

DATA PREPARATIONS FOR SWORDFISH WORKSHOP

P. M. Miyake, J. C. Rey, D. DaRozda
 ICCAT Secretariat, Principe, 17, 28001-Madrid, Spain
 Instituto Español de Oceanografía, Apdo. 285, Fuengirola 29650-Málaga, Spain*

I. BACKGROUND

The Swordfish Workshop was proposed and agreed upon during the 1986 SCRS meeting (Madrid, November, 1986). The terms of reference are attached as Appendix 1. Mr. J. C. Rey was nominated as Convener of the Workshop. It was obvious that the Workshop would need the basic data files of all the catches of swordfish in the Atlantic Ocean (including Mediterranean) broken down by size, and by reasonable area and time strata.

With this in mind, the Secretariat proposed in February, 1987, a working plan for the preparation of data for the Workshop, requesting the national scientists to prepare catch-at-length or catch-at-weight files for their national fisheries.

Unfortunately, only Japan, Spain and the U.S.A. responded to the request and their responses came rather late. As of writing this report, the only data received at the Secretariat were hard copies of Japanese data. The Japanese data were too large in volume to enter manually and we are still waiting to receive them on magnetic tape. Most of the Spanish and Brazilian data were received earlier at the Secretariat and, therefore, they were already available in the ICCAT base. The U.S. promised to bring the data to the Workshop.

Therefore, the data base is still very incomplete. The Secretariat extracted all the swordfish data available in the ICCAT base and assembled them in one file for the Workshop. Mr. Rey visited the Secretariat for a week to assist in the work and discussed various problems relating to data substitutions and raising.

As the data base at the Secretariat is still very incomplete and there are many alternatives for data substitutions and raising, and believing that the choice should be made by the Workshop rather than by the Secretariat or the Convener, no substitution or raising was done by the Secretariat before the Workshop.

II. DATA FILES PREPARED**1. Task I catch data in metric tons**

Task I catch data for swordfish are reported in metric tons by fishing gears, by north and south Atlantic (divided at 5° N) and the Mediterranean Sea. Since they will form the base for creating catch at length, they were carefully reviewed and updated. Tables 1, 2 and 4 show these figures by fisheries.

Since the Task I data have only a north and south separation for the area, specific ICCAT sampling areas were assigned for the most of the fisheries using our experience as a guide. When a fishery is known to fish in more than one area, it is assigned to combined areas.

2. Task II size data available

Since the Task I catches are reported annually and for large areas, they could be further broken down into small time-area strata, using Task II catch and effort data (in small time-area strata). However, sufficient Task II catch and effort data are available only for a very few fisheries (e.g., Japanese longline) and the national scientists have agreed to provide catch-by-size files for them. Therefore, the Secretariat decided not to use the Task II catch and effort base for this purpose.

A list of size data available in the ICCAT data base was distributed among the pertinent scientists in February, 1987. All the national scientists were requested to review the Table for any missing data which might be found in their national files. Since that time, almost no data have been added by national scientists since then.

The Secretariat pulled out all the swordfish size data from its large data base and created a small working file containing all the swordfish size data (raised and/or unraised as received from the national offices).

All the size data available in this file are listed in Tables 1 and 2 with indications of what measurements were taken, whether raised or not raised, and what time-area strata are used. Also, when known, numbers of fish measured are given as well. What is not shown in the Table is the class intervals. The intervals are left as received at the Secretariat; hence, they vary widely from 1 cm or 1 kg intervals to 10 cm or 10 kg intervals.

Many discrepancies were found between catch data and size data. For example, Task I catch data are reported for baitboats and size data are reported for handlines. In the Table all the elements are shown as originally reported but, as will be discussed later, they are matched to what we believe to be the corresponding gears.

The type of measurements varies widely between countries and years, but the majority are one of the following:

"Lower jaw to fork length (LJ-F)",
 "Eye to fork length (E-F)",
 "Dressed weight (DWT)", or
 "Round weight (RWT)".

It is obvious that there is some confusion in the original records between the eye-fork and lower-jaw fork measurements and also between dressed weight and round weight. They were footnoted but not yet corrected in the file.

If both raised and actual size data are available (i.e., Japan and Spain), only raised size data are listed in the table. For example, even if the original sampling was done by month and $5^{\circ} \times 10^{\circ}$ areas, if the raised catch/size data are compiled by quarter-ICCAT area, the latter is shown in the Table.

In the Tables, Japanese data are listed as if they are in the file but in reality, the information is gathered from the data listings received previously. Therefore, we hope that the data on magnetic tape will become available before the Workshop so that what is shown in the Table will really be available to the Workshop Group.

The listings of the entire size data file are available for reference on request.

3. Time and area strata and units in which data are presented

After the Secretariat circulated the working schedule plan, discussions took place among the scientists concerned as for which period the data should be prepared and in which unit and time-area strata the catch-by-size files should be prepared. Finally, the following agreements were reached.

UNIT OF MEASUREMENTS

It was agreed that the catch-by-size data may be prepared in whatever unit(s) the scientists wish. The class intervals are also left for the individual scientists to decide.

PERIOD

It was proposed and agreed upon that initial efforts should be made to gather data available since 1970. Tables 1 and 2 show data availability for that period. It is obvious from the Table that it would be almost impossible to create a catch-by-size table for years prior to 1975.

TIME STRATA

This has been left to the individual scientists to choose. Among the catch-by-size data so far received, Brazilian data are by month, Spanish Atlantic data are by quarter and Mediterranean data are by year, and Japanese data are by quarter.

AREA STRATA

Most of the discussions have been on this point. Since agreement could not be reached until late August, the preparation of the data base has been delayed. The initial proposal made by the Secretariat in February, 1987, was to combine data by current ICCAT swordfish sampling areas (BILL 91 through 97 which is indicated in this report as Areas 1 through 7). In 1986, the Miami Swordfish Workshop adopted different areas. The northwest Atlantic was defined as north of $10^{\circ}N$ and west of $35^{\circ}W$ and it is much easier to prepare the North American fisheries data if the area defined at the Miami Workshop is adopted. For European fisheries, however, it is much easier to compile data according to the current ICCAT areas.

Finally, it was agreed that the data should be prepared as far as possible in the current ICCAT sampling areas but BILL 94 (Area 4) should be further divided at $20^{\circ}W$ into subareas 4A and 4B (Fig. 1). The $30^{\circ}W$ dividing

line was preferred to $35^{\circ}W$ because many oriental longline size data are by $10^{\circ} \times 10^{\circ}$ rather than $5^{\circ} \times 5^{\circ}$ areas. Besides, it was found that most of the catches by the Azores fisheries, although rather minor, are not divided by the $30^{\circ}W$ line but occurred east of $30^{\circ}W$. Also $5^{\circ}N$ was preferred to $10^{\circ}N$, since the current division line for Task I catch data is at $5^{\circ}N$.

It was recognized that the data from U.S. fisheries for some years could not be separated between areas 3 and 4 and some Spanish data could not be separated between 4A and 4B. The final decision on treatment of these data is left for the Workshop when all the data are available for review.

It was also agreed that the data for the Areas 1, 2 and 3 may be presented together, if that is more convenient.

III. ADEQUACY OF SAMPLES

In Tables 1 and 2, the total number of fish measured is shown if available. For Japan, the sample sizes are further compared with the number of fish caught by sampling areas (Table 3). Those figures provide a basis for studying the adequacy of sampling.

The sample size for Brazil is not known at present. However, the minimum numbers given in the frequency tables are one's and this indicates that the raising factors were close to one.

The Japanese sampling rate is also relatively high and proportional to the catch. For most areas and years, the sampling rate exceeds 15 percent.

Spanish sampling is exclusively from the longline fishery (which makes over 95 percent of the Spanish catches). For the Atlantic, the sampling rate is quite adequate and for some years it is extremely high, between 10 and 50 percent. The data for 1985 and 1986 are, however, available only for the fisheries from Algeciras, fishing off the north and western African coast. The data for the more important fisheries from Galicia (northern Spain) have not yet been made available.

For the Spanish fisheries in the Mediterranean, the sampling rate is low (1-2 percent) in earlier years but very high (20 percent) since 1982.

IV. DATA MATCHING

1. Task I catch matched with size data

In Tables 1 and 2, all the Task I catches for the north and south Atlantic, respectively, are matched with the size data available in the ICCAT files (see Section II.2 for Japanese data). The period of 1970 through 1986 is covered and all the fisheries for which any catch was reported in the Task I file are listed.

The catches in metric tons listed in the Table are from the Task I base while the catches in number of fish are from the catch-by-size Table.

As seen in these Tables, size data are not available for most of the catches. The major fisheries which have no corresponding size data are:

- Canada
- China-Taiwan (before 1980)
- Cuba (except for 1984 Gulf of Mexico)
- Italy
- Korea (most of the years before 1982)
- Uruguay

2. Suggested data substitution for size

In order to estimate the total swordfish catch-by-size in the Atlantic, some data substitutions for size information are essential. In Tables 1 and 2, suggestions for data substitutions are made. However, none of the substitutions have yet been made by the Secretariat.

The principles adopted in suggested substitutions are:

- a. No substitutions between years.
- b. Size data from another fishery which catches similarly sized fish are chosen whenever possible.
- c. A catch-by-size file should be used for the substitutions, not going back to the original size data. Therefore, the catch-by-size data of one fishery as a whole including all time-area strata would be raised to the catch for which the data are substituted.
- d. If two alternative data sets are available, the one with better sampling coverage is chosen.

For some fisheries, even if the size data are available, data substitutions are proposed, recognizing that the sampling rate is extremely low. No suggestions are made for the fisheries for which no appropriate data were found for substitution (e.g., Italian catches) in the hope that the data may become available at the time of the Workshop.

V. RAISING DATA TO THE CATCH

1. Raising existing size data to catch

As described above, for most of the fisheries for which sufficient size data are available, national scientists have raised or are committed to raise the size data to the catch and hence the catch-by-size tables are or will be available (i.e., Brazil, Japan, Spain and most likely the U.S.). Size data for other countries are relatively fragmental and would be difficult to raise to the catch.

Although some size data (e.g., Taiwanese and Korean) are by month and by 5° x 5° area, the sampling level is not adequate to raise the data separately on these strata. Besides, the catches in these strata are not accurately known. Therefore, it is suggested that all the size data are combined into one frequency and raised to the total annual catches.

Since catch data are available only in weight, unless the frequencies are in weight, the weight of size samples has to be estimated in order to raise the size frequencies, using certain length-weight equation(s). The choice of equations has to be made by the Workshop before the raising can be done (see discussion in Chapter VI).

2. Raising substituted data to the catch

As stated earlier in this report, only the catch-by-size data are suggested to be used for substitutions and they have to be re-raised to the corresponding catch. Of course, in the case where the catch in number of fish are available, the raising factors are estimated by dividing the catch (in number) by the total number of fish in the size frequencies used to make the substitutions.

