Puerto Rico For-Hire Data Collection

FY 2008 Proposal

Craig Lilyestrom
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1. Overview

1.1. Sponsor

1.2. Focus Group

Survey Design and Evaluation

1.3. Background

Puerto Rico has participated in the MRFSS program since 2000. Surveys of the charter boat catch and effort are currently conducted using the original MRFSS methodology of catch data collected during angler intercept interviews combined with a random digit dial (RDD) telephone survey of coastal households for effort. This data collection methodology has known deficiencies of significant magnitude (NRC 2006, Ditton et al. 2001). The RDD survey of coastal households does not interview non-resident participants for their effort in for-hire fisheries, and correction factors based on the proportion of residents to non-residents encountered in angler intercepts are used to account for the non-resident effort. In the for-hire mode, a significant portion of fishing effort is from non-resident anglers, which results in large expansions of raw effort estimates and very low precision. In Puerto Rico, 80% of for-hire angler intercepts are from non-resident anglers on average, with a range of 67% to 91% annually for the seven years the survey has been conducted.HMS species comprise the main focus of the charter fishery in Puerto Rico. A few short miles off of San Juan is the famous “marlin alley” where the insular shelf ends and the marlin’s habitat of blue water begins. Blue marlin, white marlin, sailfish, yellowfin tuna and others are the common HMS targeted by the charter fisheries. In spite of the importance of these species to the charter industry and of the efforts by federal and state agencies to manage the populations, the current MRFSS methodology provides highly questionable estimates of catch. For example, the ICCAT harvest quota for blue marlin + white marlin combined for the entire U.S. is 250 individuals. For the year 2000, MRFSS estimates that in Puerto Rico the charter industry harvested 126 blue marlin, with a PSE of 99.9. In 2004, the harvest estimate is 10, with a PSE of 99.9. According to MRFSS, the private/rental mode harvested 2,594 blue marlin in 2005, with a PSE of 44.6. Clearly, we need to improve the precision of estimates for HMS in both modes, to the point where they can be reported with confidence. Overall, PSE’s for for-hire harvest estimates (in numbers of fish) for marlin, yellowfin and bluefin tuna, sailfish and swordfish are no less than 56%, and most are in the 80 to 100 percent range. Year to year estimates of harvest are highly variable, with many years estimating zero fish landed.In this proposed MRIP for-hire data collection method, the universe of for-hire vessels will be expanded to include dive vessels or other for-hire vessels, which capture queen conch, spiny lobsters or may engage in spearfishing or possibly whelk (West Indian Top Shell) harvest. In the current MRFSS survey in Puerto Rico, catch and effort of invertebrate species are specifically excluded, although Fishery Management Plans are in place (CFMC/NMFS 2005). In addition to missing invertebrate catches, there is no accountability of the fish catch by the diving sector, since no data collection system currently or historically exists. A total of 78 dive operations were identified in 1998-1999 in Puerto Rico as being in business between 2 and 30 years. Hand harvesting of lobster as well as spearfishing was allowed by 37% of the dive operators (García-Moliner et al. 2001). It was estimated that over 190,000 individual dives a year were carried out from for-hire dive operations. The most visited reefs around Puerto Rico include sites in the Islands of Desecheo, Mona, Culebra, the keys of La Cordillera on the East coast (with the reefs of Palominos and Palominitos receiving more than 25% of the dive visits overall), reefs in La Parguera on the South coast, and other reefs among over 58 other sites identified by the SCUBA charters.There are a variety of potential sample frames available, or potentially available in the near future. Under Puerto Rico Fisheries Law 278, charter vessels are required to have a state permit to operate. Enforcement of this permit requirement has been less than perfect to date, though DNER is taking pro-active measures to achieve 100% compliance. Charter captains are being contacted by DNER to remind them of this requirement, and with the recent signing of the Joint Enforcement Agreement with NOAA/OLE, DNER rangers will be visiting the charter vessel docks with greater frequency to enforce this and other related fishing regulations. Clear lines of communication exist between the data collection office and enforcement, since the Director of Marine Resources is also the main point of contact for the PR Joint Enforcement Program.Charter vessels require Coast Guard registration and Public Service Commission authorization. In addition, Puerto Rico DNER maintains an up-to-date database of all known operating charter vessels for the current MRFSS project. Currently, the database consists of 37 charter boat operations, with approximately 1/3 in the San Juan metropolitan area, which make an average of approximately 20,000 angler trips per year. The for-hire industry in Puerto Rico does not include any head-boats, and it must be recognized that not all dive vessels are included in the DNER database. Obtaining an up-to-date inventory of for-hire vessels in Puerto Rico would be an additional task of this project. Of the 37 charter boat operations on the current DNER database, 18 are known to have access to internet. Another available license frame is the federal HMS for-hire permit.A pilot program is envisioned that will introduce a mandatory electronic logbook reporting system for for-hire recreational charter vessels that harvest finfish, HMS species, and marine invertebrates in Puerto Rico. A paper logbook would be available to those without computer or internet access. Benefits of the improved and expanded system should include substantial improvements in the quality and precision of the data collected, minimal time demands on for-hire captains and increased public confidence in the data collection program as well as among resource managers. Improved timeliness in reporting of HMS data (especially marlin harvests) is an added benefit.

