JIMAR/PFRP ANNUAL REPORT FOR 1998

Project Title:

Hawaii pelagic fishing vessels economics (RCUH # 2046/2123)
aka *Hawaii Fleet, Industry, and Vessel Economics (HIFIVE)*

Principal Investigator: Samuel G. Pooley, Honolulu Laboratory, NMFS

Associate Investigators: Marcia Hamilton, Rita Curtis[1], Michael Travis[2]

Funding Agency: NOAA/Pelagic Fisheries Research Program/JIMAR

1. Purpose of Project

The objective of this research is to provide fishery management information based on the economic characteristics and dynamics of the Hawaii longline and troll-handline fishing fleets, i.e., to determine:

- **what are the economic components of fishing *effort***
- **what makes fishing *effort* endogenous,**
- **how do these inter-relate with fishery management decisions?**

The project was scheduled for 3 fiscal years (to conclude mid-1997) and was extended for a 4th fiscal year in early 1997 (RCUH # 2123). It consists of two major components: a detailed economic analysis of the Hawaii-based domestic longline fishery; and, comprehensive information on the cost-earnings of the small boat pelagic fishery in Hawaii, including charter boats. Completion of the charter boat patron studies will be conducted under a 5th fiscal year budget.

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[1] Curtis left the project in 1996 to return to the University of Maryland for doctoral studies.

[2] Travis left the project in 1998 for a position with the NMFS Southeast Region office in St. Petersburg, Florida.

2. Progress during 1997

Progress in 1997 has centered on four areas: completing the initial economic analysis of longline fishing dynamics; the collection of basic information from the small boat pelagic fishery; the publication of results on the small boat pelagic fishery; and work on the charter boat segment of the domestic pelagic fishery.

- **Longline fishing dynamics analysis: -- Paper submitted for publication by Curtis, 1997. Preliminary results presented at Lake Arrowhead '97 by Travis.**
- **Commercial troll-handline cost-earnings study completed (Hamilton, 1997). Results to be presented at Lake Arrowhead '98.**
- **Charter-boat cost-earnings analysis – completion of field work and preparation of report.**
- **Charter-boat patrons analysis -- completion of fielding design with fielding initiated in mid-1998.**
- **Collaboration with two <u>new</u> projects:**
  - **Travis-Strand on longline fleet movements**
  - **McConnell-Hamilton on recreational pelagic fishing [Preliminary results presented at Lake Arrowhead '97]**
- **Investigation of alternative management structures**
  - **Neubauer[3] review of public decision literature**

Detailed economic analysis of the longline fishery has resulted in one paper submitted for publication, two dissertation papers, and one paper under review (Curtis) and two papers under revision (Travis). These cover the institutional and regulatory environment of the Hawaii longline fishery; response of the longline fishery to ex-vessel product prices; and economic analysis of fishing effort as applied to swordfish longline fishing.

Travis also completed a paper (under review) on entry/exit into the Hawaii longline fishery component of the project which is now part of the Travis and Strand project on the movement of longline fishing vessels between the U.S. mainland and Hawaii (a significant change which was

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[3] Deane Neubauer, University of Hawaii Department of Political Science.

anticipated by project staff in 1994 and which had a demonstrable impact on the fishery in 1995). Movement of a number of Hawaii longline boats to California in 1997 (perhaps temporary due to seasonal factors) and re-entry of a number of swordfish boats in late 1997 and early 1998 reiterate the importance of this research.

Curtis is also completing a dissertation at the University of Maryland's Department of Agricultural and Resource Economics which focuses on search behavior in the Hawaii longline fishery.

Hamilton reported the troll-handline fishing cost earnings analysis results in mid-1997. The work categorizes vessel owners by the significance of fishing income, ranging from full-time commercial to purely recreational. This report was provided to most participants in the study. A summary was also included in Hawaii Fishing News.

Hamilton completed charter fishing boat cost-earnings field work early in 1998. The analysis examines costs and returns to charter boat owners and operators by the extent of owner involvement (from owner operators to out-of-state owners). Vessel operating patterns and characteristics are also presented.

Hamilton completed the design for field work with charter fishing patrons in early 1998 and will initiate testing and implementation in mid-1998. This study is composed of two parts: patron expenditures and motivations, and patrons self-valuation of their charter boat fishing experience. Approximately 500 charter boat fishing patrons are expected to complete a self-administered instrument.

Neubauer's review of the public decision literature as it applies to natural resource management was completed in late 1997 and is being compiled into a project report which should be available in mid-1998.

3. Plans for 1998

- **Completion of longline dynamics research**

Completion and publication of longline vessel economic dynamics research and description of industrial structure is the primary objective for the analytical stage of this project.

- **Cost-earnings of charter boat fishing**[4]

The charter boat cost-earnings analysis mirrors the troll-handline component of this project, with information collected from all islands. In addition, the project has collaborated with sports fishing tournament interests to provide more information on the intersection of small boat and charter boat fishing and the sports fishing component of the tourism and ocean recreation industry in Hawaii. An on-going component of the charter fishing boat project is collaboration with University of Hawaii at Hilo researchers concerning fishing tournaments.

- **Analysis of charter boat patrons motivations (demand for charter boat services)**

Work on compiling economic information on charter boat patrons, including use of hypothetical valuation techniques, will be conducted through 1998.

4. & 5. List of Papers and Technical Reports (attached)

6. Names of graduates. None.

[4] not part of the McConnell JIMAR PFRP project.

Publications & Reports

Curtis, Rita E.

1998. Spatial allocation of effort: a dynamic discrete choice model of short run supply response in the Hawaii longline fishery. (Dissertation project with the University of Maryland, Department of Agricultural and Resource Economics.)

1998. The welfare effects of reducing sea turtle interactions: an application to the Hawaii longline fishery. (Dissertation project with the University of Maryland, Department of Agricultural and Resource Economics.)

1997. The effect of temporal aggregation in fishery supply models. (Paper submitted for publication.)

1996. Short-run supply response in a multi-species fishery. (Paper under review.)

Hamilton, Marcia S.

1998. Small-boat fishery study complete. Hawaii Fishing News. January '98.

Hamilton, Marcia S., Rita E. Curtis, Michael D. Travis.

1996. Cost-earnings study of the Hawaii-based domestic longline fleet. SOEST Publication 96-03. University of Hawaii: Honolulu, HI. 59 p.

1996. Hawaii longline vessel economics. Marine Resource Economics. 11(2): 137-140.

Hamilton, Marcia S and Stephen W. Huffman.

1997. Cost-earnings study of Hawaii's small boat fishery, 1995-96. University of Hawaii SOEST 97-06/JIMAR 97-314. 102 p.

Neubauer, Deane and Kerry Burch.

1998. Alternative perspectives on fishery management decision-making. (Under review)

Travis, Michael D.

1998. Chronology of regulatory events relevant to Hawaii's pelagic longline fishery, 1987-96. (Under review)

1998. Fishing effort, power, and capacity: the importance and evolution of terminology in fisheries science. (Forthcoming paper)

Walker, Julie.

1997. Sociology of Hawaii charter boat fishing. SOEST JIMAR Contribution 97-309. University of Hawaii. 50 p.

1996. Work and leisure in Hawaii small boat pelagic fishing. Masters thesis. School of Marine Affairs, University of Washington. 78 p.

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