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June 27, 1996 F/SWC2:sgp

MEMORANDUM FOR: John Sibert
Pelagic Fisheries Research Program

FROM: Sam Pooley,
Principal investigator

SUBJECT: Hawaii pelagic fishing vessel economics project (RCUH # 2046)

John, I have attached my report on FY96 progress as submitted to JIMAR. The HIFIVE project is entering its third year and I expect we will have made substantial progress in meeting the original objectives of the project by year's end.

At this time I would like to request a fourth year of funding for our project at roughly the current level of funding ($250,000). The objectives of the fourth year would be:

- Cost-earnings analysis of the Hawaii charter boat fishing industry (this would conclude the original proposal for the HIFIVE project)
- Economic analysis of Hawaii charter boat patron motivations and interests (this would update the work done in the mid-1980s by Karl Samples of the University of Hawaii and complement the PFRP recreational valuation work of Ted McConnell)
- Site-choice model of longline fishing dynamics (this would extend the on-going economic dynamics research into fishing site selection issues)
- Analysis of swordfish and tuna fishing effort and production patterns between set, trip, and vessel levels of analysis, including switching between targets (this would complete our current work on the economics of fishing effort)

The economic analysis of longline fishing effort and production has taken longer to accomplish than anticipated in our original proposal because three factors:

substantial data management issues;

data collection from the Hawaii longline fleet was much more thorough than planned; and,

subsequent analyses of the longline fishery were more detailed and complex than anticipated.

The HIFIVE project took on the task of combining NMFS logbook, HDAR commercial catch reports, and NMFS shoreside monitoring data to generate accurate revenue estimates and robust fishing effort statistics, and in recompiling existing NMFS permit files into a consistent data base. This has been a major accomplishment and provides a reliable data base for further research, both biological as well as socio-economic.

The HIFIVE group was able to obtain reliable cost-earnings information on almost all of the active Hawaii longline vessels, rather than just a sample. This took considerably more time in terms of information acquisition but also in terms of data compilation, quality control, and management. The effect, however, is excellent, in terms of having a comprehensive overview of the Hawaii longline fleet in 1993.

As a result of the previous two points, the economic analysis has been able to utilize catch, effort, and revenue information for five years of the fishery (1991-95) rather than just the one year originally anticipated. This extends the economic dynamics aspect of the project substantially, while increasing the complexity of the econometric and modeling issues.

If a fourth year is funded, we anticipate spending some time in year three re-surveying portions of the longline fleet to bring the economic data base up to date. A fourth year will allow a much deeper intellectual "mining" of the previous three year's research, as well as a much better picture of the Hawaii longline fishery for fishery management purposes. In particular, it should help the Western Pacific Regional Fishery Management Council get a better handle on the dramatic turn of events for the swordfish fishery beginning in 1994 and how those changes may affect the Hawaii longline fishery in the future.

The troll-handline research is in a similar situation. Our ability to target field work to full-time commercial operators was significantly handicapped by the quality and range of existing data sources. As a result we have extended the scope of the study to acquire cost and earnings information from <u>all</u> pelagic troll and handline boats launching from our study sites (on all of the main Hawaiian Islands) during 1996. This will have tremendous spill-over effects on understanding the part-time commercial, recreational, and subsistence fisheries (which were not subjects of the original proposal).

A fourth year will allow us to cover the charter boat fleet adequately and document its important contributions to Hawaii's economy. It will also allow us to collaborate more fully with McConnell's PFRP recreational valuation project by compiling information from charter boat patrons on their interests and preferences. These will allow a better understanding of the

tradeoffs involved in fishery management decisions affecting the near-shore fisheries.

In order to maintain continuity with the current staff (which is the only way to meet the proposed fourth year objectives), we will need a decision by the end of this calendar year. I am willing to prepare a fuller proposal if necessary or reply to the next formal PFRP request for proposals, or better yet, you may feel this memorandum is adequate. Please let me know your thoughts and reactions to this.

