

SUPPORTING STATEMENT Part B
Awareness and application of long-term monitoring data in the Pacific Islands
OMB CONTROL NO. 0648-XXXX

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g. establishments, State and local governmental units, households, or persons) in the universe and the corresponding sample are to be provided in tabular form. The tabulation must also include expected response rates for the collection as a whole. If the collection has been conducted before, provide the actual response rate achieved.

As there are no previous studies describing the population and we do not know the total population of possible data users, purposive sampling design including consultations with those who are current data users will be used to find the target samples. The criteria of our target respondents are that they be adults, eighteen years or older, who could represent the agencies, organizations, programs or groups who may use the long-term biophysical and socioeconomic data collected in the Pacific Island region and who are involved in designing and implementing long-term biophysical and socioeconomic monitoring. In terms of the data users, we are aware of a few groups, such as the NOAA PIRO, WESTPAC, Marine Lab of the University of Guam, the Micronesia Conservation Trust. We will start the survey with the people identified by these institutions as the most appropriate persons to participate in the survey, and will then ask them to suggest other possible users or institutions. The same sampling design will be used for those who are involved in monitoring. We will start with the NCRMP biophysical and socioeconomic monitoring teams and then ask for suggestions from the subjects for the next recruits.

Based on the recently completed round of NCRMP coral reef jurisdictional surveys, the response rates for face-to-face surveys were 90% for American Samoa, 60% for Guam, and 51% for CNMI. For telephone surveys, the respective rates were 29% in Hawaii. A previous study of a different marine resources (Monk Seals) showed rates such as 40% for internet surveys and 80 percent for in-person surveys.¹ Dillman et al. (2009) considers a response rate above 50% a high response rate for mail surveys.² In this data collection, we expect a higher response rate as the participants' work is intimately tied to the types of data asked in the survey.

¹ See "Public Perception and Attitudes about the Hawaiian Monk Seal, Survey Results Report", Sustainable Resources Group International, Inc., prepared for NOAA Fisheries Service Pacific Islands Regional Office, April 2011. "Beach Users Perceptions Concerning Zuma Beach Restoration", David K. Loomis, University of Massachusetts Amherst, 2009.

"Washington-Oregon-California Purse Seine Survey", NOAA, 2007, OMB Control #: 0648-0369, Gulf States Marine Fisheries Commission (GSMFC). NOAA, "2011 National Marine Recreational Fishing Expenditure Survey" 2011.

² Dillman, D., J. Smyth and L. Christian. (2009) Internet, Mail and Mixed-Mode Surveys: The Tailored Design Method. New York: John Wiley & Sons.

2. Describe the procedures for the collection, including: the statistical methodology for stratification and sample selection; the estimation procedure; the degree of accuracy needed for the purpose described in the justification; any unusual problems requiring specialized sampling procedures; and any use of periodic (less frequent than annual) data collection cycles to reduce burden.

As mentioned above, purposive sampling will be used to recruit those who are using or may potentially use long-term monitoring data and those who are involved in designing and implementing the monitoring. We will start with known users and known monitoring teams and then ask them for additional recruits. The survey will stop when there are no further obvious agencies, organizations, programs or groups in the US jurisdictions and affiliated islands that may be using the data for managing resources, or that are involved in monitoring, or if we reach 100 respondents. We believe that there are individuals who may be using these data for their individual research purposes, e.g. students. These will not be included in this study. Given that we intend to use a non-probability sampling approach, our results will be presented in a qualitative, rather than a quantitative manner.

In addition to asking questions regarding the respondents' awareness of and use of data, as well as their suggestions for gathering different types of data, the surveys will collect information on professional affiliation, education, level of work activities engaging communities, and the extent to which this work is interdisciplinary. This additional information will be used to sort and categorize the survey results in order to compare sub-groups if applicable.

