

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

**Part A**

**ABSTRACT**

This request is for a revision and extension of a currently approved information collection under OMB Control Number 0648-0646. Pursuant to a request from the Office of Management and Budget (OMB), this collection of information is being revised to restructure these surveys as a hybrid-generic collection.

This information collection is part of the National Coral Reef Monitoring Program (NCRMP), which was established by the National Oceanic and Atmospheric Administration (NOAA) Coral Reef Conservation Program (CRCP) under the authority of the Coral Reef Conservation Act of 2000. 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 developed a survey to track relevant information regarding each jurisdiction's population, social and economic structure, the benefits of coral reefs and related habitats, the impacts of society on coral reefs, and the impacts of coral management on communities.

The purpose of this information collection is to obtain human dimensions information from residents in the seven U.S. jurisdictions containing coral reef ecosystems: Florida, U.S. Virgin Islands (USVI), Puerto Rico, Hawai'i, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands (CNMI). The survey has a core set of questions that are the same for all jurisdictions to allow for information to be tracked over time. The survey also includes questions that are specific to the local context and developed in collaboration with jurisdictional partners. Survey administration is repeated in each jurisdiction every five to seven years in order to provide longitudinal information for managers to effectively conserve coral reefs for current and future generations.

**A. JUSTIFICATION**

**1. Explain the circumstances that make the collection of information necessary.**

The Coral Reef Conservation Program (CRCP), developed under the authority of the [Coral Reef Conservation Act \(CRCA\) of 2000](#) (P.L. 106-562; 16 U.S.C. 6401 et seq.), is responsible for programs intended to “preserve, sustain, and restore the condition of coral reef ecosystems” in America’s States and Territories, and to “promote the management and sustainable use of coral reef ecosystems to benefit local communities and the Nation.” Under this authority, CRCP works with local partners in each of the seven jurisdictions to implement management strategies that aim to reduce key threats to coral reefs, such as land based sources of pollution and impacts from fishing.

Since 2012, CRCP has implemented the National Coral Reef Monitoring Program (NCRMP) as one of its strategies mandated by the CRCA (2000). This program is a strategic framework for conducting sustained observations of biological (benthic composition and reef fish), climatic, and socioeconomic indicators in U.S. states and territories that contain coral reefs. The socioeconomic component of NCRMP collects and monitors data on various human dimensions topics, including human use of coral reef resources, knowledge, attitudes and perceptions of coral reefs and coral reef management, and demographics of the populations living in coral reef areas. As a whole, the resulting data collected by all NCRMP indicators provide a holistic understanding of the condition of U.S. coral reef ecosystems and the human communities connected to them, and how conditions are changing over time.

**2. Explain how, by whom, how frequently, and for what purpose the information will be used. If the information collected will be disseminated to the public or used to support information that will be disseminated to the public, then explain how the collection complies with all applicable Information Quality Guidelines.**

**2.1 How will this information be used?**

CRCP intends to use the information collected through this survey instrument for research purposes as well as for measuring and improving the results of our reef conservation programs. Following each jurisdictional data collection, data have been analyzed and published as NOAA NOS CRCP technical memoranda prior to archival with NOAA's National Center for Environmental Information. Following technical publication, data have also been synthesized into jurisdictional infographics to address jurisdictional communication needs. In addition, these data have been used in the development of periodic NCRMP status reports (tools that synthesize and integrate data from all NCRMP pillars (biological, climate, and socioeconomic)), as well as socioeconomic indicator measurement and assessment once every monitoring cycle. These data uses and resulting products will continue in perpetuity within the NCRMP. Because many of our efforts to protect reefs rely on education and changing attitudes toward reef conservation, the information collected will be used by CRCP staff to ensure that programs are designed appropriately, future program evaluation efforts are as successful as possible, and communication and outreach efforts are targeting the intended recipients with useful information. Successful conservation requires an informed and engaged public, and these surveys are one way to assess the public's general knowledge, attitudes, and perceptions about coral reef ecosystems.

**2.2. Who will use this information?**

The information collected will be used by managing partners in each coral reef jurisdiction and the CRCP, which is housed within the National Ocean Service (NOS) under the Office for Coastal Management (OCM). Because the CRCP is a matrix program – a partnership among the NOS, Oceanic and Atmospheric Research (OAR), National Marine Fisheries Service (NMFS), and National Environmental Satellite, Data, and Information Service (NESDIS), this information will be shared with multiple NOAA line offices. Other government jurisdictions, such as the relevant regional fishery management councils established under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.) or National Marine Sanctuaries established under the National Marine Sanctuaries Act (16 U.S.C. 1431 et seq.), also have management authority over coral reef ecosystems. This information collection allows for collaboration and a multidisciplinary approach to conserving and understanding coral reef ecosystems, and conducting sound science to inform management. Additionally, state and local

government groups often are interested in the results of these surveys. For example, outreach and education coordinators for the state of Florida may be interested in whether or not residents generally support marine protected areas.

### **2.3 How frequently will this information be used?**

This is an ongoing information collection. Information on residents in each jurisdiction will be used following each data collection. The data are collected in each jurisdiction via a survey (face-to-face, mail, or internet) conducted at regular intervals every five to seven years.

### **2.4 For what purpose will the information be used?**

The purpose of this information is to understand jurisdictional residents' knowledge, attitudes, and perceptions of coral reefs and coral reef management practices, and to evaluate how this information changes over time. This information collection is required in order for the CRCP to maintain compliance with its mandate under the Coral Reef Conservation Act (2000). This information is used for the NCRMP and is meant to be integrated with the biological and climatic indicators to provide a robust depiction of the health and condition of U.S. coral reef ecosystems and the communities around them. This information on jurisdictional residents will also be used to identify and address information gaps to “increase public knowledge and awareness of coral reef ecosystems and issues regarding their long term conservation (16 U.S.C. § 6403).”

### **2.5 Summary of Survey Questions**

The CRCP, in consultation with partners and stakeholders, developed a core set of long-term indicators for NCRMP that will be measured over time in each coral reef jurisdiction. The data gathered as part of this information collection request will allow for CRCP to continue tracking these indicators and improve the results of its existing and future programs. A list of each indicator and a description of its rationale is shown in Table 1. The first seven indicators (1-7) are primary indicators measured by questions in the survey instrument (summarized in Table 1 and described in more detail below), and are topics explicitly called for in the CRCA (2000). Indicator support questions were developed based on specific social theories and a long history of rigorous social science research and methods, as described below. The remaining six indicators (8-13) are measured using secondary data sources. While they are not supported by the primary data collection proposed in this statement, they are included for contextual purposes.

While the indicators are applicable to all jurisdictions, there are considerable geographical, cultural and linguistic differences among residents living near these coral reef areas. To account for those differences, the survey questions include items that are specific to the local context and were developed based on jurisdictional partner feedback. Jurisdiction-specific questions and/or modifications also allow for the flexibility to ask about local resource management issues and emerging threats to reefs. In addition to the indicator-related questions, a number of demographic questions are also included in the survey for the purpose of allowing CRCP to sort the responses into different subgroups and analyze how demographics relate to question responses.

**Table 1: Socioeconomic Indicators for the National Coral Reef Monitoring Program**

<b>Indicator</b>	<b>Importance of Gathering Data to Measure Indicator</b>	<b>Survey Questions</b>
1. Participation in reef activities	Understand the economic and recreational importance of coral reefs to local residents; understand level of extractive and non-extractive pressures on reefs.	Q1, Q2, Q3
2. Perceived resource conditions	Complement biophysical information. Key to understanding public support for various management strategies.	Q7, Q8, Q9
3. Awareness of coral reefs and threats	Monitoring this information over time is key to tracking whether CRCP constituents understand threats to coral reefs. Data gathered will help inform management strategies and education and outreach efforts.	Q10, Q11, Q12
4. Cultural importance of reefs	Understand traditional and cultural significance of coral reefs to jurisdictional residents and whether their significance is changing over time.	Q4, Q5, Q6
5. Attitudes towards coral reef management strategies	Monitoring this information over time will be valuable to decision-makers. Information collected will assist decision-makers to evaluate and improve existing strategies and design new management approaches.	Q14, Q15
6. Participation in behaviors that may improve coral reef health	Improve existing knowledge, gain a better understanding on how human behaviors impact coral reefs positively and negatively, and conservation behaviors to promote.	Q16, Q17, Q18, Q19, Q20, Q21, Q22
7. Awareness of coral reef rules and regulations	Tracking this information over time at the jurisdictional or national level will provide a better understanding of the effect of investing in education and outreach	Q13, Q23
8. Population trends change near coral reefs <sup>1</sup>	Determine how changing population trends increase pressure on coral reefs and reef-adjacent population	N/A
9. Economic impact of coral reef fishing to jurisdiction	Track the economic contributions of coral reefs to reef fishing and justify government funding of coral reef protection programs	N/A
10. Economic impact of dive/snorkel tourism to jurisdiction	Track the economic contributions of coral reefs to tourism and justify government funding of coral reef protection programs.	N/A
11. Governance	Provide information on the status of local institutions involved in coral reef conservation, number of functioning management strategies, and percent area of coral reefs under protection.	N/A
12. Community well-being	Tracking changes in health, basic needs, and economic security enhances understanding of linkages between social and coral reef conditions.	N/A
13. Physical Infrastructure	Assess coastal development footprint, physical access to coastal resources, and waste management/water supply infrastructure provides a general understanding of human impact to the coast.	N/A

Below are summaries and justifications for indicators 1-7, to include objective, background, and

<sup>1</sup> CRCP will track information for Indicators 8-13 indirectly using secondary sources and separate data collection activities. This will reduce the burden on survey participants.

how they will be measured per the question items included in the survey instrument. Following indicator descriptions, screening and demographic questions are presented. In addition to literary support, the following indicators and questions have been peer-reviewed by external researchers and have been further tailored by extensive jurisdictional partner input (please see Section A.8 for a full description of these two efforts). Note: where alternate text is possible, the alternate versions are shown in brackets.

