

# A Hawaii Regional Survey Pilot Project: Testing a Mail Survey to Obtain Effort and Other Data from Boat-based Noncommercial Fishermen in Hawaii

FY 2012 Proposal

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## **1. Overview**

### **1.1. Sponsor**

Joshua DeMello

### **1.2. Focus Group**

Survey Design and Evaluation

### **1.3. Background**

The State of Hawaii does not require a license for non-commercial (i.e., recreational/subsistence) fishing, and is not likely to implement one in the near future. A license database would be very useful for collecting data about non-commercial fishing catch and effort. The federal National Saltwater Angler Registry (NSAR) was intended to compile a database of non-commercial fishermen – at least in the waters 3-200 miles around the islands. However, compliance with the registry has been poor, and the number of registrants from Hawaii is currently much too low to statistically represent the universe of boat-based fishermen here. Fishermen have expressed dissatisfaction with the registry requirement, as well as the Coastal Household Telephone Survey (CHTS). Therefore, fishery managers at the state and federal levels are partnering to develop a Hawaii Regional Fishing Survey (HRFS) that would address data quality issues identified locally and in a recent review of the national Marine Recreational Fishing Statistics Survey (NRC, 2006). The HRFS will ultimately estimate noncommercial fishing catch and effort in Hawaii using information from three fishing modes: private boat, shoreline, and charter boat (for-hire). Development of the HRFS, and other projects aimed at understanding noncommercial fishing in Hawaii, is promoted in our recently-released regional Saltwater Recreational Fishing Action Agenda. As part of this effort, we seek funding to test an address-based approach to obtaining data from private boat fishermen using the State of Hawaii's Division of Boating and Ocean Recreation (DBOR) vessel registration database. This project modifies and replaces one that was approved (though not implemented) for our region last year (DeMello, 2011). The survey will be based on vessel owners instead of individual anglers, as MRIP is currently. This pilot project is timely, as the NOAA Fisheries Service recently provided funds to DBOR to modify and improve its private boat registry. We also seek funding to engage statistical consultants familiar with recreational fishing data collection programs to assist us with building the HRFS (i.e., to determine the best protocol for integrating data from the private boat, shoreline, and charter fishing modes). This portion of the project would be accomplished following the survey proposed here and ideally will be leveraged by a funding proposal from Hawaii to address issues in the Hawaii Marine Recreational Fishing Survey (Ma, et al., 2012). Finally, we have requested funds as part of the proposed budget for some basic pre-survey outreach to potential respondents via boating and fishing clubs and other such targeted venues and audiences across the state.

### **1.4. Project Description**

The proposed project entails a survey of the DBOR private boat registry. This would be a one-time survey rather than successive waves of data collection (e.g., every two months for one year). Such an effort is not feasible given the time, funding, and manpower available. Rather, we seek to examine the efficiency of a mail survey in terms of response rate, as well as to compare data on key fishing trip characteristics and participant demographics as obtained via a survey of boat-based fishermen.

### **1.5. Public Description**

### **1.6. Objectives**

The proposed study has three objectives: Obj. 1: Obtain an estimate of private boat owners who fish from their vessels in Hawaii and adjacent federal waters (i.e., the "private vessel universe"), as well as indications of how many (non-boat owner) family and friends fish with these individuals on their boat in a given time period; Obj. 2: Provide basic information about fishing activities as engaged in by those in the private boat registry; and Obj. 3: Obtain estimates of effort and participation to compare to the estimates generated from the CHTS conducted in Hawaii.

### **1.7. References**

Demello, J. (2011). FY 2011 MRIP project proposal: pilot project for alternative data collection methods: Testing the concept of vessel owner/captain data reporting. Submitted to MRIP April 2011. Dillman, D.A. (1978). Mail and telephone surveys: the Total Design Method. New York: Wiley. 375 p. Link, M.W., Battaglia, M.P., Frankel, M.R., Osborn, L. and A.H. Mokdad (2008). A comparison of address-based sampling (ABS) versus random digit dialing (RDD) for general population surveys. Public Opinion Quarterly, 72(1):6-27. Ma, H., Ogawa, T. and J. DeMello (2012). FY 2012 MRIP project proposal: review of current sampling and estimation methods for the Hawaii Marine Recreational Fishery Survey. Submitted to MRIP January 2012. McHorney, C.A., Kosinski, M., and J.E. Ware. (1994). Comparisons of the costs and quality of norms for the SF-36 Health Survey collected by mail versus telephone interview: Results from a national survey. Medical Care, 32(6): 551-567. National Research Council (NRC). (2006). Review of recreational fisheries survey methods. Washington: The National Academies Press. 187 p.

