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NOAA Technical Memorandum CRCP 24

National Coral Reef Monitoring Program Socioeconomic Monitoring Component

Summary Findings for American Samoa, 2014

NOAA Coral Reef Conservation Program

Silver Spring, MD

March 2016

United States Department of Commerce	National Oceanic and Atmospheric Administration	National Ocean Service
Penny S. Pritzker Secretary	Dr. Kathryn Sullivan Administrator	Dr. W. Russell Callender Assistant Administrator

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About this document

The mission of the National Oceanic and Atmospheric Administration (NOAA) is to understand and predict changes in the Earth's environment and to conserve and manage coastal and oceanic marine resources and habitats to help meet our Nation's economic, social, and environmental needs. As a branch of NOAA, the National Ocean Service (NOS) conducts or sponsors research and monitoring programs to improve the scientific basis for conservation and management decisions. The NOS strives to make information about the purpose, methods, and results of its scientific studies widely available.

Coral Reef Conservation Program (CRCP) along with the National Centers for Coastal Ocean Science uses the NOAA Technical Memorandum NOS series to achieve timely dissemination of scientific and technical information that is of high quality but is inappropriate for publication in the formal peer-reviewed literature. The contents are of broad scope, including technical workshop proceedings, large data compilations, status reports and reviews, lengthy scientific or statistical monographs, and more. NOAA Technical Memoranda published by the CRCP, although informal, are subjected to extensive review and editing and reflect sound professional work. Accordingly, they may be referenced in the formal scientific and technical literature.

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Executive Summary

The Socioeconomic Component of the National Coral Reef Monitoring Program (NCRMP) is currently in the process of monitoring socioeconomic indicators across all U.S. coral reef territories and jurisdictions. These indicators include the demographics of these areas, human use of coral reef resources, as well as knowledge, attitudes, and perceptions of coral reefs and coral reef management. The overall goal of this endeavor is to track relevant information regarding each jurisdiction's population, social and economic structure, society's interactions with coral reef resources, and the responses of local communities to coral management. NOAA's Coral Reef Conservation Program (CRCP) will use the information for research, to assess the socioeconomic outcomes of management activities, and to improve the results of programs designed to protect coral reef resources.

This report outlines human dimensions information relevant to coral reef resources in American Samoa. The findings here are derived from a combination of data gathered through household surveys conducted in February 2014, and additional secondary sources of socioeconomic information for the jurisdiction. Surveys demonstrated that participation in recreational coral reef related activities such as SCUBA diving and snorkeling is relatively uncommon in American Samoa, with the exception of swimming and beach recreation. However, over half of residents participate in fishing or gathering of marine resources. Residents of urban areas perceived coral reef ecosystem health to be in worse condition than residents of rural areas. Additionally, surveys revealed that American Samoans generally support current marine management policies and regulations, regardless of their reliance on marine resources, and are generally trusting of the government as a source of information.

Like several coral reef jurisdictions, the population of American Samoa declined between 2000 and 2010. The jurisdiction faces a number of social challenges. GDP has declined in American Samoa in recent years, and over half of the population has incomes below the poverty line. Infrastructure, particularly for the treatment of sewage and water, remains limited.

There were a few lessons learned from this first NCRMP socioeconomic data collection in American Samoa. As similar surveys are implemented across other U.S. coral reef jurisdictions, the NCRMP team will be making adjustments to the data collection effort to improve on the type of information being generated. These findings can be considered as a starting point to develop more detailed research questions for future work.

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List of Acronyms

BEA	Bureau of Economic Analysis
CRCP	Coral Reef Conservation Program
GDP	Gross Domestic Product
GED	General Education Development
KAP	Knowledge, Attitudes, and Perceptions
MEA	Millennium Ecosystem Assessment
MLF	Municipal Land Fill
MMA	Marine Managed Area
MPA	Marine Protected Area
NCCOS	National Centers for Coastal Ocean Science
NCRMP	National Coral Reef Monitoring Program
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
OEI	Office of Environmental Information
OMB	Office of Management and Budget
SCUBA	Self-Contained Underwater Breathing Apparatus
US	United States
USEPA	United States Environmental Protection Agency
WHO	World Health Organization
WWTF	Wastewater Treatment Facility

Introduction

In 2007, the NOAA Coral Reef Conservation Program (CRCP) underwent an external review by an expert panel to provide an independent assessment of the CRCP's effectiveness in meeting its mandates and to suggest recommendations for future improvement. One of the major recommendations of the external review was to increase the CRCP's social science portfolio and use social science strategically to improve coral reef management by engaging local communities and by better assessing the social and economic consequences of management policies, interventions and activities on local communities. In 2010, the CRCP added a socioeconomic monitoring component to the National Coral Reef Monitoring Program (NCRMP) to improve its ability to track social science information in coral reef jurisdictions. NCRMP is an integrated long-term program designed to monitor the condition of coral reefs and coral reef ecosystems. The program now conducts sustained observations of biological, climatic, and socioeconomic indicators in U.S. states and territories where coral reefs are present. The main purpose of the Socioeconomic Component of NCRMP is to answer the following questions: What is the status of human knowledge, attitudes, and perceptions regarding coral reefs? And, how are human uses of, interactions with, and dependence on coral reefs changing over time?

The *CRCP Social Science Strategy* (Loper et al. 2010) recommended three priority activities: developing of a set of national-level social science indicators, collecting these indicators via regular and repeated jurisdictional surveys, and increasing social science capacity within the coral reef conservation program. The socioeconomic component of NCRMP addresses the first two priorities. The inclusion of socioeconomic indicators in the NCRMP represents a strong step forward for the CRCP, which has recognized the need to integrate socioeconomic information with biophysical indictors relevant to the conservation of coral reef resources. Integration of socioeconomic information will strengthen national coral reef monitoring and improve the Program's ability to explain how people interact with coral reef resources, as well has how coral reef ecosystems and coral reef management strategies are perceived by the public -- issues of utmost interest to our partners, resource managers, and policy makers.

Purpose of this Report

This technical memo presents the findings from the initial American Samoa NCRMP socioeconomic data collection. The report presents preliminary social indicators and provides examples of how they can be analyzed over the long term. It should be noted that this report presents information that, in many instances, is being collected for the first time. In all instances, the information represents baseline socioeconomic data for the NCRMP. Some of the variables presented in this report identify gaps in information, and we provide suggestions on how these

can be addressed in the future. The main objective is to lay the groundwork for combining and comparing socioeconomic variables with a goal of developing meaningful indicators that can be used to examine trends in human dimensions of coral reef resources and better understand human influences on effective coral reef conservation.

Overall Approach of the Socioeconomic Component of NCRMP

The socioeconomic component of NCRMP gathers and monitors a collection of socioeconomic variables, including demographics in coral reef areas, human use of and their interactions (over time) with coral reef resources, as well as knowledge, attitudes, and perceptions (KAP) of coral reefs and coral reef management. The overall goal is to track relevant information regarding each jurisdiction's population, social and economic structure, society's interactions with coral reef resources, and the responses of local communities to coral management actions. The Coral Reef Conservation Program will use the information for research, to assess and monitor socioeconomic status and change over time, to assess the socioeconomic outcomes of management activities, and to improve programs designed to protect coral reefs within each jurisdiction. Ultimately, in consultation with stakeholders, partners and other scientists, the information collected will inform the development of indicators. Each indicator will be created using data from surveys of residents in the US coral reef jurisdictions and from existing socioeconomic data collected from secondary sources such as the US Census and local government agencies. These indicators will include information about the population, the social and economic structure, the impacts of society on coral reefs, and the contributions of healthy corals to nearby residents. The indicators can also be used to track the status of human knowledge, attitudes, and perceptions regarding coral reefs and management activities related to coral reef resources. The indicators and the rationale for selection are provided below in Table 1.

Primary Data Collection

Primary data for the socioeconomic component of NCRMP is collected via a survey administered to individuals reporting on behalf of their households. The survey instrument is composed of one set of questions that is the same for all U.S. coral reef jurisdictions, as well as a sub-set of jurisdiction specific questions relevant to local management needs. NCRMP socioeconomic data are collected using a variety of modes as appropriate to the context in each jurisdiction. For example, in American Samoa, in-person household surveys in Samoan and English were employed. For all jurisdictions, the aim is a representative sample of the population that meets a 95% confidence level. The survey methodology generally follows Dillman's Total Design Method (Dillman 2007). It should be noted that the survey was developed by utilizing questions from a "bank" of over 120 questions. These questions were also approved for use by the Office of Management and Budget which is responsible for administering the Paper Work

Reduction Act (1995), the main purpose being to ensure that the public is not unduly burdened (time) and confidentiality is assured. Surveys are planned to be repeated in each U.S. coral reef jurisdiction after the completion of a full monitoring cycle, approximately once every seven years.

Primary Data Collection (Stacey Kilarski)

Secondary Data Collection

The use of secondary data is ideal for the development of a sustainable, cost effective, and long term socioeconomic monitoring plan. Secondary data collection involves compiling data that was collected by other organizations from multiple sources and across US coral reef jurisdictional geographies into a centralized database. The use of data sources that are collected in a standardized way over time (such as census data) can help facilitate the integration of social, economic, and biophysical data collected under NCRMP.

It should be noted that the data presented in this report represent the current status of the collection, ultimately intended to contribute to the development of indicators. Once developed, these indicators will be used to assess all US coral reef jurisdictions at the conclusion of the first full monitoring cycle. The primary and secondary data presented in this report serve as a snapshot of the collection and analysis of the NCRMP socioeconomic monitoring component for American Samoa in 2014.

Indicator Development

The indicators identified in Table 1 will be developed by combining data from primary and secondary sources. The assessment of all US coral reef jurisdictions will draw on composite indicators that may be comprised of multiple distinct measures getting at the same higher level concepts such as 'Attitudes towards coral reef management strategies'. For example, indicators for the well-being of populations living in US coral reef jurisdictions will be developed using the NCCOS framework and methodology developed by Dillard, Goedeke, Lovelace, and Orthmeyer (2013), which established a methodology for creating composite indicators of well-being in coastal communities. The development of composite indicators is currently underway. Box 1 provides a description the conceptual framework for developing the community well-being indicator, as an example of the multiple measures that go into developing a single composite indicator.

BOX 1 Composite Indicator: Community Well-being

Well-being is a concept used to assess the status of people, either individually or collectively, at different scales (e.g., individual, community and national; Costanza *et al*. 2007). Well-being assessment can be used to determine how people are doing in relation to an optimum standard of life experience (Doyal and Gough 1991) and are generally used by decision-makers to inform policies and programs focused on improving the societal conditions. It provides a means of tracking the relationship between communities and the environment, and a better means of understanding the ecosystem as a whole. When the environment is providing ecosystem services that communities need and desire, well-being has positive gains. Conversely, if there is decline or disruption in ecosystem services, we may expect a decline in well-being, particularly with increased dependence on these services (Butler and Oluoch-Kosura 2006; Costanza *et al*. 1997; MEA 2005). Being able to predict the consequence to humans, both positive and negative, associated with changes in ecosystem states is critical to informed management.

Eight composite indicators that can ultimately be tracked alongside coral reef ecosystem condition will be employed. The composite indicators are shown in the figure below. Each composite indicator is conceptually complex. At the conclusion of the first monitoring cycle, the coral reef jurisdictions like American Samoa will be scored on each indicator of well-being. These scores will then be used in statistical analyses with indicators of environmental condition to analyze the dynamic relationship between the ecosystem services that people regularly enjoy and community well-being.

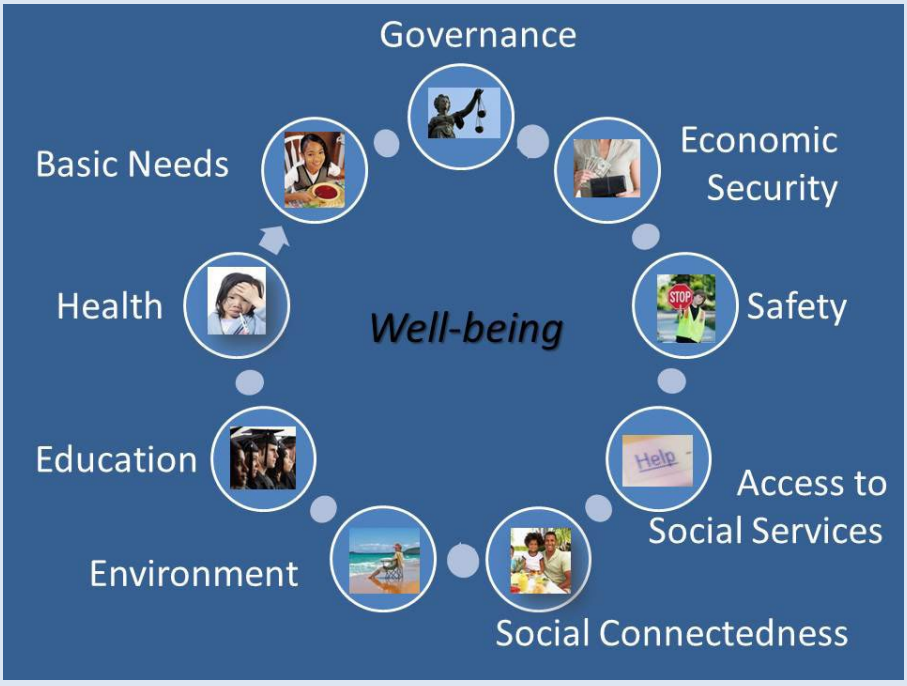

Figure 1 Framework of composite indicators for well-being and ecosystem condition, adapted from Dillard et al. 2013

Table 1 NCRMP Socioeconomic Indicators

	Indicators	Rationale
1	Participation in coral reef activities (including snorkeling, diving, fishing, harvesting)	Participation in coral reef activities enhances understanding of the economic and recreational importance of coral reefs to local residents as well as the level of extractive and non-extractive pressures on reefs
2	Perceived resource condition	Assessment of perceived conditions is an excellent complement to biophysical information and key to understanding support for various management strategies
3	Attitudes towards coral reef management strategies	Monitoring this information over time will be valuable to decision makers
4	Awareness and knowledge of coral reefs	Monitoring this information over time is key to tracking whether CRCP constituents understand threats to coral reefs and will help inform management strategies (and education/outreach efforts)
5	Human population trends (change) near coral reefs	Monitoring human population trends is important for increasing pressure on coral reefs, as well as reef-adjacent populations
6	Economic impact of coral reef fishing to jurisdiction	Tracking the economic contributions of coral reefs can help justify funds allocated for coral reef protection
7	Economic impact of dive/snorkel tourism to jurisdiction	Tracking the economic contributions of coral reefs can help justify funds allocated for coral reef protection
8	Community well-being	Tracking changes in health, basic needs, and economic security enhances understanding of linkages between social conditions and coral reefs
9	Cultural importance of coral reefs	Measuring cultural importance improves understanding of traditional and cultural significance of coral reefs to jurisdictional residents and whether this is changing over time
10	Participation in behaviors that may improve coral reef health (*e.g.*, beach cleanups, sustainable seafood choices)	Measuring participation improves understanding of positive impacts to coral reefs as well as negative impacts
11	Physical Infrastructure	Assessment of coastal development footprint, physical access to coastal resources, waste management and water supply infrastructure provides general understanding of human impact on the coast
12	Knowledge of coral reef rules and regulations	Tracking this information over time at the jurisdictional/national level will inform investment in education and outreach
13	Governance	Measurement of governance provides information on the currents status of local institutions involved in coral reef conservation, number of functioning management strategies and percent area of coral reefs under protection

Geographic Scope

Overall, the NCRMP focuses on the Coral Reef Conservation Program's geographic priority areas; however, as some of those areas are uninhabited, the socioeconomic variables are collected from only the inhabited areas. Geographic sampling units for the socioeconomic component of NCRMP are presented in Table 2. When feasible, indicators formulated at the sub-jurisdictional scale will be reported alongside biological indicators collected at the same scale. Efforts will be made to ensure sufficiently robust sample size to allow for reporting of socioeconomic indicators at appropriate sub-jurisdictional scales.

Table 2 Geographic scope of NCRMP Socioeconomic Monitoring

Location	Sampling Units
American Samoa	Island of Tutuila*
Commonwealth of the Northern Mariana Islands	Islands of Saipan, Tinian and Rota only
Guam	Entire island of Guam
Hawai'i	Islands of Oahu, Maui, Hawaii, Kauai, Molokai, Lanai
Florida	Martin, Palm Beach, Broward, Miami-Dade, and Monroe Counties
Puerto Rico	Puerto Rico, Vieques, Culebra Islands
United States Virgin Islands	St. Croix, St. Thomas, and St. John

Note: *The Manu'a islands will be added in the future but were not included in this round of surveys

Jurisdiction Description

American Samoa is an unincorporated territory of the United States and is the country's southernmost jurisdiction. American Samoa is located 14 degrees south of the equator in the Pacific Ocean, about 2300 miles south-southwest of Hawaii (Figure 2). American Samoa lies just east of the international dateline and is part of the Samoa Archipelago. It is made up of seven islands: Tutuila, Aunu'u, the Manu'a group (about 100 km east of Tutuila, consisting of Ta'u, Olosega, and Ofu), Rose Island, and Swains Island (Figure 1). The largest island of Tutuila covers an area of 143 km^2, accounting for 72% of the total land area (Central Intelligence Agency 2008), and approximately 97% of the territory's population (2010 Census).

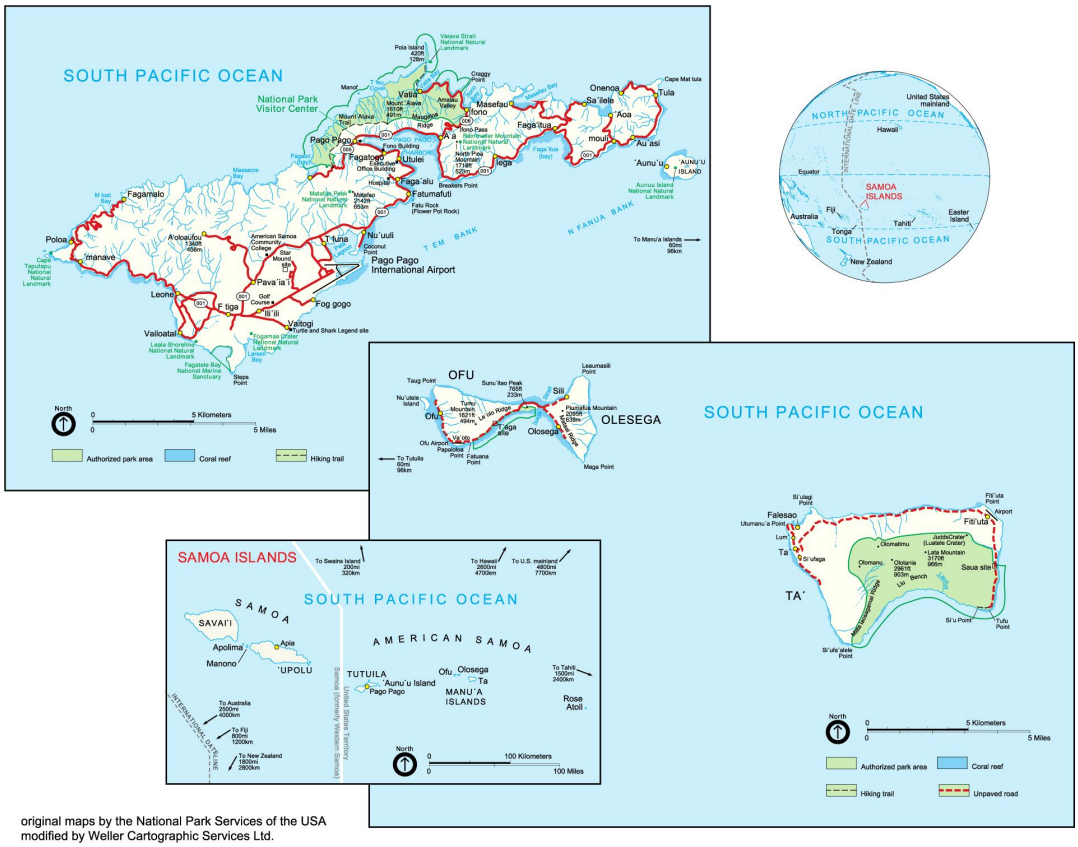

Figure 2 Map of American Samoa

Note: Map image from www.mapsof.net

American Samoa's climate is classified as tropical marine and is moderated by the southeast trade winds. The average temperature for the island territory is ~82˚F with little seasonal deviation from this norm. The rainy season extends from November to April; the typhoon season is usually experienced from December through March.

