

HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON ALBACORE FISHING EFFORT CHARACTERIZATION

In 2005, the Inter-American Tropical Tuna Commission (IATTC) and Western and Central Pacific Fisheries Commission (WCPFC) adopted resolutions for conservation of North Pacific albacore based on concerns that recent fishing effort may be above levels that are sustainable in the long term. Both resolutions call upon their members and cooperating parties to take necessary measures to ensure that the level of fishing effort by their vessels fishing for North Pacific albacore is not increased beyond current levels, and to report all catches of North Pacific albacore to the Commissions at 6 month intervals. In addition, the WCPFC resolution requires that: "Fishing effort shall be reported in terms of the most relevant measures for a given gear type, including at a minimum for all gear types, the number of vessel-days fished."

The Council directed the Highly Migratory Species Management Team (HMSMT) to characterize recent U.S. albacore fishing effort to provide a baseline for compliance with the terms in the resolutions. The HMSMT would like to emphasize that the assignment was to identify recent levels of effort which could potentially be used by the Council and the U.S. delegation in complying with the resolutions, however not to define limits to be used to regulate the fisheries on national or international levels.

The Southwest Fisheries Science Center (SWFSC) staff, in cooperation with the HMSMT, have compiled data on albacore landings and directed fishing effort as well as incidental take of albacore in non-directed fisheries. A model was developed to combine effort estimates in vessel-days for the fishery making the largest percentage of commercial landings of albacore (the surface troll/baitboat fishery accounting for roughly 92% of recent U.S. commercial landings) with effort estimates for the minor commercial fisheries landing albacore incidentally. The HMSAS has subsequently proposed that the number of U.S. commercial vessels fishing for albacore in recent years be used as a surrogate for recent fishing effort. The Scientific and Statistical Committee (SSC) reviewed both the proposal from the HMSAS and the analysis put forth by the SWFSC and HMSMT and found neither approach satisfactory. The SSC alternatively proposed that recent U.S. fishing mortality estimates be partitioned out of the overall international fishing mortality (a product of the stock assessment) based on the U.S. relative proportion of the overall catch.

The HMSMT recognizes that there are a number of ways to describe fishing effort and that each approach described above has inherent problems. However, irrespective of the approach taken, the HMSMT feels it is important to recognize year-to-year variability. The HMSMT supports the use of a band to describe average recent effort. For example, for the vessel-days analysis prepared by the SWFSC, effort estimates for the average modeled effort were derived and a band of the range of estimates and the average \pm the 95% confidence interval of the average were presented.

1) As the SSC pointed out, standardizing fishing effort to a single metric of vessel-days is problematic for widely differing fisheries; CPUEs for target and non-target fisheries can differ by greater than an order of magnitude, and non-target fisheries in particular show high year-to-year variability in CPUE. Given that the WCPFC resolution specifically requested that effort in

vessel-days be reported, the SWFSC and HMSMT analyses attempted to address this difficulty, however uncertainties remain.

2) The number of active vessels landing albacore may not provide a reliable measure of effort because not all vessels have the same capacity, operate for the same number of days, nor have the same efficiency. As with a vessel-day analysis, comparing vessel number for target and non-target fisheries is problematic.

3) While the resolutions call for submission of catch and effort data at 6 month intervals, estimates of fishing mortality derived from stock assessments are not likely to be available in time for use in management decision making. The current schedule for completing North Pacific albacore stock assessments is once every two years. Based on the latest stock assessment (completed in 2004), international fishing mortality estimates are available through 2003, with estimates for the last couple of years typically highly uncertain.

The HMSMT reviewed analyses of recent albacore fishing effort based on vessel-days, and number of vessels, and could work with the SWFSC stock assessment scientists to examine the U.S. partial fishing mortality levels through 2003. The HMSMT recommends that while not any one of these measures alone provides a definitive estimate of recent albacore fishing effort, the Council could consider all of the information presented as descriptors of recent albacore fishing effort. The HMSMT feels that vessel number may be the least informative of these metrics for describing fishing effort.

In agreement with the HMSAS, the HMSMT recommends that the U.S. recreational fisheries not be considered in the context of compliance with the IATTC and WCPFC resolutions given the relatively low harvest and the Council's proposed recreational management measures.

PFMC
04/05/07