

**JUSTIFICATION FOR CHANGE**  
**U.S. Department of Commerce**  
**National Oceanic & Atmospheric Administration**  
**Socioeconomics of Coral Reef Conservation**  
**OMB Control No. 0648-0646**

This request is for approval of a survey under the information collection requirement currently approved under OMB Control Number 0648-0646 “Socioeconomics of Coral Reef Conservation”. The change request is formatted as has historically been done for this body of work, but is the last of its kind. All future clearances will use the pending hybrid-generic clearance format as requested by OMB. The approved information collection is part of the National Coral Reef Monitoring Plan and relates to Social Science and Human Dimensions monitoring. The National Oceanic and Atmospheric Administration (NOAA) created the Coral Reef Conservation Program to safeguard and ensure the welfare of the coral reef ecosystems along the coastlines of America’s States and Territories. The administration of this program has potential economic and cultural impacts on the lives of nearby residents and citizens. In accordance with its mission goals, NOAA has designed surveys to provide longitudinal data about the impact of the Coral Reef Conservation Program.

NOAA has developed a jurisdictional survey instrument to be implemented in **American Samoa in 2020-2021**. Per OMB guidelines for PRA clearance, NOAA is required to submit a justification statement of one page or less listing the questions selected from the full question bank for the jurisdictional survey instrument. This request also briefly describes the information collection venues and sampling methodology applicable to American Samoa. Please note, this change justification is the ninth such request as per previous submissions for similar survey efforts in American Samoa, Florida (2), Hawai’i (2), Puerto Rico, Guam, the Commonwealth of the Northern Marianas, and the United States Virgin Islands. This will be the final non-substantive change request before the survey clearance package is reformatted as hybrid-generic clearance for all future collections.

This survey instrument has been developed for the purpose of collecting information that can be used to analyze frequency of coral reef and/or beach use and other activities, general knowledge, attitudes and perceptions of coral reef ecosystems as well as attitudes and opinions of natural resource management and protection activities including rules and regulations (See American Samoa survey). Each survey has a core set of questions that will be the same for all jurisdictions (See Core Module). Each jurisdictional survey instrument contains questions that are specific to the local management needs and to the population. General demographic information will also be collected from respondents. The questions that have been selected from the bank (See Core Module) will allow NOAA to collect data for some of the socioeconomic indicators of interest to the Coral Reef Conservation Program as outlined in Table 1 of the original Supporting Statement.

As described in the original supporting statement, the information will be collected using the most efficient and effective means in the individual jurisdiction. For American Samoa, an in-person interview approach will be used. The survey will be conducted in the following languages: English and Samoan. More information for American Samoa’s 2021 survey, sampling, and mode of survey implementation is provided below.

## AMERICAN SAMOA

The information collection for this U.S. coral reef location is to be conducted by a contracted survey firm who will utilize an in-person household sample. In-person surveying is the most appropriate method for survey implementation in American Samoa due to the rural spread of households, the absence of mailing addresses, and limited internet within the jurisdiction. This approach will require the surveyors to implement door-to-door household interviews that follow predetermined surveying protocols. For the jurisdictional population, we intend to select a random sample of individuals over the age of eighteen, stratified geographically as described in Table 2 from the original Supporting Statement and shown below. The random sample will be obtained from the selected survey firm using standard sample selection tools. These strata have been designed to account for the differing sizes of the populations in the areas close to coral reefs. We have used the standard approach for estimating sample size for a stratified population:

$$N = [t^2 n p(1-p)] / [t^2 p(1-p) + a^2 (n-1)]$$

Where  $n$  is the minimum sample size required for a desired precision level,  $N$  is the target population size,  $a$  is the margin of error (5%),  $t$  is the value taken from the  $t$  distribution corresponding to a 95% confidence interval, and  $p$  is the proportion of the target population with a characteristic of interest (here,  $p = 0.05$  to provide the most conservative estimate).