## **2. Methodology**

### **2.1. Methodology**

There are several options for survey implementation. One current survey approach to obtaining noncommercial fishing effort in Hawaii is the CHTS, which is underpinned by an increasingly problematic methodology: random digit dialing (RDD). Challenges associated with RDD include a population that is increasingly replacing landlines with cellular telephones, the use of "caller I.D." to screen unwanted telephone calls, the high number of calls that must be placed before a successful contact is made (poor efficiency), and the labor costs of a telephone survey that make it more expensive than other methods. For these and other reasons, we seek an alternative to the CHTS/RDD survey. Some of the concerns described above are not applicable to a targeted sample of boat registrants. Nonetheless, telephone surveys tend to be more expensive and less efficient (Link, 2008) than mail surveys. For example, in a comparative study, McHorney et al. (1994) found that total survey data collection costs using telephone was 77% higher than for a mail survey and resulted in a significantly lower response rate. In addition, telephone surveys offer respondents less flexibility in terms of allocating time to respond (Dillman, 1978). However, prior to eliminating telephone mode from consideration, it is advisable to pilot test a mail survey of registrants in the State of Hawaii private boat registry. Respondents could also be asked which survey mode they would likely prefer. In an effort to maximize response rates, the questionnaire will be sent to participants using a modified Dillman Total Design Method (Dillman, 1978). This method uses personalization as well as repeated contacts to increase the likelihood that an individual will complete the questionnaire. Recipients will receive a survey packet, which will include the questionnaire, a stamped and addressed reply envelope, and a cover letter. Approximately three weeks after the initial mailing, recipients who have not responded will be sent an additional survey packet identical to the first, except the language in the cover letter will be slightly altered to emphasize the importance of their participation to this study. About six weeks after the initial mailing is sent, all non-respondents will be sent a third and final survey packet identical to the first two except that the cover letter will further emphasize the importance of the survey. As mentioned earlier, personalization is key to the Dillman Total Design Method. In an effort to make each mailing personal, all envelopes will be hand-addressed with blue ink and mailed using a first class, hand-affixed postage stamp, instead of electronic metering. Further, cover letters will greet the respondent by first name and will all be hand-signed by the project investigator with blue ink. Prior to survey mailing, an introductory postcard will be sent to all potential respondents informing them of the project and that they will soon receive a survey. Thank-you postcards will be sent to all respondents soon after they return the survey. The exact questions to be asked will be determined in cooperation with regional partners. However, the survey will contain an initial screening question to determine if the respondent uses his boat for fishing and is likely to inquire about fishing avidity, location (i.e., effort distribution between state and federal waters), time (night vs. day), how many friends/relatives fish with the boat owner on a typical trip, and basic demographics. The desired sample size for this project is 800 returned surveys. Assuming a 65% response rate, which is reasonable for this population given the nature of the survey, and accounting for non-deliverables and other sampling issues, we will send surveys out to an initial list of 1,400 potential respondents. These respondents will be selected at random from the entire DBOR database of approximately 8,000. A sample size of 800 is somewhat higher than what is needed for general results with a low margin of error, but will allow for better subgroup analysis based on post-stratification.

