



NOAA
CORAL REEF
CONSERVATION PROGRAM



Perceptions, Attitudes and Beliefs of Communities Near Coral Reefs



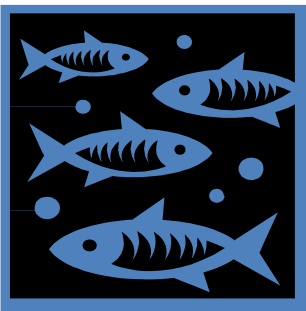
Social Coast Forum
February 7, 2018

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Peter Edwards NOAA/CRCP, and Arielle Levine NOAA/CRCP





National Coral Reef Monitoring Program



Biological
Indicators

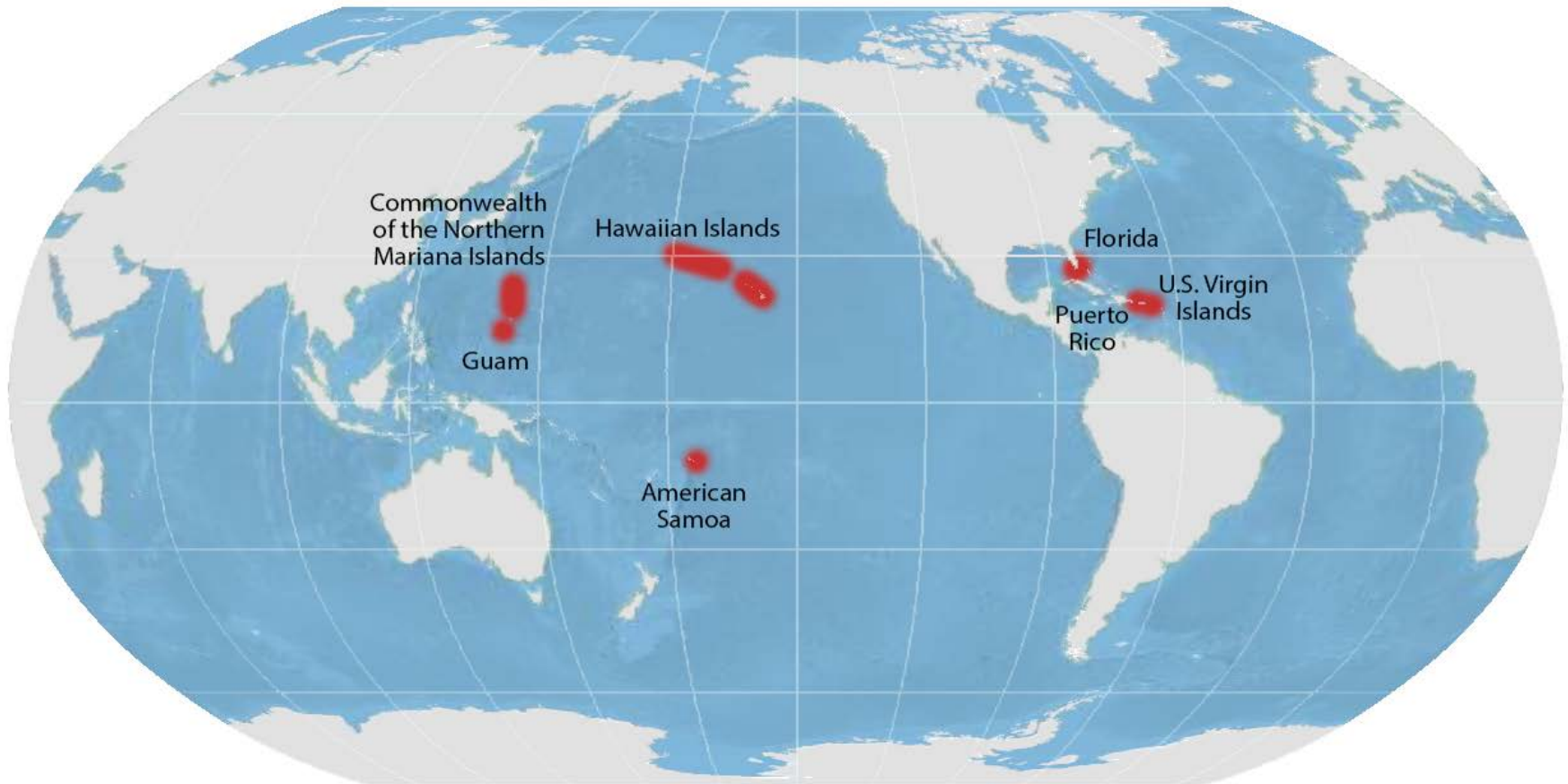
Climate
Indicators



Socioeconomic
Indicators



US Coral Reef Jurisdictions





Socioeconomic Monitoring Approach

- ❖ Data collection occurs through
 - ❖ Surveys of residents in coral reef jurisdictions
 - ❖ Synthesis of existing socioeconomic data
- ❖ Resulting data will feed into several products
 - ❖ Socioeconomic Indicators
 - ❖ Data products such as infographics, posters, presentations, and publications
 - ❖ NCRMP report cards