1.4. Project Description

A pilot electronic logbook reporting program will be developed and conducted in Puerto Rico, using as a model the electronic trip ticket systems in place in other states. Data collection would consist of a census design (mandatory reporting, as required by the 1998 Fisheries Law) with validation and would be designed to collect catch and effort data on all target species with particular

attention to HMS species and including invertebrate (queen conch, whelk and lobster) fisheries. Catch and effort data to be collected through this system will be compatible with that collected through the currently operating MRFSS survey, with the exception of inclusion of data on recreationally captured invertebrate species (queen conch, West Indian Top Shells, and spiny lobster), which are excluded from MRFSS.RFP for private contractor will include:•Design and implementation of an electronic reporting system in Puerto Rico, with built-in electronic signature, based on the electronic trip ticket program in use in other states.• Updating of the inventory of dive vessels which allow harvest of fish or invertebrates by clients.•Collection of for-hire catch and effort data via an electronic reporting system, with bi-weekly reporting frequency. Charter captains would have the option of up-to daily data reporting, if they desire; bi-weekly would be the upper time limit.• Charter captains could report fish (and invertebrate) sizes voluntarily in the system. The sizes reported would be compared to dock-side recorded sizes. • The electronic system would allow for printing a tracking report, which the charter captains could take on the vessel to manually note catch and effort for later reporting through the electronic system.•Collection of for-hire catch and effort data via non-electronic reporting option (telephone or paper forms) to be used by for-hire operations that do not have easy access to internet. DNER personnel would be responsible for data entry from telephone or paper forms. Paper forms would be faxed to DNER.•Contractor would be responsible for tracking non-compliance and reporting to proper agency.•PR DNER personnel will aid in validation of self-reported data by random visits to 10% of the charter vessels each week to note whether they are out fishing, out for other (or unknown) reason, or in the slip. Data from the observed activity patterns will be compared with the reported activity and the degree of concordance or discrepancies will be noted. Discrepancies will be discussed with the appropriate charter captain to determine how to interpret the event. Failure to comply with the data reporting requirements of the program could result in fines and/or revocation of the DNER charter boat permit. MRFSS dockside surveys of for-hire anglers will continue to be conducted, and catch data from these interviews will be used to validate self-reported catch data from logbooks. Nevertheless, it must be noted that validation of invertebrate catch will be difficult since MRFSS only covers finfish. If the pilot is successful, dockside validation of invertebrate catch will be added in the future. Diveboats identified that allow spearfishing will be added to the MRFSS dockside surveys next year.At the end of the one year pilot project, outputs from the electronic for-hire reporting system in Puerto Rico will be handed over to the Puerto Rico DNER. Data comparison tables and documentation of the results of the pilot project will be reviewed by the For-Hire Workgroup. Final products delivered to the Operations Team will include a final report with a comparison of MRFSS RDD estimates with the electronic logbook method and manual logbook method, discussion of the degree of success of the pilot program, suggestions for improvement and recommendations regarding continued use. A survey of participants will also be conducted at the end of the pilot, to obtain their feedback on the electronic logbook system. If evaluation of the system is considered favorable, as indicated by widespread acceptance and compliance by charter captains, with accurate reporting (based on validation), and acceptable response rates, then it will be recommended as the standard method for collection of for-hire data. For hire operators who were using the telephone or manual log book reporting method during the pilot project would be encouraged to adopt electronic reporting.

