

Hawaii Fisheries Disaster Relief Program Final Report

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2. Title of Project
NWHI and MHI Bottomfish Tagging Project

3. Fishery Targeted:

- *Opakapaka* (Pink Snapper).
- *Onaga* (Long Tail Red Snapper).
- *Ehu* (Short Tail Red Snapper).
- *Kalekale* (Small Mouth Pink Snapper).
- *Hapu`upu`u* (Sea Bass).
- *Gindai* (Banded Pink Snapper).
- *Butaguchi* (Thick Lip Trevall).
- *Uku* (Grey Snapper or Jobfish).

4. Award received: \$ 258,388

Actual amount spent to date: All award funds to be utilized by June 30, 2008

5. Project Objectives:

Management decisions are being made without understanding the extent to which these species move, migrate or aggregate. This project will:

- Provide fishery scientist with growth and movement information of bottomfish species during and after the conclusion of this tagging project.
- Collect tissue samples from different areas in the archipelago for genetic research.
- Inform all bottomfish fishermen about the importance of returning captured tagged fish and this type of research to better manage the fisheries.

6. Describe how the objectives were met.

PIFG identified the following goals in the grant proposal. Below each goal are the tasks completed to meet each goal.

- 1) Goal 1: Provide fishery scientist with growth and movement information of bottomfish species.
Activity: PIFG will:
 - Procure appropriate tags and materials.
 - Identify and contract NWHI and MHI bottomfishing vessels to conduct dedicated trips to tag and release of bottomfish.
 - Coordinate training workshops with contracted fishermen.
 - Contract a dedicated tagger to accompany fishermen on each fishing trip.
 - Maintain communication with contract fishermen to provide support as needed throughout the project. E.g. Distribute tags, tagging equipment and material, collect data

- sheets.
- Develop and maintain a tagging database.

PIFG procured spaghetti 4000 tags from Hall Print. Sixteen (16) experienced bottomfish fishermen were identified and recruited to participate in the tagging project. Fishing effort is distributed throughout the Hawaiian archipelago, including the NWHI. These fishermen were trained by PIFG members and provided tagging kits. All tags have been distributed to bottomfish fishermen. Approximately 2,900 tags have been deployed to date by fishermen throughout the Hawaiian Islands. All taggers were offered the option of taking a dedicated tagger on bottomfishing trips which would be provided by PIFG. PIFG continues to work with the bottomfish taggers on a continuous basis to facilitate tag deployment and retrievals. To date, 14 opakapaka have been recovered. However due to the current closed status of the MHI bottomfish fishery, we do not expect tag returns from the MHI until the fall 2008. In this project the longest travel for a recovered opakapaka has been 3.5 miles. As in a past bottomfish tagging project the longer a fish is at liberty the more chance of it traveling greater distances. It is hoped that long Term recoveries will help shed more light in this area.

- 2) Goal 2: Collect tissue samples from different areas in the archipelago for genetic research.
Activity: PIFG will:

- Coordinate with HIMB to provide secure collection vials and instructions for fishermen (see attachment).
- Conduct workshop with contracted fishermen on proper tissue collecting, storing and recording procedures.
- Facilitate retrieval of samples from fishermen after completed fishing trip.

As part of the tagging kit, PIFG provided each tagger a genetic tissue sample kit developed by the Hawaii Institute of Marine Biology. Each tissue sample kit included 100 tissue sample vials. All tissue samples have been collected and returned to HIMB for analysis.

- 3) Goal 3: Inform fishermen about the importance returning captured tagged fish and this type of research to better manage the fisheries.

Activity: PIFG will implement outreach and education that will include:

- Bottomfish tagging brochures and posters (requesting recovery information such as length, tag number, location, time, date, etc.; providing call in number(s); and award program benefits (shirts, etc)
- Engaging fishing tackle manufactures, retail outlets, local and federal agencies and organizations to garner program support to maximize tag returns.
- Distribution of brochures and posters to tackle shops and other venues where fishermen traffic.
- Engaging fishing clubs and organizations to inform members and/or participants about the bottomfish tagging program.
- Development of an incentive program (shirts, equipment, etc.) for fishermen who provide information on tag recaptures.
- Placement of periodic articles about the project and its results in agency news letters, fishing news papers, magazines and other periodicals as appropriate.

PIFG has produced a number of education and outreach material to support this tagging project. A bottomfish tagging poster and flyer has been produced and distributed to fishing tackle and seafood outlets throughout the State. Rewards for fishermen who report tag recovery have been produced and distributed. PIFG board members continue to engage the fishing community, clubs and tournaments in an effort to educate the fishing public about this tagging project and the importance of fishermen's participation in cooperative research projects. PIFG has also published a series of articles in Hawaii Fishing News in an effort to educate the public about the bottomfish tagging project and to encourage tag recovery reporting.

The methods designed and developed for this project were the first of its kind for a large scale angler based bottomfish tagging project. Procedures developed and implemented as tagging protocols for this project dealt with the difficult problem of "barotrauma" which occurs when the swim bladder expands, the fish becomes bloated often resulting in the stomach becoming inverted. One of the major outcomes of the project has been developing the treatment method for fish subject to barotrauma. Mild to Severe cases of barotrauma had to be dealt with in order to safely return bottomfish to extreme depths. Several methods were tested and implemented to safely return bottomfish. One method was "venting" of the air bladder which allowed the release expanded gas so that fish would gain neutral buoyancy and return to the bottom. Another device developed was the "Drop Shot". A barbless hooked shape wire attached to a lead was used to lower and release bottomfish to extreme depths. Instructions for treating barotrauma have been adopted by State and Federal fishery agencies.

7. Discuss differences between work anticipated in your proposal and work that was actually completed.

The main difference was the seasonal closure of bottom fishing in the Main Hawaiian Islands. When the proposal was submitted this seasonal closure wasn't in effect. So the seasonal closures lead to the delays in getting the tags in the water during the grant time period.

8. Discuss differences between expected and actual costs.

There were no real differences between expected costs and actual costs due to the planning of our project advisor, Clayward Tam.

9. List all publications, posters, brochures, and other informational material published with project funding. Submit copies of publications to JIMAR

Copies of informational handouts, drop shot instructions, poster and "Hawaii Fishing News" article submitted to JIMAR.