONSIBILITIES

## PRIORITY SETTING PROCESS PARTICIPANTS

### Core Group: place-based managers of specific area of coral reef.

In consultation with the jurisdictional point-of-contact, additional individuals were invited to the workshop as technical experts. Each member of this group was invited to attend the workshop, to partake in an interview prior to the workshop and to participate in document revisions.

#### Decision makers:

Faleseu Eliu Paopao	Director, Department of Commerce (DOC)
Ufagafa Ray Tulafono	Director, Department of Marine and Wildlife Resources (DMWR)
Dr. Toafa Vaiaga'e	Director, American Samoa Environmental Protection Agency (EPA)
Mike Reynolds	Superintendent, National Park of American Samoa
Lelei Peau	Deputy Director, Department of Commerce
Seth Satele-Galea'i	President, American Samoa Community College (ASCC)

#### Workshop Attendees:

Peter Craig	National Park of American Samoa
Jeremy Goldberg	Coordinator, Coral Reef Advisory Group
Marlowe Sabater	Chief Fisheries Biologist, DMWR
Doug Fenner	Coral Reef Ecologist, DMWR
Ephraim Temple	ASCC–Sea Grant
Fatima Sauafea-Leau	National Marine Fisheries Service (NMFS), Pacific Islands Regional Office
Alice Lawrence	MPA Network Specialist, DMWR
Domingo Ochavillo	Fisheries Biologist, DMWR
Kevin Grant	Deputy Superintendent, Fagatele Bay National Marine Sanctuary
Lucy Jacob	No-Take MPA Program Lead, DMWR (day two participant)
Christianera Tuitele	American Samoa EPA (day one participant)
Clare Shelton	DOC/NOAA Coral Reef Management Fellow
Don Vargo	ASCC, Land Grant (day two participant)
Sarah Eminhizer	Environmental Planner, DOC Coastal Management Program
Phil Wiles	American Samoa EPA

**Absent from Workshop:**

Dan Aga	ASCC, Land Grant
Elena Vaouli	Water Program Manager, American Samoa EPA
Lauren Wetzell	ASCC
Gene Brighthouse	Superintendent, Fagatele Bay National Marine Sanctuary
Doug Harper	Territorial Planner, DOC
Reinette Thompson-Niko	Acting Manager, DOC Coastal Management Program
Alyssa Edwards	DOC/NOAA Coral Reef Management Fellow

**Advisors: managers of jurisdictions and populations impacting American Samoa's coral reefs.**

Each member of this group was invited to an interview prior to the workshop and to participate in document revisions.

Selaina Vaitautolu	Community-Based MPA Lead, DMWR
Soli Tuaumu	Wetlands Specialist, DOC
Le Tausagi Members	Education Coordinator Working Team
Don Vargo	ASCC Land Grant
Peter Eves	Enforcement Coordinator, DMWR
Ben Carroll	Fish Biologist, DMWR
Bernard Matatamua	American Samoa EPA
Brian Peck	US Department of Agriculture, Natural Resources Conservation Service
Jim Maragos	US Fish and Wildlife Service
Don Palawski	US Fish and Wildlife Service

**Science Advisors: members of the scientific community with specific expertise on issues relating to American Samoa's coral reefs.**

Each member of this group was invited to review documents in preparation of the workshop as well as drafts of the Priority Setting document.

Bob Richmond	University of Hawai'i
Alan Friedlander	University of Hawai'i
Gerry Davis	NMFS Pacific Islands Regional Office
Al Everson	NMFS Pacific Islands Regional Office
Arielle Levine	NMFS Pacific Islands Fisheries Science Center
Rusty Brainard	NMFS Pacific Islands Fisheries Science Center, Coral Reef Ecosystem Division (CRED)
Steve Frano	NOAA Coastal Programs Division
Mark Monaco	NOS NCCOS, Biogeography Branch
Joyce Miller	NMFS Pacific Islands Fisheries Science Center, CRED
Bernardo Vargas-Angel	NMFS Pacific Islands Fisheries Science Center, CRED
Kerry Grimshaw	NMFS Pacific Islands Fisheries Science Center, CRED
Mike Hamnett	University of Hawai'i
Pete Houk	Pacific Marine Resource Institute
Chuck Birkeland	University of Hawai'i
Greta Aeby	Hawai'i Division of Aquatic Resources
Ali Green	The Nature Conservancy
Fini Aitaoto	Western Pacific Regional Fishery Management Council (WPRFMC)
Kitty Simonds	Executive Director, WPRFMC

