INTERNATIONAL COMMISSION
for the
CONSERVATION of ATLANTIC TUNAS

R E P O R T
for biennial period, 1974-75
PART II (1975)
English version

MADRID, SPAIN 1976

INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS

Member Countries (as of July 1, 1976)

Brazil, Canada, Cuba, France, Ghana, Ivory Coast, Japan, Korea, Morocco, Portugal, Senegal, South Africa, Spain, U.S.A.

Chairman of Commission

Dr. I. MALICK DIA, Senegal
(from December 4, 1973)

First Vice-Chairman of Commission

Mr. Y. S. KANA, Korea
(from November 25, 1975)

Second Vice-Chairman of Commission

Mr. E. B. YOUNG, Canada
(from November 25, 1975)

Panel Membership (as of July 1, 1976)

Panel	Contracting Parties	Chairman
1	Brazil, Canada, Cuba, France, Ghana, Ivory Coast, Japan, Korea, Morocco, Portugal, Senegal, Spain, U.S.A.	U.S.A.
2	Canada, France, Japan, Korea, Morocco, Portugal, Spain, U.S.A.	Morocco
3	Brazil, Japan, Korea, South Africa, U.S.A.	Japan
4	Canada, Cuba, Japan, Korea, Portugal, Spain, U.S.A.	Spain

Council (from December 4, 1973)

Chairman: SENEGAL
First Vice-Chairman: KOREA
Second Vice-Chairman: CANADA
Countries: BRAZIL,CUBA, FRANCE, IVORY COAST, JAPAN, MOROCCO, PORTUGAL, SPAIN, U.S.A.

Standing Committees

Committees:	Chairman
Committee on Finance and Administration (STACFAD)	Mr. K. YONEZAWA, Japan (from December 4, 1973)
Committee on Research and Statistics (SCRS)	Dr. B. J. ROTHSCHILD, U.S.A. (from December 4, 1973)

Secretariat
General Mola, 17, 28001 Madrid (Spain)
Executive Secretary: O. RODRÍGUEZ-MARTÍN
Assistant Executive Secretary: P. M. MIYAKE

LETTER OF TRANSMITTAL

The Chairman of the International Commission for the Conservation of Atlantic Tunas presents his compliments to the Member Governments to the Convention for the Conservation of Atlantic Tunas (signed in Rio de Janeiro, May 14, 1966), and to the Delegates and Observers representing said Governments, and has the honor to transmit the ***"Report for the Biennial Period, 1974-75, Part II (1975)"***, describing the activities of the Commission during the second half of said biennial period.

The volume contains reports of the Fourth Regular Meeting of the Commission, held in November, 1975, and of all the associated meetings of the Standing Committees and Sub-Committees. In addition, it contains a summary of the activities of the Secretariat, and the National Reports on scientific activities related to tuna fisheries carried out by the various countries.

This Report has been drafted, circulated and approved in compliance with Article III, paragraph 9, and Article IV, paragraph 2-d, of the Convention, and Rule 15 of the Commission's Rules of Procedure. The Report is available in the three official languages of the Commission: English, French and Spanish.

I. Malick Dia
Commission Chairman

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CHAPTER I
Secretariat Reports

ADMINISTRATIVE REPORT 1975 *

COM/75/11 (Amended)

1. Member Countries

On January 15, 1975, the Government of the Republic of Cuba deposited with the Director General of the Food and Agriculture Organization of the United Nations (FAO) an instrument of adherence to the International Convention for the Conservation of Atlantic Tunas, signed in Rio de Janeiro (Brazil) on May 14, 1966.

According to Article XIV, paragraph 3, of the Convention, an adherence becomes effective on the date the instrument is deposited. Therefore, on January 15, 1975, Cuba officially became a member of the International Commission for the Conservation of Atlantic Tunas.

2. ICCAT Meetings

Third Regular Meeting of the Council

The Third Regular Meeting of the Council was held in Madrid, November 20-26, 1974, and was presided by Dr. I. Malick Dia, Chairman of the Commission and the Council.

Also meeting at that time were Panels 1, 2, 4, the Working Group on Yellowfin Tuna Regulations and the Working Group on International Inspection.

Preceding the Council meetings, the Standing Committee on Research and Statistics (SCRS) met from November 13 to 19, 1974.

The proceedings and reports of the meetings are included in the Biennial Report, 1974-1975, Part I.

3. Other Meetings at which ICCAT was represented

a) *International Commission for the Southeast Atlantic Fisheries (ICSEAF)*

ICSEAF held a special meeting in Vigo (Spain) in December, 1974, which was attended by the Executive Secretary. The Assistant Executive Secretary attended the scientific meeting previously held in Madrid.

* Revised version of Administrative Report presented at Commission Meeting.

b) *The International Commission for the Northwest Atlantic Fisheries (ICNAF)*

The Executive Secretary attended the 25th Annual Meeting of ICNAF held in Edinburgh, Scotland, on June 10-20, 1975, as an observer. Because of the vast experience of that Commission in the area of regulatory measures for the various species, the meetings proved most interesting and informative.

c) *International Council for the Exploration of the Sea (ICES)*

The Assistant Executive Secretary represented the Commission at the scientific sessions of the 63rd Statutory Meeting of ICES held in Montreal, Canada, September 29-October 4, 1975. Since the ICES Bluefin Tuna Working Group expressed interest in the present situation of bluefin tuna in the Atlantic Ocean, the Assistant Executive Secretary presented a paper to the meeting, entitled «ICCAT Conservation Measures for Bluefin Tuna». (See Section 5-c.)

d) *Indo-Pacific Fisheries Council/Indian Ocean Fisheries Commission (IPFC/IOFC)*

The IPFC/IOFC Joint Committee on Management of Tunas, was held in Mombasa, Kenya, July 18-19, 1975. The Indian Ocean Fisheries Commission held its Fourth Session at the same place from July 21 to 25. The Assistant Executive Secretary attended both meetings. At the meetings, he presented one contribution paper entitled «ICCAT Experience in Improvement of Tuna Statistics in the Atlantic». (See Section 5-d.)

e) *Inter-American Tropical Tuna Commission (IATTC)*

The Assistant Executive Secretary attended the IATTC special meeting held in San Diego, California, March 3-5, 1975. Its regular annual meeting, held in Paris, October 13-15, 1975, was attended by the Executive Secretary.

4. Bluefin tuna regulation

According to the decision made at the Third Regular Meeting of the Council (Madrid, November 1974), the Secretariat circulated a note on December 6, 1974, notifying the member countries of the recommendations adopted by the Council. A vote for the recommendations was also requested.

On February 7, 1975, the Secretariat notified all the member countries that seven (7) countries, representing a majority, had voted in favor of the recommendations. (Canada, France, Japan, Korea, South Africa, Spain and U.S.A.)

On August 11, 1975, all the member governments and non-member countries were notified that the recommendations entered into effect on August 10, 1975, since no objection was received during the six-month period after the date of notification of the Commission decision.

The status of the implementation of regulations by member countries is shown in Annex 4 to the Proceedings.

5. Cooperation with other Organizations

a) *FAO*

As in the past, excellent cooperation has been maintained with FAO, particularly in the collection and comparison of statistical data. Many tuna statistics experts temporarily working with FAO have visited our office and much information on the statistics has been exchanged. Officers of FAO have made valuable contributions during ICCAT meetings, while ICCAT has also participated in some of the FAO meetings and likewise has made considerable contributions.

b) *Inter-American Tropical Tuna Commission (IATTC)*

Much scientific information on various matters of mutual interest has been exchanged. Also, both organizations have worked closely to study the world-wide situation of tuna fisheries.

c) *International Council for the Exploration of the Sea (ICES)*

The Bluefin Tuna Working Groups of ICES and ICCAT held joint meetings in 1974. In early 1975, ICES proposed to hold another joint meeting. However, since ICCAT expanded its own studies on bluefin tuna to the extent that it recommended the regulations on the bluefin tuna fisheries, this proposed meeting never materialized. Instead, a paper was presented by ICCAT to the 63rd Statutory Meeting of ICES held in Montreal from September 29 to October 4, 1975. The paper summarizes the background and actions taken by ICCAT for the conservation of bluefin tuna stocks.

d) *Indo-Pacific Fisheries Council/Indian Ocean Fisheries Commission (IPFC/IOFC)*

Because of our common interest in tunas, ICCAT and IPFC/IOFC continue close cooperation. As reported in the «Meetings» section of this Report, the Assistant Executive Secretary attended the IPFC/IOFC meeting held in Mombasa, Kenya, in July, 1975. On that occasion, IOFC expressed interest in making its relationship with ICCAT even closer in the future. It is felt that future closer cooperation is essential considering that the same fleets are fishing and the same tuna stocks are distributed in both oceans, and that a fishing regulation adopted in one ocean affects the fisheries pattern of the other ocean.

e) *Other organizations*

ICCAT has maintained very close cooperation with the International Commission for the Southeast Atlantic Fisheries (ICSEAF) and with the

International Commission for the Northwest Atlantic Fisheries (ICNAF). Both Commissions cover the Atlantic area and tunas are also of interest to both organizations, while not being their main concern. Scientific documents were also exchanged with ICSEAF and ICNAF.

6. Coordination of Research

The Secretariat has prepared a detailed report on this subject. (See the «Secretariat Report on Statistics and Coordination of Research».)

7. Publications

a) *Biennial Report*

Part I of the «Biennial Report» for the biennial period 1974-75 was printed in the three official languages of the Commission. The English version was distributed in July; the French version in September and the Spanish version in October. This Report covers Commission activities during the first half of the 1974-75 biennial period.

b) *Statistical Bulletin*

In early April the Secretariat issued the first preliminary estimates of albacore, bluefin, yellowfin, bigeye and skipjack catches for the entire Atlantic, by country. The preliminary issue, covering the data up to and including 1974, was prepared in early August and distributed among the scientists concerned. The completed version of Volume 5, 1975, was mailed in September. The final revision was issued in February, 1976.

c) *Collective Volume of Scientific Papers*

Volume IV, which included selected papers presented at the 1974 SCRS meeting, was prepared and distributed in February, 1975. Approval had been received from the writers for the inclusion of these papers in the volume. These volumes are to be used as working documents only, with no citation permitted, as was agreed in 1972. (This policy was changed at the 1975 meeting. For details see Section 10.a. of the SCRS Report.)

d) *Data Record*

The Secretariat prepared the «Data Record». Volume 5, in February, 1975. This volume covers all the catch and effort and biological data (unpublished) submitted to the Commission by the end of 1974. Volume 6 was issued in October, 1975.

e) *Newsletter*

Newsletters, relating general information of Commission activities, were sent out at intervals of two to three months. Distribution has been extended, and at present about six hundred copies are mailed throughout the world.

8. Secretariat and Administration

a) *Staff*

In 1975, two members of the Secretariat staff, Ms. Lorna Dell (English) and Ms. Ana María Mingote (Spanish), left the Commission. The Secretariat regrets their leaving. The new secretaries replacing them are Ms. Philomena M. Seidita (U.S.A.) and Ms. Marcela Estop (Spanish).

A new biostatistician, Dr. William E. Schaaf (U.S.A.), was hired by the Secretariat to start working on October 1, 1975. The contract is for a one-year period.

The Secretariat staff is presently made up of the following persons:

		Date of employment
OLEGARIO RODRÍGUEZ-MARTÍN Executive Secretary	(P-5)	July 1, 1970
P. MAKOTO MIYAKE Assistant Executive Secretary	(P-4)	November 1, 1970
MARIE-ELISABETH CAREL Multilingual Secretary	(G-4)	April 1, 1972
PHILOMENA M. SEIDITA Multilingual Secretary	(G-4)	April 1, 1975
MARCELA ESTOP HERGUETA Multilingual Secretary	(G-4)	May 1, 1975
JOAN M. MANNING Statistical Assistant		September 10, 1973
GINETTE TURPEAU Multilingual Typist		November 1, 1974
AMADEO AGUILAR Messenger		October 1, 1970
Experts with Temporary Contracts		
WILLIAM E. SCHAAF Biostatistician		October 1, 1975
ARNAUD DE BOISSET Statistical Expert		October 1, 1972

b) *Travel*

i) The Assistant Executive Secretary, after attending the IATTC meeting in California, visited the NMFS-Southwest Fisheries Center (La Jolla, California) and the Southeast Fisheries Center (Miami, Florida). He discussed with the scientists the various aspects of tuna studies. He also visited St. Maarten (Dutch Antilles) to formulate a contract with the Curaçao Pioneering N. V., to effect the sampling project. A visit was also made to Mayaguez (Puerto Rico) to observe tuna transshipment operations.

ii) The Assistant Executive Secretary visited Abidjan (Ivory Coast), Accra and Tema (Ghana) and Cape Town (South Africa) to formulate contracts for the biological sampling program and the collection of catch and effort statistics for ICCAT. This visit took place in May/June, 1975.

iii) The Executive Secretary visited Cuba by invitation of the Cuban Government, which also incurred all travel expenses. His visit was very successful, particularly considering that Cuba had just become a member of the Commission. His itinerary included a visit to various centers of the «Instituto Nacional de Pesca de Cuba» where he met administrators and various scientists and exchanged opinions and discussed a number of matters related to the Commission and tuna fisheries.

iv) *Other trips*

Members of the Secretariat staff also undertook trips in order to attend the various meetings mentioned previously in Section 3.

O. Rodríguez Martín
Executive Secretary

FINANCIAL REPORT 1975 *

COM/75/12 (Amended)

1. Auditor's Report for Fiscal Year 1974

The Auditor designated by the «Instituto de Censores de Cuentas de España» has examined the accounts and balance sheet of the Commission up to December 31, 1974. In compliance with Article 9-3 of the Financial Regulations, the Secretariat sent a copy of the Auditor's Report to all the member country Governments in April, 1975. An extract of the same has been included in the «Biennial Report» 1974-75, Part I.

2. Current status of Commission accounts

Statement 1 shows the financial situation at the end of fiscal year 1974, and includes the outstanding contributions.

In *Statement 2* the status of each member country's contribution is shown. The contributions received during 1975 totalled U. S. $ 226,569.89. Since $ 1,530.43 [$ 1,350.43 (Morocco) + $ 180.00 (Brazil)] was received in 1974 and applicable to 1975 contributions, the total paid as contributions was U. S. $ 228,100.32.

Statement 3 shows the budget and expenditures up to the end of fiscal year 1975.

There is an unused balance of U. S. $ 3,026.49. Moreover, $ 10,000 which appeared under the heading «Contingencies» did not have to be utilized. Therefore, the positive balance of U. S. $ 3,026.49 plus the unused $ 10,000 of the Contingency Fund total U. S. $ 13,026.49.

In accordance with the decision of the Commission, this should be allocated as follows:

a) To the 1976 Budget (See Statement 5) . . . $ 13,000.00
b) To the Working Capital Fund . . . . . $ 26.49

* Updated to the end of fiscal year 1975.

Statement 4 gives the total of income and expenditures and the balance in Cash and Bank at the end of fiscal year 1975.

The amounts marked with an asterisk, which refer to non-budgeted income, will be allocated to the Working Capital Fund.

Statement 5 shows the state of accounts at the end of fiscal year 1975. The accounts show a balance of U. S. $ 49,028.41. Pending country contribution total U. S. $ 7,266.68.

3. Working Capital Fund

At the Second Regular Meeting of the Commission, it was decided that the Working Capital Fund was most useful and should be maintained at a level of approximately 15 % of the total regular budget.

The Working Capital Fund amounted to $ 34,351.65 at the close of fiscal year 1974. After adding the non-budgeted income for 1975, the Fund now amounts to $ 43,295.09.

4. 1976-1977 Budget

The budget estimate for 1976-1977, presented by the Executive Secretary, was modified and approved by the Commission at its Fourth Regular Meeting (Madrid, November 1975). (Appendix IV to Annex 5 of the Proceedings.)

5. Auditor's Report for Fiscal Year 1975

The Auditor's Report for fiscal year 1975 was sent in its entirety to all the Contracting Parties in March, 1976. The Balance Sheet at the close of fiscal year 1975 has been extracted from the Report and is given as Statement 6.

STATEMENT 1

Statement at close of Fiscal Year 1974

ASSETS		$	LIABILITIES	$
Cash and Bank (at 31-XII-74)		35,211.14	To the 1975 Budget . .	10,000.00
Outstanding Contributions:			Working Capital Fund .	34,531.65
Senegal . . .	420.00		Paid in advance:	
Ivory Coast . .	5,526.00		Brazil	180.00
Ghana	4,905.04		Morocco	1,350.53
	$ 10,851.04	10,851.04		
TOTAL		46,062.18	TOTAL	46,062.18

STATEMENT 2

Status of Member Country Contributions in 1975

	Balance 1974	*Contributions for 1975 budget, approved by the Commission*	*Contributions paid by 31/XII/75 for the 1975 Budget*	*Other Contributions*	*Balance 1975 (at 31/XII/75)*
Brazil	+ 180.00 *	7,614.00	7,434.00 (31/XII) *	—	—
Canada	—	10,679.00	10,679.00 (17/II)	—	—
France	—	33,386.00	33,386.00 (4/IV)	—	—
Ghana	—4,905.04	5,623.00	5,252.17 (9/IX)	—	—5,275.87
Ivory Coast	—5,526.00	5,950.00	5,950.00 (4/IX)	5,483.94	— 42.06
Japan	—	35,195.00	35,195.00 (27/II)	—	—
Korea	—	23,873.00	23,873.00 (12/XII)	—	—
Morocco	+1,350.53 **	8,121.00	6,770.47 (13/VI) **	0.10	+ 0.10
Portugal	—	15,089.00	15,089.00 (16/VIII)	—	—
Senegal	— 420.00	7,142.00	5,613.25 (31/XII)	—	—1,948.75
South Africa	—	4,818.00	4,818.00 (8/III)	—	—
Spain	—	43,482.00	43,482.00 (2/V)	—	—
United States	—	29,028.00	29,028.00 (4/III)	—	—
		230,000.00	226,569.89		—7,266.68
Cuba ***				4,773.48	+ 0.10

* $ 180.00 + 7,434.00 = $ 7,614.00.
** $ 1,350.53 + 6,770.47 = $ 8,121.00.
*** New member country.

STATEMENT 3

Budget, Expenditures and Balance ($) for Fiscal Year 1975

	I	II	III
	1975 Budget	*Total Expenditures Fiscal Year 1975*	*Balance*
1. Salaries	120,000	119,948.53	+ 51.47
2. Travel	12,000	12,165.31	— 165.31
3. Meetings	23,000	22,789.64	+ 210.36
4. Publications	17,000	17,042.49	— 42.49
5. Office equipment	2,000	2,122.51	— 122.51
6. Operating expenses	18,000	20,023.13	— 2,023.13
7. Miscellaneous	3,000	3,216.55	— 216.55
8. Coordination of Research	35,000	29,665.35	+ 5,334.65
Subtotal	230,000	226,973.51	+ 3,026.49
9. Contingencies	10,000		+10,000.00
TOTAL	240,000		+13,026.49

STATEMENT 4

Income and Expenditures ($)

INCOME		EXPENDITURES	
Cash and Bank at 1/I/75	35,211.14	Regular budget 1975	226,973.51
Corresponding to 1975 Budget	226,569.89	Cash and Bank	49,028.41
Ivory Coast (1974)	5,483.94		
Cuba (New member country)	4,773.48 *		
Interest from Bank	3,735.70 *		
Sale of Field Manuals	157.83 *		
Balance in favor of Morocco	0.10 *		
Difference in exchange rates	69.84 *		
TOTAL	276,001.92		276,001.92

* To Working Capital Fund.

STATEMENT 5

Balance Sheet at Close of Fiscal Year *

ASSETS		$	LIABILITIES	$
Banco Exterior de España and Cash:			To 1976 Budget	13,000.00
			Working Capital Fund **	43,295.09
In time deposit		25,000.00		
Checking account		22,019.80		
C/A domestic	Ptas. 113,882.70			
C/A convertible	Ptas. 13,903.35			
Cash on hand	Ptas. 5,786.95			
	Ptas. 133,573.00	2,008.61		
		49,028.41		
(U.S. $ 1 = 66.50 Ptas.)				
1975 contributions pending payment		7,266.68		
TOTAL		56,295.09	TOTAL	56,295.09

* As of February 9, 1976.

** *Breakdown of Working Capital Fund*

To 31/XII/1974		$ 34,531.65
Increase in 1975 due to:		
a) Cuban contribution	$ 4,773.48	
b) Bank interest	3,735.70	
c) From the 1975 Budget	26.49	
d) Sales of Field Manuals	157.83	
e) Balance-Moroccan contribution	0.10	
f) Differences in currency exchange	69.84	
Total	$ 8,763.44	8,763.44
TOTAL		$ 43,295.09

International Commission for the Conservation of Atlantic Tunas
Balance Sheet at Close of Fiscal Year 1975

ASSETS			LIABILITIES		
Available:			*Payments in advance of 1976 Fiscal Year:*		
BANCO EXTERIOR DE ESPAÑA			Morocco		$ .10
C/A 30-31279Q		$ 22,019.80			
In time deposit		$ 25,000.00	*Acquired holdings:*		
C/A 30-17329	Ptas. 13,903.35		From previous Fiscal Years	$ 23,633.16	
C/A 30-17672	Ptas. 113,882.70		During Fiscal Year 1975	$ 3,856.82	$ 27,489.98
Cash on hand	Ptas. 5,786.95				
TOTAL	Ptas. 133,573.00		*Working Capital Fund:*		
At 66.5 Ptas. per 1 $		$ 2,008.61	As shown in attachment		$ 43,294.99
		$ 49,028.41	*1976 Budget:*		
Receivables:			Transfer approved by the Commission		$ 13,000.00
GHANA	$ 5,275.87				
IVORY COAST	$ 42.06				
SENEGAL	$ 1,948.75	$ 7,266.68			
Equipment:					
Before 1975	$ 23,616.60				
During 1975	$ 3,856.82				
Loss in 1975	$ —135.00				
TOTAL	$ 27,338.42				
DEPOSITS	$ 151.56	$ 27,489.98			
		$ 83,785.07			$ 83,785.07
Furniture ceded by Undersecretariat of Merchant Marine of Spain		$ 3,365.38	Undersecretariat of Merchant Marine of Spain, furniture ceded		$ 3,365.38

Madrid, March 15, 1976

The Executive Secretary:
O. RODRÍGUEZ-MARTÍN

Certified:
A. OLIVER Y TRUJILLO

SECRETARIAT REPORT ON STATISTICS AND COORDINATION OF RESEARCH

COM/75/19 — SCRS/75/8 (Amended)

I. Collection of 1974 statistics through national offices

The request for statistics was sent out on February 25, 1975 (Circular 1975/04) to all member countries together with an explanatory note on what type of statistics were requested (See Table 5), as well as the deadline dates for submitting data.

At the same time, cooperation by non-member countries which catch a significant amount of tuna and tuna-like species was solicited.

In June, a reminder was circulated, and during July cables were sent on two occasions to the countries which had not yet sent in Task I data. On August 19, 1975, another circular (Circular 1975/10) was mailed to report the progress made as of August 15, and to remind again those who had not yet fulfilled their obligations.

The progress made by the national offices is shown in Tables 1, 2 and 3 (now contained in Appendix IV to Annex 8 to the Proceedings) for Task I, Task II — catch and effort and biological statistics, respectively. To compare this year's progress with that of last year, the dates when the Secretariat received the data are shown for 1975 and 1974 (in parentheses).

1. *Task I — Total catch by species*

In Table 1 it is noted that China (Taiwan) and Cuba reported their catches (Task I) much earlier this year so that those are incorporated in the first issue of the «Statistical Bulletin», Vol. 5 (1975). For the first time, Portugal provided Task I data subdivided into species. This represents a great improvement.

2. *Task II — Catch and effort statistics and biological data*

In 1975, progress was very slow, much slower than in 1973 or 1974. At the time of the SCRS meeting, many data for important fisheries were still missing. Only continued concern of the national scientists can solve the problem.

II. Statistical work in which the Secretariat has been directly involved during 1975

1. *Port sampling program*

The Standing Committee on Research and Statistics (SCRS) recommended, and the Council authorized, the Secretariat to start biological sampling and collecting of logbook abstracts at important ports in 1975. The progress report on this program is being presented as a separate document (SCRS/75/9 — contained in the «Collective Volume of Scientific Papers», Vol. V (2)).

In summary, the Secretariat chose five specific ports for such sampling, namely Cape Town, Abidjan, Las Palmas, Tenerife and St. Maarten. Collection of the logbook summary and the biological sampling was done either by sending one of the Secretariat staff to the port, or through a contract made with a local laboratory.

The project was most successful and the coverage of the logbook summary and biological sampling for the longliners in the Atlantic has been tremendously improved because of it. Since the Ghanaian scientists have been cooperating with ICCAT by sampling from catches unloaded at Tema, Ghana, almost all the foreign fleets transshipping at the Atlantic ports are presently covered. All these data collected by the Secretariat at the ports have been processed by an automatic data processing system. For this purpose, the Secretariat has contracted the computer services of Cibernos, S. A.

2. *Statistical monitoring system for international fleets*

Since 1972, the Secretariat has been collecting statistics for the international fleets not completely covered by any national offices. Details of the plan and the progress made were reported in the last two years. (See Secretariat Reports on Statistics — Biennial Reports 1972-73, Part II, and 1974-75, Part I). This has been continued in 1975. The Secretariat compiles unloading records of all boats in such categories, with the cooperation of industries and scientists of those countries where transshipments are carried out, etc. The most important part of such fleets is that of the «foreign flag fleets», or those fleets flying flags which do not correspond to the nationality of the owners or the crew. We also keep the records for the fleets of countries located far from the Atlantic Ocean, but which transship their catches in Atlantic ports.

The records are extremely useful in making early estimates of the total tuna catches. (See Chapter III-1 of this Report.) Also, they are widely used in compiling the «Statistical Bulletin», as well as in weighting the biological data we obtain at the ports.

It should be emphasized that the estbalishment of such a system was made possible only because of the cooperation of local scientists, commercial fish traders, transshipment agencies and boat owners.

3. *Evaluation of sampling coverage and remaining problems*

Table 4 shows the availability of data for important fisheries, as we see it. This table is provided only as a base for scientists to review the present situation in data collection.

It is obvious from the table that in 1975 much improvement was introduced in the coverage, in particular with the longline fisheries. This is due to the fact that the Secretariat has been authorized to start sampling from those fleets at the port. However, there are some other important fisheries which are not yet adequately covered. Under the present system, the Secretariat is not authorized to sample from those fisheries.

III. Dissemination of information and publications

1. *Quick estimate*

According to the recommendations made at the last SCRS meeting, the Secretariat requested in early 1975 that the national scientists send in preliminary estimates on tuna catches in the Atlantic (including Mediterranean) of major species. Scientists from Canada, France (FIS), Japan, Spain and the U. S. A. have provided such estimates. Together with the estimate the Secretariat made on catches by longline fleets, provisional estimates for 1974 total Atlantic tuna catches were prepared and distributed on April 1. The species covered were yellowfin, bluefin, skipjack, albacore and bigeye tunas. Since the previous year only yellowfin, skipjack and bigeye were covered, this represents some improvement. Also, since 1974, the accuracy of the estimate was increased.

So far the Secretariat has not received any comments regarding the usefulness of such quick reporting.

2. *Statistical Bulletin*

Preliminary statistics covering available data for 1974 were circulated in August among a limited number of scientists, but including all member countries.

The first formal issue of the «Statistical Bulletin», Vol. 5 was fully circulated in early September. The final revision was issued in February, 1976.

According to a decision made at the last SCRS meeting, an important change was introduced in Vol. 5. In the past, the totals showing the number of boats by type of fisheries and category have been given only in the part for statistics by countries. In Volume 5, a part (presently Part III) was added in which all the statistics for fishing boats are summarized by year and by country.

Another change introduced was that now, as far as we are aware, all figures in the «Statistical Bulletin» are given in live-round weight. This is again done according to the decision at the last SCRS meeting. In the past, it was customary for us to maintain the figures reported by the national offices and add a footnote

when they were not given in round weight. In Volume 5, the Secretariat converted all these figures into round weight.

3. *Data Record*

Volume 5, containing all Task II data presented at the 1974 SCRS meetings, and some information received immediately afterwards, was issued in February, 1975.

Volume 6, containing all such statistics received between February and October, 1975, was issued in October, 1975.

4. *Collective Volume of Scientific Papers*

Volume IV, consisting of almost all papers submitted at the 1974 SCRS meetings and whose inclusion was approved by the authors, was issued in February, 1975.

ICCAT received a request by FAO to make reference to the existence of the «Collective Volume» in their series, «Aquatic Sciences and Fisheries Abstracts» (ASFA), and other selected bibliographies. Since this is not the same as quoting the results included in the «Collective Volume», the Secretariat granted FAO permission to proceed. On the other hand, the Secretariat has maintained the policy adopted at the 1972 SCRS meeting that the series be kept as working documents with no citations permitted.

5. *Automatic Data Processing (ADP)*

In 1975, for the first time, the Secretariat introduced an ADP system in order to process the data accumulated by our port sampling systems. The ORSTOM, Abidjan, kindly provided their programs to process catch-effort data for longliners and size frequencies. The system was adopted with some modifications. The data processing company, Cibernos, S. A. (Madrid), was contracted for all the work.

The Secretariat is considering to adopt the ADP system for Task I statistics as well. Up to now, it was not really considered worthwhile, since most of our work is verification, rather than actual processing of data.

IV. Difficulties and problems in collecting statistics

Only general comments are made in this section since those problems have been discussed in detail under each chapter.

In 1975, many improvements were made, particularly in Task I. More countries have reported on time, and species breakdown has been more accurate. Most of the reports contain more accurate information on such items as «landing or catches», «round weight or gilled-gutted», etc. On the other hand, the Secretariat is still spending much of its time and effort in urging the reporting of data.

Coverage for Task II, catch and effort and biological data has improved greatly.

However, there are still some important fisheries not covered by either the national statistical system or by the Secretariat system. (See Table 4.)

The main problem now with these statistics is the promptness of compiling and disseminating data. The Secretariat cannot foresee a solution to most of these problems unless the national scientists really work hard to complete the processing of their data, something easy to say but often impossible to carry out.

V. Tagging

Every year the Secretariat holds a tagging lottery to promote the recovery of tagged fish. In 1975, for the first time, this lottery was held in a location outside of Madrid. On April 16, 1975, the drawings were made at the Chamber of Commerce in Las Palmas, Canary Islands (Spain). The winners of this lottery were a crew of a French seiner and a crew of a U. S. commercial seiner.

VI. Secretariat staff activities

1. *The Assistant Executive Secretary*

The Assistant Executive Secretary has directed all the statistical activities. He is responsible for collecting, verifying and disseminating all statistical information, as well as arranging the entire direct port sampling system.

2. *Biostatistician (temporary)*

According to the recommendation made by SCRS and approved by the Council, the Executive Secretary announced the temporary position of biostatistician in June, 1975. Dr. William E. Schaaf was selected and started working on October 1, 1975. He is working under the overall supervision of the Executive Secretary, and directly under the Assistant Executive Secretary, on the statistical problems, with particular emphasis on the following:

i) To pursue the basic data needed for population studies.

ii) To review and improve the overall ICCAT statistical system (national and Secretariat).

iii) To uniformly compile all statistical information (national and Secretariat), and make it readily available.

iv) To establish criteria for minimum sampling requirements.

Prior to Dr. Schaaf's incorporation, Items i) and ii) had already been carried out intensively, but Items iii) and iv) had not been extensively studied because of the shortage of personnel at the Secretariat. We are especially looking forward to the improvements in these two aforementioned Items.

3. *Statistical Expert (A. de Boisset)*

Mr. de Boisset spent most of his time at the ports of Las Palmas and Tenerife to oversee the collection of logbook data and sampling from longliners unloading in the area. At the same time he conducted comparative studies between conventional fish measurement and photographic techniques to estimate the size of fish. He also spent some time at ICCAT headquarters compiling biostatistics collected by the Secretariat and adopting the ADP system.

4. *Statistical Assistant*

The Statistical Assistant compiles all statistical data and cross checks and verifies the statistics. She is also responsible for the typing of the «Statistical Bulletin».

VII. Future plans concerning statistics

The Secretariat believes that the initial stage is now completed i.e., collecting basic catch data (Task I). In 1976, more emphasis will be given to the following points:

i) Promptness in obtaining Task II catch-effort and biological data from the national offices.

ii) To complete port sampling system for longliner transshipments.

iii) To compile all statistical information (national and Secretariat) and make it available in a uniform system.

In the meantime, efforts will continue to improve the accuracy and promptness of reporting Task I statistics.

The Secretariat will not expand the present data collection system to fisheries other than longliners, unless so instructed.

Table 4. Review of the availability of data for important fisheries [1]

	Total catch	*Total catch estimate 1975*	*Catch/ Effort*	*Size*	*Source*
BLUEFIN TUNA					
Atlantic					
Total					
Longline					
Japan	-1974 (100 %)	-1975	-1973 (80-90 %)	-1973 (moderate)	FSFRL
Surface					
Spain (Peninsula)	-1974 (100 %)	-1975 (?)	-1973	?	IEO
(Canaries)	-1974 (Est.)	?	—	—	IEO
France	-1974 (100 %)	?	-1973 (80-90 %)	-1973 (good)	ISTPM
Morocco	-1974 (100 %)	?	-1974	—	Moroccan scientists
Portugal	-1974	—	—	—	
U. S. A.	-1974 (100 %)	?	-1974 (100 %)	-1974 (good)	NMFS
Canada	-1974 (100 %)	?	-1974 (100 %)	-1974 (good)	Canadian scientists
Sports					
U. S. A.	-1974 (Est.)		—	—	
Canada	-1974		—	-1974 (good)	

	Total catch	*Total catch estimate 1975*	*Catch/ Effort*	*Size*	*Source*
Mediterranean					
Total					
Longline					
Japan	-1974	-1975	-1973	-1973	
Italy	-1974	—	—	—	
Surface					
France	-1974	—	—	—	
Spain	-1974	—	—	—	
Tunisia	-1974	—	—	—	
BIGEYE, YELLOWFIN, SKIPJACK					
Longline					
China (Taiwan)	-1974 (100 %)	-1975 (50 %)	-1974; 1975 (20%) (50%)	1975 only (moderate)	T. U. and Secretariat
Japan	-1974 (100 %)	?	-1973 (80-100 %)	-1973 (moderate)	FSFRL
Korea	-1974	?	-1974; 1975 (20%) (50%)	1975 only (moderate)	National scientists & Secretariat
Panama	-1974 (60-80 %)	-1975 (60-80 %)	1975 only (50 %)	1975 only (moderate)	Secretariat
Cuba	-1974 (100 %)	?	—	—	

Surface					
Spain — Africa?	-1974	?	—	—	
Canaries	-1974	?	—	—	
FIS	-1974 (100 %)	?	-1973 (90-100 %)	-1973 (good)	ORSTOM
U. S. A.	-1974 (100 %)	-1975 (Est.)	-1974 (90-100 %)	-1974 (good)	NMFS
Japan	-1974 (100 %)	-1975 (Est.)	-1973	-1974 (good)	FSFRL & F. U. Ghana
Korea & Panama	-1974 (100 %)	-1975 (Est.)	—	-1974 (good)	F. U. Ghana
Portugal	-1974 (100 %)	—	—	—	
Angola	—	—	—	—	
ALBACORE					
Longline					
China (Taiwan)	-1974	-1975 ( )	1975 only (40 %)	1975 only (moderate)	Secretariat
Japan	-1974 (100 %)	?	-1973 (80-100 %)	-1973 (moderate)	FSFRL
Korea	-1974 (100 %)	?	1975 only (40 %)	1975 only (moderate)	Secretariat
Panama	-1974 (50-80 %)	-1975 (50 %)	1975 only (40 %)	1975 only (moderate)	Secretariat
Surface					
France	-1974 (100 %)	-1975 (Est.)	-1973 (80-100 %)	-1973 (good)	ISTPM & CNEXO
Spain (Peninsula)	-1974	-1975 ?	-1973 (80 %)	-1973 (moderate)	IEO
Canaries	-1974		—	—	

[1] Years indicate latest data available and percentage in parentheses shows estimated % of coverage.

Table 5. Summary of ICCAT statistical requirements

	ICCAT form	*Items*	*Breakdown*	*Remarks*
I. TASK I				
— Catch	1-1	Total annual catch [1]	Flag, species, gear, Atl. or Med.	[1] Live round weight
— Effort	1-2	Number of boats	Flag, type of fishery, size classes	
II. TASK II				
— Catch & effort				
i. Surface fisheries	2	Catch (in weight) & effort (in no. of days fished, etc.)	Flag, gear, species, 1°×1° area, month	
ii. Longline fisheries	2	Catch (in weight or no.) & effort (in no. of hooks, etc.)	Flag, species, 5°×5° area, quarter-year	
III. SUMMARIZED TASK II	2	Same as above	Flag, gear, species, generalized area,[2] month	[2] In case of YF surface: Area 1 — East of 3°E Area 2 — West of 3°E South of 10°N Area 3 — North of 10°N
IV. BIOLOGICAL DATA	3-4	Actual size frequency [3]	Flag, (major) species, gear	[3] In terms of fork length. Weighting factors required
i. Surface fisheries			5°×10° square, month	
ii. Longline fisheries			10°×20° square, quarter	
V. CATCH BY SIZE [4] (Size frequency weighted by catch)	3-5	Catch (no. of fish) by length	Flag, (major) species, (major) gear, generalized area, month, quarter or year	[4] Can be substituted by catch by age

CHAPTER II
Records of Meetings

PROCEEDINGS OF THE FOURTH REGULAR MEETING OF THE COMMISSION

Madrid, Spain, November 19-25, 1975

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Opening Plenary Session — November 19, 1975

Item 1. *Opening of the meeting*

1.1. The Commission held its Fourth Regular Meeting at the Hotel Luz Palacio, Madrid, under the chairmanship of Dr. I. Malick Dia (Senegal). He introduced Mr. J. de Manuel y Piniés, Director General of Sea Fisheries, Spain.

1.2. Mr. J. de Manuel y Piniés delivered a message on behalf of the Under-Secretary of the Merchant Marine, Mr. E. Amador Franco.

He welcomed all the delegates and scientists. He stressed the importance of international coordination of all the countries and showed his confidence in the extensive research being carried out by the scientists. He also expressed optimism

for the future of the Commission, and noted the great achievements made during the very short period of its history.

Mr. Piniés stressed the special interest Spain is showing in the various aspects of conservation. The country invited the seat of the Commission to be set up in Madrid. Spain also now has many young scientists working in tuna research.

1.3. The Chairman, Dr. I. Malick Dia, formally opened the meeting, by welcoming the delegates and noted that all 14 member countries were in attendance. He extended a particularly warm welcome to Cuba, which became the 14th member country.

Dr. Malick Dia referred to the objectives of the Commission and reviewed the important development of research activities which have led to the adoption of regulatory measures.

He mentioned that the knowledge we are accumulating will also be helpful to countries which are developing tuna fisheries. He pointed out the importance of continuous research efforts and the ICCAT framework for implementing conservation measures.

1.4. The Cuban Delegate expressed appreciation for the kind welcome. His country has been developing its fisheries over the last two decades. Cuba does not have many fishery resources in nearby waters and it is important for the country to develop a distant water fleet. He stressed that developing countries should have priority in the exploitation of fishery resources. He pointed out that Cuba does favor the regulation of fishery resources in order to prevent overexploitation, provided such regulations are based on scientific evidence.

The Cuban Delegate expressed that his country does not support historical fishing rights. (A full statement by Cuba is included at the end of the Proceedings of the Opening Plenary Session.)

Item 2. *Adoption of Agenda and arrangements for the meeting*

2.1. The Commission adopted the Tentative Agenda, circulated 90 days before the meeting, without change (Attached as Annex 1).

Item 3. *Admission of Observers*

3.1. The Chairman announced all the observers from the various nations and organizations. (See Annex 2 for the list.) All the observers were welcomed and admitted.

3.2. The observer from IATTC, Dr. J. Joseph, thanked ICCAT for the invitation and for the past close cooperation the Commission has maintained with the IATTC.

Item 4. *Appointment of subsidiary bodies for the meeting*

4.1. The Commission recognized that the following groups were scheduled to meet during the week:

a) Standing Committee on Finance and Administration — Chairman, Mr. K. Yonezawa (Japan). Items 5 to 11, 22, 23, 27 to 29 of the Agenda were referred to.
b) Working Group on International Inspection — New Chairman to be chosen when the Group meets due to the absence of the present Chairman, Mr. A. dos Santos Gaspar (Portugal). Agenda Item 21 was referred to this Group.
c) Panel 1 — Chairman, USA
Panel 2 — » Morocco
Panel 3 — » Japan
Panel 4 — » Spain

Agenda Item 19 was referred to the appropriate Panels.

4.2. Canada referred to the Working Group on Yellowfin Tuna and noted that it had been reported to the Council that the work had been completed and that it was not necessary for the Group to continue. However, it was noted that consideration should be given by the Commission as to whether or not another Committee should be established which may have terms of reference of a broader nature.

4.3. The Commission decided to form a drafting committee to review the proceedings of each session in the three official languages. The Committee shall consist of the following: Cuba, France, Japan, Korea, Senegal, Spain and U.S.A.

4.4. The Executive Secretary explained that the purpose of the drafting committee is to edit the Proceedings in the three official languages, but that full discussions of the text will take place during the Plenary Session. It was also understood that the final edited version of the Proceedings should be agreed upon after the meeting through correspondence.

Item 12. *Report of the Third Regular Meeting of the Council*

12.1. The Executive Secretary noted that the Report of the Meeting of the Council is now available and was circulated (Biennial Report, 1974-75, Part I (COM/75/13)). Among the recommendations made by the Council, he listed the following highlights:

a) Bluefin Regulations — proposed by Panel 2.
b) Yellowfin Tuna Working Group — dissolved.
c) Working Group on International Inspection — to be continued.
d) Sampling — The Secretariat was authorized to start direct sampling at ports and to hire one biostatistician on a temporary basis, if funds so permit.

12.2. The Report was adopted by the Commission.

Declaration of the Cuban Delegate

"Mr. Chairman:

"The Cuban Delegation wishes to express its sincere appreciation for the warm welcome given by the Commission and for the many kindnesses extended to our Delegation by the other delegations.

"As you know, after the triumph of our Revolution 16 years ago, our Government granted prime importance to fisheries development. For this development we have invested more than $ 650 million. We have constructed new fishing ports, freezers, transportation means, market facilities, processing plants and a modern fleet capable of fishing in all seas.

"This has not been an easy task, since even though our country is an island, we were not a nation with a marine tradition.

"Traditionally, our fishermen concentrated their activities on our small platform, fishing shrimp, lobster and other species common to our waters. Then, our catch scarcely exceeded 20,000 tons and the per capita fish consumption was only 4 kg.

"Our successes are still modest and in 1974 the Cuban catch reached a total of 165,000 tons. At the same time, we still had to import 70,000 tons more, in order to meet a per capita consumption of 14 kg. Our objectives for 1980 are to eliminate imports and to reach a per capita consumption of 24 kg.

"As a developing nation, Cuba urgently needs to create protein sources to adequately nourish its people. Cuba can be considered an unfortunate nation from the standpoint of not having adequate fishing resources in nearby coastal waters. It is for this reason that to meet our necessities we were confronted with the task of having to develop a fleet capable of fishing in distant waters.