1.5. Public Description

1.6. Objectives

1.7. References

CFMC/NMFS (2005) Comprehensive Amendment to the Fishery Management Plans (FMPs) of the U.S. Caribbean to Address Required Provisions of the Magnuson-Stevens Fishery Conservation and Management Act: Amendment 2 to the FMP for the Spiny Lobster Fishery of PR and the USVI; Amendment 1 to FMP for the Queen Conch Resources of PR and the USVI; Amendment 3 to the FMP for the Reef Fish Fishery of PR and the USVI; Amendment 2 to the FMP for the Corals and Reef Associated Invertebrates of PR and the USVI, Including Supplemental Environmental Impact Statement, Regulatory Impact Review, and Regulatory Flexibility Act Analysis. 624 pp. Ditton, R., A. Loftus, and J. Volstad. 2001. ACCSP For-Hire Review. Report to the Atlantic Coastal Cooperative Statistics Program, Washington, D.C. 143 pp. García-Moliner, G., W. R. Keithly, Jr. and I.N. Oliveras (2001) Recreational SCUBA Diving Activity in the US Caribbean. Proceedings of the 52nd Gulf and Caribbean Fisheries Institute (1999) 52, 363-371. García-Moliner, G., Ivan Mateo, Sheri Maidment-Caseau, William J. Tobias. and Barbara Kojis (2002) Recreational Chartered Fishing Activity in the US Caribbean. Proceedings of the 53rd Gulf and Caribbean Fisheries Institute (2000) 53, 307-317. National Research Council (NRC), 2006. Review of Recreational Fisheries Survey Methods. The National Academies Press. Washington, DC. 187pp

2. Methodology

2.1. Methodology

2.2. Region

Caribbean

2.3. Geographic Coverage

2.4. Temporal Coverage

2.5. Frequency

2.6. Unit of Analysis

2.7. Collection Mode

3. Communication

3.1. Internal Communication

Project status reports will be provided to the Operations Team on a monthly basis. Number of vessels, logbook reports collected, etc.

3.2. External Communication

4. Assumptions/Constraints

4.1. New Data Collection

4.2. Is funding needed for this project?

4.3. Funding Vehicle

Gulf FIN Grant

4.4. Data Resources

The main assumptions are that the trip ticket software in use in other states can be modified for the purposes of this pilot study, and that the majority of the existing charter operations will be willing and able to enter catch and effort data through this medium.An additional assumption is that random visits to charter boat docks by DNER personnel (biologists and enforcement), along with other comparisons and cross-checking will serve to validate the otherwise self-reported data, and thus ensure improved precision of the data collected.

4.5. Other Resources

4.6. Regulations

4.7. Other

5. Final Deliverables

5.1. Additional Reports

5.2. New Data Set(s)

5.3. New System(s)

6. Project Leadership

6.1. Project Leader and Members

First Name	Last Name	Title	Role	Organization	Email	Phone 1	Phone 2
Craig	Lilyestrom		Team Leader				

7. Project Estimates

7.1. Project Schedule

Task #	Schedule Description	Prerequisite	Schedule Start Date	Schedule Finish Date	Milestone
1	Request for Proposals		12/01/2007	01/31/2008	Y
6	Identify data elements to be collected and work with contractor to design		01/01/2008	03/31/2008	
9	Go live with electronic reporting tool, identify participants that need telephone or paper		04/01/2008	04/30/2008	
14	Preparation of final report		03/01/2009	05/31/2009	Y
15	discuss the degree of success of the pilot program, suggestions for improvement and recommendations		03/01/2009	05/31/2009	
2	Generate RFP		12/01/2007	12/31/2007	
10	Implement methods for validation of effort and catch		04/01/2008	04/30/2008	
11	Monitor and track compliance, report to DNER about non-compliance and issue warnings when warranted		04/01/2008	03/31/2009	
13	Completion of catch and effort estimates, compare with MRFSS method		03/01/2009	04/30/2009	
3	Select Contractor for award		01/01/2008	01/31/2008	
4	Development of electronic reporting method and telephone and paper alternatives		01/01/2008	03/31/2008	Y

Task #	Schedule Description	Prerequisite	Schedule Start Date	Schedule Finish Date	Milestone
5	Outreach to for-hire industry to announce the new logbook system and solicit their cooperation		01/01/2008	03/01/2008	
7	Test and run		01/01/2008	03/01/2008	
8	Implementation of logbook reporting		04/01/2008	03/31/2009	Y
12	Data analysis		03/01/2009	04/30/2009	Y

7.2. Cost Estimates

Cost Name	Cost Description	Cost Amount	Date Needed
Administrative Support Fees	Data entry by DNER personnel for paper and telephone reporting options: Est.40 hrs. @ $17/hr-in kind	$0.00	
Service Contract or Maintenance Fees	Cost of contractor to maintain the website, compile and deliver the data (included in first yr cost)	$0.00	
Software	Electronic reporting program development and implementation	$50000.00	
Enforcement	Cost for tracking noncompliance and issuing warnings or fines to offenders: 60 hrs. @ $20/hr in-kind	$0.00	
Printing	Printing and mailing costs for paper option	$5000.00	
TOTAL COST		$55000.00	

