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CONSERVATION of ATLANTIC TUNAS

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INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS

CONTRACTING PARTIES

(as of 31December 2004)

Algeria, Angola, Barbados, Brazil, Canada, Cape Verde, China (People's Rep.), Côte d'Ivoire, Croatia, Equatorial Guinea, European Community, France (St. Pierre & Miquelon), Gabon, Ghana, Guatemala, Guinea (Rep.), Honduras, Iceland, Japan, Korea (Rep.), Libya, Mexico, Morocco, Namibia, Nicaragua, Norway, Panama, Philippines, Russia, Sao Tomé & Principe, Senegal, South Africa, Trinidad & Tobago, Tunisia, Turkey, United Kingdom (Overseas Territories), United States, Uruguay, Vanuatu, Venezuela

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Panel No.	***PANEL MEMBERSHIP***	***Chair***
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-2- Temperate tunas, North	Algeria, Canada, China (People's Rep.), Croatia, European Community, France (St. Pierre & Miquelon), Iceland, Japan, Korea (Rep.), Libya, Mexico, Morocco, Norway, Panama, Tunisia, Turkey, United Kingdom (Overseas Territories), United States	European Community
-3- Temperate tunas, South	Brazil, European Community, Japan, Namibia, South Africa, United Kingdom (Overseas Territories), United States, Uruguay	South Africa
-4- Other species	Algeria, Angola, Brazil, Canada, China (People's Rep.), Côte d'Ivoire, Equatorial Guinea, European Community, France (St. Pierre & Miquelon), Gabon, Japan, Korea (Rep.), Mexico, Morocco, Namibia, South Africa, Trinidad & Tobago, Turkey, United Kingdom (Overseas Territories), United States, Uruguay, Venezuela	United States

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FOREWORD

The Chairman of the International Commission for the Conservation of Atlantic Tunas presents his compliments to the Contracting Parties of the International Convention for the Conservation of Atlantic Tunas (signed in Rio de Janeiro, May 14, 1966), as well as to the Delegates and Advisers that represent said Contracting Parties, and has the honor to transmit to them the ***"Report for the Biennial Period, 2004-2005, Part I (2004)"***, which describes the activities of the Commission during the first half of said biennial period.

This issue of the Biennial Report contains the Report of the 14th Special Meeting of the Commission (New Orleans, Louisiana, USA, 15-21 November 2004) and the reports of all the meetings of the Panels, Standing Committees and Sub-Committees, as well as some of the Working Groups. It also includes a summary of the activities of the Secretariat and a series of National Reports of the Contracting Parties of the Commission, relative to their activities in tuna and tuna-like fisheries in the Convention Area.

The Report for 2004 has been published in three volumes. ***Volume 1*** includes the Secretariat's Administrative and Financial Reports, the Proceedings of the Commission Meetings and the reports of all the associated meetings (with the exception of the Report of the Standing Committee on Research and Statistics -SCRS). ***Volume 2*** contains the Secretariat's Report on Statistics and Coordination of Research and the Report of the Standing Committee on Research and Statistics (SCRS) and its appendices. ***Volume 3*** contains the National Reports of the Contracting Parties of the Commission and Reports of Observers.

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

MASANORI MIYAHARA
Commission Chairman

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[1] Reports received and distributed for the 2004 ICCAT annual meetings. Many Reports submitted to the Commission append detailed information in the appendices. For reasons of economy, these appendices are not included in this publication, but can be requested from the Secretariat in the original language. In addition, Compliance Reporting Tables have been extracted from the Annual Reports and the information contained therein has been assimilated into the Compliance Tables (Appendix 2 to ANNEX 9 of the 2004 Commission Report).

ANNUAL REPORTS OF CONTRACTING PARTIES

ANNUAL REPORT OF ALGERIA[1]

Introduction

Since the establishment of the ministerial department in 2000, the fishing and fishery resources sector in Algeria adopted a policy of integrated and sustainable development of its economic activities, reinforced by Law No. 01-11 regarding fishing and aquaculture promulgated in July 2001, and carried out by the National Plan of Development of Fishing and Aquaculture (PNDA) which is included in the Directory Scheme of Fishing and Aquaculture Development.

As regards the catches tunas and swordfish, this Sector has undertaken within the framework of this policy a development strategy that on the one hand takes into account the national characteristics of these fisheries and Algeria's international responsibilities on the other.

At national level, the development strategy for the fishing of tunas and tuna-like species is based on the results of an analysis of the situation established by the sector that have shown:

1 - The secular character of fisheries
2 - That artisanal catches are predominant
3 - The important social consequences of this activity

This study also resulted in knowledge on the limits of this type of fishing, particularly in terms of losses in profits from the export of these products and to the socio-economic impacts generated by a contemporary production tool.

At international level, pursuant to Article 64 of the United Nations Convention on the Law of the Sea, Algeria has since the beginning recognized that the management of the catches of large migratory species requires shared responsibility at the regional level and, for this reason, joined ICCAT in 2001.

Thus, the *Ministère de la Pêche et des Ressources* Halieutiques, MPRH (Ministry of Fisheries and Marine Resources) has decreed the strategy of developing the fishing for highly migratory species, which involves, on the one hand, the necessary reconversion-modernization of a part of the fishing fleet for tunas and swordfish, respecting the pertinent international legal instruments and, particularly, the ICCAT Recommendations and Resolutions. The fishing sector chose this development option because it allows conciliating the interesting social effects generated by traditional fishing techniques with the need to compensate for economic losses and delays in technology.

The instruments of this development strategy consist, on the one hand, on the assistance granted by the State through successive National Plans to support and consolidate economic growth, and on the other hand, in an international partnership that guarantees the transfer of technology.

In this regard it should be noted that taking into account the level of technology required for the establishment and exploitation of a modern and effective fleet to fish large highly migratory species, Algeria has initially resorted to the association and cooperation with other nations to benefit from their knowledge in this domain. Thus, Algeria considers this partnership as "an initial demarche for the development of a national fishery" and as such, according to provisions of the *Recommendation by ICCAT on Vessel Chartering* [Rec. 02-21] and, in particular, those mentioned in its paragraph 1.

Part I Information regarding national fisheries, research and statistics

Section 1: Annual information on fisheries

Total Algerian catches of tunas and tuna-like species amounted to 3,949 t in 2003, i.e., a slightly higher level than in 2002 (3,878 t).

[1] Original report in French.

The catches are broken down as follows:

- Bluefin tuna (1,586 t)
- Swordfish (665 t)
- Small tunas (1,698 t).

These catches were made by a national fishing fleet whose vessels measure between 6 and 24 m in length, and have 9 to 500 hp engines. The fleet is comprised of 19 purse seiners (4 of which are specialized), 213 artisanal longliners, and 12 chartered longliners measuring 45 m.

In this respect, it should be noted that 2003 there was a modernization-reconversion strategy by sectors of a part of the tuna fleet which resulted in a reduction in the number of artisanal units that participate in this fishery and, consequently, a reduction in the proportion of national catches of some species, among them bluefin tuna. Fishing from some newly acquired vessels has not yet started.

In this regard, it is important to point out that the decrease in the national catches of bluefin tuna also responds to Algeria's willingness to respect its international commitments, particularly the catch limits imposed by ICCAT.

Studies on size frequencies carried out on an estimated sample of 3,189 bluefin tuna caught in April and May 2003, have shown that the size of the fish varies in a range from 95 cm and 290 cm with an average size of about 202 cm. Notwithstanding, the sample considered is mainly comprised of fish measuring from 195 cm to 235 cm.

The size frequency distribution of bluefin tuna is shown in **Figures 1** and **2**.

With regard to the weighted variation of bluefin catches, **Figure 3** shows that from a sample of 3,464 fish, the weight of this species varies from 9 to 390 kg, with a predominance of fish weighing from 100 to 200 Kg.

Figure 4 shows the overall size-weight relation of the fish sampled in 2003.

The study on overall sex-ratio shows a very slight difference between the abundance of males (47%) compared to that of females (53%). The global sex-ratio is shown in **Table 1** and **Figure 5**.

Further it is noted that there is a clear predominance of females measuring between 147 cm to 222 cm; in sizes above 227 cm a clear predominance of males is observed.

Section 2: Research and statistics

The system used for the collection of statistical data in Algeria, which was created in the 1970s, has undergone several modifications and adjustments.

This scheme is based on data collection officers who collect data at the ports structures and then transmit the forms periodically to the fishing agencies for processing.

The agencies transmit data daily to the *Directions de Wilaya* which in turn transmits them periodically (every ten day or once a month) to the General Director which consolidates, processes and analyzes the data collected.

The officers collect the information in two ways:

- By being present at the ports where the products are landed, and proceeding to checking on site;

- By carrying out calculations and extrapolations based on fishing effort (number of active vessels, theoretic capacity, and average catch). Crosschecks are often made with the information provided by the officers who list the amounts and the species landed and sold.

The changes that have been made to this general scheme are aimed at improving the reliability of the statistical data. Thus, measures have been taken to adapt the scheme to the changes made in this area, taking as a reference the measures and recommendations of specialized regional and international organizations (FAO, ICCAT, GFCM, etc).

In this respect, it is noted that in the past, the systems used for the collection of statistical data did not distinguish between tunas and other species. This did not facilitate the work of the scientists and researchers in monitoring and analyzing the on these fishery resources.

In fact, the old data collection forms only broke down the catches by group of species (white fish, blue fish crustaceans and mollusks) and fishing effort was considered in number of vessels.

Based on scientific advice, the fisheries administration has made changes to the scheme and has introduced a new form for the collection of information that results in the availability of detailed monthly data on the catches (by species) and fishing effort (in number of vessels, number of days at sea, weight, length and engine power).

As regards the tuna vessels, the specific schemes created that are based on another method of data collection, i.e., the placing of two monitors on each vessel whose mission is to complete the statistical documents based on the ICCAT measures and recommendations.

This includes forms for the collection of information on fishing grounds, the number of fish caught, species, size, weight and sex of each fish caught, and the period of capture.

The data collected and dispatched by these two schemes (general and specific for tuna vessels) are consolidated and processed by the central administration in collaboration with scientists. Since seven years ago, comparative studies are carried out.

These schemes for the collection and processing of information require other improvements, in particular to obtain the required statistics to complete the Task II forms, through a biological sampling network. To this effect, decisions have been taken, and the necessary measures for adaptation of these measures are being implemented.

With regards to research, the fishing and marine resources sector has adopted, within the framework of its new development policy, a strategy of regional dimension that aims at integrating national research with the work carried out by international organizations: FAO, ICCAT, GFCM, and COPEMED.

For the entry into force of this strategy regarding fundamental and applied research, the Ministry of Fisheries and marine resources is in the process of forming a research unit in the fishing and aquaculture sector, and this in addition to its human and material capacities represented by the national network of universities and institutions focused on marine sciences.

In the meantime, research on tuna and swordfish, is carried out by the *Institut des Sciences de la Mer et de l'Aménagement du Littoral* (Institute of Marine Sciences and Coastal Management) and the *Université des Sciences et des Technologies* (University of Marine Sciences and Technologies) of Algiers, laboratory of pelagic eco-systems. The key on-going research areas are as follows:

- Study on tuna catches within the framework on the environment and biodiversity;
- Assessment of the stocks of large pelagics based on VPA of the pseudo cohorts;
- Bio-accumulation of the heavy metals and contaminating parasites in swordfish;
- Evaluation of the catches of the large pelagic resources in an environmental context.

These studies are partly based on statistical data collected since 1995 by observers on board tuna vessels.
In effect, from 2000 to 2003, scientists from the fishing sector have processed a sample comprised of 10,500 fish. This study was essentially based on sex-ratio, size frequency, and size/weight relationship.

Finally, it should be noted that the analysis of the results of recent stock assessments carried out since 2003 with the assistance of specialized foreign institutions, will allow Algeria to contribute to international efforts aimed at improving knowledge on these fisheries for responsible exploitation.

Part II Management implementation

Section 3: Implementation of conservation and management measures

Before joining ICCAT, Algeria opted for a policy of rational exploitation of all its resources and adopted legislation and a regulation that reflects this option.

Thus, based first of all on the measures and recommendations of FAO, the General Fisheries Commission for the Mediterranean and finally ICCAT, the Algerian fishing sector has tried to adopt all measures aimed at the conservation and responsible exploitation of natural resources.

In this way the framework of regulations has developed from ordinance, including general rules on fishing from 1976 to the legislative decree of 1994 and finally more recently, in July 2001, to Law No. 01-11 on fishing and aquaculture.

The main objective of is to regulate:

- Conditions for carrying out fishing
- Market sizes of the species caught
- Sanitary and health conditions
- Sanctions and penalties, etc.

Fishing by foreign flag vessels in waters under national jurisdiction has been regulated since 1995 by the Executive Decree No. 95-38, which establishes, in particular, the fishing areas and seasons, fishing gears, minimum market sizes, as well as conditions to carry out fishing and the control mechanisms on fishing through the ministerial decrees of March 9, 1995 and the inter-ministerial decree of November 4, 1995.

Recently the fishing sector updated the decree of March 9, 1995 concerning the opening and closing dates of the commercial fishing season for large migratory species in waters under national jurisdiction, in order to adapt it to the *Recommendation by ICCAT on Supplemental Regulatory Measures for the Management of Eastern Atlantic Bluefin Tuna* [Rec. 93-07].

Moreover, Algeria is concluding a regulatory mechanism proceeding from Executive Decree No. 02-419 which establishes the conditions and terms for vessels fishing in waters under national jurisdiction that transposes the pertinent provisions of *Recommendation by ICCAT on Vessel Chartering* [Rec. 02-21].

Currently, the fishing sector is reviewing the most appropriate methods for the implementation of the ICCAT Statistical Document Programs for bluefin tuna and swordfish, in accordance with ICCAT Recommendations [Recs. 93-02, 94-04 and 94-05] for bluefin tuna and [Recs. 00-22 and 01-22] for swordfish. In this respect, some experiments for the implementation of the ICCAT Bluefin Tuna Statistical Document have been carried out.

Section 4: Inspection schemes and activities

With a view to improving the implementation of conservation and management measures, Algeria has made considerable efforts in recent years in reinforcing the organization, the means and the efficiency of control mechanisms in place.

Inspection activities of foreign flag vessels, regulated by Executive Decree No. 95-38, have proven quite effective since controllers from the Administration are present on board these vessels during the fishing trips.

On the other hand, the current monitoring and inspection scheme foresees controls at the start of the fishing operation (at the port), during the fishing operation (with surveillance from the maritime police), and at the end of the fishing operation.
However, as regards the traditional fishing activity, the difficulties of monitoring are more marked, particularly due to the extensive maritime area to inspect (9.5 million hectares), the large number of small vessels fishing these fish in an incidental manner, and the insufficient presence of the Administration and monitoring mechanisms in several secondary landing points.

One of the priorities of the Ministry of Fishing and Fishery Resources consists mainly in combining the monitoring and control mechanisms with a program of creating the adequate structures for monitoring, organization of the fishing activity and the reinforcement of specialized human means.

In this respect, the fishing sector is in the process of creating a corps of fishing and aquaculture monitoring inspectors in order to revise the Executive Decree No. 98-95 of March 18, 1998 “establishing a particular status for workers belonging to a specific Administration body in the fishery sector”.

In this respect, Algeria has requested technical assistance from its partners within the framework of cooperative programs, to implement a VMS system for vessel monitoring aimed at completing the general control mechanism already in place.

Section 5: Other activities

The principal activity that has been carried out by the fisheries Administration for some years now has been campaigns to assess the fishery resources, aimed at adopting a policy of durable exploitation and management. The treatment of data from these fishing trips has allowed revising upward the reserves of fish catches located in the waters under Algerian jurisdiction.

Another notable aspect is the closer association of the scientific community with the professional sector in the national program for the development of fishing and aquaculture through the recent establishment of the National Consultative Council for Fishing and Aquaculture.

Parallel to these efforts to bring its national regulation into conformity, Algeria is working to contribute positively, within the ICCAT framework, to the development, adoption and implementation of equitable conservation and management measures.

Finally, coordination activities aimed at increasing the effectiveness of the conservation measures have been carried out with the structures concerned with the import and export of tunas (customs, Coast Guard, etc).

Table 1. Sex-ratio of bluefin tuna *(Thunnus thynnus)*

Sex	*No. of fish*	*%*
Male	1641	47.40
Female	1821	52.60
Total	**3462**	**100.00**

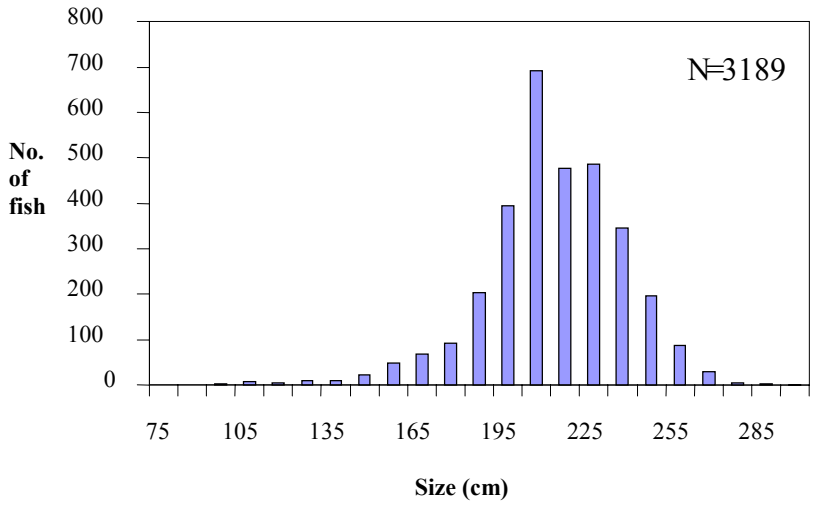

Figure 1. Distribution of size frequencies.

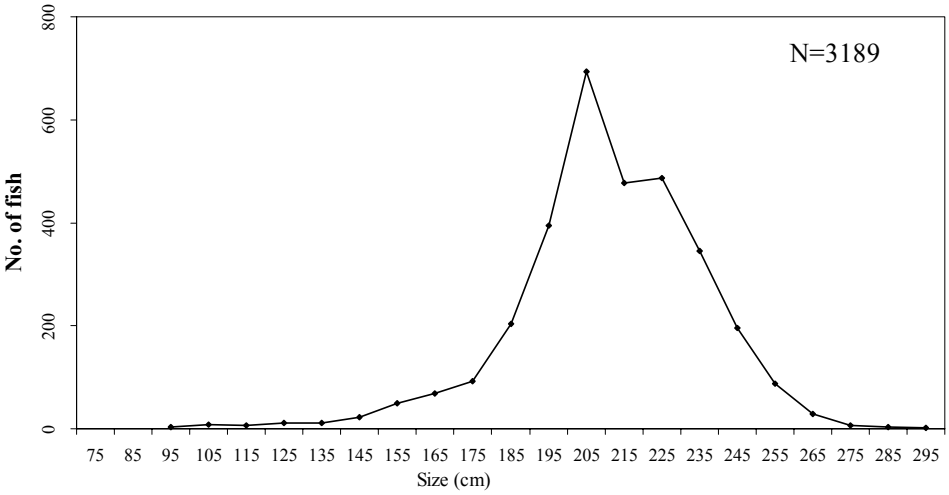

Figure 2. Size frequency curve.

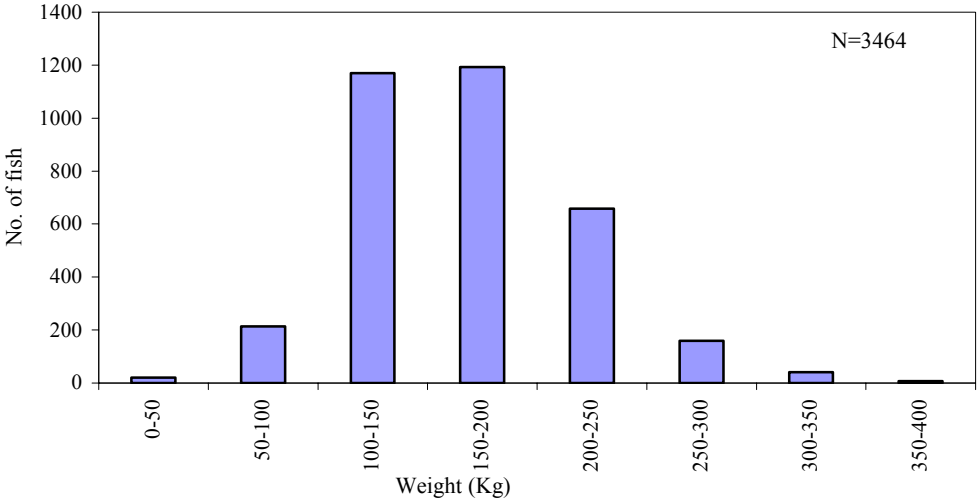

Figure 3. Distribution of weight frequencies.

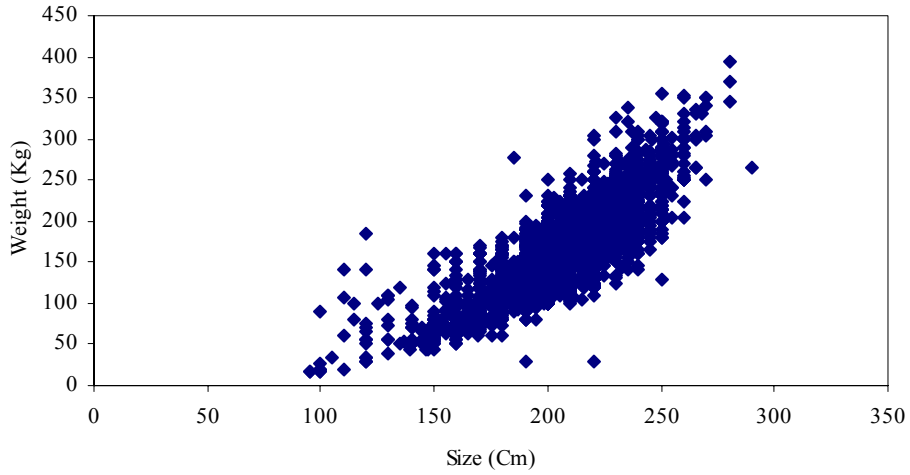

Figure 4. Size-weight relationship.

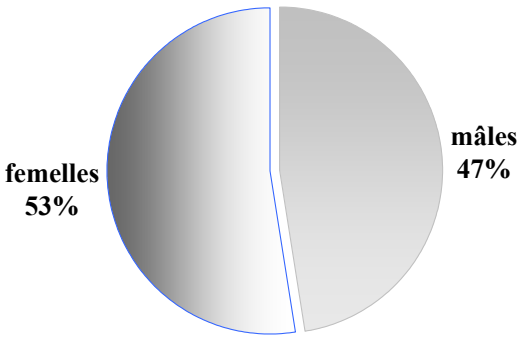

Figure 5. Percentage of males and females.

ANNUAL REPORT OF BRAZIL[1]

Paulo Travassos, Fábio Hazin

Part I. Information on fisheries, research and statistics

Section 1: Annual fisheries Information

In 2003, the Brazilian tuna longline fleet consisted of 119 vessels registered in the following ports: Rio Grande (2), Itajaí (5), Santos (18), Rio de Janeiro (2), Recife (2), Cabedelo (28), Natal (62). Of these 119 longliners, 55 were national and 64 were foreign chartered vessels. There was a decrease of 7.7% in the total number of vessels from 2002, when 129 vessels were operating. The number of baitboats operating in 2002 was 41, with an increase of 5.1% from 2002. These 41 vessels were based in the same ports (Rio de Janeiro, Itajaí, and Rio Grande). All baitboats are national.

The Brazilian catch of tunas and tuna-like fishes, including billfishes, sharks, and other species of minor importance (e.g. wahoo and dolphin fish) was 48,828.4 t (round weight), in 2002 **(Table 1)**, representing a decrease of about 3.4% from the catch in 2002 (50,575.5 t). The majority of the catch again was taken by baitboats (23,482.0 t; 46.4%), with skipjack tuna being the most abundant species (20,416.1 t), accounting for 86.9% of the baitboat catches. Catches of this species presented an increase of 12.2% from 2002. With a total catch of 1,289.4 t, yellowfin tuna was the second dominant species in the baitboat fishery.

The total catch of the tuna longline fishery (14,869.6 t) was about 8.8% lower than 2002, with swordfish being the most abundant species (2,917.5 t), accounting for 19.6% of the longline catches. Bigeye and blue shark, accounting for 15.9% (2,373.9 t) and 14.5% (2,160.1 t) of the catches were, respectively, the second and third most caught species. Yellowfin tuna ranked fourth in 2003, with 1,940.9 t, representing 13.1% of the total catch of longliners. Besides blue shark, 1,710.7 t of other shark species were caught as by-catch as well as a target species **(Table 1)**. The total catch of white marlin, blue marlin and sailfish was 262.6 t, 577.0 t and 346.7 t, respectively.

Section 2: Research and statistics

The responsibility for all issues relating to highly migratory species in Brazil (including data collection and submission to ICCAT) pertains to the Special Secretariat of Fisheries and Aquaculture (SEAP), which has the status of Ministry. However, several institutions directly assisted the Secretariat in processing and analyzing data from 2003: *Universidade Federal Rural de Pernambuco* (Federal Rural University of Pernambuco-UFRPE) and *Universidade Federal do Rio Grande do Norte* (Federal University of Rio Grande do Nortel), located in the Northeast, *Universidade Federal do Pará* (Federal University of Pará), located in the North, *Instituto de Pesca* (Fishery Institute), located in the Southeast, and *Universidade do Vale do Itajaí* (Itajaí University-UNIVALI), located in the South. These institutions, together with many others, including the *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* (Institute of Environment and Renewable Natural Resources-IBAMA), continued to conduct several research and statistics activities on tuna species caught by Brazilian boats.

Besides the catch and effort data regularly collected from Brazilian tuna fisheries, a total of 111,671 fish were measured at landing as follows: 875 yellowfin, 558 bigeye, 319 albacore, 1139 swordfish, and 108,780 skipjack. Data have also been collected from several recreational fisheries based off southeast Brazil, mainly in the Rio de Janeiro-RJ and Ilhabela-SP, where sport tournaments are conducted by local yacht clubs and billfish tag and release (tags from The Billfish Foundation) has been adopted since early 1990s.

Part II. Management implementation

Section 3: Implementation of ICCAT Conservation and Management Measures

In order to adequately comply with ICCAT recommendations, the Brazilian government has implemented rules regulating the Brazilian tuna fishery, which have been published as follow:

[1] Original report in English.

Rule No. 2 of April 12, 2004, establishing:

- A catch limit for South Atlantic swordfish of 4,196 t, of which 200 t can be caught between 5°N and 15°N;
- A catch limit for North Atlantic swordfish of 50 t;
- A catch limit for North Atlantic albacore of 200 t;
- A catch limit of 52 t of white marlin;
- A catch limit of 253 t of blue marlin;
- The mandatory release of all specimens of white marlin and blue marlin that are still alive by the time of boarding;
- The prohibition of chartering of foreign vessels included in the ICCAT and CCAMLR IUU list.

Rule No. 08 of July 29, 2004, establishing:

- The prohibition of sale of any white marlin and blue marlin caught until December 31, 2004;

A rule (Decree No. 4810 of October 8, 2003) regulating the chartering of vessels was also published, establishing observers on board of 100 % of chartered vessels and a vessel monitoring system (VMS).

Table 1. Brazil's Task I total catches (in kg).

LONGLINE

FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	TUN	SWO	SAI	WHM	BUM	SPF
BRA	**LL**	**SW**	**7.435.021**	**0**	**776.281**	**173.329**	**934.987**	**0**	**0**	**22.847**	**1.638.769**	**221.656**	**96.516**	**284.480**	**0**
BRA-PA	LL	SW	1.157.593	0	5.691	298	3.775	0	0	0	5.172	198.570	46.666	170.022	0
BRA--RN	LL	SW	2.843.366	0	632.650	69.874	873.660	0	0	0	814.566	15.005	30.170	97.846	0
BRA-SP	LL	SW	1.715.917	0	37.958	32.502	17.647	0	0	0	419.461	7.366	11.362	11.789	0
BRA-SC	LL	SW	1.548.221	0	75.563	59.087	33.004	0	0	22.847	355.781	716	8.089	1.610	0
BRA-RS	LL	SW	169.924	0	24.419	11.569	6.901	0	0	0	43.789	0	229	3.214	0
FLAG	**LL**	**SW**	**2.962.980**	**0**	**562.389**	**1.316.614**	**330.292**	**0**	**0**	**0**	**181.499**	**112.696**	**166.543**	**49.871**	**0**
CAN	LL	SW	110.801	0	30.655	25.636	18.004	0	0	0	13.643	2.346	3.579	2.753	0
HND	LL	SW	235.705	0	65.211	54.534	38.299	0	0	0	29.023	4.991	7.614	5.855	0
PAN	LL	SW	115.838	0	32.048	26.801	18.822	0	0	0	14.264	2.453	3.742	2.878	0
USA	LL	SW	106.772	0	29.540	24.703	17.349	0	0	0	13.147	2.261	3.449	2.652	0
ESP	LL	SW	225.632	0	62.425	52.203	36.662	0	0	0	27.783	4.778	7.289	5.605	0
BOL	LL	SW	107.779	0	29.819	24.936	17.513	0	0	0	13.271	2.282	3.482	2.677	0
ISL	LL	SW	104.758	0	28.983	24.237	17.022	0	0	0	12.899	2.218	3.384	2.602	0
VCT	LL	SW	1.388.543	0	201.432	769.330	118.302	0	0	0	40.802	64.871	95.144	17.642	0
GUY	LL	SW	195.570	0	28.371	108.356	16.662	0	0	0	5.747	9.137	13.401	2.485	0
VUT	LL	SW	371.582	0	53.904	205.877	31.658	0	0	0	10.919	17.360	25.461	4.721	0
FLAG	**LL**	**SW**	**4.026.816**	**0**	**563.688**	**307.331**	**1.078.585**	**0**	**0**	**1.715**	**972.013**	**11.956**	**2.333**	**242.353**	**3132**
ESP	LL	SW	2.649.266	0	372.034	202.838	711.866	0	0	0	641.529	7.891	1.540	159.953	2.067
PRT	LL	SW	483.012	0	67.643	36.880	129.430	0	0	0	116.642	1.435	280	29.082	376
HND	LL	SW	402.510	0	56.369	30.733	107.859	0	0	0	97.201	1.196	233	24.235	313
PAN	LL	SW	362.259	0	50.732	27.660	97.073	0	0	0	87.481	1.076	210	21.812	282
URY	LL	SW	129.768	0	16.911	9.220	32.358	0	0	1.715	29.160	359	70	7.271	94
FLAG	**LL**	**SW**	**401.160**	**0**	**36.235**	**46.854**	**29.655**	**0**	**0**	**0**	**107.477**	**394**	**238**	**264**	**0**
HND	LL	SW	401.160	0	36.235	46.854	29.655	0	0	0	107.477	394	238	264	0
FLAG	**LL**	**SW**	**43.658**	**0**	**2.318**	**25**	**348**	**0**	**0**	**350**	**17.737**	**0**	**0**	**0**	**0**
URY	LL	SW	43.658	0	2.318	25	348	0	0	350	17.737	0	0	0	0
TOTAL	**LL**	**SW**	**14.869.635**	**0**	**1.940.910**	**1.844.153**	**2.373.867**	**0**	**0**	**24.912**	**2.917.494**	**346.701**	**265.629**	**576.968**	**3.132**

BAITBOAT

FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	TUN	SWO	SAI	WHM	BUM	SPF
BRA	BB	SW	4.142.450	0	157.400	147.300	3.300	3.729.100	0	0	0	0	0	0	0
BRA	BB	SW	15.237.600	0	843.000	656.000	78.000	12.874.000	1.200	0	0	0	0	0	0
BRA	BB	SW	4.102.000	0	289.000	0	0	3.813.000	0	0	0	0	0	0	0
TOTAL			**23.482.050**	0	1.289.400	803.300	81.300	20.416.100	1.200	0	0	0	0	0	0

HANDLINE

FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	TUN	SWO	SAI	WHM	BUM	SPF
BRA	HL	SW	39.100	0	39.100	0	0	0	0	0	0	0	0	0	0
BRA	HL	SW	339.700	0	233.100	10	0	0	0	0	2.500	100	30	400	0
TOTAL	HL	SW	**378.800**	0	272.200	10	0	0	0	0	2.500	100	30	400	0

Miscelaneous (handline, gillnet, trolling, etc)/ Artisanal

FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	TUN	SWO	SAI	WHM	BUM	SPF
BRA	**ALL**	SW	**10.098.000**	0	0	0	0	0	0	2.234.500	0	237.900	0	0	0

	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	TUN	SWO	SAI	WHM	BUM	SPF

ANNUAL REPORT OF CANADA[1]

M. Calcutt[2], E. Carruthers[3], J. Neilson[3] and A. McMaster[4]

1. National fisheries information

1.1 Bluefin tuna

Bluefin tuna are harvested in Canadian waters from July through December over the Scotian Shelf, in the Gulf of St. Lawrence, in the Bay of Fundy, and off Newfoundland. In adherence with the ICCAT Recommendation, the Canadian quota for the 2003 calendar year was 580 t (620.15 t allocated quota reduced by 31.25 t of dead discards and a slight fishery overrun of 8.9 t, both from the 2002 season). The Canadian nominal landings of Atlantic bluefin tuna in 2003 were 556.6 t **(Table 1)**. The 23.4 t shortfall in the 2003 fishery, along with adjustments for discards, will be carried over to 2004 in deriving the 2004 Canadian quota.

All traditional bluefin tuna fishing areas produced catches of tuna in 2003 **(Table 2)**. The tended line fishery in the area between Georges and Browns Bank off southwest Nova Scotia known as the Hell Hole and the Gulf of St. Lawrence rod and reel fishery produced the largest fractions of the total Canadian landings in 2003. The Hell Hole (188 t) and the Gulf of St. Lawrence (192 t) each constituted 34% of the Canadian landings **(Table 2)**. The Gulf of St. Lawrence fish weigh about 400 kg (round), on average. Fish captured in the Hell Hole fishery weigh about 200 kg (round), on average.

Additional catches **(Table 2)** were also taken from the St. Margaret's Bay traps (84 t), from the rod and reel fishery off northeastern Nova Scotia (7 t), and from coastal fishing areas off Halifax and Liverpool, Nova Scotia (28 t). In the Bay of Fundy, 10 t were taken by electric harpoon. In 2003, 33 t were taken in the tended line fishery on the Tail of the Grand Banks of Newfoundland. The Newfoundland fishery has shown marked fluctuations in recent years, due primarily to decreased effort in the groundfish fishery and irregular presence of fishing vessels in the offshore fishing grounds. The offshore longline vessel, which directs for tuna other than bluefin in the northwest Atlantic, caught 14 t of its 20 t by-catch limit in 2003.

In 2003, 430 licensed fishermen actually participated in the directed bluefin fishery, one offshore longline license was authorized to direct for other tuna with a small bluefin by-catch provision, and four fish-trap license holders in St. Margaret's Bay used 17 bluefin tuna trapnet licenses **(Table 3)**.

A new management approach will be implemented in the 2004 fishery season, which will see each of the seven fleet sectors assigned a specific quota. Fleets will operate independently of each other, adopting their own strategies to address when and how to harvest the resource.

1.2 Swordfish

Swordfish occur in Canadian waters from April to December, primarily on the edge of Georges Bank, the Scotian Shelf and the Grand Banks of Newfoundland. The ICCAT recommendation for the Canadian swordfish quota for 2003 was 1338 t. Canada's adjusted quota for 2003 was 1463.6 t (1338 t plus a 25 t transfer from the United States, a 32.2 t shortfall in the 2002 fishery and unused dead discard allowances from 2000-2002). Canadian nominal landings in 2003 were 1284.9 t **(Table 1)**, resulting in an underage of 178.7 t that will be added to the 2004 quota. The 2003 20 t dead discard allowance was exceeded by 58.9 t and therefore a reduction in that amount will be applied to the 2004 quota calculation.