"The international principles which govern our fishing activity are as follows:

- The developing countries should have preference in the exploitation of the oceans' fishing resources.
- The fishing resources should not be over-exploited.
- We are in favor of regional organizations for the improved management of fishing resources.
- We are against the so-called "historical rights" inasmuch as they try to limit the access of the developing countries to the world's great fishing zones.
- We are always in favor of the regulations if they are based on solid scientific evidence.

"Cuba is proud to belong to the International Commission for the Conservation of Atlantic Tunas and promises to contribute its best and most sincere efforts for the success of this organization, within the above-expressed principles.

"Sincere thanks, Mr. Chairman."

Second Plenary Session — November 20, 1975

The Chairman expressed deep regret for the death of Generalísimo Francisco Franco, the Chief of State, which occurred during the early morning hours. The Commission observed a moment of silence in his memory.

The Chairman noted that an official telegram would be sent to the Spanish State in the name of the Chairman of the Commission expressing the sympathy of the Commission.

The Spanish Delegate thanked the Commission for its condolences and after expressing regrets for the death of their Chief of State, requested to withdraw from the meeting for one day. He mentioned, should any vote be taken in their absence, that the Spanish vote be counted with the majority.

Item 13. *Report of the Standing Committee on Research and Statistics (SCRS)*

13.1. Dr. B. Rothschild, Chairman of the SCRS, presented his Committee's Report (Annex 8) and summarized its scientific findings. He drew the attention of the Commission and the Panels to the pertinent sections of the Report (Item 5) dealing with the evaluation of stock conditions of various species of tunas.

13.2. The future plans proposed by the SCRS were summarized in Chapters 6 and 8 of its Report. The Chairman discussed briefly the many statistical assignments which were given to the Secretariat and to the national scientists, the proposed bluefin tagging program, and the proposed statistical and population dynamics training courses. He noted the revision in the publication policy, as well as the criteria for admission of SCRS documents. Dr. Rothschild suggested that the Commission study the costs involved in implementing the proposed SCRS activities.

13.3. The Chairman of the Commission thanked the SCRS Chairman and the scientists for the excellent and efficient studies. The Standing Committee on Finance and Administration was asked to pay careful attention to those SCRS recommendations which have financial implications when the Committee discussed the budget for the coming financial period.

13.4. The question was raised as to whether or not any studies were conducted by the SCRS on the proportions of undersized yellowfin tuna in the catch or landings by the international fleet. The Commission was informed that some data were available which indicated that a small amount of undersized yellowfin was transshipped through Puerto Rico, but that the proportion of such fish to the catch and the origin of time or country is unknown. Also it was noted that scientists have had good data on the size compositions of yellowfin tuna caught by each national fleet.

13.5. The Delegate from Ghana reported that his country intends to develop a tuna fishery in the future. Since such development will take place in the Gulf of Guinea, he requested that the size composition of yellowfin found in the area should be carefully investigated by the SCRS.

13.6. The Commission *recommended* that the SCRS reinforce its study on size composition of yellowfin caught by each national fleet and report the proportions of undersized yellowfin tuna in the catch of each national fleet at the next Council meeting.

13.7. The Commission considered the importance of obtaining adequate, accurate statistics on a timely basis and for enacting appropriate conservation measures. The Delegate of the U. S. A. proposed a resolution (Attached as Annex 3) drawing the attention of each national office to the importance of greater participation in activities of research and statistics for the success of the Commission's work.

13.8. The Cuban Delegate also emphasized the necessity of adopting strict measures regarding the prompt submission of adequate statistics and promised that Cuba wold provide all necessary catch and biological data on a timely basis.

13.9. The Korean Delegate stated that the effort to meet statistical requests of the SCRS will be continued by his government by providing computer facilities and additional scientists for tuna research and by sending more scientists to the Atlantic transshipping ports in 1976.

13.10. The Chairman emphasized the responsibility of each nation fishing tuna to compile and promptly present adequate statistics. After these discussions, the Commission formally adopted the SCRS Report.

Item 18. *Status of the proposals adopted by the Commission for the conservation of yellowfin and bluefin*

The Executive Secretary presented and fully explained the pertinent Document (COM/75/14 and its Annexes). Table 1 of said Document summarized the present status of the measures each government has taken in regard to the recommendations. (Attached as Annex 4)

18.a. *Yellowfin*

18.a.1. The Delegate from Ghana stated that his government issued Administrative Instructions to all vessel operators unloading at Tema, including those of foreign flags, to adhere to the size limit regulation.

He insisted that to implement such Administrative Instructions in Ghana, the cooperation of the countries which have their vessels landing at Tema is essential.

18.a.2. The Japanese Delegate stated that a Government Ordinance has been in effect to control the catch of undersized yellowfin tuna in accordance with the ICCAT size regulation and that a government inspector was sent to Ghana to enforce the regulation in 1975. There are only two boats operating from the port of Tema, Ghana, and he believed that there should be virtually no violation of the said regulation by these two boats.

18.a.3. The Korean Delegate stated that the proportion of yellowfin in the Korean baitboat catches landed at Tema is very small and, therefore, the amount of undersized yellowfin caught by the fleet should be insignificant.

18.a.4. The Delegate from Ivory Coast observed that the official adoption of regulatory measures on the national level does not necessarily mean that said regulations are effectively enforced. Also the regulations should be applied not only to catches and landings but to imports as well.

18.a.5. Senegal concurred with the opinion expressed by Ivory Coast and insisted that each member country pay serious attention to enforcing existing national regulations for all their boats. Otherwise, those countries which rigorously enforce the regulations will be at a disadvantage and the conservation objective will not be realized.

18.a.6. The Commission hoped that an appropriate enforcement scheme, presently under discussion by the Working Group on International Inspection, can reinforce the national regulations. The Working Group was asked to pay special attention to the present problem of possible violation of catching undersized yellowfin tuna.

18.a.7. The Commission *requested* that all the member countries realize the responsibility of strictly enforcing the national regulations for their own fleet.

18.b. *Bluefin*

18.b.1. The Delegate from Canada stated that action was taken to implement the size limit for bluefin tuna after the ICCAT recommendation on this subject was received in Canada. The regulation involved will be promulgated shortly. In the meantime, the size limit has been observed on a voluntary basis by the Canadian fishery during 1975. With regard to the recommendation concerning fishing mortality, Canada issued no new fishing licenses and introduced a number of domestic restrictions including an open season of only ten weeks for any locality within the principal fishing area.

18.b.2. The Delegate from Cuba stated that his country has not yet issued any regulation on bluefin tuna since Cuba does not catch this species. However, the Government will formulate regulations very shortly.

18.b.3. The French Delegate stated that his government has taken strict action in limiting the catches by French vessels to ensure that the regulations are enforced.

Third Plenary Session — November 24, 1975

Item 14. *Report of the Standing Committee on Finance and Administration (STACFAD)*

14.1. The Chairman of the Committee, Mr. K. Yonezawa, presented the first part of the Report (Contained in Annex 5). The Commission reviewed this part of the Report, with particular reference to the following items on the Commission Agenda:

Item 5. *Review of the Panel members*
Item 6. *Administrative Report*
Item 7. *Auditor's Report (1974)*
Item 8. *Review of financial status (1975)*

14.2. Concerning Item 8, the Commission was notified that the 1975 contribution by Korea was received during this meeting.

14.3. The Commission adopted the first part of the STACFAD Report together with all the recommendations pertinent to the Commission Agenda Items 5, 6, 7 and 8.

Item 16. *Reports of Panels 1-4*

16.1. The Reports of the meetings of Panels 1, 2, 3 and 4 were presented by the respective Chairmen (U.S.A., Morocco, Japan and Spain). All the Reports (Attached as Annex 6) were carefully reviewed and adopted by the Commission together with all the pertinent recommendations.

Item 19. *Other regulatory measures for the conservation of tuna stocks*

19.1. The Commission noted that the first recommendation adopted by the Commission in 1975 concerning the minimum size of bluefin tuna was for unlimited duration and therefore valid in the future. However, the second recommendation in 1975 concerning limiting fishing mortality of bluefin tuna to recent levels, was provisional for only one year.

19.2. The Commission *agreed* with the suggestion made by Panel 2 that the 1975 recommendation on limiting fishing mortality of bluefin tuna to recent levels be extended for an additional two years, with a provision that the proposal be re-

viewed by the Council at its next meeting. If the Council recommends that the regulations be altered, it will be necessary to communicate this to all Commission members. Accordingly, the Commission instructed the Secretariat to follow the provisions of Article VIII (2) - (5) of the Convention in order to put this recommendation into effect.

19.3. No other regulatory measures were discussed.

Item 20. *Measures for promoting activity in research and statistics*

20.1. The draft resolution proposed by the U. S. A. (See Sect. *13.7* of the Proceedings) was reviewed and the Commission unanimously *adopted* the resolution (Attached as Annex 3). The Secretariat was instructed to take the necessary steps for formally transmitting the resolution to the Contracting Parties.

20.2. The SCRS Chairman reviewed the development of the proposal of training courses in statistics and sampling and stock assessment to be held by the Commission. The Secretariat was asked to solicit, by correspondence, formal invitations by any member country to host such courses. The selection of the location, in the case of more than one invitation, should be based on the following criteria: available facilities, location to minimize the travel costs and availability of tuna fish for sampling.

Final Plenary Session — November 25, 1975

Item 14. *Report of the Standing Committee on Finance and Administration (STACFAD) Continued*

14.4. The Chairman of the Committee, Mr. K. Yonezawa, presented the second part of the Committee Report (Annex 5). The Commission reviewed the Report, with particular reference to the following Commission Agenda items.

Item 9. *Review of the Working Capital Fund*
» 10. *Estimated Budget (1976-1977)*
» 11. *Member country contributions (1976-1977)*
» 22. *Review of Commission publications*
» 23. *Relations with other organizations*
» 27. *Date and place of the next meeting of the Council*
» 28. *Assignment of items to be considered by the Council at its next meeting*
» 29. *Date and place of the next meeting of the Commission*

14.5. The Commission approved the Report of the Committee (STACFAD) in its entirety, together with all the recommendations pertinent to the above-mentioned Commission Agenda items.

Item 15. *Report of the Working Group on International Inspection*

15.1. The Chairman of the Working Group, Mr. V. Bermejo, presented the Report and reviewed the recommendations proposed and decisions made by the Group.

15.2. The Chairman of the Commission stressed the importance of the subject discussed by the Working Group. The Report (Attached as Annex 7), as well as the pertinent recommendations referring to Item 21 of the Commission Agenda, was adopted.

Item 31. *Adoption of Report*

31.1. The Proceedings of the Opening, Second and Third Plenary Sessions were presented and approved.

31.2. The Commission *decided* that the Proceedings of the Final Plenary Session, as well as the Commission Report in its entirety, should be approved at a later date by mail.

Item 24. *Election of Chairman of the Commission*

24.1. Dr. I. Malick Dia (Senegal) was re-elected Chairman of the Commission for the next biennial period.

24.2. In accepting the chairmanship, Dr. Malick Dia thanked the member countries of the Commission and also the Executive Secretary and his staff for their support. He asked for continued cooperation to achieve the objectives of the Commission.

Item 25. *Election of Vice-Chairmen of the Commission*

25.1. Mr. Y. S. Kang (Republic of Korea) was elected First Vice-Chairman and Mr. E. B. Young (Canada) was elected Second Vice-Chairman for the next biennial period.

Item 26. *Election of Council members*

26.1. South Africa and Portugal requested not to be considered for election to the Council.

26.2. The following countries were elected to the Council: Brazil, Cuba, France, Ivory Coast, Japan, Morocco, Spain, U.S.A., together with the Chairman of the Commission (Senegal) and the Vice-Chairmen (Korea and Canada).

26.3. The Chairman reconfirmed that those countries which do not belong to the Council are still members of the SCRS and other working groups which hold meetings at the time of the Council.

Item 30. *Other matters*

No other matters were discussed.

Item 32. *Adjournment*

The meeting was adjourned.

Annex 1

AGENDA

Procedure of the meeting

1. Opening of the meeting
2. Adoption of Agenda and arrangements for the meeting
3. Admission of Observers
4. Appointment of subsidiary bodies for the meeting

Administration

5. Review of Panel members
6. Administrative Report

Finance

7. Auditor's Report (1974)
8. Review of financial status (1975)
9. Review of the Working Capital Fund
10. Estimated Budget (1976-1977)
11. Member country contributions (1976-1977)

Reports to the Commission

12. Report of the Third Regular Meeting of the Council.
13. Report of the Standing Committee on Research and Statistics (SCRS)
14. Report of the Standing Committee on Finance and Administration (STACFAD)
15. Report of the Working Group on International Inspection
16. Reports of Panels 1-4
17. Reports of subsidiary bodies appointed by the Commission for the meeting

Measures for the conservation of tuna stocks

18. Status of the proposals adopted by the Commission for the conservation of:
    a) Yellowfin
    b) Bluefin

19. Other regulatory measures for the conservation of tuna stocks
20. Measures for promoting activity in research and statistics
21. Measures for rendering effective the provisions of the Convention (International Inspection)

Publications

22. Review of Commission publications

International Cooperation

23. Relations with other organizations

Other matters

24. Election of Chairman of the Commission
25. Election of Vice-Chairmen of the Commission
26. Election of Council members
27. Date and place of the next meeting of the Council
28. Assignment of items to be considered by the Council at its next meeting
29. Date and place of the next meeting of the Commission
30. Other matters
31. Adoption of Report

Adjournment

32. Adjournment

Annex 2

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Annex 3

RESOLUTION CONCERNING STATISTICAL DEFICIENCIES

Whereas, Article IX (2.a) of the International Convention for the Conservation of Atlantic Tunas states that: "The Contracting Parties agree to furnish, on the request of the Commission, any available statistical, biological and other scientific information the Commission may need for the purposes of this Convention";

Noting that conservation of resources is not possible without a reliable data base;

Noting that despite recent good progress in many areas of statistical reporting, there are still several significant deficiencies noted in the Report of the Sub-Committee on Statistics which seriously hamper the Commission from performing its obligation to properly manage the resources covered by the Convention;

Noting further that in 1975 the reporting of statistics by Contracting Parites was in many instances late, and data for many important fisheries are still missing, making analysis extremely difficult, if not impossible;

Be it therefore resolved that this matter be brought to the attention of the Contracting Parties and that they be asked to give their serious consideration to the deficiencies noted in the attached Report of the Sub-Committee on Statistics with a view toward measures necessary to correct these deficiencies.

Annex 4

National regulations (Date entered into effect)

Countries	*Yellowfin (1-VII-73)*	*Bluefin (10-VIII-75)*	
		Size limit regulation	*Regulation of fishing intensity*
Brazil	23-II-1973 *		
Canada	4-IX-1973 *		
Cuba	20-VII-1973 *		
France	29-VI-1973 *	8-VIII-1975 *	
Ghana	Administrative instructions		
Ivory Coast	III-1970		
Japan	14-VI-1973	2-IV-1975 *	2-IV-1975 *
Korea	21-VI-1973		
Morocco	No fishing	Doc. COM/75/21	
Portugal	26-XI-1973 *		
Senegal	7-XI-1970 *		
South Africa	V-1973 *	27-VI-1975 *	
Spain	29-V-1974 *	3-III-1975 *	
U. S. A.	5-XI-1975 *	13-VIII-1975 *	13-VIII-1975 *

* Formally notified to Secretariat.

Annex 5

REPORT OF THE STANDING COMMITTEE ON FINANCE AND ADMINISTRATION (STACFAD)

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Main text

Appendix I — Agenda
Appendix II — Panel Membership
Appendix III — Training Courses
Appendix IV — Budget (1976-1977)
Appendix V — Tables of contributions by member countries for 1976 and 1977
Appendix IV — List of items assigned by the Commission to the Council for consideration at its Fourth Regular Meeting (Madrid, Nov. 1976)

Item 1. *Opening of the meeting*

1.1. The Committee met at the Hotel Luz Palacio (Madrid, Spain) on November 19, 1975, and subsequent days. The Chairman, Mr. K. Yonezawa (Japan), opened the meeting. All the member countries were present as were some observers.

Item 2. *Adoption of Agenda*

2.1. The Tentative Agenda, circulated 90 days prior to the meeting, was reveiwed and adopted by the Committee (Attached as Appendix I).

Item 3. *Election of Rapporteur*

3.1. The Secretariat was designated Rapporteur.

Item 4. *Review of Panel members*

4.1. The Committee confirmed the present membership of Panels 1 through 4 (COM/75/10) and also reviewed the pertinent section of the Rules of Procedure (12-4).

4.2. Cuba informed the Committee of its intention to participate in Panels 1 and 4.

4.3. The Table showing the present membership of the four Panels, including the addition of Cuba, is attached herewith as Appendix II.

Item 5. *Administrative Report*

5.1. The Administrative Report (COM/75/11) was presented and fully explained by the Executive Secretary. He noted that on January 15, 1975, the Republic of Cuba deposited with the Director General of the Food and Agriculture Organization (FAO), an instrument of adherence to the International Convention for the Conservation of Atlantic Tunas and became the 14th member.

5.2. The Executive Secretary listed various activities of the Secretariat and noted the international meetings at which ICCAT was represented, its cooperation with other organizations, and trips made by the staff members during 1975.

5.3. The Executive Secretary also referred to the Documents COM/75/19 (SCRS/75/8), and SCRS/75/10 and 11. He summarized the statistical activities and coordination of research carried out by the Secretariat. Particular mention was made of the direct collection of statistics and sampling at ports, initiated by the Secretariat in 1975. He also commented that the Secretariat has contracted a biostatistician on a temporary basis, as was suggested at the Third Regular Meeting of the Council (Madrid, 1974).

5.4. The Committee reviewed the Administrative Report, recognized the extensive work completed by the Secretariat during the year, and *recommended* that the Commission approve the Report.

Item 6. *Auditor's Report (1974)*

6.1. It was noted that the Auditor's Report (original in Spanish) with summary translations in English and French, was circulated to the head of each delegation in early 1975. The Report was reviewed and adopted by the Committee and then *recommended* to the Commission for adoption.

Item 7. *Review of Financial Status (1975)*

7.1. The Financial Report (COM/75/12) was presented and fully explained by the Executive Secretary.

7.2. Referring to *Statement 4* (*Statement 3* in the modified version) of the Financial Report, the Executive Secretary stated that the balance at the end of 1975 would probably be $ 13,050.97 * ($ 3,050.97 from the «General Fund» and $ 10,000 from «Contingencies»), rather than $ 15,050.97 as indicated. This is because the expenditures forecasted up to the end of the year seem to be higher by approximately $ 2,000.00 than was estimated when *Statement 4* was made. He asked the Committee to decide how this sum should be allocated.

7.3. The Executive Secretary thanked Cuba for the generous invitation ex-

* As of the end of Fiscal Year 1975, the actual balance was $ 13,026.49, which is shown in the modified version of the Financial Report.

tended to him at the expense of the Cuban Government. This reduced the financial burden of the Secretariat.

7.4. The Senegalese Delegate raised the question as to whether or not any provision can be set up for alleviating the deficits caused by the difference in exchange rates in effect at the time and place the contribution is paid to the member country's bank, and those rates in effect at the time and place the contribution is received by the Secretariat in Spain.

The Chairman confirmed that the Convention and Financial Regulations clearly defined that the contribution should be paid in U. S. dollars. The Committee *requested* that the Secretariat examine and discuss in detail with the countries concerned, exactly why the deficit was produced and try to find some practical solution.

7.5. The Senegalese Delegate asked why a rather significant proportion of the 1974/1975 budget was allocated to Chapter 1, «Salaries» while a rather small proportion was allocated to Chapter 8, «Coordination of Research». The Committee was informed that an important part of the «Salaries» Chapter, and of many other chapters as well, is actually for the personnel dedicated to research activities.

7.6. Senegal stated that the authorization for paying its contribution to the ICCAT 1975 budget was issued on June 18, 1975, and that they would investigate the delay in the bank transaction. Korea * and Brazil both reported that their contributions would be paid by the end of this Commission meeting.

7.7. The Committee approved the Financial Report and *recommended* its adoption by the Commission.

Item 8. *Review of Working Capital Fund*

8.1. The Committee reviewed *Statement 7* ** of the Financial Report (COM/75/12). The Delegate of Ivory Coast proposed that the Statement be simplified by not showing the history of previous years. The Committee *recommended* that in the future, the Executive Secretary, in consultation with the auditor, present the Working Capital Fund in a more concise form.

8.2. The Committee *recommended* that all the unbudgeted income, contribution by Cuba in 1975, interest, etc., should be entered into the Working Capital Fund.

Item 9. *Estimated Budget (1976-1977)*

9.1. The Estimated Budget (COM/75/09) was presented and explained by the Executive Secretary. The Committee recognized that the preliminary estimates of country contributions were also circulated by the Secretariat, together with the Estimated Budget, 60 days prior to the Commission meeting. This is done according to the recommendations made by the Committee in 1973. The Committee recognized

* The Korean contribution was received later during the meeting.
** *Statement 7*, «Composition of Working Capital Fund», is not included in the modified version of the Financial Report.

that this procedure is convenient and *recommended* that the practice be continued in the future.

9.2. The SCRS Chairman presented the plans of those scientific activities proposed by his Committee (SCRS) which have financial implications.

They are as follows:

a) Tagging project for young bluefin tuna — (cost estimated at $ 12,500). It was understood that the cost will not be covered by the Commission budget, but by a special fund (bank) to be set up by or at the Secretariat for financing the project. Member countries wishing to contribute to the project should deposit the resources to this «bank». The Executive Secretary has been entrusted with the management of funds for realizing this project most effectively. This is in order to enable some countries whose domestic regulations do not permit contributions through bilateral agreements, to contribute to such an international project.

b) Long term skipjack study program — The SCRS started a new program to develop wide-scale comprehensive skipjack studies in order to evaluate the effect of possible extension of skipjack fisheries in the future. The SCRS noted that no funds are being requested for this year but that some funding for this program may be requested next year when the final program is developed.

c) Training courses — (cost estimated at $ 15,500). Two courses are proposed: one for tuna statistics and sampling and another for tuna stock assessment. The SCRS considered that such courses would be the best investment for improving statistics in the future. The provisional cost estimate for carrying out the program, which totals $ 15,500, is attached to the Report as Appendix III.

9.3. Considerable discussion was held on the possibility of reducing the Commission's expense for the training courses; the importance of selecting the appropriate locations for such courses in order to minimize the cost; the necessity of seeking funds from sources other than the Commission; and the integration of the sources with those planned by other organizations.

9.4. The Committee agreed that the proposed courses are useful and desirable. It *recommended* that, in principle, the expenses of sending trainees to the courses should be incurred by each respective country, but that, in fact, part or all of the expenses for trainees from the developing nations might have to be incurred by the Commission; that the Executive Secretary, in consultation with the SCRS Chairman and the Coordinating Committee for Training Courses, make every effort to minimize the costs of such a program.

9.5. The Committee examined the possibility of funding the training courses within the budget originally proposed by the Executive Secretary, i.e. $ 280,000, but recognized the difficulty, since the budget was prepared before the SCRS training program was proposed.

9.6. In order to finance the program within the framework of the recommendations outlined in paragraph 9.4, the Committee *recommended* that the Commission

reallocate $ 13,000 of the positive balance from the 1975 Fiscal Year to the 1976 estimated budget. This sum should be allocated to the special Sub-Chapter (f) «Training courses» under Chapter 8 «Coordination of Research». This will increase the total budget for 1976 to $ 293,000, while the contributions from member countries will not be increased beyond the level originally proposed by the Executive Secretary. The Committee also *reccomended* that $ 2,000 under (e) «Miscellaneous» in Chapter 8, «Coordination of Research» should be reallocated to the Sub-Chapter (f), thereby increasing the total for this Sub-Chapter (f) «Training Courses» to $ 15,000. The new proposed budget is attached as Appendix IV.

9.7. The Committee also *recommended* that the Executive Secretary should try to economize as much as possible and that any savings made on the budget for the training courses (Chapter 8 (f)) should not be used for other activities, but should be deposited to the Working Capital Fund since the Fund is presently at a level less than 15 % of the total budget, previously recommended by the Commission. However, $ 2,000, originally proposed for Chapter 8 (e) and reallocated in this new budget to Chapter 8 (f), is exempted from this provision.

9.8. The Committee also *recommended* to the Commission that such action is a special case for 1976 only and that the total of $ 300,000 originally proposed by the Executive Secretary for 1977 would not be altered.

9.9. The Committee *recommended* that the Commission adopt the budget for 1976-1977 with these proposed modifications.

Item 10. *Member country contributions (1976-1977)*

10.1. The Committee agreed to calculate member country contributions based on the catch and canning figures for 1973, since these statistics are the most recent and adequate ones available to the Commission at present.

10.2. The member country contributions for 1976 and 1977, calculated according to the formula established by the Convention, are attached herewith as Appendix V.

Item 11. *Review of Commission publications*

11.1. The Commission's policy regarding publications was explained by the Executive Secretary (Document COM/75/11). The Committee *recommended* that the Commission continue its present policy.

Item 12. *Relations with other organizations*

12.1. The Committee studied the relationships the Commission has had in the past with various international organizations (Document COM/75/11) and found them to be satisfactory.

12.2. The Delegate from Cuba commented that the Western Central Atlantic Fisheries Commission (WECAFC), which recently held its first meeting, decided

that this Commission would rely on ICCAT concerning the work on the Atlantic tunas and would take advantage of the information resulting from ICCAT studies. Consequently, that Commission expressed a desire to strengthen its relationship with ICCAT in the future. The Committee *recommended* that the Commission should also strengthen its cooperation with the Western Central Atlantic Fisheries Commission (WECAFC).

Item 13. *Date and place of the next meeting of the Council*

13.1. The Committee recommended to the Commission that the next Council meeting be held in Madrid for a period of one week, beginning on November 17, 1976, and that the SCRS meet one week preceding the Council meeting on November 10, 1976.

Item 14. *Assignment of items to be considered by the Council at its next meeting*

14.1. The Committee reviewed the possible items to be considered by the Council at its next meeting and *recommended* that the Commission assign to the Council those items listed in Appendix VI.

Item 15. *Date and place of the next meeting of the Commission*

15.1. The Committee *recommended* to the Commission that the next Commission meeting be held for a period of approximately one week, beginning on November 16, 1977, and that the SCRS meet during the preceding week. However, the Committee *recommended* that the Commission authorize the Council at its 1976 meeting to review the matter and finalize the place of the next Commission meeting.

Item 16. *Other matters*

No other matters were discussed.

Item 17. *Election of Committee Chairman*

17.1. Mr. K. Yonezawa (Japan) was unanimously re-elected Chairman of the Committee for the next biennial period.

Item 18. *Adoption of Report*

18.1. The Report was reviewed and adopted by the Committee.

Item 19. *Adjournment*

19.1. The meeting was adjourned.

Appendix I to Annex 5

Standing Committee on Finance and Administration

Agenda

1. Opening of the meeting
2. Adoption of Agenda
3. Election of Rapporteur
4. Review of Panel members
5. Administrative Report
6. Auditor's Report (1974)
7. Review of financial status (1975)
8. Review of Working Capital Fund
9. Estimated Budget (1976-1977)
10. Member country contributions (1976-1977)
11. Review of Commission publications
12. Relations with other organizations
13. Date and place of the next meeting of the Council
14. Assignment of items to be considered by the Council at its next meeting
15. Date and place of the next meeting of the Commission
16. Other matters
17. Election of Committee Chairman
18. Adoption of Report
19. Adjournment

Appendix II to Annex 5

Panel Membership

The following table shows current composition of the Panels (As of November, 1975):

Countries	*Panel 1*	*Panel 2*	*Panel 3*	*Panel 4*	*Total*
Brazil	×	—	×	—	2
Canada	×	×	—	×	3
Cuba	×	—	—	×	2
France	×	×	—	—	2
Ghana	×	—	—	—	1
Ivory Coast	×	—	—	—	1
Japan	×	×	×[1]	×	4
Korea	×	×	×	×	4
Morocco	×	×[1]	—	—	2
Portugal	×	×	—	×	3
Senegal	×	—	—	—	1
South Africa	—	—	×	—	1
Spain	×	×	—	×[1]	3
U. S. A.	×[1]	×	×	×	4
TOTAL	13	8	5	7	33

[1] Chairman of Panel.

Appendix III to Annex 5

Training Courses

A) Sampling — 4 weeks — July — 30 to 35 participants
B) Tuna stock assessment — 10 days — October — 10 to 15 participants

Cost:

1. Accommodations and other facilities (lecture rooms, transportation to sampling places, etc.)

2. Documentation, computers (preparation, duplication, and translation of documents) to be borne by ICCAT . . . $ 2,000

3. Instruction (travel, per diem and, for some, honorarium) to be borne by

   a) member countries
   b) FAO or UNDP or bilateral agencies
   c) ICCAT (mainly (i) for one or two from ICCAT non-member countries; (ii) ICCAT staff on sampling and ICCAT needs)

   Likely ICCAT costs:

Staff travel: per diem (8 or more weeks)	$ 2,000
From ICCAT member: estimated per diem	$ 1,000
From non-ICCAT countries: Travel/per diem	$ 1,500
Honorarium	$ 1,500

4. Participants (Travel + per diem)
   ICCAT non-member countries' own cost
   ICCAT member countries (mainly own cost, but some support for developing countries)
   say for 5 participants . . . . . $ 1,500 $ 7,500

$ 15,500

Appendix IV to Annex 5

Budget 1976-1977 ($ USA)

Approved by the Commission at its Fourth Regular Meeting
(Madrid, November 19-25, 1975)

	1975 Budget (Approved by the Commission in 1973 and revised by the Council in 1974)	*1976 Budget*	*Difference*	*1977 Budget*
TOTAL	240,000	293,000	+53,000	300,000
Contributions from member countries	230,000	280,000	+50,000 (+21 %)	300,000 (+7 %)
Unused balance from previous fiscal year reallocated	10,000	13,000		
Chapter				
1. Salaries	120,000	120,000	0	130,000
2. Travel	12,000	10,000	— 2,000	10,000
3. Meetings	23,000	25,000	+ 2,000	26,000
4. Publications	17,000	19,000	+ 2,000	20,000
5. Office equipment	2,000	2,000	0	2,000
6. Gen. operating exp.	18,000	25,000	+ 7,000	26,000
7. Miscellaneous exp.	3,000	4,000	+ 1,000	4,000
	195,000	205,000	(+10,000) (+5 %)	218,000 (+6 %)
8. Coordination of Research				
a) Personnel	10,000	41,000	+31,000	44,000
b) Travel	10,000	15,000	+ 5,000	16,000
c) Equipment	3,000	2,000	— 1,000	3,000
d) Data Processing	9,000	5,000	— 4,000	6,000
e) Miscellaneous	3,000	—	— 3,000	3,000
f) Training courses	—	15,000	+15,000	—
	35,000	78,000	(+43,000) (+122 %)	72,000
Sub-Total	230,000	283,000		290,000
9. Contingencies	10,000	10,000	0	10,000
TOTAL	240,000	293,000	(+53,000)	300,000

Table of Contributions by Member Countries for 1976 (Based on Catch and Canning - 1973)

Total 1976 Budget (Total of Column K): $ 280,000.00

Country	*A* *N.°*	*B* %	*C*	*D*	*E*	*F* %	*G* $	*H* $	*I* $	*J* $	*K* $
			... *(1,000 MT)* ...								
Brazil	2	6	8.6	0.1	8.7	2	1,000.	2,000.	4,957.45	3,416.94	11,374.00
Canada	3	9	2.3	1.0	3.3	1	1,000.	3,000.	6,609.93	1,296.08	11,906.00
Cuba	2	6	11.8	—	11.8	3	1,000.	2,000.	4,957.45	4,634.47	12,592.00
France	2	6	46.1	27.9	74.0	19	1,000.	2,000.	4,957.45	29,063.63	37,021.00
Ghana	1	4	2.0	—	2.0	1	1,000.	1,000.	3,304.96	785.50	6,090.00
Ivory Coast	1	4	3.5	3.5	7.0	2	1,000.	1,000.	3,304.96	2,749.26	8,054.00
Japan	4	11	64.3	0	64.3	16	1,000.	4,000.	8,262.41	25,253.94	38,516.00
Korea	4	11	33.9	0	33.9	9	1,000.	4,000.	8,262.41	13,314.29	26,577,00
Morocco	2	6	2.9	1.7	4.6	1	1,000.	2,000.	4,957.45	1,806.66	9,764.00
Portugal	3	9	8.6	4.0	12.6	3	1,000.	3,000.	6,609.93	4,948.67	15,559.00
Senegal	1	4	4.6	1.4	6.0	2	1,000.	1,000.	3,304.96	2,356.51	7,662.00
South Africa	1	4	0.2	0	0.2	0	1,000.	1,000.	3,304.96	78.55	5,384.00
Spain	3	9	82.7	26.0	108.7	27	1,000.	3,000.	6,609.93	42,692.12	53,302.00
USA	4	11	30.5	27.9	58.4	15	1,000.	4,000.	8,262.41	22,936.70	36,199.00
Total	33	100	302.0	93.5	395.5	100	14,000.	33,000.	77,666.67	155,333.33	280,000.00

A = Panel membership.
B = Percentage of payments for annual membership and panel membership (G + H).
C = 1973 catch (live weight).
D = 1973 canned production (net product weight).
E = Total C + D.
F = Percentage distribution of E.

G = Payment of $ 1,000 annual membership contribution.
H = Payment of $ 1,000 for each panel membership.
I = 1/3 of $ 233,000 = ($ 280,000 — 47,000 (G + H)) distributed percentage-wise according to column B.
J = 2/3 of $ 233,000 = ($ 280,000 — 47,000 (G + H)) distributed percentage-wise according to column F.
K = Total G + H + I + J.

Table of Contributions by Member Countries for 1977 (Based on Catch and Canning - 1973)

Total 1977 Budget (Total of Column K): $ 300,000.00

Country	*A* *N.°*	*B* %	*C*	*D* *... (1,000 MT) ...*	*E*	*F* %	*G* $	*H* $	*I* $	*J* $	*K* $
Brazil	2	6	8.6	0.1	8.7	2	1,000.	2,000.	5,382.98	3,710.24	12,093.00
Canada	3	9	2.3	1.0	3.3	1	1,000.	3,000.	7,177.30	1,407.33	12,585.00
Cuba	2	6	11.8	—	11.8	3	1,000.	2,000.	5,382.98	5,032.28	13,415.00
France	2	6	46.1	27.9	74.0	19	1,000.	2,000.	5,382.98	31,558.36	39,941.00
Ghana	1	4	2.0	—	2.0	1	1,000.	1,000.	3,588.65	852.93	6,442.00
Ivory Coast	1	4	3.5	3.5	7.0	2	1,000.	1,000.	3,588.65	2,985.25	8,574.00
Japan	4	11	64.3	0	64.3	16	1,000.	4,000.	8,971.63	27,421.66	41,393.00
Korea	4	11	33.9	0	33.9	9	1,000.	4,000.	8,971.63	14,457.14	28,429.00
Morocco	2	6	2.9	1.7	4.6	1	1,000.	2,000.	5,382.98	1,961.74	10,345.00
Portugal	3	9	8.6	4.0	12.6	3	1,000.	3,000.	7,177.30	5,373.45	16,551.00
Senegal	1	4	4.6	1.4	6.0	2	1,000.	1,000.	3,588.65	2,558.79	8,147.00
South Africa	1	4	0.2	0	0.2	0	1,000.	1,000.	3,588.65	85.29	5,674.00
Spain	3	9	82.7	26.0	108.7	27	1,000.	3,000.	7,177.30	46,356.68	57,534.00
USA	4	11	30.5	27.9	58.4	15	1,000.	4,000.	8,971.63	24,905.52	38,877.00
Total	33	100	302.0	93.5	395.5	100	14,000.	33,000.	84,333.33	168,666.67	300,000.00

A = Panel membership.
B = Percentage of payments for annual membership and panel membership (G + H).
C = 1973 catch (live weight).
D = 1973 canned production (net product weight).
E = Total C + D.
F = Percentage distribution of E.
G = Payment of $ 1,000 annual membership contribution.
H = Payment of $ 1,000 for each panel membership.
I = 1/3 of $ 253,000 = ($ 300,000 — 47,000 (G + H)) distributed percentage-wise according to column B.
J = 2/3 of $ 253,000 = ($ 300,000 — 47,000 (G + H)) distributed percentage-wise according to column F.
K = Total G + H + I + J.

Appendix VI to Annex 5

List of Items Assigned by the Commission to the Council for Consideration at its Fourth Regular Meeting (Madrid, November 1976)

1. Review the organization, staffing and operation of the Commission Secretariat.
2. Review the status of financial contributions by contracting parties.
3. Receive and review a suitably detailed report of the current state of Commission accounts.
4. Review the second half of the biennial budget, and authorize such reapportionment of amounts as may be appropriate and in accordance with Article X, paragraph 3, of the Convention.
5. Formulate proposals for the organization of the next meeting of the Commission (particularly to finalize the place of the meeting).
6. Review status of relationships with other international bodies, and make recommendations to the Commission.
7. Receive, review and report to the Commission the results of any meeting of the Standing Committee on Research and Statistics held prior to, or in conjunction with, a Council meeting, with particular reference to:
   (i) matters relating to coordination of research, proposed scientific meetings and conservation;
   (ii) status of statistical systems of the Commission, including submission to the Commission of an evaluation of such systems, together with any recommendations that may facilitate the organization of statistical systems.
8. Receive, review and report to the Commission the results of any meeting of other subsidiary bodies of the Commission.
9. Review plans for and status of publications of the Commission.
10. Review schemes of joint enforcement of regulatory measures developed by other Commissions and formulate appropriate recommendations for the Commission concerning the feasibility of such schemes for application by ICCAT (in case it decides to continue its deliberation).
11. Review the scientific studies on bluefin tuna stocks and consider, if necessary, the possible modification or change in the regulatory measures for bluefin tuna.
12. Any other matters the Commission considers appropriate.

Annex 6

REPORTS OF THE MEETINGS OF PANELS 1 THROUGH 4

Report of the Meeting of Panel 1

Madrid, November 20, 1975

1. *Opening*

The meeting was called to order at 14:40 by the Chairman, Mr. C. J. Blondin (U. S. A.).

2. *Adoption of Agenda*

The provisional agenda was approved (Appendix I).

3. *Election of Rapporteur*

Mr. J. S. Beckett (Canada) was nominated Rapporteur.

4. *Review of Panel Membership*

The Chairman welcomed Cuba as a new member of the Panel, joining Brazil, Canada, France, Ghana, Ivory Coast, Japan, Korea, Morocco, Portugal, Senegal, Spain and the U. S. A. Delegates from all the member countries, except Spain, were present.

5. *Review of the Report of the Standing Committee on Research and Statistics*

The Chairman of the SCRS, Dr. B. J. Rothschild, summarized the sections of the SCRS Report relevant to yellowfin and skipjack. He noted, in particular, the need for increased research on skipjack.

6. *Review of possible measures for the conservation of stocks*

a) Yellowfin

France drew attention to her interest in the SCRS undertaking simulation studies in order to forecast future catches. Subsequent discussion centered on the analysis of the yellowfin population and the ability of a production model, as currently

used, to predict the effects of varying year class strengths on overall yield. The Chairman of the SCRS warned that while m = 0 provides the best fit to past data, this should not be over-extrapolated because of the risk of spawning failure. Ivory Coast noted that there was a need to use a simulation model, particularly to predict the effect of such changes in the fishing pattern as are known to have taken place. The Representative from FAO commented that production curves were suitable for equilibrium conditions but that simulation models were more useful in changing fisheries. They could also be used to examine the effects of various management options.

b) Skipjack

No comments were made.

7. *Research needed to be carried out*

The Chairman of the SCRS drew attention to research needs described in the SCRS Report. He noted that some of the research needs identified in 1974 had not been carried out, including simulation modelling of the yellowfin population. He also outlined the proposed long-term skipjack study, which was to be divided into two phases, the first being a one-year period of development and planning, followed by the implementation phase.

Ghana asked whether the research envisaged could include an examination of the size distribution of yellowfin in the Gulf of Guinea, particularly with reference to the availability of tuna over the minimum size (3.2 kg) limit. The Convener of the Sub-Committee on Statistics noted that he had extensive sampling data available which he felt could be analyzed to provide the required information and offered his assistance in doing so prior to the next meeting of SCRS. Japan expressed reservations on the SCRS program of planned research pending examination of the financial implications by STACFAD.

The Chairman of the SCRS, at the request of France, explained that the item «Feasibility of regulations» referred to studies on the suitability of possible management options.

8. *Date and place of next Panel meeting*

The Panel agreed that the next meeting would be held at the same time and in the same place as the next Council meeting.

9. *Election of Chairman*

Spain proposed the re-election of the United States as Chairman of Panel 1, and it was seconded by Japan. The United States was unanimously re-elected Chairman for the next biennial period.

10. *Other matters*

No comments were offered.
The Report was adopted at a brief meeting of the Panel on November 24, 1975.

11. *Adjournment*

The meeting was adjourned at 15:30.

Report of the Meeting of Panel 2

Madrid, November 21, 1975

1. *Opening*

The meeting was called to order at 15:15 by the Chairman, Mr. D. Layachi (Morocco).

2. *Adoption of Agenda*

The provisional agenda was approved (Appendix I).

3. *Election of Rapporteur*

Mr. D. A. MacLean (Canada) was nominated Rapporteur.

4. *Review of Panel Membership.*

In addition to the current Panel members, i.e., Canada, France, Japan, Korea, Morocco, Portugal, Spain and the U. S. A., delegates from Brazil, Cuba and Ghana attended the Panel as observers.

5. *Review of the Report of the Standing Committee on Research and Statistics*

The Chairman of the SCRS, Dr. B. J. Rothschild, summarized the sections of the SCRS Report relevant to bluefin and albacore. He referred in particular to the fact that fishing mortality varied greatly on the different sizes of bluefin and to the fact that in the western Atlantic, the fishing mortality of young fish was much higher during the past 10-15 years than in earlier periods. In the eastern Atlantic the mortality has probably decreased during the same period. He also noted that the decline in the stock of medium and large fish, if it continued, would eventually lead to recruitment failure.

With reference to the albacore stocks, Dr. Rothschild emphasized a continuation of catch declines and reported that the northern stock is approaching its optimum level of exploitation. For the southern stock, increases in effort beyond the 1972 level would result in a decrease in average sustained yield.

6. *Review of possible measures for conservation of stocks*

a) Bluefin

Canada presented a statement to the Panel (Appendix II) expressing its concern that the 1974 resolution did not go far enough to provide for a real improvement in the state of the stocks.

The U. S. A. expressed its concern over the state of the stocks since the catch has continued to be very low. In 1974, the U. S. A. proposed certain actions to ensure that the fisheries could be controlled to some degree. These actions resulted in the adoption of two regulations: one concerning minimum size and the other a limitation on fishing mortality. The U. S. A. suggested an extension of the bluefin regulation concerning fishing mortality for an additional two years. This suggestion was agreed to by the Panel with a provision, suggested by Canada, that the proposal be reviewed by the Council at its next meeting. If the Council feels that the regulations should be altered, it will be necessary to communicate with all Commission members.