8. Risk

8.1. Project Risk

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach

9. Supporting Documents

"Final Report", page 1

Project Title:	Puerto Rico For-Hire Vessel Pilot Project
Duration:	May 1, 2008 – April 30, 2009
Objectives:	To collect catch and effort data from for-hire vessels in Puerto Rico. This task will include establishment of a mandatory census reporting program, development and implementation of an electronic logbook reporting system, and validation of self-reported catch and effort data. Data collected through the census program will be compared to catch and effort estimates produced by the Marine Recreational Fisheries Statistics Survey (MRFSS) in an effort to develop an improved data collection program for for-hire vessels in Puerto Rico.
Methods:	Currently, there are 15 active charter businesses operating in Puerto Rico. Some operate more than 1 vessel. Prior to this pilot project, standard MRFSS methodology was used to obtain catch and effort data on this industry, which resulted in inaccurate data estimates. Blue Fin Data was contracted to develop an electronic reporting system for Puerto Rico Department of Natural and Environmental Resources. Two internal meetings were held between DNER personnel and Blue Fin Data to develop and discuss the electronic logbook software design. Once agreement was reached on a draft software design, 3 meetings were held at DNER to present the draft design to charter boat operators. All 15 charter boat operators were invited; only 2 attended the meetings. One of the recommendations that came out of these meetings was that a manual logbook would be kept in each charter boat for the captain to fill out at the end of each trip, but that only the charter owner would fill out the electronic logbook, based on the manual logbook data provided to him. Electronic reporting commenced in February, 2009. However, only 1 charter owner agreed to fill out the electronic logbook. Personal meetings between charter owners and DNER personnel were arranged outside the DNER to present and discuss the pilot project, due to the difficulties in arranging for them to meet at the DNER. At these meetings, the charter owners expressed the following opinions for refusing to cooperate with the pilot project: • They were concerned that if the PR Treasury Department were to gain access to the electronic logbook information, they would easily be able to calculate their true earnings.

• They do not trust DNER.
• They have objections regarding the new DNER charter licensing program.
• They do not wish to give personal information, including owner's and captain's telephone number, USCG Captain number and postal address.
• They do not wish to inform DNER of every trip and all catch.

Following these personal meetings, 4 charter owners agreed to fill out the manual logbook, but not to share important information such as vessel id numbers, captain's numbers, DNER charter license number, etc. The manual logbook data started in May, 2009.

Daily validations of the only charter owner reporting via the electronic logbook were attempted. Lack of personnel (due to government layoffs) and the increased quota assigned by MRFSS made this very difficult to achieve. Random weekly validations were made starting in March, 2009. Five random weekly validations were completed; none of the validations coincided with fishing trips of the charter operation.

A meeting was held among the DNER Director of Marine Resources, the For-Hire project leader, the Director of the Hunting and Fishing License and Permit office, and the Commissioner of the DNER Ranger Corps. The issue of non-compliance with the Pilot Project was discussed, and the recommendation was made that the Ranger Corps assist with achieving greater compliance. However, when the Fishing Regulations were evaluated, the reporting requirement for charter boat operations was not sufficiently clear to the Ranger Corps Commissioner for him to agree to assign Rangers to this task. The Fishing Regulations clearly state that in order for a charter boat owner to renew their DNER license, they must demonstrate that they have provided DNER with required data on their fishing activity. However, the License and Permit office noted that only a fraction of the charter boat owners have applied for this license.

Conclusions/Recommendations:

• DNER Fishing Regulations need to be amended as soon as possible to remove all doubt that charter boat operations need a DNER license, which covers the recreational fishing activity of their clients and requires mandatory reporting via the system that DNER provides.

• DNER needs to resolve the disputes with charter operators and increase personnel to cover MRFSS and for-hire data collection.

• DNER should consider training FURA marine police as fisheries enforcement agents to augment enforcement provided by DNER Rangers.

• DNER Fishing and Hunting Licenses and Permits office must increase compliance with charter boat owners license requirements.

• DNER should continue to promote use of the electronic for-hire reporting system due to its many advantages to both the agency and the charter boat owners.

Puerto Rico For-hire System

Developed by Bluefin Data LLC

This program allows Puerto Rico For-hire boat captains to report their landings to the Puerto Rico Departamento de Recursos Naturales y Ambientales.

It is a Windows-based electronic reporting system designed to collect catch and effort data from For-hire vessel operators in Puerto Rico. The catch and effort fields and program logic were modeled after the 2007 MRFSS Intercept survey – Region 11, Puerto Rico. The program uses the Internet to send data via the SFTP protocol.

Bluefin Data LLC provides the program to any Puerto Rico For-hire captain at no cost to the captain. Free telephone support is also provided by Bluefin Data LLC.