## SUMMARY OF INSTITUTIONAL RESPONSIBILITIES

A summary of the key agencies and their existing coral management priorities and goals follows:

**American Samoa Department of Commerce (DOC)** is responsible for the management of economic development and environmental protections for the territory of American Samoa. The department is comprised of six divisions, each with specific missions and goals that contribute to the overall mandate of the department.

**American Samoa Coral Reef Advisory Group (CRAG)** is the working body of the Coral Reef Initiative. The Coral Reef Advisory Group is a formalized collaboration of five different agencies in the territory, all of which have links to the coral reef environment and management: the Department of Marine and Wildlife Resources (DMWR), the Department of Commerce (DOC), American Samoa Environmental Protection Agency (ASEPA), the American Samoa Community College (ASCC) and the National Park of American Samoa. The group receives its mandate via the governor's office as a functioning advisory task force.

Since its conception, CRAG has undertaken many successful management and science activities. Through close collaboration and cooperation, CRAG has enhanced management effectiveness and continually strives for ever better alignment with other entities that have common interests in coral reef conservation. The group utilizes innovative and creative opportunities to educate local landowners, fishermen, children and cultural leaders on the importance of resource preservation not only for now, but for future generations as well.

CRAG member agencies work together by mutual consensus to manage coral reefs in American Samoa by planning achievable programs, identifying and collaborating with other partners, obtaining funding for projects, tracking project

compliance, promoting public awareness and developing local capacity for eventual self-sustainability.

**American Samoa Department of Marine and Wildlife Resources (DMWR)** promotes the sustainable utilization of both marine and wildlife resources in the territory of American Samoa. The mission of the department is to manage, protect, preserve and perpetuate the marine and wildlife resources in the territory. The following functional statements expand upon the DMWR mission statement. (1) Prepare and develop comprehensive plans for the management, protection and preservation of marine and wildlife resources in American Samoa. (2) Conduct studies, investigations and research relative to the commercial and recreational utilization of our fisheries and wildlife resources. (3) In coordination with the office of Samoan Affairs, conduct education and training programs relating to the management and preservation of marine and wildlife resources. (4) Collect, analyze and disseminate data and information relating to the marine and wildlife resources in the territory. (5) Adopt, amend and enforce rules and regulations consistent with the laws of the American Samoan government. (6) Accept, receive and administer grants, local funds or gifts from public and private agencies, including local and federal governments for the purpose of carrying out the functions of the department.

**American Samoa Environmental Protection Agency (ASEPA)** protects human health and safeguards the natural environment—air, water and land—upon which life depends. ASEPA's purpose is to ensure the following:

- All residents of American Samoa are protected from significant risks to human health and the environment where they live, learn and work.
- Efforts to reduce environmental risk are based on the best available scientific information.