American Samoans maintain a strong cultural heritage. Based on our household survey, 93% of the population was found to be of Samoan ethnicity (as compared to 91% - U.S. 2010 Census), and maintaining *fa'a Samoa* or "the Samoan way" was considered a priority under the territorial constitution. Samoan is the predominant language, although English is often spoken in school and business settings. The Samoan hierarchical social structure remains intact in most villages, with *matai* (family leaders) comprising the village administrative group or village council (*pulega fa'alenu'u*). According to the revised 1967 American Samoa Constitution (2011), the *pulega fa'alenu'u* structure is reproduced at the jurisdictional scale, and individuals are required to have the *matai* title in order to serve in the American Samoan territorial legislature (*fono*).

American Samoa receives significant economic support from the US government, which supplies the majority of the island territory's operating budget (BEA 2014).

Methodology

2014 NCRMP Survey

Resident surveys took place in American Samoa on the island of Tutuila in 2014, and will be repeated (approximately) every 7 years. The sample frame for this study was adults, eighteen years or older, who live on the island of Tutuila, American Samoa.

The American Samoa survey data collection was focused on the following indicators:

- Participation in reef activities (including snorkeling, diving, fishing, harvesting);
- Perceived resource condition;
- Attitudes toward coral reef management strategies and enforcement;
- Awareness and knowledge of coral reefs;
- Cultural importance of reefs; and
- Participation in behaviors that may improve coral reef health.

These variables will fulfill national level indicator development needs while providing locally relevant information (e.g., attitudes towards local management strategies). More information on the general survey methods applied can be found on the NCRMP socioeconomic CORIS site: http://www.coris.noaa.gov/activities/projects/ncrmp_socio/documents/faqs_ncrmp_social_survey.pdf. Details of the American Samoa survey effort are provided below.

Surveys were conducted on Tutuila Island during February 2014. To obtain a stratified sample of respondents, villages in American Samoa were categorized by degree of urbanization (urban, semi-urban, and rural) and location on Tutuila Island (east, west, northeast, or northwest). The census uses only East and West districts in their categorizations, but additional sub-divisions differentiating the northern villages were added to ensure representative inclusion of these remote (and potentially more reef-dependent) communities. Villages were randomly selected from each category, and the percent population of the sample villages in each category approximated the percent of the total island population in that category. Residents were sampled proportionate to the total population in each village. Sampled villages included: Amanave, Amouli, Aoloau, Faga'itua, Fagasa, Failolo, Faleniu, Ili'ili, Lauli'i, Leone, Malaeimi, Nu'uuli, Onenoa, Pago Pago, and Vaitogi (Figure 3). In total, 448 residents were surveyed, yielding a confidence level of 95% and a confidence interval of 4.6% for the island-wide results[1].

[1] Results are considered statistically significant at the island level, but not at the level of individual villages.

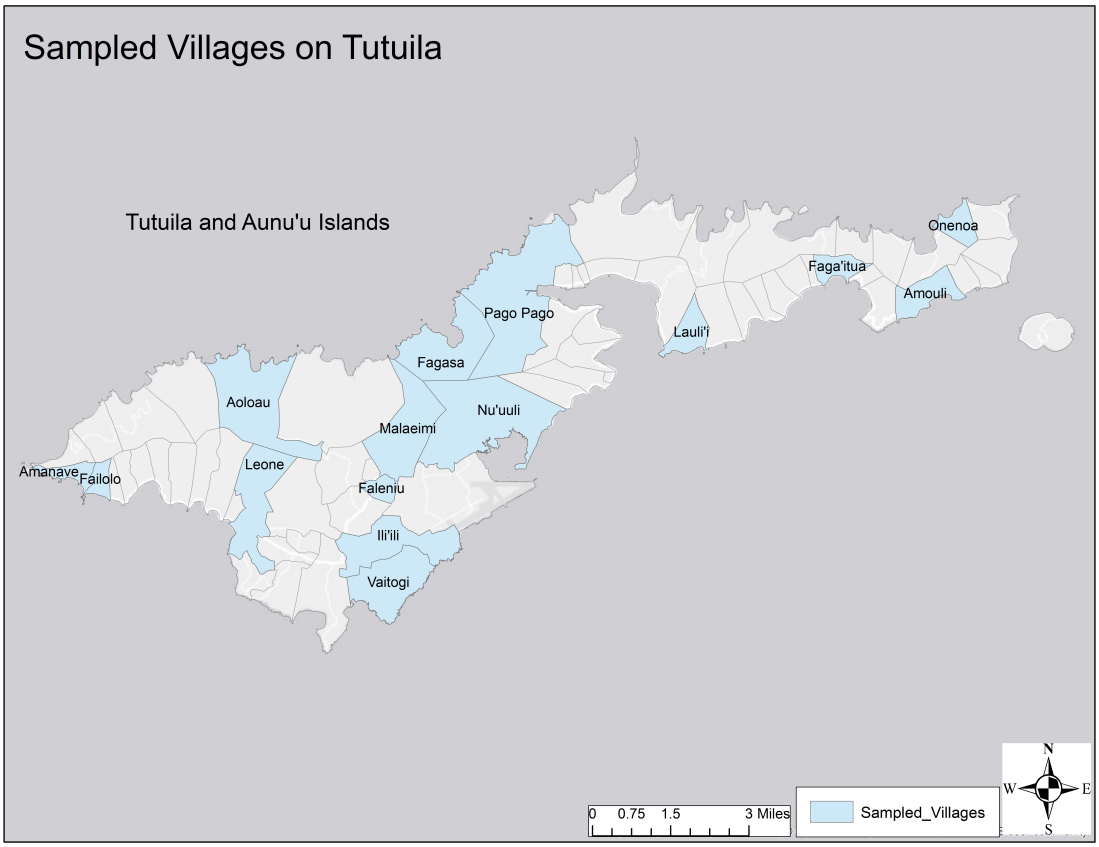

Figure 3 Location of sampled villages on Tutuila

Prior to surveying, information regarding the monitoring effort was presented to the Office of Samoan Affairs as well as to mayors of the villages included in the target sample. A local survey team was trained in survey administration and protocol. Survey questions were carefully translated to capture the meaning of each question in the English version. A Samoan word can have several meanings, so multiple Samoan-speaking project team members reviewed and revised the translation to ensure consistency with the English version of the survey. This team conducted surveys in-person in each of the selected villages on weekday afternoons and early evenings, as well as on Saturdays. Residents were sampled opportunistically due to the difficulty of pre-selecting random households (e.g., no street addresses for homes, large numbers of unoccupied structures), and the challenges of using a random sampling approach in the field (e.g., vicious dogs). The survey team made an effort to survey different regions of each village and, to the extent possible, to target respondents from different demographic categories. Respondents were offered the choice to conduct the survey in either English or Samoan, based on their own language preference. Eighty-one percent of surveys were conducted in Samoan and 19% conducted in English. A copy of both the English and the Samoan version of the survey

instrument may be found in Appendix 2. No names or personally identifiable information were collected during the surveys.

This report presents a summary of select indicators collected via the survey instrument. A presentation on all survey data can be found at http://www.coris.noaa.gov/monitoring/socioeconomic.html.

Secondary Data Collection

Additional socioeconomic data was compiled for American Samoa from secondary data sources such as the US Census Bureau, Environmental Protection Agency, US Department of Health and Human Services, National Weather Service, and local government agencies. These data were collected and analyzed at the jurisdiction level, though smaller geographies may be included in future analyses. Secondary data collection includes cleaning and transforming data prior to analyses, maintaining documentation from original sources, evaluating data for errors, and other data proofing procedures.

The secondary data collection for American Samoa was focused on the following indicators:

- Human population change near coral reefs;
- Community well-being; and
- Physical infrastructure.

All secondary data presented in this report are taken from the NCRMP socioeconomic project collection as described above. Original sources for all data presented in the report can be found in the data sources table (Appendix 3). Data items that are cited were not included in the long term project collection because they are unique to the jurisdiction or are not available in a standardized format over time.

The following indicators will be developed through using a combination of survey (primary) and secondary data:

- Economic impact of coral reef fishing to jurisdiction;
- Economic impact of dive/snorkel tourism to jurisdiction;
- Awareness of coral reef rules and regulations;
- Governance; and
- Community well-being.

Data Analysis

Data analysis of both survey and secondary data includes descriptive analyses (e.g., measures of central tendency, examination of distribution), as well as examinations of relationships between variables (e.g., cross tabulations, correlation, regression analyses). Additionally, geospatial analyses are used to examine the extent of governance and specifically, the amount of coral reef

area under a protected status. Some of the key findings will be discussed in the following sections of this report.

Findings

The results below were obtained from either primary data collection, secondary sources, or a combination of the two, and are organized according to one or more of the thirteen socioeconomic indicators presented in Table 1.

Participation in coral reef activities

Participation in coral reef activities was prioritized as the top indicator of interest among the NCRMP priority socioeconomic indicators. This indicator is broadly divided into recreational non-extractive activities (e.g., swimming, beach activities etc.) and extractive activities (e.g. subsistence or commercial gathering and harvesting).

Participation in recreational reef activities is relatively uncommon in American Samoa, with the exception of beach swimming and beach recreation. Fishing and gathering of marine resources is more common, with just over half of respondents stating that they fish, and 15% fishing once a week or more. Table 3, below, outlines the percent rates for respondents' self-reported frequency of participation in coral reef related activities.

Table 3 Frequency of participation in various extractive and non-extractive reef activities

	Non-extractive activities								Extractive Activities	
Frequency	**Swimming**	**Snorkeling**	**Diving (SCUBA or free)**	**Waterside/ beach camping**	**Beach recreation**	**Boating**	**Outrigger canoe /Fautasi**	**Surfing**	**Fishing**	**Gathering of marine resources**
Never	20%	70%	93%	55%	39%	75%	82%	86%	47%	56%
Once a month or less	32%	14%	3%	29%	29%	13%	7%	5%	21%	23%
2-3 times a month	20%	7%	2%	10%	16%	5%	3%	2%	16%	7%
4 times a month or more	23%	5%	2%	5%	13%	5%	3%	3%	15%	6%
No response	4%	3%	1%	1%	2%	3%	5%	4%	1%	7%

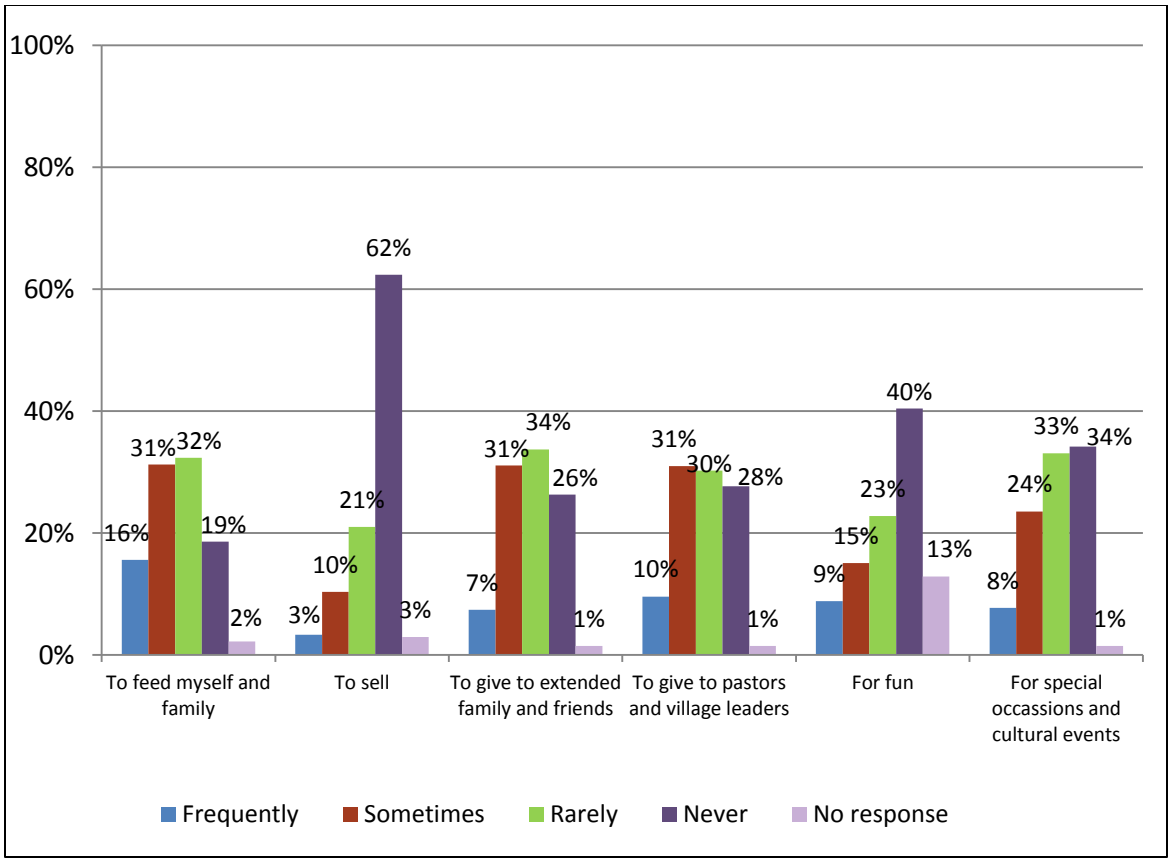

Figure 4 **Frequency of fishing for various purposes in American Samoa**

For those who fish in American Samoa, Figure 4 shows their stated reasons for fishing and frequency of fishing for those reasons. Commercial fishing is very uncommon in American Samoa; only 3% of those who fish stated that they frequently fished to sell their catch, and 62% of those who fish never sell their catch. More commonly, people fish to feed themselves and their family, or to give to extended friends, family, pastors, and village leaders.

Frequency of seafood consumption

American Samoans consume seafood frequently, with 78% of respondents stating that they eat fish or seafood once a week or more. Most American Samoans purchase seafood from stores or restaurants, with 65% of survey respondents listing this as their first or second choice for obtaining seafood. Markets and roadside vendors (45%) and fish caught by household members (37%) are also a common means for obtaining fish.

Perceived resource condition

Figure 5 illustrates residents' perceptions of resource conditions in American Samoa. While ocean water quality is generally perceived to be good or very good (42%), there was low level of consensus regarding the amount of coral, fish, or of animals for gleaning (with approximately one third of residents stating that they were uncertain of the condition of these resources). .

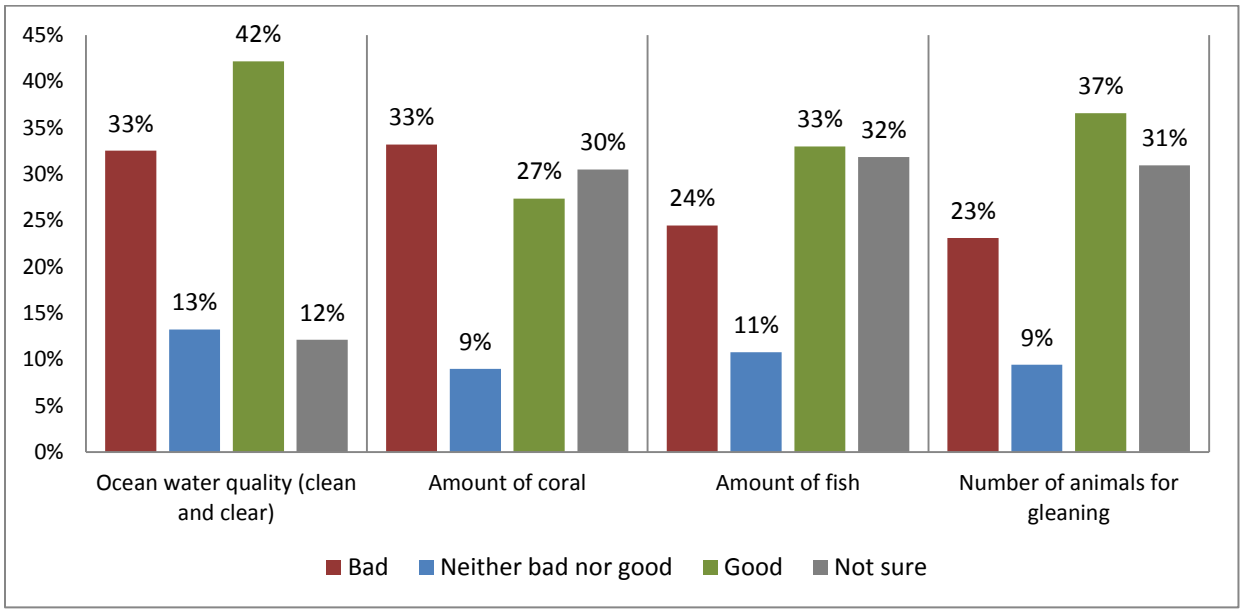

Figure 5 Resident opinions regarding current conditions of marine resources

Figure 6 shows residents' perceptions of how the conditions of marine resources have changed over the past 10 years. There is a fairly equal distribution between residents thinking conditions have worsened and improved for ocean water quality, amount of fish, amount of coral and number of animals for gleaning.

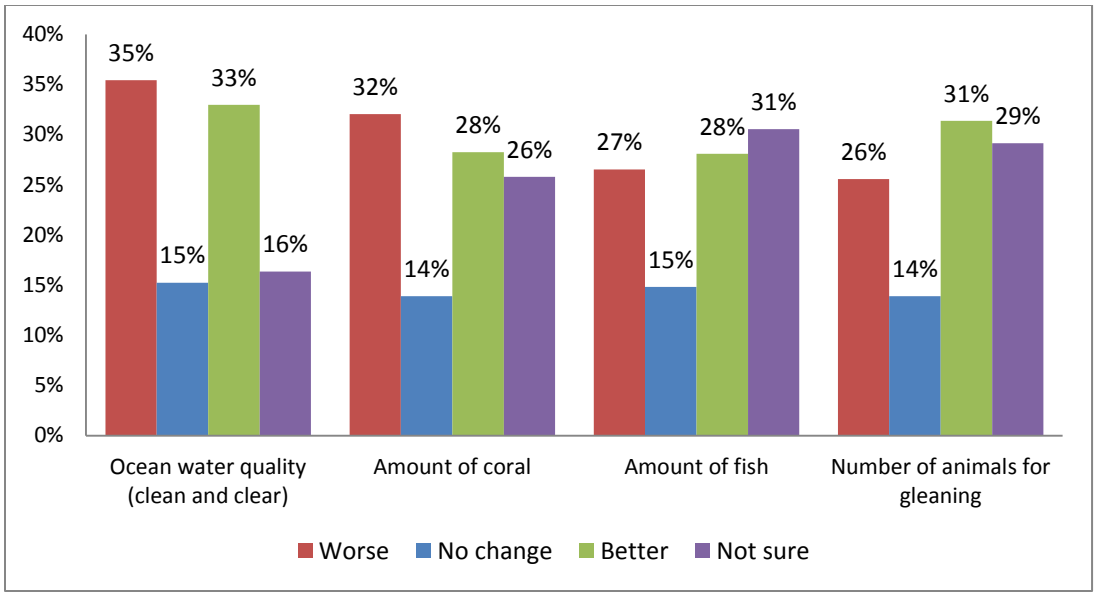

Figure 6 **Resident opinions on change in condition of marine resources over past 10 years**

When asked how the conditions of marine resources will change in the next 10 years, roughly equal numbers of respondents think conditions will get worse (31%) vs. improve (30%), while the remainder believe marine resource conditions will stay the same (21%) or are not sure (17%).

Participation in behaviors that improve coral reef health

Despite some ambiguity surrounding the perception of marine resource conditions, as demonstrated by Figures 5 and 6, many respondents in American Samoa stated that they participate in behaviors that may improve coral health. These activities include, for example, beach or village clean ups and volunteering with an organization that is taking actions to protect the environment (such as church and youth groups). Forty-eight percent of respondents reported participating in these types of activities several times a year or more while 47% reported participating once a year or less.

Attitudes towards coral reef management strategies

Residents were asked a number of questions regarding their awareness of and attitudes towards marine management policies. Figure 7 shows that over half (51%) of those surveyed stated that they were either familiar or very familiar with marine protected areas (MPAs). Overall, respondents agreed that MPAs provide benefits (Figure 7). Ninety percent or more of respondents agreed or strongly agreed that MPAs protect coral reefs, increase number of fishes, and that there has been economic benefit to American Samoa from MPAs. The vast majority of

respondents also supported adding new MPAs in American Samoa (89%) and that MPAs help increase tourism in American Samoa (85%). Only 24% of respondents stated that there should be fewer MPAs in American Samoa (with the majority of respondents disagreeing with this statement). There was less certainty regarding whether or not fishermen's livelihoods have been negatively impacted by MPAs, with 42% disagreeing with this statement, and 38% agreeing.

