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.

Potential Respondent Universe
The potential respondent universe, approximated from WPacFIN's estimation, can be defined in two aspects: in terms of the number of unique small fishing boats fishing and the number of fishing trips on an annual basis. **Table 2** below shows the estimated number of small fishing boats in the three island areas.   The combined survey population (boats) is 845.

Table 2. Estimated Number of Small Fishing Boats

Guam	506
Saipan	300
American Samoa	39
Total	**845**

(Source: NOAA PIFSC – WPacFIN, unpublished data)

For the potential respondent universe in terms of number of fishing trips, it is estimated from the expanded number of trips derived from the creel survey using the expansion systems developed by WPacFIN (creel survey expansion methodologies detailed in Hamm and Quach[1] (1988, included as a supplementary document)). The total number of fishing trips is approximated at 11,300 in Guam, 9,200 in Saipan, and 950 in American Samoa. Table 3 below shows the actual averages of 2006 to 2008.

Table 3. Estimated Total Number of Trips Derived from Creel Survey (2006-2008)

	2006-2008 Average
Guam	11,304
Saipan	9,201
American Samoa	950
Total	**21,455**

(Source: NOAA PIFSC – WPacFIN, unpublished data)

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[1] Hamm, David and Michael Quach. 1988. *Fishery Statistics of the Western Pacific, Volume III*. Pacific Islands Fisheries Science Center, National Marine Fisheries Service, NOAA, Honolulu, HI 96822-2396. Administrative Report H-88-04, p172.

Sampling and Other Respondent Selection Methods
The sampling frame of the Boat-based Interview of creel survey was developed by WPacFIN and the three local fisheries agencies as described in Question 4. Interviews are conducted several times a month (4 to 10 times) using a systematic random sampling protocol at sites (ramps/docks) that are actively used for launching fishing boats. Sample dates are drawn for monthly sampling which continues throughout the year. Each selected sample date contains two shifts: AM and PM. The data collection efforts are organized and carried out by the local fisheries agencies. An interview is conducted during the shift time by well-trained fisheries staff at the scheduled site when fishermen return from their fishing trip.

Expected Response Rate
According to WPacFIN, the past response rate from the Boat-based Interview was 95% in Saipan and American Samoa respectively, and 80% in Guam. In addition, prior research in fishery economic performance in the Pacific Islands Area also achieved relatively high response rates. Cost-earnings study of the Hawaii-based domestic longline fleet by Joint Institute for Marine and Atmospheric Research (JIMAR) achieved a response rate of 90% in 1993[2]. In this study, personal interviews were conducted with vessel owners and operators. Economic trip expenditure survey of the Hawaii longline fishery by PIFSC achieved a response rate of 71% in 2007[3]. This economic survey was an add-on to the existing data collection program through a NMFS observer program; that is, observers collected economic data from the sampled longline fishing trips while collecting the other fisheries-related data. Based on the past research experiences, we are confident that we can expect a relatively high response rate for our surveys.

The detailed sampling design for the economic survey is shown in Table 4. The intercept sample sizes are estimated based on the target number of surveys and response rates from the past creel survey experience.

Table 4. Sampling Design & Response Rate for the Economic Add-on to the Creel Survey

2006-2008 Average	Guam	Saipan	American Samoa
Total number of boats (population)*	506	300	39
Intercept survey sample	250	143	32
Expected response rate*	80%	95%	95%
Target number of surveys (boats)*	200	136	30
Total number of trips (population)*	11,304	9,201	950
Intercept survey sample	750	286	95
Expected response rate*	80%	95%	95%
Target number of surveys (trips)*	600	272	90

*(Source: NOAA PIFSC – WPacFIN, unpublished data)

[2] Hamilton, M.S., R.E. Curtis, and M.D. Travis. *Cost-Earnings Study of the Hawaii-Based Domestic Longline Fleet*. SOEST 96-03, JIMAR Contribution 96-300.
[3] http://www.pifsc.noaa.gov/economics/economic_performance_of_the_hawaii_longline_fishery.php