- American Samoan and federal laws that protect human health and the environment are enforced fairly and effectively.
- Environmental protection is an integral consideration in American Samoa and Samoa policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry and international trade, and these factors are similarly considered in establishing environmental policy.
- All parts of society—villages/communities, individuals, business and government—have access to accurate information sufficient to effectively participate in managing human health and environmental risks.
- Environmental protection contributes to making our communities and ecosystems diverse, sustainable and economically productive.
- American Samoa works with other states and nations to protect the global environment.
- The ASEPA is one hundred percent funded by the U.S. EPA Region 9 through an EPA Consolidated Environmental Program Grant awarded on a fiscal year budget period. At present, the Consolidated Grant consists of the following categorical grant funding: Clean Water Act (CWA); Safe Drinking Water Act (SDWA); Resource Conservation and Recovery Act (RCRA); Clean Air Act (CAA); Federal Fungicide, Insecticide and Rodenticide Act (FFIRA); and the Beach Grant Act. To be eligible to receive this funding, the ASEPA must meet specific environmental and technical mandates as set forth in EPA law and regulations. ASEPA programs and activities must include the planning, development, implementation and enforcement strategies, objectives and goals to accomplish this mission.

### American Samoa Community College (ASCC)

was established in 1970 to provide post-secondary education opportunities in the liberal arts, teacher training, vocational-technical education and general education to the residents of American Samoa. ASCC offers Associate of Arts and Associate of Science degrees as well as certificate programs in a variety of academic and technical areas.

### ASCC Community and Natural Resources (Land Grant) Programs

In 1981, ASCC was designated a Land Grant College. Federal funds were provided to develop programs in agriculture, family and consumer sciences, 4-H youth development and forestry. The three major components of the program are instruction, extension and research.

**ASCC Sea Grant** Environmental stewardship, long-term economic development and responsible use of America's coastal, ocean and Great Lakes resources are at the heart of Sea Grant's mission. Sea Grant is a nationwide network (administered through NOAA), of 32 university-based programs that work with coastal communities. The National Sea Grant College Program engages this network of the nation's top universities in conducting scientific research, education, training and extension projects designed to foster science-based decisions about the use and conservation of our aquatic resources. The University of Hawai'i Sea Grant Program has placed an extension agent in American Samoa. The extension agent engages in marine science education in the jurisdiction through courses administered by the American Samoa Community College.

**National Park of American Samoa** was established by the U.S. Congress "... to preserve and protect the tropical forest and archeological and cultural resources of American Samoa, and of associated reefs, to maintain the habitat of flying foxes, preserve the ecological balance of the Samoan tropical forest, and, consistent with the preservation of these resources, to provide for the enjoyment of the unique resources of the Samoan tropical forest by



Goatfish school in Rose Atoll lagoon. Photo Credit: Jim Maragos, U.S. Fish & Wildlife Service

visitors from around the world.” The National Park is really “three parks” on four separate islands. Ofu and Olosega have the most accessible coral reefs and miles of beaches. Tutuila has road-accessible forests, native wildlife and scenic coastline.

### Fagatele Bay National Marine Sanctuary

comprises a fringing coral reef ecosystem nestled within an eroded volcanic crater on the island of Tutuila, American Samoa. This smallest and most remote of all the National Marine Sanctuaries is the only true tropical reef in the program.

Fagatele Bay National Marine Sanctuary was designated in 1986 in response to a proposal from the American Samoa government to the (then) National Marine Sanctuary Program. The Office of National Marine Sanctuaries protects and preserves natural and cultural resources in areas of special significance in the oceans and Great Lakes of the United States. There are 13 sanctuaries and 1 marine national monument in the sanctuary system ranging from Stellwagen Bank off Cape Cod to the Channel Islands in southern California. All manage their precious resources through a combination of education, research, long-term monitoring, regulation and enforcement.

**The Pacific Islands Regional Office (PIRO)** and **The Pacific Islands Fisheries Science Center (PIFSC)** of the National Marine Fisheries Service (NMFS) are part of NOAA. PIRO manages programs that support both domestic and international conservation and management of living marine resources within the Pacific. The Pacific Islands Region is comprised of American Samoa, Guam, Hawaii, the Northern Mariana Islands and other U.S. Pacific islands. PIRO is responsible for assisting the Western Pacific Regional Fishery Management Council (see below) in the development of fishery management plans and amendments, drafting and implementing federal fishery regulations, issuing federal fishing permits and monitoring fisheries through its observer program. Other major responsibilities include the conservation and recovery of protected species, the preservation and restoration of marine habitat and the coordination with international organizations to implement and monitor fishery agreements and treaties. PIRO has one field office located in Pago Pago, American Samoa, and staff located in Guam and the Commonwealth of the Northern Mariana Islands.<sup>4</sup>

