JIMAR ANNUAL REPORT FOR FY 2010

P.I./SPONSOR NAME: Kevin Weng, William A. Walsh

NOAA OFFICE: NMFS/PIFSC

PROJECT PROPOSAL TITLE:

Analyses of Catch Data for Mahimahi (*Coryphaena hippurus*) and Wahoo (*Acanthocybium solandri*) from the Hawaii-based Longline Fishery and other Pacific Fisheries (PFRP Project 652764)

FUNDING AGENCY: NOAA Fisheries

NOAA GOAL (Check those that apply):

- ☑ To protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management
- ☐ To understand climate variability and change to enhance society's ability to plan and respond
- ☐ To serve society's needs for weather and water information
- ☐ To support the nation's commerce with information for safe, efficient, and environmentally sound transportation

PURPOSE OF THE PROJECT (One paragraph):

The purpose of this project is to conduct detailed analyses of catch data for wahoo and mahimahi, two widely distributed, economically, ecologically and recreationally important mid-sized pelagic predaceous fishes, from several Pacific fisheries. The first objective will be to develop statistical models of catch rates from the Pacific Islands Regional Observer Program database and then apply the model coefficients to the logbook data from the Hawaii-based longline fishery in order to characterize and quantify reporting biases. This will increase the number and types of species with corrected, well-documented catch histories in the data archives of the Pacific Islands Fisheries Science Center. The second objective is to determine whether, and if so to what extent, intraspecific CPUEs for these species are correlated in various regions of the Pacific Ocean. Likely data sources, in addition to the Hawaii-based longline fishery, include troll data from the Hawaii Division of Aquatic Resources, offshore creel survey records from the Guam Division of Aquatic and Wildlife Resources, observer and longline logbook records from American Samoa, and offshore creel records from American Samoa. The third objective will be to use the corrected CPUE trends from the Hawaii-based longline fishery to test predictions from ecosystem models for the North Pacific Ocean, which suggest that fishes at lower trophic levels (e.g., mahimahi, wahoo) would exhibit compensatory responses to declines in higher trophic level predators (e.g. blue

marlin, yellowfin tuna, blue shark). A recent paper (Polovina et al., 2009, "Increases in the relative abundance of mid-trophic level fishes concurrent with declines in apex predators in the subtropical North Pacific, 1996–2006", Fishery Bulletin 523–531) presented evidence in support of these concepts. It remains to be seen, however, if such patterns would be observed in temperate regions or across a greater spatial scale(s). The fourth objective will be to identify and estimate patterns in the sizes of these fishes. In the case of the Hawaii-based longline and commercial troll fisheries, individual weights of each fish sold at the United Fishing Agency public fish auction since January 1, 2000 will be available. The reason for this work is that previous research has suggested that wahoo exhibits a two-year cycle in body size that may be related to some life history trait.

PROGRESS DURING FY 2010:

This project is in the early analytical stages, and none of the objectives has been met. I devoted most of my efforts in FY 2010 to analyses of shark bycatch data (see PFRP Project 657157). Work to date on this project has consisted of data preparation and quality control checks, as well as exploratory analyses.

The budget allocation for this project has been spent in full. No further expenditures or requests for additional funding are planned. Report(s) will be submitted annually until the publication process has been completed.

PLANS FOR THE NEXT FISCAL YEAR (One paragraph):

The intentions for FY 2011 are to conduct the planned analyses and, if time permits, describe and submit the results to a peer-reviewed journal for publication. A letter summarizing the current status of this project and my other projects was sent to Dr. Kevin Weng, PFRP Program Manager, on March 6, 2010. The letter stated that my intentions are to conduct this work as time permits. However, completion of the ongoing sharks bycatch work (PFRP Project 657157) and the upcoming work in support of blue marlin and striped marlin stock assessments, which has recently been awarded PFRP funding for FY 2011 are considered higher priorities.

LIST OF PAPERS PUBLISHED IN REFEREED JOURNALS DURING FY 2010.

There were no peer-reviewed journal papers published under this project in FY 2010. See Walsh and Bigelow (Shark Bycatch – Project 657157) for the description of a journal paper from FY 2010.

OTHER PAPERS, TECHNICAL REPORTS, ETC.:

There were no technical reports or working papers papers published under this project in FY 2010.

GRADUATES: None

AWARDS: A one-time cash award ($300.00) was given in recognition of development of techniques for integrated analyses of catch data from fishery observers and mandatory federal logbooks and sales records from the public fish auction in Honolulu.

PUBLICATION COUNT:

	JI Lead Author	NOAA Lead Author	Other Lead Author
Peer Reviewed	0	0	0
Non-Peer Reviewed	0	0	0

PERSONNEL: None

IMAGES AND CAPTIONS: None

ACRONYMS:

NOAA: National Oceanic and Atmospheric Administration

PFRP: Pelagic Fisheries Research Program

CPUE: catch-per-unit-effort (unit = 1000 hooks)