The Moroccan delegation drew attention to Document COM/75/21, stating that their bluefin fishery was an incidental fishery and requested flexibility with respect to the minimum size regulation.

b) Albacore.

No measures were suggested.

7. *Research needed to be carried out*

The Chairman of the SCRS drew attention to research needs for both bluefin and albacore, as described in the SCRS Report. In particular, he emphasized the need for improved data from the Bay of Biscay longline fishery and the need for more production models and cohort analysis. He also requested that Panel members take particular note of Appendices IX and X of the SCRS Report.

The U. S. A. noted that not all the data necessary for assessment nor for appropriate decision making was being received by the SCRS. Members were requested whenever possible to ensure that data were complete and timely.

8. *Date and place of next Panel meeting*

The Panel agreed that the next meeting would be held at the same time and in the same place as the next Council meeting.

9. *Election of Chairman*

It was proposed by Spain, seconded by France and *agreed* that Morocco retain the chairmanship of Panel 2.

10. *Other matters*

The Report was adopted.

11. *Adjournment*

The meeting was adjourned at 17:00.

Report of the Meeting of Panel 3

Madrid, November 20, 1975

1. *Opening*

The meeting was called to order by the Chairman, Mr. K. Yonezawa (Japan).

2. *Adoption of Agenda*

The provisional agenda was adopted (Appendix I).

3. *Election of Rapporteur*

Mr. B. S. Hallman (U. S. A.) was designated Rapporteur.

4. *Review of Panel Membership*

Panel 3 membership was noted as now being: Brazil, Japan, Korea, South Africa and the United States.

5. *Review of Report of the Standing Committee on Research and Statistics*

The Chairman of the SCRS briefly reviewed for the Panel relevant parts of the SCRS Report. The representative from FAO noted that the stocks of concern to this Panel were also of interest to the Indian Ocean Fisheries Commission (IOFC) and the Indo-Pacific Fisheries Council (IPFC) and were being studied by those bodies as well as by ICCAT. Thus, any management measures for these fisheries by ICCAT would need to be closely coordinated with the IOFC and IPFC.

6. *Review of possible measures for the conservation of stocks*

No conservation measures were suggested. Japan noted that it has been unilaterally implementing measures for the protection of the southern bluefin stocks since 1971.

7. *Research needed to be carried out*

The SCRS Chairman noted that intensive work on other species has prevented major research from being carried out on the southern species of bluefin and albacore. He remarked that the SCRS was, however, anxious to obtain more detailed size composition data on these fisheries. Brazil offered to present a paper next year on the size composition of southern albacore catches by Brazilian vessels from 1969 to the present. Japan noted that its scientists are carrying out a variety of studies on the southern bluefin and that the results of this research will be reported at the next meeting of the SCRS.

8. *Date and place of next Panel meeting*

The Panel agreed that the next meeting would be held at the same time and in the same place as the next meeting of the Council.

9. *Election of Chairman*

Japan was unanimously re-elected Chairman.

10. *Other matters*

The United States asked if data concerning these species which range into the Indian Ocean and are also being studied by the IOFC and IPFC are being received by ICCAT.

The representative from FAO replied that little data have been published by these Commissions but that summary statistics were available from FAO publications. He noted that arrangements could be made for reports of meetings dealing with these species of concern to ICCAT to be sent directly to the Commission or the SCRS. He also noted that it would be useful if the work of ICCAT relative to these species could be made available to the IOFC and IPFC.

11. *Adjournment*

The meeting was adjourned.

Report of the Meeting of Panel 4

Madrid, November 21, 1975

1. *Opening*

The meeting was called to order by the Chairman, Mr. V. Bermejo Martínez (Spain).

2. *Adoption of Agenda*

The provisional agenda was adopted with the inclusion of a new item «Election of Chairman» (Appendix I).

3. *Election of Rapporteur*

Dr. P. Miyake (Secretariat) was designated Rapporteur.

4. *Review of Panel Membership*

The Panel noted that Cuba requested membership to Panel 4. Thus the present membership is as follows: Canada, Cuba, Japan, Korea, Portugal, Spain and the United States.

5. *Review of Report of the Standing Committee on Research and Statistics*

The Chairman of the SCRS, Dr. B. J. Rothschild, summarized the pertinent sections of its report on bigeye, billfishes, and small species of tunas. He commented that no substantial studies have been conducted on Atlantic bonito.

6. *Review of possible measures for the conservation of stocks*

The Panel was informed that no recommendations for conservation measures had been made by the SCRS in this session. No further comments were made.

7. *Research needed to be carried out*

The SCRS Chairman presented the Committee's future plans for research on bigeye, billfishes, and small species of tunas. He emphasized the necessity of size frequency data for bigeye being separated by north-south stocks, and of more fundamental data on billfishes. The SCRS Chairman also stressed the need to improve national statistics on the small species of tunas so that the Commission will have adequate data to effectively carry out scientific analysis and determine if a regulation is to be considered for the future. The U. S. A. expressed concern as to the condition of billfish stocks, particularly those of white marlin and blue marlin, and requested that each nation fishing these species monitor the fisheries closely. Canada noted that it will complete assembling and analyzing all historical data on swordfish.

The Panel was informed that training courses for people involved in tuna statistics, sampling and stock evaluation are proposed by the SCRS for 1976.

8. *Date and place of next Panel meeting*

The Panel agreed that the next meeting be held at the same time and place as the next Council meeting.

9. *Election of Chairman*

Spain was unanimously re-elected Chairman for the next biennial period.

10. *Other matters*

The Report was adopted.

11. *Adjournment*

The meeting was adjourned.

Appendix 1 to Annex 6

Agenda for Panel 1 (Tropical Tunas)
Panel 2 (Temperate Tunas-North)
Panel 3 (Temperate Tunas-South)
Panel 4 (Other Species)

1. Opening
2. Adoption of Agenda
3. Election of Rapporteur
4. Review of Panel Membership
5. Review of Report of the Standing Committee on Research and Statistics
6. Review of possible measures for the conservation of stocks:

Panel 1	*Panel 2*	*Panel 3*	*Panel 4*
a) Yellowfin	*a*) Bluefin	*a*) Bluefin	*a*) Bigeye
b) Skipjack	*b*) Albacore	*b*) Albacore	*b*) Atlantic bonito
			c) Billfishes
			d) Other species

7. Research needed to be carried out
8. Date and place of next Panel meeting
9. Election of Chairman
10. Other matters
11. Adjournment

Appendix II to Annex 6

Canadian Statement for Panel 2

At last year's meeting of Panel 2, the Canadian Delegation expressed its concern about the state of bluefin stocks in the North Atlantic and strongly recommended reductions in catches of bluefin of all sizes. Canada agreed reluctantly with the proposal that was finally agreed to by the Panel and the Council, because Canada did not believe it went far enough to provide for any real improvements in the state of stocks.

Although we fully realize the latitude provided for in discussion of the proposal at last year's meeting, we attempted to apply it as it is worded, i.e. to «limit fishing mortality to recent levels». In view of the declining recruitment rates, catches would have to be reduced. As was mentioned yesterday morning at the Plenary Session, we took measures to reduce our catches of large fish and kept our small fish catch below the average level of recent years.

In the SCRS Report of last year, the conclusion was reached that recruitment to the large fish component of the bluefin stock, which is the most valuable part of our national catch, is determined by levels of mortality in the small and medium size fisheries. Since the conclusions this year essentially repeat those of last year, we continue to be very much concerned. The Canadian Delegation believes that last year's resolution, with the wide range of options in interpreting it, will not improve recruitment to Canada's coastal fishery in the near future.

From all the available scientific evidence, including our new information on the age of the giant fish, it is clear that the purse seine fishery in the west Atlantic which began in the early 1960's has greatly reduced recruitment to the medium and large fish fisheries.

To improve this situation and to stay within the spirit of the 1974 ICCAT resolution, catches of immature fish should be reduced next year in proportion to the estimated size of the incoming year class. We note with reference to this the SCRS conclusion that the 1974 year class was considerably smaller than the better than average 1973 year class. Accordingly, if we adhere to the 1974 protocol, a substantial reduction in the catch of juveniles in the western Atlantic is indicated.

Furthermore, we note that if any improved escapement of young fish occurs through this fishery, these stocks will become vulnerable to the highly mobile longline fleet in the west Atlantic before they become available to our coastal fishery. Since fishing effort by the longline fleet is greatly variable, any improved local abundance of medium sized fish is bound to attract local increases in longline effort, as appears to have occurred in the Mediterranean and the Bay of Biscay in recent years, to the detriment of the coastal fisheries there. We would hope to see a reduction in fishing mortality on the intermediate sizes to provide for both

an adequate spawning stock and higher levels of recruitment to the large fish fisheries.

In conclusion, Mr. Chairman, although the mechanism for doing so is not entirely clear to us, the Canadian Delegation believes that it might be wise for the Commission to consider separate management schemes for bluefin tuna in the eastern and western parts of the Atlantic. We appreciate the fact that the scientific evidence for separate stocks is weak, but there are some differences in several biological parameters.

Accordingly, for practical management purposes, separate management regions may be more realistic than a single region for the Atlantic as a whole.

Annex 7

REPORT OF THE WORKING GROUP ON INTERNATIONAL INSPECTION

Madrid, November 21, 1975

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Main text

Appendix I — Agenda
Appendix II — ICCAT Scheme of Joint International Inspection
Appendix III — ICCAT Pennant
Appendix IV — Identification Card
Appendix V — Report of Inspection
Appendix VI — Questionnaire of the Inspector
Appendix VII — Listing of International Inspection Correspondents

1. *Opening*

The meeting was called to order at 09:40. In the absence of the present Chairman, Mr. A. dos Santos Gaspar (Portugal), Mr. V. Bermejo (Spain) was elected as the Chairman for the session.

2. *Adoption of Agenda*

The provisional agenda was approved without change (Appendix I).

3. *Election of Rapporteur*

Mr. W. B. Folsom (United States) was appointed Rapporteur.

4. *Review of ICCAT's Scheme of International Inspection*

Paragraph 3 of Article IX of the Convention calls for the establishment of a program of International Inspection. The results of previous efforts in this direction were introduced (Appendix II) for consideration.

Following considerable debate it was decided that, at this point in time, the program was premature for several reasons, including: (1) only weight limitations on yellowfin tuna and bluefin tuna were in effect, (2) the area to be covered included the entire Atlantic Ocean, and (3) many nations could not bear the costs of such an inspection program.

It was, therefore, decided that the proposed ICCAT Scheme of Joint International Inspection be accepted in principle, with the proviso that it not be placed into effect until the Commission votes to place the program into operation.

With this proviso, Item 4 was accepted in whole and it was agreed to submit the proposal to the Commission for consideration.

5. *Model of flag or pennant for vessels carrying on-board inspectors conducting international control*

The proposed flag was approved without change (Appendix III).

6. *Model of identity card for the inspectors*

Item 6 was accepted following the suggestion of South Africa and the United States that space be provided for the inclusion of both the Issuing Officer and Inspector's signatures (Appendix IV).

7. *Model of reporting form for the inspection*

The model (Appendix V — as corrected) was accepted with the inclusion of the following points proposed by the United States:

No. 4 — Time (GMT) when position was recorded.
No. 10 — List of documents inspected and comments should be inserted between Items 9 and 10.
No. 10 (now No. 11) — Designate unit of weight (kg or mt) under weight column.
No. 11 (now No. 12) — Inspector's signature should follow «comments».

The model for the «Questionnaire of the Inspector» was adopted with minor changes (Appendix VI).

8. *Review of national legislation presently in force relating to inspection and inspectors*

The United States reported that legislation was enacted on August 5, 1975, permitting the Department of Commerce to enforce any international regulations governing the conservation of tunas approved by the ICCAT Commission. Spain also indicated that it had also passed national legislation necessary to enforce regulations adopted by the ICCAT Commission.

Item 8 was approved without further comment.

9. *Suggestions as to the most effective way of ensuring control at the ports*

The Cuban delegation felt that a port inspection scheme was a necessary part of the Joint International Inspection Scheme for two reasons: (1) many nations could not afford to divert resources to mount a high seas inspection program which

could easily be done at existing ports, and (2) because a port inspection program would give a comprehensive picture of the total fishing effort in contrast to high seas inspection where only a portion of the catch would be visible to inspection (Ref: Letter of C. Marrero Gutiérrez, of Cuba, to ICCAT dated August 4, 1975). This proposal was widely supported.

It was noted, however, that ICCAT regulations do not presently cover port inspection schemes and several delegations pointed out the complexities involving international jurisdiction when inspectors of one nation, operating from ports of a second nation, could be involved in inspecting fishing vessels of a third nation.

Despite these obstacles, it was felt that action to resolve the issues of national sovereignty had to be undertaken. It was, therefore, decided that the Secretariat would draft a questionnaire which would be sent to all member nations soliciting their views. (See Appendix VII for list of correspondents.) This questionnaire would then be used to prepare a definite program for port inspection at the next Council meeting.

10. *Date of entry into effect of the International Inspection System*

It was agreed to leave in abeyance the date of entry into effect of the International Inspection Scheme until the Commission decides otherwise.

11. *Date and place of next meeting*

The group agreed that the next meeting would be held at the same time and in the same place as the next Council meeting.

12. *Other matters*

It was *recommended* that the Working Group on International Inspection continue to function.

13. *Adoption of Report*

The final draft of the report was adopted on Tuesday, November 25, 1975.

14. *Election of Chairman*

Cuba was elected Chairman for the next biennial period.

15. *Adjournment*

The meeting was adjourned at 15:30.

Appendix I to Annex 7

Agenda for Working Group on International Inspection

1. Opening
2. Adoption of Agenda
3. Election of Rapporteur
4. Review of ICCAT's Scheme of International Inspection
5. Model of flag or pennant for vessels carrying on-board inspectors conducting international control (2)
6. Model of identity card for the inspectors (3)
7. Model of reporting form for the inspection (5)
8. Review of national legislations presently in force relating to inspection and inspectors
9. Suggestions as to the most effective way of ensuring control at the ports
10. Date of entry into effect of the international inspection system
11. Date and place of next meeting
12. Other matters
13. Adoption of Report
14. Election of Chairman
15. Adjournment

Note: The numbers in parentheses refer to the paragraphs of the ICCAT Scheme of Joint International Enforcement which deal with these points.

Appendix II to Annex 7

ICCAT Scheme of Joint International Enforcement

RECOMMENDATION

Persuant to paragraph 3 of Article IX of the Convention, the Commission recommends the establishment of the following arrangements for international control outside the waters under national jurisdiction for the purpose of ensuring the application of the Convention and the measures in force thereunder:

"(1) Control shall be carried out by inspectors of the fishery control services of Contracting Governments. The names of the inspectors appointed for that purpose by their respective governments shall be notified to the Commission.

"(2) Ships carrying inspectors shall fly a special flag or pennant approved by the Commission to indicate that the inspector is carrying out international inspection duties. The names of the ships so used for the time being, which may be either special inspection vessels or fishing vessels, shall be notified to the Commission, as soon as may be practical.

"(3) Each inspector shall carry a document of identity supplied by the authorities of the flag state in a form approved by the Commission and given him on appointment stating that he has authority to act under the arrangements approved by the Commission.

"(4) Subject to the arrangements agreed under paragraph (9), a vessel employed for the time being in fishing for tuna or tuna-like fishes in the Convention Area outside the waters under national jurisdiction shall stop when given the appropriate signal in the International Code of Signals by a ship carrying an inspector unless actually carrying out fishing operations, in which case it shall stop immediately once it has finished such operations. The master [1] of the vessel shall permit the inspector, who may be accompanied by a witness, to board it. The master shall enable the inspector to make such examination of catch or gear and any relevant documents as the inspector deems necessary to verify the observance of the Commission's recommendations in force in relation to the flag state of the vessel concerned and the inspector may ask for any explanations that he deems necessary.

"(5) On boarding the vessel an inspector shall produce the document described in (3) above. Inspections shall be made so that the vessel suffers the minimum interference and inconvenience and that degradation of the quality of the fish be avoided. An inspector shall limit his enquiries to the ascertainment of the fact in relation to the observance of the Commission's recommendations in force in relation to the flag state of the vessel concerned. In making his examination an inspector may ask the master for any assistance he may require. He shall draw up a report of his inspection in a form approved by the Commission. He shall sign the report in the presence of the master of the vessel who shall be entitled to add or have added to the report any observations which he may think suitable and must sign such observations. Copies of the report shall be given to the master of the vessel and to the inspector's government who shall transmit copies to the appropriate authorities of the flag state of the vessel and to the Commission. Where any infringement of the recommendations is discovered, the inspector should, where possible, also inform the competent authorities of the flag state, as notified to the Commission, and any inspection ship of the flag state known to be in the vicinity.

[1] Master refers to the individual in charge of the vessel.

"(6) Resistance to an inspector or failure to comply with his directions shall be treated by the flag state of the vessel in a manner similar to resistance to any inspector of that state or a failure to comply with his directions.

"(7) Inspectors shall carry out their duties under these arrangements in accordance with the rules set out in this recommendation but they shall remain under the operational control of their national authorities and shall be responsible to them.

"(8) Contracting Governments shall consider and act on reports of foreign inspectors under these arrangements on a similar basis in accordance with their national legislation to the reports of national inspectors. The provisions of this paragraph shall not impose any obligation on a Contracting Government to give the report of a foreign inspector a higher evidential value than it would possess in the inspector's own country. Contracting Governments shall collaborate in order to facilitate judicial or other proceedings arising from a report of an inspector under these arrangements.

"(9) (i) Contracting Governments shall inform the Commission by the 1st of March each year of their provisional plans for participation in these arrangements in the following year and the Commission may make suggestions to Contracting Governments for the coordination of national operations in this field including the number of inspectors and ships carrying inspectors.
(ii) The arrangements set out in this recommendation and the plans for participation shall apply between Contracting Governments unless otherwise agreed between them; and such agreement shall be notified to the Commission:
Provided, however, that implementation of the scheme shall be suspended between any two Contracting Governments if either of them has notified the Commission to that effect, pending completion of an agreement.

"(10) (i) The fishing gear shall be inspected in accordance with the regulations in force for the subarea in which the inspection takes place. The inspector will state the nature of the violation in his report.
(ii) Inspectors shall have the authority to inspect all fishing gear in use or that fishing gear on deck ready for use.

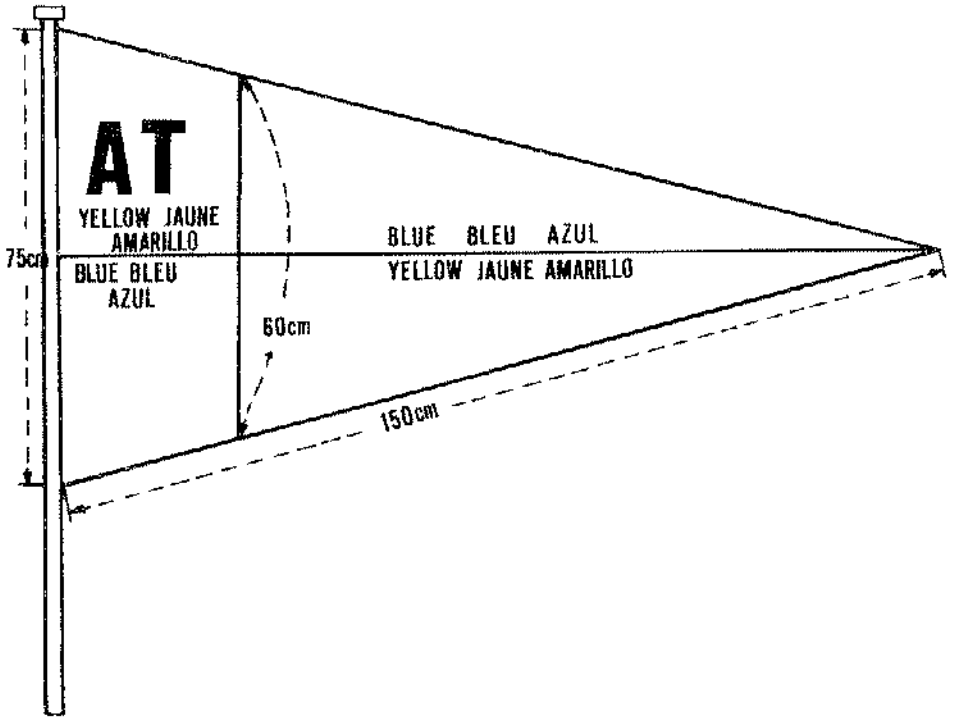
"(11) The inspector shall affix an identification mark approved by the Commission to any fishing gear inspected which appears to be in contravention of the Commission's recommendations in force in relation to the flag state of the vessel concerned and shall record this fact in his report.

"(12) The inspector may photograph the gear in such a way as to reveal those features which in his opinion are not in conformity with the regulation in force, in which case the subjects photographed should be listed in the report and copies of the photographs should be attached to the copy of the report to the flag state.

"(13) The inspector shall have authority, subject to any limitations imposed by the Commission, to examine the characteristics of catches, to establish whether the Commission's recommendations are being complied with. He shall report his findings to the authorities of the flag state of the inspected vessel as soon as possible."

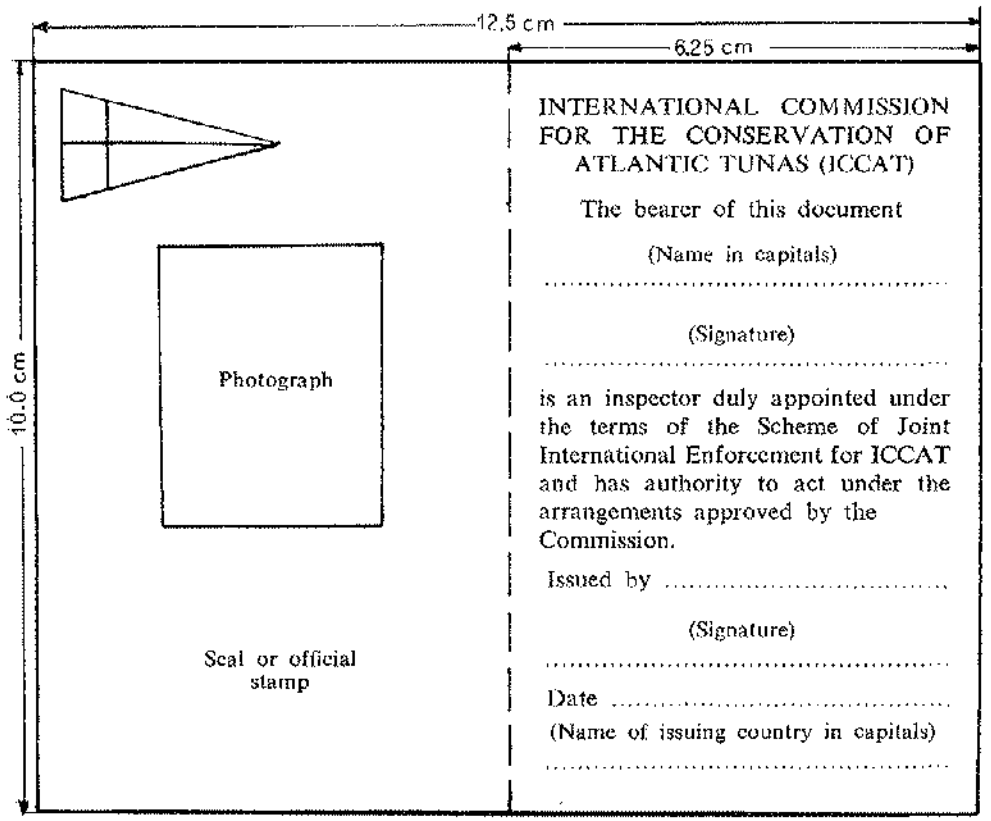
Appendix III to Annex 7

ICCAT Pennant



Appendix IV to Annex 7

Identification Card



Appendix V to Annex 7

Report of inspection

1. *Inspector*
   1.1. Name .....
   1.2. Nationality .....

2. *Ship carrying the Inspector*
   2.1. Name and Registration .....
   2.2. Nationality .....

3. *Vessel inspected*
   3.1. Name and Registration .....
   3.2. Nationality .....
   3.3. Captain (Name) .....
   3.4. Shipowner (Name and address) .....
4. *Position*
   4.1. As determined by the inspector: ..... Lat. ..... Long.
   4.2. As determined by the captain of the fishing vessel:
   ..... Lat. ..... Long.
   4.3. Time (GMT) when position was recorded .....
5. *Date* .....
6. *Time*
   6.1. Of arrival on board .....
   6.2. Of departure of the vessel .....
7. *Fishing gear on board*
   ☐ Purse seine ☐ Pole & line ☐ Longline ☐ Trolling lines ☐ .....
8. *Species observed on board*
   (Catches) ☐ BF ☐ YF ☐ ALB ☐ SJ ☐ ..... ☐ .....
9. *Statement of photographs taken with description of subjects*
10. *List of documents inspected and comments*
11. *Results of the inspection of the fish on board*

Proportion of undersized fish on board

Species	Bluefin		Yellowfin			
Size limit	6.4 Kg.		3.2 Kg.			
	No. of fish	Weight (Unit:)	No. of fish	Weight (Unit:)	No. of fish	Weight (Unit:)
Total catch						
Inspected sample:						
Total						
Over the min. size						
Under min. size						
% of undersized fish						

12. *Inspector's comments* .....
.....

Signed by: .....

Appendix VI to Annex 7

Questionnaire of the Inspector

QUESTIONNAIRE OF THE INSPECTOR

1. I am an inspector of ICCAT. This is my identity card. I am here on an inspection visit.
2. I would like to see the captain of the vessel.
3. Captain, please give me your name.
4. I require your collaboration in order to examine the fishing gear, the catches, logbooks and vessel documentation, in agreement with the International Inspection Scheme adopted by ICCAT.
5. Please check that the time is ..... GMT.
6. I am reporting your position as .....° Lat. .....° Long. at ..... GMT. Do you agree?
7. Would you like to check your position with my instruments on board the inspection ship?
8. Do you now agree (that is) your position? If not, you should write your estimated position in the indicated space on this report.
9. Please show me the vessel documentation and the fishing logbooks.
10. Please write here the name and address of the shipowners.
11. What species are you mainly catching?
12. Will you show me: *a*) the fishing gear? *b*) the fish holds?
13. I would like to inspect your catches.
14. Will you please lay out those fish I have designated for inspection?
15. I have found: ☐ in number of fish ☐ in weight
..... % of yellowfin ..... % of bluefin ..... % .....
undersize/underweight fish among those that I have inspected.
16. I have found no infringement of the ICCAT regulations.
17. If you so wish, you can make any remarks which you consider convenient in your own language in the space I am indicating on the report.
18. Do you wish to make any comments and/or remarks concerning this inspection? If so, please do so in your own language in the space I am indicating on the report.
19. Do you have any witnesses who wish to make any remarks? If so, it can be done in his own language in the space I am indicating on the report.

20. Please certify the photographs listed in the inspection report, adding the date and your signature.
21. Please sign this report on the last line.
22. I am leaving. Please check that the time is ..... GMT.
23. Thank-you. Bon voyage!

Appendix VII to Annex 7

Listing of International Inspection Correspondents

BRAZIL	M. Fortes de Almeida
CANADA	J. Beckett
CUBA	E. Oltuski
FRANCE	G. Rossignol
GHANA	V. N. Dowuona
IVORY COAST	
JAPAN	Y. Yamazaki
KOREA	S. H. Ha
MOROCCO	
PORTUGAL	A. dos Santos Gaspar
SENEGAL	S. Diouf
SOUTH AFRICA	C. S. de V. Nepgen
SPAIN	V. Bermejo
U. S. A.	C. Blondin

Annex 8

REPORT OF THE STANDING COMMITTEE ON RESEARCH AND STATISTICS (SCRS)

Madrid, November 12-18, 1975

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Text of Report

Tables and Figures

Appendix I — Agenda
» II — List of Documents
» III — Report of the Ad Hoc Group on Admission of SCRS Documents
» IV — Report of the Sub-Committee on Statistics
» V — Report of the Working Group on an Intensified Atlantic-wide Skipjack Research Program
» VI — Report of the Ad Hoc Working Group on the Proposed Statistical Sampling Study
» VII — Report of the Program of the Tuna Working Group of the Committee of Marine Vertebrates and Cephalopods of the CIESM
» VIII — Report of the Working Group on Training of Scientific Personnel
» IX — Report of the Ad Hoc Working Group on Tagging of Young Bluefin in the Eastern Atlantic and Mediterranean
» X — Evaluation of Assignments Made in 1974, and Future Plans

Item 1. Opening of the meeting

1.1. At the opening of the meeting the Chairman, Dr. B. J. Rothschild, introduced Mr. Jaime de Manuel y Piniés, the Director General of Sea Fisheries (Spain). Mr. Piniés welcomed all the attendants. He stressed the importance of research and collection of statistics and commended the solid achievement which the scientists have made in the past. He noted that only on such a basis can a feasible fishery regulation be established.

1.2. The Chairman then formally opened the Sixth Regular Meeting of the Standing Committee on Research and Statistics (SCRS). He welcomed all the delegates and observers, particularly Cuba, which became a new member of the Commission, and those scientists attending the SCRS meeting for the first time. He reviewed the Terms of Reference to the SCRS (Rule 13-2, Rules of Procedure).

Item 2. **Adoption of Agenda and arrangements for the meeting**

2.1. The Tentative Agenda was adopted and is attached as Appendix I. Dr. P. Miyake (Secretariat) was nominated Rapporteur for Items 1-4, Dr. J. Gulland (FAO) for Item 5, and Dr. J. Caddy (Canada) for Items 6-16.

2.2. The Ad Hoc Group on Admission of SCRS Documents was then established and Ivory Coast, Japan, Spain and the U.S.A. were selected. This procedure was necessary since over 40 papers were submitted to the SCRS after the deadline, October 12, 1975.

2.3. Working Groups on Statistics (one for general and one for bluefin tuna) were again set up to review the progress made in the past year and to consider the short and long-term program to collect and improve statistics.

2.4. Later, the Chairman of the Ad Hoc Group on Admission of SCRS Documents, Mr. O. Cendrero, reported the results of their deliberation. The Report is attached as Appendix III. The Ad Hoc Group recommended to relax, for 1975 only, the regulations of documentation established in 1974 and that the SCRS admit all the documents presented up to and including one day before the meeting, but not those submitted on the opening day. The list of documents accepted is attached as Appendix II.

Item 3. **Admission of Observers**

All the observers were admitted and appear in the List of Participants (Annex 2 to the Proceedings).

Item 4. **Review of national fisheries and research programs**

4.1. *Brazil*: In 1974, the longliners which operated in the southeast and south of Brazil caught 1,156 MT of tunas and related species, which represent 55 % more than in 1973, using 724,590 hooks (37 % more than in 1973). The most important species caught were yellowfin and swordfish. Biological samplings of the landings and at sea are continuing. Presently, we are studying a program of expansion of fishing, oriented principally towards the use of live bait.

4.2. *Canada*: Tuna landings in 1974 and 1975 were almost exclusively bluefin tuna; no fishery operated in the East Atlantic. Landings of bluefin declined to 768 MT in 1974, and again to (provisionally) 620 MT in 1975. This included 103 MT and 295 MT purse seined fish, and 621 MT and 325 MT of large fish in 1974 and 1975, respectively. Low catches were due both to 1974 ICCAT resolutions and to real declines in abundance for the large fish in 1975. Regulations on domestic catches imposed in 1975 were a catch quota on purse seine fish, effort + season limitation, daily catch limit and a regulation on the breaking strain of lines in the sports fishery.

Biological sampling and research now center on otolith collection and sampling (bluefin) and preliminary work on aging of swordfish (fin ray section).

4.3. *Cuba*: Cuban catches in the Atlantic totalled more than 11,300 tons. The catches consisted of the following species (%): yellowfin (34 %), bigeye (21 %), skipjack or Atlantic bonito (17 %), billfishes (20 %) and other tunas and tuna-like species (8 %).

Research activities. — The «Centro de Investigaciones Pesqueras de Cuba» carried out tuna research activities. A team of 14 specialists (mathematicians, fisheries biologists, ichthyologists, oceanographers and other experts) developed a sampling program of yellowfin size frequency and biological sampling on board the commercial vessels of the «Flota Atunera de Cuba». They also conducted samplings to collect larvae and eggs (Western Atlantic) on board the research vessels.

4.4. *France*: In 1974, French fishermen based at the homeland and at the ports of the West African coast, caught 67,000 tons of tuna compared to 54,500 tons in 1973. This increase is due essentially to the increase in skipjack catches (24,500 tons in 1974 compared to 12,700 tons in 1973). The albacore catches were increased by 1,500 tons; the yellowfin catches decreased by 800 tons. The provisional estimate of bluefin catches in 1974 calculated at 2,500 tons for the Mediterranean only, show an important increase in relation to that of 1973 (1,000 tons for the Atlantic and the Mediterranean).

Research activities were carried out in 1974 by three organizations: ISTPM and CNEXO for albacore and bluefin, and the ORSTOM for tropical tunas.

The ISTPM continued its studies of surface albacore and conducted a cruise in the region north and east of the Azores from May 28 to July 18. During this cruise, 203 albacore and 23 bigeye were tagged, 1,207 measurements were carried out and a study was conducted of the yields of the artificial bait (according to the color) used in troller fishing.

The CNEXO carried out studies regarding the state of the exploitation of albacore in the North Atlantic, taking into account the results of the French surface fishery and the Japanese longline fishery. In the surface fishery, 6,836 albacore were measured, analysis of the logbooks was continued and daily isotherm maps of the surface were prepared.

The ORSTOM continued biological and dynamics studies of tropical tunas with emphasis on the stock structures of yellowfin of the eastern Atlantic, as well as the reproduction conditions of this species. A preliminary study was conducted on the growth of skipjack.

4.5. *Ghana*: Tuna landings by foreign flag fishing vessels, mainly baitboats, were 36,407 metric tons for 1974. Ghanaian baitboats landed 2,000 tons. The landings by foreign boats were for transshipment mainly to canneries in Puerto Rico.

Research on tropical tunas by the Fishery Research Unit, Tema, particularly biological sampling of yellowfin and skipjack tunas, continued. A total number

of 7,700 yellowfin and 7,850 skipjack tunas were measured during the year. The previous year's figures were 3,850 and 3,900 for yellowfin and skipjack, respectively. A paper on the statistics of Atlantic tunas has been presented to the Sub-Committee on Statistics.

4.6. *Ivory Coast*: Tuna fishing in the Ivory Coast developed during the 1974-1975 period. Catches by the Ivorian fleet totalled 5,400 tons in 1974, while the tuna landings and transshipments at Abidjan totalled 55,000 tons. Tuna research activities continued for the FIS fleet, whose data processing is centered in Abidjan, as well as for the entire international fleet whose landings are effected in Abidjan (especially in the case of the longliners).

The work in the area of population dynamics centered almost entirely on yellowfin and some papers were presented at the SCRS meeting concerning this study.

4.7. *Japan*: The Japanese catch in 1974, some 74,000 tons, increased from 1973 by approximately 15 %. The longline fleet caught a little more than half of the total, with a special preference for bigeye, bluefin and southern bluefin tunas. Skipjack catches by the pole-and-line boats increased. In early 1975, almost the entire surface fleet withdrew from the Atlantic. Domestic regulations have been enforced since April, 1975, on bluefin tuna fishing in accordance with the ICCAT recommendations, including the temporal closure of the Mediterranean Sea.

The collection of statistical and biological data has been continued for all fisheries, for most of which data have been compiled for the years up to and including 1973.

4.8. *Korea*: In 1974, 124 tuna longliners and 8 pole-and-line boats (mainly 200-300 gross ton class) operated in the Atlantic region, and caught some 38,000 metric tons. About 93 % of the catch was taken by longliners. The major species caught in 1974 were (in order of amount taken): yellowfin, bigeye and albacore. These species constituted about 86 % of the total catch. On the other hand, catches by baitboats have been increasing as the number of vessels increased.

In regard to tuna research activities, efforts were made to improve the collection of biological data, as well as catch and effort in 5° squares, by dispatching two experts to the important Atlantic ports in June, 1975. As a result, Task II and biological data were presented to the ICCAT Secretariat for the first time and the effort to provide better statistics to the Secretariat will be continued.

4.9. *Morocco*: Moroccan tuna fishing in 1974 showed a slight decrease from 1973. This was due to a decrease in the catches of frigate mackerel. On the other hand, catches of other species remained at the same levels.

Although the 1975 figures are not yet available, we can note exceptional catches of large bluefin tuna in the Agadir area, during the months of August and September.

During 1974 and 1975, Morocco did not carry out any research programs on tunas, because of higher priority being given to other areas of activity.

4.10. *Portugal*: Tuna landings in 1974 increased by 50 % compared to those of 1973. Bigeye continues to be the most important species (representing 75 % of the total) followed by yellowfin, albacore and skipjack. More than 85 % of the landings were from baitboats. The catch and effort statistics were improved and the landings are now broken down by species. We have started some sampling and are considering carrying it out on a regular basis.

4.11. *Senegal*: Senegalese tuna catches in 1974 reached 8,000 tons and the 1975 estimates are calculated at 3,600 tons. In the port of Dakar, Senegalese and French fleets landed a total of 13,500 tons in 1974. The 1975 landings should be at about the same level as in 1974. Transshipment by the Spanish fleet can be added to these figures (20,000 tons for 1974 and 17,000 tons for the period May-October, 1975).

The work in the area of dynamics carried out by the Center (CRO) refers to yellowfin and skipjack; since 1974, the processing of FIS (France, Ivory Coast, Senegal) data for skipjack has been centralized in Dakar.

4.12. *Spain*: Bay of Biscay and N.W. of Spain. — The studies are focused on the following fisheries: *Thunnus thynnus*, *Thunnus alalunga* and *Xiphias gladius*. In 1975, with regard to catch and effort data, almost 100 % coverage of the fleet was attained. The biological samplings for the two *Thunnus* species provided us with ample information concerning the composition of populations exploited by the Spanish fleet. The total catches were more or less at the same level as those of 1974. The studies on *Xiphias gladius* in regard to biometrics, catch and effort, are still in the initial stage.

Mediterranean. — The studies being carried out in this area concerning the trap and surface fisheries are also in the initial stage.

Canary Islands. — For the first time, catch, effort, and sampling data for *Thunnus alalunga* and *Katsuwonus pelamis* were presented for this area. The total catches for both species appear to be inferior to those of 1974.

Gulf of Guinea. — Coverage of catch data for almost 100 % of the purse seine fleet which operates in this region was attained, and it does not seem possible that other statistical information will be presented at this time.

It appears that the tuna catches of the Spanish fleet in the Gulf of Guinea will be approximately half of those of 1974, in spite of a sensible increase of effort.

4.13. *South Africa*: In the summertime of 1974-75, 36 sport fishing boats, 20 live baitboats and 2 purse seiners fished tuna. The catch was well below 1,000 metric tons (69 % albacore, 15 % skipjack, 14 % yellowfin, 1 % bluefin and 1 % bonito).

Tagging was planned for October, 1974, but was not carried out. Sampling from foreign flag vessels' transshipments started in June 1975, in accordance with ICCAT. Also some environmental studies were carried out.

4.14. *U.S.A*: In 1974, U. S. commercial fishermen landed about 35,000 MT of tuna and tuna-like fishes. The catch of tropical tunas (yellowfin, skipjack and bigeye), as in previous years, accounted for the bulk (75 %) of the total catch.

Research activities were focused on collecting data from the tuna and billfish fisheries of the U. S. and assessing the status of the yellowfin, skipjack, bluefin and bigeye tuna stocks.

4.15. *Secretariat*: Details of the work on statistics are reported in SCRS/75/8, 9, 10 and 11. The routine work included: collecting Task I, Task II and biological data through the national offices, making quick estimates in the previous year of the total catches for five major species and compiling the Statistical Bulletin, etc. Besides, in 1975, according to the decision made by the SCRS and approved by the Council (1974), the Secretariat initiated port sampling and the collection of logbook abstracts. The following five major ports were selected for the program: Tenerife (Tropical tunas), Las Palmas (Tropical and Northern albacore), Abidjan (Tropical tunas), Cape Town (Southern albacore) and St. Maarten (Albacore). All these data have been compiled by computer and are reported in document SCRS/75/11.

4.16. The SCRS congratulated each country and the Secretariat on all the progress made, especially the data made available, for the first time, by Korean scientists.

Item 5. **Review of stocks**

5.a. *YELLOWFIN*

Catch and effort data

5.a.1. The catch statistics for yellowfin are summarized in Table 1, which includes preliminary estimates for 1975. The total longline catch changed very little from 1969 to 1974, remaining between 30 and 32 thousand tons. An increase in the catches of Korean vessels balanced a decrease in the catches of other fleets. In 1975, however, there seems to have been a sharp drop in the longline catch, due at least in part to a decrease in effort.

5.a.2. The catch of the surface fisheries in the eastern Atlantic has continued to increase, after a small temporary drop in 1973, to 74,000 tons in 1974 (about 25 % above 1973) and the 1975 catch will probably reach 80,000 tons. This increase has been entirely due to increasing fishing effort. The catch per unit effort has declined steadily since 1972, and in 1974 was the lowest recorded, except for the low value in 1971 when the weak 1968 year-class would have dominated in the fishery. It is likely that the catch per unit effort in 1975 will be about 5 % less than in 1974.

5.a.3. The yellowfin in the S.E. Atlantic (South of Brazil) show variations which are repeated every four years. The lowest catches were those of 1969 and 1973 and the highest were in 1971. In 1975, which should be similar to 1971, the first semester already shows that catches per unit of effort are superior to the first

semesters of other years and also that the information on the catches of the second semester indicate that they are high.

5.a.4. The estimates of the total effective fishing effort in the surface fishery, based on the best index of c.p.u.e. derived from the different elements in the FIS fleet are given in Table 2. This table also shows the growth in the total carrying capacity of the main fleets (the figure for the U. S. fleet has been weighted by the number of months in which the vessels were present).The two sets of figures are in reasonable agreement. Both indicate the growing intensity of fishing, and that this growth is continuing with little sign of slowing down.

5.a.5. Although the statistical information available to the Committee has continued to improve, there are a number of qualifications that still need to be met. First, the reported catches of small yellowfin include a proportion of small bigeye that are not properly identified. It has been estimated that the quantity of unidentified bigeye in the 1974 catches could amount to about 5,000 tons (SCRS/75/72). Since a similar and relatively minor correction would presumably need to be made for all previous years, the effects on the analysis of the yellowfin stocks would be very small, and in particular, the conclusions about the relation between catch and effort would be unaltered. The effect on the bigeye analysis would be greater. The Committee, therefore, strongly endorsed the proposals set out in detail in the Report of the Sub-Committee on Statistics for action to improve the separation of yellowfin and bigeye in the statistics of catches of small tuna.

5.a.6. The other qualification concerns the interpretation of the catch per unit effort figure. Most yellowfin are caught in fisheries that are not directed solely to yellowfin. Shifts in emphasis between species in the longline fishery have, in the case of Japan, been dealt with by using detailed statistical information on the distribution of fishing in space and time (by months and 5 degree squares).