Other details of the pending data collection and analysis are outlined in the Supporting Statement. See Table 3 for Estimates of Burden Hours. The sample (Table 2) and associated burden numbers (Table 3) presented in the original Supporting Statement will be modified, as shown below, for American Samoa. In the original Supporting Statement, a sample size of 652 at 25 minutes each was requested and approved (Table 3), but the sample size has since been modified. Based on previous surveys and changes to the survey instrument, the response time per survey is expected to be only 20 minutes, thereby allowing for an increased sample size of 815 while causing no increase in the total burden hours. Further, stratification of the sample (Table 2) has been altered to eliminate attempted sampling of American Samoa's remote islands in an effort to achieve desired statistical accuracy for the main island of Tutuila. Changes to the stratification and sampling design reflect lessons learned following the first round of monitoring, as well as partner requests to attempt a representative sample of the Village of Aua for comparative analyses.

**Table 1:** Estimates of Burden Hours (3.5-year time frame).

Requirements	Minimum # of Respondents Required for Statistical Robustness	Responses Per Respondent	Total # of Responses	Response Time	Total Burden (in hours)	Labor Cost
Florida	2,000	1	2,000	20 min.	667	\$12,650
Guam	712	1	712	20 min.	237	\$3,294
Hawaii	1,700	1	1,700	20 min.	567	\$11,651
American Samoa	652	1	652	25 min.	272	\$4,527
Puerto Rico	3,500	1	3,500	20 min.	1,167	\$14,058
Commonwealth of Northern Marianas Islands	900	1	900	20 min.	300	\$6,249
U.S. Virgin Islands	1,125	1	1,125	20 min.	375	\$6,312
Total Responses	10,589					
Non response burden	19,665	1		1 min.	328	\$5,829
Total Public Burden					3,913	\$64,669
Annualized (3 years)	3,530				1,304*	\$21,556

\*1,195 (Response) + 109 (Non response) burden hours

**Table 2:** Sampling Requirements by Geographical Jurisdictions.

Jurisdiction	Total Sample	Sample Size by Strata		
4. American Samoa	815	218	Tutuila Island	Urban villages
		376		Semi-urban villages
		107		Rural villages
		114		Village of Aua

The 2020 AMERICAN SAMOA SURVEY instrument includes script language for English. The Samoan translation and associated script will be provided by the contractor after OMB clearance. Each question in the 2020 AMERICAN SAMOA SURVEY corresponds to a previously cleared question within the CORE MODULE, Full Question Bank, and/or 2019 HAWAII SURVEY, and

are denoted accordingly. Jurisdictionally relevant and required changes that are new from the 2019 HAWAII SURVEY are italicized and highlighted in green. Other modified items are highlighted in yellow. These changes were made based on jurisdictional and expert opinion input to enhance understanding, response rate, sample weighting, and/or the type of data collected in the jurisdiction (American Samoa). Furthermore, the proposed changes minimize respondent burden, which means: (a) keeping time required to complete the interview to a maximum of 20 minutes, (b) decreasing time that respondents need to think about questions, and (c) respecting respondents by ensuring that they will not be embarrassed by not understanding what is expected from the survey.<sup>1,2</sup> A summary of those changes follows.

#### INTERVIEW SCRIPT

1. The English script for in-person administration has been added, including the use of transition sentences between survey sections.

#### PARTICIPATION IN REEF ACTIVITIES

2. The Q1 scale has been improved for data precision, clarity, and reliability in responses. Previous versions of this question asked for binned frequency per month (never, once a month or less, 2-3 times per month, 4 times a month or more). “Never” and “once a month or less” were not mutually exclusive, thereby burdening respondents to think about how to respond appropriately to the question. This question now collects average frequency by number of days per month. Using a numerical format enables all the possible responses that a respondent could provide and decreases respondent burden because it is clear how they should respond.<sup>3</sup>
3. The question option “swimming/wading” has been broken in to “swimming” and “wading” at partner request to collect more detailed information about recreation activities in the jurisdiction. “Gathering of marine resources” has been changed to “Gleaning of marine resources” due to common semantics used in the jurisdiction.