### **Indicator 1 – Participation in reef activities -----**

**Objective:** To determine the frequency of resident participation in a range of marine-based activities related to direct and indirect uses of reefs such as snorkeling, swimming, diving, fishing, and harvesting marine resources. This will help us understand the economic and recreational importance of coral reefs to local residents, as well as the level of extractive and non-extractive pressures on reefs.

**Background:** Coral reefs provide diverse ecosystem services, including recreation, tourism, and cultural values (Paterson & Loomis, 2014). Understanding participation in coral reef activities provides a baseline from which to evaluate the social and economic benefits of reefs, and examine a variety of human dimensions relevant to coral reef management.

#### **Measurement:**

1. *In the past 12 months, how many days did you participate in each of the following activities in [jurisdiction]? Please answer “0” if you did not participate in the activity.*

Question 1 collects activity participation frequency for coral reef-related activities. There are a core set of activities as well as optional jurisdictional activities. It asks about the “past 12 months” because a one-year period captures the seasonality of activities. This is the same question format used in surveys by the U.S. Forest Service (English et al., 2001), NOAA ONMS (e.g., Leeworthy & Wiley, 1997, 2001) and NMFS, and the National Park Service “pool of known questions” (OMB Control Number 1024-0224). While asking respondents to report on their memories of a previous year’s activity is subject to recall bias, studies of angling and boating participation have found the estimated mean number of days based on a 1-year recall period was just as accurate as – but less precise (fewer errors) than – the estimates based on shorter recall periods (Osborn & Matlock, 2010). Due to the 5-7 period between data collection cycles and seasonality and variability in activity participation, a 1-year recall period is necessary.

2. *Please look at the map of [jurisdiction] and the boundaries of each zone. For each activity, in which zone did you most often participate?*

Question 2 collects most frequent areas of activity participation, and refers only to the activities a respondent participates in (as indicated in Q1). The map will be segmented into zones based on jurisdictional feedback on reef areas of interest. This question will be used to identify high- and low-use areas (Alessa, Kliskey, & Brown, 2008) and the types

of activities (Q1) that occur spatially in a jurisdiction (Dalton, Thompson, & Jin, 2010; Leeworthy et al., 2018), and used to examine perceptions and other human dimensions spatially (Andrew, Burns, & Allen, 2019; Beeco & Brown, 2013; Loerzel et al., 2017).

3. Which of the following best describes your *primary* motivation for fishing and gathering [or replacement jurisdictional word choice]? (Choose one).
- a. *Recreational: I fish primarily for sport or pleasure, but may also sell a few fish.*
  - b. *Subsistence: I fish primarily to catch fish to feed myself, my family, and/or my community.*
  - c. *Commercial: I fish primarily for some or all of the money I make in one year.*
  - d. *Cultural: I fish primarily to keep traditional practices alive.*

Question 3 collects primary fishing or gathering motivation. These four motives have been used in previous studies (e.g., Loomis, Allen, & Hawkins, 2018) and have been identified as important distinctions between different types of fishing categories/identities (Leong et al., 2020; Madge, 2016) or measures of resource dependence (Watson Claar, & Baum, 2016). The data can be compared by different types of fishing (e.g., recreational fishing, spearfishing, gathering of marine resources) indicated in Q1 to determine whether different fishing categories are associated with different motives (Leong et al., 2020).

## **Indicator 2 – Perceived resource conditions -----**

**Objective:** This indicator accounts for residents’ perceptions of current marine resource conditions in the jurisdiction and how those resource conditions may change in the future. This indicator is also meant to complement biophysical information collected by other NCRMP components (fisheries, benthic, climate) and informs the need or success of management strategies.

**Background:** An extensive body of research has been devoted to perceptions of ecosystem conditions and change, because perception is a key process in the interaction between people and the natural environment (e.g., Giglio, Luiz, & Schiavetti, 2015; Gobster et al., 2007; Priskin, 2003; Uyarra et al., 2009). Ecosystem characteristics such as ecological condition or health, as defined by experts, do not always equal people’s perceptions of such characteristics. People have different perceptions of what is considered a “natural” or “healthy” ecosystem (Cottet et al., 2013; Kaplan & Kaplan, 1989; Ode et al., 2009) leading to “discrepancies between human preferences for natural resources and the ecological status of those resources” (Carvalho-Ribeiro & Lovett, 2011, p. 47).

Long-term monitoring of Indicator 2 will inform how perceptions change over time and if those changes follow similar patterns observed in biophysical data being monitored. This information can also be used to modify outreach and education material based on actual knowledge levels ensuring a more efficient and effective approach. The indicator and its components can also be used to examine its relation to other indicators measured in this survey. People have different priorities and value marine resources in different ways (Van

Beukering et al., 2007). Perceptions may vary by activity participation, resource dependence, or other social-demographic characteristics (Ditton, Loomis, & Choi, 1992; Paterson et al., 2012).

**Measurement:**

7. *How important are each of the following marine resources to your quality of life?*
8. *How would you rate the current condition of each of the following marine resources in [jurisdiction]?*
9. *Over the next 10 years, how do you think the condition of each of those same marine resources will change in [jurisdiction]?*

Questions 7-9 collect importance to quality of life, perceived current condition, and projected change in future condition for a short list of marine resources. The list includes a core set of activities as well as optional jurisdictional items. Each of these questions is asked in a 5-point Likert scale format. Question 7 responses range from “Not at all important” to “Very important”, Q8 responses range from “Very bad” to “Very good”, and Q9 responses range from “Worsen greatly” to “Improve greatly”. These types of questions have been asked in previous surveys of snorkelers, SCUBA divers, and recreational anglers (Loomis et al., 2008a, 2008b, 2008c).

**Indicator 3 – Awareness of coral reefs and threats -----**

**Objective:** This indicator aims to collect information on residents’ self-reported awareness of threats to the jurisdiction’s coral reef habitat and knowledge about specific ecological services the reef provides. 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).

**Background:** People will differ in a) what they acknowledge or consider to be threats to coral reefs, and b) the magnitude or severity of those threats. Their perceptions or beliefs about threats may or may not align with expert opinion (Kain, de Jong, & Smith, 2010; Lazo, Kinnell, & Fisher, 2000). The accuracy of the beliefs is not the issue; instead, what matters is what people believe to be true, since these beliefs are real to people and often guide their behavior.

**Measurement:**

10. *How important are coral reefs in [jurisdiction] to each of the following?*

Question 10 collects perceived importance of coral reefs to a series of ecosystem services. This question uses a 5-point Likert scale format, ranging from “Not at all important” to “Very important”. The ecosystem services offered are consistent across all jurisdictions. The delivery of ecosystem services are dependent upon the status of marine

resource conditions (Kelble et al., 2013; Leeworthy & Ehler, 2010; Nuttle & Fletcher, 2013). Accordingly, the mean importance of ecosystem services (Q10) can be examined for their relationship to perceived resource conditions (Q8), threats to coral reefs (Q11-12), and how resource conditions are perceived to be changing (Q9) (Dearden et al., 2007; Uyarra et al., 2009).

11. *Which of the following do you believe are threats to coral reefs in [jurisdiction]?*

12. *How severe are each of the following threats to coral reefs in [jurisdiction]?*

Questions 11 and 12 collect perceptions of threats to coral reefs and the severity of those threats. Both questions include a core set of potential threats as well as optional jurisdictional potential threats. Q11 includes response options of “yes”, “no”, “not sure”, and “not familiar”. Q12 then asks only about the Q11 items where the respondent selects “yes”, and uses a 4-point Likert scale format, ranging from “Minor threat” to “Severe threat” (the lower pole of the full 5-point scale, “Not a threat”, is the “no” response in Q11). These questions are modified from previous NCRMP surveys and human dimensions surveys of coral reef conditions that were conducted by academics for Florida’s Reef Resiliency Program (Loomis et al., 2008a, 2008b, 2008c) and the National Park Service (Loomis, Allen, & Paterson, 2017; OMB Control #1024-0263).

#### **Indicator 4 – Cultural importance of reefs -----**

**Objective:** To understand traditional and cultural significance of coral reefs to jurisdictional residents and whether this is changing over time.