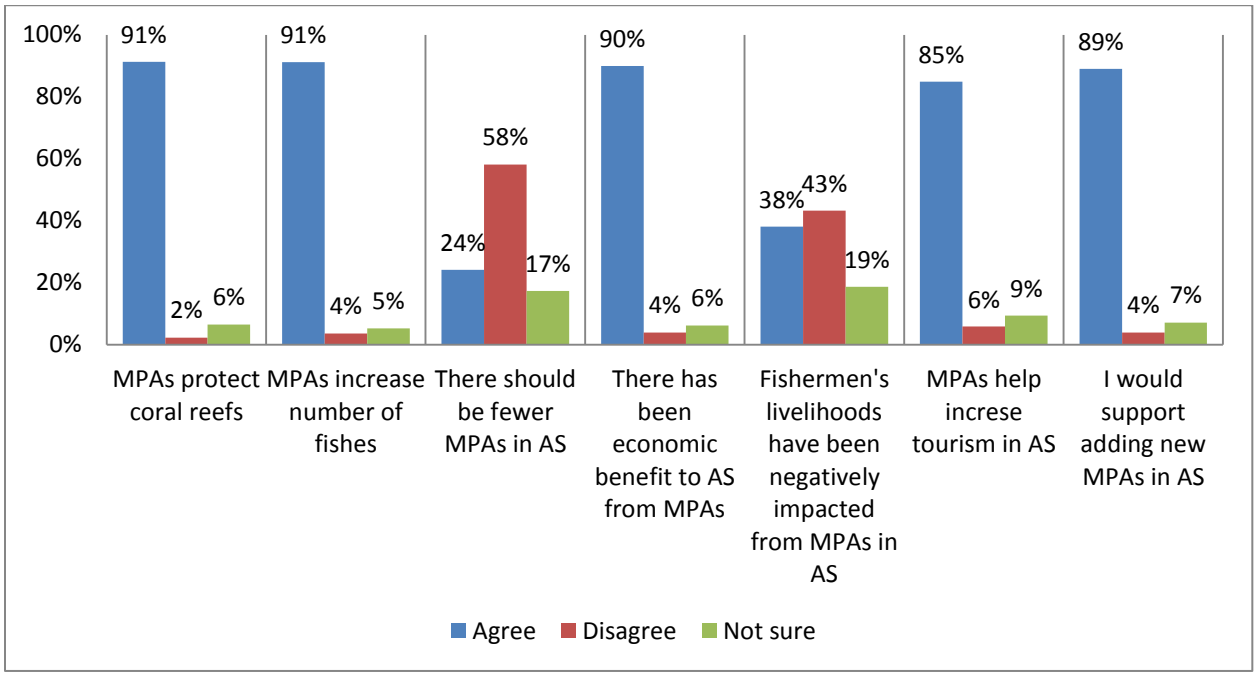

Figure 7 Resident opinions regarding marine protected areas in American Samoa

Figure 8 below illustrates residents' support for management policies in place (or proposed) in American Samoa. Residents were generally supportive of current marine management policies. There was extremely high support for community-based village MPAs (82%) and temporary fishing closures (78%). The village of Fagamalo, for example, has established two marine protected sites, a MPA with temporary take and a No-take MPA as part of the Community-based Fisheries Management (designation sign shown in the photo). The ban on fishing "big fish" species (e.g., humphead wrasse, bumphead parrotfish, and giant grouper) was the only management measure not supported by a majority of residents (with 49% agreeing with this policy).

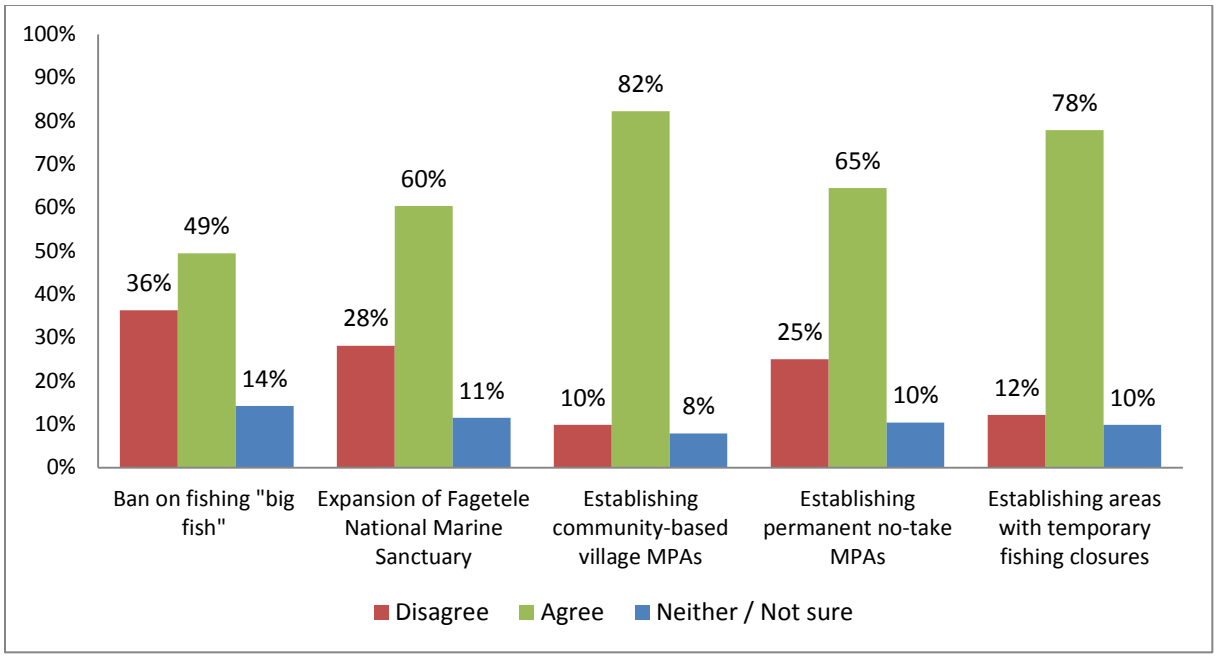

Figure 8 **Resident opinions regarding management policies in American Samoa**

Community-based fisheries management area of Fagamalo village (A. Levine)

Awareness and Knowledge of coral reefs

When asked about important services provided by reef resources, most survey respondents agreed that coral reefs protect American Samoa from erosion and natural disasters (75%), that coral reefs attract tourists (75%), and that coral reefs are important to American Samoan culture (89%). The majority of respondents disagreed with the statement that coral reefs are only important to fishermen, divers, and snorkelers (Figure 9).

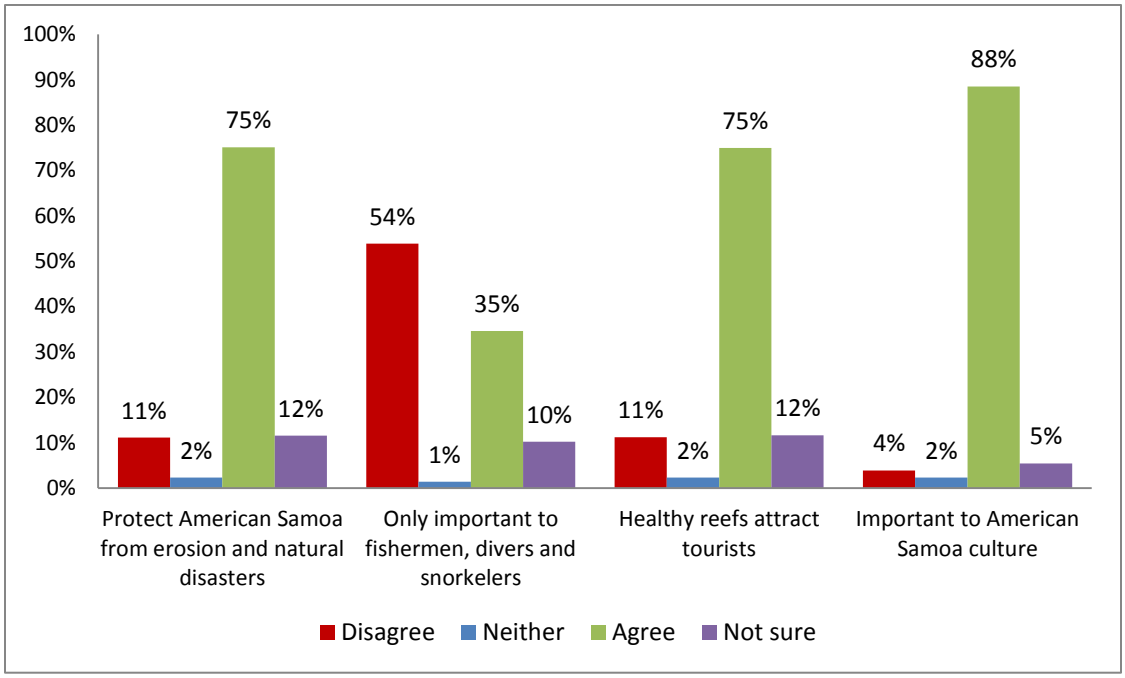

Figure 9 **Resident perceptions regarding coral reef services**

Familiarity with threats

In general, residents were familiar with potential threats facing coral reefs in American Samoa, with well over half of respondents stating they were familiar or very familiar with each potential threat listed in Figure 10.

Of these potential threats, respondents were least familiar with climate change, coral bleaching, invasive species and crown of thorn starfish outbreaks. They stated that they were extremely familiar with threats from pollution and hurricanes or other natural disasters.

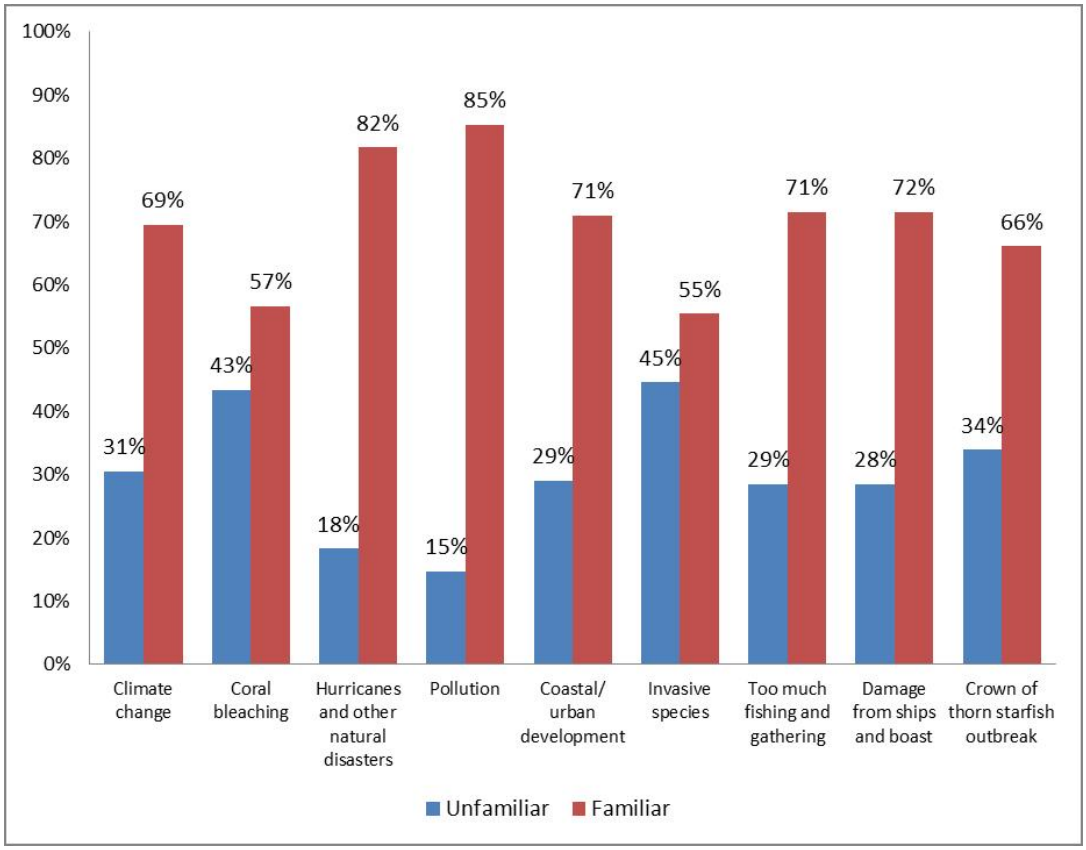

Figure 10 Residents' familiarity with threats to coral reefs

Level of threats to coral reefs

Residents were generally concerned about threats to coral reefs in American Samoa (Figure 11). Twenty-six percent of survey respondents stated that they thought threats are extreme and 32% thought threats are large. A small percentage (5%) stated that threats are minimal and an even smaller percentage (4%) did not perceive that there are any threats. This is perhaps surprising given the mixed perceptions regarding changes in coral reef resources over the past 10 years (Figure 6) and the fact that only 31% of respondents stated that they believe that the condition of coral reef resources will get worse in the next 10 years. This may indicate confidence that many of these threats are being sufficiently addressed.

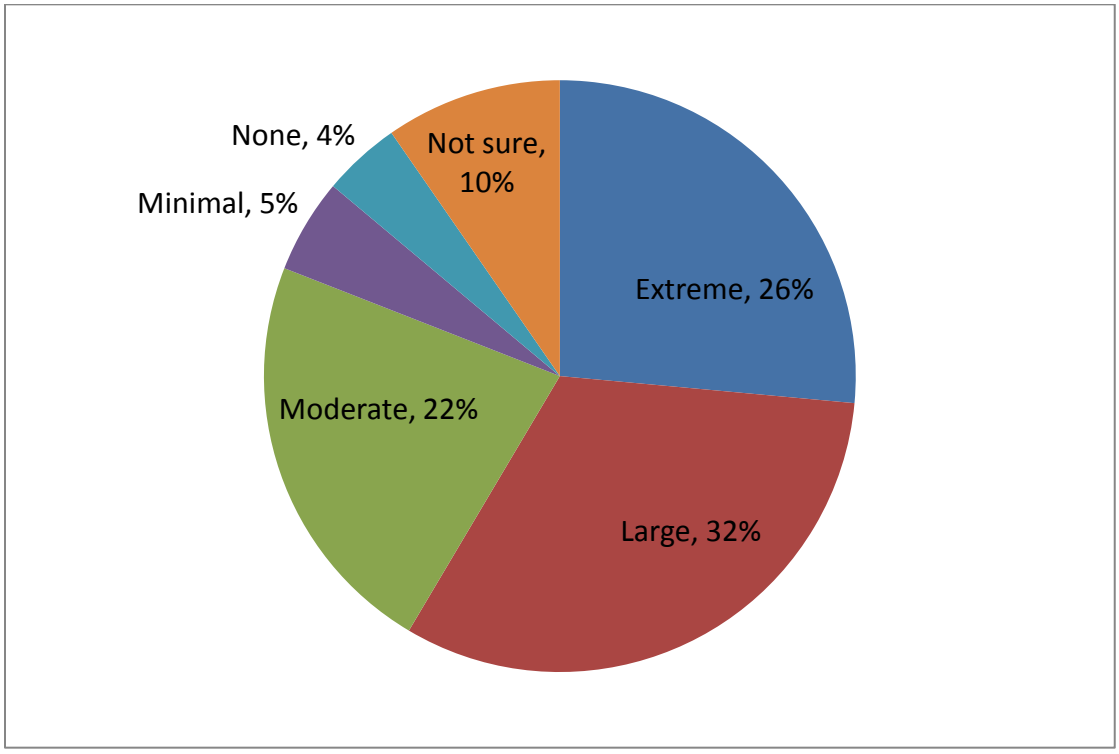

Figure 11 **Residents' perceptions of the severity of threats to coral reefs**

Human population composition and trends (change) near coral reefs

Based on our findings, American Samoa's population is predominantly composed of Pacific Islander ethnicity, with the majority identifying as Native Samoan or part Samoan (93%). The next largest ethnic category is Asian (3%). Figure 12 below describes the population composition by ethnicity.

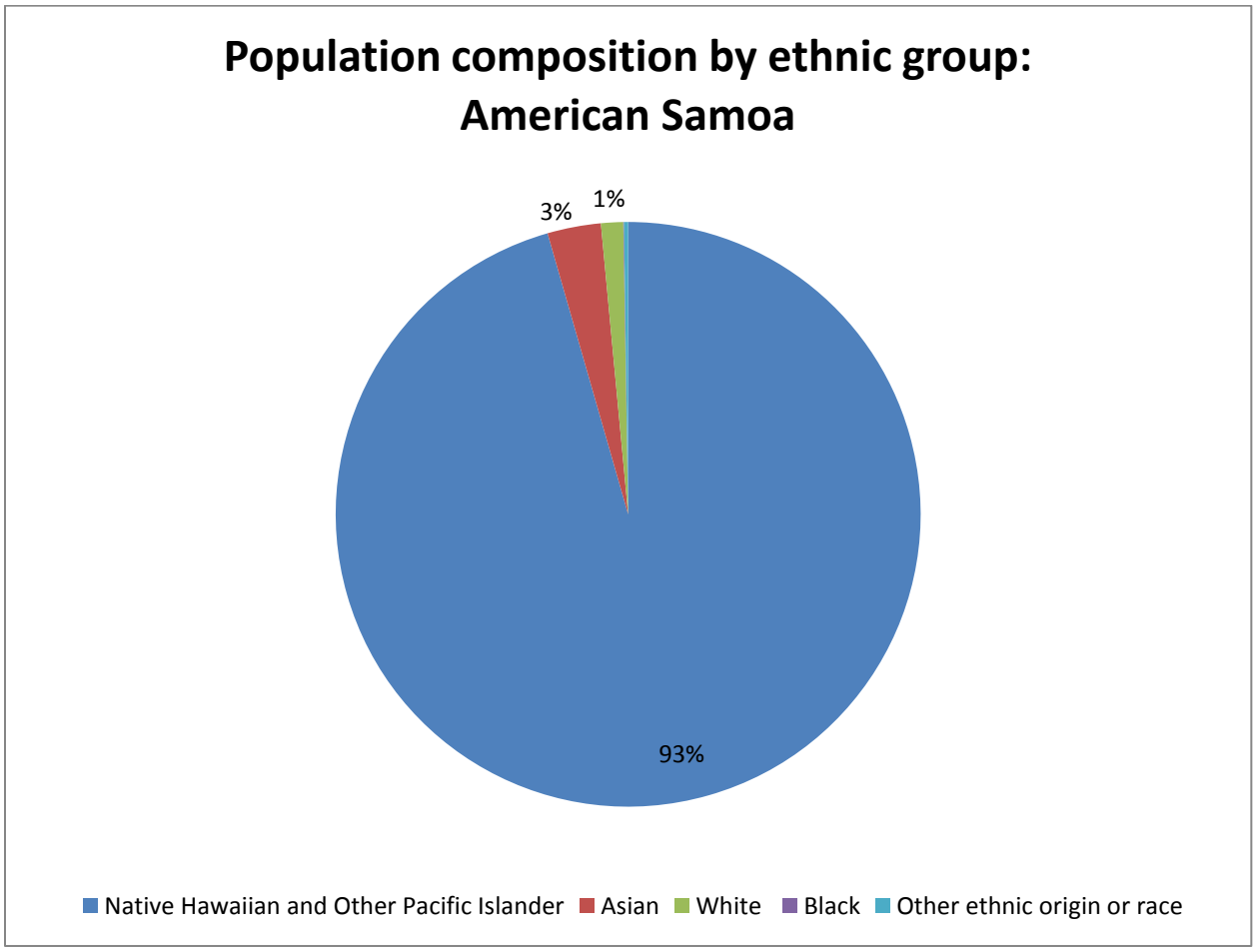

Figure 12 Population composition grouped by ethnicity

American Samoa's largely homogenous ethnic make-up facilitates certain approaches in natural resource management, such as the incorporation of traditional systems into village-based MPAs (Levine and Richmond 2014), and has implications for education and outreach strategies in the territory.

The majority of the population of American Samoa lives on the southern side of Tutuila, with the Manu'a Islands and Swains Island having a significantly lower population density (Figure 13). There was an overall decrease in population for American Samoa and all districts from 2000 to 2010 (Figure 14). This pattern is consistent with several other US coral jurisdictions including Commonwealth of the Northern Marianas, US Virgin Islands, and Puerto Rico. The decreased population is most evident on the island of Tutuila, which is comprised of the Eastern and Western Districts, and is due in large part to the 2009 closure of one of the island's two tuna canneries, a major source of employment on the island. Tri-Marine opened a new cannery in Tutuila in 2015 (Sagapolutele 2015), which may result in a reversal in this declining population trend.