However, for most of the fisheries, catches are available only in weight and the factors to raise size to the catch have to be calculated based on weight. In this case, in principle, there are two distinct methods:

$$\frac{(\text{Total Task I catch (MT) of the fishery to be substituted})}{(\text{Total Task I catch (MT) of the fishery whose data be used})}$$

or

$$\frac{(\text{Total Task I catch (MT) of the fishery to be substituted})}{(\text{Estimated weight of total number of fish found in the catch-by-size table which is used for substitutions})}$$

Generally there are some discrepancies between the Task I reported catch (in weight) and the estimated catch weight (i.e., the total number of fish multiplied by the average weight). In our experience with bluefin files, the discrepancies are between 1 to 15 percent. Therefore, the above two methods would give different raising factors.

The authors propose using the first calculation. The second system may be more accurate but there are complicated problems in estimating the weight of catch through length-weight equations. The choice of the equation would affect the results. Since data substitution is not a precise procedure to start with, using a procedure that is only a little more accurate would not add any precision.

In addition, Task I catch data are mostly based on landing data and the catch in number of fish comes from logbooks. Therefore, similar discrepancies between catch in weight and number should be expected in other similar fisheries as well. Thus, it was felt that application of the first equation is justified.

The raising factors are calculated and given in Tables 1 and 2 using this equation and can be used if this proposal is accepted at the Workshop.

VI. CONVERSIONS BETWEEN DIFFERENT MEASUREMENTS AND WEIGHTS

Table 5 lists the parameters estimated by many scientists for relationships between various characters (lengths and weights) with their sources. The equations between length and weight would be necessary for raising size data and/or estimating the average weight of fish. The conversion equation between different measurements would be needed to obtain total catch-by-size tables.

Some of the original equations have been modified and are given in the Tables so that the metric system can be used instead of the pounds system. Also, some equations have been combined to give length to round weight relationships.

VII. FURTHER WORK TO BE DONE TO CREATE ENTIRE FINAL CATCH-BY-SIZE TABLE

When the Workshop has reached an agreement on the time and area strata in which the data are to be combined, the Workshop still has to take the following steps to create an entire catch-by-size table for the entire stock(s).

1. Revise all the catch data and add any size data which become available after this report is written (e.g., Japanese and U.S. data).
2. Review the reported catch-by-size data.
3. Agree on or modify the data substitutions proposed in this report and decide on substitutions for those for which no proposals have been made (e.g., Italian catches).
4. Choose specific length-weight equations to estimate the weight of fish sampled from sample size frequencies.
5. Agree on methods for calculating raising factors.
6. Substitute and raise all the data.
7. Adjust time-area strata which do not match the specifications agreed upon (e.g., annual frequencies may have to be split into quarters or months or assigned to one period, area adjustments to be made, monthly frequencies might be combined into quarters, etc.)
8. Convert data files into the unit agreed upon, using the conversion equations agreed upon. A new computer program may be required to convert frequencies (e.g., E-F and DWT into LJ-F frequencies or vice versa).
9. Convert all the frequencies into common class intervals.

Swordfish Workshop -- Terms of Reference
(SCRS 1986)

The objective of the Workshop will be to assess the status of the swordfish in the Atlantic in late summer or autumn of 1987 at the ICCAT headquarters in Madrid. The Workshop will first review the availability of catch data, size frequency samples, age and growth data, catch-effort information, and all other data of a biological nature germane to the assessment of the resource. Major topics that will be initially addressed by the Workshop will include stock structure, methods to establish the age structure of catches based on size frequencies and growth information, procedures to estimate catch at size from the available data, consideration of reasonable mortality rates for swordfish, the development of stock abundance indices, and procedures to develop estimates of stock sizes and mortality rates. The results of these activities will be an estimation of the exploitation history of the resource including stock sizes, mortality rates, stock production, and yield-per-recruit aspects. Since extensive swordfish fisheries exist in the Atlantic in both north and south hemispheres and in both the east and west Atlantic, an interest and attendance by scientists from all countries catching swordfish is critical for workshop success.

TABLE 1. SWORDFISH REPORTED CATCHES, AVAILABILITY OF SIZE DATA AND SUGGESTED DATA MATCHING, NORTH ATLANTIC, 1970 - 1986

COUNTRY	GEAR	YR	AREA	TIME	CATCH (MT)	NO.	RE	SIZE			#FISH MEAS.	SUBSTITUTIONS OR REMARKS	R.F.
							AD	GEAR	AREA	TIME			
ALGERIE	UNCL	1973	5	YR	100			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1974	5	YR	196			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1975	5	YR	500			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1976	5	YR	368			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1977	5	YR	370			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1978	5	YR	320			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1979	5	YR	521			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1980	5	YR	650			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1981	5	YR	760			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1982	5	YR	870			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1983	5	YR	877			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1984	5	YR	884			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1985	5	YR	890			DATA	NOT	AVAILABLE			
ALGERIE	UNCL	1985	5	YR	890			DATA	NOT	AVAILABLE			
CANADA	LLHB	1970	2	II	4800			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1974	2	II	2			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1975	2	II	21			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1976	2	II	15			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1977	2	II	113			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1978	2	II	2314			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1979	2	II	2970			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1980	2	II	1794			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1981	2	II	542			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1982	2	II	542			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1983	2	II	960			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1984	2	II	465			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1985	2	II	550			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	LLHB	1986	2	II				DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	UNCL	1980	2	II	91			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	UNCL	1981	2	II	19			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	HARP	1982	2	II	12			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	HARP	1983	2	II	128			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	HARP	1984	2	II	34			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CANADA	HARP	1985	2	II	35			DATA	NOT	AVAILABLE	US 2+4A Q DWT		
CHI.TAIW	LLFB	1970	NORTH	YR	234			DATA	NOT	AVAILABLE			
CHI.TAIW	LLFB	1971	NORTH	YR	226			DATA	NOT	AVAILABLE			
CHI.TAIW	LLFB	1972	NORTH	YR	129			DATA	NOT	AVAILABLE			
CHI.TAIW	LLFB	1973	NORTH	YR	243			DATA	NOT	AVAILABLE			
CHI.TAIW	LLFB	1974	NORTH	YR	204			DATA	NOT	AVAILABLE			
CHI.TAIW	LLFB	1975	NORTH	YR	209			DATA	NOT	AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.1964 =CHI(MT)/JPN(MT)	
CHI.TAIW	LLFB	1976	NORTH	YR	362			DATA	NOT	AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.5056 =CHI(MT)/JPN(MT)	
CHI.TAIW	LLFB	1977	NORTH	YR	139			DATA	NOT	AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.3670 =CHI(MT)/JPN(MT)	
CHI.TAIW	LLFB	1978	NORTH	YR	126			DATA	NOT	AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.2172 =CHI(MT)/JPN(MT)	
CHI.TAIW	LLFB	1979	NORTH	YR	260			DATA	NOT	AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.5923 =CHI(MT)/JPN(MT)	
CHI.TAIW	LLFB	1980	NORTH	YR	103			NO	LLFB	ICCAT Q	E-F	114 JAPAN LL N ICCAT Q LJ-F	0.1338 =CHI(MT)/JPN(MT)
CHI.TAIW	LLFB	1981	NORTH	YR	140			NO	LLFB	ICCAT Q	E-F	147 JAPAN LL N ICCAT Q LJ-F	0.1413 =CHI(MT)/JPN(MT)
CHI.TAIW	LLFB	1982	NORTH	YR	200			NO	LLFB	ICCAT Q	E-F	80 JAPAN LL N ICCAT Q LJ-F	0.1982 =CHI(MT)/JPN(MT)
CHI.TAIW	LLFB	1983	NORTH	YR	209			NO	LLFB	5X5 Q	E-F	741 Raising not done.	

CHI-TAIW	LLFB	1984	NORTH	YR	126	NO LLFB ICCAT Q	E-F	718	E-F to RWT conversion could be made using
CHI-TAIW	LLFB	1985	NORTH	YR	117	NO LLFB ICCAT Q	E-F	681	U.S. equation (Area 2+4A) or Spanish (4B).
CHI-TAIW	LLFB	1986	NORTH	YR	121				
CUBA	LL	1970	NORTH	YR	134	DATA NOT AVAILABLE			
CUBA	LL	1971	NORTH	YR	160	DATA NOT AVAILABLE			
CUBA	LL	1972	NORTH	YR	75	DATA NOT AVAILABLE			
CUBA	LL	1973	NORTH	YR	248	DATA NOT AVAILABLE			
CUBA	LL	1974	NORTH	YR	572	DATA NOT AVAILABLE			
CUBA	LL	1975	NORTH	YR	280	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.2632 =CUBA(MT)/JPN(MT)
CUBA	LL	1976	NORTH	YR	283	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.3953 =CUBA(MT)/JPN(MT)
CUBA	LL	1977	NORTH	YR	398	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.7728 =CUBA(MT)/JPN(MT)
CUBA	LL	1978	NORTH	YR	281	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.4845 =CUBA(MT)/JPN(MT)
CUBA	LL	1979	NORTH	YR	128	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.2916 =CUBA(MT)/JPN(MT)
CUBA	LL	1980	NORTH	YR	278	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.3610 =CUBA(MT)/JPN(MT)
CUBA	LL	1981	NORTH	YR	227	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.2291 =CUBA(MT)/JPN(MT)
CUBA	LL	1982	NORTH	YR	254	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.2517 =CUBA(MT)/JPN(MT)
CUBA	LL	1983	NORTH	YR	410	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 1.0250 =CUBA(MT)/JPN(MT)
CUBA	LL	1984	NORTH	YR	206	NO LL 1 Q	LJ-F	297	At present nothing done. If Cuban catch for
CUBA	LL	1985	NORTH	YR	162	NO LL 1 Q	LJ-F	144	G. Mex. is available, the rest can be substituted
CUBA	LL	1986	NORTH	YR					by Japanese data.
CYPRUS	UNCL	1975	5	YR	5	DATA NOT AVAILABLE			
CYPRUS	UNCL	1976	5	YR	72	DATA NOT AVAILABLE			
CYPRUS	UNCL	1977	5	YR	118	DATA NOT AVAILABLE			
CYPRUS	UNCL	1978	5	YR	91	DATA NOT AVAILABLE			
CYPRUS	UNCL	1979	5	YR	108	DATA NOT AVAILABLE			
CYPRUS	UNCL	1980	5	YR	79	DATA NOT AVAILABLE			
CYPRUS	UNCL	1981	5	YR	88	DATA NOT AVAILABLE			
CYPRUS	UNCL	1982	5	YR	124	DATA NOT AVAILABLE			
CYPRUS	UNCL	1983	5	YR	33	DATA NOT AVAILABLE			
CYPRUS	UNCL	1984	5	YR	72	DATA NOT AVAILABLE			
CYPRUS	UNCL	1985	5	YR	80	DATA NOT AVAILABLE			
CYPRUS	UNCL	1986	5	YR	80	DATA NOT AVAILABLE			
FRANCE	UNCL	1980	5	YR	5	DATA NOT AVAILABLE			SPAIN LL AREA 5 LJ-F 0.0067 =FR(MT)/SPN(MT)
FRANCE	UNCL	1981	5	YR	4	DATA NOT AVAILABLE			SPAIN LL AREA 5 LJ-F 0.0036 =FR(MT)/SPN(MT)
FRANCE	UNCL	1984	5	YR	1	DATA NOT AVAILABLE			SPAIN LL AREA 5 LJ-F 0.0008 =FR(MT)/SPN(MT)
FRANCE	UNCL	1985	5	YR	4	DATA NOT AVAILABLE			SPAIN LL AREA 5 LJ-F 0.0033 =FR(MT)/SPN(MT)
GREECE	UNCL	1981	5	YR	73	DATA NOT AVAILABLE			
GREECE	UNCL	1982	5	YR	552	DATA NOT AVAILABLE			
GREECE	UNCL	1983	5	YR	551	DATA NOT AVAILABLE			
GREECE	UNCL	1984	5	YR	772	DATA NOT AVAILABLE			
GREECE	UNCL	1985	5	YR	740	DATA NOT AVAILABLE			
GREECE	UNCL	1986	5	YR	1110	DATA NOT AVAILABLE			
IRELAND	UNCL	1975	48	YR	3	DATA NOT AVAILABLE			NOTHING DONE
IRELAND	UNCL	1976	48	YR	1	DATA NOT AVAILABLE			
ITALY	UNCL	1970	5	YR	1800	DATA NOT AVAILABLE			NOTHING DONE
ITALY	UNCL	1971	5	YR	2900	DATA NOT AVAILABLE			
ITALY	UNCL	1972	5	YR	3700	DATA NOT AVAILABLE			
ITALY	UNCL	1973	5	YR	2800	DATA NOT AVAILABLE			
ITALY	UNCL	1974	5	YR	3330	DATA NOT AVAILABLE			
ITALY	UNCL	1975	5	YR	3002	DATA NOT AVAILABLE			
ITALY	UNCL	1984	5	YR	4193	DATA NOT AVAILABLE			
ITALY	UNCL	1985	5	YR	5225	DATA NOT AVAILABLE			
ITALY	UNCL	1986	5	YR	2931	DATA NOT AVAILABLE			

