

Mariana Archipelago Small Boat Fishery Survey 1 Responses to Supplemental Questions for PRA Clearance OMB Review of Individual Instruments

Project Title: Cost Earnings Study of Mariana Archipelago Commercial Small Boat Fleet

Justification under OMB Generic Clearance:

(Economic Survey of US Commercial Fisheries, OMB Control No. 0648-0369)

Commercial fisheries economic data collection programs implemented by National Marine Fisheries Service (NMFS) address statutory and regulatory mandates to determine the quantity and distribution of net benefits derived from living marine resources as well as predict the economic impacts from proposed management options on commercial harvesters, shore side industries, and fishing communities. In particular, these economic data collection programs contribute to legally mandated analyses required under the Magnuson-Stevens Fishery Conservation and Management Act (MFCMS), the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA), Executive Order 12866 (E.O. 12866) as well as a variety of state statutes. This particular survey instrument very closely mirrors two research efforts previously approved under generic clearance 0648-0369 [Main Hawaiian Islands Bottomfish Fishery, April 2010; Hawaii small boat pelagic fishery, September 2007] which have been developed based on previously approved question categories as outlined in the generic clearance (0648-0369) Supporting statement

Objective:

This study has two primary objectives: the first is to update baseline socioeconomic information for the commercial small boat fleets of the Mariana Archipelago; and the second aims to explore basic behavioral aspects of these fisheries that will be important to document for consideration in any potential future management actions. The Mariana Archipelago includes the United States (U.S.) territory of Guam and the U.S. Commonwealth of the Northern Mariana Islands (CNMI). The CNMI is comprised of 10 islands, of which 3 are populated (Saipan, Tinian, and Rota – in order of population). For this study, small boat fishing is defined as any non-longline boat-based fishing.

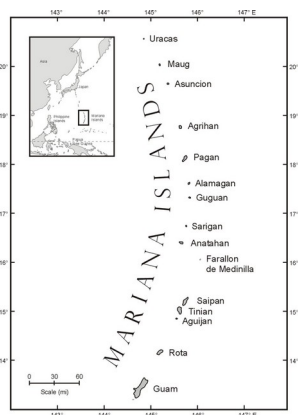


Figure 1. Mariana Archipelago. Courtesy of Barry Smith, University of Guam Marine Lab

The existing economics research available on the small boat fisheries in this region is outdated at best. The most recent work quantifying the economics of small boat fishing in the CNMI is published by Miller (2001)* based on data collected in 1999. Additionally, the most recent research conducted on Guam – focusing on social and cultural aspects of pelagic fishing - is that by Vaughn, et al. (2000)†, while the most recent cost-earnings data is found in Kasaoka (1989)‡. This current research seeks to document the existing economic and social conditions of the small boat fleets for this region and update baseline data essential for successful consideration of economic and social effects from any future Federal management actions in this region.

In addition to establishing baselines for future fishery management actions, this study will document a baseline as other important changes are taking place in this region, outside of fishery management, including large-scale conservation actions and a military build-up. The establishment of the Marianas Trench Marine National Monument in the CNMI by Presidential Proclamation 8335, in January 2009 in conjunction with the Pacific Remote Island Area National Marine Monument (Presidential Proclamation 8336) has increased local and international interest in economic data collection in U.S. flag territories. These monument proclamations closed the waters of these areas to commercial fishing. This proposed survey effort would enable the Pacific Islands Fisheries Science Center (PIFSC) to begin to gather economic data needed to respond to requests from the Western Pacific Regional Fishery Management Council (Council), the Pacific Islands Regional Office, and others about fisheries in the area, including the economic effects of the MNM designation and future regulatory actions. Additionally, a large-scale military build-up on Guam is scheduled in the coming years, which will result in an approximate 25% increase in the population of the island, including military personnel, their dependents and contract workers. This event clearly has potential implications on the small boat fleet of Guam.

Data collected in this research will include the following: fisher motivations, fisher classification, investment levels, annual fixed costs, gear disposition, behavioral aspects of fishing, estimates of effort and market participation, pounds caught, pounds sold, percent consumed by family and shared with relatives and friends. Additionally, basic demographic information will prove useful for an accurate understanding of the fishery. These data will be essential towards establishing baselines on the economic and social conditions for small boat fishers on Guam and the CNMI.

1. The potential respondent universe and any sampling or other respondent selection method to be used and the expected response rate.

* Miller, Scott A. 2001. Economic Assessment of the Domestic Fisheries Development Potential of the Commonwealth of the Northern Mariana Islands. Prepared for NMFS, Saltonstall-Kennedy Grant Number: NA 96FD0471.

† Vaughn, Stephen, M., Donald Rubinstein, and Thomas Pinhey. 2000 (draft). Coordinated Investigation of Pelagic Fishing: Territory of Guam. Draft Final Report prepared under grant NA67RJ0154 from Pelagic Fisheries Research Program – University of Hawaii, Manoa (never completed final document).