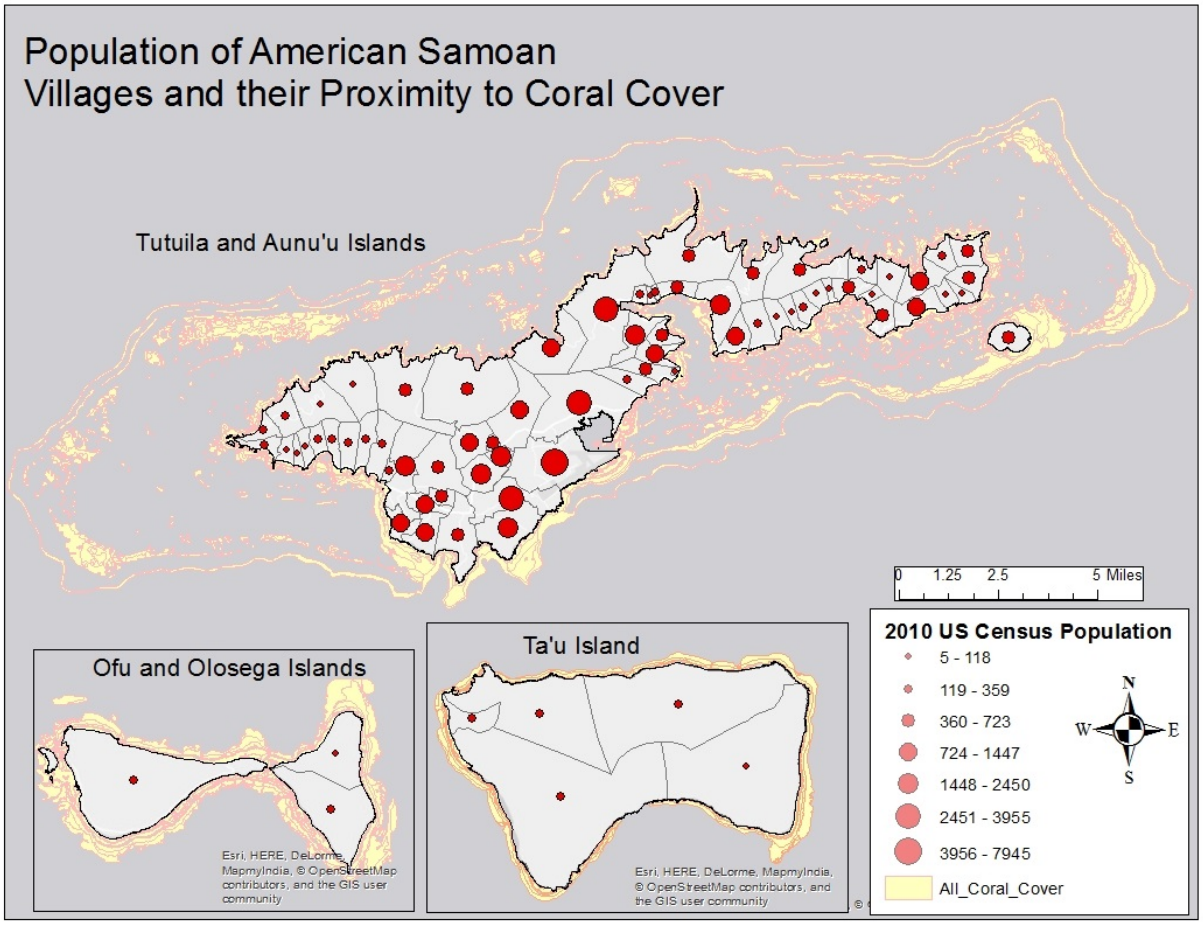

Figure 13 **Population and proximity to coral cover in American Samoa**

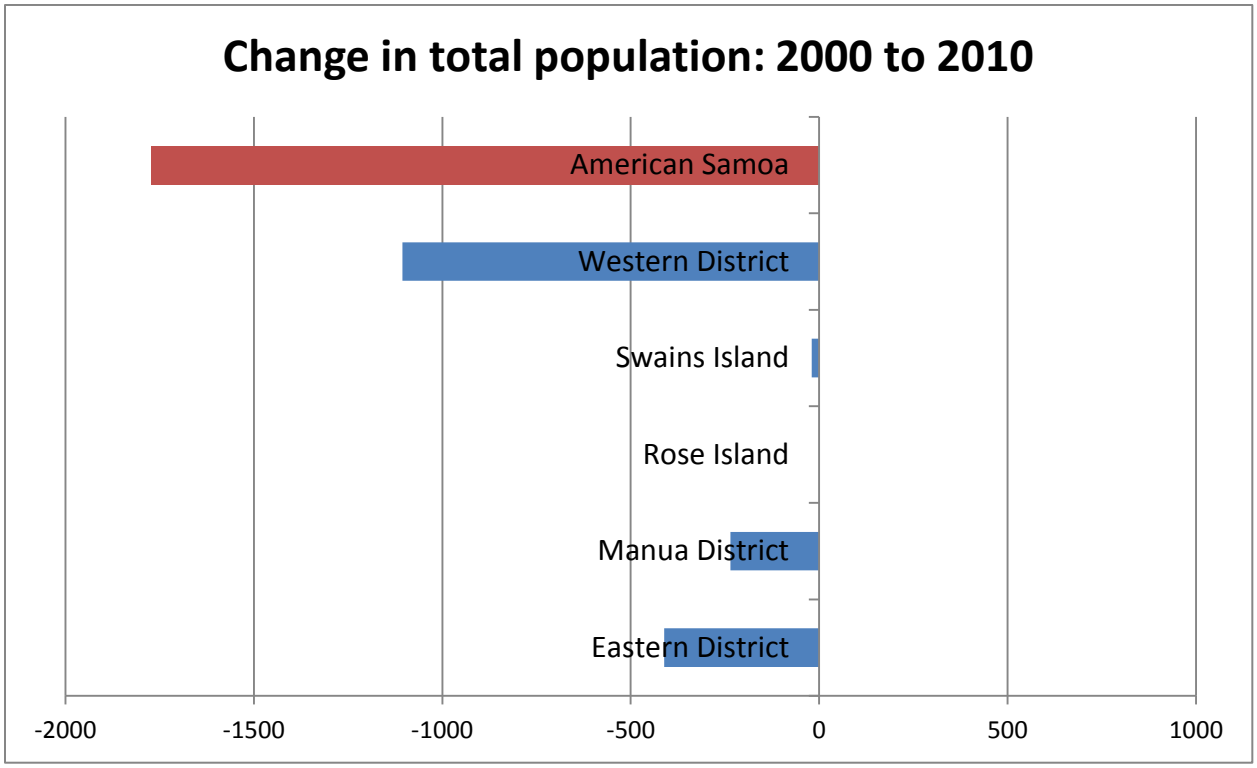

Figure 14 Change in population from 2000 to 2010 (*Rose Island is uninhabited)

More than 40% of the population in American Samoa is 18 years of age or younger. The senior population is quite small with only about 4% of the population 65 years of age or older.

Two generations of American Samoans, old and new (A. Levine)

Community well-being

Eight composite indicators of well-being are being developed for the socioeconomic component of the NCRMP. These include: access to social services, basic needs, education, health, governance, economic security, safety, and social connectedness. These composite indicators will be reported at the end of the first monitoring cycle and are composed of multiple measures (see for example, the components and measures of the composite indicator "safety" in Figure 15). A selection of measures that will be used to operationalize the well-being indicators for American Samoa (Figure 15) are presented and discussed below.

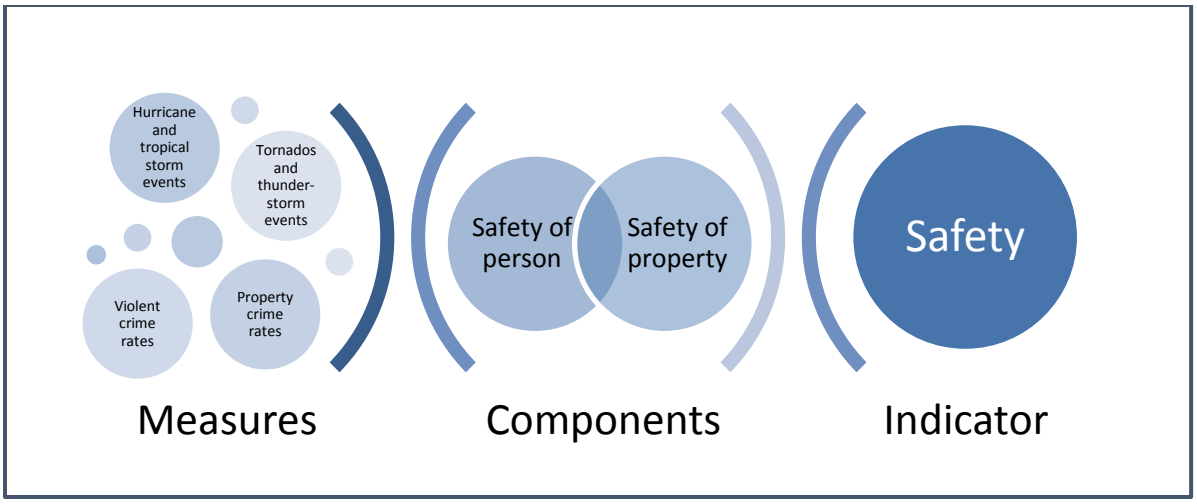

Figure 15 Safety presented as an example of a composite indicator

Health

Health, both physical and mental, contributes tremendously to individual and population well-being. Measures of life expectancy, mortality, and opportunity for a healthful lifestyle can be used to assess a population's health. Some of the measures that will be used as part of the indicator for health across all jurisdictions include leading cause of death, life expectancy, and three categories of age adjusted death rates (from all cancers, from heart disease, and overall). The leading cause of death in American Samoa (2006-08) was cancer and malignant neoplasms. The average life expectancy (2012) was 74.7 years of age. In 2010, the age adjusted death rate from all cancers was 152.5 per 100,000 people, the age adjusted death rate from heart disease was 168.9 per 100,000 people, and the overall age adjusted death rate was 1090.0 per 100,000 people. While these measures of health are being tracked across all jurisdictions, there are additional health issues of significance in American Samoa. For example, American Samoa has one of the highest rates of diabetes in the world with approximately 48% of the population affected in 2004 (WHO 2004), as well as the highest rate of obesity across all Pacific Islands (Hawley and McGarvey 2015).

Basic Needs, Access to Social Services, and Education

Basic needs, access to social services, and education are important social dimensions of well-being. The measures for basic needs include those related to the adequacy of housing, access to healthy food, transportation, basic infrastructure, and clean water. Additional measures that are related to basic needs are included below, under physical infrastructure. The median value of owner occupied housing units in American Samoa is just over $68,000. Land is passed down through families in American Samoa, and a person must be able to claim at least 50% Samoan ethnicity to own land (with the exception of freehold land).

Approximately 60% of all Samoan households have access to a vehicle. Only 4.2% of occupied households lack access to telephone service. Approximately 34.6% of occupied households have access to a computer or laptop at home; of those, 22% have access to internet service. Of the 10,963 housing units in American Samoa, 9,688 are occupied; 7,106 are owner-occupied and 2,582 are renter-occupied.

One of the key components of community well-being is education. K-12 enrollment, along with high school and college educational attainment will be combined to examine education. Approximately 18% of American Samoans 25 years or older did not complete high school or its equivalent in 2010 (Figure 16).

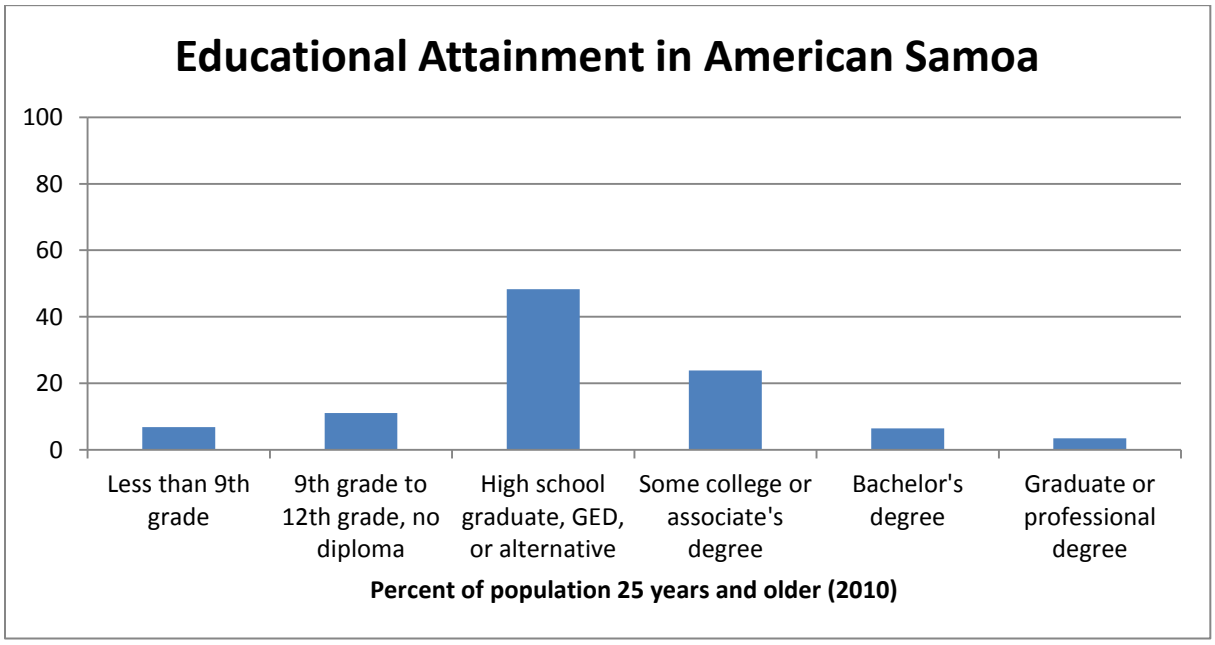

Figure 16 **Levels of educational attainment in American Samoa 2010**

Economic Security

The measures used to determine an indicator for economic security will include: gross domestic product, median household income, percent population in poverty, employment rate, and households receiving public assistance. One of the most telling measures of economic well-being at the territorial level is real gross domestic product (GDP). Since 2007, the overall trend in real GDP in American Samoa is downward (Figure 17). Although American Samoa recovered slightly in the immediate aftermath of the Great Recession, the real GDP has continued to decline to a figure of $490 million (inflation adjusted to 2005 dollars) in 2013. In 2010, 4.8% of American Samoans age 16 years and older were unemployed. About 2% of those in this age

range participated in only subsistence activities. Only a small proportion of this group is employed in commercial fishing or tourism.

Future economic conditions in American Samoa remain uncertain. According to Grace-McCaskey (2015), production in the territory's tuna processing facilities has declined in the recent past and tourism to the jurisdiction has decreased. While the United States Government increased its federal aid, boosting short-term employment in the jurisdiction, the long-term viability of those jobs remains unclear (Grace-McCaskey 2015). However, the recent opening of a new tuna processing facility could provide additional economic opportunities to the territory in the near future.

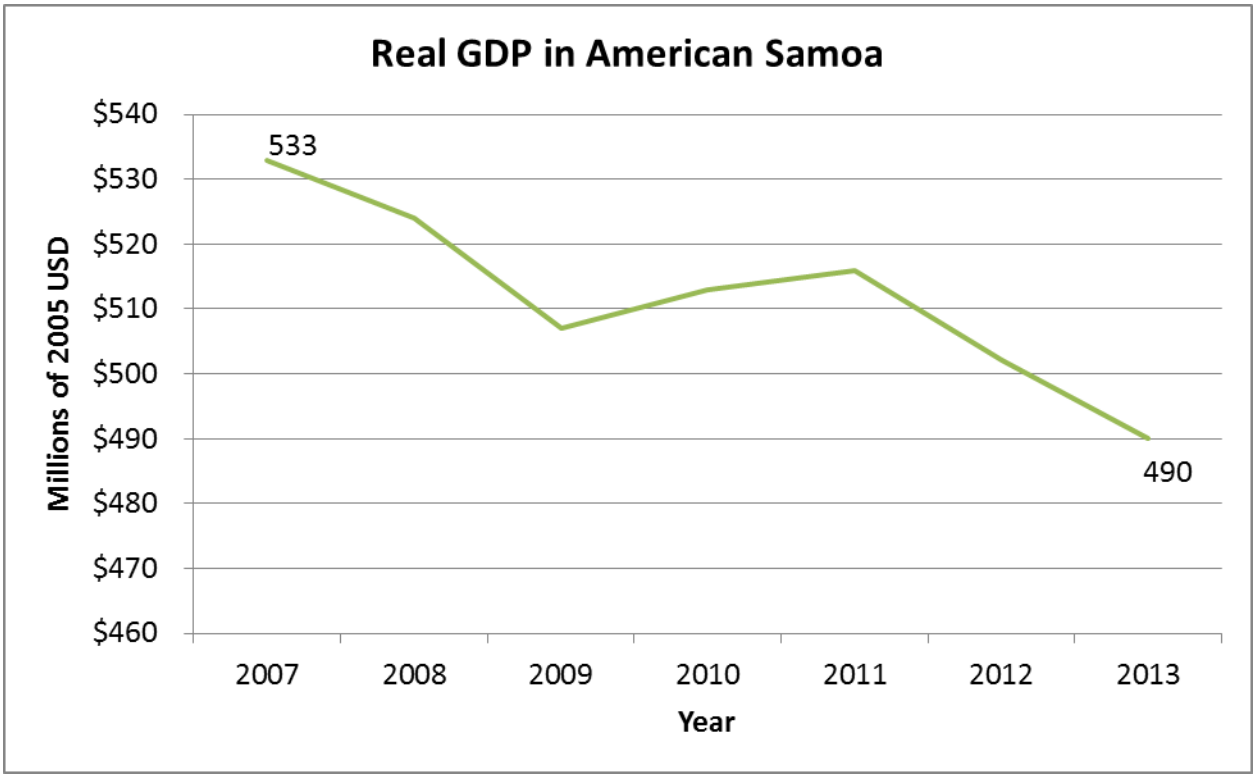

Figure 17 Real GDP in American Samoa

Real median household income stayed relatively constant from 2000 to 2010 in American Samoa as a whole with a slight increase observed in the Western District and slight decreases observed in the Eastern District and in the Manu'a District. On Swains Island, a relatively large increase (17.8%) in real median household income occurred from 2000 to 2010 (Figure 18); however, it should be noted that the total population of Swains Island in 2010 was only 17 people, largely agricultural workers, so this trend does not represent a significant change in the context of the total population of American Samoa. Over half of American Samoan residents have incomes

below the poverty line, although there was a 3.35% decrease in the percent of the total population below the poverty level between 2000 and 2010 (Figure 19).