ITALY	LLHB	1976	5	YR	3067				DATA NOT AVAILABLE		NOTHING DONE
ITALY	LLHB	1977	5	YR	2973				DATA NOT AVAILABLE		
ITALY	LLHB	1978	5	YR	3348				DATA NOT AVAILABLE		
ITALY	LLHB	1979	5	YR	3085				DATA NOT AVAILABLE		
ITALY	LLHB	1980	5	YR	3252				DATA NOT AVAILABLE		
ITALY	LLHB	1981	5	YR	3002				DATA NOT AVAILABLE		
ITALY	LLHB	1982	5	YR	2306				DATA NOT AVAILABLE		
ITALY	LLHB	1983	5	YR	2375				DATA NOT AVAILABLE		
ITALY	LLHB	1984	5	YR	2251				DATA NOT AVAILABLE		
ITALY	LLHB	1985	5	YR	2203				DATA NOT AVAILABLE		
ITALY	LLHB	1986	5	YR					DATA NOT AVAILABLE		
ITALY	HARP	1976	5	YR	279				DATA NOT AVAILABLE		NOTHING DONE
ITALY	HARP	1977	5	YR	372				DATA NOT AVAILABLE		
ITALY	HARP	1978	5	YR	675				DATA NOT AVAILABLE		
ITALY	HARP	1979	5	YR	424				DATA NOT AVAILABLE		
ITALY	HARP	1980	5	YR	447				DATA NOT AVAILABLE		
ITALY	HARP	1981	5	YR	412				DATA NOT AVAILABLE		
ITALY	HARP	1982	5	YR	318				DATA NOT AVAILABLE		
ITALY	HARP	1983	5	YR	327				DATA NOT AVAILABLE		
ITALY	GILL	1984	5	YR	1191				DATA NOT AVAILABLE		NOTHING DONE
ITALY	GILL	1985	5	YR	1361				DATA NOT AVAILABLE		
ITALY	GILL	1986	5	YR					DATA NOT AVAILABLE		
ITALY	TRAP	1984	5	YR	3				DATA NOT AVAILABLE		NOTHING DONE
ITALY	TRAWL	1978	2+4A	YR	8				DATA NOT AVAILABLE		NOTHING DONE
JAPAN	LLHB	1970	NORTH	YR	298	NO LL	10X20 M	RWT	7	SIZE DATA COULD BE RAISED AFTER SIZE-WGT DEFINED	
JAPAN	LLHB	1971	NORTH	YR	914	NO LL	10X20 M	RWT	244	SIZE DATA COULD BE RAISED AFTER SIZE-WGT DEFINED	
						NO LL	10X20 M	E-F	174	SIZE DATA COULD BE RAISED AFTER SIZE-WGT DEFINED	
JAPAN	LLHB	1972	NORTH	YR	784	NO LL	10X20 M	RWT	83	SIZE DATA COULD BE RAISED AFTER SIZE-WGT DEFINED	
						NO LL	10X20 M	E-F	145	SIZE DATA COULD BE RAISED AFTER SIZE-WGT DEFINED	
JAPAN	LLHB	1973	NORTH	YR	518	NO LL	10X20 M	RWT	53	SIZE DATA COULD BE RAISED AFTER SIZE-WGT DEFINED	
						NO LL	10X20 M	E-F	32	SIZE DATA COULD BE RAISED AFTER SIZE-WGT DEFINED	
JAPAN	LLHB	1974	NORTH	YR	1178					DATA NOT AVAILABLE	
JAPAN	LLHB	1975	NORTH	YR	1064	24320	YES LL	ICCAT Q	LJ-F	2559	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1976	NORTH	YR	716	13868	YES LL	ICCAT Q	LJ-F	2156	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1977	NORTH	YR	515	10553	YES LL	ICCAT Q	LJ-F	1760	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1978	NORTH	YR	580	11522	YES LL	ICCAT Q	LJ-F	716	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1979	NORTH	YR	439	8143	YES LL	ICCAT Q	LJ-F	690	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1980	NORTH	YR	770	15680	YES LL	ICCAT Q	LJ-F	1391	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1981	NORTH	YR	991	19277	YES LL	ICCAT Q	LJ-F	1750	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1982	NORTH	YR	1009	21266	YES LL	ICCAT Q	LJ-F	866	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1983	NORTH	YR	400	8265	YES LL	ICCAT Q	LJ-F	792	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1984	NORTH	YR	538	11233	YES LL	ICCAT Q	LJ-F	1276	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1985	NORTH	YR	944	15082	YES LL	ICCAT Q	LJ-F	1778	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1986	NORTH	YR							1985JPN NORTH(MT)=TOTAL(MT)*NORTH(8)/TOTAL(8)
JAPAN	LLHB	1975	5	YR	0	239	YES LL	ICCAT Q	LJ-F	21	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1976	5	YR	1	241	YES LL	ICCAT Q	LJ-F	46	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1977	5	YR	0	85	YES LL	ICCAT Q	LJ-F	40	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1978	5	YR	2	31	YES LL	ICCAT Q	LJ-F	1	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1979	5	YR	3	50	YES LL	ICCAT Q	LJ-F	3	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1980	5	YR	1	23	YES LL	ICCAT Q	LJ-F	14	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1981	5	YR	1	19	YES LL	ICCAT Q	LJ-F	6	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1982	5	YR	5	84	YES LL	ICCAT Q	LJ-F	0	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1983	5	YR	6	114	YES LL	ICCAT Q	LJ-F	2	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
JAPAN	LLHB	1984	5	YR	19	343	YES LL	ICCAT Q	LJ-F	88	SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3

JAPAN		LLHB 1985	5	YR	20	286 YES LL ICCAT Q	LJ-F	71 SAMPLING LEVEL AND CATCHES ARE SHOWN IN TABLE 3
KOREA	LLFB 1970	NORTH	YR	40	DATA NOT AVAILABLE			NOTHING DONE
KOREA	LLFB 1971	NORTH	YR	159	DATA NOT AVAILABLE			NOTHING DONE
KOREA	LLFB 1972	NORTH	YR	155	DATA NOT AVAILABLE			NOTHING DONE
KOREA	LLFB 1973	NORTH	YR	374	DATA NOT AVAILABLE			NOTHING DONE
KOREA	LLFB 1974	NORTH	YR	152	NO LL ICCAT Q	LJ-F	288	DEFINE LENGTH-WEIGHT BEFORE RAISING
KOREA	LLFB 1975	NORTH	YR	172	NO LL ICCAT Q	LJ-F	384	DEFINE LENGTH-WEIGHT BEFORE RAISING
KOREA	LLFB 1976	NORTH	YR	335	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.4679 =KOR(MT)/JPN(MT)
KOREA	LLFB 1977	NORTH	YR	541	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 1.0505 =KOR(MT)/JPN(MT)
KOREA	LLFB 1978	NORTH	YR	634	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 1.0931 =KOR(MT)/JPN(MT)
KOREA	LLFB 1979	NORTH	YR	303	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.6902 =KOR(MT)/JPN(MT)
KOREA	LLFB 1980	NORTH	YR	284	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.3688 =KOR(MT)/JPN(MT)
KOREA	LLFB 1981	NORTH	YR	136	DATA NOT AVAILABLE			JAPAN LL N ICCAT Q LJ-F 0.1372 =KOR(MT)/JPN(MT)
KOREA	LLFB 1982	NORTH	YR	198	NO LL 5X5 Q	LJ-F	31	JAPAN LL N ICCAT Q LJ-F 0.1962 =KOR(MT)/JPN(MT)
KOREA	LLFB 1983	NORTH	YR	53	NO LL 5X5 M	LJ-F	72	JAPAN LL N ICCAT Q LJ-F 0.1325 =KOR(MT)/JPN(MT)
KOREA	LLFB 1984	NORTH	YR	257				JAPAN LL N ICCAT Q LJ-F 0.4777 =KOR(MT)/JPN(MT)
KOREA	LLFB 1985	NORTH	YR	59	NO LL ICCAT M	LJ-F	27	JAPAN LL N ICCAT Q LJ-F 0.0625 =KOR(MT)/JPN(MT)
KOREA	LLFB 1986	NORTH	YR	16	DATA NOT AVAILABLE			
MALTA	UNCL 1970		5	YR	100	DATA NOT AVAILABLE		
MALTA	UNCL 1971		5	YR	200	DATA NOT AVAILABLE		
MALTA	UNCL 1972		5	YR	200	DATA NOT AVAILABLE		
MALTA	UNCL 1973		5	YR	200	DATA NOT AVAILABLE		
MALTA	UNCL 1974		5	YR	171	DATA NOT AVAILABLE		
MALTA	UNCL 1975		5	YR	191	DATA NOT AVAILABLE		
MALTA	UNCL 1976		5	YR	156	DATA NOT AVAILABLE		
MALTA	UNCL 1977		5	YR	199	DATA NOT AVAILABLE		
MALTA	UNCL 1978		5	YR	121	DATA NOT AVAILABLE		
MALTA	UNCL 1979		5	YR	135	DATA NOT AVAILABLE		
MALTA	UNCL 1980		5	YR	198	DATA NOT AVAILABLE		
MALTA	UNCL 1981		5	YR	171	DATA NOT AVAILABLE		
MALTA	UNCL 1982		5	YR	158	DATA NOT AVAILABLE		
MALTA	UNCL 1983		5	YR	53	DATA NOT AVAILABLE		
MALTA	UNCL 1984		5	YR	84	DATA NOT AVAILABLE		
MALTA	UNCL 1985		5	YR	37	DATA NOT AVAILABLE		
MALTA	UNCL 1986		5	YR	99	DATA NOT AVAILABLE		
MEXICO	TRAW 1978	2+4	YR	2	DATA NOT AVAILABLE			USA AREA 3 DWT
MEXICO	UNCL 1972	2+4	YR	2	DATA NOT AVAILABLE			USA AREA 3 DWT
MEXICO	UNCL 1973	2+4	YR	4	DATA NOT AVAILABLE			USA AREA 3 DWT
MEXICO	UNCL 1974	2+4	YR	3	DATA NOT AVAILABLE			USA AREA 3 DWT
LIBERIA	UNCL 1980	48	YR	5	DATA NOT AVAILABLE			NOTHING DONE
LIBERIA	UNCL 1981	48	YR	38	DATA NOT AVAILABLE			NOTHING DONE
LIBERIA	UNCL 1982	48	YR	34	DATA NOT AVAILABLE			NOTHING DONE
LIBERIA	UNCL 1983	48	YR	53	DATA NOT AVAILABLE			NOTHING DONE
LIBERIA	UNCL 1985	48	YR	24	DATA NOT AVAILABLE			SPAIN LL G. GUINEA YEAR LJ-F
LIBERIA	UNCL 1986	48	YR	24	DATA NOT AVAILABLE			
MOROCCO	LL 1970	48	YR	14	DATA NOT AVAILABLE			
MOROCCO	LL 1971	48	YR	21	DATA NOT AVAILABLE			
MOROCCO	LL 1972	48	YR	15	DATA NOT AVAILABLE			
MOROCCO	LL 1973	48	YR	10	DATA NOT AVAILABLE			
MOROCCO	LL 1974	48	YR	12	DATA NOT AVAILABLE			
MOROCCO	LL 1975	48	YR	15	DATA NOT AVAILABLE			SPAIN LL AREA 48 LJ-F 0.0041 =MOR(MT)/SPN(MT)
MOROCCO	LL 1976	48	YR	12	DATA NOT AVAILABLE			SPAIN LL AREA 48 LJ-F 0.0040 =MOR(MT)/SPN(MT)
MOROCCO	LL 1977	48	YR	6	DATA NOT AVAILABLE			SPAIN LL AREA 48 LJ-F 0.0043 =MOR(MT)/SPN(MT)
MOROCCO	LL 1978	48	YR	11	DATA NOT AVAILABLE			SPAIN LL AREA 48 LJ-F 0.0018 =MOR(MT)/SPN(MT)
MOROCCO	LL 1979	48	YR	208	DATA NOT AVAILABLE			SPAIN LL AREA 48 LJ-F 0.0030 =MOR(MT)/SPN(MT)
								SPAIN LL AREA 48 LJ-F 0.0806 =MOR(MT)/SPN(MT)