In 2002, the fishery changed from a competitive one to one operated under Individual Transferable Quotas (ITQ's). Under a competitive scheme, other tunas were taken early and late in the season, before and after the swordfish quota was caught. Under the ITQ system, fishers are able to direct for swordfish or use the IQ for by-catch to support an other tunas fishery. This resulted in a longer fishing season for swordfish than in previous years, starting in May and continuing until November.

The tonnage taken by longline was 1138 t (or 89% of the catch), while 147 t were taken by harpoon **(Table 4)**. The mean round weight of fish caught by longline and harpoon was 63 kg and 108 kg, respectively **(Table 4)**.

[1] Original report in English.
[2] Fisheries and Oceans Canada, Resource Management Branch, Ottawa, ON, K1A 0E6.
[3] Fisheries and Oceans Canada, Science, Biological Station, St. Andrews, NB, E2L 4L9.
[4] Fisheries and Oceans Canada, Resource Management, Dartmouth, NS B2Y 4T3.

Only 39 of the 77 licensed swordfish longline fishermen landed fish in the 2003 fishery **(Table 4)**. This represents the lowest number of licensed vessels landing fish since 1992, and is in marked contrast to 1993-96 when all, or nearly all, of the swordfish longline licenses were active **(Table 4)** due to the decline of groundfish stocks. The reduced effort in recent years is a result of a combination of factors including increased opportunities for fishing other species (especially crab and shrimp in Newfoundland), relatively low prices, and the introduction of the ITQ system for this fishery. Although over 1300 fishermen are eligible for harpoon licenses, only 89 were active in 2003 as harpooning swordfish is usually an opportunistic activity conducted during other fisheries.

1.3 Other tunas

The other tunas (albacore, bigeye and yellowfin) are at the northern edge of their range in Canada, and they are found along the edge of the Gulf Stream and Georges Bank, the Scotian Shelf and the Grand Banks (and beyond) throughout the year. Canadian catches of these species have traditionally been a minor portion of the overall Canadian catch of large pelagic species. The increased swordfish quota for 2003 resulted in less attention given to fishing other tunas. Bigeye landings decreased by 35% in 2003 compared with 2002. Albacore landings were down by 50%. Yellowfin landings increased slightly in 2003. In 2003, catches were spread throughout the fishing season (May – November). Catches of the other tunas by the Canadian swordfish and tuna longline fleet represented 20% of the overall catch of the fleet in the year 2003 down from 32% in 2002. Forty of the 78 licensed other tuna fishermen were active in 2003.

One Canadian offshore longline vessel has been authorized to direct for other tuna species with a bluefin tuna by-catch, and the 77-vessel swordfish/other tunas longline fleet has been permitted to direct for other tunas with no bluefin tuna by-catch. In addition, bluefin tuna vessels are authorized to catch and retain an incidental by-catch of other tuna while fishing for bluefin.

1.4 Sharks

Porbeagle is the only shark species for which there is a directed longline fishery. Historically, blue shark and shortfin mako have been a by-catch of the Canadian swordfish and groundfish longline fisheries although small amounts are also landed from other fisheries. It is believed that the by-catch for these two shark species is larger than reported because of discarding and live releases. A Management Plan for all shark species was first implemented in 1995. The 2001 porbeagle stock assessment resulted in a new 5-year management plan for sharks beginning in 2002, including a 75% quota reduction for porbeagle and closure of the porbeagle mating grounds in order to facilitate stock rebuilding. Total reported landings in 2003 were 142 t of porbeagle, 6.1 t of blue shark and 73 t of shortfin mako **(Table 1)**.

In 2003, 29 exploratory shark fishing licenses were authorized to land porbeagle and/or blue shark, with all other sharks, including shortfin mako restricted to a by-catch **(Table 3)**. This is a reduction from 55 licenses in 2001 by attrition of inactive licenses, a management measure in response to the current stock status. In addition, there were 1163 recreational shark licenses restricted to hook and release only **(Table 3)**, except for a small number of approved derbies that allow for retention of catch for scientific research purposes.

2. Research and statistics

The Canadian Atlantic statistical systems provide real time monitoring of catch and effort for all fishing trips. In 1994, an industry-funded Dockside Monitoring Program (DMP) was established in Atlantic Canada, according to Department of Fisheries and Oceans (DFO) standards, for the swordfish longline fleet and the majority of bluefin landings. Since 1996, this system has applied to all fleets (including sharks), and included monitoring of all trips even when no fish were caught. At the completion of each fishing trip, independent and certified Dockside Monitors must be present for off-loading, and log record data must be submitted by each fisherman to the Monitoring Company that inputs the data into a central computer system. Log records contain information on catch, effort, environmental conditions (e.g., water temperature) and by-catch. Log records from trips with catch must be received from fishermen before they can proceed with their next fishing trip (log records from zero catch trips can be mailed in at a later time). Ideally, this ensures 100% coverage of properly completed log records and individual fish weights. Prior to the implementation of the Dockside Monitoring Program, even though the submission of logbooks was compulsory, less than 50% of trips were represented by useable log records and information on individual sizes of fish (see **Table 4** for swordfish). The effectiveness of this system was thoroughly reviewed in 1998 and 1999, and appropriate changes implemented, as necessary. Problems such

as by-catch and highgrading are assessed through Observer Programs and at-sea surveillance on the domestic fleet. License holders who fail to comply with the domestic regulations and conditions of license are liable to prosecution that may include fines, and suspension of license privileges.

2.1 Bluefin tuna research

Canada fully supports research that improves the basic inputs and approaches of the Atlantic bluefin stock assessments. Canada (government scientists and managers, and industry) has supported and participated in recent state-of-the-art bluefin tagging studies and collaborative surveys that have raised the possibility of a previously unknown spawning area in the Central Atlantic, and looks forward to participating in further collaborative research opportunities.

The 2003 scientific research program at the Biological Station (St. Andrews) was as follows:

1) Evaluation of the effectiveness of time/area closures for minimizing by-catches of bluefin tuna in pelagic longline fisheries. This work has led to a change in the past practices of closing western Canadian waters to the early season pelagic fishery, with the expectation of reduced bluefin tuna by-catch.

2) Dockside Monitoring for all bluefin tuna landed in Canada, and data entry by the Monitoring Companies or Regional Statistical offices. Since 1996, there has been monitoring and data entry for all trips even when no fish were landed.

3) Collected bluefin blood and tissue samples for a NMFS (USA) research project on bluefin sexual maturity and genetics.

2.2 Swordfish research

1) Dockside Monitoring in place for all longline swordfish landed in Canada and data entry conducted by the Monitoring Companies or Regional Statistical offices. Since 1996, there has been dockside monitoring for both the longline and harpoon fleets.

2) Provided estimates of dead swordfish and bluefin discards based on Observer coverage of the domestic large pelagic longline fleet.

2.3 Other tunas

1) Sampling of the domestic fleet consisted of submission of tally sheets and logs, and close to 20% observer coverage. Data on catch and size have been provided to ICCAT. Dockside Monitoring is in place for the other tuna fisheries.

2) The program prepared a paper describing the Canadian bigeye tuna fishery and the biological characteristics of its catch, for presentation at the Second World Bigeye Tuna Symposium in early 2004.

3) Bigeye tuna genetics samples were collected on behalf of the ICCAT Bigeye Tuna Year Program.

4) Biological samples from collaborative surveys undertaken in the central North Atlantic were provided to U.S. investigators.

2.4 Sharks

1) The current shark management plan includes greatly reduced quotas in order to facilitate stock rebuilding. As part of this plan, research is being directed towards a comparison of current growth and maturity with that present at the time of the start of the fishery in 1961. Additional research is underway to compare the growth of NW Atlantic porbeagle with that of the South Pacific population, and on the degree of genetic relatedness between NE and NW Atlantic populations. Research completed in 2003 included a comprehensive study of porbeagle temperature associations, based on temperature measurements at the depth of the fishing gear. The deployment of archival satellite popup tags is being continued.

2) The primary directed fishery for blue sharks is recreational. Therefore, catch-effort, maturity, diet, and sex and size composition data were once again collected from all shark derbies in eastern Canada (six derbies in total for 2003). These data will be combined with an analysis of commercial by-catches, standardized catch rates, tag-recapture analysis and mortality calculations to infer population status. This report will be tabled in 2004.

2.5 Incidental catch

1) A report on the analysis of Canadian Observer data with respect to the incidental catch of all species on longline in the Canadian Atlantic pelagic fishery was completed for 2003. This report has resulted in recommendations and adoption of industry-driven mitigation measures.

2) Research with NMFS to collate and analyze historical research cruise data.

2.6 Collaborative Precautionary Approach

Canada strongly supports the Precautionary Approach and assigns a high priority to its implementation in fisheries management domestically as well as in the context of ICCAT. Recognizing that ICCAT stocks are currently not information rich, Canada fully supports new research aimed at improving stock assessments. Furthermore, as the Precautionary Approach is not limited to the development of reference points, Canada also strongly promotes the use of appropriate fisheries management and compliance measures to ensure the rebuilding and safeguarding of the resource.

Canada is a member of the ICCAT *Ad Hoc* Working Group on Precautionary Approaches.

3. Implementation of ICCAT conservation and management measures

For bluefin, swordfish, sharks, and the other tunas (bigeye, yellowfin, and albacore) Canada has issued multi-year management plans prior to the opening of the respective fishing seasons. Details of management measures and their enforcement are provided in Appendix A. These plans are compiled in consultation with the fishing industry and incorporate all relevant ICCAT regulatory recommendations. They are implemented under the *Fisheries Act of Canada*. The necessary ICCAT regulatory recommendations are either specified in the *Atlantic Fishery Regulations* (1985) (made pursuant to the *Fisheries Act*) or are handled as written Conditions of Licence (issued pursuant to the Fishery (General) Regulations), both of which are legally binding on fishermen.

3.1 Catch limits and minimum sizes

Bluefin tuna. Canada has implemented the ICCAT regulatory recommendations that apply to bluefin tuna in the Canadian Atlantic Bluefin Management Plan (Appendix A). The 2003 quota was set at 580 t (see 1.1 above), and no person shall have in his possession any bluefin weighing less than 30 kg In addition, Canada has limited entry into the fishery; and restrictions on the amount and type of gear used, vessel replacement, management fishing areas, and license transfer requirements.

Swordfish. Canada has implemented the ICCAT regulatory recommendations that apply to swordfish in the Canadian Atlantic Swordfish Management Plan (Appendix A). The 2003 quota was set at 1463.6 t (see 1.2 above), and there is a prohibition on the taking and landing of swordfish less than 119 cm LJFL (no tolerance). In 2002, a restructuring of the fleet, through the implementation of individual transferable quotas gives more control in managing the quota. In 1998 - 2003, landings of fish <119 cm LJFL were reduced to as close to zero as possible.

Other tunas. In 1998-1999, the first Canadian Atlantic Integrated Fishery Management Plan was issued for bigeye, yellowfin and albacore. Measures adopted in that plan remained in effect through 2003. A management plan that will combine measures for both swordfish and other tunas will be developed in 2004. Fishing effort is restricted by limiting entry into the directed fishery to vessels having a swordfish/other tunas longline license and to one offshore vessel with an other tuna longline license. No person shall have in his possession any bigeye or yellowfin weighing less than 3.2 kg.

3.2 Closed seasons

Swordfish. In addition to the ICCAT regulatory recommendations, Canada has limited entry into the fishery, strict by-catch provisions, time-area closures to minimize by-catch, and gear restrictions. In an effort to protect large (spawning stock) swordfish, the industry initiated a closure of a substantial portion of the Scotian Shelf to harpoon gear, for the past several years from early autumn to the end of the season. Since 1995, a relatively large portion of the southwestern part of the Scotian Shelf has been closed to swordfish longline gear for a period of up to two months to minimize by-catch of bluefin tuna.

3.3 Observer programs

Canada has had an excellent Observer Program since 1977. Observers collect biological data, and monitor compliance with fishing regulations. In 2003, 7% observer coverage (by sea days) on the fleet fishing for other tunas was achieved. Data from the Observer Program are used to estimate dead discards, and document incidental catch of non-target species.

3.4 Vessel monitoring

Although Canada has 8 licenses for large pelagic vessels over 24 meters in length, most fishing is conducted within the 200 mile zone. In 2003, Canada operated 4 vessels and all were equipped with a VMS system as per the recommendation adopted by ICCAT. The remaining 4 licenses eligible to be placed on a vessel greater than 24 meters in length were used on smaller vessels.

3.5 Inspection schemes and activities

Canada has a Port Inspection Scheme consistent with the ICCAT Regulatory Recommendation that entered into force on 13 June 1998 (see section 4).

3.6 Measures to ensure effectiveness of ICCAT conservation and management measures and to prohibit Illegal, Unreported and Unregulated fisheries

Canada participates in the Statistical Document Programs for bluefin tuna, swordfish and bigeye. Programs for swordfish and bigeye tuna were introduced in 2003 for all exports.

3.7 Other recommendations

Prior to the implementation of the ICCAT Bluefin Tuna Statistical Document Program, Canada developed a system of uniquely numbered tags to be attached to all bluefin tuna landed in Canada. Since 1995, it has tracked the utilization of these tags through a computerized system and can cross reference data from this system with the information on the Bluefin Tuna Statistical Documents once copies are returned from Japan.

Statistical Document Programs for swordfish and bigeye use government accredited organizations to validate export documents.

4. Inspection schemes and activities

Canada has a Port Inspection Scheme consistent with the ICCAT Regulatory Recommendation that entered into force on 13 June 1998. Canada uses a comprehensive enforcement protocol that involves a combination of the Dockside Monitoring Program (see section 2), and shore and sea-based patrols of Department of Fisheries and Oceans Fisheries Officers to ensure compliance with domestic regulations (which include ICCAT regulatory recommendations; see section 3).

In addition to the Dockside Monitoring Program to ensure complete coverage of the catch and effort of the Canadian fleet (see 2.1(2) and 2.2(1) above), aerial and vessel surveillance are used to monitor the fleets at-sea. Shore-based patrols monitor routine landings, watch for illegal landings and conduct airport and border surveillance. Observer coverage is used periodically to monitor specific important management questions in the commercial fishery. Test fisheries are established to define areas and times to minimize the catch/by-catch of restricted species or undersized targeted species.

Table 1. Canadian landings (tons round weight) of large pelagic fish species, 1994-2003.

Species	*Landings*									
	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Swordfish	1,675.7	1,609.2	739.1	1,089.5	1,115.1	1,118.5	967.8	1,078.9	959.3	1,284.9
Bluefin tuna	391.6	576.1	598.0	504.5	596.0	576.1	549.1	523.7	603.7	556.6
Albacore tuna	32.2	11.5	23.9	30.8	23.2	38.8	121.7	51.0	112.7	55.7
Bigeye tuna	110.5	148.6	144.0	165.7	119.6	262.8	327.0	241.2	279.3	181.6
Yellowfin tuna	52.3	174.4	154.5	100.1	56.6	21.8	105.2	125.3	70.4	72.7
Unspec. tuna	0.2	0.0	0.0	0.0	0.0	0.0	0.5	0	.1	0.4
Blue shark	112.5	137.8	11.8	10.9	4.5	53.5	18.4	0.4	5.1	6.0
Shortfin mako	157.2	111.2	67.4	110.1	69.5	70.4	77.8	69.3	78.2	73.3
Porbeagle	1,544.9	378.0	1,015.4	1,339.4	1,007.8	958.2	902.3	498.6	236.6	142.4
Unspec. sharks	107.1	38.4	12.7	42.5	37.3	17.6	10.7	19.7	21.1	13.4
Marlin[1]	4.4	4.4	8.3	8.3	7.9	4.8	5.3	3.2	2.1	1.4

[1] Prior to 2002, marlin catches were reported as white marlin, although the ability to distinguish between white and blue marlin is not clear. This has been addressed for 2002 and in subsequent years.

Table 2. Canadian bluefin tuna landings and discards (tons round weight) by fishing area, 1993-2003.

Bluefin fishing area (west to east)	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Bay of Fundy	0	34	43	32	55	36	38	18	31	13	10
Hell Hole	223	165	211	147	101	152	182	74	182	125	188
St. Marg's Bay	29	80	72	90	59	68	44	16	16	28	84
SWNS (coastal)	0	0	0	60	84	106	93	113	61	114	28
NE Nova Scotia	45	39	61	41	69	82	26	7	25	35	7
G of St. Lawren.	111	61	175	111	101	115	164	236	149	205	192
Newfoundland	26	5	10	95	30	21	10	71	51	68	33
Offshore	25	0	4	22	6	16	18	13	7	16	14
Year-end adj[1]	-	7	-	-	-	-	1	1	<1	<1	<1
Total landings	**458.6**	**391.6**	**576.1**	**598.0**	**504.5**	**596.0**	**576.1**	**549.1**	**523.7**	**603.6**	**556.6**
Discards[2]	-	-	-	-	6.0	16.3	10.7	46.0	13.2	36.9	14.0
Canadian quota	*587.5*	*510.0*	*613.5*	*613.5*	*552.6*	*600.7*	*577.7*	*569.5*	*553.0*	*594.7*	*580.0*

[1] e.g., seized, Bermuda fishery or tournaments.

[2] Discarded dead from swordfish longline fishery: no estimates prior to 1997; 1997 actual tonnage observed by at-sea observers; 1998-2002 estimate for entire fishery based on observer coverage (see SCRS/99/77). An alternative method for determining dead discards using unextrapolated observer data gives a value of .85 t for 2003. This latter value was used for deriving the 2004 Canadian quota and has been included in Canada's compliance table reporting on 2003.

Table 3. Distribution of tuna, swordfish longline and shark fishing licenses by region and species[1] in 2003.

Region	*Number of licences*[1]							
	Bluefin		*Swordfish (LL)*		*Other tuna (LL)*[4]		*Sharks*	
	Total	*Active*	*Total*	*Active*	*Total*	*Active*	*Explor.*	*Rec.*
Gulf	601	335	0	0	0	0	11	34
Newfoundland	55[3]	18	6	0	7	0	0	15
Scotia-Fundy	42	38	71	39	71	40	16	1,114
St. Margaret's Bay[2]	24	17	-	-	-	-	-	-
Quebec	54	22	0	0	0	0	2	0
Total	776	430	77	39	78	40	29	1,163

[1] Bluefin tuna, swordfish, other tunas, and sharks (exploratory longline licences) are regulated by limited entry. Recreational shark licences are restricted to hook and release only, and the number varies from year-to-year, depending on demand.
[2] Four fish trap licence holders with 6 bluefin trapnet licences each.
[3] 38 of these licenses are subject to a reduced level of fishing activity and restricted to NAFO Divisions 3LNO.
[4] Restricted to tunas other than bluefin (albacore, bigeye, yellowfin).
Note: Active fishermen are those that picked up their licences, licence conditions and tags, and submitted log records.

Table 4. Summary of 1993-2003 swordfish vessels landing fish, landings (tons round weight), discards[1], average weight of fish (kg round) by gear, percentage of small fish by number[2], and percentage of catch sampled for size.

	1993	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Number of vessels landing fish											
Longline	75	74	77	77	60	49	53	61	63	46	40
Harpoon	72	32	97	112	105	109	66	92	84	71	89
Landings (t)											
Longline	2,206	1,654	1,421	646	1,000	875	1,101	873	957.6	922	1,138[3]
Harpoon	28	22	188	93	89	240	18	95	121.3	38	147
Total	2,234	1,676	1,609	739	1,089	1,115	1,119	968	1,078.9	959	1,285
Discards (t) [1]	-	-	-	-	5.0	51.7	34.6	49.9	26.4	32.7	78.6
Average weight (kg)											
Longline	56	63	68	69	70	61	56	58	69	72	63
(# sampled)	(19,469)	(26,279)	(20,247)	(9,077)	(14,438)	(13,447)	(19,630)	(12,991)	(13,611)	(12,859)	(17,298)
Harpoon	129	120	122	161	131	126	109	111	102	117	108
(# sampled)	(151)	(83)	(1,131)	(561)	(652)	(1,911)	(147)	(830)	(1,287)	(413)	(1,364)
% small fish by number landed[2]											
<125 cm	**15**	**11**	**9**	3	5	3	3	3	2	<1	2
<119 cm	9	6	4	**<1**	**2**	**<1**	**<<1**	**<<1**	**<1**	**<<1**	<1
% of catch sampled	50	99	94	97	100	95	100	100	100	100	100

[1] Discarded dead from swordfish longline fishery: no estimates prior to 1997; 1997 actual tonnage observed by at-sea Observers; 1998-2001 estimate for entire fishery based on Observer coverage (see SCRS/99/77).
[2] Minimum size under regulation in bold: <25 kg round weight or <125 cm LJFL with 15% tolerance (by number) from 1991-1995, and <119 cm LJFL with no tolerance since 1996.
[3] Includes 0.5 tons of swordfish caught on trolling gear by longline vessels.

ANNUAL REPORT OF THE PEOPLE'S REPUBLIC OF CHINA[1]

Dai Xiaojie[2], Xu Liuxiong [2]

1. Fishery information

Longline is the only fishing gear used for tunas by the fishing fleet of China in the Atlantic Ocean. The total number of tuna longliners operating in the Atlantic Ocean was 38 in 2003, with a total catch of tunas and tuna-like species amounting to 10,048 t, which is higher than that of 2002. **Table 1** shows the species composition of the catch in the total Atlantic since 1993. ICCAT Reporting Tables on catches by China in 2003 were submitted to the Secretariat.[3]

1.1 Albacore

Albacore were caught by the Chinese longline fleet as by-catch in the Atlantic Ocean. The total catch of this species in 2003 was estimated at about 181.6 t, a 19.5% decrease compared with that of the previous year (225.7 t).

1.2 Bluefin tuna

Bluefin tuna was targeted by the longline fleet of China in the North Atlantic Ocean. The total catch in 2003 was 19.3 t, dramatically decreased from the previous year (39.1 t in 2002).

1.3 Tropical tunas

Tropical tunas include bigeye tuna and yellowfin tuna in the Atlantic Ocean. The total catch of bigeye tuna in 2003 amounted to 7,889.7 t, which is 35.1% higher than that of 2002 (5,839.5 t), while the catch of yellowfin tuna was 1,049.7 t, 50.7 % higher than that in 2002 (696.7 t).

1.4 Swordfish

The total catch of swordfish in 2003 amounted to 669.1 t, a 30.4% increase from the previous year. Of this amount, 315.8 t (90.2 t in 2002) were caught in the North Atlantic Ocean, and 353.3 t (423 t in 2002) in the South Atlantic Ocean.

1.5 Sharks

The shark catch was a by-catch of the Chinese longline fleet. Blue shark was the predominant species. Shortfin mako was the economic shark species. Based on the dried shark fin weight, the catches of two shark species (blue shark and shortfin mako) were estimated. The estimated catch of blue shark amounted to 600 t in 2003 (the number of individuals was 900). The estimated catch of shortfin mako was 260 t (the number of individuals was 4,700).

2. Research and statistics

Shanghai Fisheries University (SHFU) is in charge of data collection and compilation of Atlantic tuna fishery statistics. The compiled data, including Task I and Task II as well as the number of fishing vessels, have been routinely reported to the ICCAT Secretariat.

In accordance with the Commission's recommendation on the bigeye tuna observer program adopted at the 1997, China began to carry out a tuna observer program in ICCAT waters in 2001. One observer was sent to the Chinese Atlantic tuna longline fishing fleet. The observer covered area was 15°N-15°S, 10°W-40°W.

[1] Original report in English.
[2] Shanghai Fisheries University, 334 Jungong Road, Shanghai 200090, People´s Republic of China.
[3] Available from the Secretariat.

Additionally, a logbook data submission system is being established in order to obtain more detailed catch and fishing effort information.

3. Implementation of ICCAT conservation and management measures

3.1 Catch quota and minimum size limit

In order to comply with the catch limits established by ICCAT on bigeye, eastern bluefin, northern and southern swordfish, blue marlin, and white marlin, the fishery administration authority of China required all the fishing companies operating in the Atlantic Ocean to report their catches monthly to the Tuna Working Group at Shanghai Fisheries University.

In order to implement the conservation and management measures for bigeye tuna, the fishery administration authority of China has urged some of tuna fleet operating in the Atlantic Ocean to shift their fishing grounds to the Indian and Pacific Oceans.

The Chinese tuna fleet strictly followed the minimum size criteria established by the ICCAT Commission in order to protect young tunas.

3.2 Tuna Statistical Document Program

Since July 2002, all exported bluefin tuna, and bigeye tuna caught by tuna fleet of China, have been accompanied by a Bluefin Tuna Statistical Document and/or a Bigeye Tuna Statistical Document, as required by the resolution and recommendation adopted by ICCAT.

3.3 Fishing vessel management

It is noted that the Government of China has issued fishing licenses to all Chinese fishing vessels operating in the high seas of the world oceans on December 1, 2002. Each license specifies the type of fishery, the fishing grounds, the targeted species and quota, etc. This will facilitate fishing port inspection and also help the Government of China to effectively supervise its fleet.

A Vessel Monitoring System (VMS) is being established. This scheme will cover all the large longliners of China operating on the high seas of the world oceans in two years. Once the scheme is implemented, fishing position can be monitored simultaneously.

3.4 Observer program

A scientific observer has been sent to the high seas in the Atlantic Ocean for data collection since June, 2004.

Table 1. Catches of tunas and tuna-like species (in round weight, t), 1993 to 2003.

Species	*1993*	*1994*	*1995*	*1996*	*1997*
Bluefin tuna	---	97.4	136.9	92.8	48.7
Yellowfin tuna	139.0	155.9	200.0	124.3	83.6
Bigeye tuna	70.1	428.3	475.7	519.8	427.1
Swordfish	72.5	85.7	104.2	131.9	39.6
Albacore	---	14	8	20	---
Skipjack	---	---	---	---	---
Unspecified shark	---	---	---	---	---
Short mako	---	---	---	---	---
Spearfish	---	---	---	---	---
Blue marlin	---	---	---	---	---
White marlin	---	---	---	---	---
Sailfish	---	---	---	---	---
Other	41.0	68	76.0	80	90
Total	**322.6**	**849.3**	**1,000.8**	**968.8**	**689.0**

Table 1. Continued

Species	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Bluefin tuna	85.3	103	79.6	68.1	39.1	19.3
Yellowfin tuna	698.3	2,190	1,674.2	1,055.8	696.7	1,049.7
Bigeye tuna	1,502.9	7,347	6,563.5	7,210	5,839.5	7,889.7
Swordfish	365.3	838	365.6	302	513.2	669.1
Albacore	---	60	104.7	82.7	225.7	181.6
Skipjack	4	---	---	---		
Unspecified shark	5	31	---	---		
Short mako		---	152.8	---		
Spearfish	2.4	---	---	---		
Blue marlin		---	23.2	91.6	87.8	88.5
White marlin	3.6	---	2.4	19.8	22.8	7.6
Sailfish	---	---	7.4	8.1	11.7	4.7
Other	---	415	234.2	532.4	590.3	137.4
Total	**2,666.9**	**10,984**	**9,207.6**	**9,370.4**	**8,026.8**	**10,048**

ANNUAL REPORT OF CÔTE D'IVOIRE[1]

N. Ngoran[2], J.B. Amon Kothias[2]

1. Introduction

Although Côte d'Ivoire does not have tuna fishing vessels, it plays a very important role in the management of Atlantic tunas. Research work on marine and high seas fisheries is carried out by the *Centre de Recherches Océanologiques* (CRO). This center is responsible for the research and statistics on tunas landed regularly at the fishing port of Abidjan. As in previous years, during the course of 2003, the industrial tuna fishery has been monitored by the CRO, together with the *Institut de Recherche pour le Developpement* (IRD) and the *Instituto Español de Oceanografía* (IEO). The costs (operation, equipment and personnel) are covered by the three centers that benefit from the following three sources of funding:

- General Operating Budget (GOB) of Côte d'Ivoire;
- EU funding through the IRD (France) and the IEO (Spain);
- European Union (EU) within the framework of fishing agreements between Côte d'Ivoire and the EU.

In addition to the industrial fishery, there is an artisanal fishery that also lands mainly small tunas and billfishes (marlins and swordfish) and sharks. The monitoring of this fishery has been reinforced due to the ICCAT Enhanced Research Program for Billfish that helped the responsible agency in charge of monitoring the landings in Côte d'Ivoire, through a subsidy that enabled contracting a sampler to reinforce the collection of data.

This report summarizes the data relative to the large pelagics, particularly tunas, at the fishing port of Abidjan through the activities of the tuna vessels (mainly French and Spanish) and the driftnet canoe fishery along the Ivorian coasts. With regard to the industrial tuna fishery, the importance of the fishing port of Abidjan is demonstrated by the total landings and tuna species and the number of tuna vessels that visit this port. While there are lists of all the vessels (including Spanish vessels) that landed or transshipped at the port of Abidjan in 2003, the catch data included here do not include the Spanish surveys, which are processed by our Spanish colleagues. Also noteworthy are the important quantities of "false tuna" landed. This type of fish contributes in large measure to the diet of the low income population in Côte d'Ivoire. With regard to the artisanal driftnet fishery that targets large pelagics, this report shows the nominal and weighted catches of the various fish caught, as well as the fishing effort deployed.

2. Tuna landings at the fishing port of Abidjan

Tuna landings at the port of Abidjan in 2003 were mainly made by French, Spanish and Ghanaian purse seiners. In addition to these vessels, there were some vessels flying flags of other countries. In total, 49 boats landed or transshipped at the fishing port of Abidjan in 2003 **(Table 1)**. These are broken down as follows: 15 Spanish vessels, 14 French, 12 Ghanaian and 8 other flag vessels.

A scientific team comprised of 14 persons contracted by the three centers were in charge of the collection, data entry and processing of statistical data in 2003. This team is comprised of the following: 2 research scientists (2 CRO), 4 high level technicians (1 CRO, 2 IRD and 1 IEO), 1 data entry technician (from the partnership), and 7 samplers (all from the partnership).

In the framework of its activities throughout 2003, the *Centre de Recherches Océanologiques* (CRO) has monitored tuna landings at the fishing port of Abidjan. The result obtained is as follows:

[1] Original report in French.

[2] Centre de Recherches Océanologiques, B.P. V 18, Abidjan, Côte d'Ivoire. Tel. 225 21 355 014, 355 880; Fax 225 21 351 155. E-mail: ngoran@cro.ird.ci.

Canned tuna

− Tuna vessels with Spanish flag or similar:	64,561 t
− Tuna vessels with French flag:	49,512 t
− Tuna vessels with Republic of Guinea flag:	1,148 t
− Tuna vessels with Ghanian flag:	9,996 t
− Cargos:	6,747 t
Total	**131,964 t**
False tunas (local market)	**9,534 t**

3. Artisanal catches of large pelagics in Côte d'Ivoire

There is an artisanal fishery off the Ivorian continental shelf that exploits tunas and other large pelagics. This is a driftnet canoe fishery that started in 1984. Since 1988, this artisanal fishery has been regularly monitored. The monitoring of the landings on land by the CRO has improved within the framework of ICCAT Billfish Program. The principal groups of fish landed are: billfish (sailfish and marlins), swordfish, sharks and small tunas. The fishers use canoes to fish at night using driftnet close to Abidjan from where they can easily sell their catches. The fishing zone is located about 5 to 10 miles from the coast, beyond the continental shelf, which is not very extensive. The net sets last one night and the fish are directly sold every morning at the port of Abidjan.

As concerns the large pelagics caught by the canoes, the most abundant billfishes in the catch are as follows: blue marlin *(Makaira nigricans)*, white marlin *(Tetrapturus albidus)*, sailfish *(Istiophorus albicans)*, and swordfish *(Xiphias gladius)*. Shark catches are comprised mainly of silky sharks *(Cacharhinus falciformis)*, smooth hammerhead sharks *(Sphyrna zygaena)*, scalloped hammerhead sharks *(S. lewini),* and mako sharks *(Isurus* spp.*)*, are second in importance **(Table 2)**. Tunas, such as yellowfin *(Thunnus albacares)*, skipjack *(Katsuwonus pelamis)*, frigate tuna *(Auxis thazard)*, and Atlantic black skipjack *(Euthynnus attetteratus)* are next in importance. As by-catch, the canoes also catch large fish such as bigeye *(Thunnus obesus)*, rays *(Manta* spp.*)*, wahoo *(Acanthocybium solandri)*, dolphin fish *(Coryphena* spp.*)*, sea turtles *(Chelonia mydas, Dermochelys coriacea)* and some dolphins. **Table 2** shows the total annual catches (nominal and weighted) of large pelagics (billfishes and sharks) taken by the driftnet canoe fishery. Thus, more than 500 t of large pelagics (billfish and sharks) are caught annually by this fishery, as are small tunas and other fish species. It is noted that these catches have decreased since 1998.

4. Conclusion

The quantities of tunas that are landed or transshipped annually at the fishing port of Abidjan supply the three large canneries of Abidjan and consequently sustain an important source of employment and an impressive economic activity. The regular monitoring of statistics of these landings by the CRO contributes to the improvement of ICCAT's knowledge of the Atlantic tuna fisheries.

The analysis of the data from the surveys carried out on the artisanal driftnet fishery shows the importance of this fishery both in terms of the quantities landed and in the diversity of the species.

The importance of the landings of billfishes and swordfish by the Côte d'Ivoire artisanal fishery is only a reflection of the artisanal catches of these fish off the coasts of the Gulf of Guinea. Therefore, the monitoring of this fishery should be developed in the coastal countries of the Gulf of Guinea, Senegal and Gabon. The sampling method and the data processing scheme used by the CRO of Abidjan seem to give satisfactory results. This could be applied in other countries through sub-regional collaboration. Further, the billfish landings off the Gulf of Guinea coasts could be better monitored and coordinated.

The development of abundance indices from Ivorian data could serve as indicators of the state of the central East Atlantic stocks.

Table 1. List of tuna vessels that landed at the fishing port of Abidjan en 2003.

No.	*Name*	*Flag*	*No.*	*Name*	*Flag*
1	Via Euros	France	26	Mervent	France
2	Via Mistral	France	27	Kurtzio	Spain
3	Via Avenir	France	28	Ile Tristan	France
4	Almadraba 2	Spain	29	Cap Bojador	France
5	Pere Briant	France	30	Sant Yago 2	Spain
6	Montefrisa 9	Spain	31	Alboniga	Spain
7	Txori Eder	Spain	32	Zuberoa	Spain
8	Albacora 10	Neth. Antilles	33	Afko 105	Ghana
9	Gure Campolibre	Ghana	34	Albacora 9	Neth. Antilles
10	Almadraba 1	Spain	35	Afko 805	Ghana
11	Cap Saint Pierre 2	France	36	Afko Foods 801	Ghana
12	Cap Saint Paul	France	37	Egalabur	Spain
13	Bermeotarak Tres	Spain	38	Belouga	Rep. of Guinea
14	Via Harmattan	France	39	Marine 707	Ghana
15	Santa Maria	France	40	Egaluze	Spain
16	Matxikorta	Spain	41	Bermeotarak Cuatro	Ghana
17	Txirrine	Spain	42	Marine 703	Ghana
18	Montecelo	Spain	43	Gure Campolibre	Ghana
19	Avel Viz	France	44	Panofi Frontier	Ghana
20	Belouga	France	45	Panofi Master	Ghana
21	Albacora Caribe	Venezuela	46	Panofi Volunteer	Ghana
22	Agnes 1	Ghana	47	Izurdia	Spain
23	Germon	Morocco	48	Un-Jin	Ghana
24	Alcran	Belize	49	Mervent	Rep. of Guinea
25	Armen	France	50		

Table 2. Côte d'Ivoire annual catches (t) of billfishes and sharks by driftnet, from 1988 to 2003.