<sup>4</sup> [http://www.fpir.noaa.gov/DIR/dir\\_index.html](http://www.fpir.noaa.gov/DIR/dir_index.html)

The Coral Reef Ecosystem Division (CRED) of the Pacific Islands Fisheries Science Center (supported by the CRCP) provides sound science to enable informed and effective implementation of ecosystem-based management and conservation strategies for coral reef ecosystems of the U.S.-affiliated Pacific Islands Region. The Division leads an integrated, interdisciplinary program of ecosystem assessment and long-term monitoring, benthic habitat mapping, and applied research on the coral reef ecosystems of 50 primary islands and atolls including American Samoa.<sup>5</sup>

**Western Pacific Regional Fishery Management Council (WPRFMC)** The Western Pacific Regional Fishery Management Council is one of eight regional Fishery Management Councils. Management measures created by the Council and approved by the Secretary of Commerce are implemented by the National Marine Fisheries Service (NMFS) Pacific Islands Regional Office and enforced by the NOAA Office of Law Enforcement, the U.S. Coast Guard 14th District and local enforcement agencies.<sup>6</sup>

Fisheries 0 to 3 miles from shore are managed by the Territorial government. Fishery management measures for the US exclusive economic zone (EEZ) beyond 3 miles are found in the American Samoa Fishery Ecosystem Plan (FEP) and the Pacific Pelagics FEP. The American Samoa FEP covers all but the pelagic species and includes a management structure that emphasizes community participation and enhanced consideration of the habitat and ecosystem, protected species and other elements not typically incorporated in fishery management decision-making. Enforcement of federal fishery regulations is handled through a joint federal-territorial partnership.<sup>7</sup>

**United States Fish and Wildlife Service (USFWS)** works to conserve, protect and enhance fish, wildlife, plants and their habitats. To achieve their

mission, they engage in a number of activities, including enforcement of federal wildlife laws, protection of endangered species, conservation and restoration of wildlife habitats and management of migratory birds.

The Pacific Region includes the states of Hawaii, Idaho, Oregon and Washington and Pacific island territories and U.S. affiliated states. This includes the territories of American Samoa, Guam and the Commonwealth of the Northern Mariana Islands as well as the Freely Associated States of the Federated States of Micronesia, the Republic of the Marshall Islands and the Republic of Palau under the Compacts of Free Association.

These states and territories encompass over 158 million acres spread over a large area. The Pacific islands area of the region is located throughout 4.9 million square miles of ocean, spanning five time zones and the International Date Line.

The people of the different landscapes throughout the region perceive, value and manage their natural resources in ways unique to their respective regions and cultures. The work is therefore accomplished by working with partners—agricultural and natural resource dependent communities, rural and urban landowners, Native American tribal governments and indigenous island communities, watershed councils, coral reef advisory groups, universities, land trusts, state and federal agencies and many others.

**United States Department of Agriculture (USDA)**—Natural Resources Conservation Service (NRCS) Pacific Islands Area partners with conservation districts and others to provide technical and some cost-share assistance to private landowners. Its main goal is to protect, enhance and preserve soil, water, air, plants and animals using sound science and expertise. Participation in its programs is voluntary.