MOROCCO	LL	1980	48	YR	136	DATA NOT AVAILABLE			
MOROCCO	LL	1981	48	YR	124	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0357	=MOR(MT)/SPN(MT)
MOROCCO	LL	1982	48	YR	91	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0309	=MOR(MT)/SPN(MT)
MOROCCO	LL	1983	48	YR	125	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0200	=MOR(MT)/SPN(MT)
MOROCCO	LL	1984	48	YR	79	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0176	=MOR(MT)/SPN(MT)
MOROCCO	LL	1985	48	YR	137	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0125	=MOR(MT)/SPN(MT)
MOROCCO	LL	1986	48	YR	178	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0184	=MOR(MT)/SPN(MT)
								0.0222	=MOR(MT)/SPN(MT)
MOROCCO	TRAP	1970	48	YR	3	DATA NOT AVAILABLE			
MOROCCO	TRAP	1971	48	YR	12	DATA NOT AVAILABLE			
MOROCCO	TRAP	1972	48	YR	28	DATA NOT AVAILABLE			
MOROCCO	TRAP	1973	48	YR	8	DATA NOT AVAILABLE			
MOROCCO	TRAP	1974	48	YR	3	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0010	=SPN(MT)/MOR(MT)
MOROCCO	TRAP	1977	48	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0003	=SPN(MT)/MOR(MT)
MOROCCO	TRAP	1983	48	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0001	=SPN(MT)/MOR(MT)
MOROCCO	SURF	1983	48	YR	3	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0004	=SPN(MT)/MOR(MT)
MOROCCO	SURF	1984	48	YR	2	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0003	=SPN(MT)/MOR(MT)
MOROCCO	LLHB	1970	5	YR	214	DATA NOT AVAILABLE			
MOROCCO	LLHB	1971	5	YR	326	DATA NOT AVAILABLE			
MOROCCO	LLHB	1972	5	YR	229	DATA NOT AVAILABLE			
MOROCCO	LLHB	1973	5	YR	183	DATA NOT AVAILABLE			
MOROCCO	LLHB	1974	5	YR	193	DATA NOT AVAILABLE			
MOROCCO	LLHB	1975	5	YR	118	DATA NOT AVAILABLE			
MOROCCO	LLHB	1976	5	YR	186	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	2.0899	=MOR(MT)/SPN(MT)
MOROCCO	LLHB	1977	5	YR	144	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.2159	=MOR(MT)/SPN(MT)
MOROCCO	LLHB	1978	5	YR	172	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.2389	=MOR(MT)/SPN(MT)
MOROCCO	LLHB	1983	5	YR	43	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0326	=MOR(MT)/SPN(MT)
MOROCCO	LLHB	1984	5	YR	39	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0314	=MOR(MT)/SPN(MT)
MOROCCO	LLHB	1985	5	YR	37	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0304	=MOR(MT)/SPN(MT)
MOROCCO	LLHB	1986	5	YR	99	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0856	=MOR(MT)/SPN(MT)
MOROCCO	TRAP	1971	5	YR	1	DATA NOT AVAILABLE			
MOROCCO	TRAP	1972	5	YR	1	DATA NOT AVAILABLE			
MOROCCO	TRAP	1974	5	YR	3	DATA NOT AVAILABLE			
NORWAY	LLHB	1970	48	YR	400	DATA NOT AVAILABLE			
NORWAY	LLHB	1971	48	YR	200	DATA NOT AVAILABLE			
PANAMA	LLFB	1972	NORTH	YR	7	DATA NOT AVAILABLE			
PANAMA	LLFB	1973	NORTH	YR	171	DATA NOT AVAILABLE			
PANAMA	LLFB	1974	NORTH	YR	24	DATA NOT AVAILABLE			
PANAMA	LLFB	1975	NORTH	YR	25	DATA NOT AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.0235	=PAN(MT)/JPN(MT)
PANAMA	LLFB	1976	NORTH	YR	91	DATA NOT AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.1271	=PAN(MT)/JPN(MT)
PANAMA	LLFB	1977	NORTH	YR	22	DATA NOT AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.0427	=PAN(MT)/JPN(MT)
PANAMA	LLFB	1978	NORTH	YR	76	DATA NOT AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.1310	=PAN(MT)/JPN(MT)
PANAMA	LLFB	1979	NORTH	YR	26	DATA NOT AVAILABLE	JAPAN LL N ICCAT Q LJ-F	0.0592	=PAN(MT)/JPN(MT)
POLAND	UNCL	1973	48	YR	100	DATA NOT AVAILABLE			
POLAND	UNCL	1978	48	YR	6	DATA NOT AVAILABLE			
POLAND	UNCL	1980	48	YR	1	DATA NOT AVAILABLE			
PORT-AZOR	UNCL	1981	48	YR	5	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0012	=SPN-LL(MT)/AZOR
PORT-AZOR	UNCL	1982	48	YR	4	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0009	=SPN-LL(MT)/AZOR
PORT-AZOR	UNCL	1983	48	YR	3	NO LL 5X5 M LJ-F	2 SPAIN LL AREA 48 LJ-F	0.0004	=SPN-LL(MT)/AZOR
PORT-AZOR	LL	1984	48	YR	7	DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	0.0011	=SPN-LL(MT)/AZOR
PORT-AZOR	LL	1985	48	YR	15	NO LL 5X5 M LJ-F	13 SPAIN LL AREA 48 LJ-F	0.0020	=SPN-LL(MT)/AZOR
PORT-AZOR		1986				DATA NOT AVAILABLE	SPAIN LL AREA 48 LJ-F	ERR	=SPN-LL(MT)/AZOR