In general, we will attempt to collect survey data using a mixture of internet (via Survey Monkey) and telephone methods. Survey participants will be contacted by phone or email in advance and asked to participate in an upcoming online Survey Monkey. If online access is problematic, the survey will be conducted via telephone or skype and administered by the ESD staff. The average internet use in CNMI and Guam is 39 percent as compared to 79 percent for Hawaii. In American Samoa, a telephone survey is planned to be conducted due to the extremely low level of internet usage in this jurisdiction (i.e., approximately 6 percent) (see Table 2). However, we believe that most resource managers and people involved in monitoring have a much higher rate of internet use. English language is used in all these Pacific islands. The survey will be conducted only once in the next 3 years.

Focus groups will be conducted in conjunction with meetings where possible data users and monitoring team members are present. Tentatively, a meeting for Atlantis³ modeling and another meeting with the DAR 30x30 initiative⁴ are being planned in the spring of 2019 and we hope to

³ Atlantis is a deterministic biogeochemical and biophysical modeling system that simulates the functioning of marine food webs and fisheries to serve as a policy exploration tool for ecosystem-based management. It is an 'end-to-end' model, in that it represents ecosystem components from marine bacteria to apex predators and human beings. Sub-models include consumption, biological production, waste production, reproduction, habitat dependency, age structure, mortality, decomposition and microbial cycles. The spatial domain is resolved in three dimensions using irregular polygons to represent biogeographic features. Exchange of biomass occurs between polygons according to seasonal migration and foraging behavior, while water movement, heat and salinity flux across boundaries can be represented by a coupled hydrodynamic model.

⁴ The 30x30 initiative has a goal to effectively manage at least 30% of Hawai'i nearshore marine areas by 2030 to ensure a healthy nearshore ecosystem and fisheries that sustain the people and economy of Hawai'i. Meetings are

gather groups of up to 20 people who are potential data users and monitoring team members to participate in the group discussion. We also hope that a meeting for the West Hawai'i Human Dimension Integrated Ecosystem Assessment⁵ with stakeholders and a meeting with the Micronesia Challenge⁶ monitoring advisors, both planned to take place in 2019, could provide opportunities to develop focus groups for this project. Some of the focus group participants may have participated in the survey for this study. However, the burden is reduced as the questions are complementary (not overlapping) and the initial results of the survey will be presented in order to reduce discussion time.

Table 2: Internet Usage in Survey Jurisdictions

Jurisdiction	Population	Percent of Population Classified as Internet Users
American Samoa	55,070	6%
CNMI	53,883	30%
Guam	159,358	56%
Hawaii	1,360,211	79%
US Virgin Islands	106,405	28%

Source: Data from Hawaii US Census 2010. Other data “Internet World Statistics”, American Samoa data March 2011, CNMI data from August 2010, and Guam data from June 2010 (see <http://www.internetworldstats.com/>).

planned in 2019 to identify and prioritize biophysical and social indicators and institutionalize monitoring and data analysis.

⁵ The West Hawai'i Integrated Ecosystem Assessment (IEA) studies and monitors marine resources to inform resource management and benefit the people of West Hawai'i. The West Hawai'i IEA has recently expanded to include the human dimensions of the assessment. Initial work with stakeholders has identified a need to include culture and human well-being to guide management. Exploratory interviews have been conducted to better understand site-based indicators for cultural ecosystem services (CES). A member-checking meeting is planned to be conducted in 2019 to discuss with the West Hawai'i communities and stakeholders proxies and direct indicators of CES and human well-being.

⁶ Micronesia Challenge (MC) is a conservation commitment by the Federated States of Micronesia, the Republic of the Marshall Islands, the Republic of Palau, Guam, and the Commonwealth of the Northern Marianas Islands to preserve the natural resources that are crucial to the survival of Pacific traditions, cultures and livelihoods. The overall goal of the Challenge is to effectively conserve at least 30% of the near-shore marine resources and 20% of the terrestrial resources across Micronesia by 2020. For this commitment, biophysical (marine and terrestrial) and socioeconomic monitoring have been conducted to track the ecological and social conditions of different sites in the MC countries.