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 sampling methodology of the proposed survey will follow the Boat-based Interview as our survey is an 'add-on' portion to the creel survey. The Boat-based Creel Survey programs in the three island areas have been running for over 20 years. The creel survey is conducted several times a month, based on random sampling by type of day (weekday/weekend/ holiday) at sites that are actively used for launching fishing boats, throughout the year on an ongoing basis. Details of the survey locations, minimum survey days and shift times are shown in Appendix A. An interview is conducted by well-trained fisheries staff at the scheduled site when fishermen return from their fishing trip. Boats are chosen on a first-come-first-served basis for interviews, with the priority being for collecting boat log data first and interviews second. When too many boats return at the same time and cannot all be interviewed, staff prioritize interviews so that boats fishing with the least-encountered fishing methods for the past month are interviewed first.

Using the trip population and target number of surveys (trips), the sampling errors at the 95% confidence level are 4% for Guam and American Samoa and 5% for Saipan. This level of accuracy will provide good estimation of fishing expenses in general. The data collected will be used for descriptive and economic analyses. Detailed economic analyses can be found in Section A, Question 2.

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.

Strategy to Maximize Response Rates
Several steps will be taken to maximize the response rates. First, all staff members are trained for in-person interviewing technique to make sure survey is administered properly. This includes requesting permission to do the interview. Second, the participation is completely voluntary. If the interviewers feel the fisherman does not want to participate, they immediately terminate the survey and thank the fisherman for the time. Third, the survey is short in length, with only five major trip cost items and one question about engine type will be asked; the estimated time to complete the questions is 5 to 10 minutes. Fourth, we have tested the survey with 5 fishermen in Guam to make sure the question wording is easy to understand.

Non-Response
We will attempt follow-up calls to non-respondents. In addition, the boat log survey conducted at the same shift as the interview records the boats going out for fishing by type of fishing method. The boat registration number is recorded on the boat logs and also on the completed interviews so that respondents and non-respondents can be identified by fishing method. If there is a significant difference between the two groups, weights can be applied when estimating the total fishing expenses.

Accuracy and Reliability of the Information
Because the fishing expense data will be collected right after the fishing trip is completed, it is expected that the fisherman will have good recall and can provide accurate data of the fishing expenses.

In addition, to ensure the quality of the collected data, all staff in the creel survey programs undergoes quality assurance and quality control training for data handling, backing up the database, and archiving the raw data.

Based on the past creel survey response rates, we should have an adequate sample size for reliable estimates of fishing expenses. The sample mean is expected to be within 5% of sampling error at the 95% confidence level.

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 pre-tested the survey with 5 fishermen to make the instrument easier to understand and complete.

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. Minling Pan, economist and program lead of the WPacFIN, and David Hamm, employed by the NMFS, were consulted on the statistical design[4]. The creel survey fieldworkers/crew in the three local agencies will collect the data (as listed in Section A, Question 4). NMFS economists will oversee the data collection program, and NMFS social scientists and WPRFMC staff and the local agencies will use the data for regulatory analysis.

Appendix A. Creel Survey: Boat-Based Interview Sampling Location and Time

	Minimum Survey Days	Shift: Day	Shift: Night
GUAM			
Agana Boat Basin	2 weekdays, 2 weekends (per month)	5:00-12:00	16:00-24:00
Agat Harbor	1 weekday, 1 weekend (per month)	5:30-12:00	16:00-24:00
Merizo Pier	1 weekday, 1 weekend (per month)	6:00-11:00	16:00-24:00
SAIPAN			
Sugar Dock, Fishing Base, Smiling Cove	9 weekends and 9 weekdays (per quarter)	13:00-18:00	20:00-2:00
AMERICAN SAMOA			
Main docking area between Fagatogo and Pago	4 weekdays per week and 2 Saturday per month	5:00-13:00	17:00-1:00

Sources: NOAA PIFSC, Guam Boat-based Creel Survey Documentation, 2008, unpublished.
NOAA PIFSC, Saipan's Boat-based Creel Survey Documentation, 2008, unpublished.
American Samoa: http://www.pifsc.noaa.gov/wpacfin/as/Pages/as_coll_2.php.

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[4]Dr. Minling Pan and David Hamm, Pacific Islands Fisheries Science Center, National Marine Fisheries Service and be reached at 808-944-2190 and 808-983-5330, respectively.