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THE CALIFORNIA DRIFT GILL NET FISHERY FOR SHARKS AND SWORDFISH, 1981-82 THROUGH 1990-91

by

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ABSTRACT

California's drift gill net fishery developed rapidly in the late 1970s off southern California. The fishery originally targeted the common thresher *Alopias vulpinus*. Almost immediately swordfish *Xiphias gladius* and shortfin mako *Isurus oxyrinchus* became important components of the catch.

We examined and summarized data obtained from the California logbook system, landing receipts, and market samples taken from this fishery over the 10 fishing seasons from 1981-82 through 1990-91. During this period the fishery evolved from a small nearshore experiment to a major California fishery. Significant changes in nearly every aspect of the fishery occurred including boats and gear, techniques and regulations, fishing areas and seasons, and targeted species. These data form a base line from which changes in the fishery and harvested stocks can be compared in the future.

The drift gill net fishery operates primarily in the area between San Diego and Cape Mendocino and concentrates much of its effort on swordfish in the Southern California Bight during the months of May to December. During the period studied, fishing effort decreased 50% to 60%, from highs of approximately 11,000 sets to a low of about 4000 sets in the 1990-91 season. This decrease in effort corresponds to a decrease in total landings of approximately the same proportions. Decreases in landings of common thresher were over 80%, while swordfish and shortfin mako landings decreased 60% and 40% respectively. Average sizes of swordfish showed no change during the 1981-82 to 1990-91 fishing seasons. Average sizes of shortfin makos showed a decrease of approximately 40% from the 1982-83 through the 1985-86 fishing season, but rebounded during the 1989-90 season to within 15% of the 1982-83 season. Average sizes of common thresher, however, decreased 30% from the 1982-83 season and remained low. This may indicate a decline in the common thresher stock or reflect changes in the season and area of fishing operations.

A number of problems and conflicts occurred during the first 10 years of the fishery (e.g. bycatch of marine mammals and striped marlin *Tetrapturus audax*) which were resolved for the most part through the cooperative efforts of the commercial industry, the sport industry, environmental groups, and State and Federal governments. The incidental catch of marine mammals is apparently low and not compromising any stocks, although the potential for damage remains and therefore monitoring is prudent. Bycatch of other fishes does not appear to be a problem except for the catch of blue sharks *Prionace glauca*, which has an unknown affect on local stocks.

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