

## SWORDFISH DATA PREPARATION FOR 1988 WORKSHOP DONE BY THE SECRETARIAT

by

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### 1. Changes in data base for data up to 1985

The data base agreed upon at the 1987 Swordfish Workshop has been reviewed and the following changes have been introduced.

U.S. data 1982 - 1985. Minor corrections in accordance with the newly submitted catch-at-size data.

Brazil data 1985. Since Task I data were changed, the catch-at-size table was re-raised.

### 2. Data availability for 1986 and 1987

Table 1\* shows the 1986 and 1987 swordfish catch and size data received at the Secretariat (as of September 1, 1988). The deadline was August 6, 1988, for swordfish. Almost all the major swordfish fishing countries in the Atlantic provided at least the catch data. Brazil, Japan, Portugal-mainland, Portugal-Madeira, Spain and the U.S.A. provided either sample size data or catch-at-size data for 1986 and 1987.

For the fisheries for which catch data were not available, the 1986 catch was repeatedly used (marked with \* in the table). For Morocco, the total catch was reported but the separation between Mediterranean and Atlantic is not known. The Atlantic catch was assumed to be the same as in 1986 and the rest is allocated to the Mediterranean Sea.

The data for the Mediterranean fisheries are still far from adequate. Catch data are almost nonexistent for 1987, and even for 1986, Italian catch data are only estimated. There are almost no size data. Under the circumstances, Mediterranean data were not updated at this time.

### 3. Data conversion

Once again, Brazilian and Japanese data were in eye-fork length, Portuguese and Spanish data were in lower jaw-fork, and U.S. data were in dressed weight. All the size data were converted to lower-jaw fork length, by one centimeter intervals, using the equations agreed upon at the 1987 Workshop.

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\*This table is not attached here as it is presented as Table 1 of the Report of the Swordfish Workshop.

#### 4. Data substitutions

For the catches for which size data were not available, size data substitutions were made (see table), following the system adopted at the 1987 Workshop. For 1987, since Spanish data for Area 4B were available in 5° x 5° areas, these data in detailed areas were used in substituting the corresponding fisheries.

The south-north breakdown is not available for 1987 Cuban and Taiwanese catches. Therefore, it was assumed that the catch proportions are the same as the Japanese catches.

Biological samples are available for the Brazil-Japan fleet for 1986. However, the very small sample size results in a very large raising factor (60.5216). Therefore, instead of using this limited sample, size data for the Brazilian longline fleet based in Santos were used.

#### 5. Discrepancies in catch data

To what catch the size data should be raised was a very delicate problem. There are three types of catch (in weight) data: 1) Task I catch; 2) reported catch in the catch-at-size file (sometimes available); and 3) calculated total weight of fish based on the catch-at-size. In the table, 1) and 2) are shown as Reported Weight (in MT) and 3) as Calculated Weight (MT).

The difference is very little for the U.S., as the U.S. frequencies are in weight and Task I catch is calculated from the frequencies.

For the Spanish fleet, the (1) Task I catch, (2) reported catch for each area and (3) estimated catch are all different but within about 20 percent.

For Japanese and Brazilian data, the difference between (1) Task I catch and (3) estimated catch is very significant--as much as 50 percent. Estimated catches are always higher than Task I data.

Three sources of errors could be considered.

- 1) Task I data represent under-reporting.
- 2) Size samples are biased towards large fish.
- 3) Equations to convert length to weight are not appropriate and tend to overestimate the weight of the fish.

#### 6. Raising size data to catch

The following preference in catch data was maintained when substituted size data are raised:

- 1) Number of fish
- 2) Task I data
- 3) Reported catch (in MT) for the respective area
- 4) Estimated catch weight

The type of data used are also listed for individual cases in the table.