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 respondent universe for the NC ALDS includes all licensed saltwater anglers in North Carolina. Individually licensed anglers will be randomly sampled from this universe. Information about the size of the sample universe, sample sizes, and expected response rates are provided below. The expected response rate is 65-75% and the estimated increase in burden due to this revision is based on the maximum expected response rate of 75%.

Licensed Anglers	Sample Size	Expected Response Rate	Expected Respondents
500,000*	5,000	65-75 %	3,750

* Approximate number of licensed anglers as of July 2007.

Response rates for our other surveys that use directory frames or license frames have ranged from approximately 45% to over 90% depending on the state and sample period.

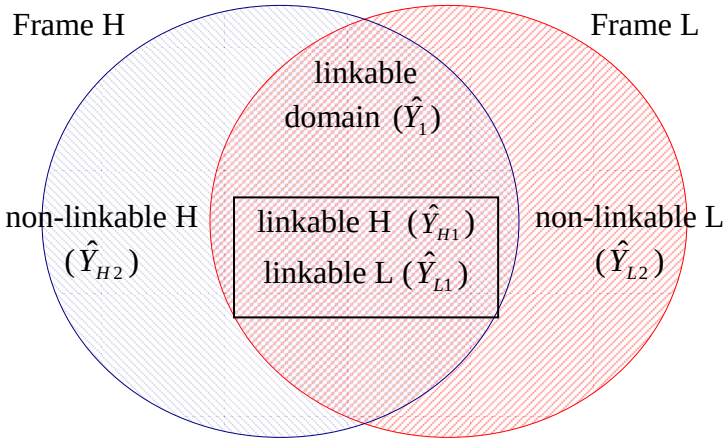
2. Describe the procedures for the collection, including: the statistical methodology for stratification and sample selection; the estimation procedure; the degree of accuracy needed for the purpose described in the justification; any unusual problems requiring specialized sampling procedures; and any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Survey procedures for the North Carolina Angler License Directory Survey (ALDS) will be identical to those previously described and approved for angler license directory-surveys currently being conducted in Washington, Oregon, California, Florida, Alabama, Mississippi, and Louisiana. Gaps in sample frames resulting from saltwater license exemptions will be accounted for by integrating the ALDS with the existing CHTS in a dual-frame approach. A brief description of estimation procedures for the dual-frame approach is included below:

ALDS / CHTS Dual-Frame Integration

Let Frame H represent the Coastal Household Telephone Survey frame and Frame L represent the Angler License Directory frame. The dual-frame methodology is dependent upon the ability to identify the overlapping and non-overlap portions of Frame H and L. Ideally, the overlapping and non-overlapping units could be easily identified through common software routines. Here, Frames H and L do not have the same listed unit: coastal household in Frame H and licensed anglers in Frame L. A commonly used approach to "normalize" sample units is to define a linkage between the frames. A household is linkable if at least one member of the household purchased a license to fish in the state in which the household is located. All other households (non-licensed households) are non-linkable households. Similarly, a licensed angler is linkable if he/she has an established coastal household in the state where the license is purchased. All other

anglers are non-linkable anglers. By the definition of linkable, three domains can be seen in the following figure.



The estimators of the three domains (a linkable domain and two non-linkable) are additive. The estimators ($\hat{Y}_{H2}$ and $\hat{Y}_{L2}$) for the non-linkable H and L respectively can be used directly in additive formula, but there are two independent estimators, $\hat{Y}_{H1}$ and $\hat{Y}_{L1}$ respectively, over the linkable H and L. In the dual frame method (Hartley, 1972), a weighted average $\hat{Y}_1$ of $\hat{Y}_{H1}$ and $\hat{Y}_{L1}$ is used as a compromised estimator.

$$\begin{aligned}\hat{Y} &= \hat{Y}_{H2} + \hat{Y}_1 + \hat{Y}_{L2} \\ &= \hat{Y}_{H2} + w\hat{Y}_{H1} + (1-w)\hat{Y}_{L1} + \hat{Y}_{L2}\end{aligned}$$

Where the weight *w* is chosen to minimize the estimated variance of $\hat{Y}$.

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.

Intensive interviewer training and tested methodological approaches are employed to maximize response rates. Interviewers are tested for skills in effective communication with potential respondents, and/or accurate coding of responses before they are hired for training. Training familiarizes interviewers with a procedures manual and develops their interviewing skills through role-playing exercises. Supervision and additional training of interviewers occurs during the conduct of all telephone surveys. Call-center supervisors monitor in-progress interviews and provide immediate feedback and additional training as needed. Refusal rates for the telephone surveys have rarely exceeded five percent during the 25 years of the Survey.

We anticipate that response rates for the North Carolina survey will be 65-75%: we have done a considerable amount of outreach about the need for better data (which was the impetus for the state's implementing a saltwater fishing license). Additional measures to increase response rates will include sending advanced notification letters to selected anglers two weeks before the call,

leaving messages on answering machines with a toll-free callback number, and increasing the number of call attempts from 5 to 7.

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 24 years of testing, methodological research and professional experience in survey work were used in formulating the present methodology.

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.

Dave Van Voorhees (301-713-2328) is Chief of the Fisheries Statistics Division, which administers the MRFS Program. The present contractor for the telephone survey is Macro International, Inc., of Burlington, Vermont.