5.a.7. Most surface fisheries are interested in both yellowfin and skipjack, and the attention paid to one or the other species varies from year to year. The true effort on yellowfin (or skipjack), therefore, depends on the attention paid to it, as well as on the reported total effort. Some adjustments for effort on skipjack have been made in this year's production model analysis, using techniques presented at the Nantes Workshop (WTPD/74/14). This problems is, as discussed in the following section, rather more serious for skipjack (which is usually the species of secondary interest) than it is for yellowfin. It could, however, be noted that the relative abundance of yellowfin is likely to be underestimated by the catch per unit effort of a particular fleet, or of the fishery as a whole, in the year when the catches of skipjack by those vessels are high, unless allowance is made. The two years of lowest yellowfin catch per unit effort —in 1971 and 1974— were both good skipjack years.

State of stocks

5.a.8. The production model analysis reported in previous years was continued (SCRS/75/80). The results, for the whole Atlantic fishery and for the surface fishery in the eastern Atlantic, are shown in Figures 1 and 2. The addition of the points for the 1974 fishery does not alter significantly the conclusion given in last year's SCRS Report, though they tend to make it appear more probable that the curve relating average sustained catch to fishing effort is relatively flattopped, i.e., approximates to that labeled $m = 0$ in the figures. Addition of the point corresponding to the estimated catch and effort values for 1975 does not alter these conclusions.

5.a.9. It should be emphasized that the curves denote average equilibrium conditions. When, as in 1974, there has been a big increase in effort, the stock will not immediately reach equilibrium, and the catch will tend to be higher than the equilibrium conditions; thus the data point for 1974 is consistent with the lower curves describing equilibrium conditions. It should also be noted that the indefinite extrapolation of the curve for $m = 0$ to very high values of fishing effort would imply a continued high production from a very low stock, and is most unlikely. At some stage in the reduction in spawning stock, a point must be reached when recruitment will begin to be seriously affected and the catch will be seriously reduced.

5.a.10. There is, however, no clear evidence that this point has been reached, and the present analyses suggest that a further increase in fishing effort (in either the surface fishery alone, or in the fishery as a whole) could give an increased yield (though less than proportioned to the increase in effort). On the other hand, any increase in effort would certainly decrease the catch per unit effort, and might also (if the true relation is like, for example, the curves for $m = 1$) result in a reduction in the total equilibrium catch.

5.a.11. The immediate future of the fishery depends on the future trends of effort and on the strength of the current year-class. Data from the surface fishery in 1975 show that the small one year old fish (belonging to the 1974 year-class) were much less common in the catches than usual (SCRS/75/74). This may be due to low availability e.g., the small fish exist, but have not moved into their usual grounds. The catches of the small fish surface fishery has in the past provided reliable measures of the real abundance of small fish and it is more probable that the 1974 year-class is in fact weak. If so, this would probably result in a drop in catch in 1976 and 1977 similar to that which occurred in 1970 and 1971, following the recruitment of the weak 1968 year-class.

5.a.12. Considering the importance of these problems, the Committee *recommended* that the quantitative estimates of the strengths of each age-group, especially those recently recruited, should be presented to the SCRS at each annual meeting.

5.a.13. The 1968 weak year-class was due to some as yet undetermined natural factors, and was followed by year-classes of average strength. The stocks recovered to a normal level by 1972 without the need for drastic action by the fishery. The same may well be true in the case of the 1974 year-class. However, if this year-class is weak because the spawning stock has been reduced to a critical level, then the restoration of the stock may require drastic action. The effort would have to be reduced (for example, to the 1971 level), and since this effort would be operating on a low stock level, the catches would have to be very small (well below the 1971 catches). It must be stressed that this situation probably has not yet been reached, but that it is quite certain that at some time in the future it will be reached if the increase in fishing effort continues without check. The Committee, therefore, repeats the statements made in earlier reports concerning the desirability of the Commission giving active consideration to the problem of carefully monitoring and controlling the total amount of fishing on yellowfin.

5.a.14. The Committee believes that further quantitative studies on the effects on the fisheries of the occurrence of weak year-classes would be very useful. These should describe the effects of randomly occurring weak year-classes caused by environmental factors, and of reduction in recruitment caused by a depletion of spawning stock. It was noted that the techniques of simulation modelling are very useful for these studies. Some results using these techniques were presented to the present meeting (SCRS/75/38 and 74) and have shown good agreement with the results of production model analyses. These results have also shown that some important conclusions on the trends in catch over the next five years are not sensitive to the precise assumptions made about the values of certain parameters.

5.a.15. The Committee, therefore, *recommended* that these studies using age-specific models, should be continued and widened to include theoretical studies of the effects of year-class change, and the results reported regularly to the Committee.

5.a.16. No new detailed analyses were presented concerning the effects of the capture of very small fish, but such new material as was available tended to confirm the conclusions given in previous reports. The average long-term yield would be increased by avoiding the capture of very small fish (i.e. less than 3.2 kg.). It was noted that the activities of the Tema-based baitboat fleet, whose catches include a very high proportion of these small fish, had been reduced. However, it was also noted that small fish were common in some deliveries of imported fish to canneries in Puerto Rico in 1975, though it was not clear when these fish were caught. The Committee again stressed that measures will only have the effects predicted if they are properly enforced, and that at least until quite recently the recommendations on a 3.2 kg. size limit had not resulted in the elimination of this size fish from the catches.

5.b. *SKIPJACK*

5.b.1. The statistics of catches of skipjack are summarized in Table 3. 1974 was a very good skipjack year and the catches of nearly all the major fleets were higher than in any previous year. The exception was the U. S. fleet, whose catches were just below the record catch taken in 1973. The total catch, 113,000 tons, was some 30 % above the catch in the previous best year. On the other hand, the preliminary estimates of the catch in 1975 suggest that this will be very much lower, possibly no more than half that of 1974. The situation in 1975 is complicated by the virtual lack, for presently unknown reasons, of a fishery off Angola, which in recent years contributed considerably to the high levels of catch. However, the catch per unit effort in the more northern fisheries was low in 1975 (SCRS/75/87).

5.b.2. Similar fluctuations in catches are typical of skipjack fisheries in other parts of the world. In the first instance, they seem to be due to large year-to-year changes in the availability of fish on the main fishing grounds, though whether this is due to changes in the abundance of the stock or in its distribution is not always clear. These changes are often exaggerated by changes in the attention paid to skipjack, which tends to increase in good skipjack years.

5.b.3. This tendency for high abundance and catch per unit effort, to result in high effort along with the natural variability, makes it difficult to detect the effects of fishing, if any, in reducing the catch per unit effort. Attempts to assess the status of the skipjack stocks by analyzing the available catch and effort data have given inconclusive results (SCRS/75/65). The high 1974 catch is beginning to approach the range of estimates of potential yield (117,000 to 250,000 tons) obtained from comparative studies of distribution and relative abundance of tunas in different oceans. These estimates are extremely rough, and the figures cannot really be used to say more than that it is likely that a further significant expansion in skipjack fishing is probably feasible, but that the fishery may now be reaching the stage at which further increase in fishing effort will not give significant increases in average sustained yield.

5.b.4. Most skipjack (over 90 %) are caught in the eastern Atlantic. If there is little interchange of fish between east and west, then catches in the west could, almost certainly, be greatly increased, but it would be less likely that catches in the eastern Atlantic could be increased. Present evidence does not suggest the existence of distinct stocks, but is inconclusive. The Committee, therefore, cannot at the present stage distinguish between three possible situations.

a) Increased fishing anywhere in the Atlantic will give significant increases in the average annual catch.

b) Increased fishing will significantly increase the average catch only if it is applied outside the eastern Atlantic.

c) Increased fishing will not significantly increase the average catch.

The Committee, therefore, repeated its earlier advice that expansion of fishing on skipjack should proceed with caution.

5.b.5. To distinguish between the situations described above is clearly a matter of highest priority for the SCRS, but requires major advances in the general understanding of the dynamics of skipjack stocks and of skipjack/yellowfin fisheries. The Committee, therefore, set up a small group to draw up plans for an intensive research program on skipjack. The report of the group is given as Appendix V. The program has two stages: a preparatory phase in 1976 in which detailed plans will be drawn up and a main phase, to be carried out from 1977 onwards, which will be determined at the 1976 meeting. The main phase is likely to involve some additional expenses for member countries in carrying out the research work, which could involve considerable work at sea, and for the Commission's Secretariat, in ensuring the effective coordination of this work. Expenses of this kind are, however, essential if the Commission is to carry out its task and are likely to be small compared with the losses that could occur if the skipjack fisheries are not properly managed.

5.c. *BLUEFIN*

Catches

5.c.1. The statistics of the bluefin catches in the Atlantic and the Mediterranean are summarized in Table 4. In 1974, the catches increased to some 16,000 tons, about 30 % above 1973, but these catches are still very much below those taken in early years. The increase in 1974 was due to greatly increased catches by Japanese longliners in the Mediterranean. Catches in 1975 are likely to be somewhere between the 1973 and 1974 levels. In several fisheries, regulations arising from the recommendations made at the 1974 Council meeting had the desired effect of having restricted the catches to levels below that which would otherwise have been reached.

5.c.2. Detailed information on the catches, the fishing effort, and on the sizes of fish caught are still lacking from some of the numerous and diverse fisheries on bluefin, but improvements have been made on both sides of the Atlantic in the supply of the essential information.

Separation of stocks

5.c.3. Studies were reported that showed significant differences in morphometric and meristic characters between bluefin tunas in the eastern and western Atlantic (SCRS/75/89). This suggests that the groups of fish on the two sides are to some extent independent, and that transatlantic movements, as shown by some tag returns, may be exceptional events. It is not yet possible to distinguish between the two main hypotheses of a single stock or of an eastern and a western stock. For the present, it is not improper to treat the Atlantic bluefin as a single stock. However,

as noted in last year's report, the effects of events (including any management action) in any one fishery will be most clearly felt in the other fisheries on the same side of the ocean.

Status of stocks

5.c.4. Data and analyses presented at this meeting generally confirmed the conclusion reached in 1974 and given in detail in last year's report. These were, in summary:

a) The fishing mortality on different ages varies greatly, according to the relative importance of different fisheries, each of which tends to be directed to a specific size of fish.

b) The recruitment to the fishery on medium fish is controlled by the level of fishing mortality on small fish. Similarly, the recruitment to the large fish fishery is determined by the fishing mortality on small and medium fish.

c) The fishing mortality on the younger fish (1-5 years) exerted by the fisheries in the western Atlantic has been much higher in the past 10-15 years than in earlier periods, though the mortality in the eastern Atlantic has probably decreased in the same period.

d) Current levels of fishing mortality, exerted from a young age at recruitment onwards, are high for a potentially very long lived fish.

e) The greatest yield per recruit would be taken with a moderately high age at first capture, little or no fishing on small fish, and moderately high fishing rates on medium and large fish. Different patterns of fishing can lead to greatly different allocations of the total yield per recruit between the fisheries on different sizes of fish. (See Table 4 of the 1974 SCRS Report, repeated as Table 5 of this report.)

f) Recruitment to the large fish fishery (age 10 onwards) has recently been very low, and this can be accounted for, in general terms, by the heavy fishing of small and medium fish. The stocks of old fish on both sides of the Atlantic now consist of a limited number of cohorts of very old fish (Age 14-20+).

g) Over the past 20 years there has been no clear evidence of a trend in year-class strength, i.e. recruitment at age 1.

h) Though there is no evidence yet that recruitment is being affected, the decline in the stock of medium and large mature fish, if continued indefinitely, is bound at some point to lead to a recruitment failure.

5.c.5. The data from the 1975 fisheries confirmed that the 1973 year-class is stronger than other recent ones. This seems particularly obvious on the western side of the Atlantic. Age II fish were also strongly represented in the 1975 surface fishery in the Bay of Biscay in which there appears to have been a general increase in recruitment over the past five years. The presence of this good year-class provides an opportunity to ensure better recruitment to the medium and large fish fisheries. As noted last year, it is the mortality in the small fish fishery, rather than

the catch, that is most critical in determining the escapement of older fish. If there is good recruitment, then the mortality can be reduced without reduction of catch —though conversely— if future year-classes are poor, catches would have to be greatly reduced to achieve the same or reduced mortality. Preliminary evidence suggests (SCRS/75/88) that the 1974 year-class in the western Atlantic is not nearly as good as that of 1973.

Management measures

5.c.6. The Committee noted the recommendations adopted by the Council in 1974 for a 6.4 kg size limit and to limit the fishing mortality. Recent analyses confirm that the 6.4 kg limit will increase the yield per recruit. Further increases in size at first capture will also increase the yield per recruit, but there are difficulties in achieving this through practical regulations such as minimum size limits, because of the mixture of different sizes of fish in the catches of the juvenile fisheries. A general reduction of fishing mortality would increase the abundance of older fish and the proportion of the total catch taken in the large fish fisheries. The precise effect would depend on the current values of fishing mortality on the different ages and are illustrated in detail in Tables 4 and 5 of the 1974 SCRS Report.

Future activities

5.c.7. While improvements in data reporting have been achieved, there are still serious gaps in catch, effort and size composition data. Information is particularly needed from the longline fisheries, especially the Japanese longline fishery in the Bay of Biscay, since they are the only ones harvesting medium fish, and there is little direct evidence in the recent trends in abundance of these (6-10 year-old) fish in the longline fishery. There are indirect estimates (based on the estimates of changes in fishing mortality among small fish and the absence of recruitment to the big fish fishery) that these fish have been very scarce. If they continue to be scarce, as is suggested by the estimates of mortality in the small fish, this would imply a continued period of low recruitment to the group of large fish and a further decline in the spawning stock. Japanese data from the longline fishery in the central Atlantic show that the hook-rate declined very greatly between 1964 and 1969, but increased sharply between 1969 and 1971. At the same time, there have been pronounced changes in the pattern of distribution of this fishery.

5.c.8. The decline between 1964 and 1969 is consistent with the estimated decline in medium fish (SCRS/75/92), and medium and large fish were then the major constituents of the Japanese longline fishery. However, sufficient size data are not available for the more recent catches, and until such data are available it is not possible to use the changes in hook-rate as evidence of recent trends in the abundance of medium fish.

5.c.9. Improved techniques for determining the ages of large bluefin were reported and the Committee believed that it would be useful to ensure better and

standardized methods of age-determination by all scientists. The Committee, therefore, appointed Dr. G. L. Beardsley to convene a small group to work by correspondence to study methods of age-determination (including the exchange of material) and to report to the 1976 meeting.

5.c.10. Other proposals for future activities —cohort analyses, survey of sport fisheries, improved estimates of year-class strength, yield per recruit calculations, stock and recruitment studies, and estimation of trends in abundance of each age— were listed in the 1974 SCRS Report. Several of these have been undertaken —e.g. cohort analyses for the eastern Atlantic surface fishery and for the Atlantic fisheries as a whole, and sport fishery surveys— and were reported to the present meeting. It is important that these studies should be continued and strengthened in 1976. However, priorities for future work should be improvement of our estimates of abundance, size composition, fishing effort, growth, mortality rates, and recruitment, leading to more precise estimates of stock status.

5.d. *ALBACORE*

Catches

5.d.1. Statistics of albacore catches are given in Table 6. The catches in 1974 showed a further decline and were the lowest since 1968, though it should be emphasized that the year-to-year variation in albacore catches is much less than for the other tuna species, and the 1974 catch is less than 20 % below the peak catch in 1964-65. The main cause of the drop in 1974 was a decline in the longline catches in the southern Atlantic, though there was a further small decrease in the surface catch.

Biological studies, distribution in the N. Atlantic

5.d.2. The results of a French exploratory cruise during the summer of 1975 in the north central Atlantic showed that immature surface albacore can be caught in the area west of the Azores. These young albacore of the central Atlantic can constitute a recruitment for the North Atlantic longline fishery, in addition to the recruitment passing through the surface fishery.

Status of stocks

Northern stock

5.d.3. Two supplementary studies on the surface fishery (SCRS/75/40) and on the longline fishery (SCRS/75/31 and SCRS/75/25) give additional information to the synopses (SCRS/74/31 and 34), regarding the fishing mortality of the northern stock.

5.d.4. *In respect to the longline fishery,* a revised compilation of the catches in number and in weight for the entire fishery (SCRS/75/31 — Table 2-1) gives figures very close to those used in document SCRS/74/31. An estimate of M = 0.4

obtained by relating effort to total mortality in the longline fishery indicates that the values of F (*longline*) of Figure 4 in document SCRS/74/31 (M = 0.4, Input F = 0.01) may be valid in the present stage of the investigations.

5.d.5. *In respect to the surface fishery*, a new estimate of F (*surface*) was obtained from cohort analysis (SCRS/75/40 — Table 6), and varies 0.15 to 1.0 according to the cohorts or the age classes. These estimate of surface F can be considered as definite and may lead to the elimination (in Figure 4 of document SCRS/75/31) of the highest curve of the surface fishery (M = 0.4) and to setting the real level of exploitation between the two curves (low and high).

5.d.6. For the fishery as a whole, Figure 7 d of SCRS/74/31 (which uses values of M = 0.4, Input F = 0.01) can be considered as the more realistic guide to the combined effects of changes in effort in both fisheries. It shows, for example, that a doubling of effort in both fisheries would increase the yield in weight by only about 15 % and would lead to a decrease in catch in the longline fishery. Increases in effort (in either or both fisheries) would reduce the fecundity index of the stock, which is already low (SCRS/74/34).

5.d.7. Regarding increased fishing in the longline fishery alone, the results of both age-structured simulation models (SCRS/74/34 — Figure 9.1), and of catch and effort analyses (SCRS/75/25 — Figure 2) show that this would not result in any significant increase in yield.

5.d.8. It was noted that there was a decrease in age at first capture in the longline, from about VI or VII in 1956 to IV or V in 1973 (SCRS/75/31 — Table 2) and some increase in the ages of fish caught in the surface fisheries (SCRS/75/41 — Table 1). Both these actions tend to increase the effort on ages V to VII which the simulation models show to be the ages at which the largest yield per recruit can be obtained. Therefore, one can estimate that with the present tendencies in the two fisheries (increase of effort on ages V to VII) the fishery on the northern stock of albacore is approaching its optimum level of exploitation.

Southern stock

5.d.9. Further studies, using catch and effort statistics in the longline fishery up to 1973 (SCRS/75/25) confirm earlier conclusions that this stock is relatively more heavily exploited than that taken in the North Atlantic. Further increases in longline effort beyond a level about equal to that occurring in 1972 will result in a decrease in the average sustained yield. However, the Committee is concerned about the notable lack of size composition data.

Recommendations for future work

N. Atlantic

5.d.10. Studies should be carried out on the existence and the quantity of the two probable sources of recruitment for the longline fishery in the N.E. Atlantic.

5.d.11. Particular effort should be aimed at integrating in the yield per recruit models the geographical variations (according to seasons) of the effort and the catches per age group (migration between zones N-1 to N-2).

5.d.12. The availability of longline data for the three major fleets should be investigated from the historical plan, or from the detailed data plan (substitution of sampling data for certain years). This effort would permit reaching a level of precision (catches by age and by year) obtained for the French-Spanish surface fishery and a systematic study of the historical data should be started.

S. Atlantic

5.d.13. The Committee strongly *recommends* that size composition data for the southern stock should be presented at the next SCRS meeting.

5.e. *BIGEYE*

5.e.1. Statistics of bigeye catches are given in Table 7. As noted in the yellowfin section, there are a number of small bigeye that have been misreported as yellowfin, and the true catches are larger (probably by about 5,000 tons in 1974) (SCRS/75/72). Even with this correction the catches in the surface fisheries are still much less than the longline catch, though the proportion of surface-caught fish has been increasing. The Sub-Committee on Statistics examined the problem of identification of bigeye. It recommended that a systematic program of sampling to determine the proportion of bigeye in the reported catches of yellowfin should be initiated at the main surface-fishery ports. The catches in both fisheries were at record levels in 1974. This increase is a continuation of a trend that has been consistent since 1967, except for a drop in 1972.

5.e.2. It was noted that data on bigeye catches were not available for catches by the USSR. The reported data from the USSR, a total of some 5,000 tons, did not include a breakdown of species, though it was believed that bigeye was the most important species. The Secretariat was requested to pursue more detailed data through the Coordinating Working Party or otherwise.

Status of stocks

5.e.3. Analyses of the catch and effort data in the longline fishery for the whole Atlantic (SCRS/75/34 and 79) showed that there has been no more than a moderate decline in hook-rate, though the increased attention being paid to bigeye (in preference to yellowfin or albacore) may tend to conceal a real decline in abundance. With this reservation, the analyses suggest that the bigeye fishery is approaching, though it has not been reached, the maximum in the yield curve. That is, increased longline fishing would probably still result in some marginal increase in equilibrium yield.

5.e.4. Separate analysis in terms of catch in numbers for the fisheries in the North and South Atlantic (SCRS/75/79) suggest that the southern group is relatively more heavily fished, and that the opportunity for increasing catches is greater in the north. The Committee *recommended* that catch in weight be separated by north and south and the analyses repeated. No assessment has yet been made of the effect of the increasing surface fishery on either the longline fishery or on the level of the total yield. The effect might be expected to be somewhat similar to that of the surface fishery on the yellowfin fishery, but would depend on *inter alia* on the values of natural mortality and growth, which vary between species.

5.e.5. The Committee is concerned over the lack of size composition data, separated by north and south, and strongly *recommended* that efforts should be made to collect these data and that the results should be presented to the next session.

5.f. *BILLFISH (INCLUDING SWORDFISH)*

5.f.1. An analysis of catch and effort data (SCRS/75/32) for blue marlin and white marlin in the Atlantic longline fishery has shown declines in hook-rate to levels substantially below those of earlier years. A simple production model was fitted to blue marlin data. However, the fit was poor and does not appear to explain fully the changes in either hook-rate or catch. It was suggested that this might be due to differences in the areas fished, to differences between sexes, to treating the whole Atlantic as a single stock, or to changes in catchability in recent years which could have resulted in too high estimates of effective effort. Male and female blue marlin differ greatly in maximum size and probably also in other population parameters such as mortality rate.

5.f.2. Information was given on the sizes of billfish caught in the Japanese fishery (SCRS/75/28) and the U. S. sports fishery (SCRS/75/41), and on the results of tagging (SCRS/75/99). Returns of tagged billfish had been rather low. Though no correction had been made for tagging mortality, tag shedding and incomplete returns, it was noted that mortality in the hours immediately following tagging was low.

5.f.3. Information was also given on the Spanish fishery for swordfish (SCRS/75/21). Catches tend to increase since 1963, especially in Galicia. It was hoped that further studies on this fishery would be given to the Committee. It was noted that during the period of the important Canadian swordfish fishery much data had been collected, but these had not yet been fully analyzed. It was hoped that these data, too, could be analyzed and reported to the Committee.

5.g. *SMALL TUNA SPECIES*

5.g.1. It was noted in the 1974 Report of the Sub-Committee on Statistics that some of the minor species, in particular blackfin tuna and litte tuna, were at least

locally important, but little attention had been paid to these species in collecting statistics, sampling or scientific studies. More detailed data are given in the 1974 Statistical Bulletin regarding these species. A total catch of some 40,000 tons of these species, other than those discussed in preceding sections, was reported for 1974, though this is probably an under-estimate of the actual landings. In addition, significant quantities of smaller species of tunas are rejected by vessels fishing for larger species of tuna. The Committee *recommended* that studies should be made of how statistics on these species could be best collected and reported. The results of these studies should be reported to the next SCRS session.

5.g.2. The above-mentioned problem is common to all oceans. A Working Group on Small Tunas has been set up by FAO's Expert Panel for the Facilitation of Tuna Research. The members of this Group are expected to meet in the NMFS Laboratory in Honolulu in December, 1975. At this meeting, it is hoped to prepare, for each species, a review of the biology, the present fisheries, the state of the resource and of the opportunities for increasing catches. The report of the meeting would be sent to ICCAT and could provide a useful basis for a more substantive discussion of these species at the 1976 SCRS meeting.

Item 6. **Report of the Sub-Committee on Statistics**

6.1. The Chairman emphasized the central importance of statistics and commented on the excellent work of the Convener, and the general progress made in this respect. The Report of the Working Group on Sampling and Statistics (Addendum II to the Sub-Committee Report) was presented by the Convener of the Sub-Committee, Mr. A. Fonteneau, who reiterated the remarks of Dr. Gulland (FAO), that the right to fish implies the duty to conserve resources and provide adequate and timely statistics.

6.2. The SCRS reviewed and approved the Report of the Sub-Committee on Statistics (Appendix IV) and concurred with its recommendations.

Item 7. **Review of progress made in statistics by the national offices and the Secretariat**

7.1. The Convener asked the Delegate from Ghana for a summary of his work to be incorporated in the Sub-Committee's Report.

The Ghanaian Delegate was commended on the speed of his national reporting, and it was noted that Ghana provides statistics on almost all of the 36,407 MT (mostly skipjack) transshipped in Ghana. The Committee requested fishing and transshipping countries to cooperate in providing Task II statistics to the Ghanaian sampling team.

7.2. The Chairman of the SCRS noted that a number of recommendations in

last year's SCRS Report were not acted upon and suggested that they be carried over in this year's Report, namely:

«9.6.c. Sampling priority chart. — Initiated, but much to be done.

9.6.d. Minimum level of sampling. — Not done.

9.6.f. Fish handling. — Completed for many ports.

9.6.g. National sampling plans. — Partially complete.

9.6.i. ICNAF experience. — Information has been obtained from ICNAF, but not compiled.

9.6.j. Landings at foreign ports. — Partially achieved.»

The Convener concurred and suggested that many of these recommendations can be delegated to the Secretariat.

Item 8. **Review of SCRS research programs and consideration of future plans**

8.a. *Improvement plan for catch-effort statistics.* See Appendix IV.

8.b. *Improvement plan for biological samplings.* See Appendix IV.

8.c. *Possible tagging for young bluefin tuna*

8.c.1. The importance of bluefin tagging in the East Atlantic with respect to the stock separation problem has been stressed in the past. It was emphasized again by the U. S. Delegate who offered help and recommended coordination of tagging programs in the East and West Atlantic. The French Delegate shared the concern at the lack of a program in the Bay of Biscay. He noted that French fishermen would cooperate, since they were becoming aware of the implications of foreign fishing in the Bay. However, he noted that financial difficulties delayed the implementation of research vessel operations in 1974 and 1975 for all species, and only five fish were tagged in this period.

8.c.2. The Spanish Delegate concurred with the French point of view and noted that the work could only be carried out from local fishing vessels. The U. S. Delegate asked if Morocco had any plans for tagging of small bluefin. The reply was that possibly some vessel days could be obtained in August-September, 1976. Noting the financial difficulties of such a program for some countries, the Chairman requested a small group to discuss the possible implementation of such a program. The Japanese Delegate offered his assistance in facilitating tag returns from the Japanese fleet. The Committee accepted the report of the Working Group mentioned above (Appendix IX). It was noted that there might be some difficulties on the part of some countries in directly financing this study and that ICCAT would look for a solution.

8.d. *Training of national scientists*

8.d.1. The Report of the Working Group on Training of Scientific Personnel was read by its Chairman, Dr. E. A. Carrillo. Two training courses are proposed for 1976: 1) Sampling and Statistics; and 2) Evaluation of Resources. Mr. E. Cadima was nominated to develop plans for the courses. The details of the report are in Appendix VIII. The SCRS reviewed the report and concurred with its recommendations. The Committee believed that it would be proper for the Commission to bear some of the costs involved in these courses, which might include: preparation of documentation, possible interpretation, travel, per diem and probable honoraria for some of the lecturers, as well as possible contribution to the travel and per diem of some participants. The Committee, therefore, *recommended* that the Commission should make appropriate provision for this in its 1976 budget.

8.e. *Seminar/Workshop*

8.e.1. The Chairman noted the successful and productive workshop held in Nantes, France, in 1974. The SCRS, however, noted that considerable emphasis should be placed on training of national personnel and that another workshop was not envisaged for 1976. The U. S. Delegate, Dr. W. W. Fox, referred to the Lake Arrowhead Conference held each year, and as Chairman, promised to send invitations to all ICCAT scientists and national offices. The main conference topic is to be the definition of fishing effort in yellowfin tuna fisheries. The Japanese Delegate expressed his interest and hoped that IATTC and Indian Ocean scientists would take part. The Chairman of the SCRS offered the encouragement of ICCAT and urged national scientists to attend. Dr. Gulland agreed to pass on Dr. Fox's invitation to the appropriate scientists and institutions in member countries of the Indo-Pacific Fisheries Council.

8.f. *Intensified Atlantic-wide skipjack research program*

8.f.1. The Rapporteur of the Working Group on Skipjack Tuna presented the Group's Report (Appendix V) and noted that the SCRS could not offer any useful precise advice to the Commission on the species at the time, even though the catch has been increasing and is now in the region of the low point of the range of potential catch estimates. He underlined the urgency of improved data and coordinated studies on the species. A list of eleven major research projects was developed in two phases and assigned to national scientists:

Phase 1: Rectify deficiencies in current basic data acquisition and compilation and review previous effort by the end of June, 1976.

Phase 2: At the 1976 SCRS meeting, work under Phase 1 will be reviewed and a Phase 2 plan developed.

8.g. *Atlantic-wide statistical summary*

8.g.1. The Convener of the Sub-Committee on Statistics discussed the work of the Working Group on the Proposed Statistical Sampling Study. It is outlined in detail in Appendix VI. The SCRS approved the report and concurred with its recommendations.

Item 9. *Cooperation with other organizations*

9.1. The Assistant Executive Secretary noted that the Coordinating Working Party on Atlantic Fishery Statistics (CWP) would meet in 1976 or 1977. In accordance with the CWP rule, ICCAT should be represented by the Convener of the Sub-Committee on Statistics, the Assistant Executive Secretary and two member countries. The Convener suggested that the nomination of the two member countries might not be necessary and that it would be more important that the Secretariat attend the meeting. Dr. Gulland (FAO) suggested that the CWP would welcome a small delegation of one or two people.

9.2. The report of the CIESM Working Group on Marine Vertebrates and Cephalopods was presented (Appendix VII).

Item 10. **Presentation of scientific papers and publication policy**

10.a. *Publication policy*

10.a.1. Some new proposals concerning the ICCAT publication policy were presented in SCRS/75/12 (COM/75/22). In accordance with the decisions made at the 1971 and 1972 SCRS meetings, ICCAT has been publishing two series of working documents: The Collective Volume of Scientific Papers and the Data Record. Both these publications have not been citable to other formal publications. However, the Committee *agreed* that it was desirable that the general scientific community should be made aware of the results of the work.

10.a.2. It was proposed that the Collective Volume should be citable in bibliographies and information systems, and the SCRS concurred with this proposal. It was *agreed* that the titles and abstracts of these papers and the existence of meeting documents could be included in the Aquatic Sciences and Fisheries Information System of FAO. The Chairman requested that the Secretariat contact the authors, should any person request citation of a paper appearing in earlier volumes.

10.a.3. Dr. C. Maurin of ISTPM (France) has offered to publish the Collective Volume of the Nantes Workshop as a publication of ISTPM. The SCRS accepted this kind offer with appreciation. The Chairman *agreed* to nominate an editor for the Volume.

10.b. *Presentation of scientific papers at the meeting*

10.b.1. The report of the Ad Hoc Committee on Admission of Documents was discussed (Appendix III). On the one hand, indulgence in accepting late submission of documents allows inclusion of the most current data in papers. On the other hand, late presentation compounds the problems of the Secretariat and the difficulties of organizing the work of the SCRS. The Chairman suggested that the SCRS accept the recomendations of the Group and adhere to them strictly in 1976. The SCRS accepted the recommendations of the Committee on Admission of Documents.

Item 11. **Other matters**

11.a. *Organization of the meeting*

11.a.1. The Chairman discussed the organization of the SCRS meeting. He recalled that earlier SCRS meetings were mostly organized by area of activity. Later meetings were organized along species lines, but there were relatively few species. However, the large number of participants, the more than 100 papers presented this year, and the intense debate on several species, reflected the fact that the SCRS was faced with a particularly complex task. It has been proposed that to simplify the meeting, and assist the Secretariat, a number of ad hoc working groups be set up at each meeting to consider different groups of species. A rapporteur should be assigned to each group to synthesize the discussion before its presentation to the plenary SCRS sessions.

11.a.2. Dr. Gulland noted that the report on the state of stocks must reflect not only the relatively short discussion, but also the contents of the papers — too great a job for one person. He suggested that the examination of papers on individual species by separate working groups be structured as follows:

1) Brief presentation to the SCRS Plenary Session of the main papers by their authors, followed by a brief summary by the rapporteur of the conclusions to be included in the SCRS Report. At the same time, the rapporteur should outline the main areas of disagreement which require detailed attention by a smaller group.

2) Detailed discussions and the consideration of the preliminary report by the working group for that species, and presentation of a clear statement to the plenary SCRS meeting that can be considered and approved in one session. The questions of technical feasibility of translation and the optimal number of working groups were considered.

With small working groups, simultaneous translations may not be completely necessary. Canada *suggested* that this year a bluefin tuna-billfish working group could have met separately and functioned efficiently with a bilingual French scientist acting as Chairman/Rapporteur, allowing the main meeting on tropical tunas and albacore to work with simultaneous translation.

11.a.3. The desirability of flexibility in the number and scope of the working groups was stressed in view of annual changes in emphasis. It was *suggested* that the Chairman of SCRS appoint rapporteurs for each species or group of species two months before the meeting. These could function as conveners of working groups if the number of papers presented on each species, or the nature of the problems, warranted separate consideration. The Assistant Executive Secretary welcomed this proposal as a major saving in the work load as long as it could be accomplished with one team of translators, but requested advance notice from the Chairman on the number of groups, in order to book the meeting rooms. The Japanese Delegate hoped that the number of groups would be limited so that full participation is warranted even for the delegations which consist of a limited number of scientists.

11.b. *Timing of SCRS meeting*

11.b.1. The Delegate of Ivory Coast noted that the annual meeting has been held at an inconvenient time, since we do not have all the statistics for the previous year by November, especially for the longline fleet, nor are all preliminary statistics available for the current year. If the meeting was in February, scientists could work on the preliminary data before the SCRS meeting. The Spanish Delegate noted that there is now greater flexibility in preparing data within two months and proposed the meeting to be held in March or April. The U. S. and Japanese Delegates concurred. However, the provision of the six-month implementation clause between proposing management measures and their adoption, means regulations proposed at a spring meeting would not go into effect the same year. Dr. Gulland enquired whether the Commission meetings should also be retimed.

11.b.2. The Chairman *requested* that the Secretariat study and prepare a paper for the next year's Committee meeting, on the question of retiming the meeting, its technical and management implications, and effects on the Commission deliberations.

11.b.3. The Executive Secretary noted that this matter was raised before and the Commission was unwilling to change the timing of the meeting because of difficulties to the delegates. He further pointed out that to hold a meeting in the spring will result in increased costs, as well as difficulties in finding adequate facilities for the meeting.

11.b.4. The Delegate from Japan requested that meetings on the first Saturday of SCRS should be, at most, a half day only. This proposal was agreed upon.

Item 12. **Recommendations**

12.1. The attention of *Panel 1* was drawn to sections 5.a. and 5.b. of this report, which concern the status of yellowfin and skipjack stocks, respectively. For *Panels 2 and 3* the status of albacore and bluefin is reviewed in sections 5.c. and 5.d. *Panel 4* should refer to sections 5.e.f.g.

12.2. Numerous recommendations to the Commission are presented in the Report, but special attention is drawn to Appendix X.

Item 13. **Election of Chairman**

13.1. The Delegate from Ivory Coast proposed Dr. B. J. Rothschild (U. S. A.) for a second term as Chairman and it was seconded by Korea. This motion was accepted unanimously. The Chairman thanked the SCRS scientists for their co-operation over the last two years, and noted the improvement in the level of advice to commissioners, but cautioned that problems will increase in scope and difficulty over the next two years, as fishing intensities increase.

He proposed that Mr. A. Fontaneau (Ivory Coast) continue as Convener of the Sub-Committee on Statistics and noted his excellent work in this connection. Mr. Fonteneau accepted and promised his continued attention to this work.

Item 14. **Date and place of next meeting**

14.1. The next meeting should be held at the same place and about one week before the next Council meeting.

Item 15. **Adoption of Report**

15.1. The Report was adopted by the SCRS.

Item 16. **Adjournment**

16.1. The meeting was adjourned.

Table 1. Yellowfin tuna catch (thousand metric tons) in the Atlantic Ocean, 1964-75

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL	68.7	69.5	64.7	58.4	82.7	92.9	76.2	81.3	97.5	93.6	107.3	97.3
Subtotals [2]												
Longline	38.7	39.8	26.4	20.9	27.5	30.2	30.3	30.6	31.4	31.9	31.6	17.3
Japan	35.1	36.6	22.1	12.8	13.9	9.8	6.7	11.0	7.5	4.2	3.9	4.5
Korea+Panama	...	...	—	—	2.3	6.0	13.3	11.5	13.0	18.4	20.5	11.0
China (Taiwan)	0.4	0.2	1.1	2.7	7.9	10.8	7.1	4.4	4.7	2.7	2.3	1.5
Surface - East Atlantic	28.2	29.0	37.8	36.7	54.4	62.2	45.1	50.4	61.3	59.8	74.1	80.0 [3]
—Purse Seine												
FIS	4.3	5.4	7.5	8.9	12.6	14.7	18.0	18.0	24.6	25.0	32.8	45.0 [3]
Japan	0.5	1.1	4.8	5.2	7.5	5.8	1.3	2.2	2.8	1.5	0.9	1.0 [3,4]
Spain	1.0	1.0	3.0	3.0	3.6	5.3	6.4	15.2	8.0	12.8	14.4	17.0 [3]
U.S.A.	—	—	—	1.1	5.9	18.8	9.0	3.8	12.0	3.5	5.6	14.0 [3]
—Baitboat												
FIS	13.2	14.7	15.9	14.9	19.9	14.2	8.1	7.8	8.4	5.6	6.4	
Japan	2.1	1.3	0.5	1.3	2.2	0.9	1.0	2.5	4.4	8.1	8.3	
Angola	4.5	2.8	2.4	1.6	1.6	1.0	0.4	0.5	0.6	0.6 [1]	0.6 [1]	
Spain	2.6	2.7	3.1	...	0.4	0.6	0.7	0.4		0.8	2.0	
Surface - West Atlantic									2.9	1.8	1.5	

[1] Estimates.
[2] Breakdown consists of major fisheries only.
[3] BB included.
[4] Ghana, Korea, Panama flags included.

Table 2. Carrying Capacity of the Major Intertropical Fleets and Estimated Effort

	1967	1968	1969	1970	1971	1972	1973	1974	1975
Estimate effective effort (000 standard days) . .	3.85	4.87	7.55	7.48	9.55	8.10	10.19	12.82	(14.5)
Carrying Capacity									
BB — FIS	3.7	3.9	3.8	3.4	2.9	2.9	2.2	1.9	1.5
BB — Tema-based . .	1.2	1.2	1.2	1.2	1.6	2.8	5.8	6.6	1.8
Total — BB	6.9	5.1	5.0	4.6	4.5	5.7	8.0	8.5	3.3
PS — FIS	1.5	1.6	4.9	5.7	7.3	9.7	11.8	14.5	16.5
PS — Spain	0.6	1.0	2.1	2.5	4.3	6.9	5.9	10.0	14.5
PS — U.S.A. *	0.3	0.6	4.4	5.4	3.8	7.9	2.9	5.5	8.0
Total — PS	2.6	3.2	11.4	13.6	15.4	24.5	20.6	30.0	39.0
Total BB + PS	7.3	8.3	16.4	18.2	19.9	30.2	28.6	38.5	42.3

* U. S. A. - estimate weighted by the number of months on the spot.

Table 3. Skipjack catch (thousand metric tons) in the Atlantic Ocean, 1964-75

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
TOTAL	18.7	33.0	40.2	37.9	63.9	43.5	64.8	87.2	76.5	79.3	113.5	55.0
Subtotals [1]												
Surface - East Atlantic	17.6	31.5	38.5	35.3	61.5	41.9	61.6	84.9	75.5	76.0	111.9	55.0
—Purse Seine												
FIS	0.4	0.7	1.9	1.6	5.1	3.8	9.2	13.8	16.7	8.7	24.8	16.0 [2]
Japan	0.0	1.8	1.4	2.2	6.3	0.7	3.5	6.2	3.4	1.5	0.9	2.0 [2]
Spain	0.4	1.0	2.3	2.9	8.9	4.3	6.9	15.0	18.6	17.8	31.1	17.0
U.S.A.	3.9	0.1	0.0	0.5	3.3	4.8	11.8	16.2	12.3	21.2	20.0	14.0
—Baitboat												
FIS	1.8	3.5	4.5	3.9	7.9	4.6	4.8	5.7	4.8	3.7	4.7	
Japan	3.1	6.3	4.4	3.7	7.3	4.9	7.5	11.7	10.1	13.0	18.7	
Spain	4.1	8.5	16.2	10.7	10.2	14.0	15.3	13.0	8.2	4.3	5.4	
Surface - West Atlantic									0.9	1.0	1.3	

[1] Breakdown consists of major fisheries only.
[2] BB included.

Table 4. Bluefin tuna catch (thousand metric tons) in the Atlantic Ocean 1964-74

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
TOTAL	38.5	35.0	24.9	32.3	22.2	21.1	18.3	23.9	13.6	12.5	16.2
Atlantic [2]	32.7	29.3	19.2	22.4	14.4	11.8	12.1	17.1	8.3	9.0	9.3
Mediterranean	5.8	5.7	5.7	9.9	7.8	9.3	6.2	6.8	5.3	3.5	6.9
Subtotals [5]											
Longline	12.8	9.8	3.1	3.3	1.9	0.7	0.4	5.1	0.8	1.7	5.6
Cuba	... [1]	0.1	0.5	2.4	1.4	0.5	0.2	—			
Japan	12.6	9.6	2.5	0.8	0.3	0.1	0.1	1.5	0.7	1.4	5.4
Baitboat											
France	2.8	1.9	2.8	2.2	1.9	1.8	1.7	2.6	1.9	1.0	0.9
UNCL											
Spain [6]	3.0 (0.5)	5.6 (0.6)	7.3 (0.6)	7.4 (0.4)	7.6 (0.4)	5.3 (0.8)	3.9 (1.3)	5.9 (1.5)	3.0 (1.2)	4.2 (1.5)	1.9 (1.0)
Purse Seine	7.0	6.2	2.2	4.2	1.7	2.1	4.9	5.0	2.5	1.9	1.8
Canada	0.6	0.5	...	...		...	1.2	0.9	0.3	0.6	0.1
Norway	1.5	2.5	1.0	1.9	0.9	0.9	0.4	0.6	0.1	0.1	0.8
U.S.A.	4.9	3.2	1.2	2.3	0.8	1.2	3.3	3.2	2.1	1.2	0.9
Hand gear [4]											
Canada	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.4
U.S.A.	...	...	...	...	...	...	...	...	...	...	0.7
Traps	5.2	5.4	3.4	4.6	2.0	2.3	1.9	0.7	0.2	0.5	0.3

[1] Included in yellowfin.
[2] Italian catch reported in Atlantic excluded due to double counting.
[3] Some minor countries' data still missing (Algeria, Greece, Turkey).
[4] Consists of rod and reel, harpoon, and hand line.
[5] Breakdown consists of major fisheries only.
[6] BB catch in Bay of Biscay in ( ).