<sup>5</sup> <http://www.nmfs.hawaii.edu/cred/index.php>

<sup>6</sup> <http://www.wpcouncil.org/about/>

<sup>7</sup> <http://www.wpcouncil.org/AmericanSamoa.htm>

# APPENDIX TWO: CONTEXT

The Situation Analysis is a preparatory document that summarizes coral reef threats, condition and trends; key management issues; and key agencies' management goals. As an initial step in the priority setting process, it was used ahead of meetings and interviews to provide a reference point and boundary for priority setting discussions with coral reef managers in American Samoa. The documents that make up the basis of this analysis were identified during interviews with coral reef managers in American Samoa and via a desk review of existing management plans from those agencies that are responsible for or affect American Samoa's coral management. The coral reef managers interviewed for this study were identified by the NOAA CRCP team with input from the NOAA CRCP point of contact in American Samoa and included NOAA-Pacific Islands Regional Office, American Samoa Department of Commerce (DOC), American Samoa DOC—Coastal Management Program, American Samoa Department of Marine and Wildlife Resources, American Samoa Environmental Protection Agency, American Samoa National Parks, American Samoa Community College, Fagatele Bay National Marine Sanctuary and the National Parks Service.

The Situation Analysis identified the following issue areas—which reflect both specific threats as well as tools to mitigate threats—as those that were most commonly referred to in the documents reviewed. These results are listed in no particular order.

**Education and Outreach** refers to the need to educate all users, both residents and visitors, of the importance of, threats to, and impacts of human activities on the coral reef ecosystem. This

includes public outreach programs in schools and villages to increase awareness of the effects of daily living on marine resources.

## **Information Management and Agency**

**Coordination** refers to the need to coordinate information and management on all levels. This includes creating and coordinating data and research as well as coordinating the various territorial, national and international research institutions and management agencies. Because American Samoa is small and remote, management and enforcement abilities and capacity could be greatly improved by wider access to information and streamlined coordination of various agencies and departments.

## **Natural Habitats: Research and Monitoring**

includes research and monitoring in high-impact areas, such as downstream of densely populated areas and piggeries. Research and habitat maintenance goals also include designating and enforcing no-take Marine Protected Areas.

The following goal areas are also mentioned often in the reviewed documents:

**Fishing** encompasses issues related to fish stocks, impacts on fisheries and coral reef fish habitat. Giant clams and a few large fish species are uncommon to rare, but many small fish species are abundant. There is some evidence to suggest that stocks of medium size fish may have increased in marine reserves. Fishing levels are currently low, having decreased in recent decades as villagers shifted to store bought food. Increasing human populations have not produced increasing fishing pressure due to the shift to store bought food

(unlike in most other locations), but the future cannot be predicted with certainty. Monitoring of reef flat fish populations is now beginning.

**Climate Change** is a serious threat to corals in the territory. Sea-temperature change and ocean acidification pose significant risks to the coral reef ecosystems as well as the island geology in general. Goals and objectives indicate the need for significant research on the topic of mitigation strategies and the possible effects of climate change, including the rise of invasive species, coral bleaching, increased incidence of coral disease, and increased storm frequency and strength.

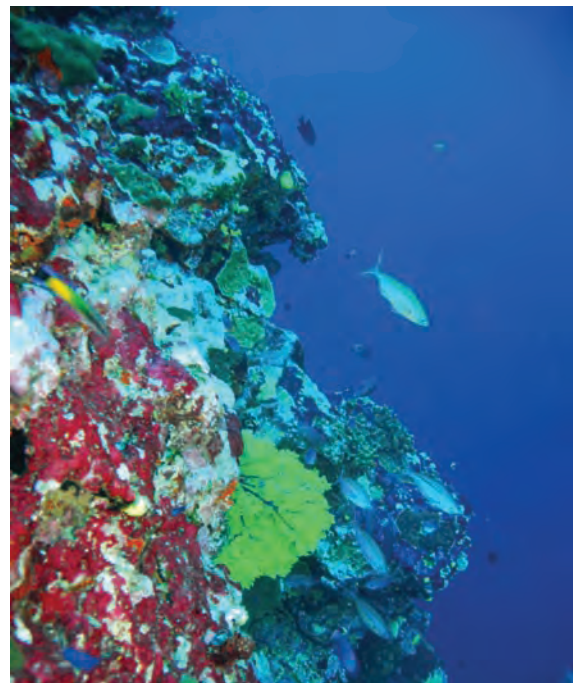
**Economic Development** refers to the necessity of all management actions to protect and enhance the economy of the territory. This includes economic valuation of marine resources as well as plans to sustainably increase economic use of resources, such as tourism and fishing.