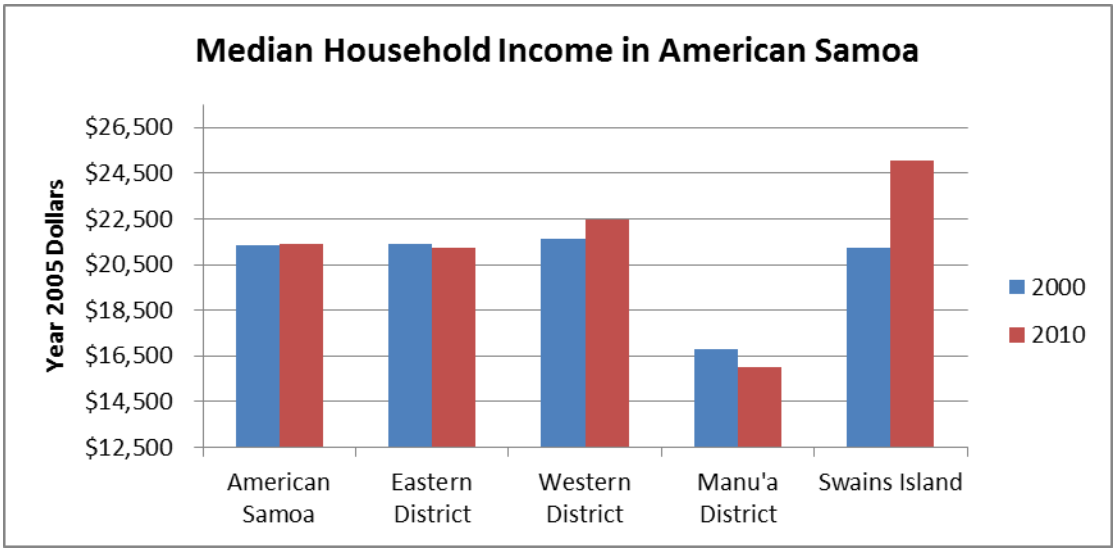

Figure 18 **Median Income in American Samoa in inflation adjusted 2005 US Dollars**

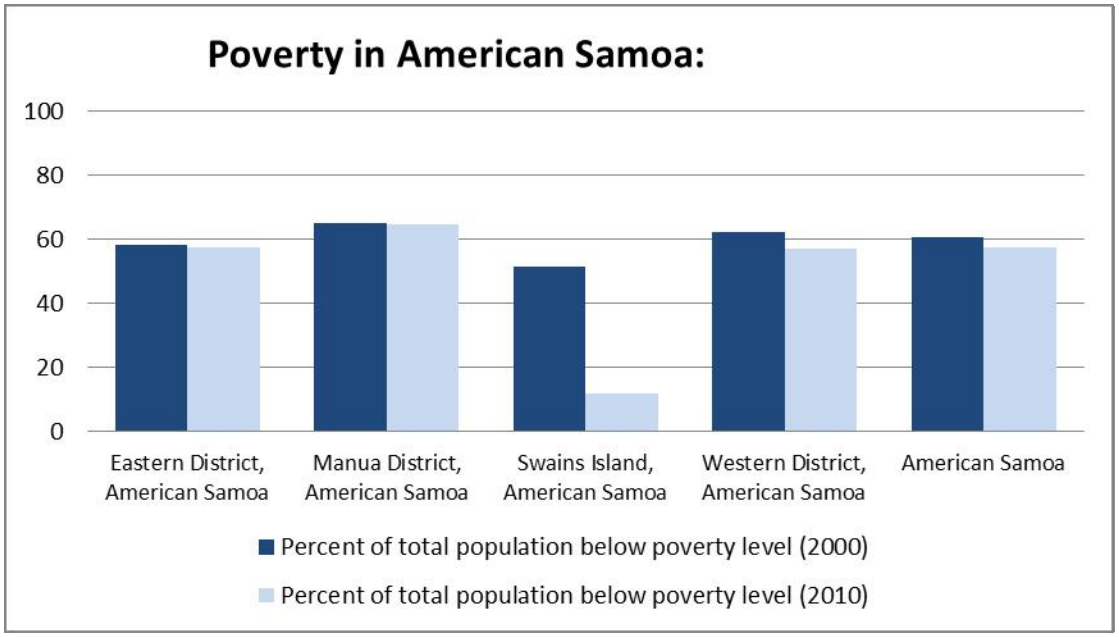

Figure 19 **Level of poverty in American Samoa**

The percent of the population receiving public assistance income did not experience a dramatic change from 2000 to 2010. The largest decreases in public assistance income receipt were in Manu'a District (8.10%) and Eastern District (4.41%). Interestingly, these districts had the least improvement in their poverty rates for the same period (Figure 20). The complete well-being assessment will examine the percentage of the population in need that is not being served by public assistance in order to measure the efficacy of support services in reaching target populations. Such measures are important to understanding the overall vulnerability of the population independent of stressors such as resource decline, severe storm events, and climate change.

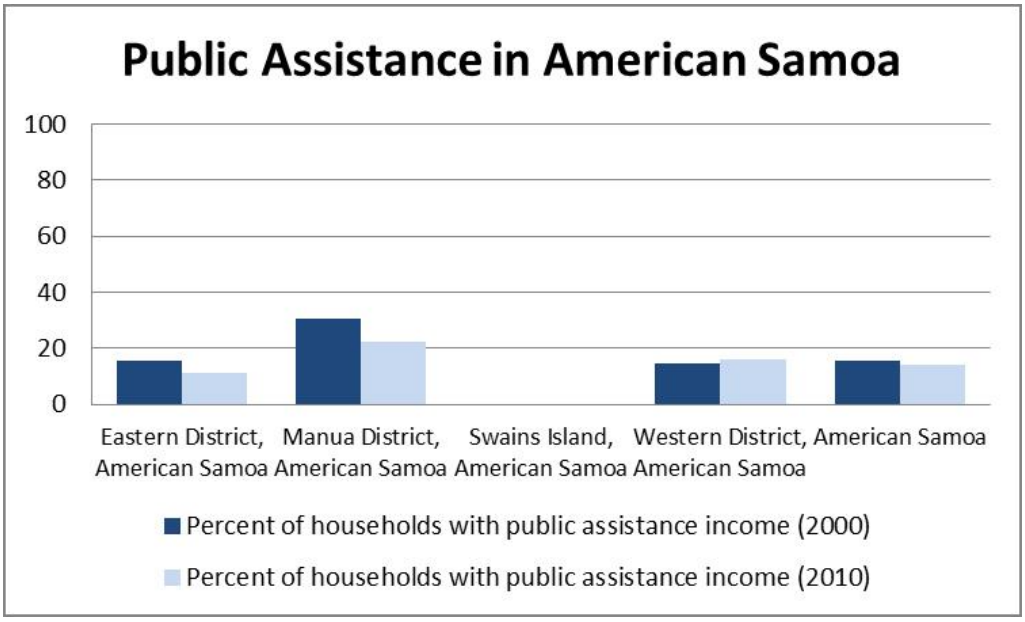

Figure 20 Level of public assistance in American Samoa

Physical Infrastructure

Indicators for physical infrastructure relate to both the human development footprint, as well as measures in place to mitigate human impacts to the marine environment (e.g., point and non-point sources of land-based pollution, as well as sewage treatment and abatement).

Landcover and coastal access

Impervious cover is a good indicator of development and is also associated with land-based pollution that can damage coral reefs. All islands combined, American Samoa has a total of 9.17 square kilometers of impervious cover, or approximately 4% of the territory's land surface area (Central Intelligence Agency, 2015; Table 4).

The majority of shoreline types in American Samoa are either rocky (45%) or beach (41%). While a paved road runs along the majority of Tutuila's south coast, the North maintains many areas that are inaccessible from shore. Villages are located in nearly all accessible coastal bays in Tutuila, but steep topography limits the extent of development across much of the islands. Several miles of the coastline have undergone some coastal engineering, such as rip rap, revetments, and sea walls, to prevent coastal erosion.

Table 4 Impervious surface areas by island

Island	Impervious Cover (Sq. km)	Percent of Total (%)
Tutuila	7.39	5.19%
East Manu'a (Tau)	0.29	0.66%
West Manu'a (Ofu and Olosega)	0.07	0.96%
Swains Island	0.0009	0.06%
Total	**7.75**	**3.97%**

Waste management and water supply

Of the 9,688 occupied housing units, 4,440 (46%) have public sewer systems, while the remainder use septic tanks, cesspools or some other means of sewage treatment; 7,083 (73%) have complete plumbing facilities, while plumbing facilities in the remaining households are incomplete.

There are 26 public or village water systems in American Samoa (USEPA-OEI, 2015). These facilities bring water to approximately 9,532 housing units. Public water, however, has been on a "boil before drinking" alert for many years, so treatment is not considered adequate.

There are 4 Municipal Land Fill (MLF) facilities in American Samoa: Ofu (Ofu Island), Olosega (Olosega), Ta'u (Ta'u Island), and Futiga (Tutuila Island; USEPA-OEI, 2015). The Futiga MLF, located uphill from the Fagatele unit of the National Marine Sanctuary of American Samoa, is expected to reach critical capacity by 2015 (Samoa News, 2013).

Two wastewater treatment facilities (WWTF) exist in American Samoa, both located on Tutuila: the Fogagogo-Tafuna WWTF which serves the southwestern Tutuila Island Sewer Collection System, and the Utulei WWTF which serves the Pago Pago Harbor Sewer Collection System. Both systems discharge through outfalls to the ocean (USEPA, 2011). Figure 21 indicates regions where sewer collection is in place or planned for the future. Even within the areas indicated, however, sections of some villages still rely on remaining septic tanks or cesspools to deal with wastewater. One hundred percent of all beaches in American Samoa were monitored in 2011 for traces of waste. Of these, 92% were impacted by a beach advisory action; however, less than a third of beach days were impacted.

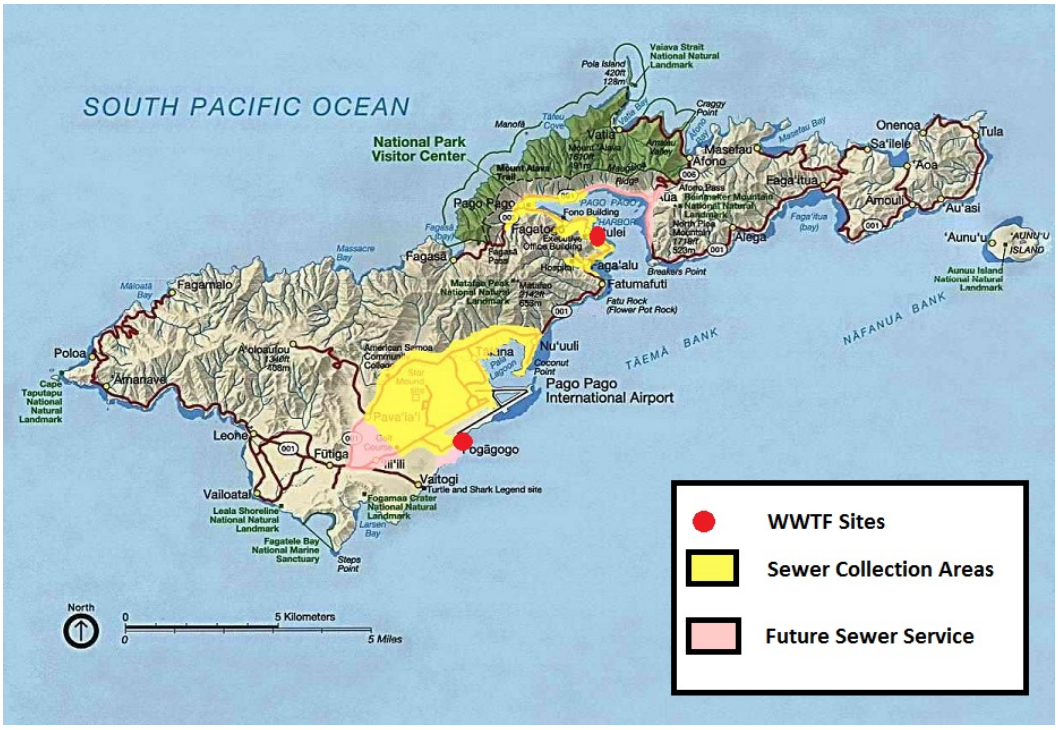

Figure 21 Wastewater treatment facilities in American Samoa

Note: Map image from US Environmental Protection Agency (USEPA 2011).

Physical access to coastal resources

Access to the coast is regulated by individual villages. Outsiders must obtain permission from a village resident if they wish to access village coasts and bays. These tenure systems are stronger in rural villages, whereas many urban villages are now effectively open access. In addition to these informal community access points, there are also approximately 5 primary ports or boat ramps located at Pago Pago, Vatia, and Leone, as well as Aunu'u, where a ferry service is located. Future information (secondary data) collection should include updated information on ports, harbors and other formal points of access to coastal and marine resources.

Economic activities related to reefs

Fishing

In 2013 there were 25 American Samoa-based fishing boats with 75 fishermen that landed approximately 102,735 lbs. of fish. The three main methods of fishing in 2013 were bottom fishing, longlining, and spearfishing, respectively (America Samoa Government, 2014). It should be noted that this catch is typically dominated by pelagic species and not necessarily linked to the demersal reef fish species. For more details on general fish catch and statistics, readers can

refer to other sources such as those produced by the Western Pacific Fisheries Management Council (http://www.pifsc.noaa.gov/wpacfin/central_pubs.php) or the Pacific Islands Fisheries Science Center (http://www.pifsc.noaa.gov/).

Tourism

Visitor arrivals to American Samoa have declined from a high of 33,710 in 2008 to a low of 26,247 in 2013. Over 40% of visitors came to American Samoa to visit relatives. Between 2005 and 2013, the month of July experienced the most off-island visits (America Samoa Government, 2014).

Many international visitors arrived via cruise ships, most frequently between the months of December and March. Cruise ships generally stayed for only one day; commercial stands are set up at the port during these visits and passengers may tour the island via *aiga* buses.

A cruise ship docks in Pago Pago harbor (A. Levine)

Governance

Governance measures such as public trust, percent areas of coral reefs under management or protection, level of community involvement in decision making/local reef governance, and the presence, longevity, and focus of MPAs and other marine managed areas are used to assess governance related to coral reefs and the marine environment for each jurisdiction.

Sources of environmental information and level of trust

The top two sources of information about coral reefs and the environment, according to survey respondents, are the government of American Samoa and U.S. federal government agencies (Figure 22). These are also the most trusted sources of information, with 90% of respondents considering each trustworthy or very trustworthy. Newspapers and community leaders were considered to be the least trustworthy, with 16% and 12% of respondents, respectively, stating that these were untrustworthy or very untrustworthy.

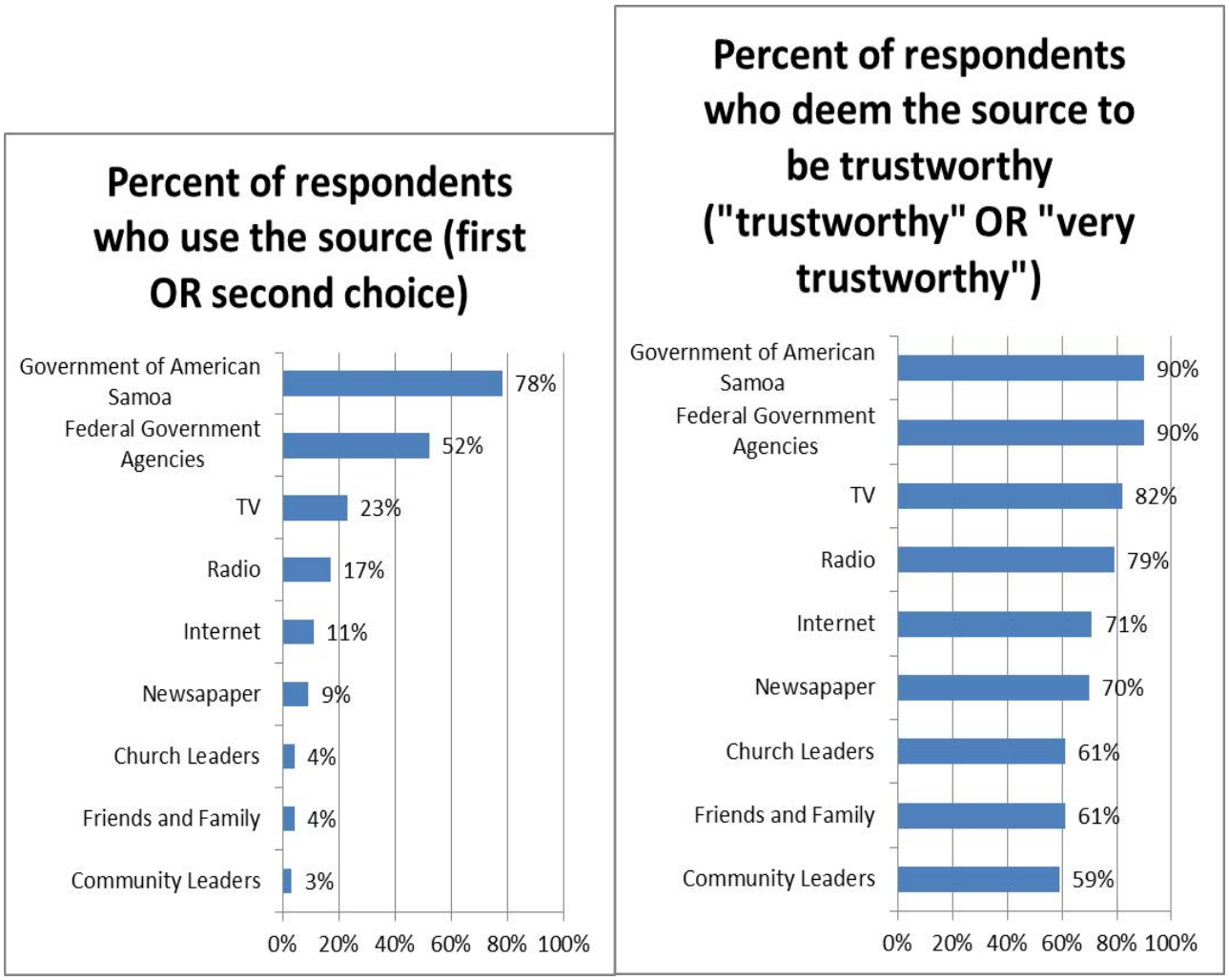

Figure 22 **Top sources of information and level of public trust**

Involvement in coral reef management decision making

Survey respondents stated that communities in American Samoa were involved in protecting and managing coral reefs, with 41% stating that communities were very involved or moderately involved, and 27% stating that communities were slightly involved. At the individual level, involvement in making decisions regarding the management of marine resources in American Samoa was similar, with 40% stating that they were very involved or moderately involved, and 22% stating that they were slightly involved.

Other governance indicators

Based on the MPA Inventory (2014), 70% of all marine managed areas (MMAs) in American Samoa have management plans in place (Table 5). The oldest inventoried MMA is just over 40 years old while some were established as recently as 2013 (establishment dates range from 1973 to 2013). Of the inventoried MMAs, cultural heritage is the primary conservation focus of twelve, and natural heritage is the primary focus of eight. Investigation shows that 24.7% of the mapped coral reef ecosystems in and around American Samoa are under some form of management regime. In 2010, the governor of American Samoa established a goal of 20% of American Samoa's coral reef areas to become no-take MPAs. To date, only 7% of coral areas are within no-take MPAs; however, communities in American Samoa have become actively involved in coral reef management, and 20% of coastal communities have some form of management plan in place. Management plans range from MPAs and village climate resiliency plans to wetland and watershed management plans.