PORT-MADE	BB	1970	48	YR	8		DATA NOT AVAILABLE		
PORT-MADE	BB	1971	48	YR	11		DATA NOT AVAILABLE		
PORT-MADE	BB	1972	48	YR	21		DATA NOT AVAILABLE		
PORT-MADE	BB	1973	48	YR	37		DATA NOT AVAILABLE		
PORT-MADE	BB	1974	48	YR	92		DATA NOT AVAILABLE		
PORT-MADE	BB	1975	48	YR	58		DATA NOT AVAILABLE		
PORT-MADE	BB	1976	48	YR	32		DATA NOT AVAILABLE		
PORT-MADE	BB	1977	48	YR	38		DATA NOT AVAILABLE		
PORT-MADE	BB	1978	48	YR	17		DATA NOT AVAILABLE		
PORT-MADE	HAND	1979	48	YR	29		DATA NOT AVAILABLE		
PORT-MADE	HAND	1980	48	YR	15		NO HAND	5X5 M	LJ-F 48 TO BE RAISED. FOLLOWING EQUATION SUGGESTED
PORT-MADE	HAND	1981	48	YR	8		NO HAND	5X5 M	LJ-F 13 RWT=.0000034333*LJ-F**3.26231049
PORT-MADE	BB	1982	48	YR	7		NO HAND	5X5 M	LJ-F 8
PORT-MADE	BB	1983	48	YR	6		NO HAND	5X5 M	LJ-F 9
PORT-MADE	BB	1984	48	YR	7		DATA NOT AVAILABLE		SPAIN LL AREA 48 LJ-F 0.0011 =MADE(MT)/SPN(MT)
PORT-MADE	BB	1985	48	YR	1		DATA NOT AVAILABLE		MADEIRA HAND AREA 48 LJ-F 0.1667 =MADE-BB(MT)/HAND
PORT-MADE	HAND	1985	48	YR	6		NO HAND	5X5 M	LJ-F 19
PORT-MADE	BB	1986	48	YR					
PORT-MAIN	PS	1986	48	YR	11		DATA NOT AVAILABLE		SPAIN LL AREA 48 LJ-F 0.0014
PORT-MAIN	SURF	1986	48	YR	348		DATA NOT AVAILABLE		SPAIN LL AREA 48 LJ-F 0.0435
PORT-MAIN	HAND	1986	48	YR	7		DATA NOT AVAILABLE		SPAIN LL AREA 48 LJ-F 0.0009
ROUMANIA	TRAWL	1978	2	YR	11		DATA NOT AVAILABLE		
SPAIN	LLHB	1970	48	YR	3160		DATA NOT AVAILABLE		
SPAIN	LLHB	1971	48	YR	3384		DATA NOT AVAILABLE		
SPAIN	LLHB	1972	48	YR	3210		DATA NOT AVAILABLE		
SPAIN	LLHB	1973	48	YR	3833		DATA NOT AVAILABLE		
SPAIN	LLHB	1974	48	YR	2893	?	NO	LL ICCAT Q	LJ-F 221 TO BE RAISED.
SPAIN	LLHB	1975	48	YR	3747	42515	YES	LL ICCAT Q	LJ-F 1104
SPAIN	LLHB	1976	48	YR	2816	33367	YES	LL ICCAT Q	LJ-F 5089
SPAIN	LLHB	1977	48	YR	3309	43016	YES	LL ICCAT Q	LJ-F 251
SPAIN	LLHB	1978	48	YR	3611	50446	YES	LL ICCAT Q	LJ-F 5115
SPAIN	LLHB	1979	48	YR	2582	38006	YES	LL ICCAT Q	LJ-F 4798
SPAIN	LLHB	1980	48	YR	3810	60668	YES	LL ICCAT Q	LJ-F 7119
SPAIN	LLHB	1981	48	YR	4013	66991	YES	LL ICCAT Q	LJ-F 35144
SPAIN	LLHB	1982	48	YR	4554	65985	YES	LL ICCAT Q	LJ-F 8520
SPAIN	LLHB	1983	48	YR	7100	125621	YES	LL ICCAT Q	LJ-F 40929
SPAIN	LLHB	1984	48	YR	6315	109229	YES	LL ICCAT Q	LJ-F 22616
SPAIN	LLHB	1985	48	YR	7431	?	NO	LL ICCAT Q	LJ-F ? PARTIAL DATA AVAILABLE FOR SOUTHERN 48.
SPAIN	LLHB	1986	48	YR	8000	?	NO	LL ICCAT Q	LJ-F ?
SPAIN	LLHB	1970	5	YR	900		DATA NOT AVAILABLE		
SPAIN	LLHB	1971	5	YR	1100		DATA NOT AVAILABLE		
SPAIN	LLHB	1972	5	YR	1300		DATA NOT AVAILABLE		
SPAIN	LLHB	1973	5	YR	1105		DATA NOT AVAILABLE		
SPAIN	LLHB	1974	5	YR	700		DATA NOT AVAILABLE		
SPAIN	LLHB	1975	5	YR	89		DATA NOT AVAILABLE		
SPAIN	LLHB	1976	5	YR	89	3249	YES	LL ICCAT YR	LJ-F 187
SPAIN	LLHB	1977	5	YR	667	21855	DATA NOT AVAILABLE		0 SPAIN LL AREA 5 1978 RAISED SIZE AVAILABLE
SPAIN	LLHB	1978	5	YR	720	23855	YES		179
SPAIN	LLHB	1979	5	YR	800	24657	YES	LL ICCAT YR	LJ-F 223
SPAIN	LLHB	1980	5	YR	750	23447	YES	LL ICCAT YR	LJ-F 471
SPAIN	LLHB	1981	5	YR	1120	39487	YES	LL ICCAT YR	LJ-F 457
SPAIN	LLHB	1982	5	YR	900	33412	YES	LL ICCAT YR	LJ-F 1461
SPAIN	LLHB	1983	5	YR	1321		DATA NOT AVAILABLE		
SPAIN	LLHB	1984	5	YR	1243	71186	YES	LL ICCAT M	LJ-F 12528
SPAIN	LLHB	1985	5	YR	1219	50756	YES	LL ICCAT M	LJ-F 11067
SPAIN	LLHB	1986	5	YR	1156		DATA NOT AVAILABLE		

SPAIN	TRAP	1981	48	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 48 YR LJ-F	0.0002	=SPN-TRAP(MT)/LL
SPAIN	TRAP	1985	48	YR	5	DATA NOT AVAILABLE	SPAIN LL AREA 48 YR LJ-F	0.0007	=SPN-TRAP(MT)/LL
SPAIN	TRAP	1986	48	YR	2	DATA NOT AVAILABLE	SPAIN LL AREA 48 YR LJ-F	0.0002	=SPN-TRAP(MT)/LL
SPAIN	GIL	1985	48	YR	4	DATA NOT AVAILABLE	SPAIN LL AREA 48 YR LJ-F	0.0005	=SPN-GILL(MT)/LL
SPAIN	PS	1986	48	YR	2	DATA NOT AVAILABLE	SPAIN LL AREA 48 YR LJ-F	0.0002	=SPN-PS(MT)/LL
SPAIN	TRAWL	1978	2	YR	11	DATA NOT AVAILABLE			
SPAIN	TRAP	1983	5	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0008	=SPN-TRAP(MT)/LL
SPAIN	TRAP	1984	5	YR	2	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0016	=SPN-TRAP(MT)/LL
SPAIN	HAND	1985	5	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0008	=SPN-HAND(MT)/LL
SPAIN	HAND	1986	5	YR	2	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0017	=SPN-HAND(MT)/LL
SPAIN	SURF	1985	5	YR	2	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0016	=SPN-HAND(MT)/LL
SPAIN	TRAP	1985	5	YR	3	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0025	=SPN-TRAP(MT)/LL
SPAIN	TRAW	1985	5	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0008	=SPN-TRWL(MT)/LL
SPAIN	TRAW	1986	5	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0009	=SPN-TRWL(MT)/LL
SPAIN	UNCL	1985	5	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0008	=SPN-UNCL(MT)/LL
SPAIN-CANABB		1985	48	YR	1	DATA NOT AVAILABLE	SPAIN LL AREA 48 YR LJ-F	0.0001	=SPN-CAN(MT)/LL
TUNISIE	UNCL	1974	5	YR	5	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0071	
TUNISIE	UNCL	1975	5	YR	3	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0337	
TUNISIE	UNCL	1976	5	YR	5	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0562	
TUNISIE	UNCL	1981	5	YR	7	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0063	
TUNISIE	UNCL	1982	5	YR	19	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0211	
TUNISIE	UNCL	1983	5	YR	15	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0114	
TUNISIE	UNCL	1984	5	YR	15	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0121	
TUNISIE	UNCL	1985	5	YR	61	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0500	
TUNISIE	UNCL	1986	5	YR	61	DATA NOT AVAILABLE	SPAIN LL AREA 5 YR LJ-F	0.0528	
TURKEY	UNCL	1970	5	YR	38	DATA NOT AVAILABLE			
TURKEY	UNCL	1971	5	YR	76	DATA NOT AVAILABLE			
TURKEY	UNCL	1972	5	YR	60	DATA NOT AVAILABLE			
TURKEY	UNCL	1973	5	YR	59	DATA NOT AVAILABLE			
TURKEY	UNCL	1974	5	YR	15	DATA NOT AVAILABLE			
TURKEY	UNCL	1975	5	YR	10	DATA NOT AVAILABLE			
TURKEY	UNCL	1976	5	YR	7	DATA NOT AVAILABLE			
TURKEY	UNCL	1977	5	YR	34	DATA NOT AVAILABLE			
TURKEY	UNCL	1978	5	YR	20	DATA NOT AVAILABLE			
TURKEY	UNCL	1979	5	YR	44	DATA NOT AVAILABLE			
TURKEY	UNCL	1980	5	YR	13	DATA NOT AVAILABLE			
TURKEY	UNCL	1981	5	YR	70	DATA NOT AVAILABLE			
TURKEY	UNCL	1982	5	YR	40	DATA NOT AVAILABLE			
TURKEY	UNCL	1983	5	YR	216	DATA NOT AVAILABLE			
TURKEY	UNCL	1984	5	YR	95	DATA NOT AVAILABLE			
TURKEY	UNCL	1985	5	YR	190	DATA NOT AVAILABLE			
TURKEY	UNCL	1986	5	YR	190	DATA NOT AVAILABLE			
USA	UNCL	1970	2	YR	287	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1971	2	YR	35	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1972	2	YR	246	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1973	2	YR	406	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1974	2	YR	1125	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1975	2	YR	1700	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1976	2	YR	1429	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1977	2	YR	912	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1978	2	YR	8	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1979	2	YR	16	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1980	2	YR	25	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			

USA	UNCL	1981	2	YR	12	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1982	2	YR	29	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1983	2	YR	39	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1984	2	YR	50	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1986	2	YR	50	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1978	2	YR	2952	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1979	2	YR	3252	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1980	2	YR	4507	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1981	2	YR	3542	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1982	2	YR	4315	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1983	2	YR	3781	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1984	2	YR	3460	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1985	2	YR	2913	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1986	2	YR	2273	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1978	2	YR	656	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1979	2	YR	524	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1980	2	YR	569	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1981	2	YR	521	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1982	2	YR	109	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1983	2	YR	288	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1984	2	YR	57	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1985	2	YR	33	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	HARP	1986	2	YR	15	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	GILL	1985	2	YR	19	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1978	4A	YR	68	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1979	4A	YR	636	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1980	4A	YR	508	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1981	4A	YR	444	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1982	4A	YR	597	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1983	4A	YR	697	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1984	4A	YR	956	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1985	4A	YR	1650	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	LL	1986	4A	YR	2546	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1987	4A	YR	16	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1984	4A	YR	15	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1979	4A	YR	191	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1980	4A	YR	16	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1981	4A	YR	11	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1982	4A	YR	21	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1983	4A	YR	5	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USA	UNCL	1985	4A	YR	3	RAISED CATCH AT LENGTH TO BE PROVIDED BY U.S.			
USSR	LLMB	1970	4B	YR	24	DATA NOT AVAILABLE			
USSR	LLMB	1971	4B	YR	24	DATA NOT AVAILABLE			
USSR	LLMB	1972	4B	YR	28	DATA NOT AVAILABLE			
USSR	LLMB	1973	4B	YR	26	DATA NOT AVAILABLE			
USSR	LLMB	1974	4B	YR	17	DATA NOT AVAILABLE			
USSR	LLMB	1975	4B	YR	32	DATA NOT AVAILABLE			
USSR	LLMB	1976	4B	YR	19	DATA NOT AVAILABLE	JAPAN LL AREA 4B Q LJ-F	0.0450	(USSR(MT)AREA4B)/
USSR	LLMB	1977	4B	YR	15	DATA NOT AVAILABLE	JAPAN LL AREA 4B Q LJ-F	0.0709	(JPN(MT) AREA4B)
USSR	LLMB	1978	4B	YR	20	DATA NOT AVAILABLE	JAPAN LL AREA 4B Q LJ-F	0.1838	
USSR	LLMB	1979	4B	YR	10	DATA NOT AVAILABLE	JAPAN LL AREA 4B Q LJ-F	0.0830	JPN(MT) AREA 4B =
USSR	LLMB	1980	4B	YR	21	DATA NOT AVAILABLE	JAPAN LL AREA 4B Q LJ-F	0.0854	JPN (MT)NORTH #
USSR	LLMB	1982	4B	YR	69	DATA NOT AVAILABLE	JAPAN LL AREA 4B Q LJ-F	0.0668	JPN(No) AREA4B/
							JAPAN LL AREA 4B Q LJ-F	0.1368	JPN(No) AREA NORTH

USSR	LLMB	1984	48	YR	16	DATA NOT AVAILABLE	JAPAN LL AREA 48 Q LJ-F	0.0694
USSR	LLMB	1985	48	YR	13	DATA NOT AVAILABLE	JAPAN LL AREA 48 Q LJ-F	0.0329
USSR	LLMB	1986	48	YR	18	DATA NOT AVAILABLE	JAPAN LL AREA 48 Q LJ-F	
USSR	PS	1978	2	YR	2	DATA NOT AVAILABLE	JAPAN LL AREA 48 Q LJ-F	
USSR	TRAWL	1978	2	YR	1	DATA NOT AVAILABLE	JAPAN LL AREA 48 Q LJ-F	
VENEZUELA	LL	1970	3	YR	23	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1971	3	YR	52	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1972	3	YR	27	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1973	3	YR	23	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1974	3	YR	24	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1975	3	YR	52	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1976	3	YR	43	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1977	3	YR	15	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1978	3	YR	46	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1979	3	YR	182	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1980	3	YR	192	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1981	3	YR	24	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1982	3	YR	25	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1983	3	YR	35	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1984	3	YR	23	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1985	3	YR	51	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	
VENEZUELA	LL	1986	3	YR	84	DATA NOT AVAILABLE	USA LL AREA 3 OR 4A YR DWT?	