Year	*Effective effort**	*Sailfish (I. albicans)*	*Blue marlin (M. nigricans)*	*White marlin (T. albidus)*	*Swordfish (X. gladius)*	*Various sharks*	***Total***
1988	2,908	65.6	130.3		12.22		**208.1**
1989	2,430	54.5	82.0		6.77		**143.4**
1990	2,920	57.9	88.1		7.52		**153.5**
1991	4,981	38.2	105.1		18.02	55.7	**217.0**
1992	6,196	68.8	79.2		13.05	101.4	**262.4**
1993	7,707	39.5	139.5		14.42	90.1	**283.6**
1994	12,756	54.4	211.6		19.98	110.9	**396.8**
1995	14,141	66.3	176.7		18.78	106.6	**368.4**
1996	14,478	90.6	157.4	0.7	25.76	103.4	**377.8**
1997	12,874	65.1	222.1	1.8	17.66	91.1	**397.7**
1998	10,328	35.3	182.4	0.9	25.12	55.6	**299.3**
1999	15,244	80.1	275.5	5.4	25.72	58.1	**444.8**
2000	12,145	44.5	205.9	1.2	20.1	47.4	**319.1**
2001	13,994	47.0	196.0	2.4	18.9	68.4	**332.7**
2002	13,061	65.4	77.9	1.8	19.0	63.2	**227.3**
2003	27,464	121.0	109.0	3.0	43.0	101.4	**377.4**

* Effective effort = nominal effort in number of trips corrected by the development of fishing power (rate of increase of the size of the nets).

ANNUAL REPORT OF CROATIA[1]

Vlasta Franičević [2]

Part I. Information on fisheries, research and statistics

Section 1: Annual fisheries information

The total Croatian catch of tuna and tuna-like fishes in 2003 was 1,139 metric tons (t). The catch is comprised entirely (100%) of bluefin tuna. Purse seine catches amounted to 1,137 t and the sport fishery caught 2 t. Almost the entire purse seine catch is transferred into floating cages for growing purposes. Additionally, 1,123 t of large bluefin tuna were imported in Croatia in 2003 from France and Spain for growing purposes. The number of licensed vessels actively fishing for tuna and tuna-like species in 2003 was 35. Of these, 31 vessels were reported as licensed large-scale vessels (> 24 m), while 20 of these have reported catch data in 2003.

Section 2: Research and statistics

During 2003, a study on bluefin tuna farming, based on the tagging of live specimens in the grow-out floating cages, within framework of the Bluefin Year Program (BYP) is still under way. Currently, this research is targeting specimens of approximately 12-25 kg live round weight. Specimens that were tagged this year are expected to be harvested in December 2003 or January 2004. Additionally, samples of heart muscles were taken for genetic studies. Based on data collected within the framework of the BYP farming study, a new conversion factor has been estimated for conversion from gilled and gutted (GG) product weight (originating from farming) to round weight (RWT) as reported in SCRS/2004/096.

All catch data are reported to the National Fisheries Information System. As almost the total catch is used for farming purposes, it is very difficult to determine size-distribution data, considering the small sample available.

Part II. Management implementation

Section 3: Implementation of ICCAT conservation and management measures

A new national regulation entered in force in 2003, introducing mandatory reporting of farming data.

Section 4: Inspection schemes and activities

Croatia has nothing to report at this time.

Section 5: Other activities

Croatia has no other activities to report at this time.

[1] Original report in English.

[2] Ministry of Agriculture, Forestry and Water Management, Directorate of Fisheries, Croatia, B. Kašića 3, 23000 Zadar, E-mail: mps-uprava-ribarstva@zd.htnet.hr

ANNUAL REPORT OF CYPRUS[1,2]

G.P. Gabrielides[3], D. Konteatis[3], N. Hadjistephanou[3], Ch. Charilaou[3]

Part I. Information on fisheries, research and statistics

Section 1: Annual fisheries information

Introduction

The large pelagic species are caught by almost all kinds of fishing methods in Cyprus i.e., by the inshore fishery, the multipurpose fishery and by the trawl fishery. Recreational fishery is also directed to these species, basically albacore. The inshore fishery takes place within the territorial waters of Cyprus, whereas the multi-purpose fleet and the trawlers operate within the territorial waters of Cyprus, as well as within the international waters, mainly in the eastern and central Mediterranean. The fishing grounds are thus distinguished as "Cyprus Waters" and "International Waters".

"Cyprus Waters" refer to the area under government control. It is known that, since 1974, the most important fishing grounds of Cyprus are occupied. Of the 846 sq. nautical miles of the continental shelf, only 507 sq.n.m. are free. Of the total coastline of 773 km, 55% is not accessible to the Government of Cyprus.

Bluefin tuna

Bluefin tuna are present in the waters of Cyprus all year round and they are fished from April to November in the territorial waters of Cyprus as well as in the international waters around the island. The Cyprus nominal landings of bluefin tuna in 2003 were 78.9 metric tones (t). **(Table 1)**. Catches of bluefin tuna have increased during the last five years, as the importance and the demand of tuna in the market is increasing. Thus, the fishery is directed towards this species.

In 2003, 33 multi-purpose vessels were licensed for fishing operations **(Table 2)**, among which 14 vessels reported bluefin catches. **Table 3** presents the total production of all species of Cyprus (in t) and CPUE (in kg/working day) for all segments of the fishery (1990-2003). **Table 4** presents analytically the catch data (in kg) and effort (in working days and number of hooks) for the Cyprus multi-purpose fishery for the years 1999 to 2003.

Swordfish

Swordfish occur in the waters of Cyprus all the year round, but it is fished mainly from April to November, with the peak season in the summer months. Swordfish, as well as the other large pelagics, are caught by surface drifting longlines. The Cyprus nominal landings of swordfish in 2003 were 47.4 t. **(Table 1)**. The landings are 56.2 t less than in 2002. The swordfish landings vary from a maximum of 172.6 t. (1990) to a minimum of 3.9 t (1996).

In 2003, from the 33 licensed multi-purpose vessels **(Table 2)**, 22 reported swordfish catches. Production and CPUE are given on **Tables 3** and **4**.

Other tunas

The other tunas that occur in the waters of Cyprus (albacore and Atlantic bonito) were collectively reported as "tuna-like species" in the log records until 2002. Since 2003, they have been reported separately. A trend of increased landings of these species is noted in 2003 **(Table 1)**, mainly due to the fact that the multi-purpose vessels participated systematically in the albacore fishery in 2003 **(Table 5)**; the method of catch was basically trolling.

[1] Original report in English.
[2] Became Member State of the EC on May 1, 2004.
[3] Department of Fisheries and Marine Research, Ministry of Agriculture, Natural Resources and Environment, Nicosia, Cyprus.

Sharks

The Cyprus fishery is not directed at sharks, the majority of which are caught incidentally. Although some identification was tried, more systematic work has to be done.
The shark catch of the trawl and the inshore fishery is rather insignificant. The multi-purpose fishery often catches blue shark on the surface drift longlines and their quantities are also small, in comparison to the total catch, representing a mean of 11.22% (range of 6.8 to 16.0%) of the swordfish catch.

In 2003 the catches of shark species amounted to 12.9 t, whereas 21.9 t were reported in 2002 and 26.5 t in 2001 **(Table 1)**. Production and CPUE are given on **Tables 3** and **4**.

Section 2: Research and statistics

The authority responsible for fishery matters of Cyprus is the Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture, Natural Resources and Environment. The DFMR has its Head Office in Nicosia and four District Units, located in the four coastal towns of Paphos, Limassol, Larnaka and Paralimni. The DFMR consists of five divisions: Division of Fisheries Resources, Division of Development and Research of Aquaculture, Division of Marine Biology and Ecology, Division of Fishing Shelters and Support, and Division of Fisheries Control.

Statistics

The Department of Fisheries and Marine Research is, according to the Fisheries Law, responsible for the collection and processing of fishery statistics, as well as their transmission to all international organizations and agencies.

The collection of fishery statistics is based on the Fisheries Law, Chapter 135 and subsequent amendments of 1961 to 2000, as well as the Fisheries Regulations of 1990 to 2000, based on Article 6 of the Basic Law.

All trawlers and multi-purpose vessels are required by law to keep logbooks, while production data from the inshore fishery are collected from a 10% sample of this fleet category. The collection of trawlers´ data is carried out by the daily return of logbook sheets, which all skippers are required to hand in prior to landing their catch. The logbook sheets of the multi-purpose fleet are handed to the fisheries Inspectors of the Department after each trip and, at any rate, within one month of their last report. Inshore fishery production reports are collected at irregular intervals of one-two months. All catches are inspected upon landing, to ensure that they were weighed and recorded accurately. All the information given is verified by the Fisheries Inspectors.

Log records contain information about the vessel, the fishing area, port of landing, on effort (number of active fishing days, number of hooks), the total catch and breakdown of the catch by species and quality. Furthermore, log records contain information on the number of large pelagic fish and weight. The logbook sheets are collected by the Fisheries Inspectorate Service of the Division of Fisheries Control (Section 4). These data are sent at regular intervals to the Statistical Service of the DFMR for computer processing and analysis.

Swordfish, bluefin tuna and cartilaginous fish (mainly sharks) are mostly caught by the multi-purpose surface drifting longlines, the main catch of which is swordfish. For this reason, the multi-purpose fleet of Cyprus is often called the “swordfish fleet”. As a result, bluefin tuna and sharks were categorized as “by-catch” together with the other large pelagics of the “swordfish fleet”. In 1998, bluefin tuna and sharks started being reported in separate categories of the logbooks. Similarly, the trawl and the inshore fisheries reported their cartilaginous fish catches in the general category of “sharks and rays” and the tuna-like species, in the general category “tonakia”. The separation of the various chondricthyan groups started in 1999, when fishermen were provided with new logbook sheets. This enabled the Department of Fisheries and Marine Research to separate each group species within the reported catch.

The system ensures 100% of properly completed log records and individual fish weights. The licensed fishermen comply with the regulations and conditions of licenses and incidents of contraventions are very rare. However, fishermen who fail to comply with domestic laws and regulations are liable to prosecution, which include fines and the suspension of licenses.

It is worth mentioning that Cyprus is participating in the MedFisis project, an on-going regional project that aims to improve the statistical system (collection and processing of data) of the participating countries. In this

respect it is expected that disadvantages of the current system (e.g., no data verification of the negligible quantities of discards) will be eliminated. Furthermore, it is intended that the quantities caught by the recreational fishery will be recorded.

Research

Cyprus fully supports research on large pelagic species. In past years some research has been carried out, mainly on swordfish. However, research is limited in recent years, during which the research activities were minimized due to limited facilities, funds and personnel. One of the main reasons is that the existing personnel have been fully occupied with the work needed for the Cyprus accession to the E.U, and the compliance with E.U obligations.

However, under the National Program for the Collection of Fisheries data for 2005, which was submitted to the EC, to comply with Regulations (EC) No. 1543/2000 and No. 1639/2001, a bluefin tuna tagging pilot project will be carried out, in order to improve the knowledge of the migration patterns in the Mediterranean and of the behavior of this species related to environmental parameters. A discard sampling of the large pelagic fishery will be conducted as well, under the National Program.

Part II. Management implementation

Section 3: Implementation of ICCAT conservation and management measures

Cyprus has shown interest and has been continuously informed regarding ICCAT conservation and regulatory recommendations, up to the year 2003, when it became a Contracting Party to ICCAT. Since May 1, 2004 Cyprus is an EU Member State and it commits that all ICCAT regulatory recommendations will be gradually implemented.

Catch limits and minimum sizes

Although Cyprus has been a Contracting Party (and is now an EU Member State), it has not been officially allocated any quotas and continues to fish under the "Others" category. Cyprus has never accepted the reference values shown in the compliance tables, as it has not provided ICCAT with any data on catches for the years 1993-1994. The bluefin catch of Cyprus is reported, as requested, in the Task I data.

Cyprus Fisheries Law and relevant Regulations provide for restrictions on the number of fishing licenses issued, on management of fishing seasons, etc.

Cyprus has amended its Fisheries Law to comply with EC Regulations and has included a list of species with minimum sizes, including bluefin tuna. Fisheries Inspectors regularly collect biological data aboard vessels and monitor compliance with the Fisheries Law; therefore, minimum size regulations are implemented.

An "ICCAT Reporting Table" has been submitted in accordance with ICCAT Recommendation [Rec. 98-14] on Application of Three Compliance Recommendations.[4]

Other

Recreational fisheries: The Cyprus recreational fisheries are being regulated by the Fisheries Law and Regulations. A license from the DFMR is needed for any kind of recreational fishing carried out from a vessel. The licenses are issued with written conditions, which are legally binding. However, the catch from recreational fishermen is not recorded, but estimated according to previous research made by questionnaires.

Information on the measures taken according to ICCAT Resolution [Res. 01-20] Concerning a Management Standard for the Large-scale Tuna Longline Fishery was provided.[4]

VMS: Cyprus has implemented a Vessel Monitoring System for all fishing vessels flying its flag that exceed 18 meters length overall. The System has become operational since May 2004.

[4] Available from the Secretariat.

General

In accordance with ICCAT Resolution [Res. 94-08] and Regulation (EC) No. 869/2004, Cyprus has provided to the European Commission a list of vessels of over 24 meters overall length flying its flag fishing in the ICCAT Convention area.

Cyprus, in compliance with ICCAT Resolution [Res. 96-15] on Large-Scale Pelagic Driftnets, has never issued fishing licenses with the use of driftnets.

Relative to individual species

Swordfish: Since 1990, Cyprus Fisheries Law has set a time-area closure for a five-month period (October to February), in territorial waters for the multi-purpose fleet, in order to reduce the mortality of juvenile swordfish. This measure is in agreement with ICCAT Recommendation [Rec. 03-04].

Trade sanctions

Cyprus will comply with any EU Regulations regarding the ban on imports.

Section 4: Inspection schemes and activities

The monitoring and control of fisheries activities of all Cyprus flag vessels are carried out by the DFMR, Division of Fisheries Control (Fisheries Monitoring Center).

The FMC is comprised of the Vessel Fleet Register, the Vessel Monitoring System, the Naval Service and the Fisheries Inspectorate Service, with 29 Fisheries Inspectors located in the District Units of the Department.

Each Fisheries Inspector carries identification, supplied by the DFMR. Cyprus Fisheries Law authorizes Fisheries Inspectors (of the DFMR and any other person, authority or organization authorized by the Director of the DFMR) to examine the fish, fishing gear and all relevant documents, to verify compliance with Fisheries Regulations. Inspectors draw up the reports on a form produced by the DFMR, which are signed in the presence of the master of the vessel.

Cyprus has informed its vessel masters who are fishing ICCAT species of the relevant regulations.

Up to now, Cyprus has not participated in any inspector exchange program.

Table 1. Cyprus landings (tons round weight) of large pelagic fish species (1990-2003).

Year / *Species*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Swordfish	172.6	162.4	56.2	116.1	159.2	89.2	39.9	51.1	61.1	91.6	82.3	135.8	103.6	47.4
By-catch*	46.0	42.5	24.0	33.9	94.4	51.8	56.1	32.6	57.1	5.0	5.1	8.1	8.4	3.1
Bluefin tuna**										31.3	60.8	85.2	91.4	78.9
Sharks										11.6	22.0	26.5	21.9	12.9
Tuna like species***	22.7	24.5	21.3	10.5	22.8	9.6	19.0	29.6	9.6	16.4	19.6	22.8	21.8	
Albacore														30
Atlantic bonito														10.4

* Prior to 1998 bluefin tuna and some shark species were reported as by-catch of the multipurpose fishery.

** It is pointed out that the provisional corresponding estimates given at the 18th Regular Meeting of the Commission in Dublin and included in the Proceedings were investigated and cannot be verified, thus the corresponding data are these included on this table.

***Prior to 2003 albacore and Atlantic bonito were reported as tuna-like species.

Table 2. Cyprus fishing licenses (1990-2003).

Year	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Multi-purpose vessels	--	23	27	17	32	34	38	42	24	31	39	40	40	33
Bottom trawlers	16	14	14	14	14	18	18	19	21	21	20	24	30	24
Inshore boats	761	761	469	469	438	491	500	466	490	498	500	500	500	500

Table 3. Cyprus production (metric tons, t) and CPUE (kg per working day) for all segments of the fishery (1990-2003).

Year	*Inshore fishery*		*Multi-purpose fishery*		*Trawl fishery*	
	Production (Metric tons)	*CPUE (kg per working day)*	*Production (Metric tons)*	*CPUE (kg per working day)*	*Production (Metric tons)*	*CPUE (kg per working day)*
1990	1,598.2	15.6	218.6	196.6	801.0	768.2
1991	1,777.8	18.8	190.3	157.9	648.9	670.0
1992	1,807.9	19.3	73.1	78.0	784.7	827.1
1993	1,786.1	17.5	138.2	135.0	781.7	804.9
1994	1,789.5	17.2	218.8	190.6	800.9	767.7
1995	1,587.2	14.5	122.0	135.7	828.1	725.5
1996	1,648.5	15.0	74.9	93.3	860.6	790.6
1997	1,498.0	15.5	71.3	91.6	738.4	712.4
1998	1,520.9	15.0	94.5	139.2	801.7	679.3
1999	1,299.6	11.4	139.5	121.7	826.1	674.1
2000	1,341.4	12.0	157.1	122.2	720.4	624.4
2001	1,168.7	11.6	237.1	146.8	840.8	502.1
2002	1,062.8	12.6	211.2	105.3	612.0	524.2
2003	972.5	13.4	132.8	91.8	617.0	485.8

Table 4. Catch and effort data of the Cyprus multi-purpose fishery (1999-2003).

	Fishing effort		*Swordfish catch*					*Bluefin tuna catch*		*Sharks catch*		*Other catch (kg)*	*Total catch*		
	No. of work. days	*No. of hooks*	*No. of fish*	*Weight (kg)*				*No. of fish*	*Weight (kg)*	*No. of fish*	*Weight (kg)*		*Weight (kg)*		
Year				*Total*	*Mean/ fish*	*Mean/ hook*	*Catch/ w.d.*						*Total*	*Mean/ hook*	*Catch/ w.d.*
1999	1,146	86,008	4,368	91,561	21.0	0.11	79.9	664	31,290	550	11,644	5,041	139,536	0.16	121.76
2000	1,286	933,673	5,705	82,335	14.4	0.09	64.0	1,302	60,822	821	8,848	5,066	157,071	0.17	122.14
2001	1,615	1,071,690	5,248	135,792	25.9	0.13	84.1	2,003	85,201	128	8,070	8,068	237,131	0.22	146.83
2002	2,006	1,141,250	3,075	103,584	33.7	0.09	51.6	2,170	91,352	119	7,866	8,382	211,184	0.19	105.28
2003	1,446	905,310	2,407	47,404	19.7	0.05	32.8	2,282	78,925	117	3,386	3,088	132,803	0.15	91.84

Table 5. Albacore catch and effort data of the Cyprus multi-purpose vessels, 2003.

Month	*Working days*	*Albacore*
January	0	0
February	0	0
March	0	0
April	20	16
May	46	886
June	149	4,764
July	196	7,266
August	113	2,315
September	93	1,485
October	37	310
November	7	22
December	0	0
Total	**661**	**17,064**

ANNUAL REPORT OF THE EUROPEAN COMMUNITY[1]

1. Information on the fisheries

The various fleets of the European Community fish all the principal species which are regulated by ICCAT in the Atlantic Ocean and the Mediterranean Sea.

The total catch of tunas and related species carried out by these various fleets in 2003 was about 222,870 t, a slight increase over 2002 (see the summary table in annex 1).

Chapter 1 of the annual reports of the various Member States of the European Community provide the details and technical information pertaining to the various fisheries, both by species and by fishing gear, which was transmitted to ICCAT for analysis by the Scientific Committee.

2. Research and statistics

2.1 Research

All the Member States of the European Community have national research establishments or, in certain cases, regional laboratories, supervised by the principal universities of the country. The detailed description of the research activities undertaken by the Community Member States, appears in Chapter 2 of the Annual Reports, which have been transmitted to ICCAT.

Regarding the tropical tuna fisheries, Member States work in close cooperation with the research establishments of the third countries in which the fleets concerned land all or part of their catch.

Scientists of the European Community and its Member States take part regularly in the scientific meetings organized by ICCAT.

Under the respective national Data Collection Programs, the European Community partially finances biological data collection in order to carry out additional studies to support stock evaluations. In addition, the European Community fully or partly finances research programs on highly migratory species carried out jointly with the concerned Member States. The principal work undertaken in 2003 under these European programs is as follows:

2.1.1 Bluefin tuna

- Evaluation of the biological parameters in collaboration with the FAO/COPEMED project;
- Evaluation of the impact of the spatial and temporal fluctuations on stock assessment management (FEMS program);
- Collection of biological data (in particular parameters on reproduction and sexual maturity) and also the incidence of by-catch;
- Data collection of bluefin tuna sports fishing;
- Indices on spawning biomass abundance in the Mediterranean;
- Tagging in the Mediterranean.

2.1.2 Swordfish

- Biological sampling to obtain the size/sex variables by spatial/temporal strata;
- Analysis of the stock structure of the Atlantic and the Mediterranean by nuclear DNA (FAIR program);
- Evaluation of biological parameters in collaboration with the FAO/COPEMED project.

2.1.3 Tropical tuna

- Analysis of the diet of yellowfin tunas;

[1] Original report provided in English and French; the anexes are available form the Secretariat.

- Evaluation of the impact of management measures (moratorium, restriction on the use of certain fishing gears for the management of the stocks which are exploited in mixed fisheries) – European FEMS program;
- Real time monitoring of the environmental conditions of sub-surface strata in the Gulf of Guinea – PIRATA program;
- Development and updating of the oceanographic database "GAO" enabling marine biologists to have ready access to verified data relating to various spatial/temporal strata.

In parallel to the Community programs, some Member States finance research programs, which may be implemented jointly with other Member States or with third countries.

2.2 Statistics

Both the European Community and its Member States continued their close cooperation with the SCRS in 2003.

The European Community has binding legislation for its Member States' fleets fishing for highly migratory species throughout the range of their fishing activity. This regulation implements the ICCAT recommendations.

This regulation aims to meet the requirements of ICCAT Tasks I and II. The instruments used (vessel log books, landing declarations, etc.) and the possibilities of exchanging data, in terms of speed and accuracy, are aimed at improving the monitoring of the catch data.

In addition, Community Regulation EC No. 1543/2000 stipulates the necessary requirements for the collection and management of data for stock assessments (national Data Collection Programs). Within this framework, the European Community finances actions aimed at improving fishing statistics:

- Sampling plan and the correction of vessel log books;
- Data collection systems and processing of catch data and fishing effort for the various fleets concerned;
- Size sampling at landing.

Moreover, Member States adopt national regulations which implement and supplement in certain cases the Community legislation, to take account of the specific nature of the national fisheries.

Finally, the European Commission adopted in February 2003 a communication on the improvement in scientific and technical advice intended for fishery management.

3. Implementation of ICCAT conservation and management measures

3.1 At regulatory level

After each annual meeting of ICCAT, the European Community transposes the adopted conservation measures into its legislation so that they are binding on its Member States and nationals within the defined implementation period as set by ICCAT.

All the technical conservation measures in force for the highly migratory species are consolidated in the comprehensive Council Regulation (EC) No. 973/01 laying down technical conservation measures for certain highly migratory fish stocks (OJ L137/1 of 19.05.2001).

The control measures adopted by ICCAT are also transposed into Community law by Council Regulation (EC) No. 1936/01 establishing certain control measures applicable to the fishing activities for certain highly migratory fish stocks (OJ L 236/1 of 03.10.2001).

In 2003, within the framework of the transposition of the ICCAT measures, the Council of Ministers adopted:

- Council Regulation (EC) No. 869/2004 of 26 April 2004, amending Regulation (EC) No. 1936/2001 drawing up certain control measures applicable to the fishing activities for certain highly migratory fish stocks (in annex 2);

- Council Regulation (EC) No. 831/2004, of 26 April 2004, amending Regulation (EC) No. 973/2001 drawing up certain technical conservation measures for certain highly migratory fish stocks (in annex 3);

The Bigeye Tuna, Bluefin Tuna and Swordfish Statistical Document Programs were transposed into Community law by Regulation (EC) No. 1984/2003, published in the Official Journal L 295 of 13 November 2003, and were sent in their English, Spanish and French versions to the ICCAT Executive Secretary for the information of other Contracting Parties.

The information received from the Member States of the European Community within the framework of the implementation of these programs is communicated in good time to the ICCAT Executive Secretary for distribution to the other Contracting Parties. This indicates a strong interest in their correct implementation.

In addition, work has been undertaken, on the basis of global trade statistics, to identify countries who have not notified ICCAT of the validating authorities for statistical documents relating to exports of swordfish, bigeye tuna or bluefin tuna in 2003. The results of this exercise were communicated to the ICCAT Executive Secretary so that the countries concerned could be informed about the programs.

The measures concerning the catch limits for bluefin tuna, southern and northern swordfish, southern and northern albacore, bigeye tuna, and white marlin and blue marlin were transposed into Community legislation by the Council Regulation establishing TACS and quotas. The limit for the number of vessels permitted to fish for northern albacore was also transposed by the same regulation.

3.2 Compliance

3.2.1 Catch limits

In 2003, the European Community respected all the catch limits adopted by ICCAT (see annex 4 of the compliance tables).

3.2.2 Minimum size

The European Community overall respects the minimum size for bluefin tuna, in particular in relation to farming activities.

With regard to swordfish, the number of undersized fish in catches slightly exceeded the tolerance fixed by ICCAT. The Community is currently financing studies on gear selectivity (hooks) in order to reduce juvenile catches.

As regards tropical tunas, the number of undersized fish in the catch also exceeded the ICCAT tolerance. Indeed, the Community fleet that targets these species is not able to respect this minimum size owing to the specific characteristics of these fisheries, as has already been mentioned by the Community and confirmed by the SCRS.

3.2.3 Vessels lists

The Community transmitted, on a timely basis, the vessels lists, fully respecting the formats required by ICCAT.

For 2003, the Community communicated the following details:

- 1,684 Community vessels greater than 24 meters authorized to fish in the ICCAT area;
- 1,226 Community vessels authorized to fish for northern albacore;
- 545 Community fishing vessels, supplying bluefin tuna for farming purposes in the ICCAT area;
- 8 chartered Community vessels.

3.2.4 Large scale long line vessels

The Community took the necessary measures to control the activities of its large scale long line vessels (see annex 5).

3.2.5 Gulf of Guinea moratorium

In 2003, the European Community fully respected the recommendation concerning the moratorium on fishing under floating objects (FADs) in the Gulf of Guinea, in particular, the observer coverage rate of the fleet (reports forwarded to ICCAT for examination by the SCRS).

3.3 At the Member State level

Member States make great efforts at the national level to comply with ICCAT recommendation and resolutions, in terms of fishing effort limitation (capacity/number of ships), catch limits (management of the quotas), and landing controls from third countries vessels and in particular those from flag of convenience vessels.

4. Complementary conservation and management measures

The European Community adopted a new fisheries policy on 1 January 2003. The objectives of the Common fisheries policy were reviewed and re-orientated towards the sustainable development of living aquatic resources, on the basis of well founded scientific advice and on the precautionary principle in the management of the fishery, on the one hand, and on sustainable aquaculture, on the other. The main changes can be summarized as follows:

- A long-term approach for fisheries management, including the adoption of multi-annual recovery plans for stocks which are under biologically safe limits, and multi-annual management plans for other stocks;

- A new fleet policy: a more simple fleet policy for which Member States have the responsibility for ensuring that fishing capacity correspond to fishing opportunities; a phasing-out of government aid for private investors;

- Better compliance with the rules: adoption of measures to develop cooperation between the various actors concerned and to improve the consistency of controls and sanctions to be applied throughout the Community. The powers of Community inspectors have been expanded to enable them to ensure equity and effectiveness of controls in the Community;

- Participation of the stakeholders: creation of Regional Advisory Committees (RACs) to improve the participation of fishermen and others with interests in the common fisheries policy.

This reform of the Common fisheries policy will make it possible to arrive at sustainable fishing from the legal, environmental and economic point of view.

The European Community has adopted a control regime under the Community fisheries policy which imposes on the Member States specific obligations as regards control. In this regard, each Member State must control, inspect and supervise in its territory and in the maritime waters under its sovereignty or jurisdiction all fishing activities and in particular directed fishing, transshipment, landing, marketing, transport and storage of fish products and the recording of the landing and sale of fishery products (Council Reg. (EEC) No. 2847/93 of 12 October 1993 establishing a control regulation for the compliance with the common Community fisheries policy, EU Official Journal n° L261 of 20.10.93, p.1). This control regulation was strengthened following the reforms introduced into the common fisheries policy.

In addition to these obligatory provisions, Member States must adopt more restrictive provisions for certain species than those imposed at the Community level or by ICCAT. These provisions, modified to meet national requirements, target rational management and more accurate monitoring of the fisheries, up to the retail point of the catch. Depending on the Member States and the fisheries concerned, the following elements, in particular, should be noted: annual fishing plans, an obligatory specific license to be issued annually (special fishing permit), limit to the number of licenses issued, withdrawal of the license in the event of infringement, detailed record of fishing activities, on-board scientific observers, notification by vessels of entry and departure from port and fishing areas, bycatch limits, vessel catch quotas, seasonal closures, and, minimum sizes.

Some Member States are studying the future compliance of the new measures aimed at controlling fishing activities of highly migratory species and the protection of the resources. These measures should in particular strengthen the sector's supervision and monitoring of the fish from catch to retail.

The European Community has also adopted specific programs for certain species and gears:

- Prohibited the use of driftnets to catch highly migratory species since 1 January 2002; obligatory Community log book;

- On-board scientific observer for long line vessels (juvenile catches);

- Monthly transmission of catch data for all species subject to TAC and quotas and quarterly transmission for other species;

- Closed fishing areas for purse-seine vessels fishing on floating devices (FADs) in the Gulf of Guinea;

- Obligatory satellite tracking (VMS) for vessels greater than 24 meters, and from 1 January 2004 for those greater than 18 meters;

- Adoption of Council Regulation (EC) 1185/2003, regarding the practice of shark finning.

The European Community has also strengthened its control regime, centered on three main principles which it considers as priority issues: the improvement of post-landing controls, the control of third country vessels operating in Community waters, and cooperation between the Member States and the European Commission.

In April 2003, the European Commission submitted a proposal to the Council of Ministers concerning the introduction of a European Fishery Inspection Agency to improve the control of conservation and management measures.

In addition, the fight against illegal fishing (IUU) is one of the priorities of the Community, with:

- On the one hand, a Commission Communication on this topic linked to the implementation of the FAO Plan of Action; and

- on the other hand, a Community action plan for the Mediterranean Sea. In this action plan, the Commission proposes:

  - a common approach for the establishment of fishery protection areas;
  - using fishing effort management as the principal tool of this policy;
  - improved fishing techniques to reduce the negative effects on resources and the marine environment;
  - intensified control and enforcement measures;
  - improved quality of the scientific advice;
  - strengthening the participation of the fisheries sector in the consultation process;
  - encourage international cooperation.

These Commission proposals were approved by the Council of Ministers of 16-20 December 2002.

As a result of the adoption of this plan, the European Commission submitted a proposal for a Council Regulation concerning management measures for sustainable use of the fishery resources in the Mediterranean. Finally, the European Community took an active part in the Ministerial Conference, organized in November 2003, in Venice, aimed at promoting sustainable fishing in the Mediterranean. Ministers agreed to strengthen fishery resource management, the control of the fishing and fight against illegal fishing in the Mediterranean.

5. Inspection schemes

5.1 Member States

5.1.1 Shore and in-port inspection

On shore controls undertaken by the Member States are generally carried out in the landing port and/or at the time of sale, when this is at auction. They can also intervene at any time during the transport or at the central markets. These controls primarily cover the quantities landed, the sizes, the age and weight of the fish, and the respect of closed fishing periods. They can also intervene at the time of marketing, to verify data.

Some Member States have established an information network between the various landing ports to improve the monitoring of vessel movements.

Routine inspections are also carried out, by third country inspectors and scientific institute observers, at the time of landing of tropical tuna by Community vessels in Africa.

The same controls that are applied to port inspections are carried out in transshipments of tunas, including foreign vessels, whether Contracting Party or non Contracting Party to ICCAT.

5.1.2 Aerial and at-sea inspections

In addition to the terrestrial methods, Member States have maritime and aerial means to monitor fishing activities and the respecting by Community vessels of the technical and administrative requirements imposed on each fishery. Air and sea control exercises, whether routine or specific, are organized throughout the fishing seasons.

This mechanism does not ignore, however, the great practical difficulties faced by the responsible Administrations of some Member States in achieving the same level of effectiveness when dealing with a very high number of landing points located on their territory.

Since 1 January 2000, the mandatory satellite tracking of vessels greater than 24 meters has improved the monitoring at sea.

5.1.3 Implementation and results (2003)

• Spain:

- In-port results:
  Atlantic 192 vessels inspected (35 infringements),
  Mediterranean 51 vessels inspected (17 infringements).

- At sea results:
  Atlantic 6 vessels inspected (4 infringements),
  Mediterranean 79 vessels inspected (22 infringements).

- Aerial surveillance:
  Atlantic 56 (0 infringements).
  Mediterranean 122 (6 infringements);

- Tropical tunas: On-board observers during the period 1 November 2003 to 31 January 2004, to ensure the respect of the moratorium in the Gulf of Guinea.

• France:

- In-port results:
  Atlantic 14 vessels inspected (3 infringements)
  Mediterranean 5 vessels inspected (1 infringement)

- At-sea results:
  Atlantic 30 vessels inspected (0 infringements)
  Mediterranean 10 vessels inspected (0 infringements)

- Aerial surveillance:
  Atlantic 60 vessels (0 infringements)
  Mediterranean 10 vessels inspected (0 infringements)

- Bluefin tuna (Mediterranean): air and sea controls – landing inspections for minimum sizes/weights and at all the marketing stages; verification of log book and trade data. Landing controls carried out in France did not give rise to any observed infringements. It should be noted that, the method of storage of the tuna on board ships (frozen water and size tolerance of 15%) makes the accurate verification of well quantities very difficult, at the time of on-board inspections.

- Daily catch monitoring by the French authorities led to the closure of the bluefin tuna fishery by decree of 3 October 2003 (entered into force on 4 October 2003 and notified to the European Commission), this so as not to exceed the quota allocated to France.

- It should to be pointed out that the purse-seine vessel activity in the Mediterranean which accounts for more than 80% of the catch of bluefin tuna takes place primarily in waters under Spanish sovereignty or on the high sea far from the French coasts. Moreover, transshipments are also carried out outside waters under the sovereignty or jurisdiction of France. Controls performed on the French vessels fishing for bluefin tuna in the Mediterranean are therefore primarily carried out by the Spanish authorities.

- Albacore (Atlantic): 1 ocean-going tug carried out patrols in the Bay of Biscay.

- Tropical tunas: On-board observers during the period 1 November 2002-31 January 2003, to ensure the respect of the moratorium in the Gulf of Guinea.

• Italy:

Within the framework of the implementation of the Community control regulation including for ICCAT control measures, Italy deployed the following resources:

- Human, naval and aerial resources (numerous administrations);
- Significant development of the inspectors' training (specialization as regards fishing);
- 307 patrol vessels, 22 aircraft;
- 187 on-land inspections, 2 infringements;
- 290 at-sea inspections, 4 infringements.
- 4 aerial inspections, 0 infringements.