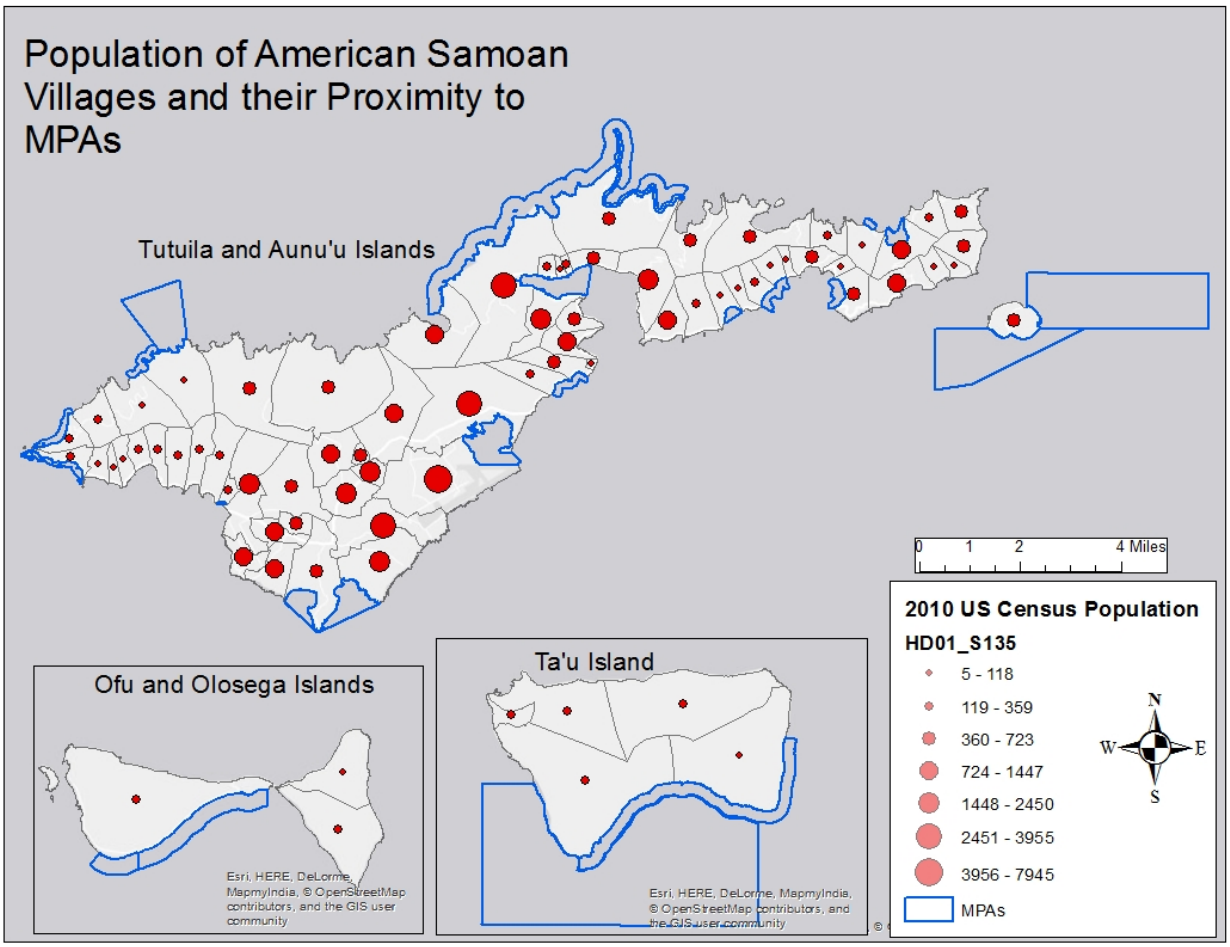

Figure 23 Proximity of populated areas to MPAs in American Samoa

Table 5 Details of the Marine Protected Areas of American Samoa

Site Name	Government Level	Management Plan	Area (sq. km)
Alega Village Marine Protected Area	Territorial	Community Agreement	0.15
Alofau Village Marine Protected Area	Territorial	Community Agreement	0.32
Amanave Village Marine Protected Area	Territorial	Community Agreement	0.34
Amaua & Auto Village Marine Protected Area	Territorial	Community Agreement	0.37
Aoa Village Marine Protected Area	Territorial	Community Agreement	0.34
Aua Village Marine Protected Area	Territorial	Community Agreement	0.34
Fagamalo No-take MPA	Territorial	No Management Plan	2.89
Fagamalo Village Marine Protected Area	Territorial	Community Agreement	0.45
Fagasa No-take MPA	Territorial	No Management Plan	*
Leone Pala Special Management Area	Territorial	No Management Plan	0.09
Masausi Village Marine Protected Area	Territorial	Community Agreement	0.20
Matu'u & Faganeanea Village Marine Protected Area	Territorial	Community Agreement	0.32
National Marine Sanctuary of American Samoa (all units)	Federal	Site-Specific Management Plan	35175.23
National Park of American Samoa (marine area only)	Federal	Site-Specific Management Plan	11.81
Nu'uuli Pala Special Management Area	Territorial	No Management Plan	2.07
Ofu Vaoto Marine Park	Territorial	No Management Plan	0.38
Pago Pago Harbor Special Management Area	Territorial	No Management Plan	1.62
Poloa Village Marine Protected Area	Territorial	Community Agreement	0.36
Rose Atoll (American Samoa) - no take MPA	Federal	Non-MPA Programmatic Habitat Management Plan	1790.81
Rose Atoll Marine National Monument	Federal	In Draft	34,836.97
Rose Atoll National Wildlife Refuge	Federal	Site-Specific Management Plan	6.75
Sa'ilele Village Marine Protected Area	Territorial	Community Agreement	0.08
Vatia Village Marine Protected Area	Territorial	Community Agreement	0.62

Notes:* indicates area data are not available for this site; data from 2014 NOAA Marine Protected Areas Inventory.

Discussion

Based on the survey findings, a few general conclusions about the population of American Samoa and their interaction with coral reefs can be made. These can be considered preliminary findings, and more detailed analyses of this data are planned for the future (after indicators from secondary data are finalized). We propose a few suggestions for future research at the end of this section.

With respect to **participation in reef activities**, purely recreational coral reef related activities (SCUBA diving, snorkeling) are relatively uncommon in American Samoa, with the exception of swimming and other recreational activities on the beach. Residents participate more frequently in recreational activities in semi-urban villages than in rural or urban villages.

Fishing and gathering of resources are some of the more common nearshore reef related activities. Our findings show that over 30% of households stated that they engaged in fishing or gathering at least once per month. The survey found that 78% of households eat fish/seafood once a week or more, and that most fishers (87%) do not sell the fish they catch; however, it is uncertain what proportion of fish protein consumed comes from coral reef vs. non-coral reef fish species, as this distinction was not specified in the survey. Seafood is also purchased in supermarkets, some of which is sourced from outside the territory.

Survey respondents were asked their perceptions of the health of American Samoa's coral reef resources. The finding showed that residents of urban areas perceived **resource conditions** to be in the worst condition, whereas residents of rural areas generally perceived resources to be in better condition. That is, urban residents had a less favorable perception of coral reef ecosystem health when compared to rural areas. The fact that coral reef health varies by location may, in part, explain the lack of consensus regarding the condition of marine resources at the jurisdictional level.

Regarding the public's **awareness and knowledge of coral reefs**, this study found that the majority of the population stated that they are familiar with threats facing coral reefs (all threat types). That being said, less than a third of the population believed that the condition of coral reef resources would get worse in the next 10 years. This may illustrate a confidence amongst American Samoans that current threats to coral reefs are being effectively addressed.

The study found that the public's **attitudes towards coral reef management strategies and enforcement** was largely positive. Residents expressed support for most of the current marine management measures in place in the territory. In particular, 82% of the respondents surveyed support community-based village MPAs and 78% support temporary fishing closures. The only management measure not supported by a majority of respondents was the ban on fishing "big fish" species (e.g., bumphead parrotfish, humphead wrasse, giant grouper, and sharks).

Generally, respondents supported marine management policies and regulations, regardless of their reliance on marine resources.

We also attempted to track public participation and attitudes with respect to the **governance** of coral reefs and their resources. While 70% of all MPAs in American Samoa have management plans in place, we were unable to assess the strength of these plans. There appears to be a moderate level of participation from individuals in activities to protect and manage coral reefs. The survey also found that American Samoan residents rely on and trust both federal and local government information sources regarding coral reef topics. It is interesting to note that church and village leaders were not frequently listed as trusted sources of information by those who utilize these sources. Those who did state that church and village leaders were trusted information sources were significantly more likely to be highly reliant on fishing, suggesting that churches and village leaders may be an appropriate means of outreach for future fisheries management strategies.

The collection of **secondary data,** including economic impacts of tourism and fishing, as well as data contributing to the development of some of the community well-being indicators, will continue over time. As updated data sets are produced by relevant agencies, these will be sourced and housed with the existing data sets, and will be used to track changes over time. These data may be incorporated into indicators that combine or compare biophysical parameters (e.g., fish biomass) with landings information or public perceptions of general reef health.

Future approaches and research ideas.

There were a few lessons learned from this first NCRMP socioeconomic data collection in American Samoa. As similar surveys are implemented across other U.S. coral reef jurisdictions, the NCRMP team will be making adjustments to the data collection effort to improve on the type of information being generated. These findings can be considered as a starting point to develop more detailed research questions for future work. For example, there is a need to fine-tune the question on fish consumption and fishing activity to make it more specific to coral reef related fish and invertebrate species, as well as distinguish between locally caught and imported fish. The monitoring team will also aim to improve the level of comparability of questions across the different jurisdictions while maintaining questions that will provide information specifically relevant to the local context and management needs in American Samoa.

Another future research direction would be to conduct analyses that explore relationships between different socioeconomic indicators, as well as comparisons between sub-populations as defined by the sampled respondents. These may include categories such as: age, gender, or familiarity with coral reefs, among others. For example, our results show that there is minimal difference in the perceptions of those who fish vs. those who do not fish in relation to their attitudes towards MPAs and most coral reef management measures. Preliminary analyses suggest

that the one exception is that fishermen were more likely to disagree with the expansion of Fagatele Bay Sanctuary, but 50% still stated they were supportive of the expansion. The study also found that resource extraction is more common in rural and semi-urban regions.

Other potential improvements include the elicitation of public awareness of climate change and ocean acidification and their potential impacts on humans. This might include adaptation measures that are perceived to be more effective for community resiliency. Additional improvements to the survey instrument might include better distinguishing the sources of information on coral reefs and level of trustworthiness. This could provide information that could be incorporated into specific public outreach and education programs for current and future management measures.

This data collection builds on and supplements the considerable social science research that has been conducted in American Samoa to date. Integrating NCRMP data with these studies, or comparing and contrasting findings, has the potential to provide a more complete understanding of human interactions with coral reef resources in the territory. For instance, Kilarski et. al.'s (2006) survey of American Samoa residents provides a baseline that may allow us to see changes in certain variables over time. Historically oriented studies, including work conducted by Armstrong et. al. (2011) and Levine and Sauafea-Leau (2013) can also provide a baseline to examine how practices, culture, and norms may have changed over time in the territory. Village-specific data collections, including Jacob (2009), Wongbusarakum (2009), and Levine and Kilarski (2015) can be compared to the territory-wide trends examined under the NCRMP study. Levine and Richmond's (2014, 2015) analysis of fisheries co-management also provide a useful lens for analysis of resident perceptions of fisheries and management analyzed under NCRMP. At the highest level, NCRMP socioeconomic data are intended to allow for analyses across jurisdictions and regions (e.g. comparisons of Pacific to Caribbean) and within a single jurisdiction over time. These investigations will be, in large part, aimed at answering questions related to the success of coral reef conservation efforts.

In future years, we intend to adjust our jurisdictional sampling schedule to enable us to increase the total sample size and survey the entire jurisdiction of American Samoa, including the Manu'a Islands. This will enable comparisons between more urbanized Tutuila and the more remote and less developed villages in Manu'a. Expanding our survey sample will improve our ability to compare NCRMP socioeconomic data to biophysical data collected by NCRMP and jurisdictional agencies (for instance, comparing perceived coral reef resource condition to biological indicators), and to inform coral reef management and monitoring across the entire jurisdiction. Finally, ongoing analyses of the individual metrics presented here will move us toward reporting the survey and secondary data collection results for a variety of composite indicators such as governance and perceived resource condition. These indicators will aid in comparisons across jurisdictions, where individual metrics may not be the same. Further, the use of indicators will support communication of complex data in a way that facilitates decision making.

Community-based fisheries management area in the villages of Matu'u and Faganeanea (A. Levine)

References

American Samoa Government. 2011. "American Samoa Constitution."

—. 2014. "American Samoa Statistical Yearbook 2013." Pp. 198. Pago Pago, American Samoa: Department of Commerce, Statistics Division.

Armstrong, Karen, David Herdrich, and Arielle Levine. 2011. Historic fishing methods in American Samoa. U.S. Dep. Commer., NOAA Tech Memo., NOAA-TM-NMFS-PIFSC-24, 70 p. + Appendices.

Bureau of Economic Affairs. 2014. "Territorial Economic Accounts for American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands."

Butler, Colin D., and Willis Oluoch-Kosura. 2006. "Linking Future Ecosystem Services and Future Human Well-Being." *Ecology & Society* 11(1):1-16.

Central Intelligence Agency. 2008. "American Samoa. In *The World Factbook*."

—. 2015. "American Samoa. In *The World Factbook*."

Chen, B. 2013. ""Landfill expected to reach critical capacity by 2015"." in *Samoa News*.

Costanza, Robert, Ralph d'Arge, Rudolph de Groot, Stephen Farber, Monica Grasso, Bruce Hannon, Karin Limburg, Shahid Naeem, Robert V. O'Neill, Jose Paruelo, Robert G. Raskin, Paul Sutton, and Marjin van den Belt. 1997. "The value of the world's ecosystem services and natural capital " *Nature* 387:253-60.

Costanza, Robert, Brendan Fisher, Saleem Ali, Caroline Beer, Lynne Bond, Roelof Boumans, Nicholas L. Danigelis, Jennifer Dickinson, Carolyn Elliott, Joshua Farley, Diane Elliott Gayer, Linda MacDonald Glenn, Thomas Hudspeth, Dennis Mahoney, Laurence McCahill, Barbara McIntosh, Brian Reed, S. Abu Turab Rizui, Donna M. Rizzo, Thomas Simpatico, and Robert Snapp. 2007. "Quality of life: An approach integrating opportunities, human needs, and subjective well-being." *Ecological Economics* 61:267-76.

Dillard, M. K., T. L. Goedeke, S. Lovelace, and A. Orthmeyer. 2013. "Monitoring Well-being and Changing Environmental Conditions in Coastal Communitities: Development of an Assessment Method." Pp. 176 in *NOAA Technical Memorandum NOS NCCOS 174*. Silver Spring, MD.

Dillman, Don A. 1978. *Mail and Telephone Surveys: The Total Design Method*. New York: Wiley-Interscience.

—. 2007. *Mail and Internet Surveys: The Tailored Design, Second Edition--2007 Update*. Hoboken, NJ: John Wiley.

Doyal, Len, and Ian Gough. 1991. *A theory of human need*: Palgrave Macmillan.

Grace-McCaskey, C. A. 2015. "American Samoa Fishing Community Profile: 2013 Update." Pp. 30: Pacific Islands Fish. Sci. Cent. Admin. Rep.

Hawley, N. L., and S. T. McGarvey. 2015. "Obesity and Diabetes in Pacific Islanders: the Current Burden and the Need for Action." *Current Diabetes Reports* 15.5(2015):1-10.

Jacob, Lucy. 2009. An Investigation Into Marine Resource Use and Management in Aunu'u, American Samoa: A Household Survey. DMWR Biological Report Series. 10-01.

Kilarski, Stacey et. al. 2006. Decision support for coral reef fisheries management: community input as a means of informing policy in American Samoa. MA thesis. Univeristy of California, Santa Barbara.

Levine Arielle, and Stacey Kilarski. 2015. Socioeconomic survey on the marine environment, pollution, and village adaptive capacity: Vatia, Aunu'u, and Faga'alu villages – Survey Results, October and November 2014. Final Project Report, June 12.

Levine, Arielle and Laurie Richmond. 2015. Using common-pool resource design principles to assess the viability of community-based fisheries co-management systems in American Samoa and Hawai'i. *Marine Policy*. 62: 9-17.
Levine, A. S., and L. S. Richmond. 2014. "Examining enabling conditions for community-based fisheries co-management: comparing efforts in Hawai'i and American Samoa." *Ecology and Society* 19(1):24.
Levine, A. S. e*t al.* 2014. "An Assessment of Socioeconomic Dependence on and Attitudes about Coral Reefs in American Samoa." NCRMP.
Levine, Arielle and Fatima Sauafea-Leau. 2013. Traditional knowledge, use, and management of living marine resources in American Samoa: Documenting changes over time through interviews with elder fishers. *Pacific Science* 67 (3). P. 395-407.
Loper, C., A. Levine, J. Agar, M. Hamnett, V. R. Leeworthy, M. Valdez-Pizzini, and K. Wallmo. 2010. "NOAA Coral Reef Conservation Program Social Science Strategy: 2010-2015."
MEA. 2003. "Ecosystems and Human Well-being: A framework for assessment." Washington D.C.
National Ocean Service. 2014. "National Marine Sanctuary of American Samoa, About Your Sanctuary."
NOAA Coral Reef Conservation Program. 2014. "National Coral Reef Monitoring Plan." Silver Spring, MD: NOAA Coral Reef Conservation Program.
Sagapolutele, Fili. 2015. "Tri-Marine opens new tuna cannery in American Samoa: CEO warns of threats from European Union free trade talks." in *Pacific Islands Report*. Honolulu, HI: Pacific Islands Development Program, East-West Center.
United States Department of Health and Human Services. 1995. "Paper Work Reduction Act (PRA) of 1995."
United States Environmental Protection Agency (USEPA). 2011. "U.S. Environmental Protection Agency, Region 9, Clean Water Act Compliance Office, NPDES Diagnostic Evaluation Inspection Report." Pp. 32. San Francisco: USEPA Region 9.
United States Environmental Protection Agency's Office of Environmental Information (USEPA-OEI). 2015. "U.S. EPA Regulated Facilities Point Locations from Envirofacts for the United States and Territories."
Wongbusarakum, S. 2009. Report on Project and Research Results Climate-Related Socioeconomic Assessment in American Samoa.
World Health Organization. 2004. "American Samoa NCD Risk Factors STEPS Report."

Appendix 1 National Coral Reef Monitoring Program

Understanding Socioeconomic Connections

The Socioeconomic Component of the National Coral Reef Monitoring Plan (NCRMP) gathers and monitors a collection of socioeconomic variables, including demographics in coral reef areas, human use of coral reef resources, as well as knowledge, attitudes, and perceptions of coral reefs and coral reef management. The overall goal of the socioeconomic monitoring component is to track relevant information regarding each jurisdiction's population, social and economic structure, the impacts of society on coral reefs, and the impacts of coral management on communities. NOAA's Coral Reef Conservation Program (CRCP) will use the information for research and to improve the results of programs designed to protect coral reefs.

The main purpose of the Socioeconomic Component of NCRMP is to answer the following questions: What is the status of human knowledge, attitudes, and perceptions regarding coral reefs? And, how are human uses of, interactions with, and coral dependence on coral reefs changing over time?

More details can be found here: http://www.coris.noaa.gov/monitoring/socioeconomic.html

Appendix 2 The NCRMP Survey Instrument

OMB SUBMISSION

NOAA Coral Reef Conservation Program
National Coral Reef Monitoring Program
Resident Coral Reef Survey
OMB Control Number 0648-0646

American Samoa Survey

Survey conducted in (circle one): *Samoan* *English*

Introduction: Talofa. My name is _____. We are conducting a survey of residents in American Samoa and are interested in obtaining your opinions on some important issues related to coral reefs and the environment in American Samoa. Your participation is voluntary and will be kept strictly confidential.

PARTICIPATION IN REEF ACTIVITIES

1. How often do you usually participate in each of the following activities? [Q14]

	Never	Once a month or less	2-3 times a month	4 times a month or more	No Response
Swimming/wading					
Snorkeling					
Diving (SCUBA or free diving)					
Waterside/ beach camping					
Beach recreation (beach sports, picnics)					
Boating					
Outrigger canoe/Fautasi					
Surfing					
Fishing					
Gathering of marine resources (lobsters, conch, seaweed, palolo)					

SKIP PATTERN-- If respondent answers 'never' to fishing or gathering of marine resources, then skip to #3:

CORAL REEF RELIANCE / CULTURAL IMPORTANCE OF REEFS

2. How often do you fish or harvest marine resources (includes all fishing and harvesting of shells, octopus, lobster, sea cucumber, or other non-fish species) for each of the following reasons? [Q112]

	Frequently	Sometimes	Rarely	Never	No Response
To feed myself and my family/ household					
To sell					
To give to extended family members and/or friends					
To give to pastors and village leaders)					
For fun					
For special occasions and cultural events (e.g.,					

	Frequently	Sometimes	Rarely	Never	No Response
fa'alavelave)					

3. How often does your family eat fish/seafood? [Guam Survey]
    a. Every day
    b. A few times a week
    c. About once a week
    d. 1-3 times a month
    e. Less than once a month
    f. Never

SKIP PATTERN-- If respondent answers f. Never, skip to question #5

4. Where do you get the fish or seafood your family eats? Please pick the top 2. [Guam Survey]

    a. Purchased by myself or someone in my household at a store or restaurant
    b. Purchased by myself or someone in my household at a market or roadside vendor
    c. Caught by myself or someone in my household
    d. Caught by extended family members
    e. Other, please specify _____

PERCEIVED RESOURCE CONDITION

5. In your opinion, how are American Samoa's marine resources currently doing? Please rank from very bad to very good. [Q50]

	Very Bad	Bad	Neither Bad nor Good	Good	Very Good	Not sure
Ocean Water Quality (clean and clear)						
Amount of Coral						
Number of Fish						
Number of Faisua (Giant Clams)						
Amount of animals for gleaning (shells, octopus, etc.)						

6. How would you say the condition of each of the following has changed over the last 10 years: from 1=it has gotten a lot worse to 5=it has gotten a lot better. [Q53]

	A lot Worse	Somewhat Worse	No Change	Somewhat Better	A lot Better	Not Sure
Ocean Water Quality (clean and clear)						
Amount of Coral						
Number of Fish						
Number of Faisua (Giant Clams)						
Amount of animals for gleaning (shells, octopus, etc.)						

