JIMAR/PFRP ANNUAL REPORT FOR FY 1999

Principal Investigator: Dr. Michael D. Travis/Dr. John Sibert

Project Proposal Title: Economic Interactions Between U.S. Longline Fisheries

Funding Agency: National Oceanic and Atmospheric Administration

I. Purpose of the Project

Dramatic changes in fleet size can indicate significant changes in a fishery and/or alternative fisheries as well as create them. For example, a significant decrease in fishery size can cause significant decreases in effort and catch, which in turn leads losses of income and jobs for fishermen, industry suppliers and fish dealers. Assuming the existence of multiplier effects, the loss of income and jobs to the local economy will be further magnified. However, in the case of multi-species fisheries, a decline in one component of the fishery can simply result in a reallocation of vessels and effort and subsequent growth in another component of the fishery. For example, in the case of Hawaii's pelagic longline fishery, a decline in the swordfish directed component of the fishery could lead to an increase in the tuna directed component. Alternatively, a decline in the entire fishery's fleet size could indicate that vessels and effort have been reallocated to other U.S. longline fisheries. Thus, one region's loss would be another region's gain. In regions where fleet sizes are expanding, management is likely to respond with increased monitoring and measures intended to curb further expansion. Although the impacts of variations in fleet size are not the primary focus of the proposed research, they do illustrate the importance of such changes. Given that importance, it is necessary to determine what causes these changes in fleet size (i.e. what causes a vessel to leave, enter, or remain in a fishery). This is the primary purpose of the proposed research. Given that a vessel or group of vessels has decided to leave a particular fishery, how do they decide which fishery to enter? Determining how fishermen answer that question is the second purpose of the proposed research.

II. Activities and Progress During FY1999

New project staff were hired in September and October, 1998 in order to field the cost-earnings survey and subsequently build a profile of the U.S. pelagic longline fleets in the Atlantic, Caribbean, and Gulf of Mexico for 1997 and 1998. The three attached documents lay

out the details of the associated efforts in this regard. The first document discusses progress made with respect to surveying the pelagic longline fishermen. The second document is a report on workshops held with the same group of fishermen regarding how to best manage the pelagic longline fishery. The third document discusses progress in the modeling of fishermen's location and entry/exit decisions.

In addition, the database for the 1996-97 survey of a select segment of the Hawaii longline fleet has been completed. This survey "update" was not meant to randomly sample the active fleet or attain census coverage. Rather, the purpose was to personally interview owners and captains of vessels which were active in 1995-96, ported in Hawaii at some time during 1997, and since the previous survey effort: 1) were new to the fleet, 2) had changed ownership, 3) were not covered for various reasons in the 1993-94 survey, 4) had allegedly changed their primary target from swordfish to tuna, and/or 5) had become part of a fleet migrating between Hawaii and ports in California.

Given these criteria, the target population was composed of 63 vessels. Of these 63 vessels, 53 were partially or completely surveyed (84% response rate).[1] In certain instances, a "complete" survey was not deemed necessary if the respondent indicated that the information had not changed since the previous survey.

Although this data was not collected for the purpose of building an updated cost-earnings profile of the Hawaii fleet, as in the case of the 1993-94 survey, it certainly could be used for such. The primary purpose of collecting the new data was to use it in the choice/decision models being developed by collaborators on this project as well as the dynamic model built by U. Chakravorty to determine regulatory impacts on Hawaii's commercial fisheries.

III. Plans for this Fiscal Year

In the next fiscal year, our primary goal is to build cost-earnings profiles for the active pelagic longline fleet in the Atlantic, Caribbean, and Gulf of Mexico for 1997 and 1998. This will require linking the survey data with data from the existing NMFS databases which contain

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[1]Users of the database will find one additional vessel survey. This survey was mistakenly filled out by an owner of two vessels with nearly the exact same name, one of which was previously surveyed (vessel ID 914709) and one that was new to the fleet (vessel ID 559024). The project team only desired a complete survey of the latter, but also received a completed survey for the former via mail.

catch, landings, effort, and price information. As alluded to in the survey progress document, given that 1997 and 1998 price data are not currently available via the HMS dealer database, it may be necessary to pursue use of non-NMFS databases in order to generate price estimates. Prior to linking, all survey data must be entered and edited. Further, all NMFS data must be compiled in a manner consistent with trip and vessel level analysis. Additional economic information may also be extracted from the pelagic logbook data in order to supplement the survey data, to the extent the former is in fact usable. Once this task is accomplished, the data that has been collected from all the various U.S. pelagic longline fisheries will be merged so that model development and testing can proceed. It is hoped that draft versions of papers pertaining to fishermen's target, location, and entry/exit decisions will be available by the end of the fiscal year.

IV. Papers Published in Refereed Journals

None

V. Other Papers, Technical Reports, etc.

Travis, Michael D. (1999). Entry and exit in Hawaii's longline fishery, 1988-96: A preliminary view of explanatory factors. In Chakrovorty, U. and John Sibert, Ocean-scale management of pelagic fisheries: economic and regulatory issues, proceedings of an international workshop organized by the Pelagic Fisheries Research Program, JIMAR, University of Hawaii at Manoa, Honolulu, HI, 12-13 November 1997. SOEST 99-01, JIMAR Contribution 99-321.

Porter, Richard. "A Study of the U.S. Atlantic Pelagic Longline Fishery: A Fleet in Transition," presentation at the *Conference on the Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and the UN Agreement*, Centre for Fisheries Economics, Norwegian School of Economics and Business Administration, Bergen, May 19-21, 1999.

VI. Students Graduating with MS or Ph.D. Degrees

None