

JIMAR, PFRP ANNUAL PROGRESS REPORT FY 2003

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Project Proposal Title: Incidental catch of Non-target Fish Species and Sea Turtles: Comparing Hawaii's Pelagic Longline Fishery Against Others. (Project No. RCUH Contract No. NA17RJ1230, Project No. 658849)

Funding Agency: PFRP

1. Purpose of the project and indicative results.

Recognizing that fisheries products in the US market originate from multiple domestic as well as distant fisheries, a practical method for making objective, science-based assessments and comparisons of bycatch impacts is needed. The project objective is to evaluate the incidental catch of non-target fish species and sea turtles in Hawaii's longline fishery and make comparisons with other pelagic longline fisheries in a methodology patterned after Hall (1999). The purpose is to put the bycatch associated with the Hawaii pelagic longline fishery into perspective by using a comparable standard of ecological impacts to make comparisons with other fisheries for the same target species available in the U.S. seafood market. Pelagic longlining is not a single method, but many methods differentiated by their operating characteristics. In order to make meaningful comparisons of fish produced by vessels applying the different longlining methods on a ton-for-ton basis of marketed species, the ratio of BPUE (bycatch per unit effort) to CPUE must be calculated. This allows a practical measure for comparison by relating bycatch impacts per unit of the targeted catch. By doing so, the relative ecological trade-offs can be quantified when management actions promote shifts in fishing effort and shifts in the source of the market supply of the same species.

2. Accomplishments.

The project work began July 1, 2002 after funds became available.

- Gathered and reviewed literature on bycatch, responsible fishing and ecosystem-based management as background for approaching the project and establishing definitions.
- Collected information needed to describe the typology pelagic longline fishing methods. The typology profiles include details about the gear, the configuration, the number of hooks, the types of hooks and bait etc. How gear is configured and used has a great impact on bycatch rates and impacts, especially on sea turtles. These details help to distinguish the various methods so that comparisons of bycatch rates between Hawaii methods and other fisheries can be better understood. These profiles have been assembled and efforts are on-going to have their accuracy confirmed by people in positions to verify the information.

- Efforts were made to determine the major sources of fresh swordfish imported into the US through the major ports of entry. A long-list of leading exporting countries was considered for potential comparisons with Hawaii's fishery. Work was done to estimate sea turtle take rate for western tropical Pacific tuna longliners, Brazil swordfish longliners and Costa Rica mahimahi longliners. Bycatch per catch ratios were estimated and comparisons of bycatch per ton of target species were made with product from the Hawaii fishery to estimate the magnitude of the differences of potential incidental interactions of sea turtles.
- The PI's participated in the Second International Fishers Forum (IFF2) in November 2002 to make contacts with fishermen and fisheries scientists from around the world who are working on solutions to bycatch problems associated with pelagic longline fishing. Met with Martin Hall from IATTC and made other contacts from important countries including Mexico, Chile, Brazil, Taiwan, Costa Rica, Mexico, South Africa, SPC, etc. Follow-up efforts with these contacts have helped to gain perspective on how longline gear is configured and used in the various fleets. We have also been trying to determine if fisheries data on primary catch and bycatch are available in these countries. This type of information is not readily available but efforts are continuing.
- Paul Bartram gave a progress report presentation on December 5, 2002 at the PFRP PI's meeting.
- A short-list of fisheries to be compared with Hawaii's fishery has been prepared by interviewing major buyers of Hawaii swordfish that had to replace their supply with imported swordfish. The short-list consists of California, Mexico, Panama, Costa Rica and South Africa, the actual source of swordfish these major buyers used after the Hawaii swordfish supply was eliminated and the buyers were forced to substitute imported product. The short-list is needed to attempt to quantify the ecological trade-offs that might have occurred as a net effect resulting from the Hawaii swordfish fishery closure that was intended to reduce adverse impacts on sea turtles.

Problems:

Accessing fisheries data especially on sea turtle bycatch and fish discards from countries that have pelagic longline fisheries has been very difficult. Information is limited, but by using the longline typologies and information on the type of fishing methods used in the various fleets, we have a method for estimating the potential bycatch impacts. Efforts are continuing to access data through industry and management contacts.

3. Plans for the next fiscal year.

Next work anticipated:

- The pelagic longline fishing typologies will be completed.
- We will continue to attempt to locate and gain access to longline fishing data from the short-list of countries identified as the source of fresh swordfish that replaced Hawaii swordfish in the market.
- Information on the Hawaii fishery CPUE and sea turtle BPUE and finfish BPUE will be gathered and summarized. BPUE/CPUE ratios will be calculated.
- BPUE for fish species usually discarded will be determined.
- Comparisons with of BPUE/CPUE ratios will be made where possible in order to estimate the ecological trade-offs of substituting Hawaii swordfish with other sources.
- Prepare final report.

4. List of papers published in refereed journals during FY 2003.

None.

5. Other papers, technical reports, meeting presentations, etc.

Presentation of preliminary results at the PFRP PI's Meeting in December 5, 2002 in Honolulu.

6. Names of students graduating with MS or Ph.D. degrees during FY 2003. Include title of thesis or dissertation.

None. Does not apply to this contract.

7. For multi-year projects, provide budget for the next year on a separate page.

Does not apply.

Submitted by:

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