‡ Kasaoka, Laurel D. 1989. Summary of Small Boat Economic Surveys from American Samoa, Guam, and the Northern Mariana Islands. Southwest Fisheries Science Center Administrative Report H-89-4C.

Potential Respondent Universe

There are no licensing or reporting requirements for any nearshore or boat-based fisheries across the Marianas Archipelago (Guam and CNMI). Data collection efforts in the region are conducted through local managing agencies in partnership with the Western Pacific Fisheries Information Network (WPacFIN), housed within the PIFSC (NOAA Fisheries). The CNMI Division of Fish and Wildlife has a voluntary offshore creel survey data collection program which primarily collects biological information as well as a voluntary commercial purchase system used to establish estimates of commercial catch. On Guam, the Department of Aquatic and Wildlife Resources conducts a similar offshore creel survey and commercial purchase system, again a completely voluntary program.

Using recent estimates from these data collection efforts, we can approximate our potential respondent universe. As one looks at Table 1, the high level of uncertainty regarding participation in these fisheries is reflected in the expansion estimates utilized by WPacFIN. While an average of only 200 and 136 unique boats have been interviewed on Guam and Saipan, respectively, over the past 3 years, WPacFIN estimates that there are roughly twice as many boats within the fishery. There is no clear indication as to the number of unique fishermen, but our survey effort will target vessel captains, familiar with operational aspects of the fishery. Prior research has established that this fleet is primarily owner-operated with a small number, if any, crew (Miller, 2001; Kasaoka, 1989). This is the best available science and thus we use these estimates to frame our target population.

Table 1
Recent Trends in Mariana Archipelago Fishery Participation Estimates (2006-2008)

Guam	2006	2007	2008	3yr avg.
Boats out fishing - recorded during surveys	355	350	362	356
Number of completed interviews	556	499	570	542
Unique boats interviewed	202	177	221	200
Saipan				
	2006	2007	2008	3yr avg.
Boats out fishing - recorded during surveys	172	167	146	162
Number of interviews	364	316	248	309
Unique boats interviewed	134	150	125	136

(Source: NOAA PIFSC – WPacFIN, unpublished data)

Using population estimates based on creel survey expansion methodologies detailed in Hamm and Quach (1988) there are an estimated 315-488 active boats on Guam[§] (Western Pacific Fisheries Management Council, 2009). For this study we settle on the midpoint of this range to define our survey population size (n=401). We do not have an equivalent estimate for the total population of the three inhabited Commonwealth of Northern Marianas Islands, so for the purposes of this research we use the number of unique boats interviewed on Saipan as our population (n=136). These assumptions equate to a combined Marianas survey population of

[§] Western Pacific Fisheries Management Council. March 2009. *Pelagic Fisheries of the Western Pacific Region 2007 Annual Report*. For details on the methodology of creel survey expansion please see: 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, p167

537.

Sampling and Other Respondent Selection Methods

We intend to conduct intercept surveys of small boat vessel owners in the CNMI and Guam during 2011. Unique to Guam is the presence of the Guam Fishing Cooperative (Co-op). This fishing cooperative has been in existence for over 30 years and as of June 2006, consisted of approximately 164 full-time and part-time members** (Allen, 2008). These members comprise a large majority of Guam's commercial offshore fishermen and sell the majority of their fish directly to the Co-op retail store. This institution provides an invaluable resource to allow us to ensure an adequate sample of Guam's commercial fishermen. However, we must ensure that our sample is not overly represented by Co-op members so as to arrive at a representative sample of small boat fishermen on Guam.

Expected Response Rate

Prior research in the fishery suggests that we can expect a relatively high level of participation with our survey instrument (Miller 2001; Vaughn 2000). The expected response rate for the intercept mode, with an expectation of intercepting a total of 430 fishers, is approximately 70% of those intercepted, with a target sample size of approximately 300 completed and usable surveys so that we have adequate samples to estimate population means for Guam and the CNMI. The work by Miller (2001) achieved a response rate of approximately 73% in the CNMI. Vaughn, et al. (2000)†† did not report response rates for their research, but detailed suggestions for improved cooperation on Guam and these measures are incorporated in the design of the survey instrument and detailed further in Question 3.

2. Data collection procedures, including the statistical methodology for stratification and sample selection, the estimation procedures, the degree of accuracy needed for the intended purpose, expected dates of survey implementation, and any unusual problems requiring specialized sampling procedures.

Data Collection Procedures, Sample Selection and Stratification

A crew of field staff will be hired to conduct intercept surveys with small boat fishers in the CNMI and Guam during 2011. This will require the hiring of field workers on each island. Efforts will be made to attempt to collaborate with existing boat-based data collection programs in this region to facilitate the field work and to avoid conflict with existing fieldwork collection efforts.

