JIMAR ANNUAL REPORT FOR FY 2009

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

NOAA OFFICE (Of the primary technical contract):

NMFS Pacific Islands Fisheries Science Center

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

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 the first thorough, 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 catch data 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 CPUE (catch-per-unit-effort) values for these species are correlated in various regions of the Pacific Ocean by use of correlation and time series techniques. 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 (e.g., Ecosim, a dynamic food-web model for a pelagic ecosystem; and Ecospace, a spatial version of Ecosim) 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). 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.

PROGRESS DURING FY 2009 (One-two paragraphs):

This project is in the early analytical stages, and none of the objectives have yet been completed. Two factors have contributed to delay. All of my previous work was conducted using the statistical software package S-PLUS, but the S-PLUS site license was relinquished by the PIFSC. I have switched to R, another software package that is similar to S_PLUS in many but not all respects. As such, this switch has required studying and experimentation that caused about a one-month delay in my progress. The second reason for delay is that revisions to a paper (see Walsh and Bigelow; Shark Bycatch – Project 657157) required almost two months of full-time effort. The resulting paper is undoubtedly improved from the original submittal because the reviews were extensive and very thorough, but the work involved in meeting the critiques was very substantial.

PLANS FOR THE NEXT FISCAL YEAR (One paragraph):

The intentions for FY 2010 are to conduct and complete the aforementioned analyses, describe the results, and then submit the results to a peer-reviewed journal for publication.

LIST OF PAPERS PUBLISHED IN REFERRED JOURNALS DURING FY 2009.

There were no peer-reviewed journal papers published under this project in FY 2009. See Walsh and Bigelow (Shark Bycatch – Project 657157) for the description of a journal paper from FY 2009.

OTHER PAPERS, TECHNICAL REPORTS, ETC.:

There were no technical reports or working papers papers published under this project in FY 2009. See Walsh and Bigelow (Shark Bycatch – Project 657157) for titles of working papers to which Walsh contributed in FY 2009.

GRADUATES (Names of students graduating with MS or PhD degrees during FY 2009; Titles of their Thesis or Dissertation):

None

AWARDS (List awards given to JIMAR employees or to the project itself during the period):

None

PUBLICATION COUNT (Total count of publications for the reporting period and categorized by NOAA lead author and Institute (or subgrantee) lead author and whether it was peer-reviewed or non peer-reviewed (not including presentations):

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

PERSONNEL: For projects that awarded subcontracts in the fiscal year, please provide the number of supported postdocs and students from each subgrantee.

None

IMAGES AND CAPTIONS (We will also be including images for the annual report. Please send two of your best high-resolution, color images (photo, graphic, schematic) as a **JPEG or TIFF (300 dpi)** with a caption for each image. If you do not have an electronic version of the image, a hardcopy version may be dropped off at the JIMAR office located in the Marine Sciences Building, Room 312):

None