• Portugal:

- Human, naval (Navy), and aerial resources;
- Aerial surveillance missions;
- 15 on-land inspections, including 7 long line vessels, one infringement (non respect of minimum size);
- Landing controls (swordfish, tunas) through to marketing (minimum sizes, value, statistics, etc.); obligation to go through the auction (fresh fish);
- Control of tuna consignments intended for the processing industry.

• Greece:

- Human, naval and aerial resources: 270 officers, with 202 inspection vessels, 7 planes;
- 7,638 vessel inspections, 7 infringements detected relating to tuna fishing activities and sanctioned (penalty of €6,350 and 160 days suspension of fishing activities).

• United Kingdom:

- On-land and at sea inspections for all fishing activities.

• Ireland:

- All landings inspected in port to ensure the vessels respect the regulations;
- 6 patrol vessels carried out inspections at various periods, 0 detected infringements;
- Surveillance aircraft also carried out missions;
- All vessels involved in the fisheries are inspected before engaging in fishing activities (via fishing authorization).

• Other Member States:

- The other Member States also carry out controls in accordance with Community legislation to ensure the respect of the ICCAT conservation measures.

5.2 European Commission

In parallel to the Member States, the European Commission has 25 fisheries inspectors whose function is to supervise the inspection and control activities undertaken by the national services of the Member States.

During 2003, 15 inspection missions directly concerned with the fishing activities of highly migratory species were undertaken, with the priority being placed on the bluefin tuna fisheries, in the Mediterranean and in the Bay of Biscay.

The main goals of the missions were:

- The verification of the respect of the Community regulation regarding driftnet fishing in the Mediterranean and in the northeast Atlantic;
- Verifying that Member States have taken the necessary measures to ensure the respect of the technical measures concerning bluefin tuna, and in particular those transposing the ICCAT recommendations;
- Verifying the compliance with Community legislation on catch and landing declarations;
- Assess the control measures implemented by the Member States.

The work of the European Commission inspectors involves the inspectors accompanying the national inspectors in all aspects of their activities, both land based and at sea, to evaluate the compliance with the binding provisions of Community legislation, which includes, in particular, the ICCAT recommendations.

In 2003, the bluefin tuna was a top priority. Inspectors paid closer attention to the control of the vessels documents (logbook), the control of the catch record, the use of the statistical document and to the landing procedures and transport of the fish. Throughout the year, particular attention was paid to the detection of the juvenile bluefin tuna.

The general evaluation of the catch recording system of highly migratory species in the Community is positive.
The data concerning the tropical tuna is supervised by scientific institutes in the Community pursuant to the provisions of the fishing agreements concluded by the EC with the third countries concerned.

Concerning bluefin tuna, all Member States of the European Community have established a specific catch data recording system, which allows the monitoring of the utilization of the catch quota.

6. Other activities

6.1 Satellite-based VMS established by the European Community

The European Community has introduced a satellite based vessel monitoring System (VMS) in 1998. Since 1 January 2000, all vessels exceeding 20 meters between perpendiculars or 24 meters length overall wherever they operate were subject to VMS.

In view of the importance of VMS as a means of control, the European Community has decided in December 2002 to extend the scope of VMS even further. A new Commission Regulation (No. 2244/2003) has been adopted on 18

December 2003. VMS applies to vessels exceeding 18 meters length overall as from 1 January 2004 and will apply to vessels exceeding 15 meters length overall as from 1 January 2005.

The satellite tracking devices fitted on board the fishing vessels shall enable the vessel to communicate its geographical position to the flag state and to the coastal Member State simultaneously (and from 1 January 2006 at the latest, their speed and course). In practice position reports are retransmitted in nearly real time from the flag state to the coastal state.

The data obtained from VMS shall be treated in a confidential manner.

Tampering with VMS has been defined as a serious infringement[2].

An obligation is placed on Member States to establish and operate Fisheries Monitoring Centers (FMC) which will be equipped with the appropriate staff and resources to enable Member States to monitor the vessels flying their flag as well as the vessels concerned flying the flag of other Member States and third countries operating in the waters under the sovereignty or jurisdiction of the said Member State.

Member States shall take the necessary measures to ensure that the position reports received from fishing vessels to which a VMS applies are recorded in computer-readable form for a period of three years. The European Commission shall have access to these computer files on the basis of a specific request.

Each FMC receives a substantial amount of position reports. Although not an explicit requirement, it is commonly considered a good practice to analyze incoming reports automatically in order to detect "events" which may be of interest for MCS activities. Such "events" include:

- a vessel failing to report on schedule;
- a vessel reporting a position which is inconsistent or not credible compared to previously received reports;
- a vessel entering or leaving a specific area;
- a vessel traveling at, above or below a given speed;
- a vessel landing abroad.

Sophisticated VMS software may be capable of detecting complex events which might be a combination of those referred to above (for example, a vessel of a particular type, traveling below a given speed in a defined geographic area). Furthermore, with VMS the time of arrival in port, the time of arrival on a specific fishing ground, can be predicted.

The detailed rules for the implementation of VMS are contained in Commission Regulation (EC) No. 2244/2003 of 18 December 2003 laying down detailed provisions regarding satellite-based Vessel monitoring Systems, the general obligation to be equipped with VMS being set in article 22(3) and article 23(5) of Council Regulation (EC) No. 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fishery Policy (FCP).

The main provisions concern:

- the requirements for the satellite tracking devices;
- the frequency of reporting;
- the format for transmission to the coastal Member State;
- the procedures in case of technical failure;
- access to computer files by the European Commission; and
- a number of administrative arrangements between Member States and the Commission.

[2] Council Regulation (EC) No. 1447/1999 of 24 June 1999 establishing a list of types of behavior which seriously infringe the rules of the common fisheries policy.

Several satellite systems exist that can meet the requirements of the EC Regulations. Neither the Council nor the Commission have imposed a particular system. Therefore any solution that meets the requirements is acceptable, and different vessels may be equipped with different systems.
VMS has not replaced conventional enforcement tools such as patrol vessels and aircraft, it nevertheless improves the efficiency and effectiveness of their deployment.

Besides monitoring fisheries in Community waters, the European Community is also responsible for a significant number of its vessels operating in different parts of the oceans.

Outside Community waters, fishing must take place with due regard to the management measures adopted by the competent international and regional bodies, and by the coastal states. Furthermore, where applicable, masters of Community fishing vessels must comply with the national laws and regulations governing the waters of the coastal state, as well as with the specific provisions contained in the Fisheries Agreements.

The European Community is anxious to ensure that its vessels respect the various rules applicable in waters of third countries and on the high seas.

Since the satellite tracking devices installed on board EC fishing vessels must be operational at all times, wherever the vessels operate, the control of the fleet operating outside Community waters is being increased significantly by the introduction of VMS. Indeed, the flag Member State knows at all times where its vessels are operating. Therefore the European Community is endeavoring to use VMS in bilateral fisheries agreements with third countries and in the framework of regional fisheries organizations such as the North East Atlantic Fisheries Commission, more commonly referred to as NEAFC. The NEAFC was established in 1953. At present, there are six Contracting Parties, among which the European Community. NEAFC took the responsibility to regulate a number of species, such as oceanic redfish, blue whiting, atlanto scandic herring and mackerel. These regulatory measures are complementary to those within the national fishing zones.

In 1998, the Contracting Parties agreed upon a Joint Control and Enforcement Scheme to be applied in the Regulatory Area[3]. This Scheme entered into force on 1 July 1999.

VMS is one of the key elements of the Scheme. Under the Scheme, Contracting Parties shall track their vessels by VMS. Entry/exit reports and position reports are forwarded to the NEAFC Secretariat in computer-readable format (the so-called North Atlantic format). These reports are retransmitted in real time in the same computer-readable format to Contracting Parties with an active inspection presence in the Regulatory Area, in compliance with specific provisions on secure and confidential treatment.

From a technical point, satellite systems continue to evolve[4] and there may be further developments in the near future regarding the expansion of other applications such as an interface with an electronic logbook or the linking of VMS with vessel sensors placed in trawl winches which will allow the enforcement authorities to monitor the vessel more thoroughly. A number of EC Member States is exploring the potential of remote sensing techniques for fisheries monitoring. A study concerning the NAFO area has clearly shown that space borne synthetic aperture radar (SAR) images could complement VMS[5]. A project is conducted to investigate means to make these images available for operational MCS in nearly real time at an affordable price. It is worth while pointing out here that the European Community is already using remote sensing for the control of area-based subsidies to farmers.

Further trials will be conducted as necessary in order to gain experience with other advanced technologies with a view of promoting their introduction by Member States.

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[3] The scheme of control and enforcement in respect of fishing vessels fishing in areas beyond the limits of national fisheries jurisdiction in the convention area ("The Scheme").

[4] The future of satellite systems in European fisheries protection and management, Study in support of the Common Fisheries Policy, Final Report, August 1998 - Navigs s.a.r.l..

[5] SAR - imagery for fishing vessel detection, Final Report, October 2000 - Joint Research centre (JRC) of the European Commission.

ANNUAL REPORT OF FRANCE (ST. PIERRE AND MIQUELON)[1]

1. Introduction

The St. Pierre and Miquelon archipelago is a French overseas territory with a population 7,000. Due to its island nature and its geographic location, the socio-economic equilibrium of the overseas territory rests on maritime fishing, a traditional activity and the major economic sector of St. Pierre and Miquelon.

In spite of the general decline in reported fisheries resources in recent years, the fishing industry continues to be an essential activity for St. Pierre and Miquelon. This industry thus employs more than 200 people, both on board the vessels as well as in the companies that process the sea products.

This situation puts the overseas territory of St. Pierre and Miquelon among the communities that are dependent on fishing.

The overseas territory borders on the areas under mandate of the International Commission for the Conservation of Atlantic Tunas (ICCAT) and participates in the work of this organization. After the adherence of the European Community to ICCAT in 1997, France continues to be a member of the Commission on behalf of the overseas territory of St. Pierre and Miquelon, which is not covered by the provisions of the Treaty of Rome relative to Community fishing policy.

2. Information on national fisheries

The fishing activities of St. Pierre and Miquelon are carried out mainly on the stocks in waters under French jurisdiction or sovereignty, all along the coasts of the overseas territory.

These activities also fall within the framework of agreements between France and Canada that oversee the common management and conservation of the fishery resources that are found in French and Canadian maritime areas, and which are based on the recognition of reciprocal fishing rights on the stocks concerned.

The local fishing activities proceed from laws open within the framework of regional organizations that cover the sectors and the coastal stocks of the territory of St. Pierre and Miquelon. Within this framework, France, on behalf of the overseas territory of St. Pierre and Miquelon, adhered to the North Atlantic Fisheries Organization (NAFO) in 1994 and to the International Commission for the Conservation of Atlantic Tunas (ICCAT) in 1997, and since then has participated actively in the work of these two organizations.

3. Research and statistics

The *Institut Français de Recherche pour l'Exploitation de la Mer* (IFREMER) (French Research Institute for the Exploitation of the Sea), which has a permanent delegation in St. Pierre and Miquelon, is responsible for the scientific and fishery research activities for St. Pierre and Miquelon. The IFREMER participates in the scientific and research work developed within the framework of NAFO and ICCAT.

The IFREMER also provides technical support to operations of statistical monitoring of the catches, which depends from the competent administrative services of the State present in St. Pierre and Miquelon.

4. Implementation of the ICCAT conservation and management measures *(as concerns the stock of bluefin tuna stock under ICCAT competence)*

The bluefin tuna fishing carried out in St. Pierre and Miquelon, within the possibilities that ICCAT constituted, up to now, taking into account the level of quota available, a supplemental activity for the island's small artisanal fishing companies that do not fish this species as a target species. This corresponds to a type of subsistence fishing.

[1] Original report in French.

However, since August 2002, a more important fishery has been started in international waters through the chartering of a Canadian vessel, an action that was repeated in September 2003 and June 2004.

Fishing vessels must have an authorization (license) issued by the competent administrative authorities and in accordance with the pertinent national regulations on maritime fishing. This procedure allows for strict and constant control of fishing effort.

The individual authorizations (licenses) to fish bluefin tuna issued to St. Pierre & Miquelon vessels (12 vessels involved) also establish some technical measures to carry out fishing that refer, in particular, to the characteristics and conditions on the use of the fishing gears. In 2004, only floating lines equipped with a maximum of two hooks per vessel were authorized. These gears are under constant surveillance of the vessels that deploy them.

The vessel captains are responsible for reporting all the catches made to the administration. These reports represent an optimal control of the fishery and a permanent statistical monitoring of the usage of the available quotas.

5. Inspection scheme and activities

All the regulatory measures indicated in section 4 and applicable to St. Pierre & Miquelon vessels were the object of monitoring on the part of the competent authorities, and are liable, in the case of violations, to judicial actions and to the withdrawal or suspension of the fishing authorizations issued.

The services of the State administration present in St. Pierre & Miquelon also exercise their competence as regards to ICCAT Resolution [Res. 94-09] relative to vessel sighting. The corresponding actions have centered, in particular, on the collection of information on the transshipments of bluefin tuna products reported at the port of St. Pierre & Miquelon by foreign vessels (no transshipments regulated in 2004).

The information collected is transmitted to the ICCAT Secretariat in accordance with the provisions of Resolution [Res. 94-09].

6. Catches in 2003

The maritime fishing catches by the overseas territory of St. Pierre & Miquelon are as follows for 2003:

Under ICCAT (figures on 2004 activities)

- 9,795.54 kg bluefin tuna
- 28,271.54 kg bigeye tuna
- 35,656.06 kg swordfish
- 7,066.42 kg North Atlantic albacore
- 7,019.24 kg sharks

Under NAFO

- 143.863 t shrimp, on a quota of 144 t allotted to France in area 3L
- No fishing activity during the 100 days authorized in area 3M (shrimp)
- No activity on other quotas granted to the archipelago (Atlantic halibut, squid, rockfish)

Under fishing agreements between Canada and France:

NAFO area 3Ps (Annex I to the agreement of 2 December 1994):

- Atlantic cod: 1,927 t (of which 1,599 t were caught by Canadian vessels and landed and processed at St. Pierre & Miquelon)
- Rockfish: 73 t (of which 6 t were caught by Canadian vessels and landed and processed at St. Pierre & Miquelon)

– Gray plaice: 1,73 t
– Canadian plaice: species under moratorium

NAFO area 2 3K (Annex II to the agreement of 2 December 1994):

– Silver hake: 62 t

National stocks - all in NAFO area 3Ps:

– Snow crabs: 85 t
– Lumpfish: 11 t
– Whelk: 0.50 t
– Other species: 1,100 t

ANNUAL REPORT OF ICELAND[1]

D. Ólafsdóttir[2]

1. Introduction

Iceland has conducted experimental longline fisheries for bluefin tuna in the waters south of Iceland since 1996. The project is organized by the Marine Research Institute in Reykjavík, Iceland (MRI) and operated in cooperation with the Japanese fishery agent, Tairyo Trading Company, Ltd., Japan.

The purpose of the project is to detect the autumn migration of bluefin in Icelandic waters, its catchability in the area as well as gathering various information on the biology and ecology of the fish.

The statistics of the experimental fisheries have been reported to the SCRS and various samples from the catch have been shared with laboratories in ICCAT member countries.

Iceland joined ICCAT in 2002 and participated in the annual meetings of the SCRS and the Commission as a full member nation for the first time in 2003.

2. The fisheries

No catch of tuna or tuna-like species was reported by an Icelandic fishing agent for the year 2003.

3. Research

Experimental fisheries for bluefin tuna within the Icelandic EEZ and related research on the biology of the fish are coordinated by the MRI, Reykjavík.

Experimental fisheries for bluefin tuna that were initiated in 1996 continued in 2003. Five Japanese longline vessels operated in the area south of Iceland in the period from August 22 to November 11 **(Figure 1)**. The catch increased slowly in the first weeks of the operation and peaked in late September to early October **(Figure 2)**.

The operation was fully covered by Icelandic observers and catch data and biological samples were obtained from the catch (muscle, liver, gill for DNA analysis, vertebra and spine for ageing) **(Table 1)**.

The results of the fisheries conducted within the Icelandic EEZ in 1996-2003 are shown in **Table 2** and **Figure 3**.

Work on the evaluation of various age reading methods for bluefin tuna is in progress in cooperation with the *Instituto Espanol de Oceanografia* (Spanish Institute of Oceanography) Santander, Spain. Estimated age derived from counting growth zones in spines and vertebrae will be compared for the same fish. The results of this work will be presented to the ICCAT working group on bluefin age determination.

Diet analyses of bluefin tuna in the area south of Iceland are also in progress.

Studies of the population genetic structure of bluefin from Icelandic waters are under way in cooperation with scientists at the Virginia Institute of Marine Science, Virginia, USA.

[1] Original report in English.

[2] Marine Research Institute, Skulagata 4, P.O.Box 1390, 121-Reykjavík, Iceland, email: droplaug@hafro.is

Table 1. Number of samples obtained from bluefin tuna caught south of Iceland in August-November 2003. Method of preserving is shown in parentheses.

Fork length (cm)	*Number of fish*	*Vertebra (-20°C)*	*Spine (-20°C)*	*Muscle (-20°C)*	*Liver (-20°C)*	*Gill (ethanol)*
<100	0	0	0	0	0	0
100-149	17	12	11	12	12	11
150-199	156	123	118	121	120	119
200-249	381	331	329	329	327	329
250>=	15	14	14	14	14	14
na*	53	18	18	16	17	18
Total	**622**	**498**	**490**	**492**	**490**	**491**

* Length data not available.

Table 2. Catch statistics from experimental fisheries for bluefin tuna within the Icelandic EEZ in 1996-2003.

Year	*Date*	*Total fishing days*	*Total no. of fish*	*Total weight (t)**	*Mean no. of fish per fishing day +/- SD*	*Mean wgt. per fishing day (kg) +/- SD*	*Total no. of hooks***	*Mean no. of fish/1000 hooks per fishing day +/- SD*	*Mean weight/ 1000 hooks per fishing day (kg) +/- SD*
1996	August 2-19.	8	7	1.041	0.9 +/- 1.0	130 +/- 153	na***	na	na
1997	August 22-31	18	195	21.602	10.8 +/-6.6	1 200 +/- 774	na	na	na
	September	63	699	82.757	11.1 +/-5.3	1 314 +/- 670	na	na	na
	October	70	568	63.174	8.1 +/- 5.4	902 +/- 572	na	na	na
	November 1-19	15	115	15.050	7.7 +/- 4.5	1 003 +/- 559	na	na	na
	Total	**166**	**1577**	**182.583**	**9.5 +/- 5.6**	**1 100 +/- 656**	na	na	na
1998	August	130	346	41.853	2.7 +/- 2.3	322 +/- 285	242 131 (80)	0.78+/- 0.69	95.98+/- 87.03
	September	132	761	84.144	5.8 +/- 4.7	637 +/- 518	239 764 (79)	1.61+/- 1.18	177.56+/- 131.26
	October	121	1146	117.793(+1)	9.5 +/- 7.1	973 +/- 776	193 016 (65)	2.88+/- 1.99	297.24+/- 227.92
	November 1-5	2	6	680	3.0 +/- 1.4	340 +/- 85	na	na	na
	Total	**385**	**2259**	**244.470(+1)**	**5.9+/- 5.7**	**635 +/- 614**	**674 911 (224)**	**1.68+/- 1.59**	**183.15+/- 173.64**
1999	August	69	74	8.960	1.1 +/- 1.2	130 +/- 143	196 215 (68)	0.38+/- 0.41	45.48+/- 49.85
	September	125	298	31.875(+6)	2.4 +/- 2.3	255 +/- 260	360 898 (125)	0.82+/- 0.78	87.97+/- 88.55
	October	103	369	36.157	3.6 +/- 2.8	351 +/- 291	299 932 103)	1.24+/-0.98	121.26+/- 101.89
	Total	**297**	**741**	**76.992(+6)**	**2.5 +/- 2.5**	**259 +/- 263**	**857 045 (296)**	**0.86+/- 0.86**	**89.79+/- 90.83**
2000	August 10-31	79	93	10.415(+1)	1.2 +/- 1.3	132 +/- 165	236 277 (79)	0.39+/- 0.44	44.01+/- 54.28
	September	104	224	22.331	2.2 +/- 2.0	215 +/- 207	301 142 (104)	0.74+/- 0.70	73.68+/- 70.64
	October	92	353	36.061(+1)	3.8 +/- 2.8	392 +/- 305	261 357 (91)	1.33+/- 0.97	135.36+/- 104.15
	Total	**275**	**671**	**68.607(+2)**	**2.4 +/- 2.4**	**250 +/- 257**	**798 776 (274)**	**0.83+/- 0.83**	**85.61+/- 87.64**
2001	September	52	55	5.955	1.1 +/-1.4	115 +/- 144	149 049 (52)	0.37+/- 0.48	39.91+/- 49.99
	October	26	52	6.573	2.0 +/- 2.0	253 +/- 241	75 550 (26)	0.69+/- 0.69	87.03+/- 82.44
	Total	**78**	**107**	**12.528**	**1.4 +/- 1.7**	**161 +/- 192**	**224 599 (78)**	**0.47+/- 0.57**	**55.62+/- 66.04**
2002	September	78	230	28.574	2.9 +/- 2.5	366 +/- 297	231 530 (78)	0.99+/- 0.81	122.80+/- 97.14
	October	21	73	9.062	3.5 +/- 2.7	432 +/- 346	60 435 (21)	1.22+/- 0.96	151.43+/- 123.61
	November	6	21	2.716	3.5 +/- 2.2	453 +/- 271	15 328 (6)	1.31+/- 0.7	169.48+/- 87.15
	Total	**105**	**324**	**40.352**	**3.1 +/- 2.5**	**384 +/-304**	**307 293 (105)**	**1.05+/- 0.84**	**131.19+/- 102.52**
2003	August 22-31	19	3	390	0.2 +/- 0.5	20 +/- 65	49 909 (17)	0.06+/- 0.17	7.51+/- 22.19
	September	110	240	33.071	2.2 +/- 2.3	301 +/- 320	289 186 (97)	0.77+/- 0.75	106.81+/- 103.48
	October	98	271	35.618(+1)	2.8 +/- 2.7	364 +/- 347	230 183 (75)	0.90+/- 0.89	119.88+/- 120.43
	November 1-9.	11	26	3.403	2.4 +/- 2.1	309 +/- 284	33 813 (11)	0.78+/- 0.72	102.15+/- 98.44
	Total	**238**	**540**	**72.482**	**2.3 +/- 2.4**	**305 +/-329**	**603 091 (200)**	**0.76+/- 0.8**	**103.02+/- 109.45**

* Number of fish where weight data is missing is shown in parenthesis;
** Fishing data from lines where number of hooks was not reported are excluded in calculations. Number of fishing days where hook data is available is shown in paranthes;
*** Data not available.

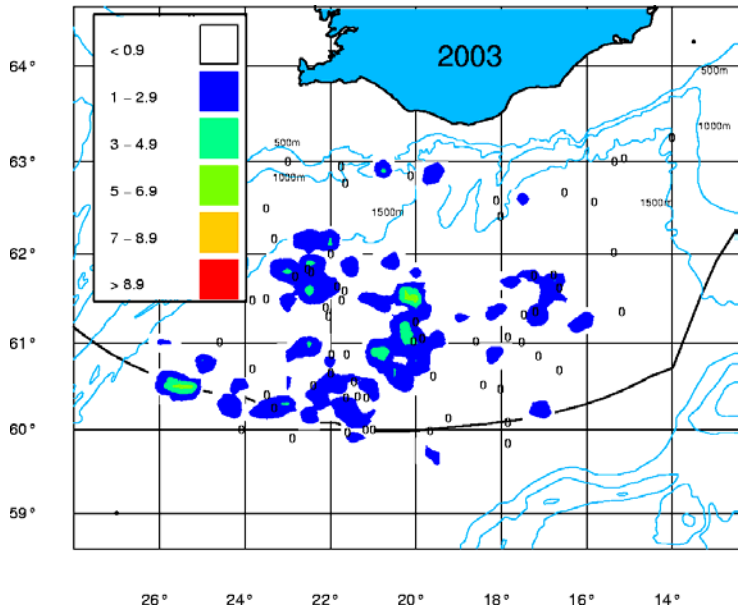

Figure 1. Operation area of the experimental longline fisheries south of Iceland in August to November 2003. Contours present number of fish per line setting and "0" indicate settings with zero catch.

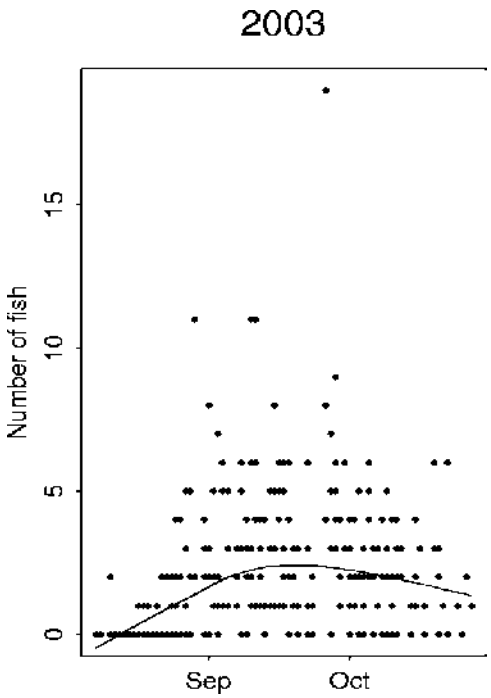

Figure 2. Number of bluefin tuna caught per line setting in 2003 (fishery data outside the Icelandic EEZ included).

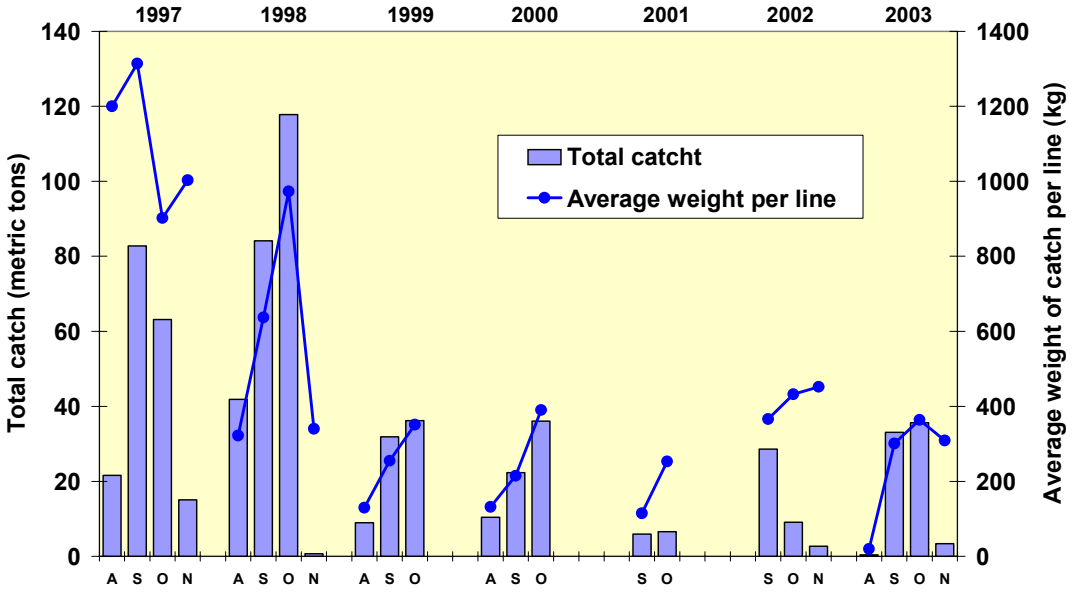

Figure 3. Total catch of bluefin tuna (metric tons) and average catch per line (kg/line) in experimental fisheries within the Icelandic EEZ 1997-2003.

ANNUAL REPORT OF JAPAN[1,2]

1. Fisheries information

1.1 Type of fisheries

Longline is the only tuna fishing gear deployed by Japan at present in the Atlantic Ocean. Two other types of fisheries, baitboat and purse seine, stopped fishing in the Atlantic in 1984 and 1992, respectively.

1.2 Statistical coverage

The National Research Institute of Far Seas Fisheries (NRIFSF) has been in charge of compiling fishery statistics from logbooks submitted by the fishermen as well as biological data. The final logbook coverage from the Japanese longline fleet operating in the Atlantic has been very good (90-95%). To reach this level, it takes almost two to three years after the completion of a given calendar year. This year's data processing has been conducted as scheduled. The current coverage, which completed collation in electronic form for 2003, is estimated to be about 75%. Information for total raising has already been collected up to 2002. However, since some trips made by the Japanese longline boats are often longer than 12 months, the coverage for the latter part of 2003 is expected to be much lower than the earlier part of that year. Therefore, caution is required when readers refer to the figures for the most recent year's catch and effort statistics as well as the geographic distributions in this paper, as the information might have come from lower statistical coverage.

With regard to the implementation of conservation measures on North Atlantic swordfish, Japan instructed its fishermen to release all swordfish caught in the North Atlantic (North of 5°N) for the period of February 2000 to the end of 2003. All the catches made during that period in that area were returned to the water. At the same time, the Fishery Agency of Japan (FAJ) requested fishermen to submit the release information in a designated format. This paper provides the new estimated discards for 2003.

All statistics on catch in this paper are raised so that they represent total statistics.

1.3 Trend of fishing effort

The number of Japanese longliners that operated in the Atlantic in 2002 and 2003 was estimated to be 193 and 208, respectively (**Table 1** and **Figure 1**). The number in 2002 was the lowest since 1989 and that in 2003 was also at a similar level although slightly above that of 2002. This decline has continued since 1996 indicating a decline of nearly one-third. The fishing days also exhibited a similar trend but much more precipitous. In 1996, the number of fishing days was 47,100, the highest since 1981. However, values in 2002 and 2003 were lower than 50% and 35% suggesting that the fleet fished a lesser amount of time in the Atlantic in those two years. Fishing days in 2002 were the fourth lowest since 1981.

The annual geographic distribution of longline fishing effort in 2002 and 2003 (**Figure 2**) showed that fishing effort was exerted in a wide area of the North Atlantic from South of Iceland to the central tropical waters between Africa and South America as well as in the waters along the African side in the South Atlantic. There was also a tendency of higher concentration of fishing effort in the temperate North Atlantic between 25°N and 35°N. On the other hand, less fishing effort was observed in the coastal waters of southern Africa. Seasonal distribution (**Figure 3**) indicated a shift in the fishing grounds such as the South of Iceland as well as off Namibia during the latter half of the year, off South Africa during the second and third quarters, and the central tropical area for all year round.

1.4 Catch trend

In accordance with the declining trend of fishing effort, the total catch has been decreasing in recent years. The most important species is still bigeye tuna, representing nearly 65% of the total tuna and tuna-like fish catch. In terms of weight, bluefin tuna, yellowfin, albacore, southern bluefin tuna and swordfish are the next important species, in this order, during the most recent years. The 2002 catch of tunas and tuna-like fishes (excluding sharks) in the Atlantic Ocean and the Mediterranean Sea by the Japanese fishery is estimated to be 23,948 t

[1] Original report in English.

[2] Fisheries Agency of Japan 1-2-1 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8907, Japan; and National Research Institute of Far Seas Fisheries, Fisheries Research Agency 5 Chome, 7-1, Orido, Shimizu, Shizuoka-shi, Shizuoka Pref., 424-8633, Japan.

(**Table 2**). This is a 13,000 t or 35% decline over 2000, a significant decline that is similar in magnitude to that of 1997. As shown in **Tables 1** and **2**, it is worth noting that although the total amount of fishing effort in 2002 is similar to 1984, the total catch is only 61% of that year. This difference is attributable to a decline in the bigeye catch (by 9,000 t), yellowfin (by 1,900 t) and swordfish (by 2,900 t) as compared to 1984 (**Table 3**). The 2003 provisional catch of tunas and tuna-like fishes was 29,997 t, which is a recovery of 6,000 t or 25% over the 2002 figure. Almost all species indicated a recovery, with the largest being bigeye (by 3,500 t) followed by southern bluefin (570 t) and yellowfin (450 t).

The area breakdown of the catch by species is also shown in **Table 4** for most recent two years (2002-2003). The 2001 to 2003 swordfish catch did not occur in the North Atlantic, as all catches of this species were discarded since February 2000. The amount of annual dead discards of swordfish was estimated to be 583, 578, 239 and 102 t for 2000-2003, respectively (**Table 3**). It was also noted that there was an increase of the catch of tropical species (e.g., bigeye tuna and blue marlin) in the South Atlantic since 2002. This tendency was even stronger in 2003 as shown in the increase of fishing effort in the South Atlantic in 2003 (**Figure 1**).

The geographic distributions of catch by species are shown in **Figure 4** (bluefin tuna), **Figure 5** (bigeye tuna), **Figure 6** (swordfish) and **Figure 7** (blue marlin). In general, the distributions for bigeye tuna reflect the geographic pattern of fishing effort between 40°N and 40°S. In contrast, the catches of bluefin tuna and blue marlin are limited to North of 40°N and the inter-tropical area between 20°N and 20°S, respectively. These patterns can be more easily seen in **Figure 8**, which indicates geographical distribution of catches by species.

1.5 New developments or shifts in the fishery

No new development or change has been observed in recent years. However, there has been a general decline in the total amount of fishing effort in the Atlantic in recent years although in 2003 there appears to a slight upturn. This decline has continued since 1996 and occurred in the bigeye fishing area located in the tropical and subtropical waters. This change seems to be caused by the shift of some fleets to other oceans due mainly to the lower CPUE of bigeye tuna.

2. Research and statistics

The NRIFSF has been in charge of data collection and compilation of Atlantic tuna fishery necessary for scientific research on Atlantic tuna and billfish stocks. Required statistical data have been routinely reported to the ICCAT Secretariat and results of scientific research have also been presented at the regular meetings and inter-sessional workshops of the Standing Committee on Research and Statistics (SCRS).

2.1 Fishery data

The NRIFSF provided near final 2002 catch, catch/effort and partial size frequency data (Task I, II and biological sampling) of the longline fishery to the ICCAT Secretariat. The compilation of the same data for 2003 is in progress as usual. The preliminary 2003 catch estimates are given in this report. This year, catch-at-size data for bigeye were created and provided to the bigeye stock assessment held June 2004.

In accordance with the 1996 ICCAT recommendation on bigeye tuna observer program and the 2000 recommendation on swordfish observer program, nine observer trips on longline boats in the Atlantic were conducted between August 2003 and January 2004. Most of the trips were made on boats targeting bluefin in the North Atlantic (30°-61°N, 5°W-50°W) and relatively fewer observations were made in the tropical and subtropical waters such as off Abidjan and Angola. A total of 465 fishing days were monitored. The summary report regarding data collection, size measurements and biological sampling on tunas and other fishes including sharks of these cruises was presented as a SCRS paper (Matsumoto, Saito and Miyabe 2004). Pop-up tagging was conducted during these trips, and eight tags were used for bluefin tuna, bigeye tuna, swordfish and blue marlin. Preliminary results for swordfish were also given in the same paper. This year's activities have already started, and in total nine trips will be made between August 2004 and January 2005. Similar pop-up tagging for bluefin as well as other species is also scheduled.

2.2 Tuna biology and stock assessment

The biological and stock assessment studies carried out by the NRIFSF on Atlantic tunas and billfishes have been continued.

Genetic differentiation between Atlantic and Mediterranean albacore (*Thunnus alalunga,* Bonnaterre), was investigated (Nakadate *et al.* in prep) using nucleotide sequence variations of the glucose-6-phosphate dehydrogenase gene intron (G6PD) and the mitochondrial DNA (mtDNA) D-loop region (Dloop). Restriction analysis using Ase I digestion on the Dloop locus revealed twelve of 26 Mediterranean albacore larvae to be the B type, whereas no B type individuals were found in the Atlantic samples (n=102). The frequencies of two alleles (L and S) at the G6PD locus were significantly different between the samples from the Atlantic (L=0.495) and the Mediterranean (L=0.8). These molecular data indicate that gene flow and migration between the Atlantic and Mediterranean albacore populations have been considerably restricted.