Table 5. Catches of bluefin tuna, in tons per million recruits at 1 year old, under different fishing mortalities on small and medium fish

(M = 0.2, F on large fish = 0.2)

(a) F on medium fish = 0

F on small fish	0	0.1	0.2	0.4	0.6
Catch Small	—	4.062	6.086	7.195	6.903
Medium	—	—	—	—	—
Large	16.796	10.187	6.179	2.273	836
Total	16.796	14.249	12.265	9.468	7.739

(b) F on medium fish = 0.2

F on small fish	0	0.1	0.2	0.4	0.6
Catch Small	—	4.062	6.086	7.195	6.903
Medium	14.763	8.954	5.431	1.998	735
Large	6.179	3.748	2.273	836	308
Total	20.942	16.764	13.790	10.029	7.946

(c) F on medium fish = 0.4

F on small fish	0	0.1	0.2	0.4	0.6
Catch Small	—	4.062	6.086	7.195	6.903
Medium	19.956	12.103	7.341	2.700	993
Large	2.273	1.378	836	308	113
Total	22.229	17.543	14.263	10.203	8.009

(d) F on medium fish = 0.6

F on small fish	0	0.1	0.2	0.4	0.6
Catch Small	—	4.062	6.086	7.195	6.903
Medium	21.680	13.149	7.976	2.934	1.079
Large	836	507	308	113	42
Total	22.516	17.718	14.370	10.242	8.024

Table 6. Albacore Catch (Thousand metric tons) in the Atlantic Ocean, 1964-74

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
TOTAL	87.7	87.8	75.4	76.1	71.9	78.7	73.4	81.1	82.9	77.3	73.0
Subtotals [3]											
North Atlantic	61.7	57.8	48.8	56.3	44.0	44.0	43.5	49.3	41.0	52.1	52.0
Surface											
—Baitboat											
French [1]	17.3	13.8	3.7	4.2	2.4	1.8	2.0	1.6	1.1	1.0	0.5
Spain											14.9
—Trolling											
French [1]			10.6	12.4	11.9	8.2	4.6	8.2	8.7	5.1	8.5
Spain											13.1
—Uncl.											
Spain	28.5	29.6	26.4	34.1	24.6	25.4	26.9	27.9	24.2	22.5	
Longline [2]											
Japan	15.8	14.3	5.9	4.8	3.3	4.7	5.9	6.5	1.3	1.0	1.0
Korea	0.0	0.0	2.0	0.6	0.1	1.6	1.3	1.5	0.1	8.5	4.1
China (Taiwan)	0.0	0.0	0.1	0.1	1.1	1.5	2.2	2.7	4.1	10.0	8.2
South Atlantic	26.0	30.0	26.6	19.8	27.9	34.5	29.8	31.8	41.7	25.2	21.0
Longline [2]											
Japan	23.7	28.3	21.0	7.7	11.9	6.3	5.9	3.6	2.6	1.2	1.6
Korea	0.2	0.5	4.7	9.7	7.2	14.4	8.7	10.0	13.5	—	1.0
China (Taiwan)	0.1	0.1	0.1	1.7	7.6	13.4	14.7	17.7	25.3	21.7	18.0
Mediterranean	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.2	0.0	—

[1] Please note 1964-65 gear classified as Surf-UNCL but here listed under «BB».
[2] 1973-74 breakdown — calculated by Secretariat estimated on landings at ports.
[3] Breakdown consists of major fisheries only.

Table 7. Bigeye Tuna Catch (Thousand metric tons) in the Atlantic Ocean, 1964-74

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
TOTAL	20.5	29.1	19.0	11.9	18.1	24.2	28.2	46.2	36.1	41.8	53.6
Subtotals [1]											
Longline	17.5	29.0	19.0	11.4	17.1	20.9	25.5	38.0	32.2	34.6	38.4
Japan	17.3	28.5	17.6	8.5	10.3	10.3	9.0	20.8	18.5	20.2	22.5
Korea	...	...	0.3	0.3	0.3	1.9	4.7	8.5	6.6	5.2	7.4
China (Taiwan)	0.0	—	0.6	2.2	5.3	7.5	7.6	5.5	5.0	3.8	3.1
Surface	3.0	0.1	0.0	0.5	1.0	2.2	1.5	8.2	3.9	7.2	15.2

[1] Breakdown consists of major fisheries only.

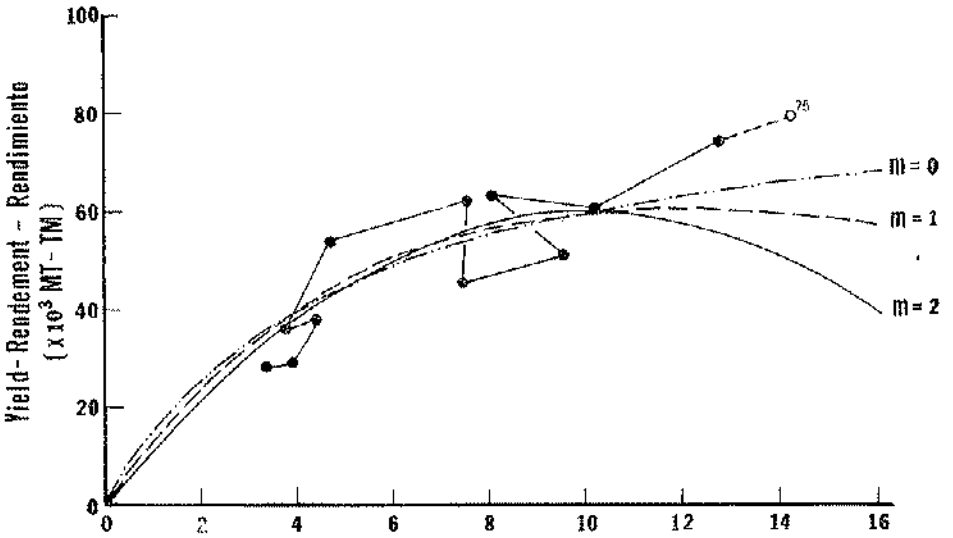
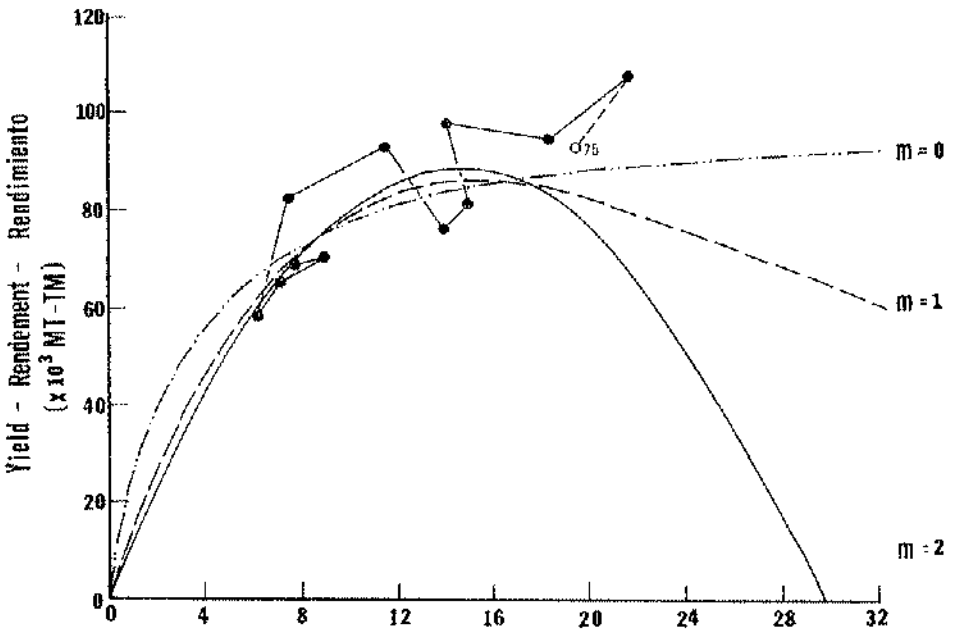


FIG. 1



F = Standard day's fishing — Journées de pêche standard — Dias standard de pesca
(× 10³)

FIG. 2

FIG. 1. Sustainable average yield curves and observed data, 1964-1974, +1975 for the eastern Atlantic yellowfin tuna surface fishery.

FIG. 2. Sustainable average yield curves and observed data, 1964-1974, +1975 for the total Atlantic yellowfin tuna fishery.

Appendix I to Annex 8

AGENDA FOR THE STANDING COMMITTEE ON RESEARCH AND STATISTICS (SCRS)

1. Opening of the meeting
2. Adoption of the Agenda and arrangements for the meeting
3. Admission of observers
4. Review of national fisheries and research programs [1]
5. Review of the following stocks:
   - *a*) Yellowfin
   - *b*) Skipjack
   - *c*) Bluefin
   - *d*) Albacore
   - *e*) Bigeye
   - *f*) Billfish (including swordfish)
   - *g*) Smaller species of tunas
6. Report of the Sub-Committee on Statistics
7. Review of the progress made in statistics by the national offices and the Secretariat
8. Review of SCRS research programs and consideration of future plans
   - *a*) Improvement plan for catch-effort statistics
   - *b*) Improvement plan for biological samplings
   - *c*) Possible tagging for young bluefin tuna
   - *d*) Training of national scientists
   - *e*) Seminar/Workshop
   - *f*) Intensified Atlantic-wide skipjack research program
   - *g*) Atlantic-wide statistical summary
9. Cooperation with other organizations
10. Presentation of scientific papers and publication policy
11. Other matters
12. Recommendations [2]
13. Election of Chairman
14. Date and place of next meeting
15. Adoption of Report
16. Adjournment

[1] The submission of written summaries for inclusion in the SCRS Report would be adequate.
[2] The Commission, Panels 1, 2, 3 and 4 are meeting this year.

Appendix II to Annex 8

LIST OF DOCUMENTS

SCRS/75/1 Tentative agenda of the SCRS / Ordre du jour provisoire du SCRS / Orden del día provisional del SCRS.

2 Tentative agenda of the Sub-Committee on Statistics / Ordre du jour provisoire du Sous-Comité des Statistiques / Orden del día provisional del Subcomité de Estadísticas.

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4 Collective Volume of Scientific Papers Vol. IV / Recueil de Documents Scientifiques Vol IV / Colección de Documentos Científicos Vol. IV.

5 Data Record Vol. 5 / Recueil de Données Vol. 5 / Colección de Datos Vol. 5.

6 Data Record Vol. 6 / Recueil de Données Vol. 6 / Colección de Datos Vol. 6.

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11 Summary of statistics collected at ports by the Secretariat (preliminary).

12 Proposals concerning the publication policy for the «Collective Volume of Scientific Papers» / Propositions concernant la procédure de publication du «Recueil de Documents Scientifiques» / Propuestas concernientes a las normas de publicación para la «Colección de Documentos Científicos» (COM/75/22).

13 Canadian national report 1974-1975 / Rapport national du Canada 1974-1975 / Informe nacional del Canada 1974-1975. — J. F. Caddy, C. D. Burnett.

14 Tuna fisheries in Senegal in 1974 / La pêche thonière au Sénégal en 1974 / Pesquerías de túnidos en Senegal en 1974.

15 Country report, tuna fisheries 1973-1974, Ghana / Rapport national, pêcheries de thonidés en 1973-1974, Ghana / Informe nacional, pesquerías de túnidos 1973-1974, Ghana.

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26 Catch statistics of Japanese Atlantic tuna purse seine fishery, 1974 and 1975. — M. Honma.

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28 Length composition of billfish caught by Japanese Atlantic longline fishery, 1956-1971. — S. Kikawa.

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90 A preliminary study of the gonadal development and fecundity of the western Atlantic bluefin tuna. — R. E. Baglin.

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93 A review of the status of stocks of Atlantic bluefin tuna, 1975. — G. L. Beardsley.

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98 Results of United States cooperative tagging of Atlantic bluefin tuna, October 1974 through October 1975. — F. J. Mather, J. M. Mason.

99 Results of United States tagging of Atlantic billfishes, January 1, 1972 - September 30, 1975. — F. J. Mather, J. M. Mason, C. C. Buchanan.

100 Introducción del método de pesca con cebo vivo en el sudeste y sur del Brasil. — L. Zavala C.

101 Structure de la population d'albacores de l'Atlantique tropical oriental. — C. Champagnat.

102 1975 SCRS Report / Rapport de 1975 du SCRS / Informe del SCRS de 1975.

Appendix III to Annex 8

REPORT OF THE AD HOC GROUP ON ADMISSION OF SCRS DOCUMENTS

The Group, after studying the list of documents presented to the SCRS meeting, noted that a high percentage of these documents (44 %) were received after the deadline. Some were received on the day before the meeting and some were received on the same morning of the opening of the meeting or even during the meeting. Besides, various documents presented late were not accompanied by the established number of copies (60).

The Group then *decided* that for this year all the documents will be admitted, except those which arrived after the opening day of the meeting. These will be distributed, but will not be included in the List of Documents nor enter into the discussions.

The Group *recommended* that the Committee —because of the problems which the lack of punctuality present to the Secretariat regarding the reproduction and distribution of these documents, as well as the problems for the Committee itself in not having sufficient time to study them— will follow the criteria established in 1974. In case any documents are not received before the deadline, the following should be strictly observed:

1) The titles of the documents to be presented to the SCRS meeting should be received by the Secretariat, with an accompanying summary, one month before the date of the meeting.

2) Those delayed documents must be received by the Secretariat at least 48 hours before the opening of the meeting, and should be accompanied by a minimum of 60 copies of the paper.

3) Any paper which does not meet the above-mentioned criteria will not be admitted for presentation to the SCRS.

Appendix IV to Annex 8

REPORT OF THE SUB-COMMITTEE ON STATISTICS

1. Opening of the meeting

The meeting was opened by the Convener, Mr. A. Fonteneau. The Convener noted that according to Dr. Gulland, «... the right to fish implies the duty to conserve the resource. We need to point out that conservation is hardly possible without an appropriate data base (ICCAT Biennial Report, Part I, 1974)». Consequently,

the concern of the Sub-Committee with the problems of up-grading the statistics of Atlantic tunas and tuna-like fishes is an important part of the responsibilities of the SCRS.

2. Adoption of Agenda, nomination of Rapporteur and arragements for the meeting

The agenda was adopted without modification (Addendum I). Dr. G. Sakagawa (U.S.A.) was nominated Rapporteur for the meeting of the Sub-Committee.

3. Review of general progress made by national offices

Article IX (2) of the Convention states that:

«The Contracting Parties agree: to furnish, on the request of the Commission, any available statistical, biological and other scientific information the Commission may need for the purposes of this Convention; when their official agencies are unable to obtain and furnish the said information, to allow the Commission, through the Contracting Parties, to obtain it on a voluntary basis direct from companies and individual fishermen.»

Efforts of the national offices in furnishing statistics and biological information to the Commission was reviewed by the delegates.

Brazil: Three Brazilian longline vessels currently fish for tunas and billfishes in the western Atlantic. Tasks I and II, and biological data were collected and submitted to the Secretariat. Catch statistics are in terms of gilled-and-gutted weight, but research has begun on obtaining conversion factors to convert the weights to live weight. Progress of this research is contained in SCRS/75/56.

Cuba: Task I and biological data have been collected and submitted to ICCAT. Procedures for collecting Task II data have been developed and initiated in 1974. The data will be submitted to ICCAT.

Canada: An improved system of collecting Task II data from the Canadian large-bluefin tuna fishery was initiated in 1975 with licensing of all Canadian fishermen that participate in the fishery. The fishermen are required to keep and submit logbooks on the catch and effort. The collection of biological data from the bluefin tuna catch was also initiated, but because sampling is conducted at the processing plants, the identity of the exact area and time of capture of the samples cannot yet be determined.

France: Task I and II data and biological data for most species were collected and submitted to the Secretariat. Submission of the 1974 data, however, was somewhat later than usual. This problem has been reviewed and steps are being taken to correct the tardiness.

Ghana: Task I and biological data were collected from both the Ghanaian fleet and foreign fleets that transship their catch from Ghana. The Sub-Committee congratulated the Ghanaian scientists for their work in sampling the large foreign transshipped catch that is not sampled by other countries.

Ivory Coast: Task I and II data and biological data were collected from the tropical tuna fleet in 1974. Compilation of the data, however, was delayed, and the data were not submitted to the Secretariat on time. Corrective action has been taken and this delay should not occur with the 1975 data.

Japan: Considerable progress was made in 1974 to adequately sample the longline catch for biological information and to process Task II data from the longline fleet on a more timely basis. Currently, the longline catch is being adequately sampled for length-frequency distribution and the processing time for Task II data has been reduced by 4 or 5 months. Also historic data on the sizes of yellowfin tuna caught by the Japanese longline fleet were processed and submitted to ICCAT. For the Tema-based baitboat fleet, no progress has been made to sample the catch for biological data or to compile available Task II data. However, plans are being made to compile the Task II data for submission to ICCAT in the near future.

Korea: Task I and II data and biological data were collected in 1974 from the longline fleet and submitted to ICCAT. Logbooks from about 60 % of the fleet were collected for the Task II data. However, the data currently contains possible errors which are being corrected.

Morocco: Task II data were collected from the Moroccan bluefin tuna fishery and some progress has been made with regard to deficiencies in biological data from this fishery. It was moreover suggested that in order to simplify things, the data on the Moroccan purse seiner that participates in the eastern Atlantic tuna fishery should be collected and included with the FIS fleet statistics (at least as far as the Task II and biological data are concerned).

Portugal: Detailed Task I statistics were collected in 1974 and submitted to ICCAT. Considerable progress has been made in separating the catch by species and plans have been formulated to collect biological and Task II data by 1976.

Senegal: Data for the Senegalese tropical tuna fleet were collected in 1974 and submitted with FIS data to the Secretariat.

Spain: Task I data were collected from virtually the entire Spanish tuna fleets. Important progress was made in 1974 in collecting Task II and biological data from the bluefin tuna and albacore fisheries and some progress was also made in collecting statistics from the Canary Islands fisheries.

No progress has been made to obtain biological samples from the tropical tuna fleet, because the vessels land their catches in foreign ports. The Spanish national office will make every effort to solve this important problem.

U.S.A.: Programs were initiated in 1974 to sample the foreign landings of Atlantic-caught tunas in Puerto Rico (SCRS/75/64), to determine the amount of bigeye tuna in the yellowfin tuna catch, and to collect statistics from the sport fishery for bluefin tuna. Plans to obtain statistics on a more real-time basis and in more detail, such as the amount of fishing effort specifically directed to skipjack or yellowfin by the tropical tuna fleet, have been made and will be initiated in 1975.

Non-Members

Taiwan: Task I and II data were collected from the longline fleet in 1974, and submitted to ICCAT. Biological data were also collected from the longline fleet with the assistance of the Secretariat.

Venezuela: Data from the Venezuelan and foreign baitboat fleet based at Venezuelan ports were submitted to ICCAT for the first time (SCRS/75/67). The data are particularly valuable because they are from a fleet that operates in the western Atlantic.

4. Review of the Report of the Working Group on Statistics

4.1. Two working groups, the General Working Group on Sampling and Statistics and the Ad Hoc Committee on Bluefin Tuna Sampling and Statistics, were organized to review and evaluate progress made to rectify deficiencies in the statistics from the Atlantic tuna fisheries. Deficiencies were identified by the 1974 Working Group on Sampling and Statistics (ICCAT Biennial Report, Part I - 1974).

4.2. The General Working Group on Sampling and Statistics presented its report (Addendum II). In essence, the Working Group reported that considerable progress was made in 1974 to obtain complete and timely statistics from the major fishing fleets. Data from certain fleets, however, particularly from the Tema-based baitboat fleet, the Spanish tropical tuna fleet, the Japanese longline fleet, and the French and Spanish Mediterranean bluefin tuna fleets, continue to be incomplete or untimely and there appears to be no early solution for these problems.

4.3. The Working Group also idntified several important new problems that require more attention in the coming years. They are: (1) the mixture of small bigeye tuna in the catch of yellowfin tuna, (2) the compilation of skipjack tuna data by more meaningful statistical areas, and (3) the convenience of the meeting date.

4.4. The Ad Hoc Committee on Bluefin Tuna Sampling and Statistics submitted a report (Addendum III) that evaluates the current available statistics on bluefin tuna. The Ad Hoc Committee reported that considerable improvement was made in the completeness and timeliness of the data. The Ad Hoc Committee also noted that (1) a concerted effort be made to collect otoliths and vertebrae from the various fisheries for a coordinated effort to determine an up-to-date age structure

of the catch, and (2) the Secretariat make every effort to obtain statistics from the apparently large Italian bluefin tuna fishery in the Mediterranean Sea.

5. *Review of the* 1974 *and* 1975 *ICCAT statistical programs*

5.1. The Secretariat reported on the achievements in collecting statistics from national offices, coordinating research effort (SCRS/75/8), and port sampling of biological and catch-effort data (SCRS/75/9; SCRS/75/10).

5.2. Substantial progress was made by the national offices in collecting and submitting to the Secretariat complete and timely Task I and biological data (Tables 1 and 3). Task II statistics, on the other hand, did not show any improvement in completeness or timeliness (Table 2), and the Secretariat warned that this problem must receive greater attention by the national offices.

5.3. The Secretariat instituted an automatic data processing system to aid in compiling data collected from the national offices and from ICCAT's port sampling program. The system has increased the Secretariat's capabilities of compiling, summarizing and disseminating data on a timely basis.

5.4. In 1974, the Secretariat was instructed by the SCRS to initiate a program of collecting Task II and biological data from fleets that unload in foreign ports and that are not sampled by the national offices. The Secretariat initiated a program in 1975 that concentrated on sampling the catch of the longline fleets. Five major ports (Las Palmas and Tenerife, Canary Islands; Abidjan, Ivory Coast; Cape Town, South Africa; and St. Maarten, Dutch Antilles), where most of the longline catch is landed directly by the catcher vessels, were selected for the program. Data from boats landing in Las Palmas and Tenerife were collected by a staff member of the Secretariat who was stationed in the Canary Islands. Vessels landing in the other ports were sampled by personnel hired under contract arrangements. Task II statistics were collected from more than 200 longliners, or 73 % of the total (Korean, Panamanian and Taiwanese) fleet, and more than 12,200 fish were measured for length during February-August, 1975. The sampling program is continuing and the effectiveness will be evaluated in 1976.

5.5. The Secretariat acknowledged the assistance and cooperation of government agencies and fishing firms that contributed to the success of the Secretariat's port sampling program.

5.6. The Secretariat was asked about the low sampling coverage at St. Maarten, as compared to coverage in the other ports, and whether other ports were being considered for sampling of fish caught in the western Atlantic. The Secretariat replied that the problem at St. Maarten was inherent in the manner in which the fish are unloaded (from catcher vessel directly to a freezer vessel), which made it difficult to sample the catch. However, the Secretariat expects to pursue some possible solutions to this problem.

5.7. With regard to sampling fish caught in the western Atlantic, the Secretariat replied that fish caught by longliner in the western Atlantic are landed and sampled in all ports that are currently included in the sampling program; whether the sampling port is in the western or eastern Atlantic, therefore, does not necessarily imply that samples from the respective ports are fish from the region. Nevertheless, the Secretariat is aware that changes in fishing conditions, species preference, and political and economic conditions all contribute to when and where the longline fleet operates and/or unloads, and the Secretariat will be monitoring the situation in order to properly and adequately sample the fleet and catch. The Secretariat also announced that a biostatistician was recently hired, as recommendad by the SCRS in 1974, and he will assist in evaluating the adequacy of the current port sampling program.

6. Current major problems in regard to quality of statistics

6.1. Deficiencies in current statistics from the national offices were identified in the reports of the working groups on statistics (Addenda II & III). They are (1) Task II statistics from the Tema-based baitboat fleet, (2) Task II and biological data from the Spanish tropical tuna fleet, (3) biological data from the Moroccan bluefin tuna fleet, (4) data from the Mediterranean bluefin tuna fleets, and (5) adequate conversion factors for converting longline catch of gilled-and-gutted weight to live weight.

6.2. *Tema-based baitboat fleet.* Task I statistics and biological sampling for the Tema-based baitboat fleet have been collected and submitted to the ICCAT Secretariat by Ghanaian scientists. Delegates from Japan and Korea were asked to comment on their plans to collect and submit to ICCAT, statistics from their Tema-based baitboat fleets. The Delegate from Japan replied that effort will be made in 1975-1976 to compile Task II data that have been collected from the Japanese fleet and the data will be submitted by the next Sub-Committee meeting. The Delegate from Korea indicated that data are not yet being collected from the Korean fleet but plans are being drafted for a sampling program in the future.

6.3. *Spanish tropical tuna fleet.* This fleet usually lands and transships its catches mainly in Dakar, Senegal and partly in Abidjan, Ivory Coast and Las Palmas, Canary Islands.

6.4. The Convener pointed out that since the catch from the Spanish fleet is large, it is very important that Spain find a solution to the problem of collecting statistics for this important fleet. He suggested the possibility that through contract with African laboratories at the landing ports, statistics from the fleet might be obtained.

6.5. *Moroccan bluefin tuna fleet.* The Delegate from Morocco has informed the Sub-Committee that in spite of the difficulties encountered, such as the lack of personnel and the resistence of the Moroccan fishermen to having their fish handled

by biologists, Morocco was making all efforts to provide the bluefin catch biological data which are possible to collect, especially if tagging campaigns are carried out in 1975-76.

6.6. *Mediterranean bluefin tuna fleets.* Task II and biological data from the French and Spanish bluefin tuna fleets of the Mediterranean Sea are not being collected. Delegates from both countries were asked about their plans to solve this problem. The French Delegate replied that bluefin tuna caught in the Mediterranean are landed at all hours and at numerous ports in the Mediterranean Sea. Consequently, adequate sampling of the catch is difficult, if not impossible, and France feels that it cannot immediately launch a program for collecting the statistics.

6.7. The Delegate from Spain replied that a sampling program to collect Task II and biological data from the Mediterranean trap fishery has been launched and past data collected from the fishery are contained in SCRS/75/58. As for statistics from the other Spanish bluefin tuna fleets in the Mediterranean, Spain has immediate plans to collect statistics from the fleets, but there is some difficulty especially because the fishermen are reluctant to have biologists handle their catch.

6.8. The Ad Hoc Committee on Bluefin Tuna Sampling and Statistics pointed out that large amounts of bluefin tuna are being caught in the Mediterranean for which adequate statistics are not available. The Sub-Committee discussed this problem and *recommended* that the Secretariat make every effort, through contacts with the national offices of particularly Italy, Algeria and Tunisia, FAO and other existing Commissions concerned with fisheries in the Mediterranean Sea, to obtain catch and biological data for the Mediterranean bluefin tuna fishery.

6.9. *Conversion factors for longline catch.* The Korean Delegate discussed the problem of converting longline catch in gilled-and-gutted weight to live weight and indicated that their studies show that the factor should be 1.13 for yellowfin and bigeye tunas. Currently the Secretariat is using a factor of 1.16 for yellowfin and bigeye tunas and 1.20 for billfishes, based on studies in the Pacific. A working group was organized to look into this matter and the report of the group is contained in Addendum IV.

The Working Group recommended that until more complete studies are accomplished, the factors of 1.13 for yellowfin and bigeye tuna and 1.20 for billfishes should be used by the national offices in converting past and current statistics to live weight and the converted statistics submitted to the Secretariat.

7. Current problems in compiling and disseminating statistics

7.1. The Secretariat's port sampling program has generated considerable amounts of data on the longline catches that could be incorporated into data from the national offices. Because it appears that the Secretariat is in a good position for undertaking such a task, the Sub-Committee *recommended* that the Secretariat produce an inventory of available data on hand, process data that are

collected from the port sampling program and proceed with plans to summarize all longline data for the Atlantic, beginning with 1974 data and working backwards. The delegates were reminded that all longline data submitted to the Secretariat should be in a minimum time-area format of quarter (Quarter 1 = January-March, Quarter 2 = April-June, etc.) and ICCAT-area (Figure 1 — Addendum I to Appendix VI to Annex 8).

7.2. This year, the Secretariat has provided a summary of available data on fishing vessels (Statistical Bulletin Vol. 5, Part III). The need for transport or carrying capacity information for the major fisheries was discussed. It was pointed out that such information is useful in analysis of fishing effort and changes in strategy of the fishing fleet. The Sub-Committee, therefore, *recommended* that the Secretariat continue to collect and compile information on the number of boats by tonnage class, and estimate the transport of carrying capacity for the major fisheries, *i.e.* eastern tropical Atlantic yellowfin-skipjack tuna fishery; albacore fisheries; bigeye tuna fishery, and eastern and western Atlantic bluefin tuna fisheries.

7.3. The Secretariat reported that statistical data on Atlantic tunas and billfishes are currently being published in the Statistical Bulletin and the Data Record for distribution. Detailed data from some fleets, however, are not contained in these publications, but are disseminated to a select group of scientists that are directly involved in analysis of the data. This is being done to cut costs since the data are quite voluminous and costly to reproduce and distribute to everybody.

8. Future plans for improving statistical and sampling programs for Atlantic tunas

The Secretariat recently hired a biostatician to assist in reviewing and devising strategies for solving some of ICCAT's statistical problems. Because there are both short and long-range problems to be solved, the Sub-Committee *recommended* that a working group be established to draft a plan of priorities, especially for the long-term problems, so that resources can be utilized most efficiently. The working group should pay particular attention to problems such as: whether the right type of data are currently being collected; whether current data will be adequate in the future; the cost, benefit and effectiveness of current and future sampling schemes; contingency plans to deal with changing fleet composition; fishing areas and species exploited; and other such problems. The working group should report its findings directly to the SCRS. The Report of the Working Group is attached as Addendum VI to this Sub-Committee Report.

9. Recommendations to SCRS

The *recommendations* contained in this report are summarized here. They are:

1) The Secretariat should produce an inventory of available data on hand, process data from national and Secretariat sources, and proceed with plans to

summarize all longline data from the Atlantic, beginning with 1974 and proceeding backwards.

2) The national offices should pay particular attention to the species identification problem involving small bigeye tuna in the catch statistics of yellowfin tuna. This problem can be easily solved if the yellowfin catch is regularly sampled for species composition.

3) There appear to be differences in the age designation of bluefin tuna in the various fisheries. Consequently, the Ad Hoc Committee on Bluefin Tuna Sampling and Statistics *recommended* that otoliths and vertebrae from a large range of sizes of bluefin tuna from the entire Atlantic be collected and a coordinated effort be made to determine an up-to-date age structure for the population.

4) Adequate statistics on the Mediterranean bluefin tuna fisheries continue to be unavailable. The Sub-Committee *recommended* that the Secretariat make every effort, through contacts with the national offices of particularly Italy, Algeria and Tunisia, FAO and other existing Commissions concerned with fisheries in the Mediterranean Sea, to obtain catch and biological data for the Mediterranean bluefin tuna fisheries.

5) A conversion factor of 1.13 for yellowfin and bigeye tunas and 1.20 for billfishes should be used to convert longline catches in gilled-and-gutted weight to live weight until more definitive studies are completed.

6) The Secretariat should continue with collecting and compiling information on the number of boats by tonnage class and fishery. It should also produce estimates of the transport or carrying capacity for the major fisheries, i. e. eastern tropical Atlantic yellowfin-skipjack tuna fishery, albacore fishery, bigeye tuna fishery, and eastern and western Atlantic bluefin tuna fisheries.

7) A working group shoul be formed to draft a plan of priorities, especially for long-term statistical and sampling problems, and should report its findings directly to the SCRS.

8) The Sub-Committee is concerned about the lack of improvement in completeness or timeliness of Task II statistics for some fleets (Table 2) and *recommends* that the national offices pay particular attention in the coming year to upgrading their statistics and submitting them on time.

9) The Sub-Committee is concerned about the lack of adequate statistics on the small-tuna species and *recommends* that the national offices place more emphasis on collecting better statistics on the small-tuna species.

10. Other matters

The problems of adequate statistics for small-tuna species, such as blackfin tuna, little tunny and bonito were discussed. The Sub-Committee *requested* that the national offices place more emphasis on collecting better statistics on the small-tuna species and submit them to the Secretariat. The Secretariat mentioned that species identification might be a current problem, but perhaps will not be a problem when better overall information on the small-tuna species becomes available after the up-coming meeting of FAO's Working Group on Small Tunas in Honolulu, Hawaii.

11. Adoption of Report

The Report was adopted.

12. Adjournment

The meeting was adjourned.

Table 1. Progress made during 1975 in the collecting of Task I data for 1974

Country	*Receipt of Data* [1]	*Type of Data*							*Remarks*
		Catch	*Landings*	*Effort*	*By Gear*	*By Species*	*Preliminary*	*Final*	
Argentina	Aug. 22 (Aug. 1)	×			×	×			
Brazil	May 12 (May 10)		×	×	×	×		×	LL data only. By area.
	June 6 (Sept. 9)		×			×		×	Other fisheries.
	July 10		×	×		×		×	Blackfin tuna.
Canada	May 12 (May 6)	×		×	×	×		×	
China (Taiwan)	July 10 (Nov. 20)		×		×	×		×	
Cuba	Aug. 14 (Nov. 12)		×	×	×	×		×	
France	June 2 (June 3)	×		×	×	×	×		Tropical fisheries only. Senegal-Ivory Coast fisheries combined.
	Aug. 4 (July 22)		×	×	×	×		×	BF and Alb. only.
	Aug. 11	×		×	×	×		×	Tropical fisheries France reported indepently. By area and by month.
Ghana	Apr. 14 (Feb. 26)		×	×	×	×		×	Only large commercial fisheries. Also reported foreign flag landings.
	May 21	×			×	×		×	Local artisan fisheries.
Ivory Coast	June 2 (June 3)	×			×	×	×		Combined with Senegal-French fisheries.

Japan	Apr. 1 (June 7)	×		×	×	×		×	BB, PS fisheries only.
	July 14	×		×	×	×	×		LL data. By area.
Korea	Mar. 4 (May 3)		×			×	×		Major species.
	Apr. 29			×					
	July 9		×			×		×	All species.
	Aug. 12 (July 29)		×		×	×		×	
Mexico	June 16 (July 17)		×			×		×	
Morocco	June 10 (Sept. 3)		×	×	×	×		×	By area.
Norway	(July 1)								Obtained through FAO.
Panama	——		×	×	×	×		×	Collected by Secretariat.
Portugal	Aug. 26 (Feb. 25)		×	×	×	×		×	
Angola				NO DATA					
Senegal	June 2 (June 3)	×			×	×	×		Combined with Ivory Coast and French fisheries.
South Africa	Apr. 23 (Apr. 22)	×		×	×	×		×	By area.
Spain	Apr. 25 (Mar. 5)		×		×	×		×	Major species only. By area.
	July 21 (Aug. 7)			×	×				
	Oct.	×			×			×	Swordfish.
U. S. A.	Mar. 11 (May 6)	×		×	×	×	×		Major species only. By area.
	July 4		×			×	×		All species.
	July 14	×		×	×	×	×		Revision for major tropical species.
	July 21	×		×	×	×	×		Revision for bluefin tuna.
Venezuela	Apr. 7 (Apr. 29)		×	×	×	×		×	Also reported foreign flag landings. By area.

[1] Date in parentheses indicates when data were received in 1974.

Table 2. Progress made in the collecting of Task II data during 1975

Country	*Date Received* [1]	*Species*	*By Gear*	*By Month*	*By 1°×1° Area*	*By 5°×5° Area*	*By Larger Area*	*Effort*	*Weight*	*No. of fish*	*Confidential*	*Years*	*Remarks*
Brazil	May 12 (May 10)	All	×	×		×		×	×			1974	LL
Canada	Aug. 26 (May 6)	BF	×	×	×			×	×			1974	PS
China (Taiwan)*	Nov. 10 (Dec. 10)	All	×	×		×		×	×	×		1974	LL
Cuba						NO DATA							
France	July 30 (Sept. 16)	BF, Alb.	×	×			×		×			1974	
	Aug. 11	YF, SJ, BE		×			×		×			1974	
	Aug. 11	YF, SJ, BE	×					×	×				
	Nov. 10	Alb., BF	×	×	×			×		×		1974	
FIS	Nov. 9 (Aug. 20)	YF, SJ	×	×	×			×		×		1974	
Ghana						NO DATA							
Japan	Sept.	All	×	×	×	×		×		×		1973	LL
	Oct. (July 22)	YF, SJ	×	×				×	×			1974	PS

Korea *	Oct. 9 (no date)	All	×	×		×		×	×		×	1974	Korean-Panamanian flag.
Morocco	June 10 (Sept. 16)	All	×	×	×			×	×			1974	
Portugal	Aug. 26	All	×	×					×			1974	
South Africa	Apr. 23 (Apr. 22)	All	×	×	×			×	×			1974	
Spain	Oct. 30 (Nov. 13)	Alb., (YF, SJ)	×	×	×			×		×		1973-74	Canaries, Biscay and Tropical.
U. S. A.	Mar. 11 (Apr. 15)	Major species	×	×	×	×	×	×	×			1974	
	July 14	Major species	×	×	×	×	×	×	×			1974	Revision.
Venezuela	Aug. 6 (Aug. 1)	All	×	×	×			×		×	×	1974	LL
		** Data collected by Secretariat*											
China (Taiwan)		YF, BF, Alb., BE	×	×		×	×	×		×		}	
Korea		YF, BF, Alb., BE	×	×		×	×	×		×		1974 1975	Partially by ORSTOM/Sec. By Secretariat.
Panama		YF, BF, Alb., BE	×	×		×	×	×		×		}	

[1] Date in parentheses indicates when data were received in 1974.

Table 3. Progress made in the collecting of biological data during 1975

Country	*Date Received*	*Species*	*Gear*	*Area*	*Month*	*Actual Size Frequency*	*Weighted Size Frequency*	*Year*	*Remarks* [1]	
Brazil	Aug. 11	YF	LL	Specific	quarterly	×		1973-74	LL	(Nov.)
Canada	May 12	BF	PS, Trap, Sport	Specific	monthly	×	×	1974		(June 27)
China (Taiwan)*										
Cuba	Oct. 8	YF	LL	General	monthly	×		1974	LL	
France	Nov.	Alb., BF	BB, Tro.	Biscay	monthly	×	×	1974		(Dec. 73)
FIS	Nov. 9	YF, SJ	BB, PS	Regions	quarterly		×	1974		(Sept.)
Ghana	Sept. 1	YF, SJ	BB, LL, PS	5° × 10°	monthly	×		1974	Tema-based fleets (monthly)	
Japan	July 8	All	LL	5° × 10° or 10° × 20°	quarterly		×(?)	1972-73 (1971 suppl.)		(Apr.)

	July 8	All	PS	5° × 5°	quarterly		×	1972-73 (1971 suppl.)		
	Feb.	YF	LL	10° × 20°	quarterly		×	1956-64		
	Aug. 25	BE, Alb., SJ, YF	PS	5° × 5°	monthly		×	1974		
Korea *	Oct. 9	YF, BE, Alb.	LL	5° × 10°	quarterly	×		1973-75	Korean-Panamanian flag	
Morocco	Oct. 22	BF	PS, BB	General	monthly	×		1972-73		
Portugal			N O D A T A							
South Africa	Apr. 23	YF	PS	5° × 10°	monthly	×		1974		(Apr. 22)
Spain	Nov. 5	Alb., BE, YF, SJ	BB	General	monthly	×		1974-75	Canaries	(March 1)
	Nov. 10	Alb., BF	BB, Tro.	5° × 5°	monthly	×		1974	Bay of Biscay	
	Nov. 10	SF	LL	General		×		1974-75		
U. .S. A	March 11	YF, SJ, BE, BF	PS	Regions	monthly		×	1974		(Apr. 15)
	July 14	YF, SJ, BE	PS	Regions	monthly		×	1974	Revision	
Venezuela	Aug. 6	YF, SJ	LL & BB	General	quarterly	×		1974		(Aug. 1)

** Data collected by Secretariat*

China (Taiwan)	YF, BE, Alb.	LL	Specific	quarterly	×	×(?)	1975	Secretariat's Port Sampling Program
Korea	YF, BE, Alb.	LL & BB	Specific	quarterly	×	×(?)	1975	
Panama	YF, BE, Alb.	LL & BB	Specific	quarterly	×	×(?)	1975	

[1] Date in parentheses indicates when data were received in 1974.

Addendum I to Appendix IV to Annex 8

Agenda for the Sub-Committee on Statistics

1. Opening of the meeting
2. Adoption of Agenda, nomination of Rapporteur and arrangements for the meeting
3. Review of general progress made by national offices (Particular emphasis on achievements made in respect to the commitments made at the 1974 meetings — Working Group on Statistics)
4. Review of the Report of the Working Group on Statistics
5. Review of the 1974 and 1975 ICCAT statistical programs
   - — Task I statistics
   - — Catch/Effort statistics collected at port by the Secretariat and other organizations
   - — Biological sampling program carried out by the Secretariat
6. Current major problems in regard to *quality* of statistics.
7. Current problems regarding *compiling* data in a standardized form and *disseminating* them promptly. (Review of the statistical problems which can occur for the principal fisheries; a probable change in the date of the SCRS meeting.)
8. Future plans for improving statistical and sampling programs for Atlantic tunas. (Review of the problems which cannot be resolved without the help of the Secretariat.)
9. Recommendations to SCRS
10. Other matters.
11. Adoption of Report
12. Adjournment

Addendum II to Appendix IV to Annex 8

Report of the Working Group on Sampling and Statistics

All countries attending the SCRS were represented at the meeting of this Working Group. Mr. A. Fonteneau served as Chairman, and Dr. W. Schaaf served as Rapporteur.

Last year the Working Group identified the major existing statistical and sampling deficiencies in the Atlantic tuna fisheries. Table 1 of last year's Report

summarized these problems and showed that portion of the fishery for certain major species which was covered on a complete and timely basis. Table 2 of last year's Report showed the response of delegations regarding actions to be taken during 1975.

The first action of the Working Group this year was to review these two tables to see what progress has actually been achieved to solve the deficiencies. Tables 1 and 2 of this Report show the current status. It can be seen in Table 1 that much progress has been made during 1975. To better illustrate the progress that has been made, the Group presented Table 3, which compares the percentage of the coverage for 1973 and 1974.

Based upon responses from each delegation and general discussion, the Group summarized sampling and statistical deficiencies under the categories of (1) last year's problems solved, (2) last year's problems unsolved, national and ICCAT, (3) problems solved that were not raised and discussed last year, and (4) new problems.

Category 1

Very good progress was made by Spain in obtaining Task I and II and biological data for the Canarian fishery; Task II data and biological information for the Oriental longline fleet are now being obtained by ICCAT in cooperation with the national offices, in accordance with the Commission's reccomendation last year.

Category 2

Unsolved national problems remain for Portugal, for which we do not have biological data, nor Task II data yet, though the Group has been advised that Portugal will provide Task II for 1975. The Japanese longline data are still untimely, but the delegation reported that it can be improved by perhaps three or four months. Japan also has a problem in processing their baitboat data. The Delegate promissed to provide these data by the time of our next meeting. However, in case this becomes difficult, the Group *recommended* that the Secretariat undertake this responsibility.

The Spanish intertropical purse seine fishery is not yet covered by any systematic sampling. It can be seen from Table 1 that this is an important fishery and inclusion of these data can greatly increase the overall coverage. This problem can be solved by port sampling at Dakar and, if possible, also at Abidjan and the Canary Islands.

