

# **Submission of U.S. Fishery Statistics for the Eastern Pacific Ocean to the Inter-American Tropical Tuna Commission for 2003 and 2004<sup>1</sup>**

**Robert A. Skillman**

Pacific Islands Fisheries Science Center  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration

This is the first formal submission of U.S. fishery statistics by the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (Fisheries), Pacific Islands Fisheries Science Center (PIFSC) to the Inter-American Tropical Tuna Commission (IATTC). As specified by IATTC Resolution C-03-05, catch and effort (or logbook) statistics for 2003 and 2004 and size composition statistics for 2004 are submitted. The catch and effort data, which are for longline fishing, are provided at Level 3, the international standard for such data. Also provided are estimated annual landings in weight by species for 2004, as requested at the first IATTC Meeting for the Review of Fishery Statistics in April 2005.

The methods used in compiling the three categories of fishery statistics and other specifics are described below. The definition of eastern Pacific Ocean (EPO) used in compiling these statistics is from 150° W longitude eastward to the American coast, without northern or southern boundaries. The only Pacific Island-based fishery that fishes in the EPO is the Hawaii-based tuna longline fishery. All statistics were compiled by year the catch was landed (2003 and 2004) regardless of the year the gear was set.

These statistics were prepared by Russell Ito, Frederick Dowdell, and Craig Graham in the Fishery Monitoring and Socio-Economics Division and Karen Sender in the Information Technology Services group at the PIFSC.

## Catch and Effort Statistics

Three longline data sets were used, all with catches in number of fish by species, effort in sets and hooks, and location. United Nations Food and Agriculture 3-alpha species codes are used to identify species, except for the combined reporting of oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum*) for which we use OILF. The largest data set by far derives from the mandatory submission of the NOAA Fisheries Service Western Pacific Longline Fishing Log by Hawaii-based fishers. These data are for landing years 2003 and 2004. A rigorous quality control process is followed, including a quick review conducted with the provider when logs are picked up from the vessel, a visual inspection of the logs, and a computer-based error checking algorithm. The second data set is derived from the mandatory submission of High Seas Fisheries Compliance Act logbooks by West Coast (mostly California)-based longline vessel

---

<sup>1</sup> PIFSC Data Report DR-05-003  
Issued 15 July 2005

operators. A few Western Pacific logbooks were submitted by operators of boats that departed Hawaii but landed on the West Coast. These two data sets are only for landing year 2003. Logs from these latter two data sets are visually inspected in Hawaii, and some computer-based error checking is done. These three data sets were merged into one data set. The Southwest Fisheries Science Center will merge West Coast logbook data for 2004 prior to submission to the IATTC.

These combined logbook data, therefore, represent the entire operations of the California and Hawaii-based fleets, not just the operations taking place in the EPO. While only those fishing trip records with landing year 2003 or 2004 were selected for compilation, as mentioned above, the data were aggregated by the begin set year and month. In addition, the data were aggregated by so-called 5x5 blocks of longitude and latitude. For example, one such block would be from -180° to < -175° W longitude and 0° to < 5° N latitude. Southern latitudes are negative. Thus, the data within each of the three data sets were aggregated by, in the vernacular, 5x5xMon, within begin set year. The three data sets were then merged into a single data set.

In order to meet the data confidentiality requirements in NOAA Administrative Order 216-100, a 3-boat filter was applied to each 5x5xMon block of data, i.e., those blocks with 2 or fewer boats fishing were deleted from the data.

### Size Composition Statistics

Size frequency statistics (weight to the nearest half pound converted to kilograms) were compiled from the State of Hawaii Division of Aquatic Resources (HDAR) Commercial Marine Dealer data from vessel-trips with landing years 2003 and 2004. While the PIFSC has collaborated with HDAR in improving the dealer reporting system, PIFSC has no control over the quality of these data. HDAR data were compiled by selecting only those vessel-trips which had been identified using the Hawaii logbook data as having fished exclusively in the EPO based on the location at start of set, end of set, start of haul, and end of haul. Weight intervals vary from 1 kg to 5 kg depending on the size range of each species. Size frequency statistics were compiled for albacore, bigeye tuna, yellowfin tuna, skipjack, swordfish, blue marlin, and striped marlin.

### Annual Landings Statistics

Landing statistics were provided rather than catches because we do not currently have a procedure for estimating the weights of fish reported as discarded in the longline logbooks. In the future, we hope to be able to estimate weight of discards. Also, recreational catches are not included in the total annual estimates.

Landing statistics for landing years 2003 and 2004 were estimated based on the HDAR Commercial Marine Dealer data set and the combined logbook data set. Although we think the dealers' species identifications are reliable, some of the marlin (blue, striped, and black marlin, and shortbill spearfish) caught are misidentified in the logbook data. Also, under reporting seems to occur for some species in both data sets.

Thus, to estimate the landed weight of each species, we chose the larger of the estimated annual weights from the two data sets.

For the dealer data, landing weights by species were compiled by combining the sold and unsold categories. The HDAR has recently improved the coverage and quality of the market data. Thus, we believe these data represent nearly a complete coverage. Landed fish are weighed to the nearest half pound, and these weights were summed and then converted to metric tons.

For the combined logbook data, reported catches in numbers, by species, were summed for those sets with begin set location occurring in the EPO. Begin set location was used because it is the only location data field that is available for the entire Hawaii logbook time series and it is the most common location used in the other logbook data sets. These summed catches in numbers were then converted to weights using average weights computed from the Dealer data for those vessel-trips with all sets exclusively in the EPO.

#### Names of Data Files Provided

Logbook: CA\_HIjoined\_5x5xmo\_03&04.xls  
CA\_HIjoined\_ImpactRule3.xls

Size Composition: HAW2003 ALB SIZFRQE.xls  
HAW2003 BET SIZFRQE.xls  
HAW2003 BUM SIZFRQE.xls  
HAW2003 MLS SIZFRQE.xls  
HAW2003 SKJ SIZFRQE.xls  
HAW2003 SWO SIZFRQE.xls  
HAW2003 YFT SIZFRQE.xls  
HAW2004 ALB SIZFRQE.xls  
HAW2004 BET SIZFRQE.xls  
HAW2004 BUM SIZFRQE.xls  
HAW2004 MLS SIZFRQE.xls  
HAW2004 SKJ SIZFRQE.xls  
HAW2004 SWO SIZFRQE.xls  
HAW2004 YFT SIZFRQE.xls

Landings: 03&04Landings.xls