BRAS.JPN	LLFB	1977	6	YR	10	DATA NOT AVAILABLE		BRAZIL LL AREA 6 M E-F	0.0303	=BR.JP(MT)/BR(MT)
BRAS.JPN	LLFB	1978	6	YR	155	DATA NOT AVAILABLE		BRAZIL LL AREA 6 M E-F	1.1232	=BR.JP(MT)/BR(MT)
BRAS.JPN	LLFB	1979	6	YR	173	DATA NOT AVAILABLE		BRAZIL LL AREA 6 M E-F	0.8122	=BR.JP(MT)/BR(MT)
BRAS.JPN	LLFB	1980	6	YR	351	NO LL ICCAT M	E-F?	674	E-F SUSPECTED LJ-F.	TO BE RAISED.
BRAS.JPN	LLFB	1981	6	YR	213	NO LL 5X5 M	LJ-F	176	SUGGESTED FORMULA.	RWT=.00001824*LJ-F^2.99507
BRAS.JPN	LLFB	1982	6	YR	364	DATA NOT AVAILABLE		BRAZIL LL AREA 6 M E-F	0.5928	=BR.JP(MT)/BR(MT)
BRAS.JPN	LLFB	1983	6	YR	283	NO LL 5X5 M	LJ-F	389	RAISING TO BE MADE USING	
BRAS.JPN	LLFB	1984	6	YR	122	NO LL ICCAT M	LJ-F	519	RWT=.00001824*LJ-F^2.99507	
BRAS.JPN	LLFB	1985	6	YR	227	DATA NOT AVAILABLE				
BRAS.JPN	LLFB	1986	6	YR						
BRAS.KOR	LLFB	1976	6	YR	27	DATA NOT AVAILABLE		BRAZIL LL AREA 6 M E-F	0.0726	
BRAS.KOR	LLFB	1977	6	YR	49	DATA NOT AVAILABLE		BRAZIL LL AREA 6 M E-F	0.1485	
BULGARIA	UNCL	1977	7	YR	3	DATA NOT AVAILABLE				
CHI-TAIW	LLFB	1970		SOUTH	YR	985	DATA NOT AVAILABLE			
CHI-TAIW	LLFB	1971		SOUTH	YR	599	DATA NOT AVAILABLE			
CHI-TAIW	LLFB	1972		SOUTH	YR	621	DATA NOT AVAILABLE			
CHI-TAIW	LLFB	1973		SOUTH	YR	849	DATA NOT AVAILABLE			
CHI-TAIW	LLFB	1974		SOUTH	YR	617	DATA NOT AVAILABLE			
CHI-TAIW	LLFB	1975		SOUTH	YR	719	DATA NOT AVAILABLE			
CHI-TAIW	LLFB	1976		SOUTH	YR	573	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	1.6491 =CHI(MT)/JPN(MT)
CHI-TAIW	LLFB	1977		SOUTH	YR	519	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	6.2283 =CHI(MT)/JPN(MT)
CHI-TAIW	LLFB	1978		SOUTH	YR	481	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	1.8736 =CHI(MT)/JPN(MT)
CHI-TAIW	LLFB	1979		SOUTH	YR	994	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	1.7619 =CHI(MT)/JPN(MT)
CHI-TAIW	LLFB	1980		SOUTH	YR	540	NO LL ICCAT Q	E-F	548	TO BE RAISED USING E-F/RWT FORMULA
CHI-TAIW	LLFB	1981		SOUTH	YR	406	NO LL ICCAT Q	E-F	468	USING EITHER USA (2+4A) OR SPAIN (4B)
CHI-TAIW	LLFB	1982		SOUTH	YR	400	NO LL ICCAT Q	E-F	41	JAPAN LL S ICCAT Q LJ-F
CHI-TAIW	LLFB	1983		SOUTH	YR	201	NO LL 5X5 Q	E-F	613	TO BE RAISED USING E-F/RW
CHI-TAIW	LLFB	1984		SOUTH	YR	153	NO LL ICCAT Q	E-F	1264	USING EITHER USA (2+4A) OR SPAIN (4B)
CHI-TAIW	LLFB	1985		SOUTH	YR	215	NO LL ICCAT Q	E-F	1254	
CHI-TAIW	LLFB	1986		SOUTH	YR	166				
CUBA	LL	1970		SOUTH	YR	148	DATA NOT AVAILABLE			
CUBA	LL	1971		SOUTH	YR	74	DATA NOT AVAILABLE			
CUBA	LL	1972		SOUTH	YR	66	DATA NOT AVAILABLE			
CUBA	LL	1973		SOUTH	YR	221	DATA NOT AVAILABLE			
CUBA	LL	1974		SOUTH	YR	509	DATA NOT AVAILABLE			
CUBA	LL	1975		SOUTH	YR	248	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.5688 =CUBA(MT)/JPN(MT)
CUBA	LL	1976		SOUTH	YR	317	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	3.4457 =CUBA(MT)/JPN(MT)
CUBA	LL	1977		SOUTH	YR	302	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	1.0903 =CUBA(MT)/JPN(MT)
CUBA	LL	1978		SOUTH	YR	319	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	1.1685 =CUBA(MT)/JPN(MT)
CUBA	LL	1979		SOUTH	YR	272	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.5142 =CUBA(MT)/JPN(MT)
CUBA	LL	1980		SOUTH	YR	316	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.2364 =CUBA(MT)/JPN(MT)
CUBA	LL	1981		SOUTH	YR	147	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.1185 =CUBA(MT)/JPN(MT)
CUBA	LL	1982		SOUTH	YR	432	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.1592 =CUBA(MT)/JPN(MT)
CUBA	LL	1983		SOUTH	YR	818	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.5479 =CUBA(MT)/JPN(MT)
CUBA	LL	1984		SOUTH	YR	1161	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.3592 =CUBA(MT)/JPN(MT)
CUBA	LL	1985		SOUTH	YR	1301	DATA NOT AVAILABLE	JAPAN LL S ICCAT Q	LJ-F	0.3500 =CUBA(MT)/JPN(MT)
CUBA	LL	1986		SOUTH	YR					
GHANA	SURF	1980	7	YR	110	DATA NOT AVAILABLE				
GHANA	SURF	1981	7	YR	5	DATA NOT AVAILABLE				
GHANA	SURF	1982	7	YR	55	DATA NOT AVAILABLE				
GHANA	SURF	1983	7	YR	5	DATA NOT AVAILABLE				
GHANA	SURF	1984	7	YR	23	DATA NOT AVAILABLE				
GHANA	SURF	1985	7	YR	20	DATA NOT AVAILABLE				
GHANA	SURF	1986	7	YR						

JAPAN	LLHB	1970	SOUTH	YR	2877	NO	LL 10X20 M	RWT	121	RAISING TO BE DONE	
JAPAN	LLHB	1971	SOUTH	YR	662	NO	LL 10X20 M	E-F	3	RAISING TO BE DONE	
JAPAN	LLHB	1972	SOUTH	YR	1023	NO	LL 10X20 M	E-F	6	RAISING TO BE DONE	
JAPAN	LLHB	1973	SOUTH	YR	480	NO	LL 10X20 M	E-F	2	RAISING TO BE DONE	
JAPAN	LLHB	1974	SOUTH	YR	191	NO	LL 10X20 M	E-F			
JAPAN	LLHB	1975	SOUTH	YR	436	7790	YES	LL ICCAT Q	LJ-F	1051	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1976	SOUTH	YR	92	1312	YES	LL ICCAT Q	LJ-F	68	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1977	SOUTH	YR	277	3914	YES	LL ICCAT Q	LJ-F	570	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1978	SOUTH	YR	273	3865	YES	LL ICCAT Q	LJ-F	439	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1979	SOUTH	YR	529	8350	YES	LL ICCAT Q	LJ-F	389	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1980	SOUTH	YR	1337	21895	YES	LL ICCAT Q	LJ-F	1359	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1981	SOUTH	YR	1241	19943	YES	LL ICCAT Q	LJ-F	880	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1982	SOUTH	YR	2714	44683	YES	LL ICCAT Q	LJ-F	2696	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1983	SOUTH	YR	1493	23806	YES	LL ICCAT Q	LJ-F	970	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1984	SOUTH	YR	3232	52055	YES	LL ICCAT Q	LJ-F	2975	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1985	SOUTH	YR	3717	58237	YES	LL ICCAT Q	LJ-F	3787	SAMPLING LEVEL SHOWN IN TABLE 3
JAPAN	LLHB	1986	SOUTH	YR							

MT(85)=TOTALMT*SOUTH(85)/TOTAL(85)

JAPAN BB 1971 7 YR 2 DATA NOT AVAILABLE

KOREA	LLFB	1970	SOUTH	YR	382					
KOREA	LLFB	1971	SOUTH	YR	256					
KOREA	LLFB	1972	SOUTH	YR	249					
KOREA	LLFB	1973	SOUTH	YR	602					
KOREA	LLFB	1974	SOUTH	YR	563					
KOREA	LLFB	1975	SOUTH	YR	279					
KOREA	LLFB	1976	SOUTH	YR	812					
KOREA	LLFB	1977	SOUTH	YR	699					
KOREA	LLFB	1978	SOUTH	YR	699					
KOREA	LLFB	1979	SOUTH	YR	303					
KOREA	LLFB	1980	SOUTH	YR	399					
KOREA	LLFB	1981	SOUTH	YR	311					
KOREA	LLFB	1982	SOUTH	YR	486					
KOREA	LLFB	1983	SOUTH	YR	409	NO	LL 5X5 Q	LJ-F	85	
KOREA	LLFB	1984	SOUTH	YR	149	NO	LL 5X5 M	LJ-F	553	
KOREA	LLFB	1985	SOUTH	YR	285	NO	LL 5X5 M	LJ-F	450	
KOREA	LLFB	1986	SOUTH	YR	66	NO	LL ICCAT M	LJ-F	240	