**Background:** There are many aspects of “culture” including cultural heritage, social identity, spiritualism, cultural norms, and traditional/customary practices that are tied to social-ecological interactions. Food, for example, connects current populations to the culture of place, a community’s heritage and ancestry (Delind, 2006). The types of food, how and when it is eaten, and who it is shared with can influence a person’s connection to place, identity, and well-being (García-Quijano et al., 2015; Khakzad & Griffith, 2016; Van Holt et al., 2016). In coral reef areas, such as in the Pacific Islands region, cultural practices include the sharing of fish to support social networks, fishing with family members to maintain generational and cultural ties, or fishing as a contribution to celebrations or ceremonies (Bell et al., 2009; Leong et al., 2020; Weijerman et al., 2016). Much of the fish caught in Guam, for example, is not traded in the market but is instead consumed within the household or shared with family, friends, and the local community (Pinhey, Rubinstein, & Vaughn, 2006).

**Measurement:**

4. *On average, how many of the meals eaten within your household contain seafood?*
5. *On average, how many of the meals eaten within your household contain seafood from local coral reefs in [jurisdiction]? (Examples include reef fish such as [jurisdictional option 1] and [jurisdictional option 2], bottomfish such as*



*[jurisdictional option 1] and [jurisdictional option 2], and other shellfish and marine life that depend on coral reefs such as [jurisdictional option 1] and [jurisdictional option 2]. This does not include pelagic fish such as [jurisdictional option 1] and [jurisdictional option 2].)*

Questions 4 and 5 collect seafood consumption frequency generally as well as from local coral reefs. Both use a 5-point Likert scale ranging from “None of the meals (0%)” to “All of the meals (100%)”, and local coral reef seafood examples are provided. These two questions will be examined for their relationship to fishing participation (Q1), demographics, or other variables measured in this survey to explore resource dependency (Watson et al., 2016).

6. *How important are coral reefs to each of the following in [jurisdiction]?*

Question 6 collects perceived importance of coral reefs to a list of cultural items. This question uses a 5-point Likert scale format, ranging from “Not at all important” to “Very important”. The cultural items offered are consistent across all jurisdictions, but allow for minor modification for jurisdictional language differences. Importance of reefs to culture can be further examined by different types of fishing participation (Q1) or fishing motives (Q3) to explore how importance of reefs to culture (Q6) is connected (Leong et al., 2020).

#### **Indicator 5 – Attitudes toward coral reef management strategies -----**

**Objective:** To understand resident attitudes (support or opposition) toward Marine Protected Areas (MPAs) and different reef management strategies.

**Background:** There is a long and established line of research on attitudes. An “attitude” is defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Chaiken, 1993). This definition has been supported by various investigators (e.g., Ajzen & Fishbein, 1980; Ajzen, 2001) and used in a variety of natural resource management situations, such as restoring wildlife (Brooks et al., 1999; Enck & Brown, 2002), natural resource management activities (Bright & Barro, 2000; Teel & Manfreda, 2009), and marine protected areas (Johnston et al., 2020).

**Measurement:**

14. *How do you think the establishment of MPAs [or jurisdictional word choice] impacted the following in [jurisdiction]?*

Question 14 collects perceptions of how the establish of MPAs has affected a list of ecosystem services. “MPAs” are not defined in this question because they’re defined in the preceding question (Q13). This question is only asked of respondents who indicated “yes” to Q13. Q14 uses a 5-point Likert scale format, ranging from “worsened greatly” to “improved greatly”. The list of ecosystem services is structured as closely as possible to the list offered in Q10, but required some minor contextual adjustments. The list is

consistent across all jurisdictions, but allows for one optional jurisdictional item. The average perceived effect of MPAs on the different items will be calculated and compared across different subgroups.

15. *Next, how much do you oppose or support each of the following management strategies to protect coral reefs in [jurisdiction]?*

Question 15 collects support level for a list of management options that may help to protect coral reefs. There are a core set of management options as well as additional jurisdictionally relevant management options. This question uses a 5-point Likert scale format, ranging from “Strongly oppose” to “Strongly support” (Krosnick & Abelson, 1992; Krosnick, Judd, & Wittenbrink, 2000). If residents are generally receptive to certain management options, managers can more confidently suggest implementing those initiatives to support coral reef health. At the same time, the management options may have differing impacts to different subgroups (e.g., anglers, divers). Mean comparisons of attitude scores can be compared across activity groups (Q1). Q15 can also be compared with perceptions of resource conditions (Q8) or perceived threats to coral reefs (Q11-12). This would show how the amount of residents/subgroups’ support is connected to their perceptions.

#### **Indicator 6 – Participation in behaviors that may improve coral reef health -----**

**Objective:** To understand residents’ level of activity supporting coral reef habitats. Understanding the types of barriers that prevent residents from engaging in environmentally-friendly behaviors informs management on what needs improved to enable those types of behaviors.

**Background:** Pro-environmental behavior is conceptually defined as “actions which contribute to environmental preservation and/or conservation” (Axelrod & Lehman, 1993). A variety of behaviors or actions support coral reef stewardship and conservation and are encouraged by CRCP and management<sup>2</sup>. Behaviors are conceptually linked to values, beliefs, and attitudes (Ajzen & Fishbein, 2000; Alessa, Bennett, & Kliskey, 2003; Steg & Vlek, 2009; Vaske & Donnelly, 1999; Wynveen, Wynveen, & Sutton, 2015). There are many different constraints or barriers that individuals perceive to inhibit or prohibit participation in pro-environmental behaviors or activities. Constraints can be categorized into a) intrapersonal constraints, which are “internal” to an individual and are mainly related to the psychological states and attributes, such as lack of knowledge and perceived health problems, b) interpersonal constraints, which are related to social disapproval and inability to find partners, and c) structural constraints, which are “external-to-an individual” such as lack of resources, and lack of facilities (Crawford, Jackson, & Godbey, 1991; Kollmus & Agyeman, 2003; Metcalf, Burns, & Graefe, 2013; Rushing et al., 2019).

**Measurement:**

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<sup>2</sup> NOAA Coral Reef Conservation Program, “10 ways to protect coral reefs”:  
<https://oceanservice.noaa.gov/facts/thingsyoucando.html>

16. *How important is it for [jurisdiction] residents to engage in activities that help to protect coral reefs?*

Question 16 collects perceived importance for residents to engage in activities that help to protect coral reefs. It uses a 5-point Likert scale format, ranging from “Not at all important” to “Very important”.

17. *Which of the following do you do routinely (whenever possible)? (Check all that apply).*

19. *In the past 12 months, have you done any of the following activities? (Check all that apply).*

21. *In the past 5 years, have you done any of the following? (Check all that apply).*

Questions 17, 19, and 21 collect participation in pro-environmental behaviors that may help protect or improve the health of coral reefs. The first of these (Q17) asks about a list of frequent, routine activities; the second (Q19) asks about a short list of less frequent (in the past 12 months) activities; and the last (Q21) asks about a few least frequent (in the last 5 years) activities. For each item listed, respondents can select “yes” or “no”. Each of the question lists include a core set of items with optional jurisdictional language modifications, as well as optional, additional jurisdictionally relevant items. These data can also be examined for correlations to other survey questions, such as perceptions of current and future resource conditions and threats (Q8, Q9, Q11-12), or tested across subgroups, such as activity participation (Q1) or demographic variables (e.g., age group, tenure, born in jurisdiction).

18. *Which of the following are reasons why you do not engage in those activities routinely? (Check all that apply).*

- a. *I do not know how*
- b. *It is not convenient*
- c. *It is too expensive*
- d. *I have not had the opportunity to do so*
- e. *None of these reasons*

20. *Which of the following are reasons why you have not engaged in any of those activities in the past 12 months? (Check all that apply)*

- a. *I do not know how*
- b. *It is not convenient*
- c. *It is too expensive*
- d. *I have not had the opportunity to do so*
- e. *None of these reasons*

22. *Which of the following are reasons why you have not engaged in those activities? (Check all that apply).*

- a. *I do not know how*
- b. *It is not convenient*
- c. *It is too expensive*
- d. *My system is already up to date*
- e. *I am not allowed to*
- f. *None of these reasons*

Questions 18, 20, and 22 are follow up questions to Q17, Q19, and Q21, and only include items that received “no” responses in Q17, Q19, and Q21, respectively. These questions collect information on why respondents did/do not participate in the listed items.

Participation in pro-environmental behaviors that may help protect or improve the health of coral reefs. The selection options are consistent across each of these questions, with the exception of some minor contextual modifications to the selection options in Q22.

These questions provide management context for why residents do not engage in certain pro-environmental activities, and this knowledge may improve local and national outreach and education approaches.

### **Indicator 7 – Awareness of coral reef rules and regulations -----**

**Objective:** This indicator measures resident awareness of local Marine Protected Areas (MPAs) and acceptable coral reef behaviors that are tied to rules and regulations. Tracking this information over time at the jurisdictional/national level will inform compliance with rules and regulations and investment in education and outreach.

