SUPPORTING STATEMENT
LARGE PELAGICS FISHING SURVEY
OMB CONTROL NO. 0648-0380

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 (i.e., 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 LPS utilizes a "complemented surveys" approach, which includes both a telephone survey of permit holders (about 25,000 potential respondents/sample frame of 25,000) to estimate fishing effort and an intercept survey of anglers and captains at fishing sites to obtain catch data and biological data. This approach was developed and tested over a period of several years to minimize response and sampling errors for the different data elements. NMFS is a leader in the field of survey sampling of marine recreational fishermen.

Refusal rates of eligible LPS respondents intercepted for dockside interviews and biological sampling are consistently less than 5%. Large pelagic telephone survey refusal rates (of those eligible respondents actually contacted) vary by state but are typically between 0% and 10%. In general, higher response rates are expected on the Large Pelagic Survey since participation is mandatory and is a condition of receiving an HMS permit to fish for specified large pelagic species.

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 LPS is used by NMFS to monitor recreational fisheries for large pelagics including tunas, billfish, sharks, dolphinfish, amberjack and wahoo. The LPS is used to collect the data needed for generating estimates of both the recreational fishing effort directed at large pelagic fishes and the recreational landings of these species. Accurate landings estimates are needed for effective quota monitoring of the recreational fishery for bluefin tuna to meet U.S. obligation under international treaty (ICCAT). The LPS is also used to collect landings data for seasonal catch estimates for billfishes, sharks, and tunas other than BFT (i.e., yellowfin, albacore), and to collect biological data on BFT and other large pelagic species.

The LPS estimates recreational BFT landings by multiplying the estimated average number of BFT landed per trip by the total number of vessel trips. Due to the migratory nature of large pelagic fishes, the LPS design considers geographic and seasonal variation in fish distribution

and the differences in effort catch characteristics of the fishing fleet. Given this variation and the data requirements for estimating the components of the generalized catch equation, the survey incorporates a multi-frame, stratified random sampling design. Specifically, the LPS consists of two complementary components: a directory frame telephone survey of tuna and/or HMS permit holders to obtain fishing trip information, and a dockside survey that collects landings information from anglers as they complete each trip and that also estimates the proportion of vessels fishing for large pelagics that are not in the telephone frame (non-permitted vessels and vessels fishing out of state).

Landings data are collected by interviewing boat captains or boat owners at the completion of a fishing trip for large pelagics and recording data on permit status of the vessel and the size, number, and species composition of the catch by all anglers on the vessel from that trip. Dockside interviews are conducted throughout the fishing season on a weekly basis, generally from June through October. The intercept sample frame consists of a random cluster of individual vessel trips at selected fishing sites. Selection of sampling sites or sites clusters (i.e., nearby sites grouped together for sampling) is based on the expected number of large pelagic fishing trips at each site/cluster, a determination based not only on the number of vessels docked at a port but also on the expected fishing pressure given the current distribution of large pelagic fish. Thus, heavily used sites/clusters are more likely to be selected for sampling.

LPS private boat fishing effort data are collected through bi-weekly telephone survey of vessel owners about trips taken during the previous two week period. The telephone survey sample frame consists of a list of boat owners compiled from tuna and/or HMS permit files. The stratification scheme includes seven geographic strata, corresponding to a state or groups of states, and bi-weekly temporal strata. This level of stratification is necessary due to the pulsed nature of the fishery as pelagic fish undertake summer feeding migrations through the mid-Atlantic and southern New England areas. Thus, estimates of sample frame size, average catch, and average fishing effort are needed for each combination of geographic and temporal strata and the estimated total annual catch is the sum of the estimates produced for each stratum.

Data collected on the telephone survey include participation status and, if verified as a participant in the fishery, the number of large pelagic fishing trips taken during the two weeks prior to the call, on a per boat basis. To calculate total trips, the number of vessels on the frame multiplies the average number of trips by respondents. An adjustment is necessary because a vessel may not be present on the permit frame, or may be intercepted in a state other than the vessel's identified homeport. This adjustment provides a better estimate the total number of vessel trips by both in and out of frame vessels, and allows the matching of information from the dockside survey with that from the telephone survey.

The total landings are estimated by multiplying the adjusted total trips for each state by the average landings recorded for that state. Variances, standard errors and coefficients of variation are estimated for each estimate of effort and catch. Control of response biases such as time-related recall error, telescoping, fish misidentification and prestige bias have resulted in the choice of the unique complemented surveys approach.

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.

As discussed in Question 1 above, due to the mandatory nature of the survey, response rates for Large Pelagics Surveys are typically high. Field interviewers are instructed on how to be non-intrusive in soliciting cooperation. Providing telephone survey respondents with the option of calling back a toll-free number at their convenience was put in place to maximize response rates. An electronic Internet reporting option has been tested in an effort to increase response rates of elements of the sample population that are difficult to reach by telephone. In addition, a non-response follow-up survey was added to the existing Large Pelagics Telephone survey to assess whether non-respondents differ from respondents in terms of fishing activity.

Intensive interviewer training and tested methodological approaches are employed to maximize response rates. Interviewers are tested for skills in fish identification, effective communication with potential respondents, and/or accurate coding of responses before they are hired for training. Training familiarizes interviewers with procedures and develops their interviewing skills through role playing exercises. Supervision and additional training of interviewers occurs during the conduct of both the telephone and intercept surveys. Field supervisors visit intercept survey interviewers periodically to observe their performance and provide additional training as needed. Contractor staff and NMFS staff to ensure consistency in survey administration monitor telephone interviewers. Other data quality assurance and quality control measures include phone validation of dockside interviews, surprise field visits by interviewer supervisors, data review meetings (local and coast-wide), and automated error-checking programs. Procedures for maintaining the integrity of the various sampling designs are clearly outlined in the statement of work and closely tracked by NMFS to ensure proper execution.

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.

More than 15 years of testing, methodological research and professional experience in survey work were used in formulating the present methodology. In addition, NMFS is currently investigating approaches for improving the Large Pelagics Survey design and estimation procedures as part of the Marine Recreational Information Program (MRIP). It is likely that pilot tests will be implemented as part of this process.

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.

Ronald Salz at (301) 427-8171 is the NMFS contact for the Large Pelagics Survey. The current contractor for the dockside (LPIS) intercept survey is QuanTech, Inc. of Rosslyn, Virginia. The

incumbent contractor for the telephone interview survey is also QuanTech. Data collections are performed under contract; NMFS staff performs analyses.