ICCAT has an unsolved problem of data inventory. The Global Sampling Plan, discussed last year, has not yet been put into effect. The Secretariat should direct efforts towards analysis (theoretical and practical) of Atlantic tuna sampling. The Working Group *recommended* that the ICCAT Secretariat assemble and process all the data from national and Secretariat sources, firstly and especially for the longline Task II and biological information. Initially, the actual data will be summarized quarterly, by species and broad geographic area; later it will be extrapolated to represent 100 % of the catch.

Category 3

Some corrected deficiencies that were not noted last year include: (a) the presentation of good Task I and biological data from Cuba, (b) data from Brazil which are biologically interesting, (c) good baitboat data from Venezuela, and (d) Japan has provided ICCAT with biological data for the yellowfin fishery from 1955 to 1964, making available a valuable historical series.

Category 4

There are several important new problems which should be emphasized to the Sub-Committee on Statistics. The species identification problem involving bigeye and yellowfin is important, especially for the surface fishery of Spain and FIS. Advice from the Working Group is to sample these fisheries adequately, using available methods, such as the examination of parasites (SCRS/75/72) and liver (Field Manual). Another new problem discussed was that of combining skipjack data into meaningful areas, such as proposed in Fig. 1. The Working Group *recommended* that all countries compile catch, effort, and biological data for skipjack by these areas, beginning from, perhaps 1968. It was indicated that the data can be provided quarterly for the Japanese purse seine fleet, FIS fleet, and U. S. seiners by each national office. The Secretariat will prepare these biological data for the Tema-based baitboat fleet.

The last new problem discussed was the convenience of the meeting date. It was pointed out that different statistical problems arise for different species. The minimum time required to compile albacore surface data is six months, whereas yellowfin and skipjack surface data for the previous year can be compiled within two months. Since the time delay in obtaining longline data is great enough, the meeting date is irrelevant.

Table 1. 1974 Atlantic Catch (Thousand MT) for *major* fisheries

	BF	*Alb*	*YF*	*SJ*	*BE*	*Total*
U. S. A.	1.5		5.6[1]	20.0[1]	0.9[1]	28.0
China (Taiwan)	0.1	26.2[1]	2.3[1]	0.1[1]	3.1[1]	31.8
Cuba			3.8[1]	1.9[1]	2.4[1]	8.7
France-Ivory Coast-Senegal	1.0*	9.0*[1]	39.5[1]	29.7[1]	1.3[1]	80.5
Tema-based BB			9.1[1]	21.9[1]	1.6[1]	32.6
Japan: Total	5.4**	2.6[2]	14.3***	20.7***	23.2	66.2
— LL	5.4**	2.6	3.9[2]		22.5[2]	34.4
— PS			0.9[1]	0.9[1]	0.1[1]	1.9
Korea (LL)	0.1	5.2[1]	17.3[1]		7.4[1]	30.0
Panama (LL)		0.4[1]	3.2[1]		1.8[1]	5.4
Spain: Total	1.9	28.1	16.4	36.5	3.2	86.1
— PS			14.4[3]	31.1[3]		45.5
— Canary I. BB	0.6	2.7[1]	2.0[1]	5.4[1]	3.2[1]	13.9
— Peninsula	1.3	25.5[1]				26.8
Portugal		1.2[3]	1.3[3]	0.7[3]	9.1[3]	12.3
Angola			(0.6)++	(1.6)++		
Subtotal	10.0	72.7	103.3	111.7	53.4	351.1
1 Total for category [1]		68.9	83.7	79.9	21.8	254.3
2 Total for category [2]		2.6	3.9	—	22.5	29.0
3 Total for category [3]		1.2	15.7	31.8	9.1	57.8

* Only France catches these species.
** Also caught 5.0 Southern Bluefin, but *not* included in total.
*** Includes Tema-based BB catch by Japanese flag boats.

++ Estimate not included in totals.

[1] Complete (Task I, II, samples) & timely (less than 6 months' delay).
[2] Complete, but not timely.
[3] Incomplete (either Task I, II or samples).

Table 2. Problems proposed in 1974 (first four colums), and progress made in 1975 (last column)

Country	*Deficiency*	*Prognosis*	*Will be done in 1975?*	*Has been done?*
U. S. A.	BF: Sport fishery, all data	Can be done	Yes	Yes
China (Taiwan)	(Task II) Biological	No solution	No	Yes, by Secretariat
France	Alb.-BF - Timeliness	Can be done	Yes	No
France	Med. BF	No solution	No	Partly done
Tema-based BB	Task II - Timeliness	Can be done	No	No
Tema-based BB	Official Biological	Can be done	No	Yes, by Ghana
Japan - LL	Task II, Biol. - Timeliness	No solution	No	No
Japan - LL	Biological - insufficient	Can be done	Yes	Yes
Japan - PS	Biol. weighting - Timeliness	Can be done	Yes	Yes, no weighting
Korea - LL	Task II, Biological	Partial solution	No	Yes
Panama - LL	Task II, Biological	No solution	No	Yes, by Secretariat
Spain - PS	Task II	Can be done	Yes	Yes
Spain - PS	Biological	No solution	No	No
Spain - Canary I.	Task II, Biological	Can be done	Yes	Yes
Spain - Peninsula	Med. BF, all data	Can be done	Yes	Yes
Portugal	All data	Can be done	Yes	Task I solved, but not II & III
Angola	No data	No solution	No	No

Table 3. Catch (in 1,000 MT) for major fisheries, and Percentage of Statistical Coverage
1973

	Alb.	*YF*	*SJ*	*BE*	*Total*
Subtotal	68.2	83.0	74.4	31.8	271.6
Complete and timely	28.6	35.4	33.4	2.5	102.4
%	*42*	*43*	*45*	*8*	*38*
Complete	29.8	50.3	50.3	14.0	147.9
%	*44*	*61*	*68*	*44*	*54*
		1 9 7 4			
Subtotal	72.7	103.3	111.7	53.4	341.1
Complete and timely	68.9	83.7	79.9	21.8	254.3
%	*95*	*81*	*72*	*41*	*75*
Complete	71.5	87.6	79.9	44.3	283.3
%	*98*	*85*	*72*	*83*	*83*

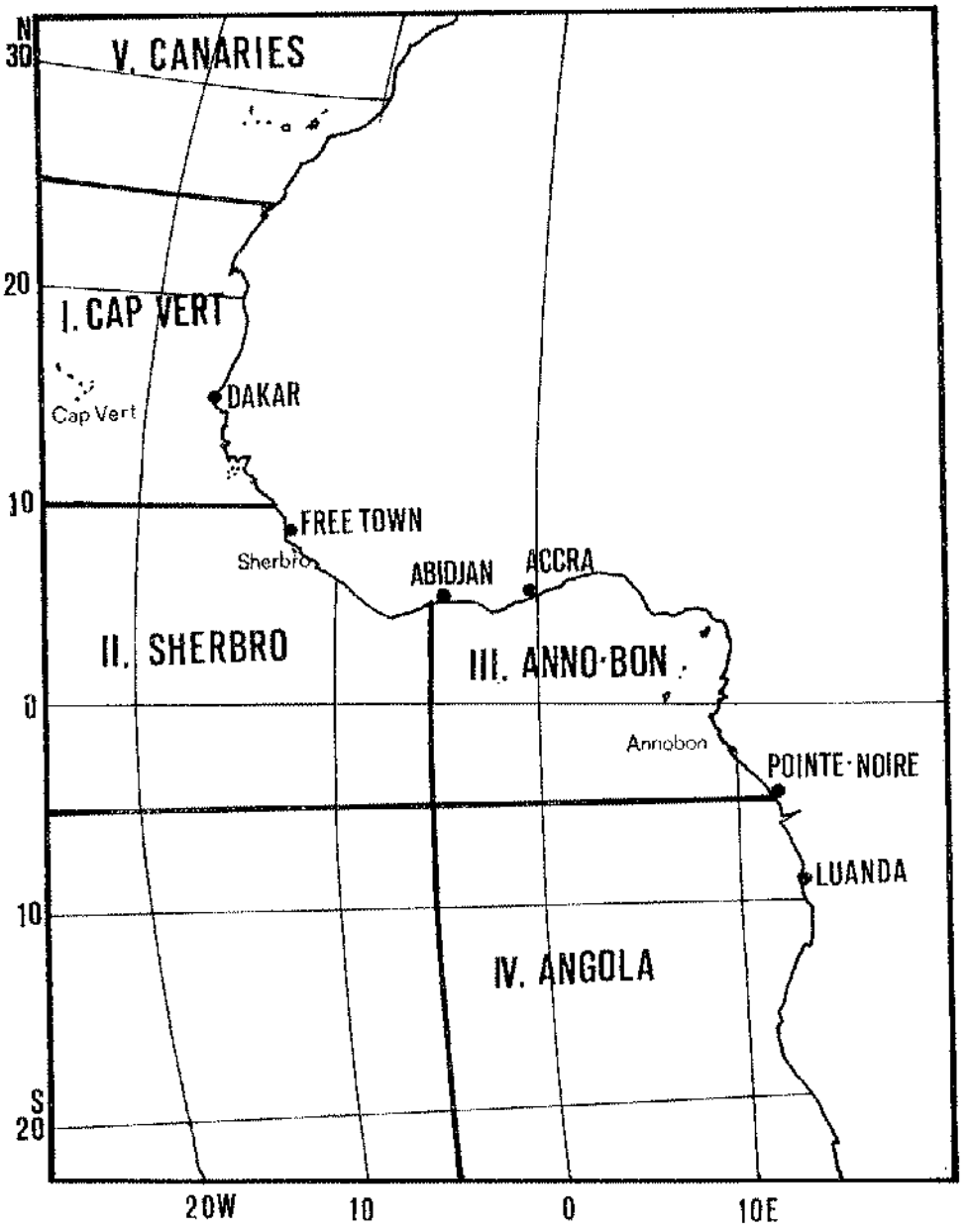

FIG. 1. — Proposed skipjack statistical areas.

Addendum III to Appendix IV to Annex 8

Report of the Ad Hoc Committee on Bluefin Tuna Sampling and Statistics

The Ad Hoc Committee on Bluefin Tuna Sampling and Statistics met on November 12, to review the availability and adequacy of Task I, Task II and biological statistics and to update a previous report (ICCAT Biennial Report, 1974-75 (I), Addendum IV to Appendix III to Annex 9). The Committee noted that significant improvements were made in several areas, particularly in the collection of size frequency data from the Japanese longline fishery, catch and effort data from the Canadian and the U. S. sport fisheries and from the Spanish-French surface fishery in the Bay of Biscay and the Canary Islands; and catch data from the Spanish fishery in the Mediterranean (Table 1). The Committee also recognized the increased efforts of the Secretariat to obtain data from various bluefin fisheries and encouraged continued efforts in this area.

The Committee noted that its recommendations last year for the collection of certain morphometric and meristic data, as well as sex data, resulted in two documents this year presenting preliminary analyses of these data. The Committee also *recommended* that a concerted effort be made to collect otoliths and vertebrae from a wide size-range of bluefin tuna from various fisheries on both sides of the Atlantic for a coordinated effort at determining an up-to-date age structure for bluefin.

The Committee also noted that the Italian bluefin fishery apparently catches a relatively large amount of bluefin in the Mediterranean and *recommended* to the Secretariat that every effort be made to obtain catch and biological data from this fishery.

Table 1. Availability of Task I, II and Biological Data from Various Countries (1974) - Bluefin

Country	*Task I*	*Task II*	*Biological*
Canada	Yes	Yes	Yes
China (Taiwan)	Yes	Yes	No
France - Med.	Yes	No	No
Atl.	Yes	Yes	Yes
Italy	Total catch only	No	No
Japan	Yes	Yes	Yes
Korea	Yes	No	No
Morocco	Yes	Yes	Partial
Portugal	Yes	No	No
Spain - Med.	Yes	No	No
Atl.	Yes	Yes	Yes
U. S. A.	Yes	Yes	Yes

Addendum IV to Appendix IV to Annex 8

Report of the Working Group on Reviewing Conversion Factors

The Group, consisting of S. Kume (Japan), W. I. Choo (Korea), C. C. Hwang (Taiwan) and P. Miyake (Secretariat), met shortly to study what conversion factors should be used for estimating catches in round, live weight when the fish are unloaded in other forms.

The Group felt that there is no significant difference among the Japanese, Korean, Panamanian and Taiwanese longliners in the way fish are dressed or gilled and gutted, except probably in the case of bluefin tuna. Therefore, it *recommended* to adopt a single common figure for conversion.

The Group *recommended* that the following factors be used for the time being until more complete studies in the future suggest otherwise.

1.13 for gilled and gutted yellowfin and bigeye
1.20 for dressed billfishes

These figures should be applied not only for data collected at a future time, but also for all the data assembled in the past.

The Group also *recommended* that each country report their catches or landings in terms of round, live weight, rather than having the Secretariat convert the data.

Appendix V to Annex 8

REPORT OF THE WORKING GROUP ON AN INTENSIFIED ATLANTIC-WIDE SKIPJACK RESEARCH PROGRAM

1. The Working Group met on Wednesday, November 12, and on Friday, November 14, and was chaired by Dr. J. Gulland (FAO). Dr. W. Fox (U.S.A.) was selected as Rapporteur.

2. As noted in the SCRS Report on skipjack, the Atlantic catch of this species became the largest for any tuna species in 1974 (113,000 tons). Potential catch estimates for Atlantic skipjack range from 100,000 to 250,000 tons so that the catch for 1974 reached a level in the neighborhood of the lower estimate. Being both one of the most important species in the Atlantic tuna harvest and within its range of potential catch estimates, skipjack should be receiving close attention by ICCAT scientists who should be forwarding, through SCRS, scientific advice to the Commission on the status of skipjack stock(s). However, as noted in the SCRS Report, the efforts of the scientists are frustrated by:

a) the lack of even the crudest knowledge on the stock structure;
b) the lack of any apparent relationship between catch and present measures of fishing effort; and
c) the lack of reasonable estimates of population dynamics parameters, growth, natural mortality, fishing mortality, and recruitment.

Therefore, the SCRS is essentially unable to offer any useful, precise advice to the Commission. The situation is even further aggravated by the estimate of the 1975 skipjack catch of 55,000 tons, about one-half that of 1974, as discussed in the SCRS Report.

3. Because of the aforementioned problems, the SCRS deemed it imperative that research on Atlantic skipjack be intensified, but in a well-coordinated joint undertaking, and established this Working Group to plan such a research program to begin immediately.

4. The Working Group identified possible research projects which might provide the necessary information on delineation of skipjack stocks and the status of those stocks. The Working Group emphasized that these projects are simply a «shopping list» and that the priorities, the costs and benefits, and the inclusion of any of these in the program of work needs further study. The possible projects are:

a) intensify compilation of existing catch, effort, and size composition data by gear-type and time-area strata; and improve the acquisition of new data;
b) rework the production model analysis and construct a cohort analysis of eastern Atlantic skipjack;
c) tag recovery experiments for:

  i) determining the degree of mixing between skipjack fished in the western and eastern Atlantic,
  ii) determining population dynamics parameters for the relatively more intensively fished eastern Atlantic fishery;

d) examination of incidental catches of skipjack by the longline fisheries by time-area strata to delineate stock separations;
e) interviews of longline fishermen and fishermen of American, French and Spanish seiners who have crossed the Atlantic as to sightings of skipjack schools;
f) make contacts with companies doing aerial spotting of skipjack in the Atlantic;
g) conduct research vessel surveys for skipjack eggs, larvae, oceanography, and biomass estimates;
h) compare the size-frequency and structure of the western and eastern Atlantic fisheries;
i) make a comparative study of the apparent relationship between eastern Atlantic skipjack and yellowfin tuna indices of recritment;

j) conduct fishing vessel surveys of the western and central Atlantic to locate and determine the magnitude of juvenile and adult skipjack concentrations;
k) conduct analyses of baitboat and purse seine fishing effort to obtain a reliable measure of effective fishing effort for skipjack in the multi-species tuna fisheries;
l) examine otoliths for daily growth rings;
m) conduct airborne and satellite environmental studies;
n) complete age and growth studies;
o) study the distribution and availability of bait fish resources.

5. The Working Group felt that the Atlantic Skipjack Program should be developed in two phases: Phase I should consist of rectifying problems in the acquisition and compilation of basic data (4.*a*), analyses of present data and review of previous research efforts (4.*a-n*). This would be completed before launching Phase II, consisting of possible new major efforts (*i.e.* 4.*c, g* and *j-o*). *The reason for this is that analyses of previous efforts are needed to reveal the benefits and costs of each new or intensified approach, in order that priorities and coordination can be established which will provide the greatest probability for success in obtaining the required information by the most effective manner.*

6. The Working Group believed that the work in Phase I must be completed by the end of June, 1976, and distributed to all members of the Working Group at that time or before. Dr. W. Fox (U.S.A.) was selected by the Working Group to serve as coordinator of Phase I activities.

7. Specific assignments of work and date of completion under Phase I were as follows:

4.*a*. (i) Collection of western Atlantic size composition data (Cuba - Carrillo; U.S.A. - Sakagawa; Venezuela - Ramos — November, 1976).

(ii) Compilation of eastern Atlantic data of catch, effort, and size composition by gear-type, month, and four areas as determined by the Working Group on Sampling and Statistics (Senegal - Pianet; Japan - Kume; Spain - Pereiro and Fernández; U.S.A. - Sakagawa — March, 1976).

(iii) Publication of detailed skipjack data in the ICCAT «Data Record» (ICCAT Secretariat — June, 1976).

4.*b*. (i) Production model analysis (U.S.A. - Sakagawa — September, 1976).

(ii) Cohort analysis (Senegal - Pianet — September, 1976).

4.*c*. (i) Study feasibility of tagging for stock separation (U.S.A. - Fox — June, 1976).

(ii) Analyze previous eastern Atlantic tagging studies and recommendations (Senegal - Pianet — June, 1976).

4.*d*. Preparation of monthly charts for longline catch, effort and hooking rates (Japan - Kume — June, 1976).

4.*e*. Interview fishermen regarding sightings of skipjack schools (Brazil, Cuba, Japan, Korea, Taiwan, France, Ivory Coast, Spain, U.S.A. — June, 1976).

4.*f*. Report on aerial spotting results (Brazil - Zavala; U.S.A. - Fox; Senegal - Pianet — June, 1976).

4.*g*. Review previous research vessel surveys (Senegal - Pianet — June, 1976).

4.*h*. Compare eastern and western Atlantic size frequencies (Senegal - Pianet; Venezuela - Ramos — June, 1976).

4.*i*. Compare skipjack and yellowfin recruitment indices (Senegal - Pianet — June, 1976).

4.*j*. Review possibility of fishing vessel surveys (FAO - Rosa — June, 1976).

4.*k*. Study definition of fishing effort (U.S.A. - Fox — June, 1976).

4.*l*. Review technical feasibility of otolith sampling and analysis for growth and spawning checks (France - Le Gall — June, 1976).

4.*m*. Review airborne and satellite possibilities (Senegal - Pianet; U.S.A. - Fox — June, 1976).

4.*n*. Complete age and growth studies and separate eastern catch by cohorts (Senegal - Pianet — June, 1976).

4.*o*. Review information on bait resources (Korea - Choo — June, 1976).

8. The Working Group will meet again at the next SCRS meeting, evaluate the work completed under paragraph 6, and plan the Atlantic Skipjack Program under Phase II. Each member of the Working Group was encouraged to review the results of the work in Phase I *prior to* the next SCRS meeting and formulate ideas on the Phase II plan, keeping in mind the objectives stated in paragraph 5. It was noted that if a workshop on tuna were held during the summer of 1976, this would provide a convenient occasion for a short meeting of skipjack experts to review the progress in the tasks described in Section 7.

Appendix VI to Annex 8

REPORT OF THE AD HOC WORKING GROUP ON THE PROPOSED STATISTICAL SAMPLING STUDY

The desirability of an ICCAT study of sampling problems and techniques was first raised at the Nantes population dynamics workshop by A. Fonteneau and P. Soisson (SCRS/74/41), who note that the size distribution sampling in the Atlantic is very poor in extent and theoretical basis, and lacks international coordination. They propose as a solution that an overall global sampling "Plan Global d'Echantillonnage" (PGE) be carried out in two phases:

Phase 1: Theoretical and practical studies to be carried out on efficiency of size sampling as to (1) the best measures of body length and their conversion formulae, (2) variance estimates and optimal class intervals for size frequency measurement according to strata, (3) optimal number of sampling strata, and their use for analyzing age composition of the overall catch, (4) problems of bias in sampling, and (5) comparison of sampling sites for cost effectiveness.

Phase 2: PGE to distribute advice on sampling methods and optimal rates, initiate sampling in new areas and publish compiled length frequency data.

To this end, hiring of a biostatistician to assist the ICCAT Secretariat, and provision of funds for travel and data analysis was *recommended* and acted upon.

The Working Group met to consider the terms of reference of the work of the ICCAT Secretariat in the context of the proposed PGE.

The Group *endorsed* the recommendations in SCRS/74/41, but extended the scope of the PGE to include a review of the state of the work and problems of catch and effort measurement by time and area strata (although the status of these studies is in general more advanced than for length sampling).

A broad overview of the current status and cost effectiveness of sampling Atlantic tunas is proposed, to be carried out by the Secretariat, and to report before the next annual meeting to scientists of the member countries, who are requested to provide information on the following two points:

1) To submit information on their statistical sampling schemes over recent years so that the Secretariat can complete a table, such as Table 1 (taken from the ICCAT Biennial Report, 1974-75).

The required information is the following: estimates of *catch, number of samples* and *number of fish sampled* according to *biological strata* and landing port (Addenda I and II). This work should be given first priority. The Secretariat should present to the next meeting a subsequent analysis of Table 1 showing where the major sampling problems are.

2) To send data on strata substitutions used in compilation of length frequency data in recent years (for an example, see Table 2 (taken from P. 80, ICCAT Data

Record, Vol. 6)). It is stressed that cooperation by national scientists is essential to successful implementation of this program.

Some general questions raised by the Group in relation to the proposed interim study which amplify those discussed in SCRS/74/41 were as follows:

— Can we be more precise in our sampling for the same cost as at present, or can we retain current sampling precision at a lower cost by more cost effective approaches? In particular, it was noted that a smaller number of fish measured at an early point in the capture/transshipment/processing sequences may yield equivalent precision, less possibility of bias, (and more incidental information on stratification) than a larger number of fish measured at a later point, and may be preferred if costs are equivalent.

— What preparations should be made to ensure adequate sampling in the light of likely future events in Atlantic tuna fisheries? In this connection, the study should describe the present sampling system, what it should ideally look like in the future, and some method of achieving this objective.

— Is there any way of conveniently standardizing (or making compatible) time/area strata and units of measurement of fish and conversion formulae between different size measurements? Are there alternatives to the somewhat dubious procedure of substituting size frequency data from adjacent unit areas?

— What is the relative sampling power of the national offices reporting data to ICCAT? Can reporting of minor catches by one country be carried out at relatively minor cost, if it is of interest to other member countries?

— What are the sources and influence of various types of bias on the subsequent length frequency compilation, and cohort analysis following morphometric conversions, pooling of strata, or age-length conversion? What influence does the unit of measurement and variance of size at age have on the estimated distribution of age components in a size frequency?

Specific comments were made on the following points:

— Technological advances in radio communication may offer some advantage in ensuring accurate and timely substratification by area and season.

— The question of whether predorsal or folk length of bigeye and yellowfin can be standardized should be considered.

— Technical problems of on-board measurement of large fish and conversions and sources of bias between tape length and caliper length were discussed.

It was *recommended* that detailed consideration of these general points should be made by the Secretariat and reported to the national scientists before the next annual meeting of ICCAT.

As background to the interim study, the Secretariat is requested to compile and disseminate to interested scientists information and background papers on sampling schemes in effect in the fisheries commissions.

Table 1. Matrix for determining Atlantic sampling priorities and deficiencies. - Provisional

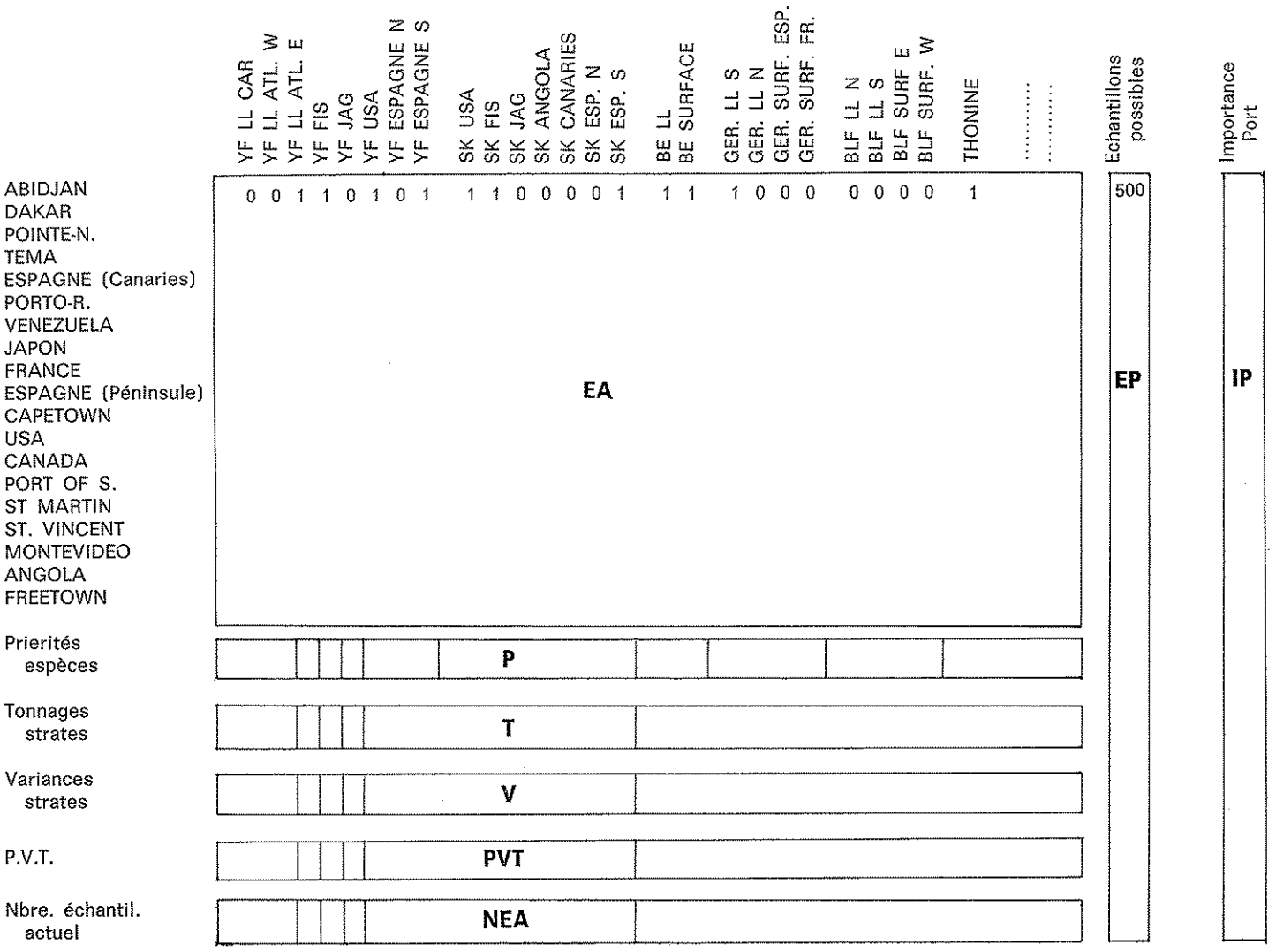

Table 2. Sample size and substitution of data for calculating catch by length class, 1956, 1957, 1963 and 1964

Area	*Year*	*Quarter*			
		I	*II*	*III*	*IV*
Carib	1956	388	2,664	(II)	1,467
	1957	2,059	43 (I)	26 (IV)	2,267
	1963	(II)	1,055	1,048	158
	1964	403	715	389	43
Guinea	1957	632	4,142	3,175	1,700
	1963	1,698	1,077	779	936
	1964	1,033	818	205	646

Arabic numerals without parentheses denote number of individuals determined by either body length or body weight.
Roman numerals in parentheses denote substituted data of the given quarter of the same year.

Addendum 1 to Appendix VI to Annex 8

The sampling matrix is tridimensional:

(1) Port of landing
(2) Quarter
(3) Biological strata (combining gear, species and area)

The Secretariat is asked to complete the table with:

— Estimates of catch
— Estimate of sampling rate (number of samples or individual)
— The variances in each strata must be estimated

The final result is a proposal from the Secretariat giving:

— Where the major deficiencies are, and where and how they can be solved
— Optimal allocation for multispecies sampling with actual sampling effort by port

Addendum II to Appendix VI to Annex 8

Biological Strata *

Strata

1. *Yellowfin*

101	LL	area	1	Map: Fig. 1-A
102	»	»	2	
103	»	»	3	
104	»	»	4	
105	PS	»	Dakar	ICCAT areas
106	»	»	Abidjan	
107	»	»	Pointe Noire	
108	»	»	1 (ref. LL)	Map: Fig. 1-A
109	»	»	4 (ref. LL)	
110	BB	»	Canaries	(North of 20° N — East of 30° E)
111	»	»	Dakar	ref. purse seiners
112	»	»	Abidjan	
113	»	»	Pointe Noire	
114	»	»	1 (ref. LL)	
115	»	»	4 (ref. LL)	

2. *Skipjack*

201	PS	area	Canaries	Map: Fig. 1-E
202	»	»	Cabo Verde	
203	»	»	Sherbro	
204	»	»	Annobon	
205	»	»	Angola	
206	»	»	1 (ref. LL)	Map: Fig. 1-A
207	»	»	4 (ref. LL)	
208	BB	area	Canaries	ref. PS
209	»	»	Cabo Verde	
210	»	»	Sherbro	
211	»	»	Annobon	
212	»	»	Angola	
213	»	»	1 (ref. LL)	
214	»	»	4 (ref. LL)	

* This list of strata is *provisional* and must be developed if necessary.

3. *Bigeye*

301	LL	area	1	Map: Fig. 1-C
302	»	»	2	
303	»	»	3	
304	»	»	4	
305	»	»	5	
306	»	»	6	
307	»	»	7	
308	»	»	8	
309	PS	»	Dakar	ref. YF
310	»	»	Abidjan	
311	»	»	Pointe Noire	
312	»	»	1 LL YF	
313	»	»	4 LL YF	
314	BB	»	Canaries	
315	»	»	Dakar	
316	»	»	Abidjan	
317	»	»	Pointe Noire	
318	»	»	1 LL YF	
319	»	»	4 LL YF	

4. *Albacore*

401	LL	area	N-2	Map: Fig. 1-B
402	»	»	N-1	
403	»	»	S-1	
404	»	»	S-2	
405	surface	»	N-2	

5. *Bluefin*

501	LL	area	19-20-21-22	Map: Fig. 1-D
502	»	»	13	
503	»	»	14	
504	»	»	15	
506	»	»	16	
507	»	»	17	
508	»	»	18	
509	PS	»	19-20-21-22	
510	»	»	13	
511	»	»	14	
512	»	»	15	
513	»	»	16	
514	»	»	17	
515	»	»	18	

516	hand gear	area	13	Map: Fig. 1-D
517	»	»	15	
518	»	»	17	
519	trolling	»	14	
520	»	»	15	
521	»	»	18	
522	pole & line	»	15	
523	»	»	14	
524	»	»	18	
525	trap	»	13	
526	»	»	16	
527	»	»	15	

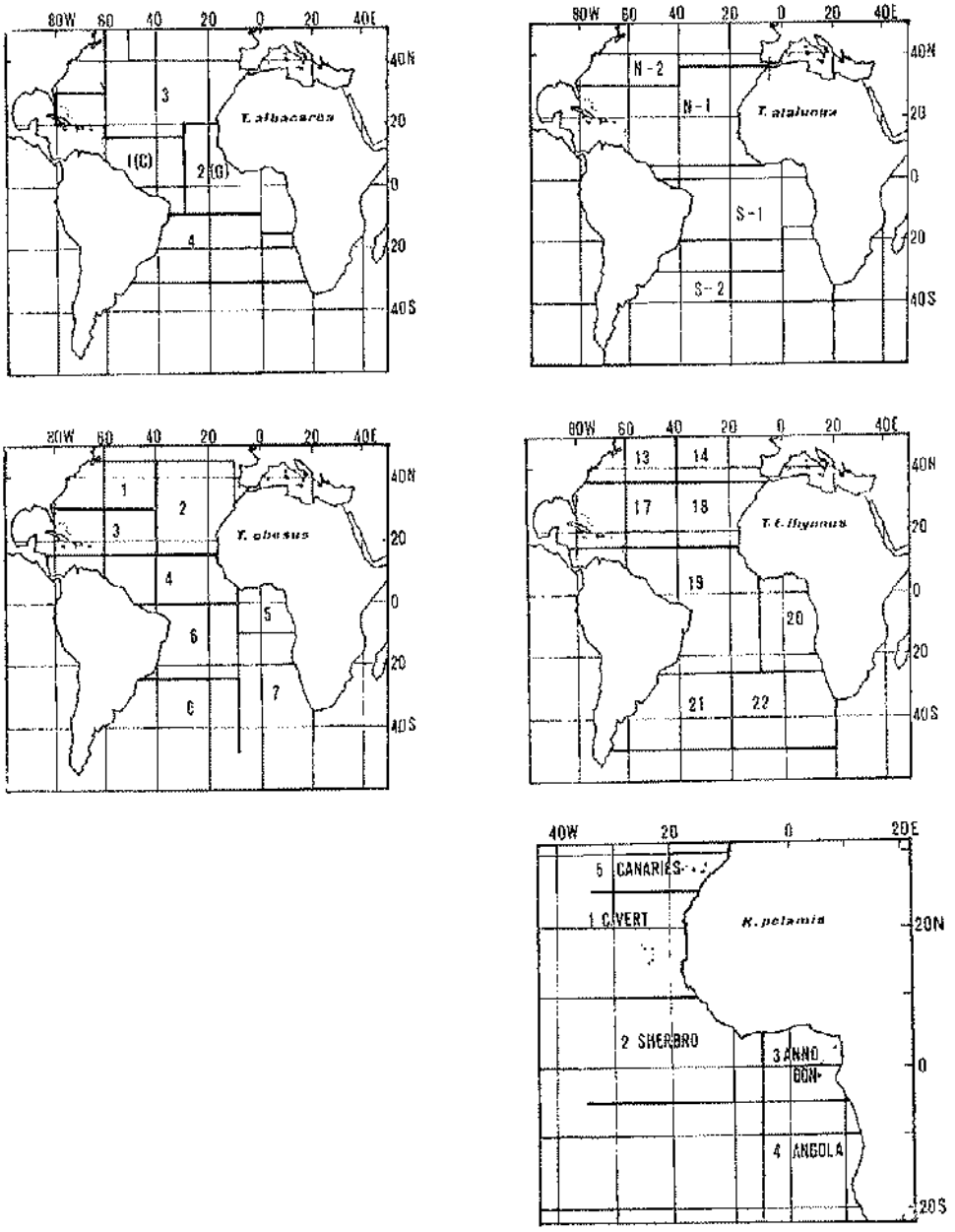

FIG. 1. — Geographical areas propsed for each species.

Appendix VII to Annex 8

REPORT OF THE PROGRAM OF THE TUNA WORKING GROUP, OF THE COMMITTEE ON MARINE VERTEBRATES AND CEPHALOPODS OF THE CIESM

(1975-76)

A. Dicenta

This program includes the following points:

1) Tuna distribution map by sizes and periods.
(Responsible: Mr. Sachi of ISTPM, Sète, France)

2) Identification of eggs and larvae of Mediterranean tuna.
(Responsible: Dr. Corrado Piccinetti, Ms. Gabriella Maufrin, of Marine and Fishery Biology Laboratory of Fano, Italy; and Mr. Antonio Dicenta, of the Oceanographic Laboratory of the Balearic Islands, I.E.O., Spain)

3) Study of the egg laying zones and periods of Mediterranean tunas.
Responsible: Dr. C. Piccinetti, G. Maufrin-Piccinetti and A. Dicenta)

To carry out these objectives, various cruises were conducted on board French (*Ichthys*) and Spanish (*Jafuda Cresques* and *Cornide de Saavedra*) vessels, and the results are published in ISTPM's «Revue des Traveaux» and in the «Boletín» of the Instituto Español de Oceanografía.

4) Intercalibration of nets for the icthyoplankton.
Responsbile: Dr. C. Piccinetti, Ms. Yvonne Aldebert of the ISTPM Lab., Sète, France, and Mr. A. Dicenta)

Yields of the following plankton nets were compared:

Bongo 60 cm, Bongo 20 cm, FAO standard, Luday Bogorov modified, Hensen, Gulf V «non-encased» and WP-2.

The results will be published in 1976 in an issue of the ISTPM «Revue des Traveaux» and in the I.E.O. Bulletin.

5) Studies on the feeding of young tuna.
(Responsible: Mr. Bombaci, of the Marine Biology Laboratory, Ancona, Italy)

6) Tagging of young tuna.
(Responsible: Dr. Arena and Dr. Sara, Italy)

Appendix VIII to Annex 8

REPORT OF THE WORKING GROUP ON TRAINING OF SCIENTIFIC PERSONNEL

Almost all the member countries and observers were present at the meeting of this Working Group. The meeting was chaired by Dr. E. Carrillo and Mr. J. Cort acted as Rapporteur. The Group *agreed* to carry out two training courses in 1976 for personnel of those countries actively engaged in tuna studies. These courses will consist of the following:

a) Obtaining and processing of the data (sampling, processing, analysis of the information, etc.).
b) Evaluation of the resources of tuna (cohort analyses, production models, etc.).

It was *agreed* that each country could send as participants the scientific and technical personnel it considers necessary.

For this task a Coordinating Committee was set up, consisting of: Dr. J. Y. Le Gall (France), Mr. J. L. Cort (Spain), Dr. J. Gulland (FAO), Mr. E. Cadima (Portugal - Convener), Dr. B. Rothschild (U.S.A.), Dr. E. Carrillo (Cuba) and the Secretariat. This Committee will decide very shortly the timing, duration, outline of syllabus, meeting places, languages and costs of the courses. This information will subsequently be mailed to the appropriate countries.

With regard to where these courses will be held, it was *agreed* that the countries could submit proposals offering the necessary conditions for such courses (e. g. landing port of various tuna species, laboratories, computer for the processing of the data, etc.). The deadline date for submitting these proposals is January 31, 1976, and they should be sent to the Secretariat.

Appendix IX to Annex 8

REPORT OF THE AD HOC WORKING GROUP ON TAGGING OF YOUNG BLUEFIN IN THE EASTERN ATLANTIC AND MEDITERRANEAN

The possibility of a coordinated tagging program for young bluefin tuna in the eastern Atlantic was referred to this Working Group under Agenda Item 8.c.

Purposes

1) To determine intermingling of east and west stocks;
2) To provide first estimate of mortality rates in eastern stock;
3) To determine intermingling of eastern Atlantic and Mediterranean stocks (lower priority).

Area of operation

Three possible areas of tagging:
1) Bay of Biscay (Fuenterrabía, St. Jean de Luz).
2) Ibero-Moroccan Bay.
3) Mediterranean.

Because of national limitation of funding and technical problems, only area I seems feasible for 1976. It is the area of operation of the baitboat fleet (gear providing best tag returns) and receives the highest fishing intensity.

Implementation

1) A unique opportunity to tag fish exists in the Bay of Biscay as fishermen will cooperate since they are aware of problems in international conservation of bluefin. This is due to the presence of foreign longline fleets in the area.
2) A second priority is incidental tagging from the French vessel «Pelagia».

Tag rates

It is anticipated that 100 fish (mostly age 2) can be tagged per day from a chartered baitboat; the local rate of return is estimated at roughly 25 % over two years, and distant (W. Atlantic) returns at less than one per cent.

Objective and estimated cost

To tag, 1,000 fish, it was estimated that 12-14 days' use of a chartered boat is needed, at a cost of no more than $ 12,500 (cost is based on purchase price of fish and subject to change depending on the change of fish market price).

Funding

Recognizing uncertainties of national funding, the Working Group *recommended* that in order to avoid problems of national susceptibility, funding and coordination of the project be carried out by the Secretariat; and that the Secretariat is authorized to approach the national offices for voluntary contributions (not necessarily equivalent).

Season

Second part of August, and September 1976, to avoid recaptures within the same fishing season.

Type of tag

To be determined by correspondence — a proportion of fish to be double tagged.

Other arrangements and technical points

1) Details to be settled by correspondence between members of the Working Group.

J. F. Caddy (Canada)
F. X. Bard (France)
J. L. Cort (Spain)
M. Lamboeuf (Morocco)
G. L. Beardsley (U.S.A.)
H. Aloncle (France)
Secretariat

2) The Secretariat is *requested* to distribute leaflets and posters in various languages to fishermen who will likely recapture the fish, notifying them of the tagging program. The cooperation of national offices is *requested*.

Note: It would be desirable that a separate tagging program for age II fish be conducted simultaneously in the W. Atlantic.

Appendix X to Annex 8

EVALUATION OF ASSIGNMENTS MADE IN 1974, AND FUTURE PLANS

General

Fishing effort — Pilot studies on relation between fishing time and searching time (begun)	U.S.A.*
Validity of units of fishing effort and catchability * (need to identify)	U.S.A., FAO, ACMRR studying
Naturality	U.S.A.**
Application of cohort analysis to the fisheries . . .	U.S.A.**
Papers on methods of estimating yield from multiple species fishery	U.S.A.**
Correspondence with ICNAF by Secretariat	Secretariat **

* Totally or partially achieved, but to be updated.
** Not yet done.

No asterisks — New assignments in 1975.

Yellowfin

Production models (update)	U.S.A.*
Yield per recruit analysis	Ivory Coast,* U.S.A.**
Table on age structure	Ivory Coast,** U.S.A.,* Japan (longline)
Cohort analysis (including effects of year-class change)	U.S.A.**
Stock structure paper	Senegal **
Simulation to investigate increased recruitment	Ivory Coast,** U.S.A.**
Effects on fisheries of management actions (e. g. reducing or increasing effort, etc.) **	Canada, Ivory Coast, Japan, U.S.A.
Feasibility of regulations	Canada,** U.S.A.**
Separation of YF from BE in catch (5.a.5) (FIS and Spanish surface fishery to be sampled)	
Study proportions of undersized yellowfin caught by each national fleet (Proceedings 13.6)	

Skipjack

*Production models (update)	U.S.A.
Table on age structure	Ivory Coast,** U.S.A.*
Cohort analysis	Senegal **
Relation between CPUE and E	U.S.A.*
Size distribution **	Canada, Ghana, Japan, ORSTOM, Spain, U.S.A. collaborate. Should be organized by the Secretariat.