#### CORAL REEF RELIANCE / CULTURAL IMPORTANCE

4. The question scale used in Q2, Q3, and Q7 has been improved for data precision, clarity, and reliability in responses. Previous versions of these two questions used a frequency scale consisting of vague quantifiers (never, rarely, sometimes, frequently, always); this scale now defines those quantifiers with via average percent time (0%, 1-25%, 26-50%, 51-75%, 76-100%). This scale is specific and mutually exhaustive, thereby improving the reliability of responses and decreasing burden.
5. The scale for Q4 and Q6 has been improved for data precision, clarity, and reliability in responses. Previous versions of these questions asked for binned frequency per month (every day, a few times a week, about once a week, 1-3 times a month, less than once a month, never); this scale now defines these binned frequencies by number of days per month, reducing burden given the rationale explained in #2 of this list.

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<sup>1</sup> Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York, NY: John Wiley & Sons.

<sup>2</sup> Schwarz, N. (1999). Cognitive research into survey measurement: Its influence on survey methodology and cognitive theory. In M. G. Sirken, D. J. Herrmann, S. Schechter, N. Schwarz, J. M. Tanur, & R. Tourangeau (Eds.), *Cognition and Survey Research*. New York: John Wiley and Sons.

<sup>3</sup> Schwarz, N. (1999). Cognitive research into survey measurement: Its influence on survey methodology and cognitive theory. In M. G. Sirken, D. J. Herrmann, S. Schechter, N. Schwarz, J. M. Tanur, & R. Tourangeau (Eds.), *Cognition and Survey Research*. New York: John Wiley and Sons.

6. Previous Q5 in the 2019 Survey has been separated into two questions (now Q5 and Q6) for better collection of “not sure” responses (differentiating between two reasons of being “not sure”) and improving survey question flow. Adding the “not sure” items ensures that all possible responses and improves data validity.

#### AWARENESS AND IMPORTANCE OF CORAL REEFS

7. Q8 combines previous Q7 and Q8 in the 2019 Survey by asking for importance level for all items, as opposed to the previous combination of importance and agreement. This improves Q9, which previously collected level of agreement with importance statements; it now collects importance directly, like the previous and incorporated Q7/Q8.
  - o The previous importance scale used in the 2019 Q7 and in the current Q8 has also been improved for data precision with a commonly accepted 5-point Likert importance scale.<sup>4,5,6</sup>
8. Q10 is a modified version of Q8, based on the concept of Q29 in the Full Question Bank. This question asks for resident perception of threat impacts to coral reefs after asking for familiarity of those same threats in Q9. A commonly accepted 5-point Likert impact scale is used (Fowler & Floyd, 1995).<sup>7</sup>

#### RESOURCE CONDITIONS

9. Q12 combines previous Q11 and Q12 in the 2019 Survey. This section previously included perception of current resource condition, perceived change over the past 10 years, and perceived change over the next 10 years. In an effort to reduce respondent burden, the perceived future change question (previously Q12) has been modified to resemble the format of perceived past change (previously Q11) and Q13 has been shortened (see below).
10. The Q12 question scale has been modified to fit the array of question options included. Where it previously used “decline” as one end of its scale, it now uses “worsen,” as “decline” doesn’t accurately apply to all question options.
11. In an effort to reduce respondent burden, Q13 now asks only for changes in the overall marine ecosystem. It uses the same “worsen to improve” scale for consistency with Q12.

#### MANAGEMENT STRATEGIES

12. Q14 provides examples of MPAs in American Samoa at partner request since the jurisdiction uses many different terms in the place of “marine protected area.”
13. Q15 (previously Q16 in the 2019 Survey) has been improved to now collect perceived effects/impacts instead of agreement with effect/impact statements. This collects effect/impact directly, enhancing data precision and clarity. The scale is from Q71 in the Full Question Bank.
14. Q16 used to be asked as an agreement statement within previous Q16 in the 2019 Survey. This question now collects level of support directly using the 5-point Likert support scale

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<sup>4</sup> Babbie, E. (2010). *The Practice of Social Research* (12th ed.). Belmont, CA: Wadsworth Publishing Company.

