

**SUPPORTING STATEMENT
ECONOMIC IMPACTS OF CORAL REEF DIVING AND SNORKELING IN HAWAII
OMB CONTROL NO. 0648-XXXX**

A. JUSTIFICATION

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

Understanding the economic impacts of reef diving and snorkeling has been a top priority for the coral reef managers of the NOAA Coral Reef Conservation Program for several years. In addition, an improved understanding of divers' and snorkelers' economic impacts and expenditure patterns in Hawaii has utility for local businesses and state and local governments for planning, research, and operational purposes. While a number of studies have examined the ecological impacts of tourism, including diving and snorkeling, on coral reefs in Hawaii and elsewhere, the economic impacts generated via consumer spending receive comparably limited attention. This project will provide an estimate of the economic impacts derived specifically from diving and snorkeling on Hawaii's reefs. The project supports the purpose, goals, and objectives of the [Coral Reef Conservation Act](#) (2000), and results of the survey can be used to inform coastal resource management planning, to help establish a baseline for outreach and education, and to provide local communities with important economic information related to recreation on Hawaii's coral reefs. For example, estimates of the scale of economic impacts generated from Hawaii's coral reefs due to diving and snorkeling via other potentially competing uses can be used by state and federal managers to determine how best to manage access to the resource among different user groups (e.g. snorkelers, divers, fisherman, boaters) or to choose between alternative management measures that provide varying levels of benefits to different user groups. Further, questions on the survey related to preferences over coral reef attributes will be used by the Pacific Islands Fisheries Science Center in their Atlantis ecosystem model for coral reefs in the Hawaiian Islands to predict how changes in the biological attributes of the reef influence the number of snorkeling and diving trips and therefore, economic impacts.

The survey will collect coral reef related expenditure information directly from the coral reef user community with a specific focus on scuba divers and snorkelers. Economic impacts will be calculated utilizing the expenditure data collected through the surveys. Economic impact models developed by NMFS economists (and compatible with IMPLAN software) will be used to estimate the impacts of diving and snorkeling on coral reefs on the Hawaiian economy.

This survey is building on a previously implemented survey of divers and snorkelers in South Florida, which was fielded in 2016-2017 under OMB Control No. 0648-0746. Data from that survey is currently being analyzed and a project report is in preparation.

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

The information and economic impacts generated from the survey data will be useful for Federal, state, and local management entities interested in the economic impacts of the use of Hawaii's coral reefs. These entities may use the information to examine the consequences of projects, policies, or regulations that may affect reefs – favorably or adversely. In addition, the estimates will be able to feed into other systems and/or coupled models such as those being developed by scientists at the Joint Institute for Marine and Atmospheric Research at the University of Hawaii. The use of economic data in these coupled models will improve their utility for forecasting, planning and management purposes. The economic estimates generated from the survey will be published and also available to anyone requesting the information. The survey will collect information only on expenditures associated with the respondent's last reef dive or snorkel trip and effort within the past 12 months, and limited demographic information.

In addition, we will prepare at least one paper for peer-reviewed publication that describes the outcomes of this survey. The primary research question to be answered in the paper will be estimates of average trip expenditures for divers and snorkelers and economic impacts stemming from those expenditures to the state of Hawaii, and by island/county. A second paper related to the perceptions and preferences over different coral reef attributes would also be feasible, and/or a paper which integrates these into the Atlantis model for Hawaii's coral reef ecosystems. 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](#).

Q1 – Q2: screening question to determine if the respondent is a Hawaii resident and if they are eligible to complete the survey - i.e. have they taken a dive or snorkel trip to a Hawaii reef during the last 12 months.

Q3: establish estimates of diving and snorkeling effort by island.

Q4 – Q6: examine motivations for snorkeling and diving and how reef conditions may change effort.

Q7: Questions that will determine which expenditure categories for durable goods the respondent will see on the following screen. If respondent checks box in this question then it will populate in the table in the following question asking about specific expenditures.

Q8: Questions that ask about actual expenditures on durable goods. Only those categories ticked in the preceding question will show up in the table for this question.

Q9 – Q12: these questions will determine which version of the survey the respondent will see related to expenditure categories. There is not a lot of difference but, for example, if the respondent's last trip was from shore, then the following screen would not include a category for expense related to cost of the boat rental or cost of the charter trip. Similarly, if the most recent trip was not part of a longer vacation, the respondent will not see expense categories for airfare.

Q13: Questions that ask about expense categories for the respondent's most recent trip. Only the categories ticked in this question will show up in the following table for actual expenditures.

Q14: Questions that ask about actual expenditures on most recent trip. Only those categories

ticked in the preceding question will show up in the table for this question.

Q15 – Q17: very minimal demographic questions.

Q18: track the source of outreach

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.