Survey Fielding

Intercept surveying will be conducted at boat ramps across the Marianas Archipelago. A summary of access points is found in Table 2. The limited number of boat ramps in this region improves our ability to target active fishers and the geographic range of these access points is

** Allen, Stewart and Paul Bartram. 2008. *Guam as a Fishing Community*. Pacific Islands Fisheries Science Center, National Marine Fisheries Service, NOAA, Honolulu, HI 96822-2396. Administrative Report H-08-01, 70p.

†† Vaughn, Stephen, M., Donald Rubinstein, and Thomas Pinhey. 2000 (draft). *Coordinated Investigation of Pelagic Fishing: Territory of Guam*. Draft Final Report prepared under grant NA67RJ0154 from Pelagic Fisheries Research Program – University of Hawaii, Manoa (never completed final document).

relatively small.

Table 2
Marianas Archipelago Private Boat Launch Access Points, by Location, Island

Location (<i>Island</i>)	Harbor/ Marina	Location (<i>Island</i>)	Harbor/ Marina
Guam		CNMI	
Agana Boat Basin	X	(<i>Saipan</i>) Sugar Dock	
Seaplane Ramp		Fishing Base	X
Marianas Yacht Club*	X	Smiling Cove	X
Sumay Cove**	X	DFW Beach	
Agat Marina	X	Tanapag	
Umatac		LauLau	
Merizo Pier	X	(<i>Tinian</i>)	X
Cocos Island Resort Pier*		(<i>Rota</i>)	
Achang Bay Marina		SongSong	X
Inarajan Bay		Eastside	X
Ylig Boat Launch			

* - these are private boat launches

** - this launch is on US military property and access will need to be requested

Expected Dates of Survey Implementation

We intend to conduct fieldwork during two waves, the wet season (approximately February – April) and the dry season (June – August). The preferred start date for conducting intercept survey is March 1, 2011, to continue through approximately August 31, 2011. The length of survey fielding is primarily to account for seasonal behavior as well as consideration for the potentially time-intensive nature of in-person intercept interviewing.

Degree of Accuracy Needed for Intended Purpose

The desired degree of accuracy, and corresponding desired response rate, depends upon the application for which the data is being used. A basic application of the survey data could be the inference of unobserved population mean values from the observed sample mean values. Given an assumed population of 537 vessels across the Mariana Archipelago (Guam, n=401 and CNMI, n=136) and assuming a margin of error of 5% and a confidence level of 95%, the minimum sample size required is 224 vessels. Over the course of field work if we are able to intercept 80% of our assumed population (80% * 537 = 429), which is reasonable given limited access points and the relatively “tight-knit” fishing community; the minimum 5% margin of error sample size (n=224) can be reached with a response rate of only 52% (52% * 429 = 224). To make generalizations across the archipelago – with varying degrees of accuracy - we will need to achieve minimum sample sizes as shown in Table 3.

Table 3
Minimum Sample Size, by Location and Archipelago

Location	10% margin of error	5% margin of error
Guam	78	196
CNMI	57	101
Marianas Archipelago Fleet	82	224

Two reasons can be identified for desiring higher response rates than those needed to support inference of population means from sample means.

First, data from this survey may be used to develop a variety of economic models covering applications such as economic contributions of the fishery to the state economy, fishery participation, and the economic health of the fishery. In these applications, error will arise not only from how well the data used for model development represents the population, but also from model specification and estimation. Since it is not possible to completely avoid specification and estimation error in model development, there is good reason to desire a higher response rate and higher degree of accuracy in the data collection process. Second, future applications of the data may require further disaggregating the population into smaller groups according to factors such as gear types, motivation, or vessel size. Additionally, Federal management actions may apply differently to the CNMI relative to Guam, as the CNMI currently does not have jurisdiction over any of its local waters (therefore Federal actions will apply all the way to the shoreline, potentially affecting different fisheries and communities). Identification of all such future disaggregated data needs is not possible at the present time. A higher response and higher degree of accuracy in the current data collection process will facilitate such future population disaggregation. While a minimum response rate of 52% (n=224) will support basic statistical inference regarding the entire population of active small boat fishermen in the Mariana Archipelago, a higher response rate is desired for the above reasons.

3. The methods used to maximize response rates and address non-response. The accuracy and reliability of the information collected must be shown to be adequate for the intended uses.