<sup>5</sup> Vagias, W. D. (2006). *Likert-type scale response anchors*. Clemson International Institute for Tourism and Research Development. Department of Parks, Recreation, and Tourism Management. Clemson University.

<sup>6</sup> Vaske, J. J. (2008). *Survey research and analysis: Applications in parks, recreation and human dimensions*. State College, PA: Venture Publishing.

<sup>7</sup> Fowler, J., & Floyd, J. (1995). *Improving survey questions: Design and evaluation*. (Vol. 38). Thousand Oaks, CA: Sage Publications.

from Q105 in the Full Question Bank instead of the previous agreement scale. This provides an overall measure of attitudes toward MPA establishment.

15. The question option “Catch limits per person for certain fish species (size and amount or by season)” in Q17 has been broken into “*size* catch limits per person for certain fish species” and “*seasonal* catch limits per person for certain fish species” at partner request for better precision.

#### PARTICIPATION IN ENVIRONMENTAL BEHAVIORS

16. The Q18 scale has been improved for data precision. Previous versions of this question asked for binned frequency per year (never, once a year or less, several times a year, at least once a month, several times a month or more); this question now collects average frequency by number of days per year, using the same rationale explained in #2 of this list.
17. Q19 has been modified to collect information on source credibility instead of information source frequency. Source credibility has been linked to attitudes and the ability to influence or change behavior.<sup>8</sup> This information was collected in each of the round 1 NCRMP monitoring surveys, and has been resumed at partner request to improve the ability to assess governance, especially with regard to trust, legitimacy, and management effectiveness.<sup>9,10</sup> The scale used is common in communications research.<sup>11</sup> Q21 was modified to continue collecting information on media outlets. This allows for better data precision between “information” and “source”.

#### DEMOGRAPHICS

18. The Q24 scale has been improved for data precision. Previous versions of the question asked for binned years of residence with potentially confusing categories (1 year or less, 2-5 years, 6-10 years, more than 10 years, all my life); the question now collects stated years of residence. Q23 and its associated skip logic have been added to account for cases of “all my life.”
19. Q25, Q27, and Q28 now include “check all that apply” text for increased data precision and clarity of information collected, as well as reduction of burden.
20. Q28 (previously Q29 and Q30 in 2019 Survey) now includes an expanded list of coastal, marine, and ocean related occupations as well as a “none of the above” option. The concept behind all versions of this question is to examine the proportion of residents with ocean-dependent or related occupations, but previous versions omitted key industries and resulted in many write-ins; hence, the categories have been expanded.
21. Q30 income categories have been modified to coincide with lower income brackets of American Samoa per the 2010 American Samoa Census Profile.<sup>12</sup>

See attached, files relevant to this non-substantive change request:  
2019 HAWAII SURVEY, CORE MODULE

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<sup>8</sup> Tormala, Z.L., & Petty, R. (2004). Source credibility and attitude certainty: a metacognitive analysis of resistance to persuasion. *Journal of Consumer Psychology*,14:427–42.

<sup>9</sup> Kauffmann, D., Kraay, A., & Mastruzzi, M. (2010). The worldwide governance indicators: methodology and analytical issues: The World Bank Policy Research Working Paper 5430.

<sup>10</sup> Lockwood, M., Davidson, J., Curtis, A., Stratford, E., & Griffith, R. (2010). Governance Principles for Natural Resource Management. *Society & Natural Resources*, 23(10), 986-1001.

<sup>11</sup> Johnson, T.J., & Kaye, B.K. (1998). Cruising is believing?: Comparing Internet and Traditional Sources on Media Credibility Measures. *Journalism & Mass Communication Quarterly*, 75(2), 325-340.

<sup>12</sup> 2010 American Samoa Census Profile at [https://www.census.gov/newsroom/releases/archives/2010\\_census/press-kits/island-areas.html](https://www.census.gov/newsroom/releases/archives/2010_census/press-kits/island-areas.html)

