

SUPPORTING STATEMENT

Social Values of Ecosystem Services (SolVES) in Marine Protected Areas for Management Decision-Making

OMB Control No. 0648-xxxx

A. JUSTIFICATION

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

This request is for a new information collection to benefit National Estuarine Research Reserve (NERR) and National Marine Sanctuary (NMS) managers in the Mission-Aransas NERR and the Olympic Coast NMS. The Mission-Aransas NERR was established in May of 2006 by the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. The 185,708 acre Reserve is located on the Mission-Aransas Estuary in southeast Texas coast between Corpus Christi Bay and San Antonio Bay. The Olympic Coast NMS was designated in 1994 by NOAA's Office of National Marine Sanctuaries. The 2,118,400 acre Sanctuary is located 25-50 miles seaward off of Washington State's Olympic Peninsula. The Sanctuary's landward side extends between Cape Flattery, WA in the north and the mouth of the Copalis River to the south. The National Ocean Service (NOS) proposes to collect socio-economic data on residents and stakeholder groups using the Mission-Aransas NERR and the Olympic Coast NMS site for recreational, economic, cultural, and scientific reasons.

Up-to-date socio-economic data is needed to support the individual NERR and NMS sites' conservation and management goals, to strengthen and improve resource management decision-making, to increase capacity, and to extend education and outreach efforts.

The NERR is a federal-state partnership program formed for the stewardship, education and research of unique estuarine sites. This data collection supports the vision of the NERR system insofar as it works to establish healthy estuaries and coastal watersheds where human and ecological communities thrive. The NERR program has identified five priority research areas, one of which is a focus on the social science and economic processes taking place within the NERR system in general and each NERR site in particular. The Mission-Aransas NERR constitutes one of the 28 sites in the NERR system and this research will inform managers there as to the human use patterns of the ecosystem goods and services available within the NERR site. This information will in turn help managers at the Mission-Aransas NERR determine whether and to what extent these activities impact the coastal environment.

Similarly, this data collection supports the purpose of the NMS program, which is to "enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural and archeological resources of the National

Marine Sanctuary System (NMSA, Section 301(b)(4)).” Moreover, sociological information about sanctuary resources is critical to sanctuary management. Social science data are used to examine the human dimension of marine resource management; to understand consumptive and non-consumptive human use patterns; to assess economic impacts of proposed activities; and to understand the attitudes, perception and beliefs of resource users. Each of these factors is not only directly relevant to the [National Marine Sanctuaries Act](#) (NMSA) and laws such as the [National Environmental Policy Act](#) (NEPA) (42 U.S.C. § 4321 *et seq.*), the [Coastal Zone Management Act](#) (CZMA) (16 U.S.C. § 1451 *et seq.*) and the [Marine Protection, Research and Sanctuaries Act](#) (MPRSA) (33 U.S.C. § 1442 *et seq.*) but is also critical to devising policies and management strategies resulting in ecological, social, and economic resilience.

Very little sociological or human use information exists for Olympic Coast NMS or the Mission-Aransas NERR. Thus, at this time neither site is able to analyze the effects of the protected areas and the management thereof as comprehensively as needed, nor are they able to pursue an ecosystem based management (EBM) framework. EBM, to be effective, requires integrating both natural and social science data into ecosystem management decisions. With improved information about the socio-cultural values of resources in the protected areas, an improved understanding of what human uses are occurring in the sites, and an improved understanding of what human uses might be proposed in the sites, the Olympic Coast NMS and the Mission-Aransas NERR will be better equipped to make sound resource management decisions. In fact, ecosystem-based management frameworks require management agencies to consider humans and human uses as part of ecosystems. To develop an effective ecosystem-based management framework, the site managers needs to develop a better understanding of the sociological dynamics and human uses in the protected areas.

While a diversity of activities occurs within each NERR and NMS site throughout their respective systems, robust data characterizing stakeholder activities, attitudes, knowledge, and preferences are limited. This limitation extends to the spatial aspect of the aforementioned stakeholder characterizations. Resource managers throughout the NERR and NMS systems would like to consider options for more effective management of the stakeholder groups that use NERR and NMS sites, in order to benefit their respective ecosystems as well as the local communities surrounding them. However, the dearth of social and economic data is a significant hurdle for the evaluation of regulatory proposals and other resource management decisions being made in their systems. Therefore, periodic data collections are required to assemble current cultural, economic and social information. A number of NERR and NMS sites have documented the need to obtain necessary information on both consumptive and non-consumptive stakeholder use patterns to inform management activities. Without these basic data on stakeholder activities, attitudes, knowledge, and preferences it is not possible to develop required management plans.