**Background:** Over the past several decades in the U.S., there has been a dramatic increase in the number of MPAs established at all levels of government, and more than 1,600 federal and state/territory sites exist today. These conservation efforts were set-forth with two Executive Orders creating the U.S. Coral Reef Task Force (1998) and National System of MPAs (2000). Numerous policy options within MPAs exist concerning the combination of activity types and use levels that are allowed or restricted within a protected area boundary, including “no take” zones. Enforcement of activities in MPAs is challenging considering the geospatial scale and porous boundaries of these areas. Understanding whether people are aware of MPAs in their jurisdiction is important for enforcement and compliance with regulations. However, this is complex considering the multitude of regulations for different activities in different management zones. Because people will vary in their awareness and understanding of the rules and regulations related to corals and their surrounding ecosystems, they may or may not know whether they are breaking the rules by engaging in certain activities. Norms for acceptable and unacceptable behavior vary in strength and is one way to understand compliance (Heywood, 2002; Smith et al., 2006; Sorice, Oh, & Ditton, 2007; Vaske & Whittaker, 2004). Injunctive norms specify rules or standards for what people “should” do in a given situation (Cialdini et al., 2006). When norms influence behavior, people consider the positive or negative consequences associated with the behavior and feel a sense of obligation to comply (Chung & Rimal, 2016; Lapinski & Rimal, 2005). These normative influences are often shared and regulated by members of the same social network or group (Dunning, 2017; McDonald & Crandall, 2015), such as recreational SCUBA divers or anglers (Anderson & Loomis, 2011).

**Measurement:**

13. *A Marine Protected Area (MPA) [or jurisdictional word choice] is an area of the ocean [, optional “such as” description,] where particular human activities are restricted [or jurisdictional word choice] to protect living, non-living, cultural, and/or historic resources. Before today, were you aware of existing MPAs [or optional jurisdictional word choice] in [jurisdiction]?*

Question 13 defines “MPA” and then collects awareness of existing, local MPAs. Question wording includes optional jurisdictional language modification. Response options include “yes” and “no”.

23. *The rules and regulations surrounding coral reefs are sometimes misunderstood. How unacceptable or acceptable are each of the following practices in [jurisdiction]?*

Question 23 collects perceived acceptability of engaging in a list of items. The items offered are rules, regulations, and best practices for the protection of corals and coral reef ecosystems. The list of items includes a core set that are consistent across all jurisdictions with the potential of jurisdictional language modification, as well as a set of jurisdictionally relevant items. This question uses a 5-point Likert scale format, ranging from “Very unacceptable” to “Very acceptable”. The proportion of respondents with a certain level of awareness will also be examined. By collecting perceived acceptability of engaging in various actions, we’re able to indirectly assess respondents’ understanding of socially and environmentally responsible actions within coral reef ecosystems. The means can be tested for differences between subgroups based on activity (Q1), zone of participation (Q2), or attitudes toward management options (Q15). Awareness of MPAs and acceptability of reef behaviors could vary based on the types of activities a person engages in or the attitudes a person holds. This understanding can improve outreach and education efforts to communicate coral reef rules, regulations, and best practices.

**Demographic questions -----**

24. *Do you identify as any of the following?*

25. *In what year were you born?*

26. *Were you born in [jurisdiction]?*

27. *How many years have you lived in [jurisdiction]?*

28. *What race/ethnicity do you consider yourself? (Check all that apply).*

29. *[optional question for Pacific Island jurisdictions:] Including your primary language, which of the following can you comfortably read?*

30. *What is the highest level of education you have completed? (Choose one).*
31. *What is your current employment status? (Choose one).*
32. *Is your current or most recent occupation related to one or more of the following? (Check all that apply).*
33. *How many adults aged 18 years or older live in your household, including yourself?*
34. *What is your annual household income?*

Questions 24-34 collect socioeconomic and demographic information. This information will be used primarily to a) extrapolate from sample to population, b) determine non-response bias, and c) analyze patterns between responses and socioeconomic and demographic information.

**Initial screening and nonresponse questions -----**

*S1. Just one person is needed to complete this survey. May I please speak to the person 18 or older in your household who has had the most recent birthday?*

*S2. Are you willing to participate in this survey?*

*S3: Do you live in [jurisdiction] at least three months of the year?*

Questions S1-S3 are screening questions that are woven into the introductory script. QS1 identifies the intended respondent based on our random stratified sample design. Depending on resident response, the interviewer will either continue to QS2, re-read script 1 and QS1 with a new individual, proceed with the “not available” protocol, or proceed with the nonresponse questions, beginning with NR1. QS1 confirms the resident’s willingness to participate in the survey. QS3 determines further eligibility of the resident to continue with the survey.

*NR1. Are there any particular reasons why you would prefer not to participate in the survey that you would be willing to share?*

*NR2. [For Interviewer] Did the respondent make any of the following comments, whether or not these exact words were used? (Check all that apply)*

*NR3. [For Interviewer] Please record the following observations during your interaction with the respondent.*

Questions NR1-NR3 are nonresponse follow up questions for individuals who choose not to participate in the survey. QNR1 collects optional rationale for a resident’s decision to

decline participation in the survey. QNR2 and QNR3 are internal questions for the interviewer to record resident responses and observed demographic features. QNR2 includes a list of potential responses for the interviewer to check off. QNR3 asks the interviewer to silently observe and record resident gender, relative age, and race, as well as the presence or absence of children in the household, as available. These nonresponse questions allow for the assessment of human behavior underlying survey participation and the presence of a nonresponse bias. When a bias exists, there are differences between respondents and nonrespondents on the variables of interest (see further discussion on nonresponse bias in Supporting Statement Part B.3). Information on nonresponse can be used to increase the rate of participation and construct statistical adjustment techniques to reduce nonresponse error in survey estimates and draw more accurate inferences about the population (Groves, 2006; Groves & Couper, 1998).

## **2.6 Compliance with Information Quality Guidelines**

The information collected will be disseminated to the public or used to support publicly disseminated information. NOAA will retain control over the information and safeguard it from improper access, modification, and destruction, consistent with NOAA standards for confidentiality, privacy, and electronic information. See response to Question 10 of this Supporting Statement for more information on confidentiality and privacy. The information collection is designed to yield data that meet all applicable information quality guidelines. Prior to dissemination, the information will be subjected to quality control measures and a pre-dissemination review pursuant to [Section 515 of Public Law 106-554](#).

### **3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological techniques or other forms of information technology.**

A combination of information collection techniques will be utilized with the objective of selecting the most cost-effective approach depending on the specific conditions in each jurisdiction, and at the same time, to reduce the burden on respondents. This information collection will employ online surveys in jurisdictions, such as Hawai'i and Florida, where Internet service is widely available to residential households. The advantages of administering a survey online include reduced costs, reduced dissemination time and response time, and automated data input. Online surveys are fast to administer and reduce human error in data entry. Implementing online surveys is also advantageous in that it facilitates large sample sizes, thus increasing the potential for subgroup analysis and decreased sampling variance. In jurisdictions, such as American Samoa and CNMI, where Internet service is not widely available, online surveys will not be feasible so alternative methods will be required.

#### **4. Describe efforts to identify duplication.**

A literature review was conducted to identify studies analyzing knowledge, opinions, attitudes and reef use patterns and protection activities, including social and economic data related to the communities affected by coral reef conservation programs. To date, no peer-reviewed publications related to all seven U.S. coral reef jurisdictions have been found, and there are no currently approved information collections requesting similar information in the seven jurisdictions containing coral reefs. Jurisdictional partners have also confirmed that the present survey effort does not duplicate other social science efforts in upcoming jurisdictions, and is instead complimentary to any related efforts and resource management projects (see Section A.8).

There are other types of socioeconomic efforts being done in the Pacific coral reef jurisdictions. While the data are collected and used for different purposes at different scales, they complement each other. NOAA Pacific Islands Fisheries Science Center (PIFSC) collects socioeconomic data in American Samoa, CNMI, Guam, and Hawai'i, but the survey is focused on fisheries industry and particular sectors. SEM-Pasifika, part of the Global Socioeconomic Monitoring Initiative for Coastal Management (SocMon), collects community-based data in the Pacific Islands (and other international regions) at the site management level (Wongbusarakum & Heenan, 2019). The SEM-Pasifika site-based assessments have been supported by the CRCP and local resource management partners. Unlike the PIFSC and SEM-Pasifika data sources, the NCRMP's socioeconomic data provide insights into the most critical issues for a variety of ecosystem services, including fisheries, recreation and shoreline protection, and provide information at the island/jurisdictional scale to examine the relationship between humans and the reef systems over time within specific island settings in ways allowing for regional comparison. The NCRMP survey also generates data that are important for climate resilience strategies, which other data sources do not cover.