The data will be collected via a voluntary survey that respondents will take online. Respondents will be able to use a computer, tablet, or phone to complete the survey, and a QR code will allow quick access to the survey via cell phones. The survey will be programmed to include prompts and skip patterns that are not viable using a mail survey. This will allow questions to be targeted specifically to the types of expenses a respondent incurred, and will prevent asking questions that are irrelevant for the respondent. The instrument will closely follow the instrument that was approved for the in the South Florida Diving and Snorkeling Expenditure Survey. (See Part B for description of the methodology).

4. Describe efforts to identify duplication.

Working with collaborators at the Pacific Islands Fisheries Science Center, collaborators at the Joint Institute for Marine and Atmospheric Research at the University of Hawaii, and several local dive shops in Hawaii, we ascertained that the information this survey will collect does not exist in an updated form, and there was no identification of ongoing efforts to produce the information. A literature review found several citations in educational and outreach materials referencing the economic impacts of Hawaii's coral reefs; however, these citations were all based on work published in 2004, and are not specific to the economic impacts associated only with diving and snorkeling. Additionally, a number of economic valuation studies have been conducted for one or more coral reefs in Hawaii, the most recent being 2013; however, these studies do not collect expenditure information and therefore cannot be used to estimate the direct and indirect economic impacts generated from diving and snorkeling.

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

Not Applicable.

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

Information produced from a previous economic impact study (2004) has been useful for conservation budgeting and planning in the state of Hawaii and have benefitted commercial entities dependent on coral reef resources. However, continuing to use what is becoming outdated data from 2004 can result in biased and/or inaccurate economic impact estimates and may impact budget allocations, environmental mitigation and research support for coral reef management.

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

In addition to a random sample of Hawaiian residents, we will provide flyers to local dive and snorkel trip operators as well as local marine parks, including Hanama Bay, to distribute to their patrons so that they can participate in the survey. Flyers will contain a distinct QR code and URL so that data collected from the opportunistic sample can be analyzed separately from the data collected via the systematic random sample. While this sampling strategy is opportunistic, and therefore does not maintain statistical properties of a random sample, there is currently no existing sample frame of non-residents who dive or snorkel in Hawaii. The method of surveying them that we propose here has been used in past projects (Survey of divers and snorkelers in South Florida, fielded in 2016-2017 under OMB Control No. 0648-0746) and yielded a large

dataset of over 2000 responses, thus we propose to replicate that method here as a supplement to surveying Hawaii residents. The survey will take approximately 10 minutes to complete.

8. Provide a copy of 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 record keeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

A Federal Register Notice “Economic Impacts of Diving and Snorkeling Expenditures in Hawaii” was published on Friday December 8, 2017 (82 FR 235), soliciting public comment. No comments were received.

The survey instrument used in this collection is based on a previous instrument used in OMB Control No. 0648-0746. After reviewing that instrument and talking with staff who implemented that project, staff from the Pacific Islands Fishery Science Center agreed a similar effort would yield useful information for marine management in Hawaii. In addition, the instrument and details of the project were discussed with staff from the Joint Institute for Marine and Atmospheric Research at the University of Hawaii, who also agreed that implementing a similar effort in Hawaii would be useful. Both the PIFSC and UH agreed that data of this type was not currently available, but would be useful to integrate into existing ecosystem models as well as useful to local tourism entities that offer diving and snorkeling in Hawaii. Staff at PIFSC and UH helped revise the instrument to make it appropriate for Hawaii and ensure that the data collected would be relevant to current management issues.

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

No payments or gifts are made.

10. Describe any assurance of confidentiality provided to respondents and the basis for

assurance in statute, regulation, or agency policy.

As stated on the survey instrument, all data collected is anonymous and will not be released for public use except in aggregate statistical form. Further, the survey is electronic and is distributed through opportunistic sampling methods, which do not require the respondent to fill out their name or any other identifying information.

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.

There are no questions of a sensitive nature.

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

The proposed collection will require approximately 692 burden hours (4,150 estimated respondents at 10 minutes per response).

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 are no start-up, capital, or maintenance costs associated with this collection. No new or specialized equipment is needed to respond to this collection. There is no recordkeeping/reporting cost, as the survey will be conducted online.

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

The duration of this survey will be for approximately 6 months; thus, the annualized cost is the one-time cost of the survey. The total estimated Cost to Government is \$15,500. Of that amount \$6,500 will be used to program and host the survey and maintain survey responses, \$6,000 will be used to print and mail postcards containing the survey website to 10,000 Hawaiian residents, and \$3,000 will be used to print flyers for dive and snorkel trip operators and local marine parks to distribute to patrons. All analysis and reporting will be done as part of the regular duties of NMFS and NOAA economists.

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

This is a new submission.

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

All results will be entered in a database using standard quality assurance/quality control procedures in survey research. Economists from NOAA Fisheries will analyze the data using standard software (e.g. SAS and IMPLAN) and standard statistical procedures that are

appropriate for survey data. Results from this collection may be used in scientific, management, technical or general informational publications, and would follow prescribed statistical tabulations and summary table formats. Data will be available to the general public on request in summary form only.

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.

Not Applicable.

18. Explain each exception to the certification statement.

Not Applicable.