One of the archival tags, deployed in November 1999 in Croatia on a fish of 80 cm (14 kg) in size, was recovered early this year. When the fish was landed, it was about 160 cm and weighed at 83 kg. Preliminary analysis of this tag revealed extensive movements between the Adriatic Sea, Ionian Sea and Aegean Sea during its third to fifth year of life, spending most of winter time in the Adriatic Sea and making a journey to the Aegean Sea in summer. During the sixth year of life, this fish went south to the waters off Libya in May and was caught by a purse seiner in late June. A detailed analysis is scheduled in the near future.

This year the NRIFSF participated in the following ICCAT related meetings, in addition to the regular SCRS meetings: ICCAT Bigeye Tuna Year Program Symposium (Madrid, Spain, March 8-9, 2004), the Second World Meeting on Bigeye Tuna (Madrid, Spain, March 10-12, 2004), the Second Meeting of the Working Group to Develop Integrated and Coordinated Atlantic Bluefin Tuna Management Strategies (Marseille, France, May 17-20, 2004), ICCAT Data Exploratory Meeting for East Atlantic and Mediterranean Bluefin Tuna (Madrid, Spain, June 1-4, 2004), Inter-sessional Meeting of the ICCAT Sub-Committee on By-catches: Shark Stock Assessment (Tokyo, Japan, June 14-18, 2004), 2004 ICCAT Bigeye Tuna Stock Assessment Session (Madrid, Spain, June 28 to July 3, 2004).

3. Implementation of ICCAT conservation and management measures

3.1 Catch quota and management system on the number of bigeye tuna vessels

3.1.1 Reporting by radio

The Fisheries Agency of Japan (FAJ) requires all tuna vessels except those fishing for bluefin tuna (see 3.1.2 below) operating in the Atlantic Ocean to submit the following information every ten-day period (early-, middle- and late-period of a month) by radio or facsimile to FAJ:

- Position (longitude and latitude) of each vessel in order for FAJ to know the movement of all vessels operating in the Atlantic Ocean.

- Catch weight of bluefin tuna, swordfish, blue marlin, white marlin and bigeye tuna (Ministerial Order on April 2, 1975 and supplemented on December 13, 1991 for swordfish and February 20, 1998 for blue marlin and white marlin, and July 30, 2001 for bigeye tuna).

3.1.2 Implementation of the Vessel Monitoring System (VMS)

About 100 Japanese longline vessels fishing for bluefin tuna in the Convention area are required to report their catches and vessel positions through VMS in real time. So far, most of the Japanese longline vessels operating in the Convention area are equipped with VMS onboard that started to be installed in 1992. In accordance with the 2003 Recommendation for the establishment of a VMS, the FAJ is in the process of making changes to the regulations to require the introduction of the new system meeting the minimum standards established in the 2003 ICCAT Recommendation.

3.1.3 Catch quotas management

i) Catch quotas

The FAJ sets catch quotas for western and eastern Atlantic bluefin as well as for northern, southern Atlantic swordfish, blue marlin, white marlin and bigeye tuna, respectively, by a Ministerial Order in accordance with the relevant ICCAT recommendations.

ii) Fishing year

The FAJ sets the "Fishing Year (August to July)" for the purpose of proper quota management for bluefin tuna, swordfish, blue marlin, white marlin and bigeye tuna. The 2003 quotas for these tunas are applied to the 2003 Fishing Year that starts on August 1, 2003 and ends on July 31, 2004.

iii) Bluefin catches in the central Atlantic Ocean

For 2003 and 2004, the 2002 ICCAT Resolution is calling for CPCs not to increase their catch by tuna longline vessels from the 1999-2000 level in the central Atlantic Ocean. For 1999 and 2000, Japanese bluefin catch in the central Atlantic Ocean was 1,144 metric tons and 974 metric tons, respectively. For 2002 and 2003, it was 226 metric tons and 390 metric tons, respectively.

3.1.4 Number of fishing vessels

The FAJ has submitted the list of all the tuna fishing vessels which are licensed to fish for tuna and tuna-like species in the Convention area based on the 2002 Recommendation to establishment of an ICCAT record of vessels over 24 meters authorized to operate in the Convention area.

Since 1998, The FAJ limits the number of vessels actually fishing for bigeye tuna in the Convention area to 245, by means of the mandatory check in/out reporting system via radio as well as the VMS based on the 1998 Recommendation on the bigeye tuna conservation measures for fishing vessels larger than 24 meters length overall.

3.2 Minimum size limits

In accordance with ICCAT recommendations, the FAJ prohibits, by a Ministerial order, the catch of undersized fish with the exemption of a certain percentage of tolerance. The catch prohibition of undersized bluefin and yellowfin was established by a Ministerial order on April 2, 1975 and the FAJ amended this Ministerial order several times to cover undersized bigeye, swordfish, etc. The latest amendment of this order was in April 2003 to implement the 2002 Recommendation concerning a multi-year conservation and management plan for bluefin tuna in the East Atlantic and Mediterranean.

All the Japanese pole and line vessels reluctantly ended their operations in the Convention area to observe the 1972 Recommendation that prohibits any taking and landing of yellowfin tuna weighing less than 3.2 kg because of their high by-catch rate.

3.3 Time and area closure

The FAJ has prohibited Japanese longline vessels from operating in the Mediterranean from June 1 to July 31 by Ministerial order, in accordance with the 1993 ICCAT Recommendation. The FAJ also has prohibited Japanese longline vessels from operating in the Gulf of Mexico.

3.4 National observer program

Based on the 2002 ICCAT Recommendation on the rebuilding program for North Atlantic swordfish, the FAJ implemented a national observer program of vessels operating in the North Atlantic. For 2003, the national observer program covered more than eight percent (8.2%) of the total number of fishing vessels operating in the North Atlantic Ocean. Similarly, the program covered about five percent (4.9%) of the total number of fishing vessels operating in the entire Atlantic Ocean.

3.5 Prohibition of import of Atlantic bluefin tuna, swordfish and bigeye tuna

Japan has prohibited the import of Atlantic bluefin tuna and its products in any form from Belize and Equatorial Guinea since September 3, 1997 and August 1, 2000, respectively, the import of Atlantic swordfish and its products in any form Belize since August 1, 2000, and the import of Atlantic bigeye tuna and its products in any form from Equatorial Guinea on August 1, 2001 from Belize, St. Vincent and the Grenadines, from Cambodia on October 15, 2001, and from Georgia on July 28, 2004, in accordance with ICCAT recommendations.

The import prohibitions on Atlantic bluefin tuna from Panama, Honduras and Belize were lifted on April 3, 2000, on June 5, 2002 and on January 1, 2004, respectively. The import prohibition on Atlantic swordfish from Honduras and Belize was lifted on June 5, 2002 and on January 1, 2004, respectively. The import prohibition on Atlantic bigeye from Honduras was lifted on January 1, 2003 and that on both Belize and St Vincent and the Grenadines was lifted on January 1, 2004. Japan conducts DNA examination against imported tunas to prevent false import.

3.6 Implementation of the ICCAT Bluefin Tuna Statistical Document (BFTSD) Program

From September 1, 1993, the Japanese government started collecting BFTSDs for frozen product, in accordance the 1992 Recommendation. In addition, from June 1, 1994, the Japanese government started collecting BFTSDs for fresh product, in accordance with the 1993 Recommendation.

The FAJ has reported the data collected by the program to the Executive Secretary on a biannual basis.

Since July 28, 2004, the Japanese government started collecting information on farmed bluefin tuna product, in accordance with 2003 Recommendation.

3.7 Implementation of the ICCAT Bigeye Tuna Statistical Document (BETSD) Program

On July 1, 2002, the Japanese government started collecting BETSDs for frozen product in accordance with the 2001 Recommendation.

The FAJ has reported the data collected by the program to the Executive Secretary on a biannual basis.

3.8 Implementation of the ICCAT Swordfish Statistical Document (SWOSD) Program

On January 1, 2003, the Japanese government started collecting SWOSDs for fresh and frozen product in accordance with the 2001 Recommendation.

The FAJ will report the data collected by the program to the Executive Secretary on a biannual basis.

3.9 Implementation of the Positive Listing Measure

Based on the 2002 Recommendation to establish an ICCAT record of fishing vessels larger than 24 meters in length overall (LSFVs) authorized to operate in the Convention area, the Japanese government started the Positive Listing Measure on November 14, 2003. So far, almost all of the tuna caught by those LSFVs is imported into Japan in frozen form. The species covered by the measure are frozen bluefin tuna, frozen bigeye tuna and frozen swordfish. If there were tunas caught by LSFVs that are not entered on the record, the import is not permitted by the Japanese government.

The Japanese government will implement the Positive Listing Measures on Farming Facilities based on the 2003 Recommendation, starting from November 2004. From then on, the Atlantic bluefin that tuna produced in farming facilities will be checked at the time of entry into the territory of Japan so as to ensure they were produced in accordance with the Recommendations.

4. Inspection schemes and activities

4.1 Assignment of patrol vessels

Since 1976, Japan has dispatched patrol vessels to the North Atlantic and/or the Mediterranean every year for a certain period of time to monitor and inspect Japanese tuna vessels. The FAJ dispatched patrol vessels to the North Atlantic in the 2003 fishing year. These vessels have also collected information on activities of non-contracting parties.

4.2 Random inspection of landing at Japanese ports

All Japanese tuna fishing vessels that land their catches at any Japanese port must report their landing plans in advance. The FAJ randomly inspects landings of those Japanese longline vessels to enforce the catch quotas and the minimum size limit.

4.3 Management of transshipment at foreign ports

A permit issued by the FAJ is required for any Japanese tuna longline vessels to transship tuna or tuna products to reefers at foreign ports. The FAJ monitors the weight by species, the time and place of each transshipment and, conducts inspection of landing at Japanese ports when longline vessels or reefers return to Japanese ports.

5. Other activities

5.1 Annual catch statistics

Each longline vessel flying the Japanese flag and licensed to engage in tuna fisheries by the Minister for Agriculture, Forestry and Fisheries is legally required to submit a catch report to the Minister within 30 days after the end of the cruise or when the vessel has entered a port. Submission of this report is established by a Ministerial order of January 22, 1963. The above-mentioned catch report includes the daily information of vessel's noon position, the number and weight of the catch by species, the quantities of gear used, surface water temperature, etc. The information on the catch report submitted is examined and compiled into the database by NRIFSF.

5.2 Collection of biological data collected on board longline vessels

The information necessary for stock analyses, such as length, weight and sex of fish caught, is collected by fishermen as a voluntary measure.

5.3 Measures to reduce incidental catch of sea turtles, seabirds and sharks

The FAJ issued administrative guidance and conducted educational programs for fishermen to use fishing gears and other tools to reduce the incidental catch of sea turtles, seabirds and sharks.

For sea turtles, the FAJ will start a pilot program to use circle hooks to reduce the incidental catch of sea turtles by Japanese longline vessels. When Japanese longline fishing vessels are operating in the high latitudes of the Southern hemisphere where interactions between seabirds often occur, use of a device is required that deters sea birds from approaching the hooks and bait when the device is launched. In other areas, fishermen are also encouraged to use the device. In 2001, Japan established the National Plan of Action for the Conservation and Management of Sharks aimed at improving the collection of accurate data, at educational activities, as well as the full utilization of sharks. In August 2003, Japan hosted the World Tuna Longline Fisheries Conference among the Asian longline tuna fishing countries and declared to work together for the collection of data, and study tools to minimize interactions with these species.

5.4 Collection of the trade data

The Ministry of Finance collects trade data, such as quantity, value, export country, etc. of imported products. Japan improved its import statistics in 1993 responding to the 1992 ICCAT Resolution to collect all data on the various types of bluefin tuna products, e.g. fillet, meat (round, dressed) etc. and the status of the products, e.g. frozen, fresh or chilled. Japan also improved its import statistics in 1997 and 1998 regarding swordfish to collect more accurate import data on this fish species.

5.5 Effort limitation

The numbers of longline vessels which can operate in the western Atlantic North of 35 degree North and the Mediterranean have been limited to 40 and 30, respectively, in the 2003 fishing year. Furthermore, the FAJ requires all the longline vessels operating in the northern part of the East Atlantic Ocean to submit to FAJ an advance notice of their planned operations, which enables the FAJ to instruct the relevant fishing vessels to shift fishing grounds, if necessary.

5.6 Restriction of re-flagging of vessels

No Japanese large-scale tuna longline vessel is authorized to operate on the high seas unless the Government of Japan issues a license. No Japanese vessel can elude the FAJ’s control even when a vessel is conducting fishing operations in waters far distant from Japan, since a Japanese port is designated as its operation base and all the

products are brought into Japan. The export and lease of Japanese longliners and purse seiners are strictly and closely controlled by the FAJ to avoid their use for operations which may diminish the effectiveness of international conservation measures. The Federation of Japan Tuna Fisheries Co-operative Association resolved that the exporting of Japanese longline vessels be prohibited in 1999. In support of this industrial initiative, the government partly financed the industry to scrap second-hand tuna longline vessels in order for them not to become a source of IUU fishing vessels through export.

5.7 Legislation for the enhancement of the conservation and management of tuna stocks

A new law was enacted in June 1996 with the objective of implementing measures necessary to enhance the conservation and management of tuna stocks and to develop international cooperation for the conservation and management of tuna stocks. This law establishes that the Government of Japan may restrict the imports of tuna and tuna products from a foreign country that is recognized by the relevant international organization not to rectify its fishermen's activity and thus is diminishing the effectiveness of the conservation and management measures adopted by the international organizations.

The objective of this law is to support and reinforce ICCAT activities, ensuring the strength of tuna resource conservation and the stability of the tuna supply.

Since November 1999, the FAJ has implemented a mandatory reporting system, based on this law, to obtain more information on activities of IUU vessels whose products enter the Japanese market. All importers and persons in charge of transport vessels are required to report detailed information on the fishing vessels that caught and transport their tuna.

5.8 Non-purchase guidance

In accordance with the resolution calling for further actions against IUU fishing activities adopted in 1999, the FAJ (i) urges importers, transporters and other persons concerned to refrain from engaging in the transaction and transshipment of tuna and tuna-like species caught by IUU fishing vessels, (ii) informs the general public of IUU fishing activities and urges them not to purchase fish harvested by IUU fishing vessels, and (iii) urges manufactures and business people to prevent their vessels and equipment/devices from being used in IUU fishing operations since December 1999. With respect to (i) and (ii), the FAJ has implemented the Positive Listing Measure since November 2003.

5.9 Scrapping of IUU vessels

Implementing the Japan-Chinese Taipei Action Programs to eliminate IUU fishing vessels, the Government budgeted a total of about US$28 million (32.7 billion Japanese yen) to scrap the IUU tuna longline vessels of Japanese origin during 2001-2003. Forty-three (43) IUU vessels were scrapped by the end of 2003.

5.10 Legalization of IUU vessels

In accordance with the 2002 ICCAT Resolution concerning cooperative actions to eliminate illegal, unreported and unregulated fishing activities by large-scale tuna longline vessels (LSTLVs), Japan consulted with Vanuatu and Seychelles, as well as Chinese Taipei, and established the following new measures in order to dispose the remaining IUU tuna longline fishing vessels, and 69 IUU LSTLVs have been committed to comply with the following cooperative management schemes:

- Cooperative management schemes to legalize these vessels have been concluded between the fisheries authorities of the flag States (the Seychelles and Vanuatu) and Japan, and the vessels participating in the scheme were placed under proper management.

- Measures to have the fishing vessels in question obtain Japan’s licenses for large-scale longline vessels and freeze those licenses, was taken for the purpose of reinforcing and complementing the cooperative management scheme mentioned above as well as preventing the increase of overall fishing capacity.

The afore-mentioned 69 vessels will cease to operate in the Atlantic.

5.11 Establishment of OPRT

The Organization for Promotion of Responsible Tuna Fisheries (OPRT) was established in December 2000 in Tokyo, Japan. The organization consists of the representatives from fishermen, importers, distributors, processors and consumers. One of the main tasks of the OPRT is to compile and analyze the import data of tunas and provide them to OPRT member flag States as feedback for their verification of the reported catch data. OPRT's other task is to inform Japanese retailers and consumers of the products caught by IUU fishing vessels. The representatives from the fishermen of Japan and Chinese Taipei are the founding members of OPRT. Fishermen of Korea, Philippines, Indonesia and China have joined OPRT.

References

Nakadate, M., Clarke, S., Suzuki, N. and Chow, S. (*in prep*): Large genetic differentiation between Atlantic and Mediterranean albacore (*Thunnus alalunga*) populations inferred from mitochondrial and nuclear DNA markers.

Matsumoto, T., H. Saito and N. Miyabe (SCRS/2004/113): Report of observer program for Japanese tuna longline fishery in the Atlantic Ocean from August 2003 to January 2004. Presented to the 2003 SCRS meeting of the ICCAT in October 2004. 22pp.

Table 1. Annual number of Japanese tuna boats operated in the Atlantic and Mediterranean, 1981-2003.

Year	*Longline*			*Purse seine*	*Pole-and-line*
	Number of boats	*Fishing days (sets in 100)*	*Fishing days per boat*	*Number of boats*	*Number of boats*
1981	320	297	93	-	10
1982	269	307	114	1	7
1983	182	175	96	1	4
1984	212	252	119	1	2
1985	205	279	136	2	-
1986	190	208	110	2	-
1987	146	172	118	2	-
1988	183	260	142	2	-
1989	239	345	144	1	-
1990	235	359	153	1	-
1991	242	339	140	2	-
1992	248	292	118	2	-
1993	307	399	130	-	-
1994	232	380	164	-	-
1995	253	385	152	-	-
1996	291	471	162	-	-
1997	276	414	150	-	-
1998	250	403	161	-	-
1999	229	339	149	-	-
2000	208	353	163	-	-
2001	187	275	147	-	-
2002[*1]	193	240	124	-	-
2003[*2]	208	302	145	-	-

[*1] Almost final.
[*2] Preliminary

Table 2. Japanese catch (t) of tuna and tuna-like fishes by type of fisheries, Atlantic and Mediterranean, 1981-2003. Discards are not included.

Year	*Longline*	*Purse seine*	*Pole-and-line*	*Total*
1981	37,636	-	16,178	53,814
1982	50,794	2,250	10,620	63,664
1983	25,596	2,733	5,577	33,906
1984	39,096	2,906	565	42,567
1985	48,497	5,226	-	53,723
1986	33,241	5,805	-	39,046
1987	29,300	5,171	-	34,471
1988	47,326	5,887	-	53,213
1989	58,514	4,453	-	62,967
1990	54,930	4,361	-	59,291
1991	46,883	7,516	-	54,399
1992	48,515	2,794	-	51,309
1993	52,917	-	-	52,917
1994	55,063	-	-	55,063
1995	52,498	-	-	52,498
1996	51,534	-	-	51,534
1997	39,319	-	-	39,319
1998	41,628	-	-	41,628
1999	34,101	-	-	34,101
2000	36,954	-	-	36,954
2001	27,061	-	-	27,061
2002[*1]	23,948	-	-	23,948
2003[*2]	29,997	-	-	29,997

[*1] Almost final.
[*2] Preliminary.

Table 3. Catches (t) of tuna and tuna-like fishes taken by the Japanese longline fishery, 1981-2003.

Year	*Bluefin*	*Southern bluefin*	*Albacore*	*Bigeye*	*Yellow-fin*	*Sword-fish*	*Blue marlin* [*1]	*Black marlin*	*White marlin*	*Sail-fish* [*2]	*Spear-fish*	*Others*	*Sub-total*	*Bluefin discards*	*Sword-fish discards*	*Sharks*	*Grand Total (including sharks)*
1981	4,386	2,506	2,298	21,044	4,145	2,233	468		143	94		319	37,636				
1982	3,826	1,135	1,350	32,867	6,062	3,728	1,132		111	173		410	50,794				
1983	3,997	505	1,318	15,141	2,069	1,899	440		44	69		114	25,596				
1984	3,246	1,636	800	24,310	3,967	3,789	833		76	97		342	39,096				
1985	2,523	1,468	1,467	31,602	5,308	4,323	1,090		126	122		468	48,497				
1986	1,664	389	1,209	22,801	3,404	2,660	508		129	99		378	33,241				
1987	2,140	1,120	851	18,575	3,364	2,294	438		134	43		341	29,300				
1988	2,536	548	1,128	31,664	5,982	4,055	823		144	79		366	47,325				
1989	2,523	625	1,214	39,419	6,971	5,593	1,555		146	78		390	58,514				
1990	2,186	1,202	1,324	35,024	5,919	7,307	1,216		126	88		538	54,930				
1991	3,754	1,331	1,346	29,489	4,718	4,688	905		121	88		443	46,883				
1992	3,985	525	1,048	34,128	3,715	3,541	1,017		248	43		265	48,515				
1993	3,858	1,688	951	35,053	3,096	6,386	928		82	60		815	52,917				
1994	3,038	595	1,157	38,502	4,782	4,763	1,524	6	92	53	38	513	55,063			3,221	58,284
1995	5,171	1,409	758	34,223	5,046	3,563	1,366	1	55	52	28	826	52,498			2,149	54,647
1996	4,542	1,219	901	33,171	5,251	3,795	1,679	2	112	50	29	783	51,534			1,364	52,898
1997	3,498	301	838	26,489	3,538	2,765	1,349	1	58	36	31	415	39,319	8		1,304	40,631
1998	4,276	926	884	25,601	5,413	2,518	1,067	2	50	50	40	801	41,628	-	-	1,524	43,152
1999	3,436	946	1,027	21,833	3,405	1,869	790	0	40	26	44	685	34,101	-	-	1,001	35,102
2000	3,523	1,205	1,235	24,411	3,876	950	862	2	83	35	40	732	36,954	-	583	675	38,212
2001	3,083	376	1,462	18,055	2,659	690	336	1	56	9	23	311	27,061	-	578	655	28,294
2002[*3]	3,501	1,246	907	15,435	2,052	899	277	2	16	21	28	564	23,948	-	239	898	25,085
2003[*4]	3,244	1,819	1,091	18,909	2,506	958	453	0	31	20	55	911	29,997	-	102	1,139	31,238

[*1] Blue marlin and black marlin were not separated until 1993.
[*2] Sailfish and spearfish were not separated until 1993.
[*3] Almost final figures.
[*4] Preliminary data.

Table 4. Area breakdown of Task I catches (t) taken by the Japanese longline fishery. ICCAT area definition is used for tunas and billfishes. For other species, north and south, and east and west are separated at 5°N and 30°W, respectively. The Mediterranean Sea is separated from both west-east and north-south area division.

2002[*1]

Species	*West*	*East*	*North*	*South*	*Medit*	*Total*
Bluefin	575	2,536	3,111	0	390	3,501
Southern bluefin	0	1,246	0	1,246	0	1,246
Albacore	579	329	698	209	0	907
Bigeye	4,746	10,689	7,021	8,414	0	15,435
Yellowfin	545	1,506	1,142	909	0	2,052
Swordfish [*2]	55	845	0	899	0	899
White marlin	6	11	11	6	0	16
Blue marlin	85	193	123	155	0	277
Black marlin	0	2	0	1	0	2
Sailfish	3	17	4	17	0	21
Spearfish	14	14	14	14	0	28
Skipjack	0	0	0	0	0	0
Blue shark	283	452	376	359	0	735
Other sharks	92	71	111	52	0	163
Other fishes	38	526	59	505	0	564
Total	7,021	18,437	12,670	12,786	390	25,844

[*1] Almost final.
[*2] Discards of 239 t in the North Atlantic are not included.

2003[*3]

Species	*West*	*East*	*North*	*South*	*Medit*	*Total*
Bluefin	71	2,857	2,928	0	316	3,244
Southern bluefin	0	1,819	0	1,819	0	1,819
Albacore	674	417	781	309	0	1,091
Bigeye	5,295	13,614	6,445	12,464	0	18,909
Yellowfin	740	1,766	1,087	1,419	0	2,506
Swordfish [*4]	150	809	0	958	0	958
White marlin	18	13	21	10	0	31
Blue marlin	125	328	163	290	0	453
Black marlin	0	0	0	0	0	0
Sailfish	7	13	7	13	0	20
Spearfish	41	14	42	14	0	55
Skipjack	0	0	0	0	0	0
Blue shark	273	657	624	306	1	931
Other sharks	96	113	127	82	0	208
Other fishes	47	864	74	836	0	911
Total	7,537	23,284	12,299	18,520	317	31,136

[*3] Preliminary.
[*4] Discards of 102 t in the North Atlantic are not included.

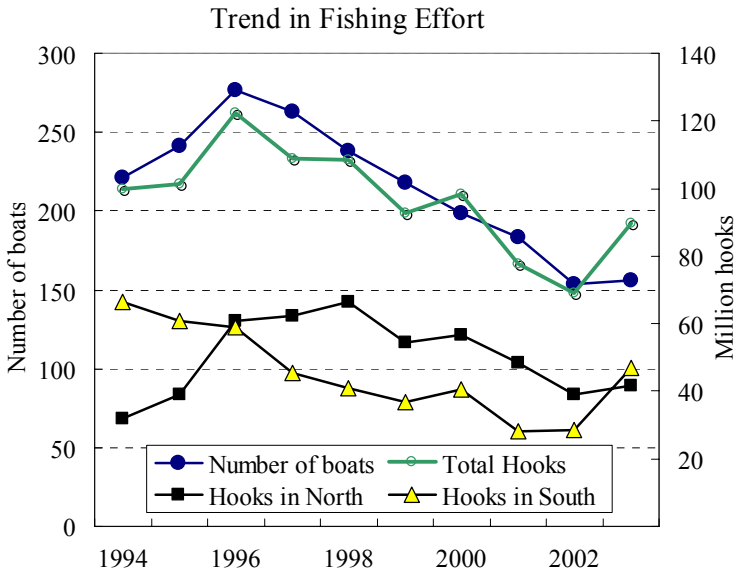

Figure 1. Trends in fishing effort (in number of boats that operated and number of hooks used) exerted by the Japanese longline fishery, 1994-2003.

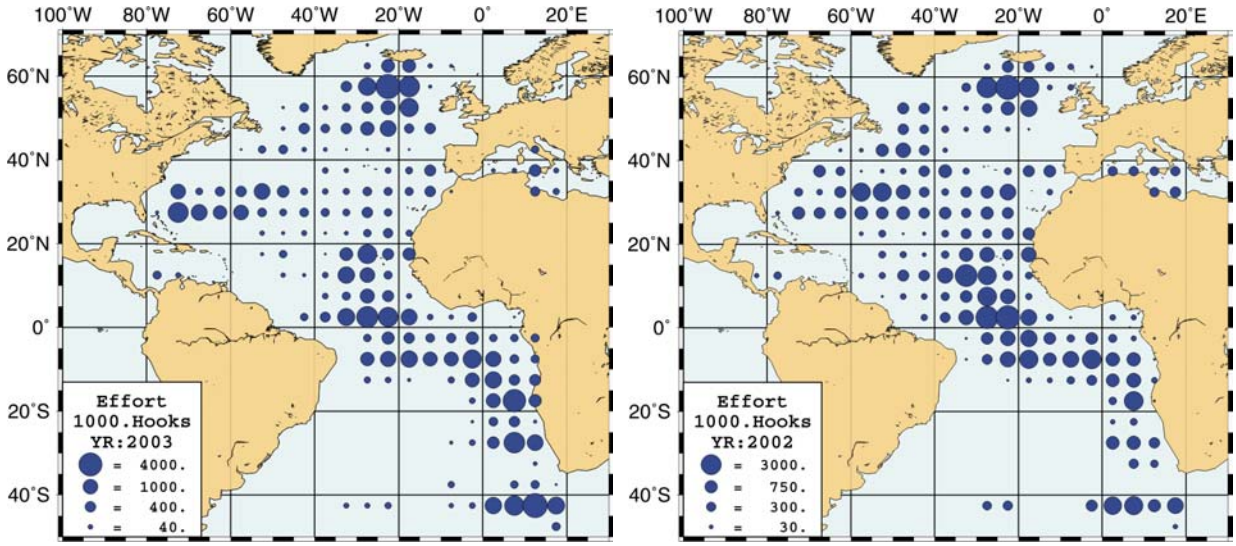

Figure 2. Geographic distribution of the Japanese longline effort (in number of hooks) in the Atlantic, for 2003 (left panel) and for 2002 (right panel). Coverage for 2003 is much lower than in 2002, especially the latter half of the year, so that the figure for 2003 should be viewed with caution.

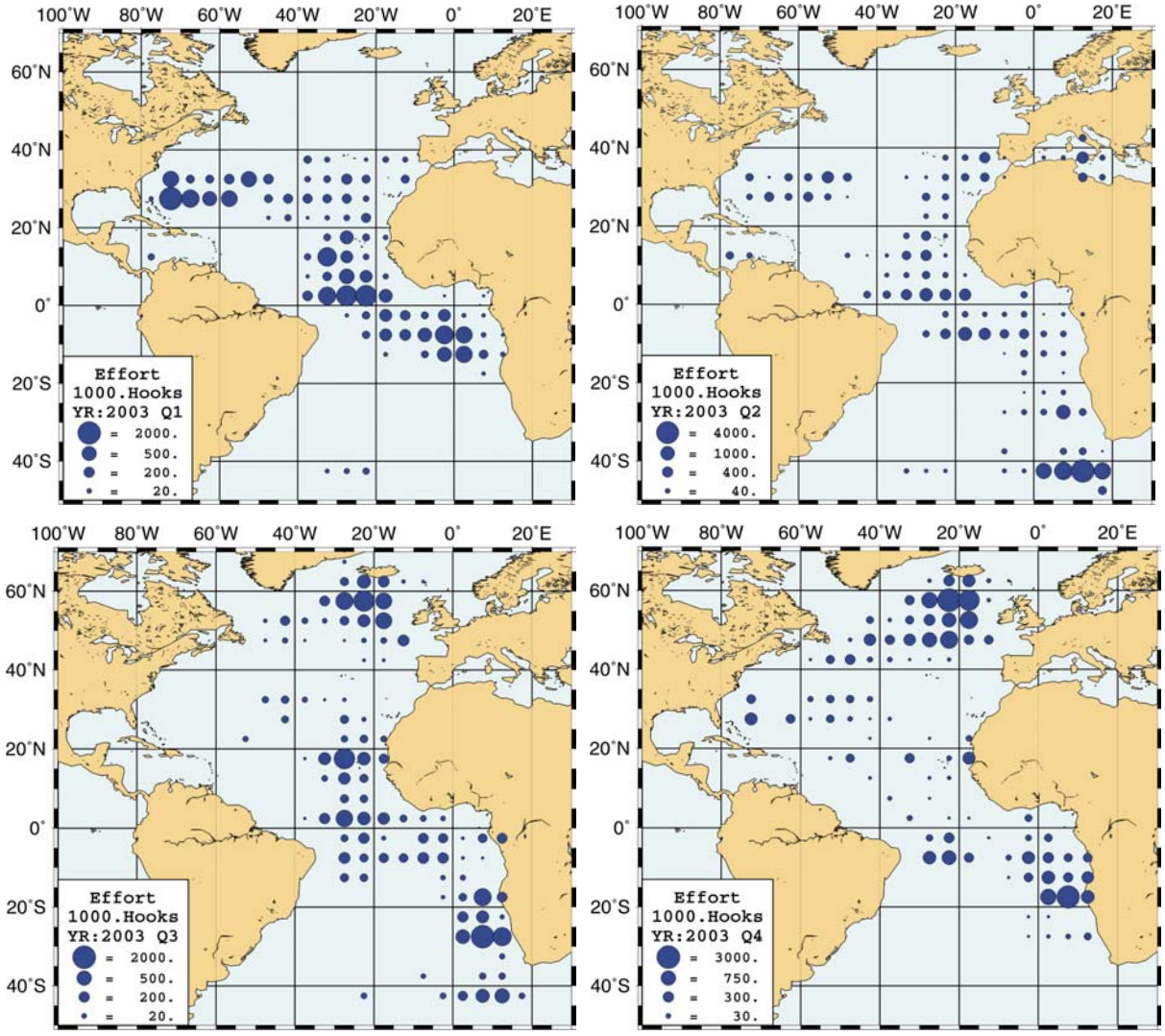

Figure 3. Quarterly distribution of Japanese longline effort (in number of hooks) in the Atlantic for 2003.

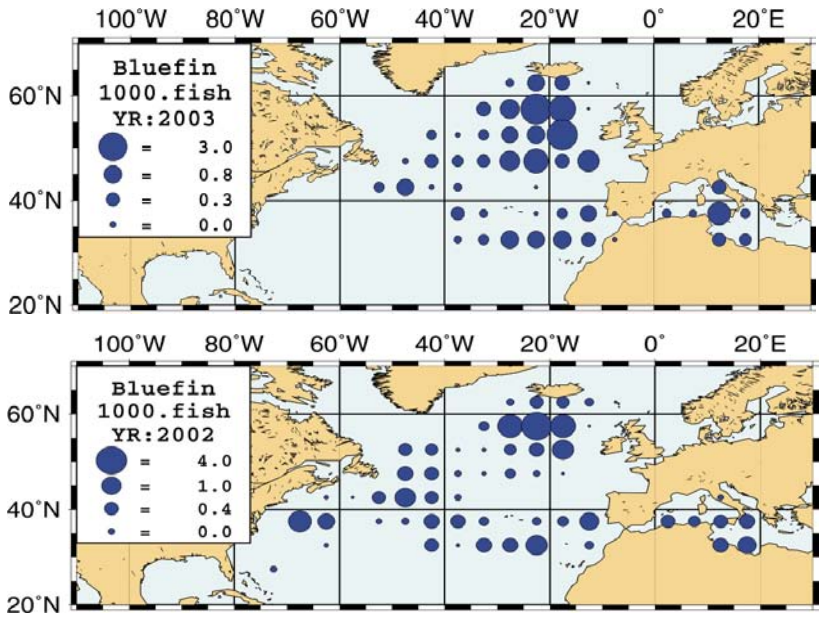

Figure 4. Geographic distribution of bluefin catch (in number) in the Atlantic for 2003 (upper panel) and 2002 (lower panel). Coverage for 2003 is much lower than in 2002, especially the latter half of the year, so that the figure for 2003 should be viewed with caution.

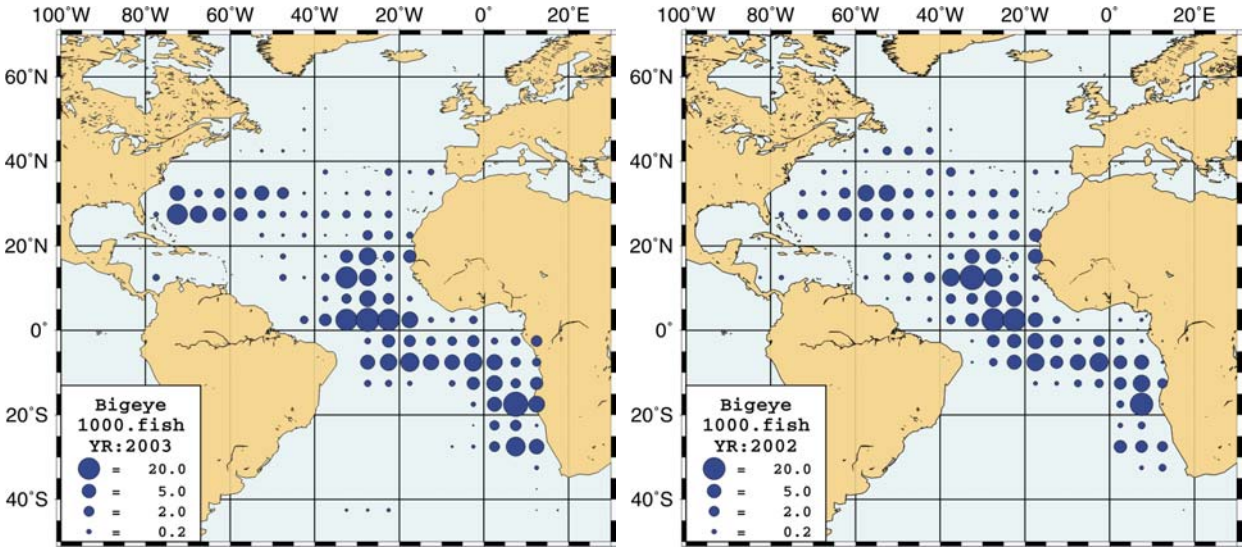

Figure 5. Geographic distribution of bigeye catch (in number) in the Atlantic for 2003 (left panel) and 2002 (right panel). Coverage for 2003 is much lower than in 2002, especially the latter half of the year, so that the figure for 2003 should be viewed with caution.