There have also been economic surveys conducted in the coral reef jurisdictions, but no duplication of efforts have been identified. There was a previously approved collection (OMB Control Number 0648-0585) for the purpose of conducting a stated preference survey to estimate individuals' preferences and economic values of the Hawaiian coral reef ecosystem. This study has been completed but the scope of this study was only limited to one jurisdiction and its focus was only to evaluate a number of specific management actions provided in the survey. There was another previously approved collection (OMB 0648-0765) to collect expenditures and preferences related to recreational diving and snorkeling in Hawai'i that was conducted and is currently submitted for renewal; however, this recreational data collection does not duplicate the efforts of the present collection request and is instead complementary. There was also an approved information collection request for the purpose of conducting a stated preference survey of tourists and residents to estimate values of Puerto Rico's coral reefs. There was no duplication of effort with the NCRMP Puerto Rico survey, given the differences in content, sample, and mode of survey delivery.

It should be noted that many U.S. coral jurisdictions in conjunction with NOAA and other state, local and federal partners have indicated the desire to conduct their own integrated ecosystem monitoring where biophysical parameters are collected in conjunction with human dimensions



data. In an effort to harmonize socioeconomic monitoring as well as to produce data that is comparable over time and space, state and other local U.S. coral reef jurisdictional partners have expressed the desire to draw from the existing question bank as they develop their integrated research efforts.

All efforts are being made to ensure that this data collection is not redundant with other efforts within NOAA. CRCP is currently collaborating with the National Marine Fisheries Service (NMFS), National Estuarine Research Reserves (NERR), the Office for Coastal Management (OCM), and the Office of Response and Restoration (ORR) on surveys led by the Office of National Marine Sanctuaries (ONMS). This collaborative effort will prevent overlap and duplication in surveys occurring in the jurisdictions to reduce survey fatigue and avoid unnecessary expenditure of resources. The ONMS surveys focus on visitor use of National Marine Sanctuaries and economic expenditures. Because the surveys will be conducted in or adjacent to U.S. coral reef jurisdictions and include non-residents in the sample, the information complements the NCRMP surveys and can help address information gaps.

Furthermore, CRCP and NCCOS social scientists participate in monthly meetings with the PRA Community of Practice to stay up to date on social science projects and surveys being conducted across NOAA line offices. Efforts are also being made to prevent duplication of collection efforts with other federal agencies that have management authority over coral reefs or adjacent areas, including the National Park Service, U.S. Forest Service, and U.S. Fish and Wildlife Service. Interagency collaboration allows for consistency in the operationalization of survey questions.

**5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.**

This collection will not involve small businesses or other small entities. Only individuals representing their households will be surveyed.

**6. Describe the consequences to the Federal program or policy activities if the collection is not conducted or is conducted less frequently.**

In accordance with Congressional directives set forth in the Coral Reef Conservation Act of 2000 (CRCA)<sup>3</sup>, NOAA's Coral Reef Conservation Program authorizes a national program that includes "monitoring, assessment...and scientific research that benefit the understanding, sustainable use, and long-term conservation of coral reefs and coral reef ecosystems" (See 16 U.S.C. § 6401). The dire consequences of not collecting this data or conducting the data less frequently would be the inability of CRCP to fulfill the requirements to monitor and assess

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3 Coral Reef Conservation Act of 2000 [P.L. 106-562; 16 U.S.C. 6401 et seq; December 23, 2000]

Purposes: (1) to preserve, sustain, and restore the condition of coral reef ecosystems; (2) to promote the wise management and sustainable use of coral reef ecosystems to benefit local communities and the Nation;(3) to develop sound scientific information on the condition of coral reef ecosystems and the threats to such ecosystems; (4) to assist in the preservation of coral reefs by supporting conservation programs, including projects that involve affected local communities and nongovernmental organizations; (5) to provide financial resources for those programs and projects; and (6) to establish a formal mechanism for collecting and allocating monetary donations from the private sector to be used for coral reef conservation projects.

linkages between ecological management goals and human wellbeing, as mandated by the CRCA (2000) with particular references to parts (2) and (3). Not conducting this investigation would undermine CRCP's ability to effectively evaluate its programs and to ensure that they are achieving its mission. The immediate consequences of not collecting this data as requested is the inability of CRCP to track changes in reef health and impacts to people and local economies over time. Without collecting this human dimensions information, CRCP will not have the best available science necessary to monitor changes in the coral reef ecosystems and coral reef-adjacent communities in each of the U.S. coral reef jurisdictions.

**7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with OMB guidelines.**

No special circumstances are anticipated. The information requested will be voluntary and the collection will be conducted in accordance with OMB guidelines.

**8. Provide information on the PRA Federal Register Notice that solicited public comments on the information collection prior to this submission. Summarize the public comments received in response to that notice and describe the actions taken by the agency in response to those comments. Describe the efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.**

A 60-day Federal Register Notice was published on January 25, 2021 (86 FR 6876). No public comments were received.

**Jurisdictional Partner Review and Feedback**

As part of the preparation for upcoming survey implementation, NOAA sought and obtained feedback from local stakeholders. Responses came primarily from state and local natural resource management agencies, fisheries management councils and NGOs. In addition, NOAA made adjustments to each of the jurisdictional surveys based on respondents' feedback to the instrument. A summary of these comments and our responses related to the next three jurisdictions for monitoring is provided below. For historical comments and responses, please see previous supporting statements for this ongoing monitoring effort.

The CRCP management liaisons in Puerto Rico, Guam, and CNMI assisted in the selection of 10-13 key stakeholders to participate in the review process. Participants were sent an electronic copy of the draft survey instrument (which included content from the first monitoring survey for reference), and were invited to send their comments via electronic mail. Survey feedback was consolidated, and participants were then invited to a virtual meeting, where we walked them through the consolidated survey feedback and engaged them in facilitated discussion. The survey instrument was revised based on the survey feedback and virtual meeting discussions. Following an additional peer review by external experts (see Table 2) and subsequent revisions, local participants were sent the updated survey prior to PRA submission.

### Puerto Rico

Participants identified survey languages, content for jurisdictional survey items, and collectively drafted the activity zone map used in question 2. They streamlined the flow of the seafood consumption questions (Q4-5) by suggesting the removal of a third question. They suggested the incorporation of “human health” in question matrix 10, which was then added to the core survey and appreciated by other jurisdictions. Lastly, they confirmed that this survey effort does not duplicate other social science efforts in Puerto Rico, and is instead complimentary to any related efforts and resource management projects.

### Guam

Participants identified survey languages, content for jurisdictional survey items, and collectively drafted the activity zone map used in question 2. They suggested that we simplify the language used in our introductory script, and this was modified and incorporated into the core survey module. They requested that we explicitly state the voluntary nature of this survey and the ability for respondents to end the survey at any time; these suggestions were incorporated into the core survey module. They suggested clarified language for one of the items in question matrix 15, and this was incorporated into the core survey module. They highlighted concern at the undefined use of “your community” in parts of the survey; these instances were revised to “in [jurisdiction]” within the core survey module. They also expressed concern at the previously binary choices for Q24; categories were expanded, and optional jurisdictional options offered within the core survey module. Lastly, they confirmed that this survey effort does not duplicate other social science efforts in Guam, and is instead complimentary to any related efforts and resource management projects.

### CNMI

Participants identified survey languages, content for jurisdictional survey items, and collectively drafted the activity zone map used in question 2. Similar to Guam participants, CNMI participants suggested that we simplify the language used in our introductory script and this was modified and incorporated into the core survey module. They asked if the activities captured in Q1 were intended to be “primary activities,” and we confirmed they are not. They requested a seafood consumption frequency question, and with other jurisdictional feedback, this helped to inform the modification of Q4-5. They suggested splitting “economy” in Q10 into “tourism-based economy” and “fishery-based economy;” this was supported by the other jurisdictions and was incorporated into the core survey module. Similar to Guam participants, CNMI participants also expressed concern at the previously binary choices for Q24; categories were expanded, and optional jurisdictional options offered within the core survey module. Lastly, they confirmed that this survey effort does not duplicate other social science efforts in CNMI, and is instead complimentary to any related efforts and resource management projects.

### **Expert Review of Survey**

Ten social science experts reviewed the survey and provided comments. These reviewers were experts affiliated with NOAA NMFS, U.S. Forest Service, Baylor University, Colorado State University, East Carolina University, University of Rhode Island, University of Utah, University of Wisconsin, and West Virginia University. Each reviewer had expertise in survey research and specialized in the concepts measured by the survey. The reviewers provided critical feedback on the clarity of instructions and skip logic, wording and format of survey questions, scales, and the

appropriateness of each question to accurately measure the corresponding indicator and achieve the objectives of the data collection. They also provided feedback on whether major sources of measurement error were identified and minimized and how the survey data will be analyzed. Some of the major comments specific to each indicator are summarized in Table 2.