Attachment (1)

cc: RML
HIFIVE staff

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JIMAR/PFRP ANNUAL REPORT FOR FY96

Project Title:
Hawaii pelagic fishing vessels economics (RCUH # 2046)
aka *Hawaii Fleet, Industry, and Vessel Economics (HIFIVE)*

Principal Investigator: Samuel G. Pooley

Associate Investigators:
Rita Curtis, Marcia Hamilton, Stephen Huffman, Michael Travis

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.

The project currently consists of two major components: a detailed cost-earnings analysis of the Hawaii-based domestic longline fishery; and, comprehensive information on the cost-earnings of the small boat pelagic fishery in Hawaii.

2. Progress during FY96

Progress in FY96 centered on three areas: publishing the results on the cost-earnings of the longline vessels; completing initial economic analysis of longline fishing dynamics; and collection of basic information from the small boat pelagic fishery.

The longline cost-earnings information has been published (or submitted for publication) in two sources (see Publications) and has been presented at the 1995 Lake Arrowhead Tuna Conference, the 1995 PFRP Symposium, and the 1996 SOEST Open House (poster). This component of the project is completed, although updating some information in 1996 may be required to facilitate on-going economic analysis of the longline fishery.

Detailed economic analysis of the longline fishery has resulted in three papers nearly ready for submission (see Publications). These cover the following topics: institutional and regulatory environment of the Hawaii longline fishery; supply-response of the longline fishery; and the methodology of fishing effort as applied to swordfish longline fishing.

This component of the project also applies to a FY96 proposal by Travis and Strand on the movement of longline fishing vessels between the U.S. mainland and Hawaii (a significant change which was anticipated by project staff in 1994 and which had a

demonstrable impact on the fishery in 1995), and an on-going dissertation project by Curtis through the University of Maryland.

The troll-handline cost-earnings study was initiated in late-1995 with development of an information collection approach and instrument. The fishing community was informed of the project through an article by Hamilton and Huffman in Hawaii Fishing News. Pre-testing was initiated in early 1996 and full fielding with a staff of three is currently underway, with over 215 interviews completed on Oahu and Kauai. Because of difficulties in "screening" for full-time commercial fishers, the study is being applied broadly; categorization of the results will be based on empirical criteria.

This component of the project collaborates with two additional JIMAR projects: a JIMAR visiting scientist project (Walker) on the socio-anthropology of the distinction between recreational and commercial fishing in Hawaii (a thesis project at the University of Washington) and a PFRP recreational valuation project with principal investigator Kenneth McConnell of the University of Maryland which will begin in mid-1996.

3. Plans for FY97

The project is currently funded to conclude in FY97 (third year of funding). Completion and publication of the current longline vessel economic dynamics research and description of industrial structure is anticipated, as well as an input-output analysis of the longline fishery and extension of the fishing effort analysis to tuna longline fishing, along with reporting of the troll-handline cost-earnings research.

If a fourth year of funding is received, then the longline cost-earnings analysis will be extended into a spatial model of supply response; a comparison of set, trip and vessel economic analysis for the longline fleet; and cost-earnings and patron activity analysis of the Hawaii charter-boat fishery. (The latter was anticipated for the third year under the small boat component of this project, but because of the need to make that study more broadly based, the charter boat sector will not be covered this year.)

Publications & Reports

Curtis, Rita E.
1996. Spatial allocation of effort: a 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.)

Curtis, Rita E.
1996. Short-run supply response in a multi-species fishery. (Forthcoming paper.)

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.

Hamilton, Marcia S., Rita E. Curtis, Michael D. Travis.
1996. Hawaii longline vessel economics. (Paper submitted to Marine Resource Economics.)

Travis, Michael D.
1996. Regulatory changes and their impact on Hawaii's longline fishery. (Forthcoming paper.)

1996. Fishing effort, power, and capacity: the importance and evolution of terminology in fisheries science. (Forthcoming paper.)

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June 26, 1996