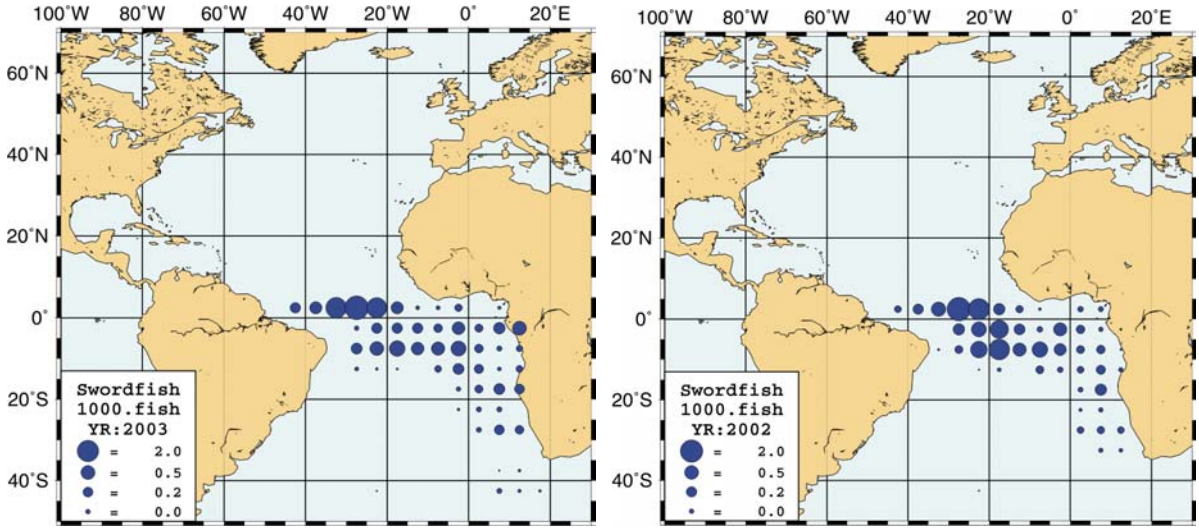

Figure 6. Geographic distribution of swordfish catch (in number) in the Atlantic for 2003 (left panel) and 2002 (right panel). Coverage for 2003 is much lower than in 2002, especially the latter half of the year, so that the figure for 2003 should be viewed with caution.

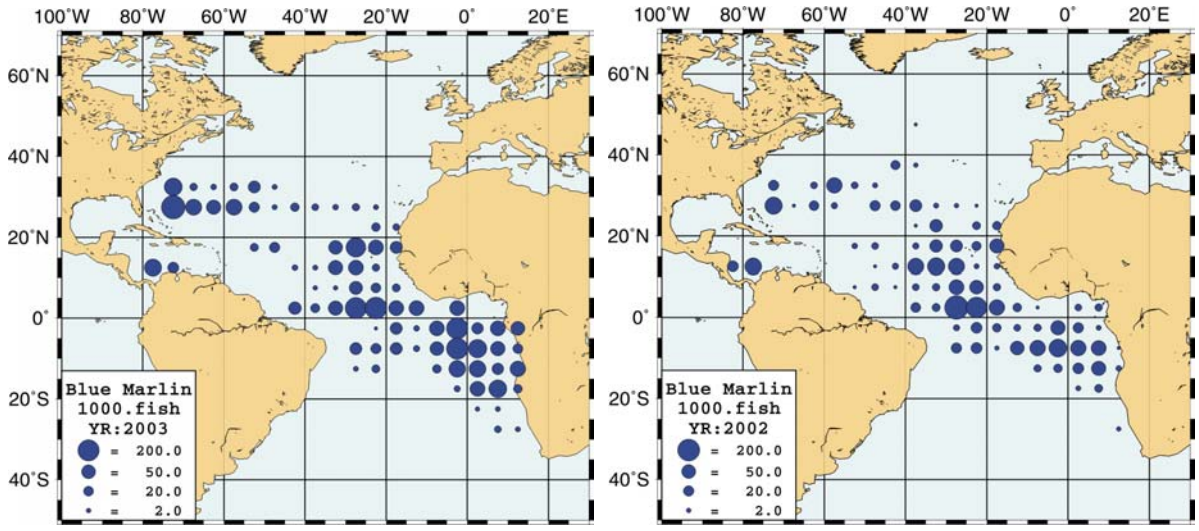

Figure 7. Geographic distribution of blue marlin catch (in number) in the Atlantic for 2003 (left panel) and 2002 (right panel). Coverage for 2003 is much lower than in 2002, especially the latter half of the year, so that the figure for 2003 should be viewed with caution.

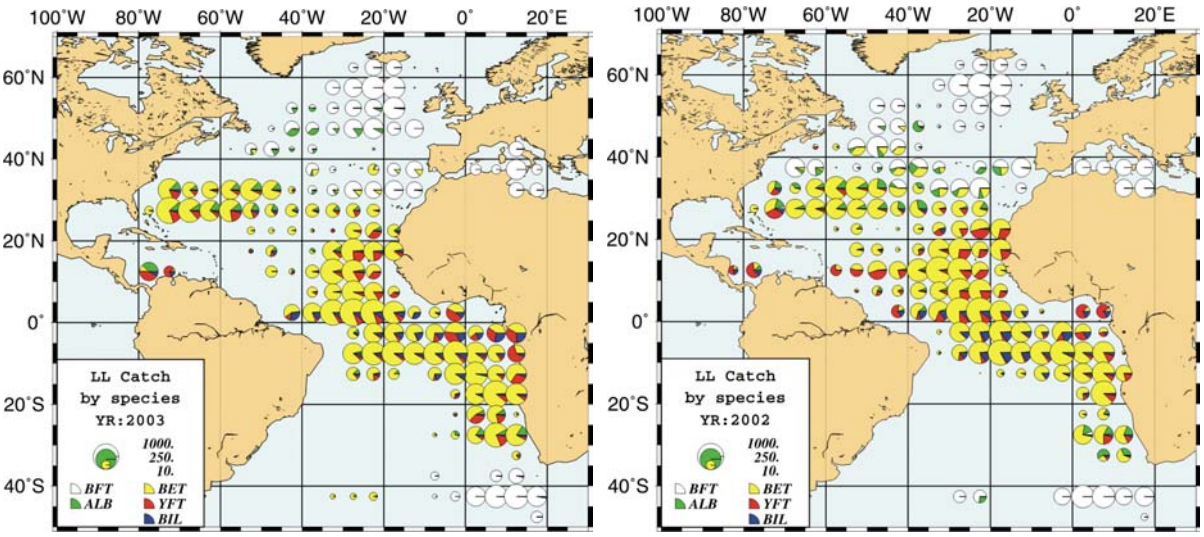

Figure 8. Species composition in the Japanese longline catch (in weight) for 2003 (left) and 2002 (right). Species are categorized into five groups: BFT (bluefin and southern bluefin), ALB (albacore), BET (bigeye), YFT (yellowfin) and BIL (swordfish and all billfishes).

ANNUAL REPORT OF KOREA[1]

Jeong-rack Koh[2], Soon song Kim[2], and Dae-yeon Moon[2]

1. Fisheries information

The tuna fishery is still the most important distant water fishery in Korea and most of the Korean longline fisheries occur in the Pacific and Indian Oceans. However, the fisheries for Atlantic tunas and tuna-like species have shown a gradual decline year after year since the mid-1980s. During the 1990s, the average number of Korean tuna longliners active in the Atlantic was less than 10 each year with 1,700 t of annual catches. From the mid-1990s, even though 54 longliners are registered in the IOTC area, many registered vessels shift between the Indian and Atlantic Oceans, depending on the conditions of each fishing ground. Gear-type-based licensing in Korea, which does not limit the fishing grounds, enables the shift in fishing grounds for those tuna longliners.

The total annual catches of all tuna and tuna-like species in the Atlantic Ocean are given in **Table 1**. The change in catch trends was mainly due to the shift of the fleet to the Indian Ocean to catch southern bluefin tuna (SBT).

The total catches of tunas and tuna-like species in the Atlantic in 2003 was estimated as 402 t, representing a increase of more than 300 t from the previous year's figure.

Almost 88% of the total catch in the Atlantic in 2003 was comprised of two species, yellowfin tuna (209 t) and bigeye tuna (143 t). Until recent years, bigeye and yellowfin tunas were the most important tuna species for the Korean tuna longline fishery, not only as regards catches, but also as regards the commercial value on the sashimi market which is higher than for other species.

Bigeye and yellowfin tuna are target species of the Korean longline fishery and the catch distribution of these species largely depends on the distribution in the Atlantic Ocean. The fishing area of Korean longliners in the Atlantic Ocean in 2003 was mainly the waters east of Africa and dispersed from 20^{o} west longitude to 20^{o} east longitude **(Figure 1)**. However, the catch distribution has shown annual fluctuation depending on the fishing and oceanographic conditions for the target species.

2. Research and statistics

Routine scientific monitoring work was carried out by the National Fisheries Research and Development Institute (NFRDI) as in past years. This monitoring covers the collection of catch and fishing effort statistics from the Korean tuna longliners operating in the Atlantic Ocean. Task I and Task II data were provided to the ICCAT Secretariat.

2.1 Observer program

The Korean Government has initiated the training of observers to monitor its distant-water fisheries, including the tuna fisheries. Five observers received a transship from the pelagic fishery observer program at NMFS in Hawaii in 2002 and five from NFRDI in 2004. Although these observers only worked in the Pacific and Indian Oceans for scientific purposes this year, the Korean Government is planning to expand the observer area to the Atlantic Ocean in the future.

2.2 Data reporting system

The NFRDI has established a new database system for the handy manipulation and analysis of fisheries data by fishery scientists. Old data files will be revisited and reviewed for correction or verification of the existing fishery statistics. As a consequence, we do not exclude the possibility of a minor correction in our fishery statistics in the future.

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[1] Original report in English.
[2] National Fisheries Research and Development Institute (NFRDI), Busan, Korea.

3. Implementation of ICCAT tuna management measures

To implement the recommendations adopted by ICCAT, Korea has introduced these to its domestic regulations. Those are minimum size limits for bigeye, yellowfin, bluefin tuna and swordfish. With a view to protecting the spawning stock of northern bluefin tuna in the Mediterranean Sea, a new domestic regulation has been effective since 1995.

Table 1. Nominal catch (t) of tuna and tuna-like fishes by the Korean longline fishery in the Atlantic Ocean, 1984-2003.

Year	*No. of vessels*	*BFT*	*YFT*	*ALB*	*BET*	*SBT*	*SKJ*	*SWO*	*BUM*	*WHM*	*SAI*	*Others*	*Total*
1984	51	-	2,673	1,315	8,943	-	29	406	344	62	86	927	14,785
1985	45	77	3,239	901	10,691	-	20	344	416	372	101	1,293	17,454
1986	28	(156)	1,818	694	6,084	-	11	82	96	71	16	1,093	9,965
1987	29	(1)	1,457	401	4,438	-	6	75	152	27	21	1,048	7,625
1988	29	(12)	1,368	197	4,919	-	3	123	375	19	15	782	7,801
1989	33	(45)	2,535	107	7,896	-	6	162	689	135	33	944	12,507
1990	17	(20)	808	53	2,690	-	-	101	324	81	41	240	4,338
1991	9	(229)	260	32	801	-	-	150	537	57	30	267	2,134
1992	8	(101)	219	-	866	-	-	17	38	1	1	321	1,463
1993	4	(573)	180	-	377	-	-	-	19	2	1	308	887
1994	4	684	436	-	386	-	-	-	-	91	1	27	1,625
1995	4	663	453	-	423	-	-	-	61	1	-	114	1,715
1996	16	683	381	-	1,250	-	-	26	199	37	6	156	2,738
1997	12	613	257	5	796	10	-	33	70	24	1	115	1,924
1998	5	-	65	-	163	-	-	-	-	-	-	62	290
1999	9	-	94	-	124	28	-	-	-	-	-	31	277
2000	9	-	143	-	70	62	7	-	-	-	-	10	292
2001	5	0.5	3.4	1.4	1.3	157.7	-	0.1	0.5	-	-	27.4	192.3
2002		-	7.8	-	87.3	-	-	1.5	-	-	-	-	96.5
2003		-	209	5	143	-	-	24	-	11	-	10	402

( ) Estimated by ICCAT Secretariat (ICCAT Report, 1994. Vol. 2).

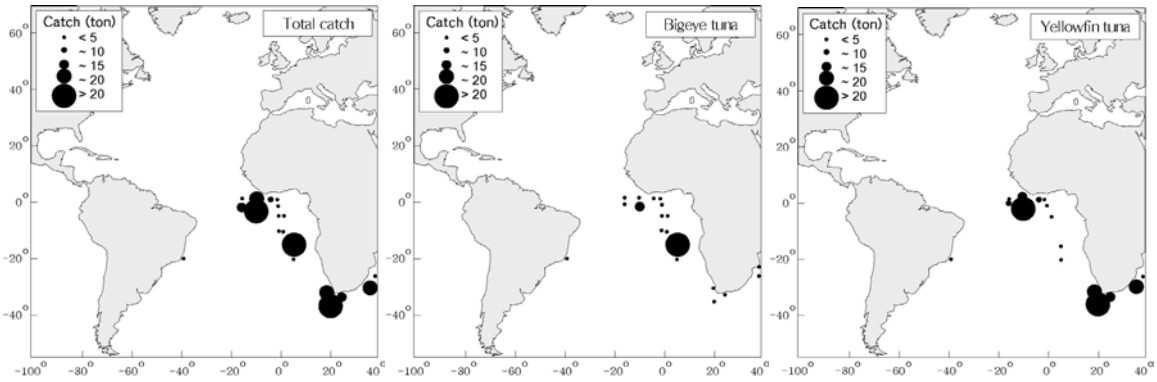

Figure 1. Catch distribution of Atlantic tuna and tuna-like species by the Korean longline fishery in 2003.

ANNUAL REPORT OF MALTA[1, 2]

1. National fisheries information

1.1 Bluefin tuna

In Malta, bluefin tuna are targeted mainly by surface longlines. In 2003, 91 vessels were authorized to operate in the Convention area. The total landings for bluefin tuna were just over 255 metric tons (t). The duration of each fishing trip was a maximum of three fishing days and the maximum number of hooks used by each fisherman was 1,500. Fishing operations were undertaken exclusively in the central Mediterranean region.

1.2 Swordfish

Swordfish are targeted all year round although during the bluefin tuna fishing season they are mainly caught as by-catch. The total landings for swordfish for 2003 were only 162.5 t. This was rather low when compared to the previous year´s landings that reached 257 t. The main gear used for swordfish is surface longline, which differs slightly in its technical characteristics from that used for bluefin tuna.

1.3 Albacore

In Malta, albacore are not targeted directly but are usually caught as by-catch during the bluefin tuna season and with swordfish from July to September. The total landings were over 4.5 t.

2. Research and statistics

Data on landings of these species have been collected through a special scheme at the Central Fish Market. A pilot study was carried out in 2003 on the use of logbooks on board vessels over 10 m. The logbook scheme aims at monitoring catches, effort and landings.

Malta is still actively taking part in the FAO-COPEMED project on the fisheries biology of bluefin tuna and swordfish. As a result of the evaluation processes carried out by the Standing Committee on Research and Statistics, ICCAT issues various recommendations concerning research every year, which are used as guidelines in the present project in order to establish the different objectives. The research results obtained by the FAO-COPEMED Project were presented to the ICCAT SCRS through the production of scientific documents.

Malta is also participating in the Bluefin Year Program (BYP) through tagging projects. During a cooperative program between Italy, Malta and COPEMED, a total of nine bluefin tuna were tagged using PAT tags (Wildlife Computers INC, Redmond, Washington, USA). The tags were programmed to detach themselves from the fish and float to the sea surface after intervals of 120 and 300 days. A selection of the archived data, including daily longitudes, times of sunrise and sunset and depth and temperature histograms, will be transmitted through the Argos satellite system, which determines the pop-up position of the tag. The first tagging activity was conducted off the northern eastern coast of Malta (35:58:40N and 14:25:57E) on July 20,, 2004 whilst the second tagging activity was conducted off the southeastern coast of Malta (35:50:72N and 14:35:05E).

Malta is a core participant in the initiative to study the domestication aspects of bluefin tuna through the Domestication of *Thunnus thynnus* (DOTT) 5th RTD Framework Program of the European Commission.

Malta has also set cages in its waters to conduct other research trials on bluefin tuna.

3. Implementation of ICCAT conservation and management measures

3.1 Catch limits and management

Malta has observed the 1994 ICCAT Recommendation on the bluefin tuna catch limits based on the 1993 or 1994 reference period and has regulated the fishery through local subsidiary legislation (SL 10.12) which lays down detailed licensing and operational regulations.

[1] Original report in English.

[2] Became Member State of the EU on May 1, 2004.

3.2 Trade restriction

Any ICCAT recommendations on trade restriction orders could also be enforced through other local subsidiary legislation (SL 138.02) that gives powers to the Director General to enforce any trade restriction orders.

3.3 Prohibition of aircraft

In May 2002 subsidiary legislation (SL 232.14) on the prohibition of aircraft as a support to fishing operations was published and such activities have been completely controlled since this date.

3.4 Effort control

The Fisheries Conservation and Control Division has not issued new fishing licenses for the bluefin tuna fishery in accordance with recommendations from ICCAT to restrict the increase in catch and effort.

3.5 Collection and submission of data

Scientific data and information on the fisheries of large pelagic species have regularly been submitted to ICCAT, along with documents related to the revision of the time series of landings data of both bluefin tuna and swordfish.

A trade monitoring scheme has been implemented whereby information is collected from purposely declaration formulated forms. With respect to the importation of bluefin tuna from foreign fleets intended for farming in Maltese waters, the FCCD has enforced the requirement for the buyer to submit an ICCAT Statistical Document from the flag state of the catching vessel.

4. Inspection schemes and activities

Malta has a team of Fisheries Protection Officers that carry out inspections on the activities of large pelagic species activities thus aiding the conservation of highly migratory species. These inspectors assure that fishing for bluefin tuna is only carried out following the Recommendations and Resolutions of ICCAT. A Vessel Monitoring System (VMS) will be installed on all vessels over 24 m and, later on, on all vessels over 15 m as well.

5. Other activities

5.1 Tuna farming

Malta follows Council Regulation No. 869/2004 in laying down control measures with respect to farming activities. During 2003, Malta had five registered bluefin tuna farms. The following procedures are followed in order to regulate the farming activities as closely as possible. Farms are requested to register yearly and to submit three forms containing all the information on the vessels involved during the transfer of bluefin tuna from purse seiners into cages. These forms aim to provide all the details on the purse seiners, place and date of catch, number of heads, total estimated weight, size ranges, weight of dead fish during transfer and mortality during transport. After the fattening period, separate forms have to be filled in order to provide information about the mortalities during the fattening period, the number of heads being harvested and the type of processing involved. Aquaculture Officers are sent during each transfer of bluefin tuna from the purse seiners into the cages in order to ensure that the forms are correctly filled and that the data being submitted are as coherent as possible. Malta also follows the ICCAT Recommendations in issuing Bluefin Tuna Statistical Documents and Re-Export Certificates.

5.2 Pilot fishery

There was also a pilot purse seine fishery bluefin tuna in 2003. In March 2003, the Fisheries Conservation and Control Division issued a Government Notice stating that it was ready to receive no more than four applications for the fishing of tuna with other fishing implements different from the one presently in use. Two licenses were issued for a trial period of two years. These licenses were issued to fishing vessels already registered in the Maltese Vessels Register.

ANNUAL REPORT OF MEXICO[1]

Luis Miguel López,[2] Rafael Solana[3]

1. Introduction

In 2003, Mexico continued to strengthen its legal and administrative framework with the aim of complying with the provisions established by the Commission. In this regard, work has been coordinated with the pertinent national authorities, aimed at strengthening actions regarding illegal, unreported and unregulated fishing, specifically satellite monitoring systems on vessels, the development of a national plan of action and updating the registry of vessels licensed to fish in the Convention area.

With regard to sales, particularly in the framework of the Statistical Document Program, information has been updated on the Mexican officials authorized to issue the sales certificates of bigeye, swordfish and bluefin tuna and the information from ICCAT Contracting Parties was distributed among the customs authorities of Mexico.

Likewise and considering that the statistical information is the principal means for the adoption and implementation of conservation and management measures, Mexico has made efforts to update and refine the database on the major species under the Commission's mandate.

Mexico has strengthened its participation in various meetings and working groups and hosted the 2003 Yellowfin Tuna Stock Assessment Session, which was held July 21 to 26 in Merida.

In 2003 the issues of interest to Mexico were to reiterate its request for the allocation of bluefin tuna and swordfish quotas to 110 and 200 t, respectively, the full application of the allocation criteria for fishing possibilities, the conservation of species such as sharks and marine turtles, actions aimed at combating illegal, unreported and unregulated fishing and their implementation and, as a last resort, trade restrictions.

2. The Mexican fishery

The major commercial fishery of tuna and tuna-like species is carried out by a small fleet of medium-sized vessels (with lengths between 20 and 26 feet) that operates in the southern area of the Gulf of Mexico. The fishing effort of this fleet is directed at yellowfin tuna (YFT) *(Thunnus albacares)*. In 2003, there were 30 active vessels which carried out a total of 413 fishing trips, reporting a catch of 32,875 yellowfin tuna individuals, equivalent to 1,362 t. This catch, in weight, represents 86% of the catch of tuna species and other highly migratory species caught by Mexico in the Gulf of Mexico. The total catch was similar to that of 2002, with a slight increase of 3,5%. The largest catch of this species was obtained in the summer months, with 39% of the total number of individuals caught. A higher fishing yield was also observed in those months, reaching nearly 2.7 individuals per 100 hooks.

In the Mexican longline fishery in the Gulf of Mexico other tuna species are also caught incidentally. The most important species, for their market value are: bluefin tuna *(Thunnus thynnus)*, whose catches increased to 18 t; this represented 1.3% of the total number of tunas caught. The highest number of bluefin tuna caught incidentally in this fishery was reported in the first three months of the year, with 52 individuals caught (75% of the fish caught). Other tuna species that were caught incidentally were: bigeye tuna *(Thunnus obesus)* with 4 t (0.3% of the total catch), skipjack tuna *(Katsuwonus pelamis)*, with 5.5 t (0.4% of the tuna catch), blackfin tuna *(Thunnus atlanticus)* with 10 t, and Atlantic bonito *(Sarda sarda)*, with less than 1 t.

In the Mexican longline fishery for yellowfin tuna in the Gulf of Mexico an incidental catch is also observed of highly migratory species, such as billfish and similar species. Swordfish *(Xiphias gladius)* is a species that is present in the incidental catch of this fishery. In 2003, 873 individuals were caught, which overall represented almost 40 t of the catch. This species was present practically the entire year, although a higher catch was reported in the summer months. Another species of importance in the incidental catch was sailfish *(Istiophorus*

[1] Original report in Spanish.

[2] Comisión Nacional de Acuacultura y Pesca. Av. Camarón Sabalo s/n esq. Tiburón Col. Sabalo Country Club, C.P. 82100 Mazatlán, Sin., México; llopezm@conapesca.sagarpa.gob.mx.

[3] Instituto Nacional de la Pesca; rafael_solana@conapesca.sagarpa.gob.mx.

albicans) with 2,490 fish, or about 45 t. Incidental catches of this species are higher in the summer months. Other species taken incidentally were Atlantic blue marlin *(Makaira nigricans)* with 1,481 individuals and Atlantic white marlin *(Tetrapturus albidus)* with 763 individuals caught.

With regard to by-catches of sharks, there was a total reported catch of 31 oceanic whitetip sharks *(Carcharhinus longimanus)*, 258 blacktip sharks *(Carcharhinus limbatus)*, 111 shortfin mako sharks *(Isurus oxyrhinchus)* and 378 individuals of other shark species.

In addition to the fishery described above, Mexico maintains artisanal fishing activity for small tuna species all along the coasts of the Gulf of Mexico and the Caribbean Sea. This fishery is carried out on minor boats with outboard motors. They fish are close to the coast at depths ranging from 1 to 12 fathoms. In 2003, there was a reported total catch of 10,960 t of small tunas. Atlantic Spanish mackerel *(Scomberomorus maculatus)* with 5,242 t, king mackerel *(Scomberomorus cavalla)* with 4,369 t and Atlantic bonito *(Sarda sarda)* with 1,274 t were among this group of species.

3. Research and statistics

Through the National Observer Program, statistical information is collected on catch, size, fishing effort and environmental conditions, among others. In 2003, 100% of the fishing trips were covered, complying with the *Norma Oficial Mexicana* NOM-023-PESC-1993 (Official Mexican Law) that regulates tuna longline fishing in the Gulf of Mexico (NOM-023-PESC-1993).

As concerns research defined by the establishment of databases, in 2002 the National Institute of Fishing organized working meetings with the Observer Program and the academic sector to coordinate activities that involve them in data processing. Following the relational database model, a *Sistema de Información de Atún del Golfo de Mexico* (SIA) (Gulf of Mexico Tuna Information Scheme) was initiated. This tool contemplates the storage and management of information generated by the fishery and collected by different sources such as the Observer Program and the official fishing logbooks. The conceptual model of the SIA considers two types of information with a total of 11 relationships. Currently this program permits the storage of information collected by scientific observers on board commercial fishing vessels.

With the information from the Observer Program research is being carried out on the dynamics of by-catches of non-target species, such as other tunas, billfish, sharks and sea turtles. The study consists of observing the possible relationships that catches of fish from these groups have on variables, such as hook type, set depth, season, and others. The objective is to monitor which of these variables influence by-catches, in order to decrease or eliminate such catches. Currently only partial results are available from the Exploratory Analysis of Data, with a time span-area perspective.

4. Implementation of ICCAT conservation and management measures

4.1 Catch limits and minimum sizes

As a result of the protection regime established by ICCAT, Official Mexican Law NOM-PESC-023-1996 has determined the incidental catch limits and has established other measures aimed at the protection of swordfish *(Xiphias gladius)*, sailfish *(Istiophorus albicans)*, various billfish species *(Makaira and Tetrapturus)*, sharks, and bluefin tuna *(Thunnus thynnus)*.

For each vessel the overall annual by-catch rate of the abovementioned species cannot exceed 20% of nominal catches (total catch which includes fish released live), obtained during a calendar year

With regard to the size limits, according to Official Mexican Law NOM-023, the incidental catches of bluefin tuna *(Thunnus thynnus)* can only be retained if the fish caught weigh a minimum of 30 kg or measures 115 cm fork length. Further, the Law establishes that fish weighing or measuring less than the limit established must be relesed in good condition for survival.

4.2 Closed season

There are currently no closed seasons applied to catches of yellowfin tuna, the target species, in the Gulf of Mexico and Atlantic Ocean.

4.3 Prohibitions on imports

Mexico does not maintain any fish trade of the species and the countries that have trade restrictions imposed by ICCAT.

4.4 Observer Program

For more than 10 years, Mexico has applied the Program of National Observers on-board tuna vessels that fish in waters of under its jurisdiction as well as on the high seas in the Gulf of Mexico. In order to reinforce these actions in 2002, Official Mexican Law NOM-023 entered into force which establishes that 100% of tuna longline fishing trips in the Gulf of Mexico must have an observer on-board to collect scientific information on the yellowfin tuna catches, by set, on the by-catch, and on fishing effort.

In 2003 scientific observers on-board the Mexican fleet continued as the direct source of information, which supported the quality of data on catches of tuna and other species that was transmitted to the Commission.

4.5 Vessel monitoring

As part of the actions aimed at combating, eliminating and halting illegal, unreported and unregulated fishing and in accordance with the *Recommendation by ICCAT Concerning the Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area* [Rec. 03-14], in 2003 a project concluded on the evaluation of satellite monitoring equipment, which is scheduled to be installed in 2005 on large and small tuna vessels on both Mexican coasts. As concerns the Atlantic, 100% installation of VMS is planned for the tuna fleets, shrimp vessels, and shark fishing vessels for 2006.

4.6 Measures to guarantee the effectiveness of the conservation and management measures

Some of the ICCAT conservation and management measures are regulated and observed in Mexico through the application, since 1997, of Law NOM-023-PESC, which regulates the adequate utilization of tuna species caught by longline vessels fishing in the federal jurisdictional waters of the Gulf of Mexico and the Caribbean Sea.

This law affects yellowfin tuna *(Thunnus albacares)*, as well as species taken as by-catch: bluefin tuna *(Thunnus thynnus)*, swordfish *(Xiphias gladius)*, sailfish *(Istiophorus albicans)*, billfishes (*Makaira* and *Tetrapturus* genera) and sharks.

The purpose of the law is to establish a fishing regime that guarantees the optimum utilization of the yellowfin tuna *(Thunnus albacares)* resources, using vessels equipped with tuna longline, as well as the conservation of this resource and the species susceptible to being taken as by-catch.

With regards to the actions aimed at combating IUU fishing, the National Plan of Action to Present, Discourage and Eliminate Illegal, Unreported and Unregulated Fishing was submitted for consideration and consultation.

In 2003 and in accordance with the Statistical Document Programs established by ICCAT, the amendments to the ICCAT Statistical Document forms for bluefin tuna, bigeye and swordfish, established in the Recommendation by ICCAT [Rec.03-19], were distributed among the Mexican custom authorities. Furthermore the competent Mexican authorities were requested to update the seals, signatures and information on the Mexican officials authorized to issue such documents.

Regarding the exchange of information with ICCAT, data have been provided concerning catches, compliance tables, information for entry on the record of vessels measuring more than 24 meters that have a license to catch tuna and tuna-like species in the Convention area, as well as other statistical information. Likewise, the ICCAT regulations have been distributed among the pertinent national authorities.

With regard to the Resolution [Res. 03-10] by ICCAT on shark fishing, it should be noted that in 2003 work was carried out on the development of the National Plan of Action for the Management and Conservation of Sharks,

Rays and Similar Species, which considers developing various programs, including systematic research, (training, data collection, data analysis and the establishment of a management plan) as well as programs on distribution, training, inspection and co-participative surveillance with the fishing sector and the public in general. Although the Plan is still being studied by the interested parties, actions are already being carried out, such as the development of a shark NOM corresponding to the conservation and management program, as well as the distribution of guides for identifying sharks in the Gulf of Mexico that are of commercial importance.

Likewise, an Official Mexican Law for the Management and Conservation of Sharks, Rays and Similar Species was developed and submitted to a consultative process. This law includes measures, such as the prohibition of finning, the protection of white shark, whale shark and basking shark, the prohibition of catches in determined seasons and areas, the use of species identification guides by fishers, inspectors and administrators, and the establishment of technical specifications on fishing methods in the coastal fishery (small boats), the medium depth fishery on each coast and the high seas fishery in the Pacific Ocean, among others.

With regard to the protection of sea turtles, Mexico has been carrying out a Protection Program for these species since more than 30 years ago, which includes protection, conservation and restocking measures. Furthermore, the permanent use of turtle exclusion devices (TEDs) is regulated and mandatory on shrimp trawlers that fish on both of the country's coasts.

Likewise and with the aim of carrying out yearly monitoring of activities concerning the protection of marine turtles when the season for shrimp fishing begins, inspectors from the *Procuraduría Federal de Protección para el Medio Ambiente* (PROFEPA) (Federal Agency for the Protection of the Environment) verify that vessels have turtle exclusion devices and comply with the regulations. For this, the *Secretaría de Marina* (Maritime Secretariat) oversees the use such devices on the high seas.

These efforts to protect, conserve and encourage the survival of sea turtles are accompanied by the commitment acquired by Mexico as a Party to the Inter-American Convention for the Protection and Conservation of Sea Turtles.

4.7 Sport fishing

In September 2003, the document regarding "Strategic Lines of Action, 2003-2006 for Sport Fishing" was concluded. It presents an information system that describes, at the framework level, the characteristics of such actions and formulates a work plan with objectives, goals, and a calendar of commitments for the development of activities.

On the other hand, these have already been presented to the Presidency of the National Committee for Responsible Fishery, as agreed with clubs, associations, tourist services, and the scientific fishing community, for discussion in order to amend Law 017-PESC-1994 which regulates sport fishing in Mexico.

Furthermore, through the Fishing Sub-delegations of the Mexican States, the signing of Conventions for the Distribution of Sport Fishing Permits is promoted as one of the most adequate instruments, under current legal conditions, to exercise more control over this activity.

5. Inspection schemes

In 2003, in order to reinforce inspection and surveillance activities, all of Mexico's delegations were supported with resources for fuel, vehicle maintenance, registration fees, and travel expenses.

There were 174 Federal Fishing Officers as well as personnel from the Maritime Secretariat assigned to carry out technical work and oversee safety work on the vessels in the Atlantic Ocean. In addition, 47 vehicles (trucks and boats) were purchased to support this work.

ANNUAL REPORT OF MOROCCO[1]

A. Fahfouhi[2], T. El Ktiri[2] and A. Srour[3]

1. Introduction

Fishing for tunas and tuna-like species has always been an important activity of the maritime fishing sector and continues to occupy an important place in the national economy of this sector.

In effect, due to Morocco's geographic position and its temperate climate, Moroccan territorial waters constitute either the northern limit of distribution of a large number of tuna species or an area where large tunas must pass on their migrations between the Atlantic and the Mediterranean.

Tuna fishing is carried out seasonally, during the two passages of tunas along the coasts of Morocco, which occur from the Atlantic to the Mediterranean in April-June and from the Mediterranean to the Atlantic in July-November.

2. Information on the fisheries

2.1 Tuna fishing

The major tuna species caught by Moroccan fishers are bluefin tuna, bigeye tuna, swordfish, yellowfin tuna and small tunas (skipjack, Atlantic bonito, frigate tuna, etc.) as well as other species.

The landings are comprised of various species. Thus, large size bluefin tuna (+120 kg) are landed at the ports of northern Morocco whereas species of average size (between 30-60 kg) are landed more in the south.

As concerns bigeye tuna, the southern ports of Morocco continue to be the main landing ports of this species (the ports of Boujdour, Laâyoune, etc.).

Swordfish continue to be landed at the Mediterranean ports, in particular, at the level of the maritime district of Tanger.

Small tunas are found in the landings of the artisanal and coastal fishing vessels at practically all the ports of Morocco.

2.2 Fishing areas

Bluefin tuna, bigeye tuna and small tunas (Atlantic bonito, frigate tuna, skipjack tuna) are usually fished off the Atlantic coast. Albacore and yellowfin tuna were also caught in the Atlantic.

The principal swordfish fishing areas are located in the Mediterranean.

The major landing ports of tuna species are Tanger, El Hoceima, M'diq, Nador and Ras kebdana in the Mediterranean, and Agadir, Boujdour, Casablanca, Dakhla, Safi, Mohamedia, El-Jadida, Mehdia, and Larache in the Atlantic.

