

**SUPPORTING STATEMENT  
CREEL SURVEY OF PRIVATE BOAT RECREATIONAL FISHING IN THE U.S.  
VIRGIN ISLANDS  
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.**

**Sample---Catch & Fisher Attribute Data**

Respondent Universe and Sample Size Estimation:

The potential study universe for the present data collection effort includes any person in the USVI who engages in boat ramp-based, non-commercial fishing from January 1<sup>st</sup> 2016 through December 31<sup>st</sup> 2016. In the USVI, non-commercial fishers are not generally required to secure a fishing permit or license to engage in the activity.

We anticipate conducting a survey with 250 individuals over the course of the 2016 calendar year. Because fishermen are sometime difficult to locate and certain times of the year are more likely to engage in fishing, it is anticipated that it will take a year to reach our sampling goal.

**Sample Selection**

USVI poses a particularly challenging sampling context for non-commercial fishers. Firstly, in the absence of a program for registration of non-commercial fishers, there is no readily identifiable sample frame allowing anglers to be polled directly. Secondly, recreational anglers are able access recreational fishing opportunities from much of the shoreline of the USVI, public boat ramps, and marinas. This study will focus on the public boat ramps.

The sampling design is a straight forward stratified random sample. Stratification will be done by boat ramp, time of day, and category of day (weekday or weekend/holiday). The primary sampling unit (PSU) will be at the level of day/time of day/boat ramp with boat intercepted as they arrive at the ramp within the allotted time frame.

Days will be stratified by weekday (M – F) and weekend/holiday<sup>1</sup> (SAT-SUN, holidays). Day units, both weekday and weekend/holiday, will be sampled for each month during the 12 month study, January 2016 until January 2017, or one year from the project field start date.

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<sup>1</sup> In the USVI, there are 15 territorial holidays that fall on a weekday. These days will be grouped with weekend days because fishing pressure on these days is expected to be similar to a weekend day when fishers are off of work, having additional leisure time.

Previous research findings and anecdotal information from territorial resource managers indicated that, generally speaking, fishing pressure is not intense for boat ramp-based, non-commercial fishing, with the exception of certain holidays (e.g., Easter). Therefore, we propose a census of boat ramp-based, fishers once the surveyor arrives at the boat ramp. After arriving at the boat ramp, the surveyor will request to interview every fisher arriving back to the boat ramp. Per survey period, assuming interviews take approximately 15 minutes to complete, one surveyor could realistically complete 12 surveys during the survey period (3 hours). Should fishing pressure be extremely high during an assignment, meaning that a boat ramp has more than 1 boat returning in any ten minute period, the surveyor will systematically sub-sample fishers for inclusion by selecting the first fisher encountered during each ten minute period to be surveyed, instead of completing a census.

### **Sample Selection—Effort Data**

Data necessary to calculate fisher effort will be collected based on boat trailer counts. The count portion of the project will be undertaken independently of the survey portion of the project and will not include collection of data directly from people. It will be based solely on observation. The sample for counts will be selected using the same sampling protocol as for the selection of survey units.

**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.**

### **Statistical Methodology for Stratification**

The PSU is day units. Sampling will be stratified by month and day of the week type. First, the sampling time period (1 year) will be stratified by month. A sample of days will be drawn at random for each month from January 2016 until January 2017. Within each month, we will stratify type of day, meaning weekday or weekend/holiday day. Each month, 6 weekdays and 6 weekend/holiday days will be sampled using equal probability sampling without replacement. We will adapt the methods and sampling procedure once we have a better estimate of the fishing intensity at different sites, something unknown until we begin the field research.

### **Statistical Methodology for Sample Selection**

For each stratum, as described above, first, we will select the day units using simple random sampling without replacement. We will then select the boat ramp-time segment unit, weighted for both boat ramp unit and time segment, for which we will use random sampling with replacement.

### **The Estimation Procedures**

The following procedures will be used to calculate fishing effort, catch rate and total catch. These procedures are appropriate for studies employing instantaneous counts to collect data for effort and on-site interviews of incomplete fishing trips to collect data for catch.

### **Unusual Problems Requiring Specialized Sampling Procedures**

There are no unusual problems that require specialized sampling procedures.

**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 developed a short survey so that we will not unduly inconvenience fishers. To increase awareness about the study and increase comfort among respondents, we plan to engage in outreach and education activities prior to the onset of data collection. The goal of these activities is to inform the fishing public about the need for the data, explain its uses, and describe how the interviews will be conducted. We plan to engage with the fishing public directly during a research open house event within the local community where we will talk about the project, demonstrate fish inspection procedures and equipment, and answer any questions that local fishers might have about the project. Additionally, we will hire a local survey staff person who is familiar with the island, its culture and fishery, to complete the surveys. Our local collaborators indicate that fishers will be more comfortable with a local person and, thus, more willing to participate in the survey. Finally, local staff will be trained extensively on appropriate field interviewing etiquette and protocol.

After moving through the creel survey we will ask the economic add on questions. These question will take no more than 5 minutes to answer and will provide important economic information about participants in the recreational fisheries (boat-based).

In general, non-response (refused surveys vs. number of respondents approached) analyses will be undertaken to assess the impact of non-response on data quality. Interviewers will attempt to record the number of fishers on the vessel as well as provide an estimate of vessel length. If allowed, they will also ask the fishers whether they are USVI residents.

**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.**

We base our creel survey on both the MRIP survey used in the mainland U.S. and the recently completed shore-based intercept surveys completed by NOS in St. Croix. These angler surveys have been repeatedly tested in the field, and we do not expect substantive changes to the standard angler intercept method.

**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.**

Dr. Todd Gedamke will supervise the completion of the research by selecting individuals from various local sources to administer the surveys. These individuals are likely to be associated with the University of the Virgin Islands and the Department of Natural Resources and Planning. At the moment we have not identified specific people but there are those that have worked on similar projects for Dr. Gedamke and have expressed interest in doing it again. Dr. David Die from the University of Miami, RSMAS, will oversee the contract for Dr. Gedamke.