7. In the next 10 years, do you think the condition of the marine resources in American Samoa will get worse, stay the same or improve? [Guam Survey]
    a. Get worse
    b. Stay the same
    c. Improve
    d. Not sure

AWARENESS AND KNOWLEDGE OF CORAL REEFS

8. Please say whether you disagree or agree with each of the following statements. [Q7, Guam Survey]

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Sure
Coral reefs protect the American Samoa from erosion and natural disasters.						
Coral reefs are only important to fishermen, divers and snorkelers.						
Healthy coral reefs attract tourists to American Samoa.						
Coral reefs are important to American Samoa culture.						

9. How familiar are you with each of the following potential threats facing the coral reefs in American Samoa? [Q31]

	Very Unfamiliar	Unfamiliar	Neither Familiar nor Unfamiliar	Familiar	Very Familiar	Not sure
Climate change						
Coral bleaching						
Hurricanes and other natural disasters						
Pollution (stormwater, wastewater, chemical runoff and trash/littering)						
Coastal/urban development						
Invasive species						
Too much fishing and gathering						
Damage from ships and boats						
Crown of Thorn starfish outbreaks (alamea)						
Coral disease						

10. Do you believe that the threats to coral reefs in American Samoa are: [MODIFIED Q29]

    a. Extreme
    b. Large
    c. Moderate
    d. Minimal
    e. None
    f. Not sure

ATTITUDES TOWARDS CORAL REEF MANAGEMENT STRATEGIES AND ENFORCEMENT

11. A Marine Protected Area is an area of the ocean where human activity is typically restricted to protect living, non-living, cultural, and/or historic resources. How familiar are you with Marine Protected Areas (MPAs)? [Q36]

    a. Very Unfamiliar
    b. Unfamiliar
    c. Neither Unfamiliar nor Familiar
    d. Familiar
    e. Very Familiar
    f. Not sure

SKIP PATTERN-- If respondent answers a 'Very unfamiliar' or b 'Unfamiliar', then skip to #12:

12. Please indicate how much you disagree or agree with each of the following statements. [MODIFIED Q44]

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Sure
MPAs protect coral reefs						
MPAs increase the number of fish						
There should be fewer MPAs in American Samoa						
There should be more MPAs in American Samoa						
There has been economic benefit to American Samoa from the establishment of MPAs						
Fishermen's livelihoods have been negatively impacted from the establishment of MPAs in American Samoa						
MPAs help increase tourism in American Samoa						
The establishment of MPAs increases the likelihood that people will vacation in American Samoa						
I would support adding new MPAs in American Samoa if there is evidence that the ones we have are improving American Samoa's marine resources						
I generally support the establishment of MPAs						

AWARENESS OF CORAL RULES AND REGULATIONS

13. The following are management measures intended to improve the protection of coral reefs in <location>. Please rate whether you oppose or support each of the following: [Q103]

Rules/Regulations	Strongly Oppose	Oppose	Neither Support nor Oppose	Support	Strongly Support	Don't Know
Invertebrate size restrictions						
Fishing gear restrictions						
Ban on shark fishing OR ban of fishing "big fish" species including bumphead parrotfish, humphead wrasse, giant grouper						

Rules/Regulations	Strongly Oppose	Oppose	Neither Support nor Oppose	Support	Strongly Support	Don't Know
Expansion of Fagatele National Marine Sanctuary						
Establishing community-based Village MPAs						
Establishing permanent no-take MPAs						
Establishing areas with temporary fishing closures						

PARTICIPATION IN BEHAVIORS THAT MAY IMPROVE CORAL HEALTH

14. How often do you participate in any activity to protect the environment (for example, beach clean ups, volunteering with an environmental group)? [MODIFIED Q89]

    a. Not At All
    b. Once a year or Less
    c. Several times a year
    d. At least once a month
    e. Several Times a Month or more
    f. Not Sure

15. Which of the following would you consider to be your top 3 sources of information about coral reefs and the environment in American Samoa? ***[interviewer checks the top 3 sources of information in box below]*** [Q105]

16. To what degree do you trust each of your top rated sources of information to provide you the most accurate information on coral reefs and coral reef related topics in American Samoa? ***[respondent rates only the top 3 sources of information in box below]*** [Q109]

Top 3	Sources	Very untrustworthy	Untrustworthy	Neither Trustworthy nor Untrustworthy	Trustworthy	Very Trustworthy	Not sure
	Newspapers, other print publications						
	Radio						
	TV						

Top 3	Sources	Very untrustworthy	Untrustworthy	Neither Trustworthy nor Untrustworthy	Trustworthy	Very Trustworthy	Not sure
	Internet						
	Friends and family						
	Community leaders						
	Church leaders						
	Government of American Samoa (Dept. of Marine and Wildlife, AS EPA, Coastal Management Program)						
	Federal government agencies (NOAA, National Parks, US EPA)						
	Other:_____						

17. How involved is the local community in protecting and managing coral reefs? [Q97]

    a. Not at all involved
    b. Somewhat involved
    c. Moderately involved
    d. Involved
    e. Very involved
    f. Not sure

18. How involved are you in making decisions related to the management of coral reefs in American Samoa? [Q90]

    a. Not at all involved
    b. Slightly involved
    c. Moderately involved
    d. Involved
    e. Very involved
    f. Not sure

DEMOGRAPHICS

I just have a few more questions that will help us to interpret our results. As a reminder, the information you provide is completely <u>confidential</u>.

19. Are you male or female? [Q122]
    a. Male
    b. Female

20. What is your year of birth? _____ [Q121]

21. How long have you lived in American Samoa? [Q129]
    a. 1 year or less
    b. 2-5 years
    c. 6-10 years
    d. more than 10 years
    e. all my life

22. Including your primary language, please name each language you speak. [***interviewer should not read options below, but should allow respondent to answer***] [Q133]

    1. English
    2. Spanish
    3. French
    4. German
    5. Italian
    6. Portuguese
    7. Arabic
    8. Chinese
    9. Japanese
    10. Korean
    11. Tagolog
    12. Hindi
    13. Hawaiian
    14. Hawaii Pidgin English
    15. Sāmoan
    16. Chamorro
    17. Carolinian
    18. Creole
    19. Crucian
    20. Tongan
    21. Other: Please list
        _____
    22. No Response

23. What race/ethnicity do you consider yourself? [***interviewer should not read options below, but should allow respondent to answer***] [Q131]

    1. Chamorro
    2. Filipino
    3. Carolinian
    4. Korean
    5. Yapese
    6. Kosraen
    7. Chuukese
    8. Pohnpeian
    9. Palauan
    10. Chinese
    11. Japanese
    12. Indian
    13. Samoan
    14. Native Hawaiian or other Pacific Islander
    15. White
    16. American Indian or Alaskan Native
    17. Other: Please specify
        _____
    18. No response

24. What is the highest level of education you have completed? [Q123]
    a. 8th Grade or Less
    b. Some high school
    c. High School Graduate, GED
    d. Some college, community college or AA
    e. College Graduate
    f. Graduate School, Law School, Medical School
    g. No Response

25. What is your current employment status? [Q124]
    a. Unemployed
    b. Student
    c. Employed full-time
    d. Homemaker
    e. Employed part-time
    f. Retired
    g. None of the above: Please specify _____
    h. No Response

26. What is your occupation? [***open ended***] _____ [Q125]

27. May I ask, what is your annual household income? [Q127]
    a. Under $10,000
    b. $10,000-19,999
    c. $20,000-29,999
    d. $30,000-39,999
    e. $40,000-49,999
    f. $50,000-59,999
    g. $60,000-74,999
    h. $75,000-99,999
    i. $100,000-149,999
    j. $150,000 or More
    k. No Response

[Interviewer: Please note the village within which you completed the respondent's survey]

THANK YOU FOR YOUR TIME

If you would like a copy of the results, please provide us with your mailing address or email address (write on separate contact sheet that is not linked to survey answers).

SAMOAN VERSION

Nu'u: _____ Tagata Fa'atautaia le su'esu'ega _____

Aso: _____ Fale Numera / fa'amatalaga: _____

Survey conducted in (circle one): Samoan / English

Talofa. O lo'u igoa o _____. Ua matou fa'atautaia lenei su'esu'ega e maua ai le silafia i manatu o tagata i tulaga taua e fa'atatau i a'au 'amu ma le si'osi'omaga i totonu o Amerika Samoa. O lo'o matou faia nei su'esu'ega i maota I totonu o Tutuila, ma o lou maota lea ua filifilia e fa'atautaia ai lenei fa'amoemoe.

E tusa e 20-30 minute e fa'atautaia ai lenei su'esu'ega, ma o le foa'i atu se meaalofa fa'atauva'a aua lou auai i lenei fa'amoemoe. E leai se afaina pe a e le fia auai i lenei su'esu'ega, ma o tali po'o fa'amaumauga ete tu'uina mai e le mafai ona fa'asoa atu i se tagata.

O lenei su'esu'ega ua lagolagoina e le NOAA's Coral Reef Conservation Program ma o lo'o fa'atautaia e le San Diego State University Research Foundation. O su'esu'ega fa'apenei o lo'o fa'atautaia fo'i i nisi vaega o le United States.

If ask:

If you have any questions (or would like additional information about this survey), please see the NCRMP website:
http://www.coris.noaa.gov/activities/projects/ncrmp_socio/documents/ncrmp_socio_econ_onepager.pdf

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(This information will also be available on a contact card to hand out.)

Auai i ni tulaga o fa'atinoina i luga o le gataifale

1. E fa'afia ona e auai i tulaga nei?

	E le'i faia	Fa'atasi i le masina pe itiiti	2-3 taimi I le masina	4 taimi i le masina pe sili atu	Leai se tali
Auau					
Auau e fa'aaoga le mata ma le mea manava					
Tofu e fa'aaoga le tane ea					
Fa'aaogaina o le matafaga mo mafutaga (beach camping)					
Fa'aaogaina o le matafaga mo ta'aloga ma evaga					
Fa'aaogaina o va'a					
Fa'aaogaina o le paopao po'o le fautasi					
Fa'ase'e i luga o galu					
Fagota					
Aoina o figota po'o meaola mai le sami					

A tali "E le'i faia" le fagota ma le aoina o figota mai le sami, ona fa'aauau leai i le fesili #3

O LE TAUA O Ā'AU 'AMU I LE AGANU'U

2. E fa'afia ona e fagota mo tulaga o lo'o ta'ua i lalo (e aofia ai fagotaga uma ma le fagotaina o figota?

	Fa'afia	Isi o taimi	Seasea	E le'I faia	Leai se tali
Mo le fofoga tausami a a'u ma la'u aiga					
E fa'atau atu					
E tufaina atu mo aiga ma uo					
E tufaina atu mo faifeau ma matai a le nu'u					
Mo fiafiaga					
Mo fa'alavelave					

3. E fa'afia ona taumafa lou aiga i se i'a/mea'ai sami?
    a. Aso uma
    b. Salasala taimi i le vaiaso
    c. Fa'atasi i le vaiaso
    d. 1-3 taimi i le masina
    e. E le atoa se masina
    f. E le'i faia

A tali "E le'I faia", ona fa'aauau lea i le fesili #5

4. O fea e aumai ai i'a po'o mea'ai sami e tausami lou aiga? Fa'amolemole filifili mai le lua (failogaina I le 1 ma le 2).

    f. ____ Fa'atau mai e a'u po'o se tasi i totonu o lo'u aiga mai le faleoloa po'o se faleaiga
    g. ____ Fa'atau mai e a'u po'o se tasi i totonu o lo'u aiga mai le maketi po'o tafa-ala
    h. ____ Fagotaina e a'u po'o se tasi i totonu o lo'u aiga
    i. ____ Fagotaina e se tasi mai i lo'u aiga faitele
    j. ____ Fagotaina e a'u uo
    k. ____ O isi, fa'ailoa mai _____

TULAGA O LE TAMAOAIGA

5. O le a sou manatu, e fa'apefea le tulaga o le tamaoaiga i le sami i Amerika Samoa? Fa'amolemole fa'atulaga mai i le leaga tele i le lelei tele.

	Leaga tele	Leaga	E le o leaga po'o	Lelei	Lelei tele	E le mautino
Tulaga o le Sami (Mama ma le manino)						
Aofaiga o 'Amu						
Numera o i'a						
Aofaiga o figota I le aloalao (fe'e, sisi, ma isi)						

6. E fa'apefea ona e fa'amatalaina le tulaga ua iai le suiga mai le 10 tausaga talu ai?

	Fa'atupuleina le leaga	Feololo le leaga	Leai se suiga	Feololo le lelei	Fa'atupuleina le lelei	E le mautioa

	Fa'atuputeleina le leaga	Feololo le leaga	Leai se suiga	Feololo le lelei	Fa'atuputeleina le lelei	E le mautioa
Tulaga o le Sami (Mama ma le manino)						
Aofaiga o 'Amu						
Numera o i'a						
Aofaiga o figota i le aloalao (fe'e, sisi, ma isi)						

7. I le 10 tausaga o i luma, o le a sou iloa I le tulaga o le iai le tamaoaiga o le gataifale I totonu o Amerika Samoa pe o le a fa'atuputeleina le leaga, pe tumau pea e leai se suiga, pe suia i le lelei?
    e. Fa'atuputeleina le leaga
    f. Tumau pea e leai se suiga
    g. Suia i le lelei
    h. E le mautinoa

FA'AILOA MA LOU SILAFIA I A'AU 'AMU

8. Fa'amolemole fa'ailoa mai pe ete fa'atui'ese pe ete ioe i fa'amatalaga ua ta'ua i lalo.

	Fa'atuiese malosi	Fa'atuiese	Fa'atuiese pe lē	Ioe	Ioe malosi	E lē mautinoa
O a'au 'amu e puipui Amerika Samoa mai sologa ma tafega po'o mala fa'alenatura						
O a'au 'amu e taua mo na'o tagata fagota, tagata moulu, ma tagata auau						
O a'au 'amu olaola lelei e fa'atosina mai ai turisi i Amerika Samoa						
O a'au 'amu e taua tele i le aganu'u o Amerika Samoa						

9. O le a sou iloa i tulaga o lo'o ta'ua mai i lalo i fa'afitauli o a'afia ai a'au 'amu a Amerika Samoa?

	E matua lē lava so'u iloa	Oute lēiloa	Oute lē iloa pe iloa iai	Oute iloa	E matua lava lo'u iloa	E lē mautinoa

Fesuiaiga o le tau						
Ua suia le lanu o le ‘amu						
Afa ma a’afiaga fa’alenatura						
Otaota (lapisi lafoa’I, otaota mai alavai, lologa vai mai tumiga ma tafega)						
Galuega o lo’o fa’atino i autafa o le sami						
Meaola fa’atama’ia						
So’ona fagota						
A’afiaga mai va’a						
Alamea						

10. E te talitonu o a’afiaga i ā’au ‘amu a Amerika Samoa e:

    g. Matua telē
    h. E telē
    i. Feololo
    j. E itiiti
    k. E leai se mea
    l. E lē mautinoa

O MANATU MA LAGONA I LE PUIPUIINA O Ā’AU ‘AMU MA LE FA’AMALOSIA O TULAFONO

11. O le gataifale fa’asao o se vaega sami lea ua fa’asaina ona fa’atino ai ni tulaga e puipui ai le tamaoaiga O le a sou silafia I lea gataifale fa’asao?

    g. Matua lē silafia
    h. Lēsilafia
    i. E lē silafia pe silafia
    j. Silafia
    k. Matua silafia
    l. E lēmautinoa

A tali mai I le “Matua le silafia” po’o le “Le silafia”, ona fa’aauau lea I le #12:

12. Fa’amolemole fa’ailoa mai lou fa’atuiese po’o lou ioe i fa’amatalaga ua ta’ua i lalo.

	Fa’atuiese malosi	Fa’atuiese	E lē ioe pe fa’atuiese	Ioe	Ioe malosi	E lē mautinoa
Gataifale fa’asao e puipuia ā’au ‘amu						

	Fa'atuiese malosi	Fa'atuiese	E lē ioe pe fa'atuiese	Ioe	Ioe malosi	E lē mautinoa
Gataifale fa'asao e fa'atuputeleina le fuainumera o i'a						
E tatau ona fa'aitiitia gataifale fa'asao i totonu o Amerika Samoa						
E tatau ona fa'ateleina gataifale fa'asao i totonu o Amerika Samoa						
E maua alamanuia o Amerika Samoa mai le fa'avaeina o gataifale fa'asao						
O le tausiga o aiga a tagata fagogota ua a'afia mai le fa'avaeina o gataifale fa'asao i Amerika Samoa						
O gataifale fa'asao e fesoasoani I le fa'atuputeleina o turisi i totonu o Amerika Samoa						
Oute lagolagoina le fa'aopopoina o gataifale fa'asao fou I totonu o Amerika Samoa pe a fai e iai ni fa'amaoniga o lo'o alualu lelei le tamaoaiga mai i gataifale fa'asao o lo'o iai nei						
Oute lagolagoina le fa'avaeina o gataifale fa'asao						

FA'AILOAINA MA SILAFIA TULAFONO O Ā'AU 'AMU

13. O tulaga o lo'o ta'ua i lalo o lo'o fa'aaogaina aua le puipui o le si'osi'omaga o le sami i Amerika Samoa. Matou te fia iloa sou manatu i le fa'aaogaina o nei tulaga aua le puipuiina o ā'au 'amu. Fa'amolemole, fa'ailoa mai lou fa'atuiese po'o lou ioa i nei tulaga:

	Fa'atuiese malosi	Fa'atuiese	E lēioe pe fa'atuiese	Ioe	Ioe malosi	E lē mautinoa
Fa'asa on fagotaina i'a lapo'a e iai Uluto'i, Laea-uluto'i, Lalafi, Tagafa, Ata'ata-uli, Vaolo						
O le fa'alauteleina o le Sanctuary						

	Fa'atuiese malosi	Fa'atuiese	E lēioe pe fa'atuiese	Ioe	Ioe malosi	E lē mautinoa
Fa'avaeina o gataifale fa'asao i nu'u						
Fa'avaeina o gataifale fa'asao tumau						
Fa'avaeina o ogasami fa'asao mo faigafaiva fa'atulagaina						

AUAI I GAIOIGA E FA'ALELEIA AI LE OLAOLA LELEI O 'AMU

14. E fa'afia ona e auai i so'o se gaioiga mo le puipuia o le si'osi'omaga (fa'ata'ita'iga, fa'amama matafaga, taeina o le otaota, fa'amamaina o lapisi lafo'ai I totonu o le gataifale, nisi)?
    g. E leai lava
    h. Fa'atasi i le tausaga pe itiiti
    i. Fa'atele i le tausaga
    j. Fa'atasi i le masina
    k. Fa'atele I le masina pe sili atu fo'i
    l. E lē mautinoa

15. Fa'ailoa mai po'o a tulaga o e fa'amoemoe ai mo le mauaina o fa'amaumauga ma fa'amatalaga mautinoa o a'au 'amu i totonu o Amerika Samoa?

Taua tele	Tulaga o lo'o maua mai ai fa'amatalaga	E lē matua fa'amoemoeina	E lē fa'amoemoeina	E fa'amoemoeinape lē fa'amoemoeina	Fa'amoemoeina	Matua fa'amoemoeina	E lē mautinoa
	Nusipepa ma isi tusitusiga						
	Letio						
	TV						
	Upega tafa'ilagi						
	Uo ma aiga						
	Ta'ita'I o fa'alapotopotoga						

Taua tele	Tulaga o lo'o maua mai ai fa'amatalaga	E lē matua fa'amoemoeina	E lē fa'amoemoeina	E fa'amoemoeina pe lē fa'amoemoeina	Fa'amoemoeina	Matua fa'amoemoeina	E lē mautinoa
	Ta'ita'I o Ekalesia						
	Malo o Amerika Samoa (DMWR, ASEPA, DOC, etc)						
	Malo o le Feturale (NOAA, National Parks, US EPA)						
	O nisi:_____						

16. O fea o tulaga ua ta'ua i luga e taua tele ona e fa'amoemoe iai aua fa'amatalaga mo a'au 'amu ma le si'osi'omaga i Amerika Samoa? ***[maka le vaega taua tele.]***

17. O le a le auai o lo'o iai tagatanu'u i le puipuiina ma le pulea o ā'au 'amu?
    g. E le o auai
    h. E to'aitiiti le auai
    i. E feololo le auai
    j. E matua auai
    k. E lē mautinoa

18. E fa'apefea ona e auai i faiga o fa'ai'uga aua le pulea o ā'au 'amu o Amerika Samoa?

    g. E le o auai
    h. E to'aitiiti le auai
    i. E feololo le auai
    j. E matua auai
    k. E lē mautinoa

O LOU TAGATANU'U

E iai nai fesili ia e fesoasoani lea e fa'amatala atili fa'amaumauga ua iai. E fa'amanatu atu, <u>e le mafai</u> ona fa'asoa atu i fafo ia fa'amaumauga ua e tu'uina mai.