JAPAN LL S ICCAT Q LJ-F 0.6399 =KOR(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 8.8261 =KOR(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 2.5235 =KOR(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 2.5604 =KOR(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 0.5728 =KOR(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 0.2984 =KOR(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 0.2506 =KOR(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 0.1791 =KOR(MT)/JPN(MT)
 TO BE RAISED USING LJ-F TO RWT CONVERSION
 RWT=0.00001824*LJ-F**2.99507

NIGERIA UNCL 1983 7 YR 83 DATA NOT AVAILABLE
 NIGERIA UNCL 1984 7 YR 69 DATA NOT AVAILABLE

PANAMA	LLFB	1972	SOUTH	YR	12					
PANAMA	LLFB	1973	SOUTH	YR	274					
PANAMA	LLFB	1974	SOUTH	YR	90					
PANAMA	LLFB	1975	SOUTH	YR	40					
PANAMA	LLFB	1976	SOUTH	YR	219					
PANAMA	LLFB	1977	SOUTH	YR	28					
PANAMA	LLFB	1978	SOUTH	YR	83					
PANAMA	LLFB	1979	SOUTH	YR	26					

JAPAN LL S ICCAT Q LJ-F 0.0917 =PAN(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 2.3804 =PAN(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 0.1011 =PAN(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 0.3040 =PAN(MT)/JPN(MT)
 JAPAN LL S ICCAT Q LJ-F 0.0491 =PAN(MT)/JPN(MT)

S.AFRICA LLHB 1984 7 YR 5 DATA NOT AVAILABLE
 S.AFRICA LLHB 1985 7 YR 5 DATA NOT AVAILABLE
 S.AFRICA LLHB 1986 7 YR 3 DATA NOT AVAILABLE

S.AFRICA TRAWL1979 7 YR 28 DATA NOT AVAILABLE
 S.AFRICA TRAWL1980 7 YR 31 DATA NOT AVAILABLE
 S.AFRICA TRAWL1981 7 YR 9 DATA NOT AVAILABLE

S.AFRICA	TRAWL1982	7	YR	3	DATA NOT AVAILABLE
S.AFRICA	TRAWL1983	7	YR	7	DATA NOT AVAILABLE
S.AFRICA	TRAWL1984	7	YR	23	DATA NOT AVAILABLE
S.AFRICA	TRAWL1985	7	YR	3	DATA NOT AVAILABLE
S.AFRICA	TRAWL1986	7	YR	2	DATA NOT AVAILABLE
TOGO	UNCL 1985	7	YR	6	DATA NOT AVAILABLE
TOGO	UNCL 1986	7	YR	6	DATA NOT AVAILABLE
URUGUAY	LLHB 1981	6	YR	115	DATA NOT AVAILABLE
URUGUAY	LLHB 1982	6	YR	663	DATA NOT AVAILABLE
URUGUAY	LLHB 1983	6	YR	1460	DATA NOT AVAILABLE
URUGUAY	LLHB 1984	6	YR	2464	DATA NOT AVAILABLE
URUGUAY	LLHB 1985	6	YR	1685	DATA NOT AVAILABLE
URUGUAY	LLHB 1986	6	YR	1685	DATA NOT AVAILABLE
USSR	LLMB 1970	7	YR	176	DATA NOT AVAILABLE
USSR	LLMB 1971	7	YR	176	DATA NOT AVAILABLE
USSR	LLMB 1972	7	YR	202	DATA NOT AVAILABLE
USSR	LLMB 1973	7	YR	188	DATA NOT AVAILABLE
USSR	LLMB 1974	7	YR	123	DATA NOT AVAILABLE
USSR	LLMB 1975	7	YR	231	DATA NOT AVAILABLE
USSR	LLMB 1976	7	YR	138	DATA NOT AVAILABLE
USSR	LLMB 1977	7	YR	106	DATA NOT AVAILABLE
USSR	LLMB 1978	7	YR	149	DATA NOT AVAILABLE
USSR	LLMB 1979	7	YR	70	DATA NOT AVAILABLE
USSR	LLMB 1980	7	YR	154	DATA NOT AVAILABLE
USSR	LLMB 1981	7	YR	36	DATA NOT AVAILABLE
USSR	LLMB 1982	7	YR	26	DATA NOT AVAILABLE
USSR	LLMB 1983	7	YR	46	DATA NOT AVAILABLE
USSR	LLMB 1984	7	YR	146	DATA NOT AVAILABLE
USSR	LLMB 1985	7	YR	60	DATA NOT AVAILABLE
USSR	LLMB 1986	7	YR		DATA NOT AVAILABLE
USSR	PS 1978	7	YR	12	DATA NOT AVAILABLE
USSR	SURF 1981	7	YR	4	DATA NOT AVAILABLE
USSR	SURF 1984	7	YR	12	DATA NOT AVAILABLE

BRAZIL LL AREA 6 YR E-F	0.2840	=URG(MT)/BRZ(MT)
BRAZIL LL AREA 6 YR E-F	1.0798	=URG(MT)/BRZ(MT)
BRAZIL LL AREA 6 YR E-F	3.0998	=URG(MT)/BRZ(MT)
BRAZIL LL AREA 6 YR E-F	7.2258	=URG(MT)/BRZ(MT)
BRAZIL LL AREA 6 YR E-F	11.3851	=URG(MT)/BRZ(MT)

JAPAN LL AREA 7 Q LJ-F		USSR(MT) AREA 7
JAPAN LL AREA 7 Q LJ-F		=
JAPAN LL AREA 7 Q LJ-F		JPN(MT) AREA 7
JAPAN LL AREA 7 Q LJ-F		
JAPAN LL AREA 7 Q LJ-F		JPN(MT) AREA 7 =
JAPAN LL AREA 7 Q LJ-F	0.5359	
JAPAN LL AREA 7 Q LJ-F	1.5000	JPN(MT) SOUTH *
JAPAN LL AREA 7 Q LJ-F	0.3844	
JAPAN LL AREA 7 Q LJ-F	0.5695	JPN(No) AREA 7
JAPAN LL AREA 7 Q LJ-F	0.1325	
JAPAN LL AREA 7 Q LJ-F	0.1276	JPN(No) AREA 6+7
JAPAN LL AREA 7 Q LJ-F	0.0367	
JAPAN LL AREA 7 Q LJ-F	0.0102	
JAPAN LL AREA 7 Q LJ-F	0.0321	
JAPAN LL AREA 7 Q LJ-F	0.0460	
JAPAN LL AREA 7 Q LJ-F	0.0184	
JAPAN LL AREA 7 Q LJ-F		
JAPAN LL AREA 7 Q LJ-F	0.0459	
JAPAN LL AREA 7 Q LJ-F	0.0041	
JAPAN LL AREA 7 Q LJ-F	0.0038	

TABLE 3. ESTIMATED CATCH IN NUMBER OF FISH (C) AND TOTAL NUMBER OF FISH SAMPLED (N), JAPANESE LONGLINE, BY LOCAT AREA.

YEAR	AREAS (NORTH)								AREAS (SOUTH)							
	1+2+3		4A		4B		5		TOTAL		6		7		TOTAL	
	N	C	N	C	N	C	N	C	N	C	N	C	N	C	N	C
1975	409	2540	553	5300	1574	16241	21	239	2559	24320	9	39	1042	7701	1051	7790
1976	626	3364	420	4573	1034	5138	46	241	2155	13658	0	0	68	1312	69	1312
1977	848	3885	354	4911	519	1672	40	35	1760	10553	8	18	562	3396	570	3714
1978	55	2092	295	4615	355	4734	1	31	715	11522	4	131	435	3704	439	3355
1979	54	1517	425	4405	208	2171	3	57	590	3143	1	14	383	8336	359	9350
1980	117	2231	566	7009	594	5237	14	23	1391	15630	208	2129	1151	19755	1359	21835
1981	33	3069	524	9529	1137	5650	6	19	1750	19277	0	4192	880	15751	830	19943
1982	121	1469	517	9086	228	10627	0	34	355	21256	54	2672	2532	42011	2696	44683
1983	195	1549	239	3193	356	3409	2	114	732	3265	34	955	936	22341	970	23806
1984	198	1876	535	4196	454	4813	38	343	1275	11233	6	956	2969	51099	2375	52055
1985	48	922	1334	7565	625	6309	71	235	1778	15032	228	7273	3559	50764	3787	53237

144

Oct. 1, 1987

Table 4. ATLANTIC SWORDFISH CATCH (1000 MT)

 CAPTURA PEZ ESPADA ATLANTICO (1000 TM)

 PRISE ESPADON ATLANTIQUE (1000 TM)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
TOTAL	12.6	13.2	13.4	13.6	13.0	13.4	19.2	19.5	22.9	19.4	23.2	25.4	31.5	34.7	22.0
ATLANTIC	7.1	8.8	9.8	9.7	8.8	9.5	13.7	14.4	17.5	13.7	17.9	19.6	20.6	22.5	15.0
BRASIL	0.1	0.1	0.3	0.3	0.4	0.4	0.3	0.4	1.5	0.6	1.0	0.8	0.5	0.4	0.0
CANADA	0.0	0.0	0.0	0.0	0.0	0.1	2.3	3.0	1.9	0.6	0.6	1.1	0.5	0.6	0.0
CHINA (TAIWAN)	0.8	1.1	0.8	0.9	0.9	0.7	0.6	1.3	0.6	0.5	0.6	0.4	0.3	0.3	0.0
CUBA	0.1	0.5	1.1	0.5	0.6	0.7	0.6	0.4	0.6	0.4	0.7	1.2	1.4	1.5	0.0
JAPAN	1.8	1.0	1.4	1.5	0.8	0.8	0.9	1.0	2.1	2.2	3.7	1.9	3.6	4.7	0.0
KOREA	0.4	1.0	0.7	0.5	1.1	1.2	1.3	0.6	0.7	0.4	0.7	0.5	0.4	0.3	0.0
PANAMA	0.0	0.4	0.1	0.1	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESPANA	3.2	3.8	2.9	3.7	2.8	3.3	3.6	2.6	3.3	4.0	4.6	7.1	5.3	7.4	8.0
USA	0.2	0.4	1.1	1.7	1.4	0.9	3.7	4.6	5.6	4.5	5.1	4.8	4.5	4.6	4.0
URUGUAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	1.5	2.5	1.7	1.0
USSR	0.2	0.2	0.1	0.3	0.2	0.1	0.2	0.1	0.2	0.0	0.1	0.0	0.2	0.1	0.0
OTHERS	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.4	0.5	0.2	0.3	0.3	0.4	1.0	0.0
MEDITERRANEAN	5.5	4.4	4.6	3.9	4.2	4.9	5.5	5.1	5.4	5.7	5.3	5.8	10.9	12.1	6.0
ALGERIE	0.0	0.1	0.2	0.5	0.4	0.4	0.3	0.5	0.6	0.3	0.9	0.9	0.9	0.9	0.0
ITALY	3.7	2.8	3.3	3.0	3.3	3.3	4.0	3.5	3.7	3.4	2.6	2.7	7.6	8.8	2.0
MALTA	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.0
MAROC	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESPANA	1.3	1.1	0.7	0.1	0.1	0.7	0.7	0.8	0.8	1.1	0.9	1.3	1.2	1.2	1.0
OTHERS	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.2	0.7	0.8	1.0	1.1	1.0