Strategy to Maximize Response Rates

There are a number of reasons why a response rate of approximately 70% is anticipated for this survey. For one, as noted in Question 1 prior research in these fisheries have obtained comparable response rates (Miller, 2001). Additionally, extensive outreach activities that we plan to undertake will greatly help our response rate. Informing the fishermen about the purpose and need for the cost-earnings survey will be important to the success of the survey. Outreach will occur on a number of levels, including utilization of the numerous outlets available to us for getting survey information directly to small boat fishers of the region:

- Written materials: A summary of the research goals and methods can be made available to our target population in advance of fieldwork through informational flyers posted at local managing agency meetings (Council meetings, Advisory Panel and Plan Team meetings) and various fish dealers and wholesalers. Additionally, we have the opportunity to place informational advertisements in the *Journal of Micronesian Fishing* newsletter and the *Marianas Fishing Magazine*. In addition, on Guam we can post introductory materials on-site at the Guam Fishing Cooperative. All disseminated written material will describe the purpose and need of the survey, how it will be administered, address confidentiality concerns, and provide principal investigator and local point of contact information.
- Fishing Community: local agency staffs, the Western Pacific Fisheries Management Council and organizations such as the Pacific Islands Fisheries Group have well established networks of fishermen across the archipelago which will promote the outreach and understanding of research goals and objectives as well as buy-in from the community.
- Informational materials promoting/detailing the survey can be provided at upcoming Western Pacific Regional Fishery Management Council and regional plan team meetings
- A variety of people, including Pacific Islands Fisheries Science Center and Western Pacific Regional Fishery Management Council staff, are available to assist in outreach efforts for this research.

Strategy to Address Non-Response

This research is designed to reach a viable sample of small boat fishermen across the Mariana Archipelago. Unfortunately, there is a limited amount of information currently available about vessel characteristics and landings for the survey population. Information on the physical characteristics of each vessel is available from existing research from the late 1990s (Miller 2001; Rubinstein 2001) and CNMI vessel registrations. Existing creel survey data collection programs and US Census data will allow us to check the representativeness of our sample and determine whether there is any significant difference with respect to landings and vessel characteristics between respondents and non-respondents. If non-response bias seems evident we can tap into our fishing networks to either help us contact missing groups or use local knowledge to weight the responses for our sample.

Accuracy of Data Collected

NMFS needs to measure the economic performance of small boat fishermen in the Mariana Archipelago in order to meet legal and regulatory requirements, support fisheries management decision making, and undertake economic analyses. Currently available cost earnings data is outdated (1999 data) and does not meet these needs. This study will collect data that is needed to update measures of profitability, productivity, and economic impacts. In addition, this research will collect important behavioral information that has not been collected systematically before, such as the number of different boat ramps used by fishermen, general areas of fishing, and the social importance of their catch. The data gathered and performance measures constructed will be used to address a wide range of issues.

We expect vessel characteristics, owner characteristics, and behavior data to be quite accurate. Additionally, due to the high cost, durability, and relative simplicity of gear used, we expect these data to be quite accurate as well. Miller (2001) provides baseline information for the small boat fishery in the CNMI whereas Vaughn, et al. (2000) provides a more qualitative description of the pelagic fishery of Guam. However, we do expect less accuracy when collecting fixed costs such as major repairs and maintenance, landings, and sales information. Questions regarding the catch and sale of fish could be viewed as highly sensitive information which could reduce the quality of the data received at the time of the intercept. However, efforts will be made to randomly re-contact individuals by phone (we expect to make efforts to obtain a first name and telephone number from respondents at the conclusion of the survey) in an effort to validate the fixed cost, catch, and sales data received at the boat ramp.

While the data will be used to comply with legal and regulatory requirements, these requirements do not specify a level of data accuracy. Minimum target response sizes for each population stratum are based on the objective of having a sample mean within 5% of the population mean at the 95% confidence level. It is believed that this provides a sufficient level of precision for inference of population means from sample means. As explained in the response to question 2, even greater precision is highly desirable for other anticipated applications of the data.

4. How the survey instrument was developed, including the steps taken to validate the questionnaire design.

The survey instrument closely mirrors instruments developed, approved by OMB (0648-0369), and successfully implemented by Hospital, Scholey, and Pan (2011)^{‡‡} for Hawaii small boat fishermen and Hospital and Beavers (2010)^{§§} for Hawaii bottomfish fishermen, based on approved question categories. While the Mariana archipelago is a distinct fleet and culture, the population in these past survey treatments closely approximates the survey population for the study at hand with similar social and cultural motivations towards fishing. The survey has been reviewed and pre-tested with Federal staff of the NMFS Pacific Islands Fisheries Science Center (PIFSC), Western Pacific Regional Fishery Management Council, agency staff of the Guam Division of Aquatic and Wildlife Resources and Commonwealth of Northern Marianas Islands Division of Fish and Wildlife, and many of whom work very closely with fishermen in our target population. All comments were considered in the design of the final survey format.

5. The reporting and use of the results of the survey

Use of Survey Results

There are legal and regulatory requirements for NMFS to measure the economic performance of commercial fisheries. This research will be used to assess the economic effects of fishery management regulations, such as the effects of regulations on harvesting costs and regional

^{‡‡} Hospital, Justin, Skaidra Scholey, and Minling Pan. 2011 *Economic and Social Characteristics of the Hawaii Small Boat Pelagic Fishery*. Pacific Islands Fisheries Science Center. Administrative Report H11-01.

