SUPPORTING STATEMENT
SOCIAL IMPACTS OF THE IMPLEMENTATION OF CATCH SHARES PROGRAMS IN THE MID-ATLANTIC
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 respondent universe for this study consists of all active fishermen from Connecticut to North Carolina that are involved in federal Mid-Atlantic fisheries. Types of respondents expected are fishing vessel owners, operators, and crew.

The only group for which a potential sample frame exists are the permit holders (i.e., vessel owners) because that is required information on the federal fishing permit application form. However, this information provides only an approximation of the numerical universe as one person may own more than one vessel and some vessels may have multiple owners. There is no crew registry or list of crew in the northeastern U.S. that could be used as a base sample frame, making it difficult to estimate the total crew universe. Access to vessel owners and crew will be achieved through two methods. The primary method will be an intercept survey at docks, marinas and other locations where fishermen tend to congregate. Vessel owners and permit holders will also be asked for lists of employees and/or permission to contact their employees. In general, it is customary to seek approval from captains, if they are available, to speak to their crew. When appropriate, appointments will be made at a time and location of the interviewee's choosing. Any crew member approached who has already completed the survey will inform the surveyor.

Due to the lack of a precise respondent universe it is not possible to draw a strictly random sample. Given the rapid assessment research design of this study, all available fishermen found in places where fishermen congregate will be approached, at random times and locations within ports systematically selected using multivariate criteria (see below). Pollnac and Poggie (1978:365) found this an effective method for achieving a high respondent participation rate, and a sample obtained in this manner can be conceptualized as a sample from the universe of all hypothetically possible data sets collected under the same conditions (cf. Chein 1976; Thomas 1976; Freund 1960).

Values for calculating the total estimated potential respondent universe (see below) come from a combination of published data and information from personal communications. Published data for delimiting the number of active vessels include the number of permitted vessels from the NMFS Northeast Regional Office (NERO) database and associated landings value and pounds from the NMFS Northeast Fisheries Science Center (NEFSC) dealer database. Any vessel with a permit but no landings is considered inactive. Estimates of crew come from personal communication with NMFS employees and the contractor. Although the databases noted above are ample for initiating sampling, they are inadequate for capturing the respondent universe because of the lack of a formal sample frame for crew.

No. of Permitted Vessels by Owner's Residence	Estimated No. of Crew[x] per Vessel	Estimated Potential No. of Crew[xx]	No. of Respondents Targeted for Survey	Expected Response Rate	Targeted No. of Surveys
1,544	**2**	**3,088**	**300**	**90%**	**270**

[*] In general there is a distinction between captains and crew who perform other roles on a fishing vessel. However for the purposes of the above calculation captains are included in the crew count.

** Given the constraints described above for estimating the total number of crew, double counting of crew is likely therefore inflating the overall estimate.

Further, the respondent selection process is based on a previous study implemented in New England in 2009 and 2010 (see Part A Question 4), using the same research design. Using an intercept survey approach for that study and a targeted sample of 350 a 90% response rate was achieved. Similar results are expected for this study. This design has also been replicated elsewhere in the U.S. and internationally for over thirty years by the contractor, an international expert in the field of fisheries anthropology and social science surveys, e.g. Pollnac and Ruíz-Stout 1977; Pollnac and Poggie 1988, 2006, 2008; Pomeroy et al. 1997; Pollnac et al. 2001; Sievanen et al. 2005.

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.

Interviews will be conducted in Mid-Atlantic primary ports and select secondary ports. Ports will be systematically selected based on a numerical taxonomy of fishing communities developed using principal component analysis and cluster analysis. (Smith et al. In prep). This method creates clusters of communities with like characteristics, making it possible to select a smaller number of communities for the survey while retaining an appropriate mix of different types of ports (e.g., rural vs. urban, focused on particular species, having particular demographic characteristics). Hence, selection of communities to survey will be based on multivariate criteria.

As previously mentioned in Part B Question 1, the approach to this study is to conduct a rapid assessment of the study population. Individuals who meet the study criteria will be provided an opportunity to participate in the research, i.e., fishermen, vessel operators, and crew - within the ports chosen via multivariate analysis,. The sample selection will be based on a random intercept of fishermen and vessel owners (see Question 3 below on methods appropriate for hard-to-find individuals) who are (a) active in the Mid-Atlantic fisheries, (b) located within a community selected by the multivariate analysis, and (c) willing to participate.

Data collection will occur through in-person, face-to-face surveys. Interviewers will explain the purpose of the study, administer the surveys and be available to answer questions. The survey is completely anonymous; no identifying information is collected.

This is a one-time data collection intended to capture baselines and Year One impacts of catch share regimes for fisheries in the Mid-Atlantic to evaluate impacts over time. A baseline is critical for trend analysis and to evaluate impacts over time. Without baselines we cannot as effectively judge change due to management from change due to other factors.

The projected study year is 2011.

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.

Various steps have been and will continue to be taken to maximize response rates. The first step to increase response rates will be to use a pre-existing refined survey tool (described in Part B Question 1) that has already been tested and revised by researchers at the University of Rhode Island. That prior University of Rhode Island study first piloted the survey in New England and then administered the survey to over 300 respondents. Mid-way through that study the survey was reevaluated and trimmed based on researcher observations and industry input on questions that some interviewees found confusing. This reduced the average time to administer from thirty to twenty five minutes in New England.

A random intercept survey is used to maximize response rates and is a method used for studies of hard-to-find individuals (Miller et.al. 1997) such as crew, who may not have a permanent address or phone number or may live aboard the vessel on which they work (Kitner 2006). As mentioned in Part B Question 1 above, 90% of all fishermen approached participated in the New England study.

To improve response rates survey administrators will conduct all surveys in-person. Face-to-face interviews are an effective method for the collection of information from people such as illiterate individuals who may not be able to participate using other methods (Bernard 2006:256). Face-to-face interviews also make it possible to probe for more in-depth answers and clarify respondent questions (Bernard 2006:256). In addition, the individuals participating in the research have the opportunity to communicate with the researcher and provide additional information that is useful to the overall objectives of the study.

Prior to the implementation of the survey, interviewers will explain that the survey is anonymous, participation is voluntary and that the interview can be stopped at any point. It will also be explained that participants can skip questions they do not want to answer. In the New England study there was no pattern to the very few questions that were refused or skipped. In general all questions were completed.

Contact has been made with key members of NMFS, academia, and industry to better understand the study universe.

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.

A review of the study description, the study methodology, and the survey instrument has been undertaken. NMFS personnel in various regions have reviewed the survey tool and provided comments on both the survey tool and the study. An industry-funded organization provided feedback for the original New England study when it was piloted in 2009. Invaluable feedback was garnered from the New England study and from other NMFS personnel that resulted in modifications to the survey.

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.

The internal NMFS design, development, and review team including statistical analysis included Dr. Lisa L. Colburn, social scientist NEFSC (401) 782-3253; Dr. Patricia M. Clay, social scientist NEFSC (301) 713-2328 x 125; Dr. Richard B. Pollnac, contractor, University of Rhode Island (401) 874-6102.

The primary individuals expected to collect the data include Richard B. Pollnac, University of Rhode Island contractor NEFSC, co-principal investigator ; Lisa L. Colburn, social scientist, co-principal investigator, NEFSC; and 3 graduate students from the University of Rhode Island. Individuals who are expected to analyze the data include Lisa L. Colburn (401) 782-3253 NEFSC and Richard B. Pollnac (401) 874-6102.

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