Consequently, this data collection is needed by NERR and NMS resource managers so that they may develop strategies for the wise management and sustainable use of sensitive estuarine and marine ecosystems.

The data collection described herein has been developed in collaboration with resource managers at the NERR and NMS sites. Based on work previously conducted in the Ashepoo-Combahee-Edisto (ACE) Basin NERR during 2011-2012, the proposed collection focuses on two sites initially, one NERR and one NMS site, specifically the Mission-Aransas NERR and the Olympic Coast NMS.

2. 1 Explain how, by whom, how frequently, and for what purpose the information will be used. 1 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.

General Overview

This data collection request involves the gathering of value, use, and location information specific to ecosystem services as well as general socioeconomic information from those using NERR and NMS sites. This submission is comprised of two sets of questions. The first is a core set of questions that will be used with all iterations of the survey. The second set contains modules of management-related questions that managers can select from to provide them additional needed information. The core set of questions is necessary for the social values assessment and includes the use of ecosystem services, the types of ecosystem services desired and the amount of value placed on those ecosystem services by respondents. Respondents will be asked to identify specific geographic locations of ecosystem services that the respondents self-report as valuable. It also includes demographic questions including sex, ethnicity/race, birth year, location of and length of time at their residence, employment status, and income to provide us an understanding of the activities and values of different groups. The core survey module will be included with each implementation of the survey. Management modules will allow individual sites an ability to tailor the survey to better focus on their individual site's management issues. These include questions about activities and changes in environmental condition. In the second year, two additional sites (one NERR and one NMS) will be selected and a non-substantive change request will be submitted for approval. .

Who will use this information?

In general, the purpose of this research project is to inform natural resource managers in the Mission-Aransas NERR and the Olympic Coast NMS, including the Coastal Training Coordinator, the Education Coordinator, the Stewardship Coordinator and the Research Coordinator at each NERR and NMS site being investigated as to the use and social value of the environmental resources available in each site. This one-time, voluntary survey will be administered at each selected site to collect information on:

- 1) The participation of respondents in the NERR or NMS area.
- 2) The management conditions of the NERR or NMS.
- 3) The place attachment of respondents to the NERR or NMS.

- 4) The ecosystem services respondents most value in estuarine and marine systems.
- 5) Location of ecosystem services that the respondents value.
- 6) Perceptions, knowledge and attitudes about management issues in the NERR or NMS.
- 7) Demographic characteristics of persons who use the ecosystem services available in the selected NERR and NMS sites.

Data for these purposes will be collected via the survey with methods that include Internet surveys, paper-based mail-back surveys and stakeholder intercepts. The single method or combination of methods used will depend on the best methods to reach the stakeholders that the individual NERR or NMS considers a priority for the study. It is anticipated that we will use the intercept method and residential surveys at all sites (Table 1).

Table 1 Schedule of sites for one-time data collection and delivery of survey results

Time	Year 1 2014	Year 2 2015	Clearance	Survey results to managers
Mission-Aransas NERR	X		This request for new collection.	2014-2015
Olympic Coast NMS	X		This request for new collection	2014-2015
2 nd NERR		X	Future Non-substantive change request*	2015-2016
2 nd NMS		X	Future Non-substantive change request*	2015-2016

*The NERRs locations have similar visitor numbers and thus the burden will be similar for the additional sites. If there is a change in sample, then a new submission will be necessary.

How frequently will this information be used?

Each survey will be administered at each NERR and NMS site in three one-month periods. Data and derived products will be provided to NERR and NMS resource managers before the conclusion of the project period. It is anticipated that data and derived products will be used by NERR and NMS resource managers on an as-needed basis, particularly since they have been involved in the development of the survey instrument and have identified a need for using the information in their planning processes. At the end of the 3 year project period we will have provided data to two NERR and two NMS sites.

For what purpose will the information be used?

Directly, information provided as a result of this data collection will be used by resource managers in the selected NERR and NMS sites to better understand the nature of stakeholder use patterns so as to inform management decisions. Information could be used by NERR and NMS resource managers to inform NERR and NMS management plans or programs, outreach/education activities, or policies related to the management of the NERR and NMS sites.

Summary of Survey Questions

Module-based Question Selection

Due to the unique nature of each site within the NERR and NMS systems coupled with the fact that each site may choose different stakeholders for this assessment a large variety of questions must be formulated. To make sure that the survey approximates the ecosystem services offered by each site, in addition to reflecting stakeholder uses to the greatest extent possible, questions not assigned to the core module for social values analysis are grouped by the management concern they address and are submitted for approval. From these modules, questions will be selected in coordination with NERR and NMS resource managers and informed by the management plans of each NERR and NMS chosen for study.