TABLE 5. CONVERSION EQUATIONS REPORTED IN THE PAST ON VARIOUS MEASUREMENTS OF SWORDFISH

A=	B=	AREA	TIME	N	MIN	MAX	SOURCES
LOWER JAW-FORK LENGTH TO ROUND WEIGHT							
$RWT(kg) = A * LJ-F(cm)^B$							
.30399E-05	3.2854	IBERICA	Q-1				J.C.REY, SCRS/87/37
.64328E-05	3.1291	IBERICA	Q-2				J.C.REY, SCRS/87/37
.33816E-05	3.2532	IBERICA	Q-3				J.C.REY, SCRS/87/37
.21258E-05	3.3666	IBERICA	Q-4				J.C.REY, SCRS/87/37
.34333E-05	3.2623	IBERICA	YR				J.C.REY, SCRS/87/37
.55224E-05	3.1576	N.C.W.ATL.	Q-2				J.C.REY, SCRS/87/37
.36186E-05	3.2458	N.C.W.ATL.	Q-3				J.C.REY, SCRS/87/37
.12032E-05	3.4585	N.C.W.ATL.	Q-4				J.C.REY, SCRS/87/37
.42030E-05	3.2134	N.C.W.ATL.	YR				J.C.REY, SCRS/87/37
.1824 E-05	2.9950	SW ATL.	YR				CALC'D BASED SCRS/78/51
LOWER JAW-FORK TO DRESSED WEIGHT							
$DWT(Lbs.) = A * LJ-F(cm)^B$							
.1133E-04	3.1110	NW ATL.	FEB	178	122	206	S.TURNER, MIAMI WS 86/11
.6152E-05	3.2380	NW ATL.	APR	22	125	209	S.TURNER, MIAMI WS 86/11
.1791E-04	3.0220	NW ATL.	MAY	24	125	205	S.TURNER, MIAMI WS 86/11
.2914W-05	3.3760	NW ATL.	JUN	35	121	207	S.TURNER, MIAMI WS 86/11
.1311E-04	3.0770	NW ATL.	JUL	78	121	207	S.TURNER, MIAMI WS 86/11
.2174E-05	3.4420	NW ATL.	AUG	39	121	203	S.TURNER, MIAMI WS 86/11
.2715E-05	3.4110	NW ATL.	SEP	28	120	209	S.TURNER, MIAMI WS 86/11
.8779E-05	3.1670	NW ATL.	OCT	21	124	209	S.TURNER, MIAMI WS 86/11
.10123E-04	3.1370	NW ATL.	YR	551	82	287	S.TURNER, MIAMI WS 86/11
$DWT(kg) = A * LJ-F(cm)^B$							
.64338E-05	3.109	GUINEA	Q-1				J.C.REY, SCRS/87/37
.30415E-05	3.253	GUINEA	Q-2				J.C.REY, SCRS/87/37
.29082E-05	3.271	GUINEA	Q-3				J.C.REY, SCRS/87/37
.65265E-05	3.113	GUINEA	Q-4				J.C.REY, SCRS/87/37
.43491E-05	3.188	GUINEA	YR				J.C.REY, SCRS/87/37
.68566E-05	3.101	SENEGAL	Q-1				J.C.REY, SCRS/87/37
.51250E-05	3.152	SENEGAL	Q-2				J.C.REY, SCRS/87/37
.12197E-05	3.444	SENEGAL	Q-3				J.C.REY, SCRS/87/37
.16409E-05	3.381	SENEGAL	Q-4				J.C.REY, SCRS/87/37
.25608E-05	3.293	SENEGAL	YR				J.C.REY, SCRS/87/37
.29495E-05	3.271	CANARIAS	Q-1				J.C.REY, SCRS/87/37
.24002E-05	3.315	CANARIAS	Q-2				J.C.REY, SCRS/87/37
.20424E-05	3.846	CANARIAS	Q-3				J.C.REY, SCRS/87/37
.10952E-05	3.467	CANARIAS	Q-4				J.C.REY, SCRS/87/37
.185844E-5	3.363	CANARIAS	YR				J.C.REY, SCRS/87/37

A=	B=	AREA	TIME	N	MIN	MAX	SOURCES
.517 E-05	3.16	NE ATL.	YR	486			REY & GARCES, SCRS/78/87
.961669E-6	3.533	MEDIT.	YR				J.C.REY, SCRS/87/37
.97 E-06	3.49	MEDIT.	YR	105			REY & GARCES, SCRS/78/87
.51392E-05	3.1110	NW ATL.	FEB	178	122	206	MIAMI WS 86/11 CONVTD
.27905E-05	3.2380	NW ATL.	APR	22	125	209	MIAMI WS 86/11 CONVTD
.81238E-05	3.0220	NW ATL.	MAY	24	125	205	MIAMI WS 86/11 CONVTD
.13218E-05	3.3760	NW ATL.	JUN	35	121	207	MIAMI WS 86/11 CONVTD
.59466E-05	3.0770	NW ATL.	JUL	78	121	207	MIAMI WS 86/11 CONVTD
.98611E-06	3.4420	NW ATL.	AUG	39	121	203	MIAMI WS 86/11 CONVTD
.12315E-05	3.4110	NW ATL.	SEP	28	120	209	MIAMI WS 86/11 CONVTD
.39821E-05	3.1670	NW ATL.	OCT	21	124	209	MIAMI WS 86/11 CONVTD
.45917E-05	3.1370	NW ATL.	YR	551	82	287	MIAMI WS 86/11 CONVTD
.124 E-04	3.04	SW ATL.	YR				AMORIM et al SCRS/78/51
EYE-FORK LENGTH TO DRESSED WEIGHT							
$DWT(Lbs.) = A * E-F(cm)^B$							
.2849E-04	3.0185	NW ATL.	YR	119	91	221	S.TURNER, MIAMI WS 86/11
$DWT(kg.) = A * E-F(cm)^B$							
.12923E-04	3.0185	NW ATL.	YR	119	91	221	MIAMI WS 86/11 CONVTD
TOTAL LENGTH TO DRESSED WEIGHT							
$DWT(Lbs.) = A * TL(cm)^B$							
.3771E-05	3.0742	NW ATL.	YR	117	155	380	S.TURNER, MIAMI WS 86/11
$DWT(kg.) = A * TL(cm)^B$							
.17105E-05	3.0742	NW ATL.	YR	117	155	380	MIAMI WS 86/11 CONVTD
DRESSED WEIGHT TO LOWER JAW-FORK LENGTH							
$LJ-F(cm) = A * DWT(Lbs.)^B$							
44.2237	.29257	NW ATL.	YR	551	4	473	S.TURNER, MIAMI WS 86/11
DRESSED WEIGHT TO EYE-FORK LENGTH							
$EFL(cm) = A * DWT(Lbs.)^B$							
36.10826	.30622	NW ATL.	YR	117	14	345	S.TURNER, MIAMI WS 86/11
DRESSED WEIGHT TO TOTAL LENGTH							
$TL(cm) = A * DWT(Lbs.)^B$							
68.18065	.29126	NW ATL.	YR	117	14	345	S.TURNER, MIAMI WS 86/11
EYE-FORK LENGTH TO LOWER JAW-FORK LENGTH							
$LJ-F(cm) = A + B * E-F(cm)$							
7.821534	1.0897	E.ATL+MED.	YR	251			REY & GARCES, SCRS/78/87

Table 5 (cont.)

A=	B=	AREA	TIME	N	MIN	MAX	SOURCES
ROUND WEIGHT TO DRESSED WEIGHT							
$DWT(kg) = A * RWT(kg)^B$							
.8009	1.015	SW ATL.	YR	127			AMORIM et al SCRS/78/51
.75	1.04	NE ATLANTIC	YR	40			AMORIM et al SCRS/78/51

AREAS

GUINEA	5°N-10°N, 5°W-30°W
SENEGAL	10°N-25°N, east of 30°W
CANARIAS	25°N-35°N, east of 30°W
IBERICA	35°N-45°N, east of 30°W
N.C.W. ATL.	30°N-50°N, 30°W-50°W

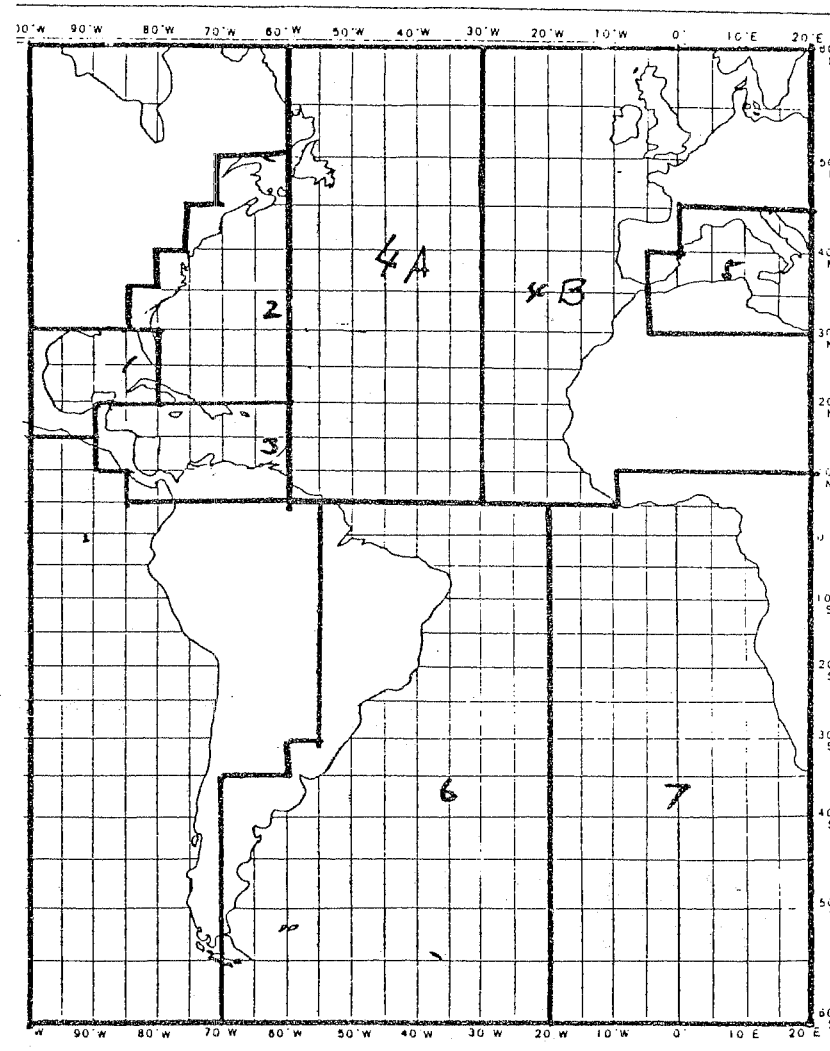


Figure 1. Swordfish areas agreed upon by Workshop members in which initial data preparations were made.