New skipjack reserach to be commenced

Collection of W. Atlantic size data — (Carrillo, Sakagawa, Ramos — Summary by Secretariat)

Compilations of E. Atlantic catch, effort, size data by gear, month and by mean-

ingful area — (Senegal, Pianet; Japan, Kume; Spain, Pereiro and Fernández; U.S.A., Sakagawa — Summary by Secretariat)

Feasibility study of tagging for stock separation — (U.S.A., Fox)

Analysis of previous E. Atlantic tagging studies — (Senegal, Pianet)

Monthly charts of catch, effort, hooking rates — (Japan, Kume)

Interview fishermen for school sighting — (Brazil, Japan, Korea, Taiwan, Senegal, Ivory Coast, Spain, U.S.A., Secretariat)

Report aerial spotting results — (Brazil, Zavala; U.S.A., Fox; Senegal, Pianet)

Review previous research vessel surveys — (Senegal, Pianet)

Compare E. and W. Atlantic size frequencies — (Senegal, Pianet; Venezuela, Ramos)

Compare SJ and YF recruitment indices — (Senegal, Pianet)

Review possibility of fishing vessel surveys — (FAO, Rosa)

Study definition of fishing effort — (U.S.A., Fox)

Review feasibility of otoliths for growth — (France, Le Gall)

Review airborne and satellite possibilities — (Senegal, Pianet; U.S.A., Fox)

Complete age and growth studies and separate E. Atlantic catch by cohorts — (Senegal, Pianet)

Bluefin

Production models (new or updated)	Canada,** U.S.A.**
Yield per recruit analysis	Canada,* U.S.A.*
Table on age structure	Canada ?, U.S.A. Japan (longline)
Cohort analysis	Canada,** U.S.A.*
Stock structure paper	U.S.A.*
Simulation to investigate increased recruitment	Japan
Age determination (5.c.9)	Beardsley and small working group
Sport fishery survey (5.c.10)	U.S.A.*
Year class strength study (5.c.10)	Japan

Tagging young bluefin in the Bay of Biscay	U.S.A., Spain, France, Morocco, Secretariat
Catch and biological data from Mediterranean fishery (including Italy, Algeria, Tunisia)	Secretariat through FAO, etc.

Albacore

Production models (updated)	France *
Yield-per-recruit (integrated with C/E per age)	France,* Japan ?
Table on age structure	France ?, Japan ?
Cohort analysis	France *
Stock structure paper	France **
Recruitment for longline (N.E. Atlantic)	Japan
Study on historical data (North stock — longline and surface)	
Size composition data (new or historical — South)	Japan (historical data)

Bigeye

Production models (updated)	U.S.A.,* Japan *
Yield-per-recruit analysis	Japan *
Table on age structure	Japan *
Cohort analysis	Japan *
Stock structure paper	Japan **
Size data (5.e.5)	Japan (longline)
Separation of statistics by north-south (5.e.5)	Japan
Separation of bigeye catch from yellowfin (FIS and Spanish surface fishery to be sampled)	
Catch by USSR	Secretariat

Billfishes

Production models	Japan,* Canada **
Table on age (size) structure	Japan,** U.S.A.**

Small tuna species

Secretariat to request experience of field workers and observations of taxonomists	Secretariat * (partially done)
Study the methods to improve statistics (5.g.1) Task I, II and biological	All national offices
Study a system to estimate rejects by fishing boats (5.g.1)	

Statistics and Sampling

Synopsis of sampling schemes by time, area, gear, species strata	All national offices; to be summarized by the Secretariat
Catch and effort by time, area, gear, species strata .	All national offices; to be summarized by the Secretariat
Overall view of current status and cost effectiveness of Atlantic sampling program	Secretariat
Strata substitutions for length frequency compilations	All national offices
Estimate carrying capacity for major fisheries . . .	Secretariat
Promptness of Task II data	All national offices
Systematic sampling of Spanish intertropical purse seine fishery	
Processing of Japanese baitboat data	Japan

CHAPTER III

NATIONAL REPORTS

REPORT ON THE INVESTIGATION AND FISHERY OF TUNA AND TUNA-LIKE SPECIES IN BRAZIL

by

L. A. ZAVALA C.

A. General situation

Tuna fishing in Brazil is carried out by longline in the southeast and south (20° to 32° S) and by trolling.

The fisheries of northeast Brazil concentrate on the following species: *Thunnus atlanticus*, studied by the «Instituto de Biologia Marinha da Universidade de Rio Grande do Norte»; and king and Spanish mackerels, *Scomberomorus cavalla* and *Scomberomorus maculatus*, studied by the «Laboratorio de Ciências do Mar da Universidade Federal do Ceará». The research conducted on the longline fishery is carried out by the «Instituto de Pesca» of Santos, Sao Paulo.

Production by species, 1974 (Longline)

Species	*MT (GILLED & GUTTED)*
Swordfish	289.5
Yellowfin	188.6
Albacore	167.2
Bigeye	151.4
Sailfish	67.6
White marlin	30.1
Blue marlin	11.6
Blackfin	2.0
Others	116.0
	1,024.0

Original report in Spanish.

In 1974, the three longliners which operate in the southeast and south of Brazil, caught 1,024 MT (gilled and gutted) of tuna and tuna-like species, which represent a 49 % increase over 1973; 724,590 hooks were used (37 % more than in 1973). During the last few years, the most important species (in order of their importance) were: yellowfin and swordfish, except in 1974, when the catch of the latter species exceeded those of yellowfin.

B. Research programs for the longline fishery

Biology

Biological sampling has been conducted since 1972 and the first results are found in Document SCRS/75/18.

Major attention is being given to the study of the stomach contents of tuna and tuna-like species, primarily to study juveniles.

Data are being obtained on the sexual maturity of yellowfin.

Statistics

Data are being compiled on the principal tuna species, swordfish and marlins, converting gilled and gutted weight to round weight and then by sizes, in order to utilize information accumulated since 1969. The first results obtained from the study of yellowfin are included in Document SCRS/75/56.

C. Program for expansion of tuna fishing in the southeast and south of Brazil

Biological studies have indicated the possibility of introducing surface fishing methods, principally that of live bait (Document SCRS/75/100). These observations should proceed with programs of exploratory fishing.

CANADIAN NATIONAL REPORT 1974-1975

by

J. F. CADDY and C. D. BURNETT

A. Status of the fisheries

1. *Swordfish*

The landings of swordfish in Canada for 1974 were approximately 2 metric tons.

2. *Tunas*

Canadian catches of tuna in 1974 were exclusively bluefin from the West Atlantic, and landings by all methods amounted to 768 metric tons, a decrease of 237 MT from the previous year. The decline in landings was due to the purse seine fishery off the eastern coast of the United States, which took only 103 MT, in contrast to 639 MT in 1973, well below a domestically imposed quota for 1974.

The catch of large tuna by traps in St. Margaret's Bay, Nova Scotia, and by the rod and reel fishery in the Gulf of St. Lawrence increased to 256 and 365 MT, respectively; 41 % and 70 % more than in 1973. Incidental captures by gill nets and mackerel seines in the Gulf of St. Lawrence accounted for the remainder (44 MT) of the total landings, while some additional catches, estimated at 18 MT, were tagged and released.

B. Special research studies

1. *Swordfish*

Four exploratory 19 day longline cruises were conducted in August, 1975, off the Canadian and U. S. East Coast. Information on size, abundance, sex ratio, and morphometrics was recorded. Two swordfish, released in 1969 and 1970, were recaptured in 1975 and 1974, respectvely.

Original report in English.

2. *Tunas*

Weights, and area and method of capture, were recorded for 1,921 large bluefin tuna caught in Canadian waters during 1974. Similar information has been collected in 1975 and supplemented by sampling otoliths from a substantial proportion of the catch. Landings of juvenile bluefin, in both years, were sampled for fork length.

Forty-eight (48) were tagged and released from the sport fishery and from the trap fishery, St. Margaret's Bay, in 1974. One recaptured off P.E.I. and another off Portland Light Vessel were at large for 5 and 3 years, respectively.

C. 1975 regulations and preliminary landing figures for 1975

In keeping with the 1974 ICCAT recommendations on conservation of bluefin tuna, in 1975, domestic restrictions were applied to the three Canadian fisheries for this species in the West Atlantic.

Purse Seine Fishery (Juveniles)

This fishery is estimated to have taken the domestic quota for bluefin off the New Jersey coast which was set at 317 MT, or approximately 50 % of Canadian catches from this fishery over the period 1970-74. Less than 5 % of the fish sampled as of 1 September 1975 were below 6.4 kg. round weight.

Gulf of St. Lawrence Rod and Reel Fishery

Angling for bluefin was restricted to 10-week periods for each fishing locality in the Gulf of St. Lawrence. Licences were limited to the number participating in the 1974 fishery, and weekly reports of fishing effort and catch were made mandatory. Angling with a line exceeding 130 lb. breaking strength and the landing of more than two fish per boat per day was prohibited.

Abundance of fish and catches has been poor, and total landings are likely to be less than 50 % of those in 1974.

Nova Scotia Trap Fishery

The first 148 fish caught incidentally in the St. Margaret's Bay mackerel trap fishery in 1975 were double tagged with WHOI type «H» tags and released. So far, one of these has been recovered in the Gulf of St. Lawrence. Subsequently, 408 fish, averaging 295 kg., were taken in the trap fishery (to 1 September), 52 % of the 1974 landings. A total of 46 of the fish caught early in the season were retained in a large holding net for experimental feeding prior to marketing.

There was no purse seine fishery for yellowfin and skipjack in the Gulf of Guinea in either 1974 or 1975. Ten (10) metric tons of skipjack were landed in 1975 from the West Atlantic.

NATIONAL REPORT - CUBAN FISHERIES IN THE ATLANTIC DURING 1974

by

E. CARRILLO

The tuna fleet

The tuna fleet which operated in the eastern Atlantic was comprised of 23 longliners and one purse seiner. The fleet which operated in the western Atlantic (Cuban platform) was comprised of 44 live baitboats.

Fishing zone

During this year, the fleet was distributed in the eastern Atlantic (from 10° S to 28° N latitude and 50° W longitude).

Catches

The Cuban catch amounted to 11.3 thousand tons; 7.8 thousand tons corresponded to the longline fisheries with an effort of 97,176,970 hooks, while 0.8 thousand tons corresponded to the purse seine fisheries in the eastern Atlantic. The composition of the catch by species in this area was as follows:

Gear/species	*TOTAL*	*YF*	*BE*	*SJ or bonito*	*Marlin*	*Others*
LL	7.8	3.4	2.4	—	2.0	—
PS	0.8	0.4	—	0.1	—	0.3
Total	8.6	3.8	2.4	0.1	2.0	0.3

A comparison of the 1974 catch with those of previous years is as follows:

Original report in Spanish.

Species	*1974*	*1973*	*1972*	*1971*
		UNIT %		
Yellowfin	44	53	55	34
Bigeye	28	31	31	56
Albacore	—	—	2	—
Skipjack	1	—	—	—
Marlins	23	—	—	—
Others (unclassified)	4	16	12	10

Although the catches for this year have decreased, it should be noted that effort was also decreased.

Research Activities

Tuna research is carried out as part of the program of the «Centro de Investigaciones Pesqueras de Cuba». For this research there is a team of 14 persons (mathematicians, fisheries biologists, ichthyologists, oceanographers and other experts).

This year a program was developed for yellowfin biological sampling (length, weight, sex, maturity stage and feeding).

Samplings were also conducted for the collection of larvae and eggs (in the western Atlantic).

Future research activities (1976)

A program will be developed for sampling bigeye, and a yellowfin tagging program will be initiated in the western Atlantic (Gulf of Mexico and Caribbean Sea).

RESEARCH REPORT FOR 1974 - FRANCE

by

R. LETACONNOUX

Status of Fishing in France

In 1974, more than 64,500 tons of tuna were caught by French fishermen based at the homeland and in African coastal ports.

	1968	*1969*	*1970*	*1971*	*1972*	*1973*	*1974*
Albacore	14.3	10.0	6.6	9.8	9.8	6.0	7.5
Yellowfin	32.5	28.9	26.0	25.9	35.6	32.3	31.5
Skipjack	13.0	8.5	14.0	19.5	20.5	12.7	24.5
Bigeye	—	1.6	1.2	0.5	0.3	2.5	0.5
Atlantic Bluefin Tuna	0.6	0.6	0.8	0.8	0.9	0.5	0.5
Mediterranean Bluefin Tuna	1.9	1.8	1.7	2.6	1.9	1.0	?
Thousand Tons	61.7	50.8	49.5	58.3	68.1	54.5	

Between the European coasts and 30° W, a total of 256 boats —221 trollers and 35 baitboats— were equipped for albacore fishing, compared to 319 in 1973. This represents a 20 % decrease in the number of vessels which fished during this season.

Albacore cruises in the N.E. Atlantic in 1974 - monthly catches.

Month	*Catches (MT)*	*No. of Trips*	*Catch/Month/Trip*
June	480	53	9
July	2,686	252	10.5
August	2,168	237	9.1
September	976	189	5.2
October	1,149	131	8.8
November	30	6	5
Total	7,489	868	8.6
1973 Figures	6,097	953	6.4

Original report in French.

Research

1. *RESEARCH CARRIED OUT BY ISTPM*

In 1974, two research cruises were planned — one for albacore and the other for bluefin. For financial reasons, only one cruise, that for the study of albacore fisheries, was carried out. This was effected on board the vessel «La Pélagia» and in the sector north and east of the Azores, between May 28 and July 18.

In the course of this cruise, tagging operations were continued, and particular attention was given to the study of the yields, by using artificial bait in troller fishing in relation to the color of the bait.

During the last half of June, fishing and research work were interrupted by adverse weather conditions.

During the course of this mission, only 203 albacore and 23 bigeye were tagged. These fish measured between 55 and 81 cm.

In 1974, 1207 fish were measured.

From January 1 to December 31, we were informed that 12 tags had been recovered, as follows:

4	albacore	tagged	in	1973
6	»	»	»	1972
2	»	»	»	1971

Research program for 1975

An albacore cruise is planned for the vicinity of the Azores. Also, a second cruise dedicated to the tagging of bluefin is planned in the region of the Bay of Biscay.

On the other hand, in the course of its round trip between St. Pierre et Miquelon and France, the vessel «Cryos» will carry out tuna exploration between 56° W and the region of the Azores.

2. *STUDIES CARRIED OUT BY THE «CETRE OCEANOLOGIQUE DE BRETAGNE (C.O.B.)» (Reported by the C.O.B. scientific department)*

Albacore

a) Studies were continued on the status of exploitation of albacore in the N. Atlantic, using the results of French fishing:

— A small group of researchers, aided by young scientists on board the auxiliary boat, monitored the fishing conditions by radio and through periodical visits on board to effect the measurements.

Measurements
I.S.T.P.M.

Measurements taken on board 7 boats 926 specimens				*I.S.T.P.M. measurements on board «La Pélagia» 281 specimens*	
cm. Fork-length	*May 21-Jun. 27 W of 27° W*	*Jun. 27-Sept. 2 W of 18° W*	*Sept. 9-Oct. 9 7° W & 14° W*	*June 2-July 15*	
				W of 18° W	*East of 18° W*
43					
44					
45	5				
46	34			0	
47	27			1	
48	2			1	
49	0			1	
50	1			1	
51	0			4	
52	0			2	
53	0			5	
54	1			2	
55	1			6	
56	4	19	2	11	
57	7	7	14	27	
58	26	4	6	39	1
59	15	18	5	46	2
60	25	29	18	30	2
61	27	39	27	15	0
62	2	28	18	13	1
63	6	8	33	10	0
64	4	3	37	0	1
65	12	12	12	4	0
66	4	26	3	0	2
67	4	5	13	1	0
68	25	7	13	1	4
69	16	34	0	9	3
70	5	37	1	3	4
71	4	25	14	2	1
72	24	23	21	5	4
73	10	24	0	3	1
74		10	0	1	0
75		3	0	0	2
76		5	5	1	0
77		2	14	2	1
78		0	2	0	2
79		1		1	0
80		0		0	0
81		0		0	
82		1		2	
83		6		0	
84		1		1	
85					
	291	377	258	250	31

— At the end of the season, additional size samplings were carried out at ports in Brittany.

— The data abstracted from the logbooks (which had been kindly completed by some skippers) were analyzed, and a breakdown of fish geopraphical areas and age classes was obtained.

The total of albacore measured in this cruise was 6,836.

b) Likewise, the C.O.B. worked especially on the improvement of albacore fishing conditions.

— The daily isotherm maps received on the auxiliary boat were interpreted and useful information was retransmitted to the tuna boats, in collaboration with I.S.T.P.M.

— A technique for hauling of the lines with hydraulic power block was elaborated on a traditional troller.

c) Finally, important studies concerning the nutritional condition in the environment of albacore were carried out with one chartered tuna boat.

Bluefin

Because of the shortage of personnel, few samplings were effected on the Basque coast. Only 442 fish were measured.

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Etude de l'état du stock nord-atlantique de germon (*Thunnus alalunga*) par l'analyse des cohortes. (SCRS/74/34).

MARINE MARCHANDE — D. A. M. Bretagne-Vendée Nantes

La pêche du germon atlantique Bretagne-Vendée/Pays Basque — Campagne 1974.

TUNA FISHERIES 1973 - 74. GHANA

Outline

Until 1972, the bulk of tuna landed in Ghana was from foreign flag vessels based in Tema. These are Japanese, Korean, Chinese, Panamanian, American, Canadian and Norwegian flag vessels. These vessels were all on contract to Star-Kist Foods Inc. Star-Kist uses Tema as a transshipment base. East-Gate (Ghana) Ltd., a subsidiary of West-Gate Company of San Diego, California, started operation in September, 1972, also using Tema as a transshipment base with foreign flag vessels.[1]

Serious development of a Ghanaian tuna industry was started in 1972. Before this time, tuna and related species have been exploited by Ghanaian canoe fishermen and small inshore purse seiners. Mankoadze Fisheries Ltd. (a Ghanaian fishing company), Star-Kist Inc. and Nichiro Fishing Company of Japan formed a company in June, 1972, for the exploitation of tuna. This company —The Ghana Tuna Fishing Development Company— now operates two baitboats, «Truth» and «Self Reliance».[2]

Mankoadze Fisheries Ltd., acquired a baitboat, «Leader» (formerly Azuma Maru No. 3), from Taiyo Fishing Company of Japan. Mankoadze Fisheries Ltd., and The Taiyo Fishing Company formed another company, «The Ghana Marine Enterprises Ltd.» in 1974. This company operates a baitboat, «Joy» (formerly Azuma Maru 12).

The Fishery

During 1974, 36 foreign and 4 Ghanaian vessels operated from Tema. These were made up as follows:

Flag	*Type*	*No.*	*Range in GRT*
Japanese vesels	Baitboat	22	282-500
	Purse Seine	1	500
Korean vessels	Baitboat	5	245-250
	Longline	3	138-270
Spanish vessels	Purse Seine	2	330-480
Panamanian vessels . . .	Baitboat	4	190-432
Ghanaian vessels . . .	Baitboat	4	

[1] East-Gate does not operate any vessel now.
[2] «Self Reliance» is now scrapped.

Original report in English.

Landings

The following are landings of foreign and Ghananian flag vessels.

	Tuna landings (in MT)			
	1973		*1974*	
	Foreign	*Local*	*Foreign*	*Local*
Yellowfin	12,919.994	141.456	11,905.714	341.636
Skipjack	18,830.271	128.809	22,776.984	701.428
Little tuna	1,130.839	26.219	560.277	66.004
Other Species	1,538.032	1.741	1,164.156	895.374
Total	34,419.136	298.225	36,407.131	2,004.442

During 1974 a total of 348 trips were made by both foreign and Ghanaian vessels with each trip lasting for about a month.

All the landings are transmitted to ICCAT, by species, vessel type, gear, and flag.

Research

Research on the tropical tunas continued during the year. Biological sampling — Biological sampling of yellowfin and skipjack tunas was continued during 1974. A total number of 7,700 yellowfin and 7,850 skipjack tunas were measured during the year. This is against 3,850 yellowfin and 3,900 skipjack measured during 1973.

The bulk of these measurements came from baitboats. The sizes ranged from 35 cm. to 170 cm. for yellowfin and 35 cm. to 65 cm. for skipjack tunas.

Data from these measurements would be made available to all scientists working in the area.

Work on maturity, and stomach content analysis were also continued.

Tagging

Arrangements were continued during 1974 to obtain suitable vessels for the tagging programme of the Fishery Research Unit of the Department of Fisheries. Nichiro Fishing Company of Japan expressed its willingness to co-operate.

Ghana continued to co-operate in ICCAT's co-operative tagging programme. Six tags reported to the Fishery Research Unit were transmitted to ICCAT Headquarters.

Research Programme for 1975

The research programme started for the Atlantic tunas would be continued during 1975. These would include biological sampling, monitoring of catch, effort and catch per unit effort for both Ghanaian and foreign flag vessels. Special attention would be paid to yellowfin and skipjack tunas.

Stomach content analysis of both yellowfin and skipjack tunas would also be continued.

Tagging

It is anticipated that about 1,000 yellowfin and skipjack tunas would be released during the year.

The Fishery Research Unit would start monitoring metal content levels in tuna during the year. This would be done in conjunction with the Ghana Atomic Energy Commission.

REPORT FROM THE IVORY COAST ON TUNA FISHERIES AND RESEARCH, 1974-1975

by

A. FONTENEAU and L. KOFFI

1. Tuna fishing

Concerning the tuna fleet of Ivory Coast, which is comprised exclusively of purse seiners, the number of vessels increased in 1974-75 (Table 1) as well as its catches (Table 2).

Table 1. Development of the tuna fleet of Ivory Coast.

Year	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*
Purse seiners (200 T. cap.)	1	1	1	1	2	3
Purse seiners (400 T. cap.)	1	1	1	1	2	3

Table 2. Development of the catches of the Ivorian fleet (1975 forecast based on the catch up to September 30, 1975).

Year	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*
Yellowfin	550	1,164	2,188	2,400	3,036	6,000
Skipjack	300	963	1,306	1,000	2,220	1,700
Bigeye	1	24	0	120	137	50
TOTAL	851	2,151	3,494	3,620	5,393	7,750

The complete statistics of the Ivory Coast fleet are included in the FIS statistics (Task I, Task II and measurements).

Landings and transshipments from foreign tuna fleets also increased, and in 1974, 54,000 tons of tunas were transshipped at Abidjan. This represents an absolute record in transshipments carried out since the construction of this port.

Original report in French.

Table 3. Breakdown of the transshipments by country.

	YF	*SJ*	*BE*	*Alb*	*Div*	*Total*
Baitboats FIS	345	58	1	0	0	404
Purse seiners FIS . . .	19,684	8,674	270	0	0	28,628
» » US . . .	1,665	1,705	0	0	0	3,370
» » SPAIN . .	4,030	1,801	0	0	0	5,831
Various, surface . . .	609	421	0	0	0	1,030
Longliners	5,426	19	3,326	3,893	2,336	15,000
TOTAL	31,759	12,678	3,597	3,893	2,336	54,263

2. Tuna Research

In 1974, studies were continued on fishery statistics, biology and population dynamics at the «Centre de Recherches Océanographiques» (C.R.O.).

a) *Statistics and sampling of the surface fishery*

The C.R.O. of Abidjan undertakes the collection of logbooks and effects size measurements of all the surface fleets which unload at Abidjan, especially that of the FIS fleet. Table 4 shows the sampling carried out in Abidjan in 1974 (number of fish measured and samples taken).

Table 4. The number of fish sampled and the number of samples (in parentheses).

	YF	*SJ*	*BE*	*Alb*	*Total*
Baitboats FIS . . .	293 (6)	89 (2)	20 (2)	0	402 (10)
Purse seiners FIS . .	7,302 (155)	2,405 (52)	1,155 (43)	0	10,862 (250)
» » US . .	138 (4)	106 (2)	0	0	244 (6)
» » SPAIN .	602 (9)	410 (5)	0	0	1,012 (14)
Longliners	465 (11)	0	405 (8)	284 (6)	1,154 (25)
TOTAL	8,800 (185)	3,010 (61)	1,580 (53)	284 (6)	13,674 (305)

Besides its local responsibilities, the C.R.O. centralizes and processes by computer the statistics of all the FIS landings. The following statistics were obtained at Abidjan. (The results are summarized in documents SCRS/75/69 and 70).

- Task I: catch and effort by gear.
- Task II: catch, effort and yield by month, by 1° × 1° square and by gear.
- Size distribution for yellowfin by gear, quarter and sector.

It should be noted that skipjack measurements are analyzed at the C.R.O. at Dakar (Centre de Recherches Océanographiques de Dakar, Senegal).

b) *Statistics and sampling of the longline fishery*

The statistical program for this fleet was initiated in 1973; the program developed in a satisfactory way during 1974 and 1975. Task II results for the longliners which landed at Abidjan in 1974 were published in 1975 (Document SCRS/75/71) and comprise 80 % of the catches.

The measurements program was intensified in 1975 due to a contract between ICCAT and the C.R.O. which allowed for hiring a sampling expert on a full-time basis for the longliners.

c) *Population dynamics*

These studies concern the intertropical fishery, especially yellowfin. The work included studies on the simulation model developed at the C.R.O. and presented at Nantes in September, 1974. The first study (Fonteneau and Francis, SCRS/75/38) analyzes the sensibility of this model to errors in the basic parameters (parallel study to that of the simulation of Pacific yellowfin).

A second study analyzes the actual situation of the yellowfin fishery and compares the conclusions obtained through the production model and simulation model (Fonteneau and Pianet, SCRS/75/74).

Some documents analyze particular problems such as bigeye identification (Fonteneau, SCRS/75/72), relationship between predorsal and fork length of yellowfin (Caverivière, SCRS/75/73).

d) *Biology and fecundity of yellowfin*

A program concerning the fecundity of yellowfin was developed during 1974 and 1975. The preliminary results of this study have been presented in Documents SCRS/75/75 (Albaret, J. J.) and SCRS/75/77 (Albaret, Caverivière, Suisse de Ste. Claire).

e) *Ecology and infra-red radiometry*

The program is based on the combined cruises of airplanes, oceanographic ships and the tuna fleet. It was continued in 1974-75.

Knowledge of the short-term fluctuation in the availability of tuna has improved and consequently makes it possible to do some forecasting of the fishing areas.

3. Future projects

Tuna research programs already under way will be continued, in close collaboration with ICCAT and other laboratories interested in tuna statistical and research activities.

List of papers presented by the C.R.O., Abidjan, at the 1975 SCRS meetings.

Subject	*Reference SCRS/75*	*Title*	*Author(s)*
General	/68	Rapport de la Côte d'Ivoire sur les pêcheries et la recherche sur les thonidés pour 1974-1975	A. Fonteneau L. Koffi
Fish Statistics	/69	Statistiques de pêche de la flottille FIS en 1974	F. Barbe A. Fonteneau
	/70	Statistiques de pêche de la flottille FIS au 30 septembre 1975	F. Barbe A. Fonteneau
	/71	Statistiques de pêche des palangriers du port d'Abidjan - Année 1974	Anonymous
	/72	Note sur les problèmes d'identification du bigeye dans les statistiques de pêche	A. Fonteneau
	/76	Note sur les résultats demandés au programme de traitement des mensurations palangrières de l'ICCAT	A. Fonteneau
	/73	Longueur prédorsale, longueur à la fourche et poids des albacores de l'Atlantique	A. Caverivière
Yellowfin dynamics	/38	Sensitivity analysis of the yellowfin tuna population, fishery models of the eastern Atlantic and eastern Pacific to errors in basic parameters	A. Fonteneau R. Francis
	/74	Analyse de la situation de la pêcherie d'albacore de l'Atlantique de l'est	A. Fonteneau R. Pianet
Yellowfin biology	/75	Maturité sexuelle, fécondité et sex ratio de l'albacore du Golfe de Guinée — résultats préliminaires	J. J. Albaret
	/77	Périodes et zones de ponte de l'albacore de l'Atlantique d'après les études du rapport gonado-somatique et des larves — résultats préliminaires	J. J. Albaret A. Caverivière E. Suisse de Sainte Claire

JAPANESE FISHERIES AND RESEARCH ACTIVITIES ON TUNAS AND TUNA-LIKE FISHES IN THE ATLANTIC OCEAN, 1973-1975

by

SUSUMU KUME

1. Fishing activities

The Japanese catch of tunas and tuna-like fishes in 1974 in the Atlantic Ocean amounted to about 75,000 tons, 10,000 tons higher than the previous year. The catch over the past five years has almost leveled off at between 56 and 78 thousand tons (Fig. 1). The purse seine catch continued to decrease, but the pole-and-line catch increased and was the highest recorded in 1974.

In early 1975, there was a drastic change in the Japanese tuna fleet in the Atlantic, that is, the essential reduction of the pole-and-line fleet and the complete withdrawal of the purse seiners from the Atlantic. The total yield in 1975, therefore, is expected to drop sharply.

1.1. *Longline fishery*

The catch of the longline fishery in 1974 was 42,454 tons, which is 56 % of the total 1974 catch. The distinctive features of the longline operation in 1974 were summarized as such: 1) the bigeye catch still stayed on a high level, being more than half of the total longline catch; 2) the catch of bluefin tuna reached 5,300 tons of which about 2,300 tons were taken from the Mediterranean; and 3) the catch of albacore and yellowfin tuna together was only 6,700 tons, or 16 % of the total longline catch (Table 3). This was the reflection of the recent continued specific species preference by the longline fleet, directing its efforts to bigeye and bluefin in order to meet domestic fresh consumption. Longline boats which operated in the Atlantic in 1974 numbered 222, including one deckloaded motherboat, but no foreign-based boats (Table 2). The number of boats in Table 2 is overestimated, since many boats fishing for southern bluefin tuna in the area off southern Africa move frequently from the Atlantic to the Indian Ocean and vice-versa.

In 1975, the longline operation will again show the recent prevailing preference

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for certain species, but some changes in fishing strategy are also expected due to the new regulatory measures taken on bluefin tuna.

1.2. *Pole-and-line fishery*

With the addition of a few boats in 1974 (this fleet now totals 24 boats), this fishery produced 30,000 tons of tunas, which equal 41 % of the total Japanese tuna catch in the Atlantic (Tables 1 and 2). Other than the conventional pole-and-line fishing ground in the Gulf of Guinea, pole-and-line fishing operated on a small scale in a limited area off Venezuela. The catch of skipjack in 1974 increased markedly and constituted two thirds of the total baitboat catch, but the yellowfin catch also slightly exceeded that of the previous year (Table 4).

The major portion of the Japanese pole-and-line fleet ceased its fishing activities in the Atlantic in February, 1975. Thereafter, only a couple of boats have been operating, so that the catch in 1975 will drop severely.

1.3. *Purse seine fishery*

The purse seine catch in 1974 was 1,900 tons, and represents only 3 % of the total Japanese tuna catch in the Atlantic, indicating a considerable reduction since 1973 (Table 1). Two single-boat seiners were active, but no double-boat seiners operated in the Atlantic (Table 2). The catch consisted mostly of skipjack and yellowfin, which are almost equal in importance (Table 5).

Only one single-boat purse seiner operated in 1975, but this boat also withdrew from the Atlantic in February. Up until now, no purse seine fishing has resumed.

1.4. *Reaction of the fisheries to the regulatory measures*

In regard to the minimum size regulation for yellowfin tuna, the pole-and-line fleet has made it their effort to stay away from the fishing grounds where young yellowfin are abundant. This resulted in the reduction in the proportion of yellowfin tuna in their catches, while the total pole-and-line catch increased rather extensively in 1974. From March, 1975 onwards, because of the essential withdrawal of the Japanese surface tuna fleet from the Atlantic, there will be extremely little opportunity for the Japanese fishermen to capture undersized small yellowfin. It is very rare that longline gear catches yellowfin tuna weighing less than 5 kg.

To meet the coming ICCAT regulatory measures on bluefin tuna, the Japanese Government enforced (since April, 1975) jurisdiction on their fishermen, including a catch quota and closure of a specific area for a certain duration. This legislation was enacted even before the ICCAT bluefin tuna regulation went into effect in August. The Mediterranean Sea, which is a good bluefin fishing ground, was closed to the Japanese boats during the most productive fishing period, from May 21 through June 30. Also, after August, catching of bluefin tuna by a Japanese boat in the Atlantic was prohibited with an allowance of up to 10 % of the total catch (in weight) per boat.

2. Research activities

2.1. *General catch statistics*

The Statistics and Information Department of the Ministry of Agriculture and Forestry provides the official catch and effort statistics of the longline and pole-and-line fleets. Since 1971, the statistics have been compiled by year of catch, but not by year of landings, and therefore completely meet the Task I requirement defined at the first SCRS meeting. The Fisheries Agency compiles similar data for the Atlantic purse seiners.

In 1975, the Statistics and Information Department published «The National Fisheries Yearbook on Statistics for 1973», which included data on catch and effort (in number of cruises, operations and days at sea) by type of fishery, species and base port. The Fisheries Agency and the Far Seas Fisheries Research Laboratory (FSFRL) obtained final catch and effort statistics for the Japanese purse seine fishery in the Atlantic up to February, 1975 (Honma MS b).

2.2. *Detailed statistics*

The Fisheries Agency and its research laboratories have continuously collected catch records from major fisheries. These data are adequate enough to prepare Task II statistics. However, the processing system for the Atlantic pole-and-line fishery is not yet working well.

The annual report on 1973 longline catch and effort statistics by area was published in March, 1975 (Fisheries Agency 1975). The 1974 data compilation is now under way and will be completed by the end of 1975. Logbooks were also collected from the pole-and-line fishery. However, the data from the Atlantic Ocean have not been compiled yet. Purse seiners also submitted their logbooks to the Fisheries Agency. Honma (MS b) processed the Atlantic data up to February, 1975, as a series of purse seine catch and effort data tabulations.

2.3. *Length statistics*

In 1974, length composition data taken in 1973 and reported to the FSFRL by the end of September, 1974 were compiled for tunas and billfishes. The resultant size statistics from the Atlantic Ocean are tabulated and sent to the ICCAT Secretariat in May, 1975. The measurements obtained in 1974 and reported by August, 1975, will be processed by the end of 1975. In addition, the old length data of yellowfin tuna caught by the Japanese longline fishery, 1956-1964, were compiled and submitted to the ICCAT Secretariat (Honma MS c) and similar data for billfishes are now being compiled.

Since May, 1972, an onboard-survey program has been conducted to measure the body length of fish taken by longline in the Atlantic. In fiscal year 1974 (starting in April), we obtained length data from four vessels. This program has been ex-

tended to most of the longliners operating in the Atlantic, since the time when the bluefin regulatory action was taken. Japanese biological sampling will improve to a great extent soon. An onboard survey is highly essential to substantiate the accuracy of length data for the longline catch in the Atlantic, since at the place of unloading: (1) It is almost impossible to know where and when the fish sampled were caught, due to the wide range of operations throughout a cruise in respect to space and time; and (2) The landings of large longliners are frequently not covered by our sampling scheme.

2.4. *Stock assessment*

To facilitate cooperative studies in ICCAT, the staff of the FSFRL calculated the overall fishing intensity of the Japanese longline fishery for albacore, yellowfin, bigeye and Atlantic blue and white marlins for 1956 through 1973, together with the catch by length class for albacore and yellowfin tuna (Honma MS a & c, Shiohama MS, Kume MS a and Kikawa MS a).

Several studies made in 1975 include: The examination of the effect of the control of yellowfin fishing on the longline fishery (Honma and Kume MS), the possible stock fluctuation of medium and large-sized bluefin tuna (Shingu and Hisada MS), an estimation of parameters in Y/R model on albacore population (Morita MS) and the stock condition of bigeye tuna (Kume MS b). The length data by sex of yellowfin tuna caught by the Japanese longline fishery were examined (Yonemori MS and Honma MS c). Hayashi (1974) made the stock assessment of southern bluefin tuna, using the available data up to September, 1973. Various problems on this species were also discussed by Australian and Japanese scientists at the special southern bluefin tuna working party which was held at FSFRL in June, 1975.

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Table 1. Japanese catches (in metric tons) and percentages (in *italics*) of tunas and tuna-like fishes by types of fisheries, Atlantic, 1960, 1965, 1972, 1973 and 1974.

Type of fishery		1960	1965	1972	1973	1974
Total		68,257	150,162	67,830	64,302	75,048
Longline*	Subtotal	68,257 *100*	136,970 *91*	45,121 *67*	38,008 *59*	42,454 *56*
	Deckloaded motherboat	—	53,097 *(39)*	3,835 *(8)*	450 *(1)*	42,454 *(100)*
	Homeland-based boat	—	—	39,386 *(87)*	37,059 *(98)*	
	Foreign-based boat	68,257 *(100)*	83,873 *(61)*	1,900 *(4)*	499 *(1)*	—
Purse seine	Subtotal	—	4,203 *3*	7,750 *11*	3,348 *5*	1,918 *3*
	Single-boat seiner	—	—	2,399 *(31)*	2,751 *(82)*	1,918 *(100)*
	Double-boat seiner	—	4,203 *(100)*	5,352 *(69)*	597 *(18)*	—
Pole-and-line		—	8,989 *6*	14,959 *22*	22,947 *36*	30,676 *41*

Source of data: Statistics and Information Department for longline and pole-and-line fisheries, and Fisheries Agency and Far Seas Fisheries Research Laboratory for catch of purse seine fishery.

Percentages without parentheses are those of the total of the annual catch and those within parentheses are of gear subtotals.

* Bluefin catch in the Mediterranean Sea is included, which is as follows:

1972	112 tons
1973	246 tons
1974	2,192 tons

Table 2. Number of Japanese tuna boats which operated in the Atlantic Ocean, 1960, 1965, 1972, 1973 and 1974.

Type of fishery		Size class*	1960	1965	1972	1973	1974
Longline	Deckloaded motherboat	Total	—	40	8	1	1
		201- 500	—	7	2	1	—
		501-1,000	—	33	5	—	1
		1,001-	—		1	—	—
	Homeland-based boat	Total	—	—	186	199	221
		51- 200	—	—	1	—	—
		201- 500	—	—	181	199	221
		501-1,000	—	—	4	—	—
	Foreign-based boat	Total	88	169	11	2	—
		51- 200	. .	28	2	—	—
		201- 500	. .	135	9	2	—
		501-1,000	. .	6	—	—	—
		1,000-	. .		—	—	—
Purse seine	Single-boat seiner	Total	—	—	2	2	2
		201- 400	—	—	1	1	1
		401-	—	—	1	1	1
	Double-boat seiner**	Total	—	1	3	3	—
		51- 150	—	1	3	3	—
Pole-and-line		Total	—	6	14	22	24
		151-	—	6	14	22	24

Source of data: Statistics and Information Department for longline and pole-and-line fisheries, and Fisheries Agency and Far Seas Fisheries Research Laboratory for purse seine fishery.

* Size for single-boat seiners is expressed in carrying capacity, while that for others is given in gross tonnages.

** Number of double-boat purse seiners is given in terms of a fishing unit that comprises two net-boats and several carriers.

Table 3. Catch (in MT) and catch permillage (in *italics*) of tunas and tuna-like fishes taken by Japanese Atlantic longline fishery, 1960, 1965, 1972, 1973 and 1974.*

Year	1960	1965	1972	1973	1974
Total	68,257	136,970	45,121	38,008	42,454
Albacore	9,804	42,634	3,892	2,154	2,448
	144	*311*	*86*	*57*	*58*
Bigeye tuna	2,904	28,538	18,525	20,243	21,356
	43	*208*	*411*	*533*	*503*
Bluefin tuna**	820	9,612	674	1,387	5,295
	12	*70*	*15*	*36*	*125*
Southern bluefin tuna	—	—	10,775	7,533	6,397
			239	*198*	*151*
Yellowfin tuna	50,822	36,619	7,527	4,189	4,296
	745	*267*	*167*	*110*	*101*
Youngs	—	299	—	—	—
		2			
Skipjack	23	22	3	0	0
	0	*0*	*0*	*0*	*0*
Swordfish	98	2,870	2,023	1,186	1,486
	1	*21*	*45*	*31*	*35*
Blue & black marlin	2,712	5,751	444	368	310
	40	*42*	*10*	*10*	*7*
White marlin	253	4,631	456	366	441
	4	*34*	*10*	*10*	*10*
Sailfish	215	2,471	222	144	138
	3	*18*	*5*	*4*	*3*
Unclassified and others	605	3,523	580	438	287
	9	*26*	*13*	*12*	*7*

Source of data: Statistics and Information Department.

* Figures up to 1970 are of landings.

** Bluefin tuna catch in the Mediterranean Sea is included, see note for Table 1 as to annual catch.

Table 4. Catch (in MT) and percentage (in *italics*) of tunas and tuna-like fishes taken by Japanese Atlantic pole-and-line fishery, 1965, 1972, 1973 and 1974.

Year	1965	1972	1973	1974
Total	8,989	14,959	22,947	30,676
Bigeye tuna	125	—	190	606
	1		*1*	*2*
Yellowfin tuna	1,279	4,425	8,068	9,518
	14	*30*	*35*	*31*
Skipjack	6,318	10,149	13,401	19,798
	70	*68*	*58*	*65*
Frigate mackerels	902	25	1,237	461
	10	*0*	*5*	*2*
Unclassified and others	365	360	51	293
	4	*2*	*0*	*1*

Source of data: Statistics and Information Department.

Table 5. Catch (in MT) and percentage (in *italics*) of tunas and tuna-like fishes taken by Japanese Atlantic purse seine fishery, 1965, 1972, 1973 and 1974.

Year	1965	1972	1973	1974
Total	4,203	7,750	3,348	1,918
Albacore	—	—	3	—
			0	
Bigeye tuna	—	308	18	115
		4	*1*	*6*
Yellowfin tuna	1,134	2,827	1,542	868
	27	*36*	*46*	*45*
Skipjack	1,802	3,386	1,544	910
	43	*44*	*46*	*47*
Frigate mackerels	—	1,189	216	25
		15	*6*	*1*
Unclassified and others	1,267	40	25	—
	30	*1*	*1*	

Source of data: Fisheries Agency and Far Seas Fisheries Research Laboratory.