**Table 2: Summary of feedback on the survey provided by expert reviewers**

<b>Indicators</b>	<b>Expert Reviewer Comments</b>	<b>NOAA Response</b>
Participation in reef activities	<ul style="list-style-type: none"> <li>● Asking about “the past 12 months” is appropriate and recall bias is not a major issue. Values will not be 100% accurate, but an approximate numerical estimate is still more accurate than asking “average per month” or binned categories, and this allows for better statistical analyses.</li> <li>● Suggested the fishing categories and descriptions used by NOAA NMFS.</li> </ul>	<ul style="list-style-type: none"> <li>● We will maintain the 12 month recall window to address seasonality and consistency with past surveys. Number of days provides a numerical value that can be used in more advanced statistical analyses.</li> <li>● Incorporated the suggestion and will use NMFS fishing categories for more accurate measurement and consistency across NOAA offices.</li> </ul>
Perceived resource conditions	<ul style="list-style-type: none"> <li>● Wording is appropriate and suggest the use of 5-point scales.</li> </ul>	<ul style="list-style-type: none"> <li>● Current and future resource conditions will be measured on a 5-point scale using similar modifiers.</li> </ul>
Awareness of coral reefs / threats	<ul style="list-style-type: none"> <li>● Suggested that the survey ask about both awareness of threats and severity of threats.</li> </ul>	<ul style="list-style-type: none"> <li>● We incorporated this suggestion</li> </ul>
Cultural importance of reefs	<ul style="list-style-type: none"> <li>● The wording of the questions about seafood and cultural importance of reefs was not clear.</li> </ul>	<ul style="list-style-type: none"> <li>● The wording was revised for clarity, and done in a way that will not bias or influence how people respond to questions</li> </ul>
Attitudes toward coral reef management strategies	<ul style="list-style-type: none"> <li>● Suggested more specific wording of questions and items pertaining to impacts of management strategies.</li> </ul>	<ul style="list-style-type: none"> <li>● The wording was revised to improve accuracy of responses.</li> <li>● Additional management strategies were added for a more comprehensive evaluation.</li> </ul>
Participation in behaviors that may improve coral reef health	<ul style="list-style-type: none"> <li>● The format and presentation of questions on pro-environmental behaviors and barriers to participation were appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>● Measurement of this indicator is improved by the addition of specific behavior items and barriers to engaging in those activities.</li> </ul>
Awareness of coral reef rules and regulations	<ul style="list-style-type: none"> <li>● The acceptability scale is a stronger measure than asking about awareness because it evaluates whether a behavior is a norm.</li> </ul>	<ul style="list-style-type: none"> <li>● The acceptability scale is used to assess behavioral consistency with regulations.</li> <li>● This is a new question in the survey. Previous surveys did not include questions measuring this indicator.</li> </ul>

**9. Explain any decisions to provide payments or gifts to respondents, other than remuneration of contractors or grantees.**

No payments or gifts will be provided to respondents.

**10. Describe any assurance of confidentiality provided to respondents and the basis for assurance in statute, regulation, or agency policy.**

No personally identifying information (PII) will be collected in the survey. As stated in correspondence with respondents (via mail, email, or in person), PII (name, address, telephone number, email address) will be used for the sole purpose of contacting respondents to administer the survey. This information will only be viewed by the contractor compiling the data, and will be destroyed at the end of the information collection.

Participants' names and addresses will be assigned an arbitrary number that will serve as the respondent ID number. The identification number will be linked to each questionnaire and respondents will be requested not to place their name or any personal identifiable information on the questionnaire. When a survey is completed and returned, the identification number will be used to record the return of the survey and end the mailing or distribution of any further reminders. The identification number will be entered with the responses to the survey in a separate data file. Once data collection is complete, the link between names/addresses and data will be destroyed. This process will maintain the confidentiality of the responses received, and all potential participants in the survey will be informed about this process.

All data received from the surveys will be stored on a secure server and will be password protected. This website will not be available to the public. All computerized data will be maintained in a manner that is consistent with NOAA's IT Security Program. No data files will contain personal identifiers. Aggregate and summary statistics will only be publicly available for the data, which will allow the identities of survey respondents to remain confidential. CRCP will maintain the data in accordance with the highest standards of information security and will keep PII data only as long as is necessary to complete the survey.

**11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.**

For this collection, no sensitive questions will be asked. All survey questions are voluntary, so the respondent can skip any question.

**12. Provide an estimate in hours of the burden of the collection of information.**

A variety of instruments and platforms will be used to collect information from respondents. The total annual burden hours requested (1,093 hours) are based on the maximum number of collections we expect to conduct over the requested period for this clearance, even though we do not expect 100% response (Table 3). The entire collection will be collected over a 7-year period

(1 jurisdiction per year), and therefore, will not be collected more frequently than once every 3 years. Using average labor rates for the specific jurisdictions and for the nation as a whole when jurisdictional information is not available, the burden estimates results in expected labor costs of \$24,194.05.

**Table 3: Estimates of Total Burden Hours and Dollars**

Requirements	Number of Respondents	Responses Per Respondent	Total Number of Responses	Response Time (min)	Total Burden Hours	Total Burden Dollars
1. Florida <sup>4</sup>	2,000	1	2,000	20 min	667	\$15,314.32
2. Guam <sup>5</sup>	800	1	800	20 min	267	\$4,739.25
3. Hawai'i <sup>6</sup>	1,700	1	1,700	20 min	567	\$14,974.47
4. American Samoa <sup>7</sup>	815	1	815	20 min	272	\$6,995.84
5. Puerto Rico <sup>8</sup>	1,800	1	1,800	20 min	600	\$8,562.00
6. Commonwealth of Northern Marianas Islands <sup>6</sup>	1,600	1	1,600	20 min	533	\$13,708.76
7. U.S. Virgin Islands <sup>9</sup>	1,125	1	1,125	20 min	375	\$8,287.50
Total Public Burden	9,840		9,840		3,280	\$72,582.14
Annualized	3,280		3,280		1,093	\$24,194.05

The response burden is based on three different components that are explained by the survey administrator or read by the respondent: the purpose and need for respondent participation, the survey instructions and section transitions, and the survey questions (including demographic questions for statistical purposes). We acknowledge that not all respondents contacted will be willing to participate in the survey. Based on previous NOAA surveys of the targeted population we expect response rates for each survey mode to be consistent with industry standards. See Supporting Statement Part B.1 for more information on expected response rates.

4 Mean hourly wage in Florida is \$22.96 ([https://www.bls.gov/oes/current/oes\\_fl.htm](https://www.bls.gov/oes/current/oes_fl.htm))

5 Mean hourly wage in Guam is \$17.75 ([https://www.bls.gov/oes/current/oes\\_gu.htm](https://www.bls.gov/oes/current/oes_gu.htm))

6 Mean hourly wage in Hawai'i is \$26.41 ([https://www.bls.gov/oes/current/oes\\_hi.htm](https://www.bls.gov/oes/current/oes_hi.htm))

7 Mean hourly wage is based on national estimate: \$25.72 ([https://www.bls.gov/oes/current/oes\\_nat.htm](https://www.bls.gov/oes/current/oes_nat.htm))

8 Mean hourly wage in Puerto Rico is \$14.27 ([https://www.bls.gov/oes/current/oes\\_pr.htm](https://www.bls.gov/oes/current/oes_pr.htm))

9 Mean hourly wage in U.S. Virgin Islands is \$22.10 ([https://www.bls.gov/oes/current/oes\\_vi.htm](https://www.bls.gov/oes/current/oes_vi.htm))

**13. Provide an estimate of the total annual cost burden to the respondents or record-keepers resulting from the collection (excluding the value of the burden hours in Question 12 above).**

There will be no cost to respondents beyond burden hours.

**14. Provide estimates of annualized cost to the Federal government.**

The cost to the Federal government for contract services, supplies, equipment, travel, etcetera, is approximately \$418,709 for FY2021, \$414,874 for FY2022, and \$420,285 for FY2023. The annualized cost for contract services, supplies, equipment, travel, etcetera, is approximately \$417,956.

The total annual cost for Federal labor on the project is approximately \$20,000 for FY2021, \$20,000 for FY2022, and \$20,000 for FY2023. The annualized cost for Federal labor is \$20,000.

The total annualized cost for the project is \$437,956 for the period of FY2021 to FY2023.

**15. Explain the reasons for any program changes or adjustments.**

Information Collection	Respondents		Responses		Burden Hours		Reason for change or adjustment
	Current Renewal / Revision	Previous Renewal / Revision	Current Renewal / Revision	Previous Renewal / Revision	Current Renewal / Revision	Previous Renewal / Revision	
CRCP Question Bank and Core Model Survey	0	1765	0	1765	0	652	Removed as collection is being restructured as a hybrid-generic.  This hybrid-generic allows for the identification of individual populations being targeted for response, which wasn't done under the previous structure.
Florida	2000	0	2000	0	667	0	
Guam	800	0	800	0	267	0	
Hawai'i	1700	0	1700	0	567	0	
American Samoa	815	0	815	0	272	0	
Puerto Rico	1800	0	1800	0	600	0	
CNMI	1600	0	1600	0	533	0	
USVI	1125	0	1125	0	375	0	
<b>Total for Collection</b>	<b>9840</b>	<b>1765</b>	<b>9840</b>	<b>1765</b>	<b>3281</b>	<b>652</b>	
<b>Difference</b>	<b>8075</b>		<b>8075</b>		<b>2629</b>		

There are no major program changes or adjustments as this is a revision and extension of a previous information collection request. Minor adjustments in federal government cost are a result of changes in cost of living and minor adjustments in (respondent) sample sizes since the previous request. All changes in annual sample sizes are in accordance with approved non-substantive change requests since 2012; however, sample sizes for each jurisdiction have been increased because jurisdictional partners and CRCP leadership have requested higher resolution

data to improve resolution of final products and better integrate the results from this data collection with complimentary NCRMP data (i.e., biological datasets). To allow for larger sample sizes with increased resolution without exceeding burden and budget limitations, CRCP has decided to reduce collection efforts from two jurisdictions per year to a single jurisdiction per year. Additionally, following the completion of the first socioeconomic monitoring cycle, indicators were developed and calculated. The survey instrument as well as the indicator development approach then underwent internal and external peer review. To address review comments, improve measurement of the final indicators, and incorporate updated standards for survey development and implementation, minor changes to the survey instrument have been made. Final question wording is presented and justified in Section A.2, and supporting summaries of external and partner review and contributions are found in Section A.8.