^{§§} Hospital, Justin and Courtney Beavers. 2010 – in press. *Management of the Main Hawaiian Islands Bottomfish Fishery: Fisher's Attitudes, Perceptions, and Comments*. Pacific Islands Fisheries Science Center. Administrative Report.

economies. Currently, available cost-earnings data for the small boat fisheries of the Mariana Archipelago are limited, with the most recent research being conducted over a decade ago. Therefore, NMFS needs to update its understanding of the economics of the Marianas small boat fisheries in support of fisheries management decision making. It is important to note that a key feature of the federal regulatory process is that NMFS cannot simply implement a regulation to achieve a conservation goal but instead must consider a suite of management alternatives. The current study will support fisheries management decision making and allow for consideration of the economic and social impacts of future fisheries management decisions. Economic analyses can identify the alternative that minimizes losses to stakeholders while still achieving conservation goals, allowing NMFS to be proactive, rather than reactive, in its resource management strategy.

Reporting of Survey Results

Survey results will be reported through a series of summaries prepared for the general fishing public, fisheries managers, and academics. Results will be reported directly to fishers through direct mailings to the Guam Fishing Cooperative member list, the *Journal of Micronesian Fishing* newsletter and the *Marianas Fishing Magazine*, all of general interest to our survey population. It is anticipated that results will also be reported in the form of a technical memorandum of the Pacific Islands Fisheries Science Center, academic publications, and presentations at conferences. All reporting of survey results will conform to data confidentiality requirements. Qualified researchers with data access and confidentiality agreements will have access to raw data for performing future analyses.

Information Quality Guidelines and Confidentiality

It is anticipated that the information collected will be disseminated to the public or used to support publicly disseminated information. As explained in the previous paragraphs, the information gathered has utility. NMFS will retain control over the information and safeguard it from improper access, modification, and destruction, consistent with NOAA standards for confidentiality, privacy, and electronic information. In particular, the data collected will be kept confidential as required by section 402(b) of the Magnuson-Stevens Act and NOAA Administrative Order 216-100, Confidentiality of Fisheries Statistics, and will not be released for public use except in aggregate statistical form without identification as to its source.

The information collection is designed to yield data that meet all applicable information quality guidelines. Prior to dissemination, the information will be subjected to quality control measures and a pre-dissemination review pursuant to Section 515 of Public Law 106-554.

6. Contact information for agency coordinator and principal investigator.

Agency Coordinator

Sarah Malloy
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7. Estimated burden and number of respondents

Completing the survey is conservatively expected to take approximately 30 minutes per respondent and this is in line with past experience that has shown that equivalent instruments have taken on average. As a result, the survey is expected to impose a total of 150 burden hours on the Marianas small boat fishing fleet.

Approximate Target Population	537
Expected intercept rate	80%
Expected intercepted population	429
Expected survey response rate	70%
Expected # survey respondents	300
Average burden hours/survey	30 min. (0.5 hours)
Total in-person burden hours	150
Total annual burden hours	150

INTERCEPT SURVEY INSTRUMENT

(To be read prior to interview)

*Hafa adai, we are conducting a survey to better understand the economic and social importance of boat-based fishing in the Marianas. It has been over 10 years since any similar information has been collected. How well our report portrays an accurate picture of the fishery depends on the information provided by you, the fisher. **The information you provide will remain strictly confidential as required by section 402(b) of the Magnuson-Stevens and NOAA Administrative Order 216-100, Confidentiality of Fisheries Statistics, and will not be released for public use except in aggregate statistical form without identification as to its source.** We will combine your responses with information provided by other participants, and report it in summary form so that responses for any individual vessel can not be identified. Public reporting burden for this information collection, including time for gathering data needed and completing the survey, is estimated to average 30 minutes per respondent. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number. May I continue?*

Hafa Adai, help us to better understand the importance of fishing to the Mariana Archipelago. Your thoughts, opinions, and details of fishing activity are important for getting accurate results. We want to best represent Marianas fishermen and we can

only do that by hearing from as many fishers as possible. While your response is voluntary, we hope that you can help us in this research

SECTION A. YOUR FISHING EXPERIENCES

Different fishermen in the Marianas had different fishing experiences in 2010. Please tell us about yours

1. Approximately how many boat fishing trips did you take over the past 12 months? (please check one)

- Fewer than 25 trips (about once every other week)
- 25 - 49 trips (about once a week)
- 50 - 99 trips (about once or twice a week)
- 100 - 200 trips (about two to three times a week)
- more than 200 trips (about three to four times a week)

Marianas fishermen use many different gear types and target many different species

2. In the past 12 months, how many of your fishing trips were primarily: (please check one for each gear type)

	All of my trips (90-100%)	Most of my trips (61-89%)	About half (40-60%)	Some of my trips (10-39%)	Very few of my fish (1-9%)	None of my trips (0%)
Trolling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deep water bottomfish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shallow water bottomfish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Atulai	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spear/Snorkel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. In the past 12 months, how many of your fishing trips were in

