

**SUPPORTING STATEMENT  
MARINE RECREATIONAL INFORMATION PROGRAM, HAWAII MAIL-IN  
SURVEY FOR SHORE FISHING EFFORT  
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.**

During 2008-2012, there were 308,490 households on Oahu, Hawaii according to the US Census (<http://quickfacts.census.gov/qfd/states/15/15003.html>). Thus, approximately 310,000 Oahu households are the potential respondent universe. Three thousand Oahu households (1% of the respondent universe) will be randomly selected for the mail survey. Based on previous mail surveys of Hawaii boat owners and bottom fishing anglers, we anticipate a response rate of 40%, which would result in approximately 1,200 households responding to the survey.

Population of households	310,000
Probability Sample	3,000
Expected response rate	40%
Final completed sample	1,200

**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.**

The 3,000 Oahu households to be surveyed will be randomly selected from the Oahu population of households. The household addresses will be purchased from a marketing firm (e.g., Andrew Associates). The questionnaires will be mailed to these 3,000 households with follow-up mailings, modified from the Tailored Design Method (Dillman, 2010). Data will be gathered for fishing gear hours from Oahu anglers covering a two-month period. The percentages of fishing gear hours from night fishing and from private/restricted area will be estimated and the percentage estimates will be used to adjust the gear hour estimates from a concomitant onsite roving survey. The onsite roving survey will not be able to cover the fishing activities at night and in private/restricted area. The estimates of fishing gear hours from mail survey and onsite roving survey combining with catch rate estimate (based on roving survey) will be used to estimate total catch.

The decision to select 3,000 households for the survey was mainly based on available funds for the project. Measures will be taken to maximize the response rate (see the answer to Question 3 below). We expect that the survey will be able to provide accurate estimates if it is executed

properly. The results from this pilot survey will help to calculate the sample size, given a specified precision, for the future actual survey to be implemented.

**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.**

We will use a multiple contact procedure as discussed in the guidelines for mail survey implementation presented by Dillman (2000) to maximize response rates. A pre-letter will be used to introduce the survey, explain the importance of survey even if the household did not fish, and express appreciation for their responses. The first mailing of the questionnaire will come with a cover letter emphasizing why the study is important and how the household was selected. This mailing will also include a prepaid return envelope. A week later, post-card reminders will be used to thank those who have completed survey and to urge those to respond who haven't yet completed the survey. Two to four weeks after the first mailing of the questionnaire, a second mailing will be used to send another questionnaire with a cover letter (with a slightly different content from the one in the first mailing) and a prepaid return envelope.

The response rate is expected to be 40% (< 75%), but we will try to acquire representative ("reliable") data/samples from the survey. For instance, we will emphasize in the cover letters that information from non-fishing houses is also needed and important so that the responses will not be biased toward fishing households or non-fishing households. The most important estimates (i.e. percentage of fishing gear hours from night fishing or from private/restricted area) will be determined by the responses from fishing households, and will not suffer from the potential bias toward fishing households if fishing households are more responsive to the survey than the non-fishing households.

The fishing activity category question included in the questionnaire is also asked in the current Hawaii Marine Recreational Fishing Survey (HMRFS) and other recent fishing surveys in Hawaii. It may appear to be a sensitive question. In HMRFS onsite surveys since 2003, there have been virtually no refusals for this question. A recent fishing survey (mail survey) on small boat owners in Hawaii had an overall response rate of 42% and the fishermen were asked to classify themselves to similar categories.

During the data analyses, we can compare the answers from the initial respondents and the late respondents. The late respondents, who do not respond to the first mailing and the post-card reminder, may have some similarities with the non-respondents. The differences between the initial respondents and late respondents will be explored.

**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.**

This pilot study is to test new methodology to collect recreational effort and catch data. The methods are proposed to improve the current methods used to estimate recreational fish catch. The method used, a mail survey with multiple contacts, have been successfully used in pilot

studies for MRIP on the east coast.

During the development stage of the survey instrument, we received some input from a working group including scientists/managers from universities, NMFS, the Hawaii Division of Aquatic Resources, and the Western Pacific Regional Fishery Management Council.

**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.**

Three MRIP statistical consultants (below) were consulted for the survey design:

Dr. Virginia Lesser, Oregon State University, (541) 737-3584

Dr. Jay Breidt, Colorado State University, (970) 491-5269

Dr. Jean Opsomer, Colorado State University, (970) 491-3841

The following persons (below) will help conduct the mail survey:

Dr. Hongguang Ma, Pacific Islands Fisheries Science Center (NOAA Fisheries), (808) 725-5663.

Tom Ogawa, Hawaii Division of Aquatic Resources, (808) 587-0093

Dr. Chris Hawkins, Western Pacific Fishery Management Council, (808) 522-8171

Dave Itano, Pacific Islands Regional Office (NOAA Fisheries), (808) 725-5177

**References**

Dillman, D.A. 2000. *Mail and internet surveys: The tailored design method*. New York: Wiley-Interscience.

National Research Council (2006). *Review of Recreational Fisheries Survey Methods*. Washington, D.C.: National Academies Press.