The bank of questions (which ultimately contains 164 question options) is based on a survey instrument developed to conduct a similar study in the ACE Basin NERR during 2011-2012 by the College of Charleston¹. The success of that study and the willingness of ACE Basin NERR managers to recommend future iterations of the assessment have led to the development of this project. The bank incorporates questions from former regional and local surveys, published articles and other information pertaining to estuarine and natural resource management^{2,3,4,5}. In addition to the site specific questions, a number of demographic questions are also included, with the purpose of allowing the researchers to sort the responses into different subgroups and analyze how demographics relate to question responses. Questions for each administration of the survey will include the core survey module in addition to those questions deemed most important and/or relevant to the NERR or NMS sites in general. The questions will also be limited in number so as to maintain a 20 minute time frame for survey implementation. Using the core survey module as a framework, questions from the question bank will be selected with the assistance of resource managers at the respective NERR or NMS which focus directly on particular management

¹ Loerzel, J., S. Lovelace and M. Dillard. (submitted). Mapping Perceptions of Social Values in the Ashepoo-Combahee-Edisto (ACE) Basin, South Carolina.

² Clement, J. M. (2006). Spatially explicit values on the Pike and San Isabel National Forests in Colorado. Doctoral dissertation. Colorado State University. ProQuest/UMI, AAT 3246268.

³ Cole, Z.D. (2012). Mapping social values of ecosystem services in Sarasota Bay, Florida: e-Delphi application, typology development, and geospatial modeling. Doctoral dissertation. University of Florida. ProQuest/UMI. AAT 3569613.

⁴ van Riper, C.J., Kyle, G.T., Sutton, S.G., Barnes, M., Sherrouse, B.C. (2012). Mapping outdoor recreationists' perceived social values for ecosystem services at Hinchinbrook Island National Park, Australia. *Applied Geography* 35, 164–173.

⁵ Loerzel, J., S. Lovelace and M. Dillard. (submitted). Mapping perceptions of social values in the Ashepoo-Combahee-Edisto (ACE) Basin, South Carolina.

concerns within the respective sites. For future iterations of the survey, a non-substantive change request will be filed with the Office of Management and Budget (OMB).

Table 2 below presents a summary of the question descriptions and narratives included in the core survey module. A more detailed description of each question to be included in the larger question bank is attached to this document.

Table 2: Summary of core question descriptions and narratives

SURVEY SECTION	DESCRIPTION	NARRATIVE	NUMBER OF QUESTIONS
1	Participation	This section asks about your general residential location, residency, visitation and participation with the [NERR/NMS site].	5
2	Management -- Condition	Below are several questions asking for your opinion of the conditions at the <site name>. Possible responses range from “Large Increase” to “Large Decrease.” You may also respond with “Unsure or Don’t know.”	8
3	Place attachment	This section asks about your connections, knowledge, and experience with the [NERR/NMS site]. Please indicate the level you agree/disagree with each of the following statements	7
4	Values	Each person values the [NERR/NMS site] resources differently. We would like to know how you value the [NERR/NMS site].	13
5	Map	In this mapping exercise, you will locate places in the natural areas of the [NERR/NMS site] (represented by the red boundary) that have special meaning to you....	N/A
6	Management – Insert 2 to 3 Optional Mgmt. Modules	These two optional sections will be used for any additional management questions to be determined by resource managers at individual NERR/NMS sites.	10a-10x 11a-11x
7	Demographics	Finally, we would like to ask just a few questions about you to help us understand your needs.	8

chosen and surveyed in year three. The information will be collected either by undergraduate and graduate students, volunteers, contractors, or the researchers themselves in close coordination with NERR and NMS site managers in accordance with the methodology set forth in Part B. For each site, the researchers will work with site managers to define the survey objectives beyond the core objectives, the data collection strategy, select relevant additional questions from question bank and tailor them to the specific location. The researchers are planning to use the following approach to select the questions for each site:

1. Identify the categories of questions, beyond the core module, that are necessary for that jurisdiction. Within each category, select which questions and answer choices are most applicable to that site (e.g. questions of commercial or cultural activities may not be applicable to certain NERR or NMS sites).
2. Prioritize the questions chosen in order to obtain the most critical information while staying under the 20 minute threshold.

As has been mentioned, general questions for the bank as well as site specific amenity information, management issues and goals, resource use types, place attachment attitudes, and demographic inquiries are included in this submission as a separate document.