	All of my trips (90-100%)	Most of my trips (61-89%)	About half (40-60%)	Some of my trips (10-39%)	Very few of my fish (1-9%)	None of my trips (0%)
Local waters only (0-3nm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offshore waters only (greater than 3nm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Both Local and Offshore Waters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. How long is your average fishing trip? _____ hours

5. How many people in total, including yourself, are on board for an average fishing trip? _____

6. Do you always fish out of the same boat ramp or harbor? yes ->go to Q7 no ->go to Q6a

If no:

6a. On average, how many different boat ramps or harbors do you use in a year? _____

7. On average, how far (one-way) do you travel to fish? _____ miles

If trailered, indicate one-way distance to most common ramp; If moored, please indicate one-way distance to slip

8. In the past 12 months, approximately how many total pounds of pelagic fish did you catch?

- None
- 1 - 50 pounds
- 51 - 100 pounds
- 101 - 500 pounds
- 501 - 1000 pounds
- 1001 - 2500 pounds
- More than 2500 pounds

9. In the past 12 months, approximately how many total pounds of bottomfish did you catch?

- None
- 1 - 50 pounds
- 51 - 100 pounds
- 101 - 500 pounds
- 501 - 1000 pounds
- 1001 - 2500 pounds
- More than 2500 pounds

10. In the past 12 months, approximately how many total pounds of reef fish did you catch?

- None
- 1 - 50 pounds
- 51 - 100 pounds
- 101 - 500 pounds
- 501 - 1000 pounds
- 1001 - 2500 pounds
- More than 2500 pounds

11. In the past 12 months, during which months (check all that apply) did you fish for :

- Pelagic fish Winter (December - February) Spring (March - May)

- Summer (June - August)
- Fall (September - November)
- Bottomfish
- Winter (December - February)

- Spring (March - May)
- Summer (June - August)
- Fall (September - November)
- Reef fish

- Winter (December - February)
- Spring (March - May)
- Summer (June - August)
- Fall (September - November)

SECTION B. MARKET PARTICIPATION

People have different opinions on the definition of commercial fishing....

12. How would you define a fisherman as commercial? To be considered a commercial fisherman, I feel that someone has to: (please check one)

- | | |
|--|---|
| <input type="checkbox"/> Sell <u>any</u> of catch | <input type="checkbox"/> Make at least 25% of income from fishing |
| <input type="checkbox"/> Sell 25% or more of catch | <input type="checkbox"/> Make at least 50% of income from fishing |
| <input type="checkbox"/> Sell 50% or more of catch | <input type="checkbox"/> Make <u>all</u> of income from fishing |
| <input type="checkbox"/> Sell <u>all</u> of catch | <input type="checkbox"/> Other _____ |

13. How would you define yourself as a fisherman? (check all that apply)

- Purely recreational** (only for sport or pleasure)
- Recreational expense** (primarily for sport or pleasure, but I also sell a few fish to recover trip expenses whenever I can)
- Subsistence** (primarily to catch fish to feed myself/my family)
- Cultural** (I enjoy fishing, but I am even more concerned about keeping traditional practices alive, such as using traditional gear and sharing fish with the community in a historical way)
- Part-time Commercial** (fishing pays some of my bills, but I still have to work at another job)
- Full-time Commercial** (fishing brings in most or all of the money I make in a year)

14. In the past 12 months, what percentage of your catch was:

	All of my fish (90-100%)	Most of my fish (61-89%)	About half (40-60%)	Some of my fish (10-39%)	Very little of my fish (1-9%)	None of my fish (0%)	
Sold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-> If none go to
Q19							
Caught and released	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Consumed at home		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Given to friends/neighbors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Given to crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Used for cultural/community event	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traded for goods/services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

If any of the catch was sold:

15. Where did you sell your fish?

	All of my fish (90-100%)	Most of my fish (61-89%)	About half (40-60%)	Some of my fish (10-39%)	Very little of my fish (1-9%)	None of my fish (0%)
Guam Fishermen's Cooperative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Markets/Stores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restaurants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dealers/Wholesalers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friends/neighbors/coworkers		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roadside Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If any of the catch was sold:

16. In the past 12 months, approximately after what percentage of your fishing trips did you sell fish?

- Almost all of my trips (90-100%)
- Most of my trips (61-89%)
- About half of my trips (40-60%)
- Some of my trips (10-39%)
- Very few of my trips (1-9%)

If any of the catch was sold:

17. Can you usually sell all of the fish that you want to sell? yes no

If **NO**: why not? _____

If any of the catch was sold:

18. In the past 12 months what percent of your personal income, before taxes, came from fishing?

Less than 10% 10% to 25% 26% to 50% 51% to 75% 76% to 100%

19. Are the fish you catch an important source of food for your family? yes no

SECTION C. VESSEL AND GEAR QUESTIONS

In this section we want to better understand the vessel and gear characteristics of boat based fishing on Guam

20. Do you own the boat that you fish on?

- yes
 no

20a. Do you always fish on the same boat? yes no

20b. Do you always fish with the same captain? yes no

20c. How are you compensated for your time as crew?