3. Describe the methods used to maximize response rates and to deal with nonresponse. The accuracy and reliability of the information collected must be shown to be adequate for the intended uses. For collections based on sampling, a special justification must be provided if they will not yield "reliable" data that can be generalized to the universe studied.

There are often legitimate concerns about the potential for non-response to internet or telephone surveys. However, because this survey would yield results that could directly benefit respondents (i.e. creating understanding of their needs for data types and adapting future monitoring efforts so that they meet respondents' needs and enable them to better understand social-ecological systems), we expect that potential respondents will see advantages of this study and will be willing to participate. We will communicate the survey's objectives to the leaders of the organizations, agencies, and programs and will ask for their support and cooperation in announcing the survey prior to its launch. We will also share key findings with the respondents and their programs by means of a summary report and presentations.

A variety of techniques have been incorporated into this study to maximize response rates. The surveys are user-friendly, with clear, easy-to-comprehend questions. The questionnaire is relatively short and can be completed in a short period of time. The survey topics and questions are within the areas of familiarity or expertise of the respondents. Listing options, numeric choices, and short answers will allow the respondent to answer questions easily, and will help in recall and data coding and analysis.

The introduction of the survey and focus groups will explain the project and why a response is important, will include a statement indicating that all personal information will be protected, and will provide straightforward instructions for completing the survey.

For the internet Survey Monkey, we will use a number of techniques⁷ to increase response rates including:

- Subject lines on contact emails will clearly indicate the purpose of the survey and will explicitly avoid SPAM language in the subject line or body of the message (I.e. title all caps)
- Information on how the respondents name was obtained, the survey intention, the use of the data, guarantees of anonymity
- Personalized messages
- Use of a ".gov" reply email address
- Indication of how long the survey takes to complete and the cutoff date.
- Use of only clean and updated email lists
- Scheduled regular reminders and follow-ups.

Telephone or in-person surveys will only be used if the respondents are not able to participate in

⁷ See Dillman, D. A. (2000). Mail and Internet surveys: The total design method (2nd ed.). New York: Wiley. Division of Instructional Innovation and Assessment, The University of Texas at Austin. "Guidelines for Maximizing Response Rates." Instructional Assessment Resources. 2007.
<http://www.utexas.edu/academic/diia/assessment/iar/teaching/gather/method/surveyResponse.php>

the online Survey Monkey. They will be administered and recorded by skilled social scientists. Call appointments will be scheduled in advance and based on the time most convenient for the respondents. These methods have proven to be an effective approach in increasing response rates for telephone surveys.⁸

4. Describe any tests of procedures or methods to be undertaken. Tests are encouraged as effective means to refine collections, but if ten or more test respondents are involved OMB must give prior approval.

A pretest with 5 people who are data users and in monitoring teams will be conducted prior to the survey to allow for the refinement and correction of any methodological issues that are identified.

5. Provide the name and telephone number of individuals consulted on the statistical aspects of the design, and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Individuals consulted on the statistical aspects of the design, survey implementation and data analysis are listed below:

Supin Wongbusarakum, Justin Hospital, Tye Kindinger, and Kirsten Leong contributed to the design of the data collection, including statistical aspects. Supin Wongbusarakum and Justin Hospital will supervise data collection. Data analysis will be completed by Supin Wongbusarakum, Tye Kindinger, and Kirsten Leong.

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⁸ This approaches have been shown to have a positive impact on response rates, see Cantor, D. and Cunningham, P. (2002) "Methods for Obtaining High Response Rates in Telephone Surveys" in "Studies of Welfare Populations: Data Collection and Research Issues Panel on Data and Methods for Measuring the Effects of Changes in Social Welfare Programs", Eds. Ver Ploeg, M, Moffitt, R.A. and Citro, C.F. , Committee on National Statistics Division of Behavioral and Social Sciences and Education National Research Council.

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