## **2.2. Region**

Western Pacific Islands

## **2.3. Geographic Coverage**

The Hawaiian Islands

## **2.4. Temporal Coverage**

2011/2012 DBOR registrants

## **2.5. Frequency**

One survey (three mailings)

## **2.6. Unit of Analysis**

Individual DBOR registrants

## **2.7. Collection Mode**

Mail survey

## **3. Communication**

### **3.1. Internal Communication**

The project team is in regular contact. Team members either work in the same division, or just a short drive away. Internal communication regarding this project will typically be handled by email and face-to-face meetings and will be largely coordinated by Hawkins. Meetings tend to occur either at PIRO or at the Council office. At present, most of the team's members meet approximately once per month to discuss marine recreational fishing activities in the Region. This new project will require coordination and cooperation from project partners. In particular, awareness of survey mailings is important, so that team members can expect questions from the public, other partners, and civic leaders. We also expect that division representatives to

the project will keep their respective agencies apprised of the project's goals, objectives, and progress. Regular communication will occur in all phases of the project: survey development, survey implementation, survey response, and data analysis and reporting. Prior to the implementation phase, Hawkins will send email updates to collaborators as necessary. During the implementation phase, Hawkins will send a brief email to collaborators informing them of project activities and other relevant issues every 14 days.

### 3.2. External Communication

Hawkins will report project progress once per month and develop a final report in collaboration with project partners at the conclusion of the project, as required by MRIP.

## 4. Assumptions/Constraints

### 4.1. New Data Collection

Y

### 4.2. Is funding needed for this project?

### 4.3. Funding Vehicle

MRIP

### 4.4. Data Resources

### 4.5. Other Resources

### 4.6. Regulations

OMB review applicable

### 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
Joshua	DeMello	Fishery Analyst	Team Member	Western Pacific FMC	joshua.demello@noaa.gov		
Christopher	Hawkins	Social Scientist	Team Member	NMFS PIRO	christopher.hawkins@noaa.gov		
Walter	Ikehara	Permits Coordinator	Team Member	NMFS PIRO	walter.ikehara@noaa.gov		
Alvin	Katekaru	SFD ARA/Regional Recreational Fishing Coordinator	Team Leader	NMFS PIRO	Alvin Katekaru		

First Name	Last Name	Title	Role	Organization	Email	Phone 1	Phone 2
Hongguang	Ma	Regional Recreation Fishing Coordinator	Team Member	NMFS PIFSC	hongguang.ma@noaa.gov		

## 7. Project Estimates

### 7.1. Project Schedule

Task #	Schedule Description	Prerequisite	Schedule Start Date	Schedule Finish Date	Milestone
1	Receive funding		04/02/2012	04/02/2012	
2	Develop draft cover letter and survey instrument		04/03/2012	05/30/2012	
4	First survey mailing		09/04/2012	09/04/2012	
5	Survey mailing # 2		09/25/2012	09/25/2012	
7	Data entry		09/10/2012	11/09/2012	
8	Data analysis and report		11/12/2012	12/14/2012	
9	Engage statistical consulting team		08/15/2012	10/15/2012	
3	OMB review and approval		05/30/2012	08/30/2012	
6	Survey mailing # 3		10/16/2012	10/16/2012	

### 7.2. Cost Estimates

Cost Name	Cost Description	Cost Amount	Date Needed
Introduction and thank you postcards printing	.20 each	\$500.00	
Stationary: #9 & #10 envelopes	.10 each	\$329.00	
Introduction and thank you postcards postage	.32 each	\$700.00	
MRIP statistical consultant support	170/hr @ 40 hrs.	\$6800.00	
Outreach	Printed materials for boating and fishing clubs; travel for project staff (e.g., marine recreational)	\$1500.00	
Survey printing	.45/survey	\$1458.00	
Cover letter printing and folding	.25 each	\$810.00	

Cost Name	Cost Description	Cost Amount	Date Needed
Survey postage	60 outgoing/.46 reply	\$3432.00	
Temporary staff hire	250 hours total over 15 weeks \$16/hr.	\$4000.00	
TOTAL COST		\$19529.00	

## 8. Risk

### 8.1. Project Risk

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
<p>In general, we do not expect any obstacles to the timely completion of this project. We do anticipate the OMB data collection review and approval process to be of typical length and expect that this process will be the most significant challenge to timely completion.</p> <p>A risk is that survey recipients may not respond in sufficient numbers from the various strata. In this event, we will aggregate strata for analyses.</p>	<p>The potential impacts to the successful completion of the project posed by the risks described above are likely to be minimal.</p>	Low	<p>We will be implementing the survey based on the Dillman Tailored Design method, which utilizes several features, including personalization, to encourage higher response rates that might otherwise be obtained.</p>

## 9. Supporting Documents