(if you are not the captain on the boat you on, how are you compensated for your time)?

- | | Percentage (%) |
|--|----------------|
| <input type="checkbox"/> Given a percentage of total fish caught | _____ |
| <input type="checkbox"/> Given a percentage of trip revenues | _____ |
| <input type="checkbox"/> I pay a percentage of trip costs | _____ |
| <input type="checkbox"/> I keep all the fish I catch | |
| <input type="checkbox"/> No compensation - I just like to fish | |

If you have some other compensation arrangement please describe:

-> Go to Section E

If own:

21. What is the length of your boat? _____ feet

22. What is the horsepower? _____ hp

23. In what year was the boat built? _____

24. Do other people (other than family members) use the boat without you?

- often sometimes rarely never

25. If you are the captain on fishing trips, how do you usually compensate your crew?

- | | Percentage (%) |
|--|----------------|
| <input type="checkbox"/> Given a percentage of total fish caught | _____ |
| <input type="checkbox"/> Given a percentage of trip revenues | _____ |
| <input type="checkbox"/> Crew pays a percentage of trip costs | _____ |
| <input type="checkbox"/> Crew keeps all the fish they catch | |
| <input type="checkbox"/> I always fish alone | |
| <input type="checkbox"/> Don't Know/different every time | |

If you have some other compensation arrangement please describe:

26 In what year did you purchase the boat you fish on? _____

(if homebuilt - when did you complete it)

27. How much did you pay to purchase the boat you fish on? \$ _____

(if homebuilt - how much did it cost to build it)

28. Was the boat purchased... new used I built it

29. How did you purchase this boat? cash only cash and loan loan only

If cash and loan or loan only:

29a. What was the original loan amount? _____

30. What is the approximate market value, in dollars (considering age and current condition), of the *electronics* you currently use to fish? \$ _____

31. What is the approximate market value, in dollars (considering age and current condition), of the *gear* you currently use to fish (not including electronics)? \$ _____

32. What is the approximate market value, in dollars (considering age and current condition), of your *boat* (including motor(s) and trailer, but not including gear, equipment, or electronics mentioned above)? \$ _____

SECTION D. YOUR LAST FISHING TRIP

33. Think about your most recent fishing trip, in what month and year was this trip made? _____

34. What was the primary gear used for this trip? _____

35. How much money was spent on your most recent fishing trip?

Variable Cost	Expenditure (dollars)	
Boat Fuel	\$	<input type="checkbox"/> gas <input type="checkbox"/> diesel
Truck Fuel (round-trip)	\$	<input type="checkbox"/> gas <input type="checkbox"/> diesel
Ice	\$	
Bait	\$	
Food and Beverage	\$	
Other (specify) _____	\$	
	\$	

36. How much money was spent on your last second most common gear type (see Q2) fishing trip?

Variable Cost	Expenditure (dollars)	
Boat Fuel	\$	<input type="checkbox"/> gas <input type="checkbox"/> diesel
Truck Fuel (round-trip)	\$	<input type="checkbox"/> gas <input type="checkbox"/> diesel
Ice	\$	
Bait	\$	
Food and Beverage	\$	
Other (specify) _____	\$	
	\$	

37. What percentage of these costs did you pay? _____ %

SECTION E. 2010 FISHING EXPENDITURES

*In an effort to better understand your economic contribution to the Marianas economy we would like to ask about your fishing-related expenditures in 2010. In the table below please indicate how much, if any, was spent on the following items during 2010. Enter "0" if you did not have any expenses in a category. **Please Do Not Leave Blank.***

Remember that all your answers are strictly confidential.

38. _____

Cost Category	2010 Expenditure (dollars)
Boat insurance	\$
Loan payments	\$
Financial services (accounting, taxes)	\$

Moorage fees	\$
Repair, maintenance, and improvements for vessel, engines, or trailer	\$
Oil and lube	\$
Gear (lines, lures, gaffs, rods, electric/hydraulic reels, coolers, etc.)	\$
Electronics	\$
Fees (Coop fees, registration for truck and trailer, dry dock fees, fishing club dues, etc.)	\$
Safety Equipment	\$
Other (please specify) _____	\$

39. Some fishermen purchase fishing gear, electronics, safety equipment or other items online or through a catalog and have it shipped to them. In the past 12 months, approximately what percentage of the expenditures listed above did you purchase off-island? _____

SECTION F. ABOUT YOU

*Different people have different fishing experiences and different motivations for fishing.
The following questions help us to better understand these differences.*

