



**Gulf of Maine
Research Institute**

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Progress Report

Contract Number: 10-073

Project Title: Is the OLFISH electronic monitoring system a feasible tool for improving fishery-dependent data for the deep water red crab fishery?

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Contract period: March 1, 2010 – February 28, 2011; Extended through February 28, 2012 (24 months) on 3/4/11.

Period being reported: February 1, 2011 – June 30, 2011 (5 months)

Signature of lead PI:

Date: 12th July 2011

Introduction

This report refers to the Scope of Work outlined in the Project Development Fund contract #10-073, entitled "Is the OLFISH electronic monitoring system a feasible tool for improving fishery-dependent data for the deep water red crab fishery?". The primary aims of this scope of work are as follows:

Objective 1: Customize and assess the OLFISH electronic data collection system for collecting catch-per-unit-of-effort (CPUE) and discards data during commercial red crab fishing trips; collaborate with the NEFSC assessment staff to ensure the compatibility and utility of these data for improved stock assessments in future years.

Objective 2: Work with the red crab industry (Williams, captains and crew) to ensure the feasibility of the data collection system developed and provide training for sustained CPUE/discards data collection.

Objective 3: Make the collected data available to the NEC, the NEFSC, the red crab PDT and the SSC for consideration in future stock assessment processes.

Major accomplishments and milestones

Following are the primary tasks completed within the current reporting period:

- 1) February 2011 – Discussed with the NEC the need for a project extension, to enable us to continue working with the red crab industry and improve the quality of data collected; GMRI prepared a Memorandum detailing the needs for further software customization, additional training of red crab captains and additional data collection.
- 2) March 2011 – Secured a contract amendment from the NEC, extending the life of the project by 12-months.
- 3) March-April 2011 – In accordance with the extended scope of work, GMRI began reviewing the software refinement plans with OLRAC. Due to the frequent shift of captains and vessels within the red crab fleet, we had decided that the software needed to allow a captain to move a laptop between vessels (rather than having a license registered to a specific vessel). This would enable the captains to change vessel information under one computer license and therefore, improve the continuity of the data in the future. However, during this detailed planning exercise, OLRAC determined that the re-build would be very complex, and therefore, much more costly than their initial estimate of \$1,600 (obtained in January 2011).
- 4) April 2011 – After further communication with the NEC, it was agreed that instead of utilizing the funds to refine the software, we would instead focus our efforts on purchasing an additional laptop and license, and increasing our training efforts with red crab captains, so that more captains would be able to utilize the software, regardless of whether they moved from one vessel to another.
- 5) May 2011 – GMRI ordered a new laptop for use on the F/V Krystel James. We had planned to re-train Capt. Jorge Daher who had returned to the west coast for the winter; Daher has not returned to the east coast and is no longer fishing red crab, so much of May was spent communicating with the red crab industry to figure out a training plan for the upcoming red crab season.
- 6) June 2011 – GMRI re-trained Capt. Johnnie Brewer, to collect data on F/V Hannah Boden. Brewer is currently collecting data from his 3rd trip since this training session.
- 7) July 2011 – GMRI re-trained Capt. Johnnie Brewer (to clarify some software nuances) and trained a new captain (Capt. Lam Pham) to collect data on F/V Krystel James.

Unexpected difficulties and project alterations

Cost of software refinement: Periodically, captains from one vessel will start a trip by hauling gear that another vessel had set. This type of fishing behavior cannot be captured in the current OLFISH software build and GMRI investigated the options for changing this, as part of the software refinement process that would allow one laptop to be transferred between vessels. To refine the software according to these needs became cost prohibitive and thus, we decided to focus more on training more captains to use the software in its current build; this should allow for data collection continuity, even if captains move between vessels during the course of the year.

Software terminology confusion: As GMRI trains more captains with the OLFISH software, we are learning that some of the terminology used in the software causes some confusion. As such, GMRI is developing a list of minor software changes that we will recommend to OLRAC for future builds (whether for this fishery, or for others).

Loss of trained captains: The first captain we had trained (Jorge Daher, FV Benthic Mariner) had returned home (to the West Coast) for Christmas and decided to stay to fish in Alaska; he was due to return to fishing red crab in May 2011, but ultimately decided to stay in Alaska. In January 2011, GMRI trained a second captain (John Brewer) to record red crab catch on F/V Hannah Boden (after completing fishing for swordfish); it remains unclear whether F/V Hannah Boden will fish swordfish in 2011, and whether this captain will stay fishing red crab (on e.g. F/V Krystel James) or crew for Capt. Linda Greenlaw. In the meantime, we have trained Capt. Lam Pham for the F/V Krystel James (since this is likely to be the most stable vessel in terms of focusing on red crab for 2011). However, if Brewer switches to the F/V Krystel James, then we have a trained captain (Pham) with no access to an OLFISH license without removing the computer from F/V Hannah Boden, cancelling any outstanding license months and re-licensing for a different vessel. This is possible, but takes time and requires software re-installation and speedy communication between the industry, GMRI and OLRAC. We have not trained Capt. Tim Foley since he is not currently fishing red crab.

Switching of vessels between fisheries: The pattern of vessels changing between fisheries does pose a problem for data collection continuity; the table below summarizes the vessel/captain changes by year.

	Year 1 of the project (2010)					Year 2 of the Project (2011)				
	RC	JC	L	S	C	RC	JC	L	S	C
HB	X			X	X	X			?	X
KJ	X				X	X				X
BM	X	X			X	X	X			X
DG		X	X		X		X	X		X

Fishery Key: RC=red crab, JC=Jonah crab, L=lobster, S=swordfish, C=Captain changes

Vessel Key: HB=F/V Hannah Boden, KJ=F/V Krystel James, BM= F/V Benthic Mariner, DG=F/V Diamond Girl.

By way of explanation, during 2010 the F/V Benthic Mariner and F/V Krystel James both fished red crab (while the software was being built); during this time F/V Diamond Girl was targeting lobster and Jonah crab, while the F/V Hannah Boden moved between red crab and swordfish. During 2011, the F/V Hannah Boden has been targeting red crab, but with the ever-present plan to switch to swordfish at some point during the summer. The F/V Krystel James should be the vessel that remains constant for the remainder of 2011, targeting red crab, however, this vessel got a late start on the season due to work permit problems for the captain. The F/V Benthic Mariner has been tied up, though in July will again fish red crab.

Next steps, tasks for next 6 months

- Continue training/re-training red crab captains to collect catch/discards and landings data from the red crab fishery;
- Improve communication (regularity) with trained captains and also the shore manager so that we can respond in a more timely manner to vessel/captain changes;
- Update the NEFSC red crab stock assessment team of our data collection hurdles and progress;
- Present our work at relevant fishery forums (abstract accepted for oral presentation at the AFS conference in Seattle, September 2011);
- Summarize the work from this project on a webpage hosted by GMRI.

Impacts of the project to the fishing and science community

Until we have data from more red crab trips, the project can have minimal impact on the scientific community. We will continue to train captains to enable them to electronically monitor their catch/discards data at a resolution that is helpful to future stock assessments and efforts to manage the deep water red crab fishery.