**Water Quality** issues are often closely related to agricultural and piggery runoff as well as correlated with areas of dense population. Water quality issues include sediment plumes as well as elevated nutrient, phosphate and heavy metal levels. Consistent monitoring programs are underway to determine the threat, which is considered to be generally low in many areas of the island chain, which are sparsely populated. However major exceptions occur for the heavily populated areas of Manu'a and Tutuila, where quickly growing population is increasing pressure on coastal resources. This issue is closely related the "Land Based Sources of Pollution" (below), but includes water quality issues related to boating, climate change, storms, etc.

**Land-Based Sources of Pollution** pertains to human actions that degrade water quality and have a direct impact on reef health, including solid waste disposal, piggery runoff, septic and sewage run-off and the impacts of coastal construction.

**Zoning and Marine Protected Areas (MPAs)** are emerging issues as the establishment of a system of no-take MPAs and other MPAs is underway. Issues of zoning and MPAs run the gamut from the economy to research and community outreach. However, many of the active villages have been successful in establishing and enforcing local conservation and access customs.

**Regulation and Enforcement** refers to enforcing regulations already in place as well as updating regulations to reflect current needs and stresses. This includes permitting, reviewing construction plans and fishery regulation. As the ecosystem evolves due to changing uses and increased anthropogenic stresses as well as the effects of global climate change, regulations must evolve to meet the needs. As such, research and monitoring are often linked to the updating of regulations. In addition, this issue often coincides with significant education and outreach goals, as having public input to regulations and dispersing information on regulations is the first step toward user-group compliance.



*Coral Wall at Whale Rock in outer Pago Pago Harbor.  
Photo Credit: Ben Carroll*

# APPENDIX THREE: PRELIMINARY IDENTIFICATION OF CAPACITY GAPS AND OTHER BARRIERS TO IMPLEMENTATION OF THE PRIORITIES

During the interviews with coral reef managers in American Samoa, facilitators made an effort to understand the working relationship between managers and management documents. Facilitators noted and identified challenges to and current deficiencies in achieving stated goals and objectives, noting specific capacity gaps that likely will need attention in the upcoming capacity assessment.

The Coastal Resources Center at the University of Rhode Island developed and applied common tools for comparative assessments of coastal ecosystem governance. This approach involves three categories, phrased as key statements, for enabling conditions that allow an initiative to successfully execute a sustained plan of action designed to influence the course of events in an ecosystem.

The three categories are: constituencies, commitment and capacity. This baseline will also identify the immediate capacity gaps that are directly related to implementing this strategic approach. These gaps will be explored further, and a capacity assessment will be developed in phase II of this effort, beginning in fiscal year 2010.

## CONSTITUENCIES

### Premise:

To achieve success, a core of well-informed and supportive **constituencies** comprised of stakeholders in both the private sector and government agencies must actively support the program.

### Measures:

1. The user groups who are affected by your program understand and support the goals, strategies and targets.
2. There is public support for your program.
3. The institutions that assist in implementing your program, or the institutions that are affected by the plan, understand and support it.

### Results:

There is a strong system of local (village) rule that exists and is used for resource management in American Samoa. This creates a strong basis for village leadership to direct action at the local level. However, to properly engage in a community process, there are government protocols and cultural norms that need to be followed. While this isn't necessarily an impediment, it does require time and energy to do so appropriately, which needs to be considered in planning for any community engagement activities. Although this may slow the engagement initially, reports indicate that most community-based efforts have found moderate to high success. It was noted by several participants that this constituency sometimes lacks long-term commitment and interest and does not have the resources or mandate for effective reef management. Across the territory, the population generally appreciates the need for a healthy environment; however, the connection between their actions and environmental degradation is not strong.