40. What is your age?

- | | |
|---|---|
| <input type="checkbox"/> Less than 25 years | <input type="checkbox"/> 45 to 54 years |
| <input type="checkbox"/> 25 to 34 years | <input type="checkbox"/> 55 to 64 years |
| <input type="checkbox"/> 35 to 44 years | <input type="checkbox"/> more than 64 years |

41. What village do you live in? _____

42. How long have you fished from a boat? _____ years

43. Are you of Hispanic, Latin, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin?
- Yes, Mexican, Mexican American, Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino, or Spanish Origin _____

44. How would you describe your race? (check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Guamanian or Chamorro | <input type="checkbox"/> Vietnamese |
| <input type="checkbox"/> Filipino | <input type="checkbox"/> Native Hawaiian |
| <input type="checkbox"/> Other Asian or Pacific Islander _____ | <input type="checkbox"/> Samoan |
| <input type="checkbox"/> White | <input type="checkbox"/> Asian Indian |
| <input type="checkbox"/> Chinese | <input type="checkbox"/> Black, African American, or Negro |
| <input type="checkbox"/> Japanese | <input type="checkbox"/> American Indian or Alaska Native |
| <input type="checkbox"/> Korean | <input type="checkbox"/> Other _____ |

45. Are you currently employed?

- | | |
|--|--|
| <input type="checkbox"/> Employed Full-time | <input type="checkbox"/> Student (part-time) |
| <input type="checkbox"/> Employed Part-time | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> Retired | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Student (full-time) | |

46. How many hours per week do you work for pay? _____

47. What was your total household income, before taxes, in 2010, including fishing income?

- | | |
|---|---|
| <input type="checkbox"/> Less than \$20,000 | <input type="checkbox"/> \$80,000 to \$99,999 |
| <input type="checkbox"/> \$20,000 to \$39,999 | <input type="checkbox"/> \$100,000 to \$149,999 |
| <input type="checkbox"/> \$40,000 to \$59,999 | <input type="checkbox"/> \$150,000 to \$199,999 |
| <input type="checkbox"/> \$60,000 to \$79,999 | <input type="checkbox"/> \$200,000 or more |

48. What is the highest level of education you have completed?

- | | |
|---|---|
| <input type="checkbox"/> Less than 9 th grade | <input type="checkbox"/> Associates degree or technical school |
| <input type="checkbox"/> Some High school (no diploma) | <input type="checkbox"/> College graduate (bachelor degree) |
| <input type="checkbox"/> High school graduate (including GED) | <input type="checkbox"/> Advanced, Professional, or doctoral degree |
| <input type="checkbox"/> Some college (no degree) | |

Thank you for participating in this survey.

Do you have any suggestions for how the Marianas' fisheries should be managed or topics that you feel need further study?

Are you interested in receiving a copy of the results from this study?

Yes Name: _____

Address: _____

(your contact information will be kept strictly confidential)

May we contact you if we have any questions about your survey answers?

Yes Name: _____

Phone: _____ best time to reach you: _____

(your phone number will be kept strictly confidential)

Paperwork Reduction Act Statement. The information you provide will remain strictly confidential as required by section 402(b) of the Magnuson-Stevens and NOAA Administrative Order 216-100, Confidentiality of Fisheries Statistics, and will not be released for public use except in aggregate statistical form without identification as to its source. We will combine your responses with information provided by other participants, and report it in summary form so that responses for any individual vessel can not be identified. Public reporting burden for this information collection, including time for gathering data needed and completing the survey, is estimated to average 45 minutes per respondent. Please provide comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Justin Hospital, NOAA Fisheries, 1601 Kapiolani Blvd, Suite 1110., Honolulu, HI 96814, 808-944-2188, Justin.Hospital@noaa.gov. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

**THANK YOU LETTER GIVEN TO
RESPONDENT AT CONCLUSION OF
SURVEY**

Dear Marianas Fisher,

Thank you for your participation in the 2011 Marianas fishing study.

The information that you provided to us will be extremely valuable in arriving at an accurate portrayal of the economics of fishing across the Mariana Archipelago. Analyzed data will be aggregated by various characteristics and will not reveal individual vessel information. **All your answers will be held in strict confidentiality as required by section 402(b) of the Magnuson-Stevens Fishery Management and Conservation Act as well as NOAA Administrative Order 216-100.** For details on confidentiality and public burden requirements please see the Paperwork Reduction Act statement below*. Please contact Justin Hospital, toll-free at 1-855-944-2188, if you have any questions or concerns pertaining to the study or would like to obtain a copy of the results of this study.

Your help is greatly appreciated.

Sincerely,

Justin Hospital
Economist, National Marine Fisheries Service
Pacific Islands Fisheries Science Center
1601 Kapiolani Blvd, suite 1000
Honolulu, HI 96814
(808) 944-2188
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