19. Ituaiga tagata? [***Interviewer check, don't need to ask]***
    c. Ali'i
    d. Tama'ita'i

20. O le a lou tausaga fanau? _____

21. O le a le umi sa e aumau ai I totonu o Amerika Samoa?
    f. 1 tausaga pe le'i atoa fo'i
    g. 2-5 tausaga

h. 6-10 tausaga
i. Luga atu ma le 10 tausaga
j. Lo'u olaga atoa

22. Mai I lau gagana masani, fa'amolemole fa'ailoa mai nisi gagana ete silafia. [***interviewer should not read options below, but should allow respondent to answer***]

1. English
2. Sāmoan
3. Tongan
4. Tagalog
5. Korean
6. Chinese
7. Spanish
8. Micronesian languages (please list): _____
9. Hawaii Pidgin
10. O nisi: Fa'amolemoe tusi i lalo: _____
11. E leai se tali

23. O le a le ituaiga tagatanu'u e ta'ua oe? [***interviewer should not read options below, but should allow respondent to answer***]

19. Samoan
20. Tongan
21. Native Hawaiian
22. Filipino
23. White
24. Chinese
25. Korean
26. O nisi: Fa'amolemoe tusi i lalo: _____
27. E leai se tali

24. O le a le maualuga o a'oa'oga ua e ausia?
    h. Vasega 8 po'o vasega lalo ifo
    i. E le'i uma le a'oga maualuga
    j. Fa'au'u mai i a'oga maualuga
    k. E le'i uma le kolisi
    l. Fa'au'u mai i le kolisi
    m. Fa'au'u mai i polokalama o iunivesete, a'oga fa'aloia, a'oga fa'afoma'i
    n. E leai se tali

25. O le a lou tulaga faigaluega?
    i. E le o faigaluega
    j. A'oga
    k. Nofo fale
    l. Faigaluega mo sina taimi
    m. Faigaluega taimi atoa
    n. Litaea
    o. E leai se mea o ta'ua i luga: Fa'ailoa mai _____
    p. E leai se tali

26. O le a lau matafaioi? [***Fa'amatalaga***] _____

27. O le a le aofaiga o se tupe maua a lou aiga?
    l. Under $10,000
    m. $10,000-19,999
    n. $20,000-29,999
    o. $30,000-39,999
    p. $40,000-49,999
    q. $50,000-59,999
    r. $60,000-74,999
    s. $75,000-99,999
    t. $100,000-149,999
    u. $150,000 pe luga atu
    v. E leai se tali

Fa'afetai tele mo lau taimi!

A mana'omia se lomiga o nei fa'amaumauga, fa'amolemole tu'u mail lau pusa meli po'o lau imeli.

Appendix 3 NCRMP Secondary Data Sources for American Samoa

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
American Samoa Department of Commerce, Statistics Division	American Samoa Statisitical Yearbook 2012	2012	The 2012 Statistical Yearbook is the thirty-third annual publication of compendia detailing both the historical and current economic and social characteristics of the Territory.	2002-2012	http://www.doc.as/wp-content/uploads/2011/06/2012-Statistical-Yearbook-1.pdf
American Samoa Department of Commerce, Statistics Division	American Samoa Statisitical Yearbook 2013	2014	This is a compendia detailing both historical and current economic and social characteristics of the Territory.	1900-2013	http://doc.as.gov/wp-content/uploads/2011/06/2013-Statistical-Yearbook-Final-Draft.pdf
American Samoa Government Department of Commerce	American Samoa Statistical Yearbook 2008	2011	This is a compendia detailing both historical and current economic and social characteristics of the Territory.	2006-2008	http://www.doc.as/wp-content/uploads/2011/11/Statistical-Yearbook_2008.pdf
Central Intelligence Agency	The World Factbook Life Expectancy at Birth	2013	These data represent the average number of years to be lived by a group of people born in the same year, if mortality at each age remains constant in the future.	2014	https://www.cia.gov/library/publications/the-world-factbook/rankorder/2102rank.html
Central Intelligence Agency	The World Factbook Inflation Rate (Consumer Prices)	2014	Inflation rate (consumer prices) compares the annual percent change in consumer prices with the previous year's consumer prices.	2003-2014	https://www.cia.gov/library/publications/the-world-factbook/rankorder/2092rank.html
Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), Ocean and Coastal Resource Management	MPA Inventory Database (10/2014)	2014	The MPA Inventory is a comprehensive catalog that provides detailed information for existing marine protected areas in the United States. The inventory provides geospatial boundary information (in polygon format) and classification attributes that seek to define the conservation objectives, protection level, governance and related management criteria for all sites in the database. The comprehensive inventory of federal, state and	2014	http://marineprotectedareas.noaa.gov/dataanalysis/mpainventory/

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
(OCRM), National Marine Protected Areas Center (MPAC)			territorial MPA sites provides governments and stakeholders with access to information to make better decisions about the current and future use of place-based conservation. The information also will be used to inform the development of the national system of marine protected areas as required by Executive Order 13158.		
Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office for Coastal Management (OCM)	Time-Series Data on the Ocean and Great Lakes Economy for Counties, States, and the Nation between 2005 and 2012 (Sector Level) (ENOW)	2015	Economics: National Ocean Watch (ENOW) contains annual time-series data for over 400 coastal counties, 30 coastal states, 8 regions, and the nation, derived from the Bureau of Labor Statistics and the Bureau of Economic Analysis. It describes six economic sectors that depend on the oceans and Great Lakes and measures four economic indicators: Establishments, Employment, Wages, and Gross Domestic Product (GDP).	2005-2012	http://coast.noaa.gov/dataregistry/search/dataset/C3722030-943C-4BEE-B063-06715F815891
Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Coastal Services Center (CSC)	Spatial Trends in Coastal Socioeconomics (STICS): Total Economy of Coastal Areas	2013	These market data provide a comprehensive set of measures of changes in economic activity throughout the coastal regions of the United States. In regard to the sources of data, establishments, employment, and wages are taken from the Quarterly Census of Employment and Wages (QCEW). These data series also is known as the ES-202 data. These data are based on the quarterly reports of nearly all employers in the United States. These reports are filed with each state's employment or labor department, and each state then transmits the data to the Bureau of Labor Statistics (BLS), where the national databases are maintained. The data for the Coastal Economies have been taken from the national databases at BLS (except in the case of Massachusetts). Gross State Product (GSP) data are taken from the Bureau of Economic Analysis (BEA), which develops the estimates of GSP from a number of sources. In regard to "employment," data are reported by employers, not employees, and does not contain any information about age. There is no difference between "employed" and "employment". The source is known as the payroll survey, a survey filed by employers every 3 months showing the number of people employed at each establishment in each of the preceding 3 months.	1990-2011	http://coast.noaa.gov/dataregistry/search/dataset/info/coastaleconomy
Environmental Protection Agency	EPA Annual Beach Notification Summary Reports -- Closures and Advisories	2007, 2011, 2012	These fact sheets summarize beach monitoring and notification data submitted to EPAfor each swimming season. Beach water monitoring is conducted primarily to detect bacteria that indicate the possible presence of disease-causing microbes (pathogens) from sewage or fecal pollution. People swimming in water contaminated with these types of	2006, 2010, 2011	http://water.epa.gov/type/oceb/beaches/2011_season.cfm

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
			pathogens can contract diseases of the gastrointestinal tract, eyes, ears, skin, and upper respiratory tract. When monitoring results show levels of concern, the state or local government issues a beach advisory or closure notice until further sampling shows that the water quality is meeting the applicable standards. Beach water pollution can occur for a number of reasons including stormwater runoff after heavy rainfall, treatment plant malfunctions,sewer system overflows, and pet and wildlife waste on or near the beach. To help minimize beachgoers' risk of exposure to pathogens in beachwaters, EPA is helping communities build and properly operate sewage treatment plants, working to reduce overflows as much as possible, and working with the U.S. Coast Guard to reduce discharges from boats and larger ships. Under the Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000, EPA provides annual grants to coastal and Great Lakes states, territories, and eligible tribes to help local authorities monitor their coastal and Great Lakes beaches and notify the public of water quality conditions that may be unsafe for swimming.		
HML Project Team	Environmental Use and Dependence - HML Project Team Collection	2014	This data set is comprised of uses occurring in study areas as well as attendance figures for parks located in the study areas. Park visitation to national, state, and county parks as well as National Wildlife Refuge areas are included in this data set. Use data includes fishing, diving, and boating in the study area. Sources: -American Samoa data sources: U.S. Fish and Wildlife Service, National Park Service, U.S. Department of Homeland Security/U.S. Coast Guard Office of Auxiliary and Boating Safety, Professional Association of Diving Instructors, National Oceanic and Atmospheric Administration.	2013	
Institute for Health Metrics and Evaluation (IHME)	United States Adult Life Expectancy by County 1987-2007	2011	This is a complete time series for life expectancy from 1987 to 2007 for all US counties, and released as part of IHME research published in *Population Health Metrics.*	2007	http://ghdx.healthdata.org/record/united-states-adult-life-expectancy-county-1987-2007
National Oceanic and Atmospheric Administration (NOAA), Coastal Change Analysis Program (CCAP)	National Oceanic and Atmospheric Administration, Coastal Change Analysis Program (CCAP)	2012	The Coastal Change Analysis Program (C-CAP) produces a nationally standardized database of land cover and land change information for the coastal regions of the U.S. C-CAP products are developed using multiple dates of remotely sensed imagery and consist of raster-based land cover maps for each date of	2001-2007 (various)	http://www.csc.noaa.gov/digitalcoast/data/ccapregional

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
	Regional Land Cover Data		analysis, as well as a file that highlights what changes have occurred between these dates and where the changes were located. These data highlight the relative effects of different landscape features on water quality, such as increased polluted runoff from impervious surfaces and the mitigating impacts of forests. NOAA produces high resolution C-CAP land cover products, for select geographies. GIS and tabular data was accessed June 2012 and prepared for the project by NOAA Coastal Services Center, Charleston SC.		
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington, and NOAA's Coral Reef Conservation Program.	American Samoa ESI: HYDRO (Hydrography Lines and Polygons)	2004	This data set contains vector lines and polygons representing coastal hydrography used in the creation of the Environmental Sensitivity Index (ESI) for American Samoa. The HYDRO data layer contains all annotation used in producing the atlas. The annotation features are categorized into three subclasses in order to simplify the mapping and quality control procedures: GEOG or geographic features, SOC or socioeconomic features, and HYDRO or water features. This data set comprises a portion of the ESI for American Samoa. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.	2001-2002	http://archive.orr.noaa.gov/topic_subtopic_entry.php?RECORD_KEY%28entry_subtopic_topic%29=entry_id,subtopic_id,topic_id&entry_id%28entry_subtopic_topic%29=849&subtopic_id%28entry_subtopic_topic%29=8&topic_id%28entry_subtopic_topic%29=1
The World Bank	World Bank – Fish/Mammal species threatened	2010, 2011	The World Bank is a vital source of financial and technical assistance to developing countries around the world. We are not a bank in the ordinary sense but a unique partnership to reduce poverty and support development. The World Bank Group comprises five institutions managed by their member countries. Fish species are based on Froese, R. and Pauly, D. (eds). 2008. Threatened species are the number of species classified by the IUCN as endangered, vulnerable, rare, indeterminate, out of danger, or insufficiently known. Mammal species are mammals excluding whales and porpoises. Threatened species are the number of species classified by the IUCN as endangered, vulnerable, rare, indeterminate, out of danger, or insufficiently known.	2010, 2011	http://data.worldbank.org/indicator/EN.FSH.THRD.NO http://data.worldbank.org/indicator/EN.MAM.THRD.NO
The World Bank	World Bank - Population, Total	2014	The World Bank is a vital source of financial and technical assistance to developing countries around the world. We are not a bank in the ordinary sense but a unique partnership to reduce poverty and support development. The World Bank Group comprises five institutions managed by their	2012-2013	http://data.worldbank.org/indicator/SP.POP.TOTL

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
			member countries. Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. The values shown are midyear estimates.		
The World Bank	World Bank - GDP (current US$)	2014	The World Bank is a vital source of financial and technical assistance to developing countries around the world. We are not a bank in the ordinary sense but a unique partnership to reduce poverty and support development. The World Bank Group comprises five institutions managed by their member countries. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates.	2005-2013	http://data.worldbank.org/indicator/NY.GDP.MKTP.CD/countries/PR?display=graph
U.S. Department of Commerce Bureau of Economic Analysis	Gross Domestic Product for American Samoa, 2013	2014	Estimates of gross domestic product (GDP) for the territory for 2013, in addition to estimates of gross domestic product by industry and compensation by industry for 2012 are presented in this document. These estimates were developed under the Statistical Improvement Program funded by the Office of Insular Affairs (OIA) of the U.S. Department of the Interior. The latest estimates of GDP for 2007 to 2012 are also presented in this release, as well as GDP byindustry and compensation by industry for 2007 to 2011.	2007-2013	http://www.bea.gov/newsreleases/rels.htm
U.S. Department of Commerce Bureau of Economic Analysis	Advance 2013 and Revised 1997-2012 Statistics of GDP by State	2014	These statistics reflect the results of the comprehensive revision of gross domestic product (GDP) by state for 1997–2012. This revision not only incorporates new and revised source data, but it also includes significant improvements in classification and statistical methods to more accurately portray the state economies. Significant changes introduced with this revision include: updated industry definitions consistent with the 2007 North American Industry Classification System (NAICS), results of the 2013 comprehensive revision of state personal income, results of the 2013 comprehensive revision of the national income and product accounts and the 2014 comprehensive revision of the annual industry accounts, which included the recognition of research and development (R&D) expenditures as capital, the	1997-2013	https://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
			capitalization of entertainment, literary, and other artistic originals, the expansion of the capitalization of the ownership transfer costs of residential fixed assets, the use of an improved accrual accounting treatment of transactions for defined benefit pension plans, and improved methods for computing financial services provided by commercial banks		
U.S. Department of Health and Human Services	National Vital Statistics Reports: Deaths: Preliminary Data for 2011	2012	These are preliminary U.S. data on deaths, death rates, life expectancy, leading causes of death, and infant mortality for 2011 by selected characteristics such as age, sex, race, and Hispanic origin. Preliminary data in this report are based on records of deaths that occurred in calendar year 2011, which were received from state vital statistics offices and processed by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) as of June 12, 2012.	2011	http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf
U.S. Department of Health and Human Services	National Vital Statistics Reports: Deaths: Final Data for 2010	2013	These data represent final 2010 data on U.S. deaths, death rates, life expectancy, infant mortality, and trends by selected characteristics such as age, sex, Hispanic origin, race, state of residence, and cause of death.	2010	http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf
U.S. Energy Information Administration	EIA State Electricity Profiles	1991-2014	The State Electricity Profiles presents a summary of key State statistics for 2000, and 2004 through 2010. The tables present summary statistics; ten largest plants by generating capacity; top five entities ranked by retail sales; electric power industry generating capacity by primary energy source; electric power industry generation of electricity by primary energy source; utility delivered fuel prices for coal, petroleum, and natural gas; electric power emissions estimates; retail sales, revenue, and average revenue per kilowatthour by sector; and utility retail sales statistics. Data published in the State Electricity Profiles are compiled from five forms filed annually by electric utilities and other electric power producers.	1990-2014	http://www.eia.gov/electricity/state/
U.S. House of Representatives	Committee on Ways and Means Report: Supplemental Nutrition Assistance Program (Formerly the Food Stamp Program)	2013	This report written by the U.S. House of Representatives Ways and Means Committee details SNAP and some of the figures associated with the program.	2007	http://democrats.waysandmeans.house.gov/sites/democrats.waysandmeans.house.gov/files/documents/food.pdf
United States Census Bureau	Census 2000	2002	Summary File 3 contains population and housing data based on Census 2000 questions asked on the long form of a one-in-six sample	2000	http://www.census.gov/main/www/cen20

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
			of the population. Population items include marital status, disability, educational attainment, occupation, income, ancestry, veteran status, and many other characteristics. Housing items include tenure (whether the unit is owner- or renter-occupied), occupancy status, housing value, mortgage status, price asked, and more. In addition to the 50 states and District of Columbia, the U.S. Census Bureau also conducts censuses and surveys in the the United States' Island Areas. Census and survey operations are conducted in cooperation with the governments of the the Island Areas and frequently include modifications to the questionnaires to help the local and federal governments better understand the populations being counted.		00.html
United States Census Bureau	2010 Census	2011	Summary File 1 shows detailed tables on age, sex, households, families, relationship to householder, housing units, detailed race and Hispanic or Latino origin groups, and group quarters.	2010	http://www.census.gov/2010census/data/
United States Census Bureau	2008-2012 ACS 5-Year Estimates	2013	The ACS provides information on more than 40 topics, including education, language ability, the foreign-born, marital status, migration and many more. Each year the survey randomly samples around 3.5 million addresses and produces statistics that cover 1-year, 3-year, and 5-year periods for geographic areas in the United States and Puerto Rico.	2012	http://www2.census.gov/acs2012_5yr/summaryfile/
United States Census Bureau	2010 Census American Samoa (AS) Summary File	2013	This summary file contains subject-matter content from the 2010 Census — age (including single years of age), sex, race and ethnicity, household type, relationship, population in group quarters, whether the residence is owned or rented (tenure), and vacancy status among other social, economic, housing, and demographic characteristics.	2010	https://www.census.gov/2010census/news/press-kits/island-areas/island-areas.html
United States Census Bureau	2013 Population Estimates: Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2013	2014	The estimates are based on the 2010 Census and reflect changes to the April 1, 2010 population due to the Count Question Resolution program and geographic program revisions. The resident population for each year is estimated since the most recent decennial census by using measures of population change. The resident population includes all people currently residing in the United States.	2010-2013	http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2013_PEPANNRES&prodType=table
United States Census Bureau	2009-2013 ACS 5-Year Estimates	2014	The ACS provides information on more than 40 topics, including education, language ability, the foreign-born, marital status, migration and many more. Each year the survey randomly samples around 3.5 million addresses and produces statistics that cover	2013	http://www2.census.gov/acs2013_5yr/summaryfile/

Source (originator)	*Data Set Title*	*Publication Date*	*Abstract*	*Data Year(s)*	*URL*
			1-year, 3-year, and 5-year periods for geographic areas in the United States and Puerto Rico.		
United States Census Bureau	Building Permits Survey	2015	Data collected include number of buildings, number of housing units, and permit valuation by size of structure. This survey covers all places issuing building permits for privately-owned residential structures. Over 98 percent of all privately-owned residential buildings constructed are in permit-issuing places.	2004-2014	http://www.census.gov/construction/bps/stateannual.html
United States Census Bureau	Quarterly Workforce Indicators	2015	The Quarterly Workforce Indicators (QWI) are a set of economic indicators including employment, job creation, earnings, and other measures of employment flows. The QWI are reported using detailed firm characteristics (geography, industry, age, size) and worker demographics information (sex, age, education, race, ethnicity). QWI data are available through the following access tools:	2013-2015	http://lehd.ces.census.gov/data/
United States Census Bureau	County Business Patterns	2014	County Business Patterns (CBP) is an annual series that provides subnational economic data by industry. This series includes the number of establishments, employment during the week of March 12, first quarter payroll, and annual payroll.	1998-2012	http://www.census.gov/econ/cbp/
United States Department of Agriculture Food and Nutrition Service	Supplemental Nutrition Assistance Program: Average Monthly Participation (Persons)	2015	SNAP offers nutrition assistance to millions of eligible, low-income individuals and families and provides economic benefits to communities. The number of persons participating is reported monthly. Annual averages are the sums divided by twelve.	2010-2014	http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap
United States Government Accountability Office	American Samoa and the Commonwealth of the Northern Mariana Islands: Economic Indicators Since Minimum Wage Increases Began	2014	This report updates GAO's previous reports and discusses for each territory (1) changes in employment and earnings and (2) changes in key industries since the most recent federal minimum wage increase and since the increases began. GAO reviewed local and federal earnings information; collected data from employers in key industries through a questionnaire and from employers and workers through discussion groups and interviews during visits to each area.	2009	http://www.gao.gov/assets/670/662127.pdf

United States Department of Commerce	National Oceanic and Atmospheric Administration	National Ocean Service
Penny S. Pritzker Secretary	Dr. Kathryn Sullivan Administrator	Dr. W. Russell Callender Assistant Administrator