**16. For collections whose results will be published, outline the plans for tabulation and publication.**

Data collected under this clearance will only be used for research purposes, to measure and improve the results of CRCP programs, and to target outreach efforts. Aggregated statistics and other general findings will be presented to local jurisdictions and a final NOAA technical report will be published for each jurisdictional monitoring cycle. Additional products may include infographics, scientific posters, presentations, and two-page summaries of highlights from the survey results. All products will be available upon request and via CRCP web sites and other media.

In an effort to promote the use of scientific information for improved resource management, the agency may publish some of the findings in peer-reviewed journals. These will be in addition to NOAA technical documents and presentations. It should be noted that NOAA may receive requests to release some of its findings through congressional inquiries or Freedom of Information Act (FOIA) Requests. CRCP will disseminate the findings when appropriate, and strictly following NOAA's guidelines, and all applicable laws and regulations.

**17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons why display would be inappropriate.**

The expiration date will be displayed on all survey instruments.

**18. Explain each exception to the certification statement.**

The agency certifies compliance with [5 CFR 1320.9](#) and the related provisions of [5 CFR 1320.8\(b\)\(3\)](#).

**References**

- Ajzen I. (2001). Nature and operation of attitudes. *Annual Review of Psychology*, 52, 27–58.
- Ajzen I., & Fishbein M. (2000). Attitudes and the attitude–behavior relationship: reasoned and automatic processes. *European Review of Social Psychology*, 11, 1–33.



- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Alessa, L., Bennett, S.M., & Kliskey, A.D. (2003). Effects of knowledge, personal attribution and perception of ecosystem health on depreciative behaviors in the intertidal zone of Pacific Rim National Park and Reserve. *Journal of Environmental Management*, 68, 207-218.
- Alessa, L., Kliskey, A., & Brown, G. (2008). Social-ecological hotspots mapping: A spatial approach for identifying coupled social-ecological space. *Landscape and Urban Planning*, 85, 27-39.
- Anderson, L. E., & Loomis, D. K. (2011). SCUBA diver specialization and behavior norms at coral reefs. *Coastal Management*, 39, 478–491.
- Andrew, R.G., Burns, R.C., & Allen, M.E. (2019). The influence of location on water quality perceptions across a geographic and socioeconomic gradient in Appalachia. *Journal of Water*, 11, 2225.
- Axelrod, L.J., & Lehman, D.R. (1993). Responding to environmental concerns: What factors guide individual action? *Journal of Environmental Psychology*, 13(2), 149-159.
- Beeco, J.A., & Brown, G. (2013). Integrating space, spatial tools, and spatial analysis into the human dimensions of parks and outdoor recreation. *Applied Geography*, 38, 76-85.
- Bell, J.D., Kronen, M., Vunisea, A., Nash, W.J., Keeble, G., Demmke, A., Pontifex, S., & Andrefouet, S. (2009). Planning the use of fish for food security in the Pacific. *Marine Policy*, 33, 64-76.
- Bright, A. D. & Barro, S. C. (2000). Integrative complexity and attitudes: A case study of plant and wildlife species protection. *Human Dimensions of Wildlife*, 5(4), 30–47.
- Brooks, J.J., Warren, R.J., Nelms, M.G., & Tarrant, M.A. (1999). Visitor attitudes toward and knowledge of restored bobcats on Cumberland Island National Seashore, Georgia. *Wildlife Society Bulletin*, 27(4), 1089-1097.
- Carvalho-Ribeiro, S.M., & Lovett, A. (2011). Is an attractive forest also considered well managed? Public preferences for forest cover and stand structure across a rural/urban gradient in northern Portugal. *Forest Policy and Economics*, 13, 46-54.
- Chung, A., & Rimal, R. N. (2016). Social norms. In J. Benhabib, A. Bisin, & M. O. Jackson (Eds.), *Handbook of social economics* (Vol. 1, pp. 311–338). Amsterdam, the Netherlands: North-Holland.
- Cialdini, R. B., Demaine, L. J., Sagarin, B. J., Barrett, D. W., Rhoads, K., & Winter, P. L. (2006). Managing social norms for persuasive impact. *Social Influence*, 1(1), 3–15.
- Cottet, M., Piégay, H., & Bornette, G. (2013). Does human perception of wetland aesthetics and healthiness relate to ecological functioning? *Journal of Environmental Management*, 128, 1012-1022.
- Crawford, D., Jackson, E., & Godbey, G. (1991). A hierarchical model of leisure constraints. *Leisure Sciences*, 13, 309–320.
- Dalton, T., Thompson, R., & Jin, D. (2010). Mapping human dimensions in marine spatial

- planning: An example from Narragansett Bay, Rhode Island. *Marine Policy*, 34, 309-319.
- Dearden, P., Bennett, M., & Rollins, R. (2007). Perceptions of diving impacts and implications for reef conservation. *Coastal Management*, 35, 305-317.
- Delind, L.A. (2006). Of bodies, place, and culture: Re-situating local food. *Journal of Agricultural and Environmental Ethics*, 19, 121-146. Doi:10.1007/s10806-005-1803-z.
- Ditton, R., Loomis, D., & Choi, S. (1992). Recreation specialization: reconceptualization from a social world's perspective. *Journal of Leisure Research*, 24, 33-51.
- Dunning, D. (2017). Normative goals and the regulation of social behavior: The case of respect. *Motivation and Emotion*, 41(2), 285–293.
- Eagly, A., & Chaiken S. (1993). *The Psychology of Attitudes*. Orlando, Florida: Harcourt.
- Enck, J.W., & Brown, T.L. (2002). New Yorkers' attitudes toward restoring wolves to the Adirondack Park. *Wildlife Society Bulletin*, 30, 16-28.
- English, D., Kocis, S.M., Zarnoch, S.J., & Arnold, J.R. (2001). Forest Service National Visitor Use Monitoring Process: Research method documentation. Gen. Tech. Rep. SRS-57. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 14 p.
- García-Quijano, C., Poggie, J., Pitchon, A., & Del Pozo, M. (2015). Coastal resource foraging, life satisfaction, and well-being in southeastern Puerto Rico. *Journal of Anthropological Research*, 71(2), 145–167.
- Giglio, V.J., Luiz, O.J., & Schiavetti, A. (2015). Marine life preferences and perceptions among recreational divers in Brazilian coral reefs. *Tourism Management*, 51, 49-57.
- Gobster, P.H., Nassauer, J.I., Daniel, T.C., & Fry, G. (2007). The shared landscape: What does aesthetics have to do with ecology? *Landscape ecology*, 22, 959-972.
- Groves, R.M. (2006). Nonresponse rates and nonresponse bias in household surveys. *The Public Opinion Quarterly*, 70(5), 646-675.
- Groves, R.M., & Couper, M.P. (1998). *Nonresponse in household interview surveys*. New York: John Wiley & Sons, Inc.
- Heywood, J. L. (2002). The cognitive and emotional components of behavior norms in outdoor recreation. *Journal of Leisure Sciences*, 24(3-4), 271–281.
- Johnston, J.R., Needham, M.D., Cramer, L.A., & Swearingen, T.C. (2020). Public values and attitudes toward marine reserves and marine wilderness. *Coastal Management*, 48(2), 142-163.
- Kain, D., de Jong, M., & Smith, C.F. (2010). Information usability testing as audience and context analysis for risk communication. In M. Albers & B. Still (Eds.), *Usability of complex information systems: Evaluation of user interaction*. Taylor & Francis, CRC Press. Pp. 305-332.
- Kaplan, R., & Kaplan, S. (1989). *The Experience of Nature. A Psychological Perspective*. Cambridge University Press, Cambridge.