As described in Question 3 below, the information will be collected by using the most efficient and effective means for the site selected. During the three years covered by this clearance we expect to use paper-based mail-back surveys and intercept approaches as well as internet based survey techniques as appropriate to individual NERR or NMS sites.

For each future survey implementation a non-substantive change request will be submitted listing the questions from the core and those selected from the management modules and briefly describe the information collection venue and sampling methodology applicable to the site. If additional changes are made this will be submitted as a revised collection.

Data collected will not be disseminated to the public in a way which could potentially reveal personally identifiable information (PII). Aggregate and summary statistics only will be publicly available for the data, which will allow the identities of survey respondents to remain confidential. The researchers will maintain the data in accordance with the highest standards of information security and will keep PII data only as long as is absolutely necessary to complete the survey.

The researchers fully acknowledge the possibility of experiencing potential bias during the data collection, for example, in case of non-response to certain questions or non-truthful answers (these scenarios are dealt with in Part B's detailed descriptions of methodology).

The risk associated with these potential biases skewing the analysis will be minimized by the fact that the researchers will be primarily using the information to analyze stakeholder resource use patterns, user attitudes toward management initiatives, and gauge stakeholder knowledge and

perceptions of the ecological condition at each site. The information collected will not be used by the researchers to conduct comprehensive evaluations of NERR or NMS programs nor will the data from this survey be used in isolation to make decisions about these programs. Any decisions to modify existing programs and to create new management initiatives will be made using information collected from a number of sources, including this survey and other tools such as formal program assessments and evaluations and site specific strategic plans.

Compliance with Information Quality Guidelines

It is anticipated that the information collected will be disseminated to the public or used to support publicly disseminated information. NOAA/NOS/NCCOS 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 met 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.

We will utilize a number of electronic or other technological techniques and other forms of information technology for this data collection. While we expect that there may be limited access to the internet near some sites of the NERR and NMS complexes, to satisfy the requirements of the Government Paperwork Elimination Act (GPEA), an online version of the survey will be made available for those respondents with Internet access available to them and would rather take the survey in the comfort of their own home. The surveys that are administered in-person (e.g., intercepts and interviews) will have the responses recorded on tablet computers.

4. Describe efforts to identify duplication.

This project was developed in close collaboration with local partners in the Mission-Aransas NERR and the Olympic Coast NMS. This project was proposed specifically to meet a gap in data related to stakeholder/human uses of ecosystem services available in the Mission-Aransas NERR and Olympic Coast NMS sites and the impacts those activities have on the overall ecological condition within the sites. To our knowledge, it does not duplicate research proposed or underway in the either NERR or NMS site.

This data collection is being coordinated with Sally Morehead-Palmer, the Mission-Aransas NERR Reserve Manager, Ed Busky, the Mission-Aransas Stewardship Coordinator, and others at the Mission-Aransas NERR site. We were informed that the Mission-Aransas NERR is not presently conducting surveys of stakeholders in the Reserve. However, the resource managers

expressed a profound interest in moving forward with the project. The above mentioned resource managers have reviewed our survey instrument, as well as the sampling and statistical design.

During project development we contacted Marie Bundy, the Chief Research Coordinator at NOAA's Estuarine Reserve Division (ERD) and Steve Gittings, the Science Program Manager for NOAA's Office of National Marine Sanctuaries (ONMS). Both expressed an interest as well as the need for this type of stakeholder research in both the NERR and NMS programs.

During development of this project, we also contacted Robert Leeworthy, Chief Economist at the ONMS to learn if he or others in his office were conducting or planning any data collections related to stakeholders in other NERR or NMS sites. He informed us that he was unaware of any similar survey collections occurring at the Olympic Coast NMS site. He pointed out that this type of information gathering will be very beneficial when the Olympic Coast NMS site begins developing their Next Generation Condition Report.

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.

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

If the proposed information were not collected (or collected less frequently), then NOAA's Office of National Marine Sanctuaries (ONMS) and National Estuarine Research Reserve System (NERRS) would not have available important social data to satisfy the legal requirements put forth by the National Environmental Policy Act (NEPA), the National Marine Sanctuaries Act (NMSA), the Coastal Zone Management Act (CZMA), and Executive Order 12898 of 1994. The latter three mandates require federal agencies to establish conservation and management measures, which take into account the importance of marine and estuarine resources to local communities in order to provide sustained community participation and to minimize, to the extent possible, adverse economic impacts on such communities. Furthermore, all of these requirements mandate that NERR and NMS sites establish conservation and management plans and measures using the best available information.

