

JIMAR/PFRP ANNUAL REPORT FOR FY 2000

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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 FY2000

The primary activity of the project staff was to use data from the cost-earnings survey and a multitude of other data sources to subsequently an economic profile of the U.S. pelagic longline fleets in the Atlantic, Caribbean, and Gulf of Mexico for 1997. A considerable amount of time was spent entering and editing the survey data. Considerable time was also spent on editing data from other sources (such as the pelagic logbook data) and linking the various data files together. Inconsistencies across the various data files created considerable difficulties as well. For example, when project staff attempted to link the pelagic logbook data, which contains catch and effort information, with the pelagic weigh-out data, which contains information on the weight of fish, it was found that the two files commonly disagreed with respect to the number of fish by species that were landed on a particular trip. Another difficulty arose from the fact that the pelagic dealer data for 1997 was not available when the databases were being compiled. This data was expected to be the primary source of price information. Without that database, project staff were forced to use price data from a combination of data sources, such as the Florida trip ticket data, the Northeast Science Center's landings database, and the NMFS commercial landings website. Use of price data from the latter source is certainly not ideal given its highly

aggregated nature. Unfortunately, for trips in the South Atlantic, Gulf, and Caribbean (with the exception of trips landed in Florida), this was the only source of price information available.

An initial draft of the cost-earnings profiles was completed before the end of the fiscal year. However, the initial results indicated that interpretational and/or computational errors were likely made with respect to certain cost data collected via the survey. In part, these errors were caused by the greater than anticipated heterogeneity in the fleet with respect to level of participation in the fishery (which affects the allocation of fixed costs to pelagic longline activity), different types of cost sharing agreements between the boat owner(s) and crew, and different arrangements with respect to the transporting and selling of fish, and the costs associated therewith. A fair amount of heterogeneity remained even after stratifying the fleet according to vessel size and species target. This high degree of heterogeneity complicated the process of extrapolating the survey data to the non-surveyed portion of the fleet.

In addition to these efforts, the project's subcontractors also completed a draft paper that attempts to model fishermen's fishing location decisions under uncertainty. The paper is attached to this report. The data contained in the cost-earnings profiles will be used to test the model.

III. Plans for this Fiscal Year

In the next fiscal year, we anticipate completing the revisions to the cost-earnings profiles and completing a report on such. This should be done before the end of calendar year 2000. Also anticipated by then is the testing of the model to predict fishermen's location decisions under uncertainty, and the finalization of a paper based thereon. We expect that both reports will be presented at the December PI meeting in Honolulu. Since the location decision is related to the entry/exit decision, the fishing location model is seen as an important step towards building an entry/exit model. The completion of such an entry/exit model is also hoped for during this fiscal year.

IV. Papers Published in Refereed Journals

None

V. Other Papers, Technical Reports, etc.

None

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

None