## COMMITMENT

### Premise:

To achieve success, it is necessary that the delegated authorities have expressed **commitment** to the policies of a program and to the allocation of financial resources required for long-term program implementation.

### Measures:

1. The appropriate level of government has formally approved the plan of action.
2. The government provided the program with the authorities it needs to successfully implement its plan of action.
3. Sufficient financial resources have been committed to fully implement the program over the long-term.

### Results:

There was a general sense that American Samoa lacks strong planning (i.e., no comprehensive planning or zoning at the local and island-wide scales) approaches so it is difficult to comment on the formal approval and adoption of plans. It was recognized that additional, comprehensive planning is critical to successfully managing population growth and resulting pressures. Overall, because of the relatively close proximity between managers, appointed directors and elected officials, there was a general sense that political will can be generated for important projects (e.g., ban on scuba spearfishing). It was frequently noted that even when political will exists, follow-through on mandates and orders is often lacking. Like many places, American Samoa does not have sufficient funding resources to complete basic work such as monitoring and enforcement. This situation is worsened by inter-agency coordination issues wherein work that could be done cooperatively often is not, leading to the duplication of effort.

## CAPACITY

### Premise:

To achieve success, it is necessary for sufficient **capacity** be present within the institutions responsible for the program to implement its policies and plan of action.

### Measures:

1. Your program possesses the human resources to implement its plan of action.
2. Your program possesses the institutional resources (equipment, materials, etc.) to implement its plan of action.
3. There are internal or external barriers to successfully implement plan of action. What are these?

### Results:

American Samoa is challenged by the cycle of technical experts that arrive on island, stay a few years and then leave. This creates a situation of constant movement at the technical level, which causes planning and workshop fatigue for those who remain on island for any length of period beyond two years, as previously discussed issues are re-hashed. The lack of permanent talent is exacerbated by educated and talented Samoans leaving the island for their careers or taking federal positions on-island. It is difficult to retain American Samoan government staff because of the comparatively low salary scales. Some of the most successful activities mentioned shared common attributes: They were limited in scope, achievable with limited funding and capacity, targeted to a specific issue (piggeries) and remedial action was clear and easily executed. It was noted that these small-scale projects are, in part, successful because they work below the bureaucracy, which tends to have a low efficiency.

This initial assessment will be followed by a more detailed assessment and analysis that will focus on capacity gaps in relation to the specific management goals and objectives that are finalized by the priority setting process.

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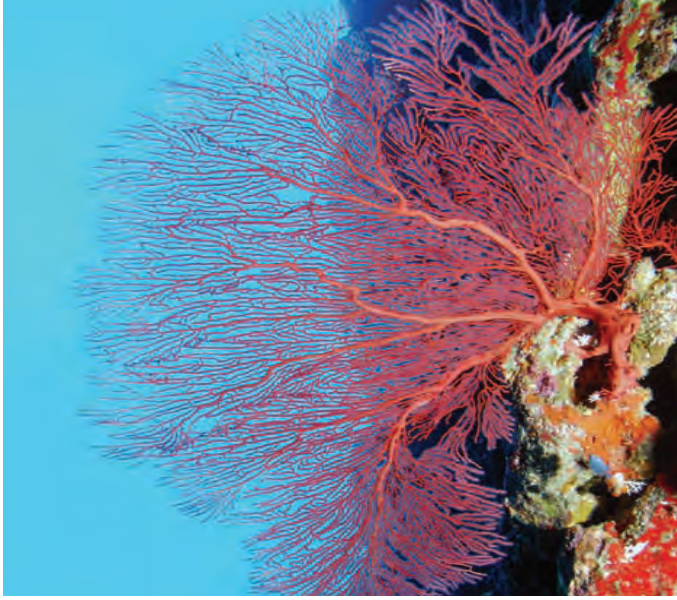
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A gorgonian seafan in outer Pago Pago Harbor. Photo Credit: Ben Carroll

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