NCRMP Socioeconomic Monitoring Schedule

Jurisdiction	Geographic scope	Year
American Samoa	Island of Tutuila	2013-14
Florida	Martin, Palm Beach, Broward, Miami-Dade, Monroe Co.	2013-14
Hawai'i	Islands of Kauai, Maui, Moloka'i, O'ahu, Hawai'i, Lana'i	2014-15
Puerto Rico	Islands of Puerto Rico, Vieques, Culebra	2014-15
CNMI	Islands of Saipan, Tinian, Rota	2015-16
Guam	Entire island of Guam	2015-16
USVI	Islands of St. Croix, St. Thomas, St. John	2016-17

Indicators for NCRMP Social Monitoring

- * Participation in reef activities
- * Perceived resource condition
- * Attitudes towards coral reef management strategies and enforcement
- * Awareness and knowledge of coral reefs
- Human population changes near coral reefs
- Economic impact of coral reef fishing to jurisdiction
- Economic impact of dive/snorkel tourism to jurisdiction
- Community well-being
- * Cultural importance of reefs
- * Participation in behaviors that may improve coral reef health
- Physical infrastructure
- * Awareness of coral reef rules and regulations
- Governance



Survey Methodology



- ❖ Core module vs. jurisdiction specific module
- ❖ Stratified random sample of adult residents in the jurisdiction representative of population demographics (age, race, sex, income)
- ❖ Survey mode (phone, face to face, internet) and language(s) are jurisdiction specific



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RESULTS





Perceived Resource Condition

Jurisdiction	Condition Perception Index
South Florida	50.54
American Samoa	49.23
Hawaii	55.69
Puerto Rico	47.97
Guam	49.13
CNMI	58.52
USVI	55.08

- ❖ Higher index scores indicate a more “positive” perception
- ❖ Perceptions concerning the condition of marine resources is largely average
- ❖ Pacific residents > Atlantic residents ($p < 0.01$)



Attitudes Towards Coral Reef Management Strategies and Enforcement

Jurisdiction	Management Support Index
South Florida	76.13
American Samoa	64.51
Hawaii	75.26
Puerto Rico	81.10
Guam	72.22
CNMI	75.81
USVI	72.30

- ❖ Higher index scores indicate more support for management
- ❖ Support for management is fairly widespread
- ❖ Puerto Rico > all others ($p < 0.01$)
- ❖ Atlantic residents > Pacific residents ($p < 0.01$)



Cultural Importance of Reefs

Jurisdiction	Percent that agrees with the statement: "Coral reefs are important to the jurisdiction's cultures"
South Florida	91.30%
American Samoa	93.57%
Hawaii	95.22%
Puerto Rico	76.22%
Guam	98.44%
CNMI	92.01%
USVI	96.28%

- ❖ Agreement with the cultural importance of coral reefs is very apparent across all 7 jurisdictions
- ❖ Over 3/4 of residents in each jurisdiction are in agreement with this statement and over 90% agree in 6 out of 7 jurisdictions
- ❖ Puerto Rico < all others ($p < 0.01$)
- ❖ Pacific residents > Atlantic residents ($p < 0.01$)



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- ❖ Similarities:
 - ❖ More education = more positive perception of marine protected areas and their functions as well as more support for management
 - ❖ More support for management = more familiarity with coral reef threats
 - ❖ Participation in environmental behavior = more frequent participation in coral reef activities





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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



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National Oceanic and
Atmospheric Administration

National Ocean Service

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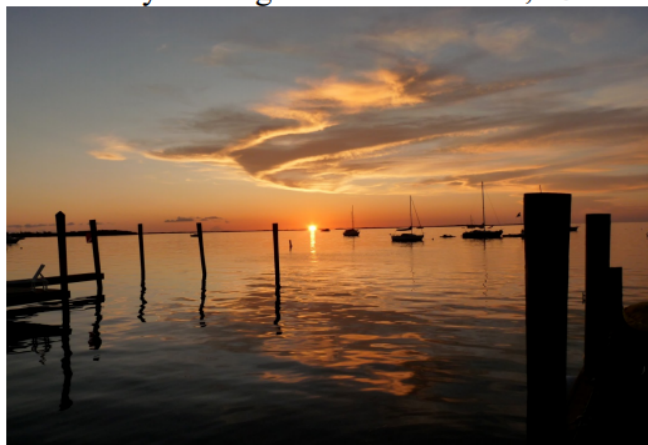
NOAA Technical Memorandum CRCP 25

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National Coral Reef Monitoring Program Socioeconomic Monitoring Component

Summary

Summary Findings for South Florida, 2014



NOAA Coral Reef Conservation Program

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Summary Findings



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Summary Findings



National Coral Reef Monitoring Program Socioeconomic Monitoring Component Summary Findings for Puerto Rico, 2015



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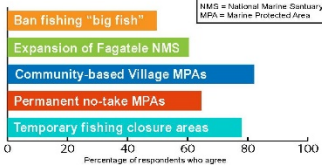
CONNECTIONS BETWEEN CORAL REEFS & COASTAL COMMUNITIES

NOAA's Coral Reef Conservation Program monitors the biological, socioeconomic, and climate conditions of US coral reef areas and communities. This includes collection of socioeconomic variables including demographics, human use of coral reef resources, as well as knowledge, attitudes, and perceptions of coral reefs and coral reef management through the use of surveys and existing data. The takeaways below are based on the survey results for American Samoa.