2.3 Fishing methods

Tunas and tuna-like species are caught mainly by four fishing methods:

2.3.1 Trap

This gear mainly targets bluefin tuna and small tunas. In 2003, 11 traps were set in national waters, one of them in the Mediterranean. The former was not put into service. In Morocco, the active period of the traps is between the months of April and July.

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[1] Original report in French.

[2] Ministère de la Agriculture, du Développement Rural et des Pêches Maritimes, Département des Pêches Maritimes.

[3] Institut National de Recherche Halieutique.

2.3.2 Hand line

This gear is used mainly by an important community of artisanal fishers that have a fleet of a hundred artisanal vessels (length less than 5 m and GRT <2 t).

The fishing activity with this gear targets large-sized bluefin tuna and sometimes bigeye tuna in the southern regions. Fishing is carried out during the entire year, with a 2-3 month halt in the activity each year.

2.3.3 Purse seine

This fishing technique is utilized by about 300 purse seiners that only fish tunas occasionally and as by-catch. This activity is carried out mostly in the Atlantic and the species caught, mainly large tunas, show sizes and weights lower than species caught by the other fishing methods, such as trap.

It should be noted that this method obtains important quantities of by-catches, comprised essentially of small tunas.

2.3.4 Driftnet

About 300 coastal vessels of the "longline" and "coastal longline" type fish with this gear. About 70% of these are based at Tanger and fish in the Mediterranean.

These vessels also fish swordfish during their migrations across the Moroccan coasts during the period extending from April to November.

It should also be noted that these vessels incidentally catch bluefin tuna with longline.

It is important to recall that the majority of these vessels are small-sized (14-16 m).

3. Catches

The national fishing statistics on tunas and tuna-like species are shown in the attached tables.

In 2003, the catches of tunas and tuna-like species amounted to 10,104,000 kg (10,104 t), which is a decrease of 19% as compared to catches in 2002.

This decrease is mainly due to the decline in the catches of small tunas (-39%) as well as to the unfavorable weather conditions during the time of the setting of the traps.

In terms of weight, bigeye tuna, bluefin tuna and swordfish represent, 8%, 27% and 34%, respectively, of the total weight.

Albacore and yellowfin tuna represent 0.7 and 1%, respectively, of the total weight.

As regards small tunas, these represent 26% of the total weight.

3.1 Bluefin tuna fishing

In 2003, bluefin tuna catches reached 2,557,000 kg, or 2,557 t.

The catches in the Mediterranean amounted to 760 t, which is 30% of the total catch of this species.

Hand line fishing this year, carried out in the Mediterranean, contributed about 570 t, which represents 22% of the total catches of bluefin tuna and corresponds to an increase of this fishing of about 40% of the number of small artisanal vessels that targeted this species, due to fishing restrictions in other fisheries (cephalopods).

The traps (10 active in 2003 of 11 traps set) contributed approximately 517% of the total bluefin tuna catches, whereas in 2001 they represented about 87% of the total catches of bluefin tuna in weight, with a lesser number of active traps (5).

Within the framework of improving the collection of scientific information, the number of bluefin tuna caught by the traps sent along the Atlantic coast was 6,200 fish, with a total weight of about 1,305 t.

Purse seine fishing contributed about 20% of the total catches in the Atlantic and 6% in the Mediterranean, which represents, for this fishing zone, a slight increase in the catches by this gear, as compared to the previous year.

3.2 Swordfish fishing

In 2003, swordfish catches reported a slight decrease as compared to the average of the 1997-2002 period, which is 3,652 t, and also reporting a total catch of 3,629,000 kg or 3,629 t.

Swordfish catches are broken down as follows:

- Atlantic: 329 t; and
- Mediterranean: 3,300 t

The catches made in the Mediterranean comprised 91% of the total swordfish catches by Morocco during the course of this year. The use of driftnets contributed with approximately 47% of the national catches, as compared to 63% in the previous year.

Longline fishing contributed about 52% of the total catches (1,893 t), of which 1,670 t were caught in the Mediterranean and 233 t in the Atlantic.

Longline (LL) fishing represents about 36% of the total catches whereas hand line catches represented 1%.

3.3 Bigeye tuna fishing

Bigeye tuna fishing in 2003 showed a decline in catches of about 2.6% as compared to 2002, from 913,000 kg to 889,000 kg.

This species is caught mainly by the coastal fleet vessels and the artisanal fleet vessels that only fish in the Atlantic in the Moroccan EEZ.

3.4 Small tunas fishing

The catches of tunas showed a significant decrease this year of about 39%, going from 4,543,000 kg to 2,770,000 kg (2,770 t).

The catches of these species, by gear and by area, are summarized in the attached **Table 5**.

3.5 Catches by foreign vessels (2002)

Within the framework of a Morocco-Japan fishing agreement, the only tuna fishing vessel that operated in the Moroccan EEZ in 2002 reported a catch of 129,600 kg, comprised mainly of bluefin tuna (2,300 kg), bigeye tuna (60,000 kg), yellowfin tuna (46,000 kg), sailfish (1,000 kg), and other species (20,300 kg).

4. Implementation of conservation and management measures adopted by ICCAT

4. 1 Minimum size limits

In accordance with the ICCAT Recommendations, the Ministry of Maritime Fishing prohibits the catch of under-sized fish, according to a ministerial decree that modifies and completes the decree of October 3, 1988, which establishes the minimum commercial size of species fished in Moroccan waters.

4.2 Limit on fishing effort

In application of Circular 3887 of August 18, 1992, investments in vessel construction were suspended since that date in order to guarantee compatibility between fishing effort and the level of the state of the stocks.

Furthermore, Circular No. 12361 of December 9, 1999, which establishes the conditions for granting and extending the authorizations for reconverting, reforming and the replacement of fishing vessels, permits carrying out some technical changes to the active fishing vessels.

4.3 Monitoring of fishing activities

The major objectives of the monitoring of fishing activities are to oversee the strict application of the regulations in force, to sanction the offenders and, at the same time, to contribute to the management of the resource, supplementing instruments already in place, such as the technical measures, and limits on catches and fishing effort.

Strict monitoring is applied to the overall fishing sector and mainly centers on fishing activities, transshipment, landing, commercialization, transport and storage of the fishing products, as well as on the reporting of the landings and sales.

At-sea monitoring centers on verifying the characteristics of the fishing gear (monitoring of the conformity of the gear and the mesh size in relation to the target species and the geographic area), on the inspection of fishing activities (logbooks, legality of the fishing activity with regard to the fishing period and the quota), and the cargo (minimum size, quantities by species).

The statistical information collected during these controls also permits monitoring of the catch levels.

The organization of this monitoring is carried out in the following manner:

4.3.1 At-sea monitoring

This is carried out by the maritime control authorities and by the members of the corps of scientific observers.

The resources available to the controllers are: surveillance vessels, planes and satellite monitoring (GPS).

Monitoring is carried out on board the vessels and at the time of the catch. The entries reported in the fishing logbooks are monitored as well as compliance with the technical measures (size, species, gears, fishing areas and quotas).

As concerns the traps, it should be noted that a scientific observer is constantly present, whose mission is to monitor the sizes, species and catch amounts, and to collect biological data.

At the end of the fishing season, generally after the lifting of the trap, the observer presents a detailed report on this trap activity.

4.3.2 Land-based monitoring

These are carried out by officers from the Ministry of Maritime Fishing, officers from the National Office of Fishing and by representatives of the corps of Scientific Observers who make up the Monitoring Commissions.

These inspections can be directed or random. They are carried out at landing, during transport of the product, during processing and during commercialization.
The documents that can be used for the monitoring are: landings reports, transport documents that are also subject to verification by the authorities that monitor highway traffic, and sales records.

4.4 Sighting scheme and satellite monitoring of fishing vessels (DRS/GPS)

Within the framework of the rational management of the fisheries resources and with an aim towards assuring better monitoring of the fleet activity over a large geographic area, the Ministry of Maritime Fishing has created a structure for the utilization of data transmission systems by satellite, by GPS as well as by other systems.

Likewise, and with an aim to contribute effectively to the fight against illegal, unreported and unregulated fishing (IUU) in the ICCAT Convention area, supplemental monitoring mechanisms are being finalized and implemented to complete the electronic systems already in place by the authorities in charge of monitoring fishing activities.

Finally, it should be noted that the Ministry of Maritime Fishing is the headquarters of the National Monitoring Center for Fisheries.

4.5 Trade data

With regard to exports, crosschecking is carried out in collaboration with the services of the exchange office and the customs administration, which are under the Ministry of Economy and Finance, to verify the amounts declared for export.

5. Research activities

In 2003, the *Institut National de Recherche Halieutique*, INRH (National Institute for Fisheries Research), through its Regional Center in Tanger, continued the regular activities, particularly those carried out with the coordination of the COPEMED project and concern studies on the biology and exploitation of tunas. These studies centered, more specifically, on the biological characteristics of swordfish and bluefin tuna (indices of abundance, estimates of fishing effort, population studies, etc.).

Furthermore, within the framework of the Action Plan for the progressive eradication of driftnets, some scientific teams contribute notably to the collection of scientific data on the swordfish fisheries in the region the strait.

Table 1. Statistics on tuna catches in 2003 (in t).

Species	*Total*
Yellowfin tuna (YFT)	108
Albacore (ALB)	81
Bigeye tuna (BET)	889
Bluefin tuna (BFT)	2,557
Atlantic black skipjack (LTA)	77
Skipjack tuna (SKJ)	524
Atlantic bonito (BON)	1,013
Frigate tuna (FRI)	441
Plain bonito (BOP)	715
Swordfish (SWO)	3,629
Others	70
Total	10,104

Table 2. General fishery statistics, by area (in kilograms, kg).

Species	*Atlantic*	*Mediterranean*	*Atl. + Med*
Bluefin tuna	1,797,000	760,000	2,557,000
Bigeye tuna	889,000	0	889,000
Swordfish	329,000	3,300,000	3,629,000
Albacore	81,000	0	81,000
Yellowfin tuna	108,000	0	108,000
Small tunas	2,417,000	353,000	2,770,000
Others	48,000	22,000	70,000
Total	**5,668,000**	**4,436,000**	**10,104,000**

Table 3. State of bluefin tuna (BFT) catches, by area and by gear, for the 1994-2003 period (in metric tons, t).

BFT	*Gear*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Atl	Trap	494	210	699	1,240	1,615	852	1,540	2,330	1,670	1,305
Atl	PS	213	458	323	828	692	709	660	150	884	490
Atl	LL	0	0	0	0	0	0	0	0	0	02
Atl	Gill	13	10	13	0	34	30	28	17	11	00
Med	Hand	373	816	541	455	634	600	650	195	407	570
Med	Gill	16	92	30	17	18	6	6	9	14	20
Med	PS	0	0	0	0	0	0	0	0	0	170
Med	LL	0	0	0	0	0	0	0	0	0	0
Med	Trap	703	127	15	63	35	30	39	307	0	0
Tot-Atl		720	678	1,035	2,068	2,341	1,591	2,228	2,497	2,565	1,797
Tot-Med		1,092	1,035	586	535	687	636	695	511	421	760
Total		**1,812**	**1,713**	**1,621**	**2,603**	**3,028**	**2,825**	**2,923**	**3,008**	**2,986**	**2,557**

Table 4. Swordfish (SWO) catches, by area and by gear, for the period 1994-2003.

SWO	*Gear*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Atl	Trap	11	12	7	5	2	13	3	7	4	7
Atl	PS	5	7	98	10	10	11	22	9	1	1
Atl	Gill	13	32	322	13	179	60	51	243	64	98
Atl	LL	7	28	35	239	0	35	38	264	154	223
Med	LL	527	169	273	245	323	259	205	754	1,149	1,670
Med	Gill	2,109	1,518	2,461	4,653	2,905	2,979	2,503	2,266	2,230	1,629
Med	PS	0	0	0	0	0	0	0	4	0	0
Med	Hand	0	0	0	0	0	0	0	0	0	0
Med	Trap	18	9	0	2	0	0	0	2	0	1
Tot-Atl		36	79	462	267	191	119	114	523	223	329
Tot-Med		2,654	1,696	2,734	4,900	3,228	3,238	2,708	3,026	3,379	3,300
Total		**2,690**	**1,775**	**3,196**	**5,167**	**3,419**	**3,357**	**2,822**	**3,550**	**3,602**	**3,629**

Table 5. Catch statistics on small tunas, by gear, for 2003 (in t).

Species		*Atl. black skipjack (LTA)*	*Atlantic bonito (BON)*	*Skipjack (SKJ)*	*Frigate tuna (FRI)*	*Plain bonito (BOP)*	*Total*
Atl	Trap	0	1	1	4	0	6
Atl	Hand	0	0	0	0	0	0
Atl	Gill	6	64	113	38	1	222
Atl	LL	0	0	0	0	0	0
Atl	PS	70	863	409	142	705	2,189
Med	Trap	0	0	0	0	0	0
Med	Hand	0	0	0	0	0	0
Med	Gill	0	0	0	246	9	255
Med	LL	0	0	0	0	0	0
Med	PS	1	85	1	11	0	98
Tot.Atl.		76	928	523	184	406	2,417
Tot.Med.		1	85	1	257	715	353
Total		**77**	**1,013**	**524**	**441**	**715**	**2,770**

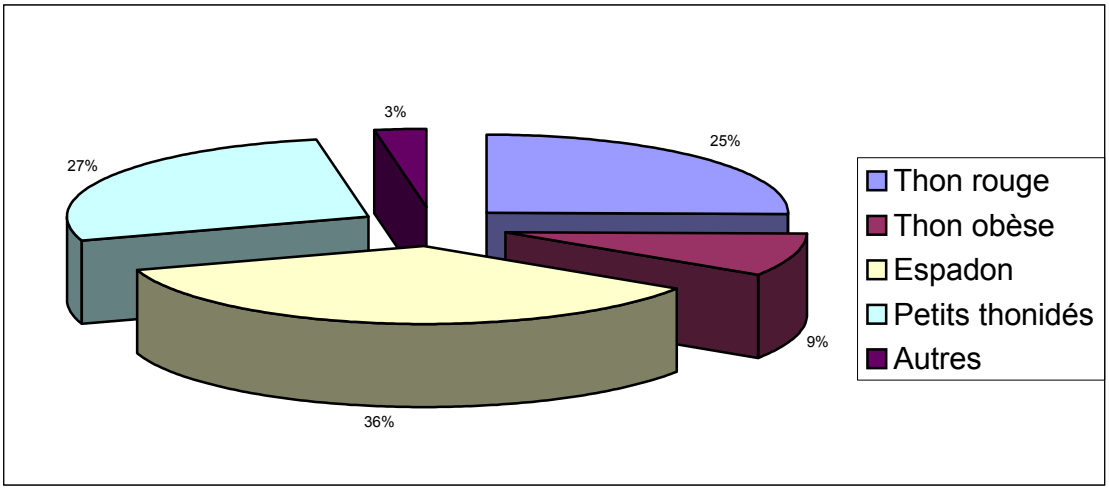

Figure 1. General statistics on fishing for 2003.

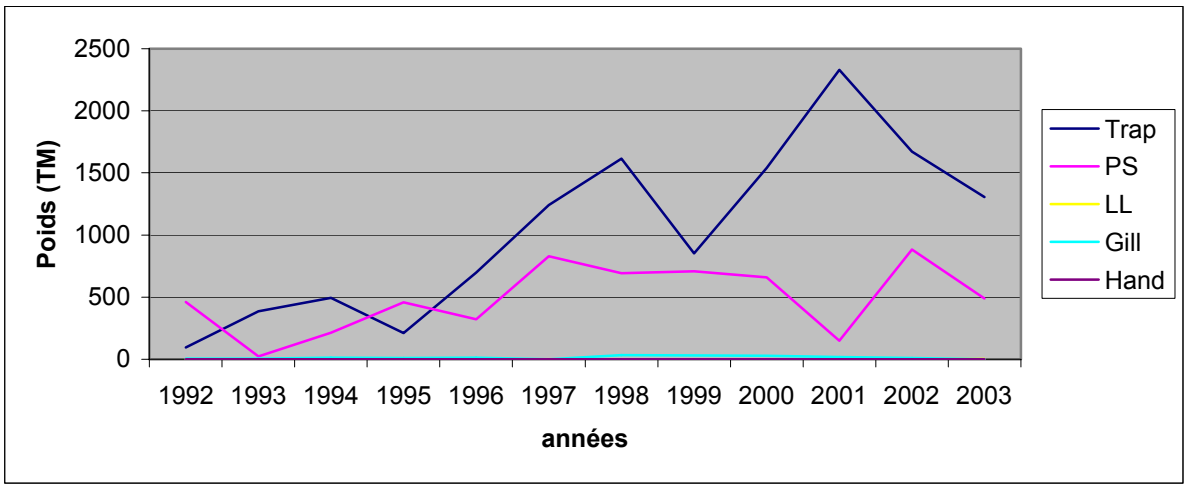

Figure 2. Bluefin tuna (BFT) catches by gear in the East Atlantic.

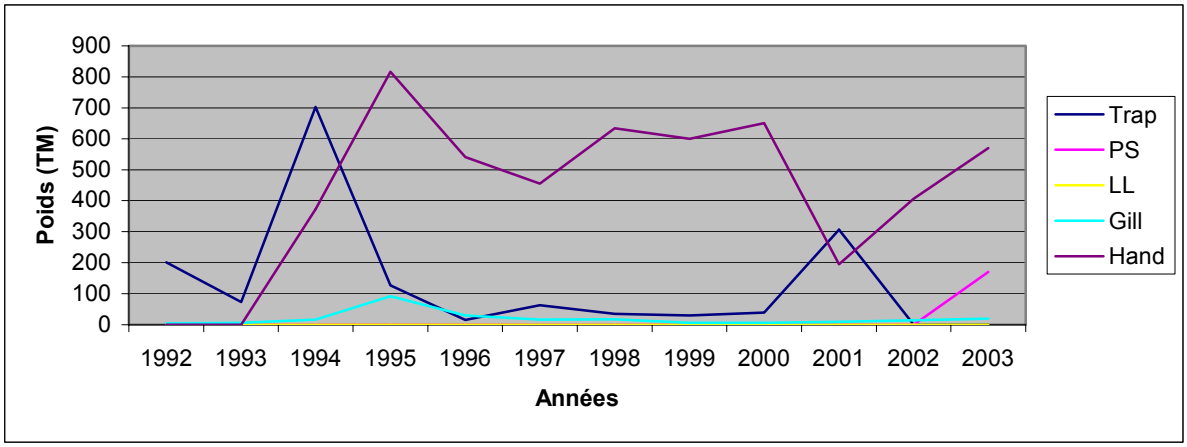

Figure 3. Bluefin tuna (BFT) catches by gear in the Mediterranean.

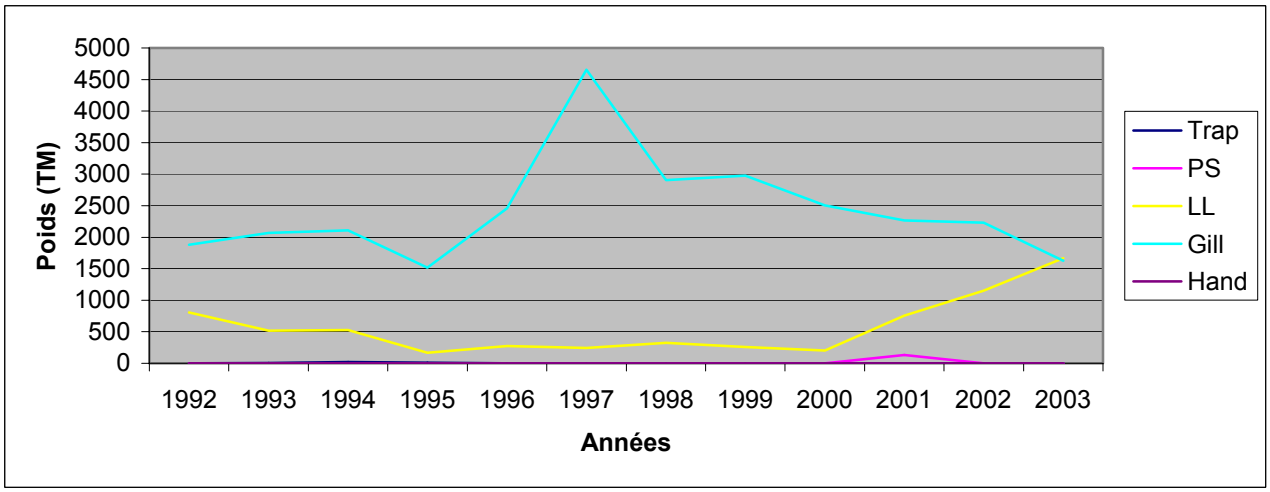

Figure 4. Development of swordfish (SWO) catches in the Mediterranean, by gear.

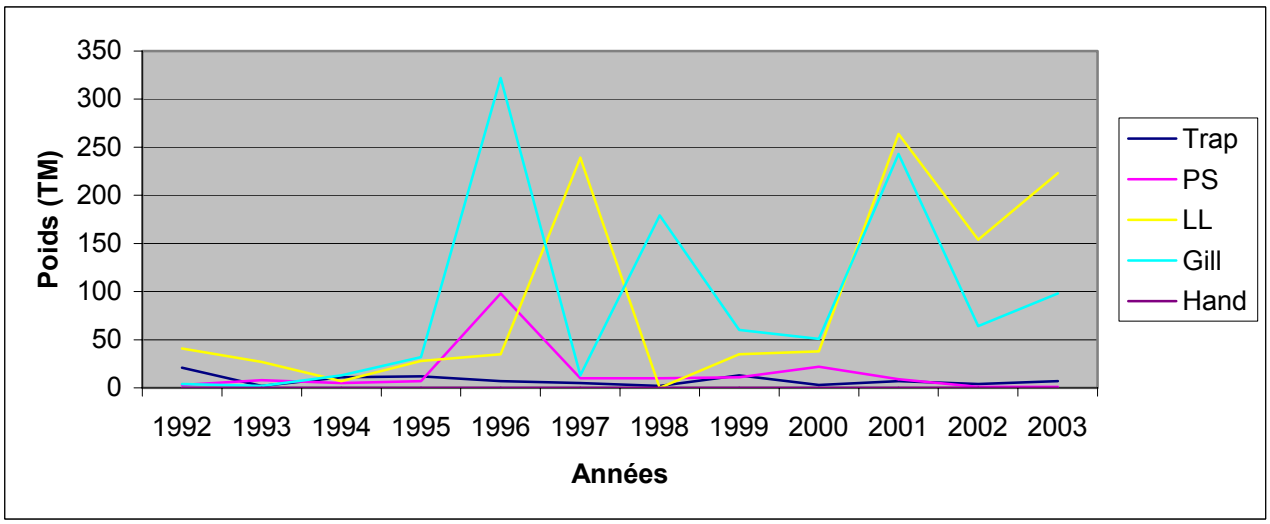

Figure 5. Development of swordfish (SWO) catches in the North Atlantic, by gear.

ANNUAL REPORT OF THE PHILIPPINES[1]

As new member, this is the first time Philippines presents an Annual Report to ICCAT and this report will include a brief description of the tuna fisheries in Philippines.

1. Description of the Philippine tuna fisheries

Philippine waters have been a major tuna producer in the western and central Pacific Ocean since the early 1970s with the successful development of purse seine fishing in conjunction with the use of "payaos" (anchored fish aggregating devices). In recent years, over 200,000 t of tuna or about 10% of the western and central Pacific Ocean tuna catch has been attributed to the domestic fisheries of the Philippines.

Most of the tuna catch are taken by purse seine, ring net and handline gears with a variety of other artisanal gears also in use, such as gill net, troll, multiple handline and mini-longline.

The tuna fisheries are usually divided into two sectors: the municipal sector, involving vessels less than 3 GRT and the commercial sector, with vessels above 3 GRT, and are prohibited from fishing in municipal waters less than 15 kilometers from the shoreline. The commercial sector provides the majority of the catch of oceanic tunas (146,000 t in 2002, or 70 % of the official tuna catch). This is primarily taken by larger purse vessels targeting skipjack and yellowfin tunas, whereas the municipal sector catch, with handline as the predominant gear, takes similar quantities of oceanic and neritic tunas. Much of the municipal catch is utilized as fresh fish for local consumption whereas most of the municipal catch of skipjack tuna and small yellowfin tuna is for the canneries for processing and export. The larger yellowfin and bigeye tunas taken by handline are exported to the sashimi market. The handline vessels range widely in their operations, in some cases beyond Philippine waters.

Since the mid 1980s, larger purse seine vessels operated by Philippine companies have fished in neighboring countries under access, joint venture agreements or as local companies, with most of their catch being landed in Philippine ports for processing. Catches are also taken in high seas areas by purse seine and longline vessels. The passage of the Philippine Fisheries Code in 1998 providing for incentives for Philippine fishing vessels operators to fish further in the Philippine EEZ and beyond has encouraged them to venture in other oceans such as the Atlantic and Indian Oceans. Thus, in 1998 a number fishing companies taking advantage of the incentives provided under the Fisheries Code acquired several longline fishing vessels through outright purchase or through bareboat charter.

2. Compliance with ICCAT conservation and management measures

For the implementation of the relevant ICCAT conservation and management measures, Philippine flagged fishing vessels are required under the Fisheries Code to first secure an International Fishing Permit and Certificate from the Philippine Bureau of Fisheries and Aquatic Resources (BFAR) before they can operate outside Philippine waters. They are also required to keep a daily record of fish catch and spoilage, landing points, and the quantity and value of fish caught and off-loaded for transshipment, sale and/or other disposal. The detailed report should be submitted to the BFAR for validation. Failure to comply with this requirement will result in the non-renewal of their Commercial Fishing Vessel and Gear License (CFVGL) and International Fishing Permit.

The Fisheries Code also provides for the establishment of a monitoring, control and surveillance system to ensure that the fisheries and aquatic resources in Philippine waters and adjacent waters are judiciously and wisely utilized and managed on a sustainable basis. The BFAR is now negotiating with some foreign companies that deal with vessel monitoring systems (VMS), but due to the prohibitive cost and coupled with the country's dire financial straits, this might not come about soon.

[1] Original report in English.

3. Fisheries information on Philippine vessels in the Atlantic Ocean

In 2003, there were 24 Philippine flagged longline vessels authorized to fish in the ICCAT Convention area (the list of vessels has already been provided to ICCAT). However, only 5 vessels are allowed to fish in the area in any given time to comply with the ICCAT Recommendation on the matter. It is noted that last year a total of 1,061.54 t of bigeye and yellowfin tunas and a by-catch of swordfish were taken in the Atlantic Ocean by Philippine vessels, which is slightly higher than the 2002 catch.

Last year, only three (3) species were caught. These are: yellowfin tuna, bigeye tuna, swordfish and some others; yellowfin: about 153.62 t were caught by Philippine fishing vessels, an increase of 24 t; bigeye: a total of 855.21 t were caught, which was higher than the 2002 catch; swordfish: the catch of 52.065 t was a by-catch.

4. Research and statistics

The Bureau of Agricultural Statistics of the Department of Agriculture is the agency mandated to collect/gather official fisheries statistics, among others. However, the Bureau of Fisheries and Aquatic Resources is the government agency collecting and collating data insofar as those reported by fishing vessels operating in the Atlantic and Indian Oceans are concerned. The data collected are reported to ICCAT annually through Task I and Task II, including the list of fishing vessels.

5. Tuna Statistical Document Program

The Philippines, since July 2002, has implemented the ICCAT Tuna Statistical Document Program for Bluefin, Bigeye and Swordfish for all catches exported by Philippine fishing companies, as required by the Recommendations adopted by ICCAT.

As a new member of ICCAT, the Philippines will strive to comply with all the conservation and management measures adopted by the Commission. Rest assured, therefore, of its commitment towards the sustainability of the tuna resources in the Atlantic Ocean as well as in other oceans, the Philippines is also a member of the Indian Ocean Tuna Commission (IOTC) and is now in the process of ratifying the Convention for the Conservation and Management the Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC), and is a Cooperating Non-Member of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT).

ANNUAL REPORT OF RUSSIA[1]

1. Introduction

In Russia, work relevant to research on tunas and tuna-like species is carried out by the Atlantic Scientific Research Institute of Marine Fisheries and Oceanography (AtlantNIRO), Kaliningrad, and the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO), Moscow. These organizations collect catch and biological statistics and analyze these data, provide operative fishery monitoring, prepare proposals and recommendations required on tuna-catch vessels operation. The statistical data in this report are presented on a calendar year basis.

2. The fishery in 2003-2004

No specialized tuna fishery was carried out in 2003 due to purse seiner repairs. The vessels of the trawling fishery caught as by-catch 191 t of tunas: 128 t of bullet tuna *(Auxis rochei)*, 50 t of frigate tuna *(Auxis thazard)*, 13 t of Atlantic black skipjack *(Euthynnus alletteratus)*, including 185 t in the central east Atlantic and 6 t in the southeastern Atlantic Ocean. Atlantic bonito *(Sarda Sarda)* catches amounted to 461 t (445 t in the central east Atlantic and 16 t in the southeastern Atlantic Ocean), scomberomorus unclassified (*Scomberomorus* spp.) –15 t in the central east Atlantic. The by-catch of tunas and Atlantic bonito decreased from 2283 t in 2002 to 652 t in 2003. The main reason for the decrease is the general reduction of the total Russian catch in the central east Atlantic by 64%.

During the first half of 2004 no tuna-catching seiners carried out fishing. According to the preliminary data for the first half of 2004, vessels of the trawl fishery caught 95 t of tunas (51 t of bullet tuna, 44 t of frigate tuna), and 21 t of Atlantic bonito in the central eastern Atlantic**.**

3. Research and statistics

The temperature conditions impact on the formation of yellowfin tuna *(Thunnus albacares)* and skipjack tuna *(Katsuwonus pelamis)* fishable aggregations in the tropical Atlantic Ocean. Statistical data of the Russian purse fishery for 1980-2000 were used as the material for the work. The results of daily vessel reports (17,606 records), including coordinates of vessels operation areas, total catch per vessel by 24-hour periods, catch species composition, type of vessels activities (searching, fishing, traveling, bunkering, landing, idle time). Besides, the original catch and biological data obtained by AtlantNIRO scientists in research and searching expeditions and by observers in fishing cruises during 1959-2000 were used. Longline, trawl, fishing pole, troll, drifter catches, where skipjack and yellowfin tunas occurred, were studied. These data contributed to the information on the distribution of tunas and the fishery in areas where neither specialized fishery has been carried out by the Russian vessels. Actually, the whole equatorial and tropical zones of the Atlantic Ocean from 20°N to 20°S have been covered by research.

The data analysis revealed that abundant aggregations of skipjack form when mean water temperature in the layer from 0 to 100 m is within 19.7-22.7°C, while the estimated standard deviation of water temperature from the mean by depths is within 5.1-6.3°C. For yellowfin tuna the optimal range of mean sea water temperatures is 19.5-22.7° C, while the optimal range of standard deviations was 4.9-6.5°C. A possibility to apply the operative data on sea surface temperature obtained from satellites in indirect assessment of spatial-temporal characteristics of tuna aggregations distribution areas has been demonstrated.

In 2003 and January-July 2004 observers collected data on the occurrence of tunas and tuna-like species in catches of trawlers fishing in the economic zones of Mauritania and Morocco. The species and length composition and proportion of tunas in the total fish catches were determined.

In laboratories, the sampling, systematization and analysis of the species and quantitative composition of tunas in the trawl catches taken by Russian vessels from the central east Atlantic during 2002-2003 were fulfilled. The observation data obtained by AtlantNIRO scientists at research and trawl fishing vessels during different seasons were used. The results of five expeditions in the economic zones of Mauritania and Morocco were processed. Skipjack, frigate tuna, bullet tuna, Atlantic black skipjack, and Atlantic bonito were recorded as by-catch.

[1] Original report in English.

Depending on the fishing area and season of the trawl vessel operations, the by-catch of tunas and Atlantic bonito varied from 0.1 to 4.0%.

4. Implementation of ICCAT conservation and management measures

In the trawl fishery within the areas where tunas and tuna-like species occurred in catches, ICCAT requirements and recommendations concerning the ban on species under quotas and restriction of young yellowfin and bigeye tuna catches were applied. To improve the quality of statistics, observers on the trawl vessels operating in the Convention area collect data on the by-catch of tunas and tuna-like species on the annual basis.

ANNUAL REPORT OF SENEGAL[1,2]

Youssouph Diatta[3] and Taïb Diouf[4]

1. Fisheries parameters

1.1 The industrial fishery

Senegal has a coastal region of 718 km with an exclusive economic zone (EEZ) of approximately 60,000 square kilometers and 400 square squared of continental waters. Senegal's very privileged geographic location has allowed for the development of maritime fishing.

Various maritime resources, including tunas, are abundant along the Senegalese coast. Tuna fishing is centered mainly on three species: yellowfin tuna-YFT (*Thunnus albacares*), skipjack tuna-SKJ *(Katsuwonus pelamis)* and bigeye tuna-BET *(Thunnus obesus)*. These species are caught by a baitboat fleet with Dakar as the base port, where all catches are landed.

However, there are other coastal tuna species, such as Atlantic black skipjack-LTA *(Euthynnus alletteratus)*, West African Spanish mackerel-MAW (*Scomberomorus tritor)* and Atlantic bonito-BON *(Sarda sarda*), as well as billfish species, such as swordfish-SWO (*Xiphias gladius)*, Atlantic blue marlin-BUM (*Makaira nigricans)* and sailfish-SAI *(Istiophorus albicans*) that are of interest in tuna fishing but they are caught by artisanal fishing and, to a lesser extent, by sport fishing.

Table 1 presents the catches by species, fishing effort and catch-per-unit-of-effort (CPUE) of Senegalese baitboats from 1991 to 2003 (there were no boats registered in 1992).

1.1.1 The industrial fleet

From 1996 to 2002, Senegal registered a total of 21 vessels (**Table 2**).

1.2 Other fisheries

1.2.1 The atisanal fisheries

The artisanal fisheries catch small tunas using hand line, troll and purse seine (Atlantic black skipjack, Atlantic bonito and West African Spanish mackerel) as well as billfish species (sailfish and marlins). The landing statistics of these species are given in **Table 3**. The total catches of small tunas decreased from 1997 to 2002, from 8,961 t to 4,113 t, all species combined. Sailfish catches also decreased in 2002, from 877 t to 240 t. This important decrease is due to the low variation in abundance of these resources, to lesser interest of the fishers in these species, and to a decline in fishing effort.

It should also be noted that, taking into account that CRODT samplers do not distinguish between sailfish and swordfish, there is considerable possibility that sailfish catches included in the table are comprised of a mixture of swordfish and sailfish commonly known as swordfish sailfish or simply sailfish. Furthermore, sampling is rarely carried out on these species.

1.2.2 The artisanal fleet

A census of the canoes and the infrastructures related to the artisanal fishery carried out from October 21 to 25, 2002 showed the results provided in **Table 4**.

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[1] Original report in French

[2] Became a Contracting Party to ICCAT on December 21, 2004.

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1.3 Sport fishing

Sport fishing in Senegal targets marlins, sailfish and swordfish during the fishing season that runs from May to November. In Senegal, the sport fisheries are well monitored. The majority of the catches are assessed in number and no sampling is carried out on these species. **Tables 5, 6** and **7** present the catches, effort and CPUE of sailfish and marlins from 1996 to 2000. The tables also show that the major sport fishing season, which reported the most important catches, was from June to August.

2. Statistical data collection schemes

The tuna statistical collection scheme is based on detailed daily sampling carried out on by vessel captains at each landing, supplemented by the effective catches from different sources (factories, boat owners, DPM. This work is carried at the fishing port of Dakar by four technicians (three in charge of sampling and one for data collection). The overall information is collected, coded and entered into a computer, and then centralized in Abidjan and Dakar after verification and correction. Data management is carried out in collaboration with the IRD, the IEO, which finance the activities through the EU financing.

