

**SUPPORTING STATEMENT
SURVEY OF CHARTER BOAT AND HEAD BOAT ANGLER INTERACTIONS WITH
SEA TURTLES
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.

The sample universe will be any recreational angler who completed a charter boat or head boat trip in North Carolina in 2013, who has been intercepted during the APAIS effort during Waves 3, 4, and 5, approximately during the months of June- October 2013. The number of anglers is estimated to be 4,000. It is expected that approximately 50% of those anglers will agree to complete the follow-up survey, approximately 2,000 individuals. Of that number, we will mail surveys to a maximum of 1,990 individuals due to the allocated budget for this survey. We expect approximately 60% to complete the follow-up mail survey when it arrives, therefore we expect to receive responses from approximately 1,194 individuals.

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 goal of the survey is to provide angler-level estimates of interactions with sea turtles over a 12 month recall period. While our initial sample universe is all recreational anglers that were intercepted through the North Carolina APAIS survey, we understand that only a subset of those anglers will agree to complete this survey and of that number only a subset will fill out and return the survey form.

NMFS has selected a sample size of 1990 units (individual recreational anglers to receive the mail survey). The 1990 individuals will be selected based on their willingness to complete the survey, and we expect approximately 60%, or 1194 individuals to complete the survey.

The 60% response rate is based upon previous MRIP pilot studies (Andrews et al. 2010, Brick et al. 2012a) that demonstrated that expected response rates for mail surveys, depending on the reliability of the addresses and other factors, ranges from 48% to 60%. We have chosen the higher response rate because the anglers that will be surveyed in this instrument will have verified their address and previously agreed to complete a follow-up survey

Additionally, because we expect sea turtle interactions to be a memorable event and because of the relatively short recall period for which we are collecting detailed data (12 months), we expect the accuracy and reliability of the information collected to be adequate for the intended uses.

As part of the mailed survey, we will be asking the number of recreational charter or head boat trips completed and the number of interactions with sea turtles during specific periods of time. This information will be used to measure avidity for weighting purposes, and sampling error will be estimated. The estimated proportion of anglers who have had interactions with sea turtles will be calculated using the appropriate ratio estimator given our sample size. Based on this information, and averaged across all responses, we will be able to estimate a rate of interaction within the specific time period and within the charter and head boat sector of recreational fishing in North Carolina.

We ask additional information on the nature and outcome of the interactions, which will help us to further quantify the impact of the fishery on sea turtles. The details of the analysis are still being finalized.

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 have given careful consideration to maximizing response rates when designing the contact letters and survey instrument. Because respondents will have agreed to participate in the follow up survey, we expect response rates to be higher for this survey than with randomly selected participants. To maximize the response rates, a letter will be sent with each survey to encourage participation and to provide contact information if the respondent has questions. If no response is received within 2-3 weeks, a second letter including a copy of the survey will be mailed out to encourage a response. If no response is received within 1-2 additional weeks, a reminder post card will be mailed as a last effort to encourage the individual to complete the survey.

Additionally, because we expect sea turtle interactions to be a memorable event and because of the relatively short recall period for which we are collecting detailed data (12 months), we expect the accuracy and reliability of the information collected to be adequate for the intended uses. We are not asking the anglers to identify the sea turtles to species, and so we expect the level of detail that we are asking them to produce reliable results.

We do not want to assume that a non-response is an indication that no interactions occurred, as it is equally possible that a person does not respond to this particular survey because they are afraid to report an interaction.

In our analysis of the data, we will assess nonresponse bias it two different ways. First, we will compare early and late responders with respect to reported fishing activity and sea turtle

interactions. This analysis will identify differences in respondents based upon the level of effort required to solicit a response. Previous studies (Brick et al., 2012) demonstrated that early and late responders are similar in terms of reported recreational fishing activity, and it is likely that sea turtle interaction reports will be similar.

The second approach will utilize information from sample frame to define weighting classes for post-survey weighting adjustments. Weighting classes will be defined such that response rates and fishing activity are similar within classes. Nonresponse bias will be measured by comparing unadjusted estimates to estimates that have been adjusted to account for differential nonresponse among weighting classes. This method of evaluating nonresponse bias has been used in previous studies (Andrews et al., 2010).

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 formal testing is planned, although informal review of the survey questions has been completed by NOAA staff and contractors to ensure the questions are understandable.

As mentioned above, in 2012 we completed a private boater survey to determine the level of sea turtle interactions that occur. While the format of that survey was slightly different and included both phone and mail interviews, the basis for the information collection process and the questions asked are very similar. Therefore, the success of that survey and the data collected provided a test of this data collection method, and provide us with confidence that this survey will yield usable and important data on sea turtle interactions rates.

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:

Dr. Elena Besedin, Abt Associates' program manager, [617.349.2770](tel:617.349.2770)

Abt Associates will mail out all survey documents, and receive/collate the responses.

Sara McNulty, NOAA Fisheries Service, Office of Protected Resources, 301-427-846 is the first point-of-contact for the Agency, and will review the survey responses.

Jennifer Lee, NOAA Fisheries Service, Southeast Regional Office, 727-824-5312, is the second point-of-contact for the Agency, and also reviews and tabulates the survey responses.

References:

Andrews, W.R., J.M. Brick, N.M. Mathiowetz, and L. Stokes (2010). Pilot Test of a Dual Frame Two-Phase Mail Survey of Anglers in North Carolina. Retrieved from http://www.countmyfish.noaa.gov/projects/downloads/Final_Report%20NC%202009%20Dual%20Frame%20Two%20Phase%20Experiment.pdf.

Brick, J.M., W.R. Andrews, and N.M. Mathiowetz (2012a). A Comparison of Recreational Fishing Effort Survey Designs. Retrieved from https://www.st.nmfs.noaa.gov/mdms/doc/08A_Comparison_of_Fishing_Effort_Surveys_Report_FINAL.pdf.