The absence of up-to-date socio-economic information would limit the site's ability to estimate the social impacts of management proposals and examine the performance of existing regulations. Hence, the merits of management proposals would continue to be debated without the inclusion of social data. In addition, the availability of current information would minimize the likelihood of unforeseen impacts of existing regulations and court challenges on the grounds of deficient analysis. Lastly, the collection of detailed stakeholder data will allow NERR and NMS site managers to make timely and better-informed decisions by having the best information available.

Finally, if this data collection is not carried out, gaps in data relative to visitor attitudes, knowledge, perceptions, and resource use patterns in the NERR and NMS sites will persist and resource managers in the sites will not have the information to understand the nature of the resource users at the NERR and NMS sites.

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

N/A

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 Federal Register Notice was published on September 23, 2013 (78 FR 58287) to solicit public comments. No comments were received.

This project was developed in close collaboration with local partners in the Mission-Aransas NERR and the ONMS. The principal investigators developed this data collection in consultation with staff from the Mission-Aransas NERR ONMS. Additionally, principal investigators made substantial efforts to consult with local experts on user activities in the Mission-Aransas NERR as well experts on survey and social research, including research staff with NOAA's Hollings Marine Laboratory Human Dimensions Research Program, the College of Charleston, and others. Below are the names of individuals who provided comments on some aspect of this data collection, including the survey and/or sampling designs:

Kristopher M. Huffman, M.Sc.
Statistician
American College of Surgeons
Chicago, IL.

Sally Morehead-Palmer, M.Sc.
Reserve Manager
Mission-Aransas NERR
Port Aransas, TX.

Ed Busky, Ph.D.
Research Coordinator
Mission-Aransas NERR
Port Aransas, TX.

Kiersten Madden, Ph.D.
Stewardship Coordinator
Mission-Aransas NERR
Port Aransas, TX.

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

No payments or gifts will be given to respondents.

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

Foremost, it is important to note that no personally identifiable information (PII) will be collected in the course of this project. Respondents will be informed that data will only be reported in aggregate at the conclusion of the study. Nevertheless, as stated on the survey instruments, respondents will be advised that any information provided will be considered private and will be treated as confidential. NOAA National Ocean Service, National Centers for Coastal Ocean Science 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. The respondents will be notified that any information they provide will be accessible only by those in need of such information and will be stored in a password protected database. Only group averages or group totals will be presented in any reports, publications, or oral presentations of the study's results.

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.

No questions of a sensitive nature will be asked.

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

a. Estimation of Respondent Burden

We estimate that the number of respondents will be 1,415 annually (since we expect similar numbers from the next two sites chosen, these are our average annual estimates) **and the time per response will be about 20 minutes. Hence, we are requesting 472 burden hours.** The 20 minute per response burden includes the time for reading the instructions, reviewing the questions, and completing the survey instrument. This estimate is based on the type of questions asked, length of the survey instrument, and the researcher's experience conducting similar surveys.

b. Labor Cost of Respondent Burden

We estimate that the total labor cost of respondent burden to be approximately \$5,469. This figure was derived from the per capita income reported for each county (in 2011 dollars). The per capita income figures were then averaged for all NERR and NMS counties, respectively, and

divided by 52, which represents the number of weeks in an average year. That result was divided again by 40, representing the average hours per work week. The average hourly wage in the five counties adjacent to the Mission-Aransas NERR is \$10.93; the average hourly wage in the three counties adjacent to the Olympic Coast NMS is \$12.24. The hourly wage averages were multiplied by the burden hours for the residential and intercept survey collection methods – 256 and 216 respectively – which resulted in **a total labor cost of \$,2966 and \$2,503 for the residential and intercept survey collection methods, respectively.**

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).

No additional cost burden will be incurred by respondents beyond response time.

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

The annual costs of the project to the Federal government are labor cost, approximately \$43,500 and postage of \$6,077 for each fiscal year (FY2013 and FY2014). **Total annual costs would be \$49,577.**

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

This is a new collection.

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

Data will be collected and analyzed by the research team. Researchers will use the SolVES GIS modeling, descriptive statistics, cross tabulations, chi square tests and factor analysis, among other statistical techniques, to analyze the data. Findings will be presented in a variety of formats, including tables, graphs, and maps. Upon completion of the project, the research team will produce a NOAA Technical Memorandum report of findings that will be made available to our collaborating NERR and NMS agencies and the public in PDF format. Additionally, the NERR and NMS will be encouraged to develop non-technical briefing materials that can be used by managers for outreach to their own constituents and focal audiences. Project principal investigators will provide at least one ‘end-of-project’ presentation to interested NERR and NMS resource managers. Finally, research findings may be presented at professional conferences and will be published in peer reviewed social science journals.

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.

N/A.

18. Explain each exception to the certification statement.

N/A.