SUPPORTING STATEMENT
MARINE RECREATIONAL INFORMATION PROGRAM
OMB CONTROL NO. 0648-0052

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.

The sample universe is all saltwater anglers in the states of North Carolina, South Carolina, Georgia and Florida. The survey utilizes a dual-frame approach to sample recreational, saltwater anglers. The sample will be selected from state databases of licensed, saltwater anglers and address frames (address-based sample or ABS) derived from the USPS Delivery Sequence File. ABS sampling will utilize a two-phase approach to first screen households to identify saltwater anglers and then collect information about recent saltwater fishing trips. The license frame includes all anglers who have a saltwater fishing license in the study area during the reference wave, and the 1st-phase ABS frame includes all residential addresses within the study area. The 2nd-phase ABS sample includes all saltwater anglers identified in the 1st-phase screening.

We select approximately 4,288 licensed anglers and 24,000 households each reference wave.

	USPS DSF	License Frame
Frame Size	19,259,158[1]	1,700,000[2]
Sample Size	24,000	4,288
Complete Screeners	9,600 (40%)[3]	
Eligible Anglers	3,096[4]	
Complete Angler Interviews	**1,704 (55%)[5]**	**2,040 (47.6%)[6]**

1. Estimated number of occupied households in the study area as of 7/1/2009.
2. Approximate number of licensed saltwater anglers in the study area as of 1/1/2010
3. Response rate based upon previous mail surveys of recreational saltwater anglers.
4. Assumes 21.5% if responding households have eligible anglers and 1.5 anglers per eligible household.
5. Previous studies have achieved 2nd-phase ABS response rates of 55-75%.
6. Weighted average of expected mail (55%) and telephone (40%) response rates.

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 survey collects recreational fishing effort data, including the number of shore and private boat fishing trips, for independent, two-month reference waves.

The survey utilizes a dual-frame design that samples anglers from state databases of licensed saltwater anglers (license frame) and residential address frames (address-based samples or ABS). The union of the license and ABS frames consists of three domains: Households in the address frame but not in the license frame, households in the license frame but not the address frame, and households in both frames. If the address frame is complete, then the license frame is a subset of the address frame, with the exception of licensed anglers who reside outside of the study area (i.e. nonresident anglers).

Address Frame

The ABS frame is derived from the United States Postal Service, Delivery Sequence File (DSF) and includes all residential addresses within the study area. Sampling is stratified by wave, state and sub-state region, which is defined by geographic proximity to the coast.

Sampling from the ABS frame utilizes a three-phase design. In the first phase, random samples of residential addresses are mailed a screening questionnaire designed to identify likely saltwater anglers and collect telephone contact information. In the second phase, all adults who identify themselves as saltwater anglers in the first phase are contacted by either telephone or mail and asked to provide details about recreational saltwater fishing activity that occurred during the reference wave. Second phase sample is randomly distributed among telephone and mail treatments at the household level. In the third phase, all anglers who report an encounter with a sea turtle are contacted by telephone and asked to provide details about the nature of the encounter.

License Frame

Sampling from the license frame is stratified by wave, state (state of licensure) and sub-state region of residence (coastal and non-coastal counties). License frame sampling includes an additional stratum for licensed anglers who reside outside the state of licensure (nonresident anglers).

The license frame is derived from state databases of all anglers who were licensed to participate in saltwater fishing in the study states between the beginning of the wave and the time the sample frame is created. Sampling from the license frame is conducted in two phases. In the first phase, anglers are contacted and asked to provide details about fishing activity that occurred during the reference wave. As with the ABS sample, license sample is randomly distributed among telephone and mail treatments. In the second phase, all anglers who report an encounter with a sea turtle are contacted by telephone and asked to provide details about the nature of the encounter.

Data are collected through either Computer Assisted Telephone Interviewing (CATI) or completed and returned mail questionnaires. Regardless of data collection mode, data collection is retrospective for the most recent two-month reference wave.

Estimation

As mentioned above, independent samples will be selected from the two frames to make direct estimates of totals of the numbers of participants and fishing effort from each of the three domains. Estimates of totals from the address frame will be produced for S_1 and S_{12}; while from the license frame estimates will be produced for S_2 and S_{12}. The two totals for S_{12} will be averaged to give a more precise overall estimate for S_{12}. The three estimates will be summed to estimate the total population.

The first step in estimation is to develop base weights that are the inverses of the probabilities of selection for the units by frame. These standard weights will then be adjusted by the inverse of the response rates within stratum, separately by frame, to account for nonresponse from within each frame. Additional nonresponse weighting adjustment cells, defined by auxiliary information included on the sample frames, will be examined in an effort to reduce potential nonresponse error. The estimates produced from these weights will overestimate totals because the units in the overlap are over-represented because they could be sampled from both frames. The final step is to adjust the weights of the units in the overlap. A simple averaging of the two overall domain estimates can be accomplished by dividing the weight of any unit in the overlap by two. More sophisticated weighting schemes will also be examined.

The sample was designed to produce bi-monthly (wave), state-level estimates of total recreational fishing effort with a percent standard error of no more than 10%. Sampling levels will also satisfy the need to detect differences in survey variables between data collection mode at the bi-monthly level.

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.

For mail treatment groups, standard mail survey protocol will be implemented (Dillman et al, 2008). An initial mailing will include an introductory letter stating the purpose of the survey, a screener questionnaire, a post-paid return envelope, and a $1.00 cash incentive. A thank you/reminder postcard will be sent to all sample units one week following the initial mailing. A final mailing, including a second questionnaire, a nonresponse conversion letter*, and a post-paid return envelope will be sent to all nonrespondents three weeks after the initial mailing.

*This is a letter which attempts to obtain a response from a person who has not yet responded.

For telephone treatments, a minimum of 8 attempts will be made to contact each sample unit. Contacts will be distributed among days and times to maximize the likelihood of completing interviews.
In addition to implementing efforts to maximize response rates, we will also administer a nonresponse follow-up study to contact nonrespondents from each frame for the first-phase ABS screener and the angler questionnaires. The follow-up study, which will include additional contact attempt using both telephone and email, will characterize the fishing activity of nonrespondents. We will also examine alternative nonresponse weighting adjustment strategies that utilize auxiliary information included on the sample frames to identify adjustment cells.

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.

No testing is planned.

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.

Statistical support was provided by the following:

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Rob Andrews, Fisheries Biologist, NOAA Fisheries Service, Office of Science and Technology, (301) 427-8105 is the point-of-contact for the Agency.