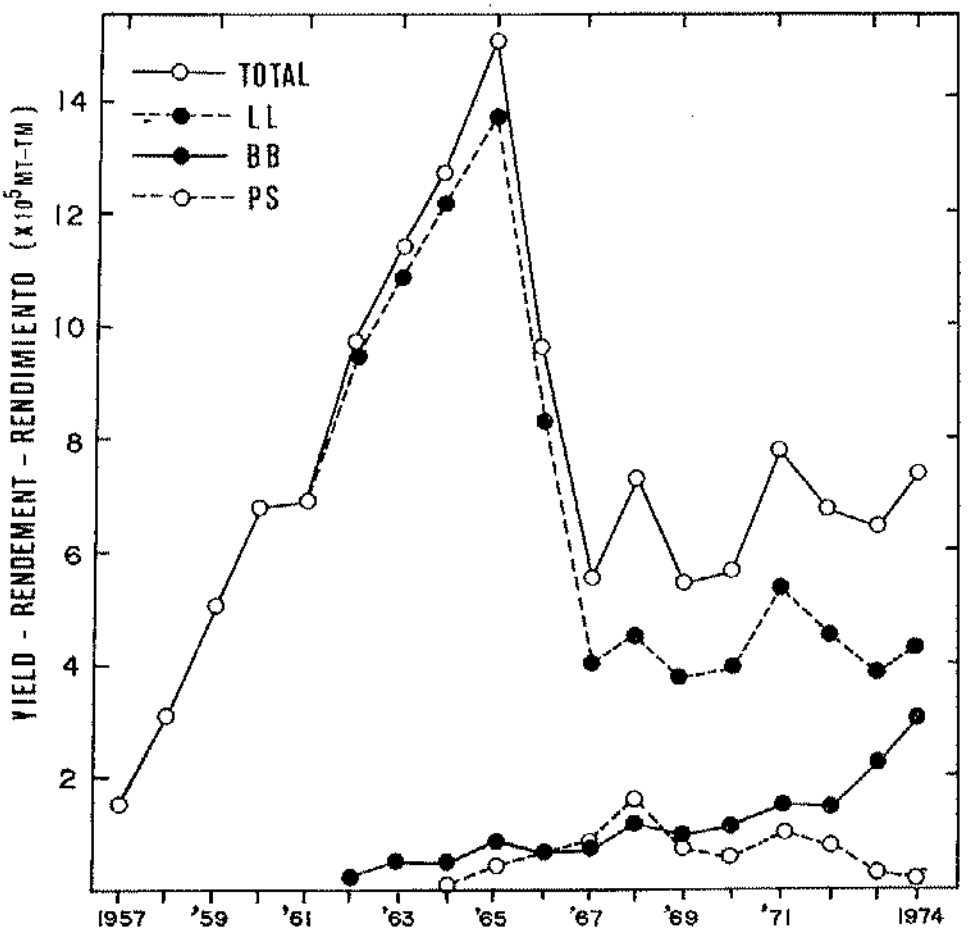

Fig. 1. Annual yield of Japanese tuna fisheries in the Atlantic Ocean, 1957-1974.

Source of data: 1957-1967 — ICCAT Statistical Bulletin Vol. 1.
1968-1973 — ICCAT Statistical Bulletin Vol. 4.
1974 — Table 1, of this report.

REVIEW OF KOREAN TUNA FISHERIES IN THE ATLANTIC OCEAN

by

OFFICE OF FISHERIES

1. Brief history of the Korean Atlantic tuna fishery

Since 1964, when Korea initiated the Atlantic tuna fishery for the first time, the fishery has developed remarkably and continuously. From the beginning up to recent years, the Korean tuna fishery was operated only by longliners. However, two skipjack pole-and-line boats obtained licenses to operate in the Atlantic late in 1972, and the boats started actual commercial fishing in the following year. As a result, the Korean tuna fishing has been dualized since 1973 in the Atlantic.

Besides, the vessels which were registered to some foreign countries have been fishing in the Atlantic since 1968. These vessels were all registered to Panama, except for one which was registered to the Netherlands in 1974. The foreign-flag vessels are chartered and operated by Korean firms, and are subject to the same fishery regulations as are the vessels flying the Korean flag. Therefore, these chartered boats and their catches are included in the Korean tuna statistics reported hereafter without any distinction, unless otherwise noted.

Table 1 summarizes the number of boats and their landings from 1964 to 1974. The general trend shows that the Korean tuna fishery is still in the growing stage.

2. Fishing boats

It is fully understood that the number of boats for a given year should include only the boats engaged in actual fishing. However, as it is not practical to collect such data in Korea, we provide the total number of vessels in the entire fleet, including the foreign registered vessels.

Table 2 gives the number of tuna boats operating in the Atlantic Ocean by type and size of boats. It should be pointed out that 500 gross ton class longliners now have completely disappeared. Besides, the number of baitboats increased in 1974.

Table 3 shows the number of Korean tuna boats in 1974. A total of 132 vessels registered to three countries (Panama, the Netherlands and Korea), adopted either

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of the two fishing methods (longline or pole-and-line), and ranged in size from 100 to 499 gross tons.

3. Landing statistics

There are four major problems in the Korean tuna landing statistics. First, the statistics are collected on the basis of landing time. Second, the quantities landed are not expressed in round weight, but in the weight after the fish are processed on board. Three processing methods are generally adopted in the longliners for the catch, depending on species: «Round» for albacore and skipjack; «GG» (gilled and gutted) for bluefin, yellowfin and bigeye tunas; and «DWT» (dressed with tail) for other species. Third, the statistics include the catch from the foreign-registered vessels. Fourth, the statistics include the landings of sharks.

The annual landing statistics are already shown in Table 1. Table 4 gives the Korean tuna landings by species and types of gear. Longliner landings have been sustained at the level of 35,000 metric tons since 1970, but the landings of baitboats have been increasing mainly due to the increasing number of vessels.

At the beginning of Korean tuna longline fishing in the Atlantic, albacore was the main object of the catch. But fishing has shifted to yellowfin tuna since 1970, and in 1974 this trend appeared more prominent. Actually, in 1974, yellowfin constituted the largest portion (45.8 %) of the total longliner landing, followed by bigeye tuna (21.7 %) and albacore (15.4 %), in descending order.

4. Research activity

In 1970, the Korean Fisheries Research and Development Agency (KRDA) published catch and effort statistics on the Korean tuna longline fishery for the first time. The publication includes some Atlantic data for four years from 1966 to 1969. The coverage, however, is not sufficient for reviewing the overall Korean tuna fishing activity.

From April to July, 1975, two Korean scientists made trips to Korean tuna fishing bases along the Atlantic Ocean in order to collect Korean tuna data. The data have been compiled and submitted to the ICCAT Secretariat. Table 5 summarizes the catch and effort statistics of the Korean tuna longline fishery in the Atlantic in 1974. The sampling coverage rate is 62.41 % of the total catch. Ninety-nine 5° squares were fished by Korean longliners between 40° N and 25° S. The fishing efforts were concentrated in the tropical area to catch yellowfin (Fig. 1). The catches per 1,000 hooks for several species by month are illustrated in Fig. 2.

On the other hand, the biological data which have been submitted to the ICCAT Secretariat are summarized in Table 6. Fish of three important species were measured (yellowfin, bigeye and albacore) either at fork length or in weight.

Table 1. Number of Korean tuna boats and the landing statistics in the Atlantic Ocean, since 1964.

Year	Number of boats			Landing (MT)		
	Longliner	Baitboat	Total	Longliner	Bairboat	Total
1964	1	—	1	167	—	167
1965	9	—	9	520	—	520
1966	54	—	54	7,114	—	7,114
1967	56	—	56	12,836	—	12,836
1968	49	—	49	12,624	—	12,624
1969	57	—	57	12,594	—	12,594
1970	105	—	105	34,865	—	34,865
1971	117	—	117	37,142	—	37,142
1972	105	2	107	36,345	—	36,345
1973	106	3	109	32,638	1,822	34,460
1974	124	8	132	33,910	4,416	38,326

Table 2. Number of Korean tuna boats by type and size of boats.

Year	Longliner (gross tons)						Baitboat (gross tons)				Grand Total
	100-	200-	300-	400-	500-	Total	100-	200-	300-	Total	
1971	11	62	29	1	14	117				—	117
1972	9	58	24	—	14	105	2	—	—	2	107
1973	6	63	23	3	1	106	2	1	—	3	109
1974	6	80	33	5	—	124	4	4	—	8	132

Table 3. Number of Korean tuna boats operating in the Atlantic Ocean, by flag country, type and size of boats, 1974.

Flag country	Gear	100-	200-	300-	400-	500-	Total
Korea	LL	5	60	24	2	—	91
	BB	1	2	—	—	—	3
Panama	LL	1	20	8	3	—	32
	BB	3	2	—	—	—	5
Netherlands	LL	—	—	1	—	—	1
	BB	—	—	—	—	—	—
Total	LL	6	80	33	5	—	124
	BB	4	4	—	—	—	8

Table 4. Landing statistics of Korean Atlantic tuna fisheries in metric tons.

Year	*Gear*	*Blue-fin*	*Yellow-fin*	*Alba-core*	*Big-eye*	*Skip-jack*	*Other tuna-like species*	*Shark*	*Total*
1971	LL	3,039	9,901	11,539	7,353	47	4,858	405	37,142
1972	LL	30	11,078	13,577	5,730	45	5,267	609	36,345
1973	LL	66	12,844	8,525	5,829	—	4,787	587	32,638
	BB	—	900	—	—	922	—	—	1,822
	Total	66	13,744	8,525	5,829	922	4,787	587	34,460
1974	LL	56	15,518	5,216	7,372	116	5,286	346	33,910
	BB	—	2,169	—	4	2,123	120	—	4,416
	Total	56	17,687	5,216	7,376	2,239	5,406	346	38,326

Table 5. Summary table of catch and effort statistics of the Korean Atlantic tuna longlines, 1974.

No. of hooks sampled	:	31,943,223 hooks
Coverage rate	:	62.41 %
No. of 5° squares covered	:	99 squares

Catch by species:

Species	*MT*	%	*Catch per 1000 hooks (kg)*
Bluefin	23.7	0.1	1
Yellowfin	11,102.0	44.4	348
Albacore	2,131.7	8.5	67
Bigeye	7,314.0	29.3	229
Skipjack	—	—	—
Swordfish	267.1	1.1	8
Others	4,165.5	16.7	130
Total	25,004.0	100.0	783

Table 6. Size measurement data sampled from Korean tuna longliners.
(Fork length in cm, Weight in kg)

Species	*Measurement*	1973			1974			1975		
		No. of fish	*Range*	*Mean*	*No. of fish*	*Range*	*Mean*	*No. of fish*	*Range*	*Mean*
Yellowfin	Fork length				102	78-171	123.1	539	78-189	135.1
	GG length	3,025	12-109	40.8		-		1,129	10-85	39.3
Bigeye	Fork length		-		47	88-209	138.2	510	74-195	134.2
	GG weight	918	12-111	43.0		-		1,488	12-125	47.7
Albacore	Fork length		-		85	88-115	102.4	60	80-110	95.8
	Round weight	1,051	8-41	23.6		-		76	18-37	24.2

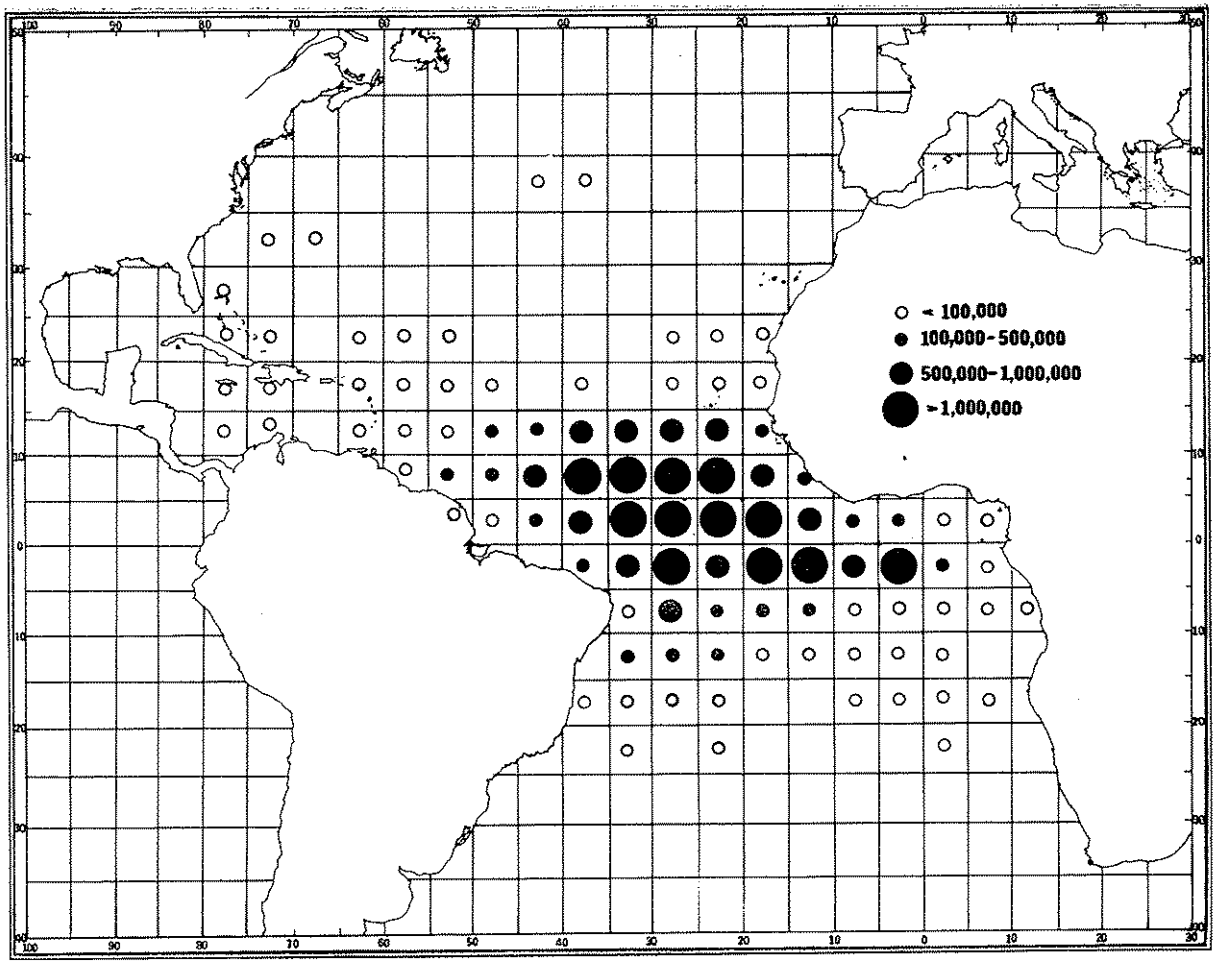

FIG. 1. Distribution of effort sampled (in number of hooks) by Korean Atlantic tuna longliners, 1974.

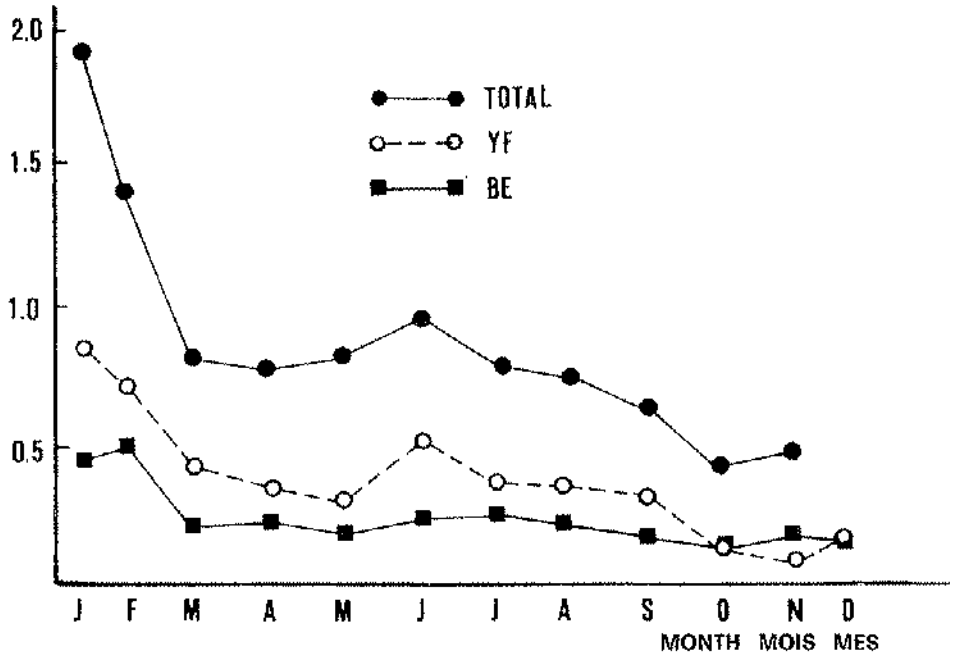

FIG. 2. Monthly catch per 1,000 hooks for Korean Atlantic tuna longlines (Data source: FRDA)

MOROCCAN NATIONAL REPORT

1. Fishing

Moroccan tuna fishing in 1974 showed a slight decrease from 1973. This was due to a decrease in the catches of frigate mackerel. On the other hand, catches of other species remained at the same levels.

Although the 1975 figures are not yet available, we can note exceptional catches of large bluefin tuna in the Agadir area, during the months of August and September.

2. Research

During 1974 and 1975, Morocco did not carry out any research programs on tunas, because of higher priority being given to other areas of activity.

Original report in French.

PORTUGUESE NATIONAL REPORT - 1974

1. The Fisheries

The Portuguese tuna vessels operate only in Madeira and Azores waters. The main fishing method was by baitboat.

In 1974, the Portuguese landings amounted to 12,319 tons, of which 9,079 tons were bigeye. This total represents an increase by 50 % over the 1973 landings. The species composition is not very much different from that of 1973, with bigeye as the major component of the landings.

This increase in landings seems to be mainly due to an increase in the number of trips.

2. Catch and Effort Statistics

A program for improving the commercial statistics has been established since January 1975, with the landings being reported by species, by gear and by landing ports. Monthly summaries of the number of vessels fishing, number of trips and corresponding catches are being compiled for 1975.

3. Biological Sampling

Occasional samples for lengths and other biological characteristics have been taken during 1975, but a regular program of sampling for length composition of landings of bigeye, yellowfin and albacore, as well as age-readings, sex ratio and maturation is being prepared to start in 1976.

Original report in English.

TUNA FISHERIES IN SENEGAL IN 1974

I. Senegalese fishing in the east tropical Atlantic

1) *The tuna fleet*

In 1974, the fleet was composed of 19 vessels, divided as follows:

— 1 independent baitboat with iced well of 49 GT (15 T capacity)

— 18 freezer purse seiners of the «Société Sénégalaise d'Armement à la Pêche (SOSAP)», totaling approximately 6,000 GT and with a capacity for carrying 2,240 T of tuna.

These seiners are modern vessels constructed less than five years ago; two of them are former baitboats which have been converted.

The majority of these seiners fished only sporadically during the last four months of the year, which is evidenced by the low number of trips per vessel (from 3 to 13 trips per seiner, not even averaging 8).

2) *Catches*

The following table indicates the distribution of landings by species (at Dakar and outside of Dakar) for 1973 and 1974.

Year	*Type of vessel*	*Number of vessels*	*Yellow-fin*	*Skipjack*	*Bigeye**	*Total*
1974	freezer	1	81	96	12	189
	purse seiner	18	4,225	3,582	3	7,810
	total	19	4,306	3,678	15	7,999
1973	total	17	6,929	2,549	82	9,478
comparison	Figures	+ 2	— 2,623	+ 1,129	—67	— 1,479
1974/73	%	+12.5%	—37.9%	+44.3%	—81.7%	—15.6%

* The figures referring to bigeye are not very significant since this species is reported as yellowfin or skipjack, depending on its size. These are estimates based on surveys presently being conducted only for trips landed at Dakar and are more accurate for baitboats than for seiners.

Original report in French.

The total production decreased more than 15 % in relation to 1973; this decrease is entirely due to the drop in yellowfin catches (38 %). The 1973 catches decreased 16 %, compared to those of the 1972 record year (11,340 T landed).

3) *Distribution of catches by fishing area*

The study actually concerns the distribution of the landings among the ports (Dakar, Abidjan and Pointe-Noire), which reflects fairly well the distribution of the catch by fishing area.

The following table shows the landings at the three ports, in 1973 and 1974.

Year	Port		Yellowfin		Skipjack		Total	
			Weight	%	Weight	%	Weight	%
1973	Dakar		876	12.6	691	27.1	1,567	16.5
	Abidjan		2,671	38.6	560	22.0	3,231	34.1
	Pointe-Noire		3,382	48.8	1,298	50.9	4,680	49.4
	Total	Weight	6,929	100.0	2,549	100.0	9,478	100.0
		%	73.1		26.9		100.0	
1974	Dakar		854	19.8	855	23.2	1,709	21.3
	Abidjan		1,676	38.8	793	21.6	2,469	30.9
	Pointe-Noire		1,790	41.4	2,031	55.2	3,821	47.8
	Total	Weight	4,320	100.0	3,679	100.0	7,999	100.0
		%	54.0		46.0		100.0	

Note: Bigeye has been combined with yellowfin.
DAKAR – SOSAP + JARWIN; AT OTHER PORTS – SOSAP ONLY

Production decreased on the whole (16 %). The catches decreased more appreciably in the Abidjan area (−24 %) than in the Pointe-Noire area (−18 %), while the remained stable (+9 %) in Dakar. This reduction in the landings is due entirely to the drop in yellowfin production, which now only represents 54 % of the 1974 catches, compared to 73 % in 1973. The three areas are affected in the following way: −3 % Dakar, −37 % Abidjan and −47 % Pointe-Noire, and are not compensated equally at the three ports by the increase in skipjack catches: +24 % Dakar, +42 % Abidjan and +56 % Pointe-Noire.

The fleet operates in a rather concentrated manner, traveling in a group from one area to another. It fished essentially in the Abidjan area in January-February (85 % of the trips), then in Pointe-Noire during March-April (75 % of the trips) where important catches of skipjack were obtained in Angola (almost 1,300 T). The fleet came back to Dakar-Abidjan in May and then went again to Pointe-Noire in July-August (82 % of the trips).

From September to December, all the purse seine vessels remained at Dakar, except for two or three (in Abidjan) and hardly fished: twenty-six trips were made in these four months, whereas 114 trips had been carried out in the first eight months of the year.

4) *Fishing effort*

We do not yet have accurate data available on the fishing effort outside of the Dakar area. We can, nevertheless, make an estimate based on the number of trips and the catches per trip. The following table shows the data for the three fishing areas referring to the fishing of SOSAP purse seiners.

Zone	Year	Trips		Yellowfin		Skipjack		Total	
		No.	%	Weight	W/Trip	Weight	W/Trip	Weight	W/Trip
Dakar	1973	36	24.2	866	24.0	671	18.6	1,537	42.7
	1974	46	32.9	761	16.5	759	16.5	1,520	33.0
Abidjan	1973	58	38.9	2,671	46.1	560	9.6	3,231	55.7
	1974	45	32.1	1,676	37.3	793	17.6	2,469	54.9
P. Noire	1973	55	36.9	3,382	61.5	1,298	23.6	4,680	85.1
	1974	49	35.0	1,790	36.5	2,031	41.5	3,821	78.0
Total	1973	149	100.0	6,929	46.5	2,549	17.1	9,478	63.6
	1974	140	100.0	4,227	30.2	3,583	25.6	7,810	55.8

W/TRIP = Catches in tons by trip.

It is evident that the best overall yields were obtained in the Pointe-Noire area for the two years indicated. They, moreover, correspond to better yields for the two species, except as concerns yellowfin production, which was slightly higher in Abidjan in 1974.

In general, the catches by trips as seen in the 1974 figures, are significantly less than in 1973, for the three areas (7.8 T less per trip). The results vary from one boat to another (averaging 25 to 82 T per trip for 1974).

II. International fishing in the Dakar region

The surveys, which had been initiated in 1966 and effected on board tuna vessels landing in Dakar, continued in 1974. Once combined with the Pointe-Noire and Abidjan surveys, the resulting data, which are presently being processed by computer in Abidjan, will indicate the distribution of the fishing effort and the catches by especies in the entire eastern tropical Atlantic, in particular for the Dakar region (from Cap des Palmes to Cap Blanc).

Practically all the landings are monitored through surveys conducted at the port and the official statistics, («Bureau Permanent de la Campagne Thonière»). Monitoring is likewise effected on all French tuna boats pertaining to SOVETCO.

At present, data are obtained from Spanish boats which enter the ports when the surveys are being conducted, but the official total landing figures are not yet available to us. An estimate has been made based on the trip sheets and an extrapolation of the results, to cover the cases when no surveys have been conducted. This estimate most probably is lower than the amount of fish actually landed. Finally, American purse seiners operate in the Dakar region during the second half of the year, but they do not land their catches.

1) *The tuna fleet*

In 1974, about 73 French, Senegalese and Spanish tunaboats have landed their catches in Dakar. The following table indicates the distribution by type and nationality of the boats.

Type of boat		*France*	*Senegal*	*Spain*	*Total*
Baitboats	Ice	24	1	0	25
	Freezer	5	0	0	5
Seiners	With bait	1	18	14 *	33
	Without bait	10	0	0	10
TOTAL		40	19	14	73

* Spanish seiners use a very unique fishing method. The seiners usually do not carry bait, but work together with baiting boats (former baitboats which do not fish by themselves) and around these boats they set a net. They can, therefore, be considered as seiners with bait, and generally give much higher yields than other boats in the same category.

2) *Distribution of landings by nationality*

This is shown in the following figure. Estimates of Spanish catches are mentioned in another section. We have also reported for reference (bottom line of the chart) the landings by freezer cargo boats to Dakar canneries. The landings correspond to 42 % of catches made by SOSAP seiners outside of Dakar. These should not, however, be taken into account when considering landings at Dakar, as they are already included in calculations in Abidjan or Pointe-Noire.

Country		*No. of boats*	*No. of trips*	*Yellowfin*	*Skipjack*	*Bigeye*	*Total*	%
France		40	667	5,923.6	5,368.7	482.3	11,774.6	48.3
Senegal		19	72	839.2	854.5	14.9	1,708.6	7.0
Spain *		14	39	3,196.0	7,618.0	98.0	10,912.0	44.7
Total	T	73	778	9,958.8	13,841.2	595.2	24,395.2	100.0
	%	—	—	40.8	56.8	2.4	100.0	—
Cargos		4	5	1,004.0	1,669.0	—	2,673.0	

NB — The nationality corresponds to the flag of tunaboats which have effected landings.
— Spanish figures are survey-based estimates.
— Senegalese figures only refer to Senegalese landings in Dakar.

The following table shows landings by countries in a comparison between 1973 and 1974.

	France		*Senegal*		*Spain*		*Total*	
	Weight	%	*Weight*	%	*Weight*	%	*Weight*	%
1973	7,936	36.6	1,567	7.2	12,197	56.2	21,700	100.0
1974	11,774	48.3	1,709	7.0	10,912	44.7	24,395	100.0
Variation	+3,838	+48.3	+142	+9.1	−1,285	−10.5	+2,695	+12.4

The French landings have increased considerably (48 %), while the Senegal landings increased less (+ 9 %). The apparent decrease in the Spanish landings

may be deceptive, since the 1974 figures are only an estimate which may be lower than the actual landings; it is possible that 1974 Spanish catches have also been better than in 1973.

Considering France and Senegal only (the landing figures of which we are sure) the landings were 13,483 T in 1974 as compared to 9,503 T in 1973, which means an increase of 42 %.

3) *Catch and catch per unit of effort*

For this study, the tuna boats were grouped in four relatively homogeneous categories:

— baitboats (with iced wells and freezers) with comparable average annual results (2.2 T per fishing day)
— purse seiners with bait
— purse seiners without bait
— Spanish vessels - their fishing strategy is very particular, which prevents their being included in any other category.

The following table shows the average annual results of these four types of fishing:

Type of vessels	*No. vessels*	*No. trips*	*Days at sea*	*Yellowfin*		*Skipjack*		*Bigeye*		*Total*	
				W	*MT Day*	*W*	*MT Day*	*W*	*MT Day*	*W*	*MT Day*
Baitboat	30	644	4,159	4,329	1.04	4,306	1.03	402	0.10	9,037	2.17
Seiner w/bait	19	60	848	957	1.13	983	1.16	12	0.01	1,952	2.30
Seiner w/o bait	10	35	520	1,476	2.84	934	1.80	84	0.16	2,494	4.80
Spanish	14	39	1,065	3,196	3.00	7,618	7.15	98	0.10	10,912	10.25

The rather important difference in the catches per unit of effort between the purse seiners with bait and those without bait, is due to a number of trips made by large French purse seine vessels. A difference can also be noted between the Spanish boats and the seiners without bait; the effort of the Spanish boats has been systematically underestimated, since only the effort by the tuna boats is taken into account and not that by the baitboats which work along with them.

The catches, effort and CPUE of the combined French and Senegalese baitboats and purse seiners, since 1970, are as follows:

Year	*Baitboats*			*Seiners*		
	Catch	*Effort*	*CPUE*	*Catch*	*Effort*	*CPUE*
1970	5,803	3,879	1.50	7,585	1,964	3.86
1971	8,315	4,211	1.97	13,551	3,175	4.27
1972	5,208	4,100	1.27	8,292	2,081	3.98
1973	6,688	3,791	1.76	2,815	860	3.27
1974	9,037	4,159	2.17	4,446	1,368	3.25

The year 1974 was characterized by good baitboat yields, the highest since 1970, and by moderate seiner yields. In particular, results surpassed those of 1973 for baitboats and were identical in the case of the seiners.

4) *Distribution by species*

The following table shows catch by species since 1970 for the French and Senegalese fleets.

Year	*Yellowfin*		*Skipjack*		*Bigeye*		*Total*
	Wt.	%	*Wt.*	%	*Wt.*	%	
1970	6,877	51.5	5,931	44.0	580	4.5	13,388
1971	11,513	52.5	9,949	45.5	404	2.0	21,866
1972	6,687	49.5	6,622	49.0	183	1.5	13,492
1973	4,419	46.5	4,541	48.0	543	5.5	9,503
1974	6,763	50.0	6,223	46.0	497	4.0	13,483

The distribution by species has remained quite stable since 1970. However, it should be pointed out that 1974 was probably a good year for skipjack, judging from the Spanish catches (7,600 T of skipjack as compared with 3,200 T of yellowfin).

5) *Spanish fishing*

In 1974, the CRO was able to conduct surveys on board numerous Spanish vessels that landed at Dakar. Although we do not have the official landing figures available, we make a first estimate of the catches based on these surveys.

Besides, a number of landings were effected even while surveys were not being conducted. In those cases, the results were extrapolated according to the type of vessel (large or medium seiner).

The 1974 results are shown in the following table:

Estimate	*Type of vessel*	*No. of vessels*	*No. of trips*	*Days at sea*	*Yellowfin*	*Skipjack*	*Bigeye*	*Total*
Trips With Survey	Medium Seiners	3	9	179	660	1,146	63	1,869
	Large Seiners	10	17	568	1,555	4,284	—	5,839
Trips Without Survey	Medium Seiners	3	5	100	365	640	35	1,040
	Large Seiners	4	6	198	546	1,512	—	2,058
Total	Medium Seiners	3	14	279	1,025	1,786	98	2,909
	Large Seiners	10	23	766	2,101	5,796	—	7,897
	Total*	14	39	1,065	3,196	7,618	98	10,912

* Two baitboat trips are included in the total.

For the estimates, the following average trips were used:
MEDIUM SEINERS = 20 days at sea, 73 T yellowfin, 128 T skipjack, 7 T bigeye.
LARGE SEINERS = 33 days at sea, 91 T yellowfin, 252 T skipjack.
The catches per day at sea are indentical for the two types of vesels: 10.4 T/day at sea.

Finally, the skipjack catches are significant during the last four months of the year, particularly as concerns the large seiners.

III. Conclusion

In 1974, the 19 Senegalese tuna boats (one baitboat and 18 seiners) fished 8,000 tons of tuna in the Atlantic, which means a 15 % decrease compared to

1973. These catches —48 % from Pointe-Noire, 31 % from Abidjan and 21 % from Dakar— correspond to 54 % yellowfin and 46 % skipjack. The total production is less than that of 1973 in all three areas and corresponds to a decrease in yellowfin catches, which was not compensated by the increase in the skipjack catches. Temporary difficulties of the Senegalese boat owners account for this decrease in catches.

On the other hand, Franco-Senegalese catches in the Dakar area increased, and almost 13,500 tons were landed (+42 % increase over 1973), with yellowfin representing 50 % of the catches and skipjack 46 %. The production of the bait-boat vessels was the best since 1970; that of the seiners was somewhat average, in spite of the fact that several large seiners were fishing.

The Spanish fishing has been estimated based on the surveys conducted by the CRO of Dakar-Thiaroye. These estimates show a total catch of almost 11,000 tons in 1974, which means a 10 % decrease in relation to 1973, although probably this decrease is only apparent. The distribution of catches by species is quite different from that of the French and Senegalese tuna vessels, 70 % skipjack against 30 % yellowfin. The yields were also much higher: 10.2 T/day at sea against 4.8 T/day at sea for the French seiners without bait.

REVIEW OF NATIONAL FISHERIES AND RESEARCH ACTIVITIES - SOUTH AFRICA

1. *The fishery*

Fishing was conducted near the coast, mainly in the Cape Point area during the summer months. Catches were made by 36 sport fishing boats with commercial licences, 20 boats using the live bait and pole method, and two vessels equipped with purse-seine nets.

There was a small increase in the amount of tuna caught, but the total was well below 1,000 metric tons. The catch during the 1974/75 summer season consisted of approximately 69 % albacore, 15 % skipjack, 14 % yellowfin, 1 % bluefin and 1 % bonito.

2. *Tagging*

Tagging operations planned for October 1974 had to be suspended because of the mechanical breakdown of the available boat.

3. *Biological sampling*

Sampling of tuna transshipped by foreign boats in Table Bay Docks commenced in June, 1975, after negotiations with the Commission.

4. *The environment*

Regular environmental surveys were done on a monthly basis off the South Cape coast between Cape Point and Danger Point.

5. *Statistics*

Catch statistics were collected and supplied to ICCAT.

Original report in English.

SPANISH NATIONAL REPORT - 1975

The Spanish tuna fisheries in 1975 have progressed, in general, similar to other years.

Research effort increased considerably in the majority of the fisheries. Such improvement has been consistent in the last few years.

Albacore: The fishing effort seems to be decreasing in this fishery, particularly for the live bait fleet, which had good yields during this year; the trolling fleet, on the other hand, has had a poor season.

The data collection system has worked out very well. We are trying to compile data of previous years. However, up to now, evaluation work has not been possible.

Bluefin: This local fishery has remained stable this year, but showed a slight reduction in effort, which has been directed to albacore fishing; data collection has been very complete for this fishery.

Swordfish: For the first time, monitoring was carried out on the longline fleet which lands swordfish, and operated principally in the South Atlantic region. Also, the trolling fleet based at ports in the Galician region fishes swordfish when their catches are poor at the beginning of the albacore trips. Research activities have been initiated for this fishery.

Mediterranean: We still know very little about our local tuna fisheries in the Mediterranean, since our Task I data are still incomplete. No substantial improvement in our statistics is foreseeable over a short period of time.

Canary Islands: Effort has continued increasing in this fishery, especially that of the local fleet of 20 to 25 MT vessels, rather than those of less than 10 MT. Research effort has been very significant and previous data deficiencies have been corrected, and in the future, biological samples and evaluation should be improved.

Purse seine fishery off the African coast: This fishery is expanding at a rate of about 10-15 %. Skipjack yields during this year were considerably less than those of previous years.

Research has continued at a level similar to that of the last year. At the end of the year, reviewing of the daily logbooks was started. This will make it possible to file the fishing effort in accordance with any stratification requested.

Original report in Spanish.

REVIEW OF UNITED STATES FISHERIES AND RESEARCH ACTIVITIES ON TUNA AND TUNA-LIKE FISHES OF THE ATLANTIC OCEAN FOR 1974 - 1975

by

National Oceanic and Atmospheric Administration
National Marine Fisheries Service

Review of fisheries

In 1974, U.S. commercial fishermen landed about 35,000 metric tons (MT) of tuna and tuna-like fishes from the Atlantic Ocean (Table 1). It was the best season so far recorded for the U.S. As in earlier years since 1968, the catch of tropical tunas (yellowfin, *Thunnus albacares*, skipjack, *Katsuwonus pelamis*, and bigeye, *T. obesus*) accounted for the bulk of the 1974 total catch.

The U.S. tropical tuna fleet that fished in the Atlantic in 1974 fished almost exclusively in the eastern tropical Atlantic, off Africa. Only a few fishing days were spent in the western Atlantic and no catches were made. A total of 26 American tuna seiners fished in the eastern tropical Atlantic and caught about 5,600 MT of yellowfin, 20,000 MT of skipjack, 900 MT of bigeye, and 40 MT of little tunny *(Euthynnus alletteratus)*. The bulk of the yellowfin tuna catch (75 %) was caught in the Gulf of Guinea, and the bulk of the skipjack tuna catch (84 %) was caught off Angola. The average length of yellowfin tuna was 81 cm and skipjack, 46 cm. The average catch rates for the entire season were 2.8 MT of yellowfin/day's fishing and 8.7 MT of skipjack/day's fishing (Table 2).

This year (1975) more than 30 American tuna seiners have entered the eastern tropical Atlantic tuna fishery, primarily because fishing conditions in the eastern tropical Pacific have been poor. Preliminary data from the fleet indicate that catches are poor and yellowfin tuna is the dominant species in the catch.

Northern bluefin tuna *(T. thynnus thynnus)* is caught in the Atlantic by U.S. comercial fishermen exclusively in the Northwest Atlantic with purse seine, handline, harpoon and trap. In 1974, the catch was 1,535 MT. The purse seine catch was 791 MT of age 1-5 bluefin and 61 MT of large (age 6+) bluefin. The handline, harpoon, and trap fishery landed 683 MT. Preliminary estimates indicate that the 1975 catch will be substantially higher than in 1974. Approximately 2,200 MT of bluefin were taken by the purse seine fishery of which 280 MT were large bluefin. The harpoon, handline, and trap fishery landed approximately 620 MT. Much of the increased catch of the purse seine fishery is attributed to an unusually abundant year-class of 2-year-olds.

During the latter part of the 1975 season, the bluefin tuna fishery operated under catch and size regulations recommended by ICCAT in 1974. This resulted in closure of the seine fishery for small fish on August 15 and the harpoon, handline, and trap fishery on September 21.

Original report in English.

Virtually all of the U.S. catch of mackerels (Spanish mackerel, *Scomberomus maculatus*, and king mackerel, *S. cavalla*) is landed in Florida. In 1974, the total U.S. landing of mackerels was about 7,100 MT, no change from that of 1973 (Table 1).

Review of research

U.S. research activities on tuna and tuna-like fishes of the Atlantic are conducted by the Southwest Fisheries Center (SWFC), La Jolla Laboratory and the Southeast Fisheries Center (SEFC), Miami Laboratory of the National Marine Fisheries Service, and the Woods Hole Oceanographic Institution (WHOI). SEFC and WHOI are responsible for research activities on billfishes and northern bluefin tuna. Research activities on all other tuna species are the responsability of SWFC. In 1974-75, U.S. research efforts were on problems associated with yellowfin, skipjack, bluefin, bigeye, albacore *(T. alalunga)* and billfishes (Xiphiids and Istiophorids).

Yellowfin and skipjack

Research effort on yellowfin and skipjack was focused on (1) organizing a computer data base for storage and rapid retrieval of data for analyses, (2) collecting data on the U.S. catch and imports of Atlantic-caught tunas landed in Puerto Rico, U.S.A., and (3) assessing the status of the stocks. The results of these activities are contained in our documents.

Northern bluefin

Research continues on status of stocks, fecundity, spawning, age and growth, and stock identification; reports discussing preliminary results are contained in our documents. Research contracts were negotiated to survey the sport fishery for bluefin of the U.S. and aerial survey flights were continued off the Bahamas to observe the spring spawning run. The National Marine Fisheries Service-WHOI Cooperative Tagging Program recorded the tagging of 1,751 bluefin tuna and 1,191 billfishes in 1974.

Bigeye

Landings of bigeye tuna in the U.S. are generally reported together with landings of yellowfin tuna. In 1974, research was initiated to determine the quantity of bigeye tuna in the yellowfin tuna landings. Assessment of the status of the bigeye stocks was also initiated in 1974.

Albacore

No major research was conduced on albacore, except that biological samples were collected from imports in Puerto Rico. The samples were all from longliners.

Billfishes

Research continud on the biology and population dynamics of billfishes in the western North Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. Biological

and statistical data were collected from 33 big-game fishing tournaments and from daily port sampling at selected areas. Hook rates (number hooked per hour of fishing) for white marlin and sailfish increased in 1974, and hook rates for blue marlin declined.

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MS. Size frequencies of billfishes from the western North Atlantic Ocean, Caribbean Sea, and Gulf of Mexico caught by sport fishing gear. Southeast Fisheries Center, Miami, Florida.

BERRY, F. H.
MS. Age and growth of the bluefin tuna in the western North Atlantic Ocean based on vertebrae and otolith analyses. Southeast Fisheries Center, Miami, Florida.

COAN, A. L.
MS a) Length and age composition of skipjack tuna from the Atlantic Ocean, 1968-73. Southwest Fisheries Center, La Jolla, Calif.
MS b) Length, weight and age conversion tables for Atlantic tunas. Southwest Fisheries Center, La Jolla, Calif.

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MS. Report on the sampling of imports of Atlantic-caught tunas in Puerto Rico. Southwest Fisheries Center, La Jolla, Calif.

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UCHIYAMA, J. H., and P. STRUHSAKER.

MS. Age and growth of skipjack tuna, *Katsuwonus pelamis*, yellowfin tuna, *Thunnus albacares*, and albacore, *Thunnus alalunga*, as indicated by daily growth increments of sagittae. Southwest Fisheries Center, Honolulu, Hawaii.

Table 1. Catch and landing (metric tons) of Atlantic tunas and tuna-like fishes by United States fishermen, 1967-74.[1]

Year	*Bluefin*	*Yellowfin*[2/3]	*Albacore*	*Bigeye*[2]	*Little tunny*	*Skipjack*[2]	*Bonito*	*Swordfish*	*Billfishes*[4]	*Spanish mackerel*	*King mackerel*	*Unclassified*	*Total*
1967	2,320	1,136	0	0	7	493	22	474	—	3,577	2,767	10	10,806
1968	807	5,941	0	18	6	3,314	43	274	—	5,342	2,813	2	18,560
1969	1,226	18,791	0	148	7	4,849	98	171	—	4,952	2,814	1	33,057
1970	3,327	9,029	0	195	158	11,752	83	287	—	5,506	3,050	—	33,387
1971	3,169	3,764	0	544	5	16,224	90	35	—	4,713	2,571	50	31,165
1972	2,138	12,342	10	212	212	12,290	24	246	75	4,863	2,213	—	34,625
1973	1,294	3,590	0	113	20	21,246	261	406	62	4,437	2,710	—	34,139
1974[5]	1,857	5,621	12	865	42	19,973	73	—	53	4,395	2,715	—	35,606

[1] Estimated catch is for bluefin, yellowfin, albacore, bigeye, skipjack, little tunny and billfishes. Landing is for all other species. Sport catches are not included except for billfishes.

[2] Catches of purse seiners flying the flags of Panama and the Netherlands.

[3] Includes small quantities of bigeye tuna.

[4] Entire catch is from recreational; rod-and-reel gear.

[5] Preliminary.

Table 2. Summary of logbook estimates of catch and catch rate of yellowfin and skipjack tunas caught by American seiners [1] in the eastern tropical Atlantic. Source of data is the Inter-American Tropical Tuna Commission.

Year	*Number of seiners*	*Yellowfin*		*Skipjack*	
		Catch (metric tons)	*Catch rate (metric tons/day fishing)*	*Catch (metric tons)*	*Catch rate (metric tons/day fishing)*
1967	3	1,000	7.8	500	3.8
1968	8	6,200	23.3	3,200	12.0
1969	25	19,800	10.9	4,400	2.4
1970	23	9,100	4.0	11,400	5.1
1971	24	4,400	2.7	16,100	10.0
1972	33	10,900	3.3	12,200	3.7
1973	24	2,600	2.2	20,400	17.0
1974	26	5,600	2.8	20,000	8.7

[1] Purse seiners flying the flags of Canada, Netherlands, Panama and USA are included.