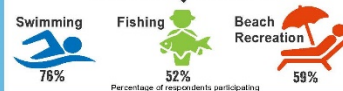
TAKEAWAYS FROM AMERICAN SAMOA

MANAGEMENT SUPPORT

The majority of people support management strategies to improve protection.



USES OF RESOURCES

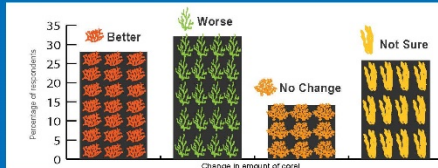


TENURE & CONDITION

Years of residence impacts perceptions of marine resource conditions. Lifelong residents of American Samoa are more likely to believe that the condition of marine resources will get worse over the next 10 years.

PERCEPTIONS

PARTICIPANTS WERE ASKED HOW THE AMOUNT OF CORAL AND CONDITION OF OCEAN WATER QUALITY HAS CHANGED IN THE PAST 10 YEARS...

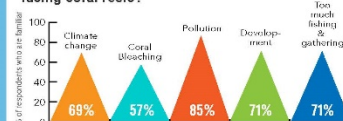


VALUES & AWARENESS

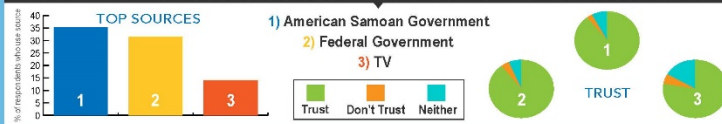
- American Samoan residents who agreed that "coral reefs protect American Samoa from erosion and natural disasters" were more likely to be more familiar with the various threats posed to coral reefs.
- American Samoan residents who agreed that "healthy coral reefs attract tourists to American Samoa" were more likely to perceive the threat level to coral reefs to be "large" or "extreme".

THREAT FAMILIARITY

How familiar are you with these potential threats facing coral reefs?



CORAL REEF INFO SOURCES & DEGREE OF TRUST TO PROVIDE ACCURATE INFO



The survey was conducted for a random stratified sample of households on the island of Tutuila in American Samoa in late 2014. In comparing the sample to the total population of American Samoa, the data were determined to be representative and therefore the results are generalizable to the entire population of the jurisdiction. Data were collected through a back-to-back interview method, and the total sample size for this survey was 411. The survey effort is used in conjunction with the collection of existing secondary data to monitor the socioeconomic conditions of the coral jurisdictions over time. For more information, please see the NCRMP Socioeconomic Component project page at <http://data.noaa.gov/data/ncrmp-socioeconomic>.



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Next Steps

- ❖ Indicator Development
 - ❖ Combination of primary and secondary data
- ❖ Technical Memorandum
 - ❖ All 7 jurisdictions
- ❖ Data visualization
 - ❖ Infographics, story maps, web-based
- ❖ Re-engage jurisdictional partners
 - ❖ How data are being used, identify gaps
- ❖ Refine survey questions/methods
- ❖ Merge Socioeconomic, Biological, and Climate data streams



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Project Team

- ❖ Peter Edwards
- ❖ Arielle Levine
- ❖ Jarrod Loerzel
- ❖ Matt Gorstein
- ❖ NCCOS social science team
- ❖ Jurisdictional management agencies
- ❖ Key jurisdictional stakeholders
- ❖ CRCP and NMFS management liaisons

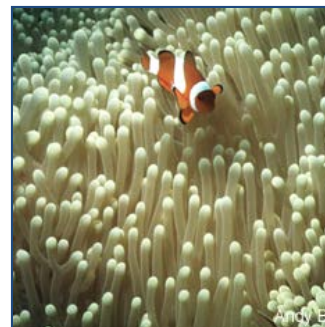
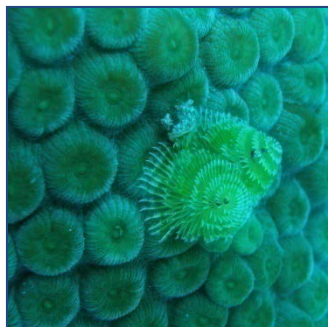


NCCOS





Thank you



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web-portal: <http://www.coris.noaa.gov/monitoring/socioeconomic.html>