- Kelble, C.R., Loomis, D.K., Lovelace, S., Nuttle, W.K., Ortner, P.B., Fletcher, P., Cook, G.S., Lorenz, J.J., & Boyer, J.N. (2013). The EBM-DPSER conceptual model: Integrating ecosystem services into the DPSIR framework. *PLoS ONE*, 8(8), e70766.
- Khakzad, S., & Griffith, D. (2016). The role of fishing material culture in communities' sense of place as an added-value in management of coastal areas. *Journal of Marine and Island Cultures*, 5, 95-117.
- Kollmuss, A., & Agyeman, J. (2003). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-260.
- Krosnick, J. A., & Abelson, R. P. (1992). The case for measuring attitude strength in surveys. In J. Tanur (Ed.), *Questions about questions* (pp. 177–203). New York: Russell Sage Foundation.
- Krosnick, J. A., Judd, C. M., & Wittenbrink, B. (2005). The Measurement of Attitudes. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (p. 21–76). Lawrence Erlbaum Associates Publishers.
- Lapinski, M. K., & Rimal, R. N. (2005). An explication of social norms. *Communication Theory*, 15(2), 127–147.
- Lazo, J.K., Kinnell, J.C., & Fisher, A. (2000). Expert and layperson perceptions of ecosystem risk. *Risk Analysis*, 20(2), 1-15.
- Leeworthy, V. R., & Ehler, R. (2010). Linking the economy and environment of the Florida Keys/Key West, importance and satisfaction ratings by recreating visitors to the Florida Keys/Key West 2007–08. Silver Spring, MD: National Oceanic and Atmospheric Administration.
- Leeworthy, V. R., & Wiley, P. (2001). Current participation patterns in marine recreation. Silver Spring, M: US Department of Commerce. National Oceanic and Atmospheric Administration. National Ocean Service. Special Projects.
- Leeworthy, V.R., & Wiley, P.C. (1997). A Socioeconomic Analysis of the Recreation Activities of Monroe County Residents in the Florida Keys/Key West. Silver Spring, MD: National Oceanic and Atmospheric Administration.
- Leeworthy, V.R., Schwarzmann, D., Goedeke, T.L., Gonyo, S.B., & Bauer, L.J. (2018). Recreation use and spatial distribution of use by Washington households on the outer coast of Washington. *Journal of Park and Recreation Administration*, 36, 56-68.
- Leong, K.M., Torres, A., Wise, S., & Hospital, J. (2020). Beyond recreation: When fishing motivations are more than sport or pleasure. NOAA Admin Rep. H-20-05, 57 p. doi:10.25923/k5hk-x319.
- Loerzel, J.L., Goedeke, T.L., Dillard, M.K., & Brown, G. (2017). SCUBA divers above the waterline: Using participatory mapping of coral reef conditions to inform reef management. *Marine Policy*, 76, 79-89.
- Loomis, D.K., Allen, M.E., & Hawkins, C. (2018). Hawai'i Fishing Community Perceptions of the Marine Protected Area Siting Process and its Implications. Western Pacific Regional Fishery Management Council. Pacific Island Fisheries Research Program.

- Loomis, D.K., Allen, M.E., & Paterson, S.K. (2017). Coastal Marine Recreation at Dry Tortugas National Park: Understanding the Ecological Attitudes, Behavior, and Knowledge of Park Visitors. Natural Resource Report. National Park Service, Fort Collins, CO. 138 pp.
- Loomis, D.K., Anderson, L.E., Hawkins, C., & Paterson, S.K. (2008a). Understanding coral reef use: SCUBA diving in the Florida Keys by residents and non-residents during 2006-2007. The Florida Reef Resilience Program, (p. 141).
- Loomis, D.K., Anderson, L.E., Hawkins, C., & Paterson, S.K. (2008b). Understanding coral reef use: recreational fishing in the Florida Keys by residents and non-residents during 2006-2007. The Florida Reef Resilience Program, (p. 119).
- Loomis, D.K., Anderson, L.E., Hawkins, C., & Paterson, S.K. (2008c). Understanding coral reef use: snorkeling in the Florida Keys by residents and non-residents during 2006-2007. The Florida Reef Resilience Program, (p. 135).
- Madge, L. (2016). Preliminary assessment of monk seal-fishery interactions in the main Hawaiian Islands. Pacific Islands Fishery Science Center, NMFS, NOAA, Honolulu, HI 96818-5007. Pacific Islands Fish. Sci. Cent. Admin. Rep. H-16-08, 23 p. doi:10.7289/V5/AR-PIFSC-H-16-08.
- McDonald, R., & Crandall, C. S. (2015). Social norms and social influence. *Current Opinion in Behavioral Sciences*, 3, 147–151.
- Metcalf, E.C., Burns, R.C., & Graefe, A.R. (2013). Understanding non-traditional forest recreation: The role of constraints and negotiation strategies among racial and ethnic minorities. *Journal of Outdoor Recreation and Tourism*, 1-2, 29-39.
- Nuttle, W.K., & Fletcher, P.J. (Eds.). (2013). Integrated conceptual ecosystem model development for the Southeast Florida coastal marine ecosystem. NOAA Technical Memorandum, OAR-AOML-103 and NOS-NCCOS-163. Miami, Florida. 125 pp.
- Ode, A., Fry, G., Tveit, M.S., Messenger, P., & Miller, D. (2009). Indicators of perceived naturalness as drivers of landscape preference. *Journal of Environmental Management*, 90, 375-383.
- Osborn, M.F., & Matlock, G.C. (2010). Recall bias in a sportfishing mail survey. *North American Journal of Fisheries Management*, 30, 665-670. DOI: 10.1577/M09-196.1
- Paterson, S., Young, S., Loomis, D.K., & Obenour, W. (2012). Resource attributes that contribute to nonresident diver satisfaction in the Florida Keys, USA. *Tourism in Marine Environments*, 8, 47-60.
- Pinhey, T.K., Rubinstein, D.H., & Vaughn, S.M. (2006). Fishing and fiestas in Guam: an exploratory note on the reinforcement of cultural traditions. *Pacific Studies*, 29, 74–82.
- Priskin, J. (2003). Tourist perceptions of degradation caused by coastal nature-based recreation. *Journal of Environmental Management*, 32, 189-204.
- Rushing, J.R., Needham, M.D., D’Antonio, A., & Metcalf, E.C. (2019). Barriers to attachment? Relationships among constraints, attachment, and visitation to urban parks. *Journal of Outdoor Recreation and Tourism*, 27, 1-11.
- Smith, S.W., Atkin, C.K., Martell, D., Allen, R., & Hembroff, L. (2006). A social judgment

- theory approach to conducting formative research in a social norms campaign. *Communication Theory*, 16, 141–152.
- Sorice, M. G., Oh, C.-O., & Ditton, R. B. (2007). Managing scuba divers to meet ecological goals for coral reef conservation. *AMBIO: A Journal of the Human Environment*, 36(4), 316–322.
- Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behavior: An integrative review and agenda. *Journal of Environmental Psychology*, 29, 309-317.
- Teel, T.L., & Manfredo, M.J. (2009). Understanding the diversity of public interests in wildlife conservation. *Conservation Biology*, 24(1), 128 – 139.
- Uyarra, M., Watkinson, A., & Cote, I. M. (2009). Managing dive tourism for the sustainable use of coral reefs: Validating diver perceptions of attractive site features. *Journal of Environmental Management*, 43(1), 1-16.
- Van Beukering, P., Haider, W., Longland, M., Cesar, H., Sablan, J., Shjegstad, S., Beardmore, B., Liu, Y., & Garces, G.O. (2007). The economic value of Guam's coral reefs. University of Guam Marine Laboratory Technical Report No. 116, pp. 130.
- Van Holt, T., Weisman, W., Johnson, J.C., Käll, S., Whalen, J., Spear, B., & Sousa, P. (2016). A social wellbeing in fisheries tool (SWIFT) to help improve fisheries performance. *Sustainability*, 8, 667; doi:10.3390/su8080667.
- Vaske, J.J., & Donnelly, M.P. (1999). A value-attitude-behavior model predicting wildland preservation voting intentions. *Society and Natural Resources*, 12, 523 – 537.
- Vaske, J. J., & Whittaker, D. (2004). Normative approaches to natural resources. In M. J. Manfredo, J. J. Vaske, B. L. Bruyere, D. R. Field, and P. J. Brown (Eds.), *Society and Natural Resources*. Jefferson City, MO: Modern Litho, 238–294.
- Watson, M.S., Claar, D.C., & Baum, J.K. (2016). Subsistence in isolation: Fishing dependence and perceptions of change on Kirimati, the world’s largest atoll. *Ocean & Coastal Management*, 123, 1-8.
- Weijerman, M., Grace-McCaskey, C., Grafeld, S.I., Kotowicz, D.M., Oleson, K.I.I., & van Putten, I.E. (2016). Towards an ecosystem-based approach of Guam’s coral reefs: The human dimension. *Marine Policy*, 63, 8-17.
- Wongbusarakum S., & Heenan, A. (2019). Integrated Monitoring with SocMon/SEM-Pasifika: Principles and Process: An addendum to the Global Coral Reef Monitoring Network (GCRMN) Socio-economic Monitoring Manual for Coral Reef Management. Global SocMon Initiative, National Oceanic and Atmospheric Administration (NOAA) Coral Reef Conservation Program (CRCP), Silver Spring (MD). 28 pp.
- Wynveen, C.J., Wynveen, B.J., & Sutton, S.G. (2015). Applying the Value-Belief-Norm Theory to marine contexts: Implications for encouraging pro-environmental behavior. *Coastal Management*, 43, 84-103.