Sampling is also carried out on the landings at port and in the factories.

In addition, tags are recovered by boat owners and collected in order to be sent each year to the ICCAT Secretariat.

This system results in the collection of the data necessary for a rational management of the fishery.

Regarding the artisanal fishery, data collection is carried out in practically the same way but at different landing sites. Sampling is rarely carried out on small tunas and sailfish. Further, the CRODT samplers do not make a distinction between sailfish and swordfish. Thus, it is very possible that the aforementioned sailfish catches therefore comprise a mixture of swordfish and sailfish commonly known as swordfish sailfish or simply sailfish.

For sport fishing, every year Senegal collects catch information, in number, from the sport fishing centers.

2.1 Sampling

In 2003, multi-species sampling was carried out 303 fish from the overall baitboat and purse seine fisheries and from cargoes that were landed at Dakar, as compared to only 178 in 2002. This sampling **(Table 8)** was carried out by a team of three samplers.

3. The canneries

Currently, only three canneries are in operation (SE-SNDS, PFS and INTERCO); however they do not operate regularly **(Table 9)**.

In the framework of fishing agreements between Senegal and the EU, the mandatory landings of 5,000 t by baitboats and 12,500 t by purse seiners are needed for an adequate functioning of the canneries. However, due to the deficient condition of the canneries, the landings seem irregular.

At the end of 1999, two out of the three canneries were closed. In 2000 the three canneries operated but in an illegal manner. In 2003 two canneries were operational and a decrease in production was noted, primarily linked to a decrease in the production of the PFS cannery.

Table 1. Catches by species, by efforts and catches by unit efforts (PUE) of Senegalese baitboats from 1991 to 2003 (no boats registered in 1992).

Year	*Baitboat catches (t)*					*Effort (in days fishing)*	*CPUE (t/day)*				
	YFT	*SKJ*	*BET*	*LTA*	*Total*		*YFT*	*SKJ*	*BET*	*LTA*	*Total*
1991	79	309	10	1	399	73	1.08	4.24	0.14	0.01	5.47
1992											
1993	13	42	5	0	60	27	0.46	1.56	0.20	0.00	2.22
1994	6	59	11	0	76	40	0.16	1.49	0.27	0.00	1.92
1995	20	18	60	53	151	74	0.27	0.24	0.81	0.72	2.04
1996	41	163	84	0	288	91	0.46	1.80	0.92	0.00	3.18
1997	208	455	204	0	868	176	1.19	2.59	1.16	0.00	4.95
1998	251	1,679	676	3	2,610	511	0.49	3.28	1.32	0.01	5.10
1999	834	1,479	1,473	2	3,788	572	1.46	2.59	2.57	0.00	6.62
2000	252	1,506	1,131	3	2,892	697	0.36	2.16	1.62	0.00	4.15
2001	295	1,271	1,308	0	2874	512	0.58	2.48	2.55	0.00	5.61
2002	447	1,046	565	0	2,058	395	1.13	2.65	1.43	0.00	5.22
2003	279	733	407	0	1,419	370	0.75	1.98	1.1	0.00	3.83

Table 2. Number of active baitboats from 1991 to 2003.

Year	*Number of boats*
1991	1
1992	0
1993	1
1994	2
1995	3
1996	2
1997	2
1998	3
1999	4
2000	6
2001	2
2002	2
2003	4

Table 3. Small tunas and sailfish catches (in t) made by artisanal fisheries from 1996 to 2002.

Species	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*
Tuna	4,225	2,974	1,364	487	3,991	4,969	2,659
Atlantic bonito	1,142	1,510	1,116	591	323	545	622
Mackerel bonito	2,717	505	415	259	953	408	592
Sailfish	877	556	209	267	1,222	953	240
Total	**8,961**	**5,545**	**3,104**	**1,604**	**6,489**	**6,875**	**4,113**

Table 4. Breakdown of the number of canoes in 2002, by fishing area.

Subdivisions	*Number of canoes*
Large coast	2,803
Cape Verde	2,714
Small coast	3,057
Total	**8,574**

Table 5. Catch, effort and catch-per-unit of effort of sailfish and billfish by the sport fishery from 1996 to 1997.

Year	*Month*	*Effort (in number of trips)*	*Sailfish*		*Billfish*	
			Catches (in number)	*CPUE (in number of trips)*	*Catches (in number)*	*CPUE (in number by trips)*
1996	June	111	29	0.26		
	July	247	487	1.97		
	August	158	405	2.56		
	September	17	16	0.94		
	October	12	11	0.91		
	Total	**545**	**948**	**1.73**		
1997	May	10	0	0.0	9	0.9
	June	81	10	1.3	17	0.2
	July	88	206	2.3	0	0.0
	August	43	73	1.71	5	0.1
	September	20	22	1.1	6	0.3
	October	2	48	1.7	3	0.75
	Total	**270**	**454**	**1.7**	**40**	**0.14**

Table 6. Catch, effort and catch-per-unit of effort of sailfish and billfish in the sport fishery from 1998 to 1999.

Year	*Month*	*Effort (in number of trips)*	*Sailfish*		*Billfish*	
			Catches (in number)	*CPUE (in number by trip)*	*Catches (in number)*	*CPUE (in number by trip)*
1998	May	50	26	0 .5	25	0.5
	June	107	220	2.0	34	0.3
	July	235	444	1.9	0	0
	August	256	452	1.7	0	0
	September	118	191	2.4	3	0.03
	October	103	122	1.2	0	0
	November	25	16	0.6	0	0
	TOTAL	**894**	**1,271**	**1.9**	**62**	**0.07**
1999	July	264	516	1.95	0	0
	August	178	274	1.53	1	0
	September	120	288	2.4	2	0.02
	October	141	193	1.36	2	0.01
	November	35	52	1.48	0	0
	TOTAL	**996**	**1,582**	**1.58**	**63**	**0.07**

Table 7. Catch, effort and catch-per-unit-of-effort of sailfish and billfish caught by the sport fishery in 2000.

Year	*Month*	*Effort (in number of trips)*	*Sailfish*		*Bilfish*	
			Catches (in number)	*CPUE (in number by trip)*	*Catches (in number)*	*Catches (in number by trip)*
2000	May	33	7	0.21	15	0.45
	June	190	244	1.28	86	0.45
	July	212	475	2.24	11	0.05
	August	238	414	1.73	2	0.00
	September	171	278	1.62	14	0.08
	October	263	288	1.09	19	0.07
	November	24	47	1.95	5	0.20
	TOTAL	**1,131**	**1,753**	**1.54**	**152**	**0.13**

Table 8. Number of size samples carried out on tuna vessels.

Number of samples in 2003	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	***Total***
On baitboats	13	11	7	2	6	24	17	19	21	21	19	23	**183**
On purse seiners	0	5	14	23	28	16	15	4	6	6	0	3	**120**
Total	**13**	**16**	**21**	**25**	**34**	**40**	**32**	**23**	**27**	**27**	**19**	**26**	**303**

Table 9. Tonnage landed for the canneries from 1998 to 2003.

	1998	%	*1999*	%	*2000*	%	*2001*	%	*2002*	%	*2003*	%
SE-SNCDS	18,000	64	2,900	15	3,300	26	8,700	49	9,300	50	10,000	61
PFS	8,900	32	12,000	61	7,900	62	7,000	39	8,700	47	6,300	39
INTERCO	1,100	4	4,700	24	1,600	12	2,200	12	460	3	0	
TOTAL	**28,100**		**19,700**		**12,800**		**17,900**		**18,460**		**16,300**	

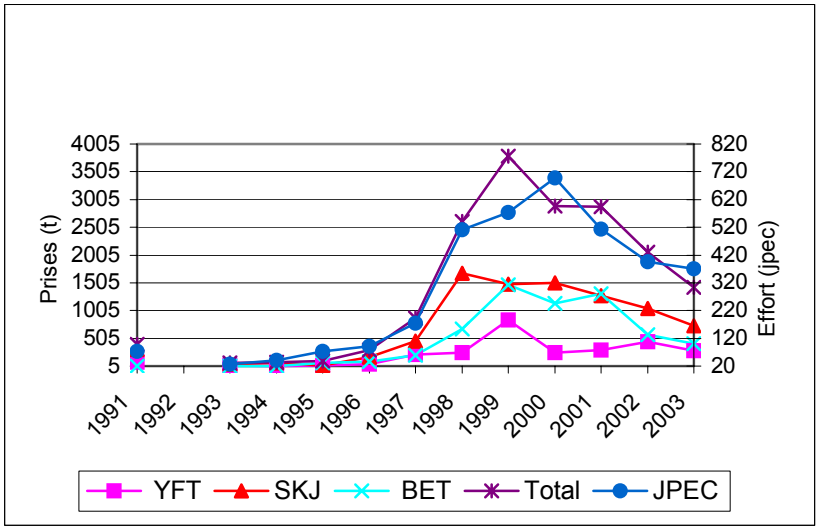

Figure 1. Annual development of Senegalese baitboat catches from 1991 to 2003.

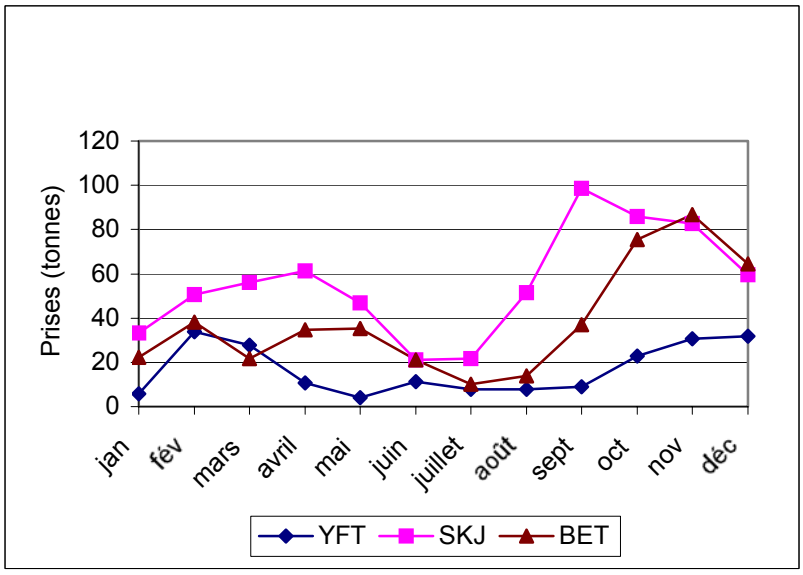

Figure 2. Seasonal variation in Senegalese baitboat catches from 1991 to 2003.

ANNUAL REPORT OF SOUTH AFRICA[1]

C. Smith[2]

1. National fisheries information

1.1 Poling and sport fishery

The use of pole and line has been employed commercially since the 1970s to target tuna. In 1979 commercial tuna fishing effort increased after a record run of yellowfin tuna in the region. Subsequent to this, the South African tuna fishery has essentially been a surface pole and line fishery that targets mainly juvenile (3-4 year old) albacore in near-shore waters off the west coasts of South Africa and Namibia for export canning markets. Annual albacore landings have fluctuated around 6 000 t whole weight and is strongly influenced by the availability of albacore in the inshore waters, which in turn is affected by large scale environmental factors. Since 1990, low annual landings have been recorded twice, namely in 1991 and 2000 **(Table 1)**. The declaration of Namibian independence in 1990 was responsible for excluding South African poling vessels from Tripp Seamount, resulting in a sharp decline in annual albacore landings in 1991. The second decline in annual landings was attributed to the low availability of albacore in near-shore waters in 2000. There have been approximately 100-200 commercial vessels active in this fishery since 1978. In addition, numerous small sports craft (5-8m) fish for albacore and other tunas with rod and reel off the Cape Peninsula.

163 vessels (with a crew of 2,734) received tuna pole fishing rights in 2002, but only 88 vessels reported tuna catches for 2003. Despite the number of active vessels being similar to 2002, fishing effort decreased by 28.4% from 3,733 sea days in 2002 to 2,673 sea days in 2003. Consequently, albacore landings decreased by 46.6% from 6,507 in 2002 to 3,470 in 2003 **(Table 2)**, making it the lowest annual catch in two decades. In contrast, nominal CPUE increased from 0.873 t per day to 1.026 t per day. The average size of albacore landed also increased from 79.2 cm in 2002 to 86.5 cm in 2003 **(Figure 1)** possibly due to a good recruitment year a few years ago. A plausible explanation for the seemingly contradiction in catch and CPUE is that the resource was not particularly concentrated in near-shore waters in 2003. Hence a number of vessels were only active in this fishery on a part time basis, resulting in a decrease in total catch. The strengthening of the Rand has also made a number of operators in this sector economically unviable, which resulted in a further decrease in fishing effort. Nominal CPUE, however, increased because large vessels (with large crews) were still able to access the resource, despite longer search times, and average size of albacore landed was larger than in 2002. The general consensus from the fishing industry is that 2003 was a poor fishing season, despite numerous reports of not being able to catch detected tuna schools.

The poling fleet also reported 256 t of yellowfin tuna and 8 t bigeye tuna, with an additional 12 t of yellowfin tuna estimated from the sport fleet **(Table 2)**. Yellowfin catches have increased as a few right holders have started to target this species for export to sashimi markets.

1.2 Tuna/swordfish longline fishery

Commercial longlining for tunas started in the early 1960s, but ceased beyond the mid-1960s in favour of other more lucrative developing fisheries. In 1997, 30 experimental longline permits were allocated in response to applications to re-develop a domestic longline fishery. Although this fishery was intended to be a tuna directed fishery the bulk of the catch comprised of swordfish (>60% dressed weight in 1998), possibly due to the shallow nature of the fishing method used and vessels being equipped with American monofilament gear and light sticks. In 1999 and 2000, reported swordfish catches declined in response to more stringent measures imposed by South African authorities on swordfish catches. During the same time period some vessels fished in Namibian waters, where swordfish catch restrictions were more lenient. Consequently, catches made by those vessels were reported to ICCAT as Namibian catch. It is noted, however, that international import figures reflect both Namibian and South African catches for 1999 as South African. During 2000, South Africa raised the swordfish by-catch limit and declared a country catch limit of 1000 t dressed weight. Subsequently, ICCAT has issued a swordfish country allocation to South Africa. The allocation was 890 t in 2003, and will increase to 1009 t n 2004, 1,070 t (2005) and 1140 t (2006).

[1] Original report in English.

[2] Marine & Coastal Management, P/Bag X2, Roggebaai 8012, Cape Town, South Africa, tel: +27 21 402 3156, e-mail: csmith@deat.gov.za

In 2003, the tuna longline vessels were still fishing under experimental permits. The number of active vessels was similar to that of 2002. Fishing effort was more dispersed in 2003 with comparatively more fishing effort outside South Africa's EEZ **(Figure 2)**. Fishing effort also decreased by 40% in the ICCAT region, from 1.1 million hooks in 2002 to 0.7 million hooks in 2003 **(Table 2)**. The decline in fishing effort in this region is due to the unfavourable Rand/US dollar exchange and a shift in fishing effort into the IOTC region **(Figure 2)**.

The total reported landings for all target species declined in 2003. The reported landings per species were as follows: albacore (65 t), swordfish (219 t with a further 588 t caught east of 20°E), yellowfin tuna (24 t), bigeye tuna (90 t) blue shark (46 t) and mako (25 t) **(Table 2)**. In addition, 12 t of southern bluefin tuna were also landed. Nominal CPUE was the lowest for swordfish and yellowfin tuna since the inception of the experimental fishery, being 0.311 kg/hook and 0.035 kg/hook respectively. Nominal CPUE for bigeye tuna (0.128 kg/hook) was also lower than the previous five-year average. In contrast, albacore CPUE was similar to 2002 and southern bluefin tuna CPUE increased by 60%, from 0.011 kg/hook in 2002 to 0.018 kg/hook in 2003. Large increases in CPUE were also experienced for mako sharks (2.5 times higher than for 2002) and blue sharks (1.4 times higher than for 2002). Like the tuna pole fishery, the longline industry indicated that 2003 was a poor fishing season.

Size frequency distributions are presented for swordfish **(Figure 3)**, bigeye **(Figure 4)** and yellowfin tuna **(Figure 5)**. The mean LJFL recorded for the swordfish catch in 2003 (163.5 cm) was smaller to that recorded in 2002 (170.1 cm), and substantially less than that for 1998 (184.5 cm). The mean length of bigeye tuna in 2003 (131 cm) was also smaller than that recorded in 2002 (139 cm). The mean FL of yellowfin landed decreased by 15 cm, from 142 cm in 2002 to 127 cm in 2003. Moreover, in comparison to 2001, mean FL decreased by 32cm.

1.3 Shark longline fishery

The shark longline fishery comprises two distinct components, namely the demersal shark longline and the pelagic shark longline. The demersal shark longline component mainly targets soupfin and hound sharks in shallow coastal waters, whereas the pelagic shark longline component mainly targets blue and mako sharks offshore in the open ocean. A total of 23 shark longline rights were issued in 2002.

The number of vessels active in this sector increased from two in 2002 to seven in 2003. Consequently, fishing effort increased fivefold from 35,308 hooks in 2002 to 174,050 hooks in 2003 **(Table 2)**. This increase in fishing effort was mainly due to improved market prices for sharks, particularly makos. Catches of blue shark increased from 4 t to 132 t, and mako sharks increased from 1 t to 96 t. Nominal CPUE for blues increased by a factor of seven and mako CPUE increased by a factor of 27. The increase in shark CPUE can be possibly be attributed to a combination of three factors:

1. a reduction in domestic tuna/swordfish longline fishing effort in the region;
2. no fishing effort by foreign fleets in South Africa's EEZ, and;
3. fishers are using steel tracers thereby being more efficient at targeting sharks. Consequently, the by-catch of tunas was negligible.

Unlike its tuna counterparts the shark longline industry indicated that the 2003 fishing season was good.

1.4 Foreign longline fishery

No permits were issued in 2003 to foreign fleets wanting access to tuna/swordfish in South Africa's EEZ.

2. Research and statistics

Although a logbook system to monitor line fishing vessels (including the poling fleet) was implemented in 1985, reported catches proved to be unreliable with substantial under-reporting in some years. Consequently dealer returns were used to monitor total albacore catch levels, and to validate catch statistics reported to ICCAT. However, in 1998 it was shown that even with the dealer returns, the estimated annual albacore catch was lower than the Customs and Excise records of the amount of South African caught albacore exported each year for the period 1993 to 1996. Customs and Excise records are probably the most reliable estimate of annual total albacore catch because: a) almost all of the albacore catch is exported, and; b) the amounts of fish exported are precisely known. Therefore, the estimated total albacore catch for the South African poling and sport fleet reported to ICCAT from 1993 onwards, are based on Customs and Excise data **(Table 1)**. However, levels of reporting improved for this sector in 2003 when comparing customs and excise data **(Table 1)** to reported data **(Table 2)**.

As most of South Africa's swordfish is exported to the United States of America, the U.S. trade statistics provides a useful means of verifying reporting levels of the domestic longline fleet **(Table 3)**. In 1999 strict swordfish by-catch measures were imposed by South African authorities, which resulted in many vessels fishing either under Namibian permit and/ or not reporting their catches to South African authorities. Consequently, under-reporting of longline catches was a problem between 1999 and 2000. During this period more reliable estimates of total South African swordfish landings were provided by US trade statistics. However, since South Africa raised the swordfish by-catch limits in 2000 reporting levels improved, with 2002 and 2003 reporting levels being the most reliable since the inception of the experimental fishery in 1997 **(Table 3)**.

Research in South Africa is mainly focussed on swordfish for the following reasons:

- It is the most important species caught by the longline fleet;
- Stock delineation is uncertain;
- There is concern about localized depletion;
- To provide better management measures for swordfish;

Genetic samples were collected from swordfish caught along the west, south and east coast of South Africa. Preliminary analysis indicate that both Indian and Atlantic swordfish stocks are caught along the south coast of South Africa. As there is uncertainty regarding the stock delineation of swordfish caught in South African waters a proportion of the catches made along the south and east coast of South Africa may also be derived from Atlantic stock. If this were true then Atlantic swordfish catches made by the South African fleet could be as high as 807 t when taking into consideration that 219 t were caught west of 20^{o}E and 588 t caught east of 20^{o}E. The collection of genetic material has continued to obtain a better understanding of the mixing dynamics of swordfish stocks in South African waters. To validate the genetic analysis, tissue samples will be collected for heavy metal analysis and a tagging programme will be implemented in 2004. Biological samples have been collected since the inception of the experimental fishery with the aim of elucidating the life history patterns of swordfish from this region.

3. Implementation of ICCAT conservation and management measures

3.1 Recommendations and Resolutions Adopted by ICCAT in 2002

[Rec. 02-01]: As South Africa's reported bigeye tuna catch was less than 2 100 MT in 1999 it is exempted from this resolution.

[Rec. 02-03]: South Africa was issued a swordfish catch limit of 890 MT for 2003, to which it adhered.

[Rec. 02-06]: Southern Albacore catches are estimated from South African customs and excise data, which in turn are submitted to the Secretariat on a bi-monthly basis. As this data does not originate from fishing logbooks it is impossible to submit this data within two months of the actual catches been made. In 2003, data have been submitted between three to four months after the catches were made. Due to the delayed nature of South Africa's reporting (and possibly that of other fishing entities as well), this management measure is unlikely to prevent catches from exceeding the estimated replacement yield of the stock, and South Africa once again urges the Commission to devise an alternative management arrangement.

[Rec. 02-13]: In the tuna and swordfish longline fishery marlins are designated as by-catch species. According to permit conditions the total catch of marlins may not exceed 5% (by dressed weight) of the total catch (dressed weight) of the targeted species per trip. Marlin catches contributed to 2.1% of total catch by weight in 2003.

[Res. 02-14]: Various bird mitigation measures have been included as permit conditions, such as: All longliners are required to deploy a tori line when setting; No bright lights are to be used when setting at night; Baits are required to be properly defrosted to ensure faster sinking rates; Bait and offal are not to dumped on the same side as hauling.

In addition, scientific observers also collect data on bird mortality rates and provide dead specimens for identification. Permit holders have also been made aware of the large impact longliners have on seabird populations. To encourage responsible fishing permit holders have been given bird posters so as to be able to identify the common species occurring in South African waters.

[Recs. 02-16, 02-17, 02-18 and 02-19]: As South Africa does not import but rather exports tuna and swordfish, there has been no official ban on imports from the respective countries.

[Rec. 02-21]: South Africa is in the process of developing its fishing capacity and as such has chartered a number of vessels from St Vincent (4), Seychelles (2), Korea (1), Namibia (1), Panama (1) and United States of America (1). These vessels are under the control of South African regulations and permit conditions. All vessels are equipped with VMS and are required to take an observer onboard on every fifth trip. No transshipments are permitted at sea and all catches are required to be landed in South African ports. These vessels are only chartered by South Africa. ICCAT has been informed of these chartering arrangements.

[Rec. 02-22]: All vessels participating in the experimental tuna/swordfish longline fishery are larger than 24m and their details have been submitted to ICCAT.

[Res. 02-25]: The Statistical Document Programme for swordfish, bigeye tuna and southern bluefin tuna was implemented in 2003.

3.2 Regulatory measures

All vessels active in the South African tuna and swordfish longline fishery in 2003 are classified as large-scale tuna longline vessels and have been issued a South African fishing permit. All the vessels are also subject to taking onboard observers and are required to be fitted with a functional VMS. All catches made from these vessels are monitored and controlled by South Africa. The particulars of these vessels have been submitted to ICCAT. The table for the ICCAT management standard for large-scale tuna longline vessels was submitted[3].

A. Catch limits, minimum sizes and protection of juvenile fish
   All fishing sectors targeting large pelagic species, except for the sport sector, is managed by a TAE (with TAE = no of vessels) as determined by the Minister of Environmental Affairs and Tourism. The Regulations in terms of the Marine Living Resources Act (1998) also specify minimum mass limits for bigeye tuna (3.2 kg), bluefin tuna (6.4 kg), swordfish (25 kg whole weight) and yellowfin tuna (3.2 kg).

B. Closed seasons
   No closed seasons are applicable

C. Ban on imports
   South Africa mainly exports tuna and swordfish with no official ban on imports.

D. Observer Programme
   An onboard observer programme has been developed for the tuna longline fishery since 1998. Permit holders are required, by permit conditions, to take an observer onboard on every fifth trip.

E. Vessel Monitoring Systems
   All tuna vessels, irrespective of size, are required by law to have a functional VMS (as approved by South African authorities) in place before the vessel is permitted to embark on a fishing trip.

F. Measures against IUU fisheries
   No IUU vessels or black listed vessels are permitted to discharge or tranship tuna and tuna-like species in South African ports.

G. Recreational fisheries
   The tuna sports sector is an open access fishery, and is restricted by a bag limit of 10 tuna per person per day as stipulated in the Regulations in terms of the Marine Living Resources Act (1998). The minimum size limits as stipulated by the Regulations in terms of the Marine Living Resources Act (1998) also applies to the sport sector.

[3] Available from the Secretariat.

4. Inspection schemes and activities

South Africa has a full Port Inspection Scheme in place in accordance with ICCAT recommendations. This includes foreign vessels requiring a permit to discharge in South African ports. Discharge permits are only issued to vessels authorized by ICCAT to fish in the Atlantic Ocean. No IUU or black listed vessels are allowed to discharge in South African Ports. In applying for a discharge permit, skippers have to provide South African authorities with the necessary Flag State authorization documents, quantity of fish and species onboard to be discharged as well as the gear type used. A letter of authorization from the flag State is required if South African authorities are uncertain about the application for a discharge permit. Transhipments are only allowed in port under a transhipment permit. In applying for a permit the skipper has to provide South African authorities with the vessel details, quantity of fish and species to be transhipped, and where it was caught. Spot checks are made on foreign discharges and transhipments to ensure that catches meet ICCAT's minimum size limits. Vessels participating in the experimental tuna longline fishery are required to notify the inspectors prior to landing. All domestic discharges are required to be monitored and inspected by South African authorities. The Statistical Document Programme for swordfish, bigeye tuna and southern bluefin tuna was implemented in 2003.

5. Other activities

A total of 854 albacore were measured during 6 port-sampling trips undertaken in 2002. In 2003 due to a shortage of staff, only 338 albacore were measured during 2 port-sampling trips.

An on-board observer programme was launched in 1998, with the first observer placed on a local longline vessel in November. The programme is primarily aimed at: (1) verifying retained catches of target and by-catch species, and of discarded catches; (2) providing measures of large pelagic species caught, and; (3) to obtain biological samples of swordfish. Each permit holder is required, by permit conditions, to take an observer onboard on every fifth trip. Despite this permit condition, observer coverage decreased from 17.5% in 2001 to only 6.9% of 202 fishing trips in 2003.

Surveillance of coastal waters is provided by *ad hoc* spotter plane and navy patrols.

Table 1. Annual albacore landings (t) estimated from logbooks for 1985-1996 and customs and excise data for 1993-2003.

Year	*Logbooks*	*Exported*
1985	6,697	
1986	5,930	
1987	7,275	
1988	6,570	
1989	6,890	
1990	5,280	
1991	3,410	
1992	6,360	
1993	6,743	6,881
1994	5,268	6,931
1995	4,246	5,213
1996	2,856	5,635
1997		6,708
1998		8,412
1999		5,101
2000		3,610
2001		7,236
2002		6,507
2003		3470

Table 2. Nominal catch and effort data for the most important species landed by large pelagic fisheries in 2002 and 2003.

Fishing sector	*Total reported Effort 2002*	*Total reported Effort 2003*	*Reported catch by species per year in t dressed weight except for poling and sport*											
			ALB 02	*ALB 03*	*SWO 02*	*SWO 03*	*YFN 02*	*YFN 03*	*BET 02*	*BET 03*	*BSH 02*	*BSH 03*	*SMA 02*	*SMA 03*
Poling	3,733 sea days	2,673 sea days	3,262	2,744	0	0	77	256	22	8	0	0	0	0
Sport	Unavailable	Unavailable	323	82	0	0	10	12	0	0	0	0	0	0
Tuna Longline	1,175,384 hooks	702,116 hooks	127	65	500	219	57	24	282	90	59	46	18	25
Shark Longline	35,308 hooks	174,050 hooks	0.4	0	0.4	0.1	0	0.6	1	0	4	132	1	96
		Total	**3,712.4**	**2,891**	**500.4**	**219.1**	**144**	**292.6**	**305**	**98**	**63**	**178**	**19**	**121**

Table 3. Comparison of reported South African swordfish catches vs imported South African swordfish by the United States (as reflected by U.S. trade Statistics (in t).

Year	*Reported catch*	*U.S. trade statistics*
1998	394.7	401.7
1999	114.7	1,041.5
2000	252.1	909.9
2001	621.7	791.6
2002	1,091.1	993.7
2003	807.9	807.9

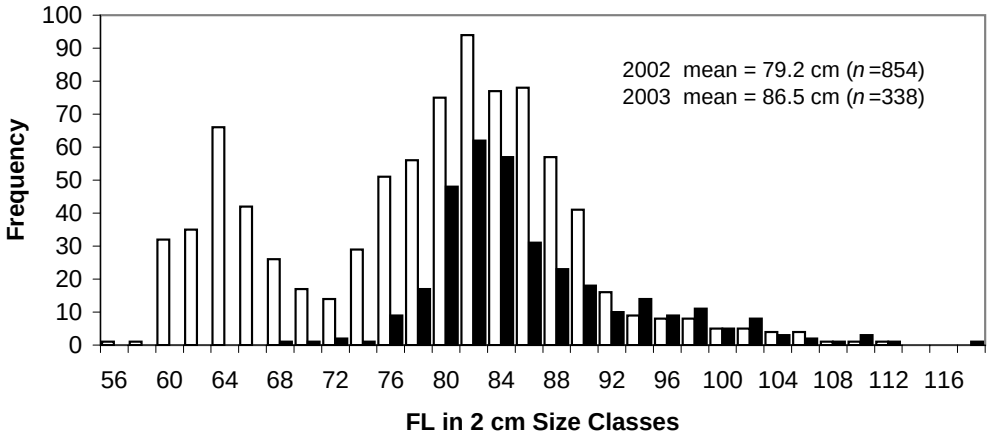

Figure 1. Length frequency distribution of albacore catches made by South African poling fleet in ICCAT region for 2002 (light bars) and 2003 (dark bars) as measured by port samplers.

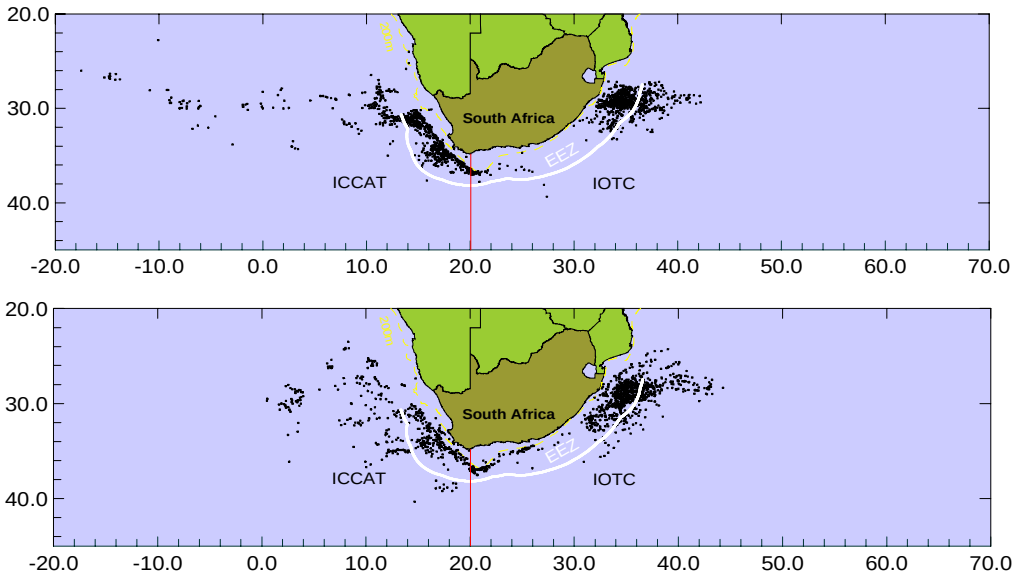

Figure 2. Longline set positions of South African fleet in 2002 (above) and 2003 (below).

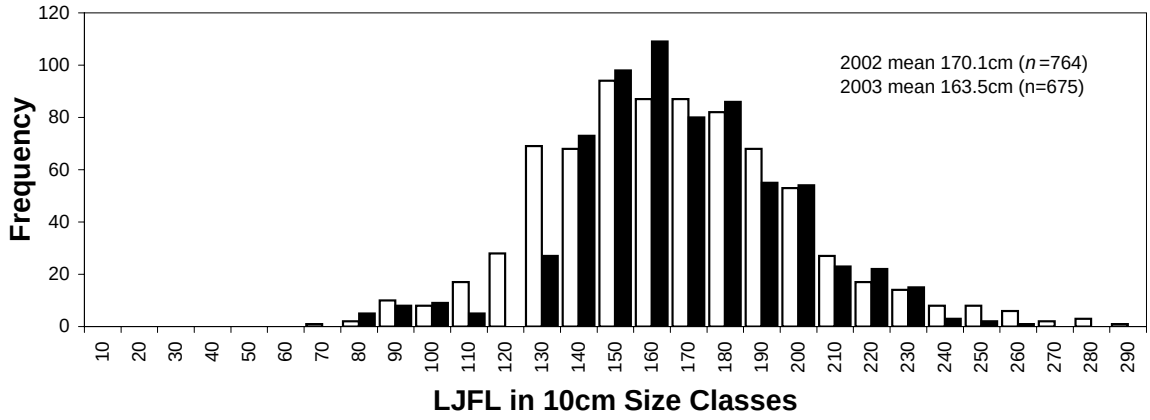

Figure 3. Length frequency distribution of swordfish catches made by South African longline fleet in ICCAT region for 2002 (light bars) and 2003 (dark bars) as measured by onboard observers.

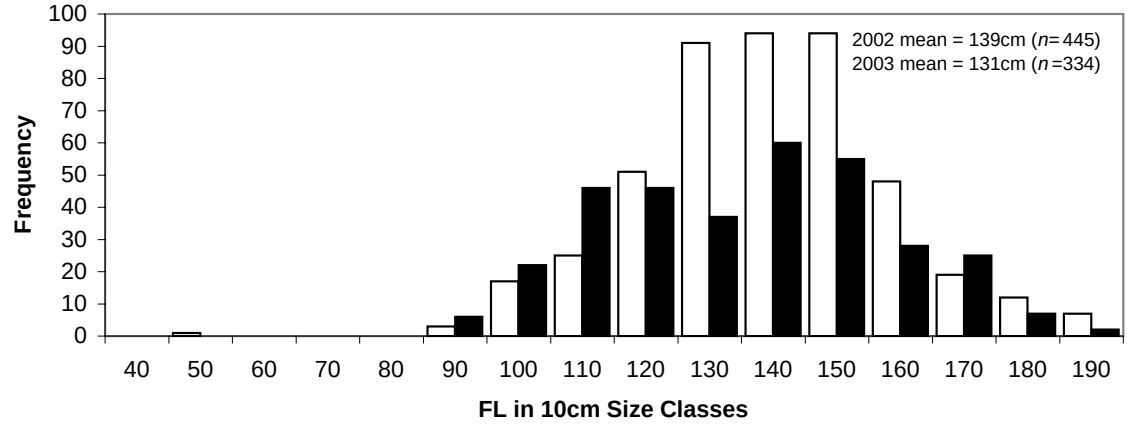

Figure 4. Length frequency distribution of bigeye tuna catches made by South African longline fleet in ICCAT region for 2002 (light bars) and 2003 (dark bars) as measured by onboard observers.

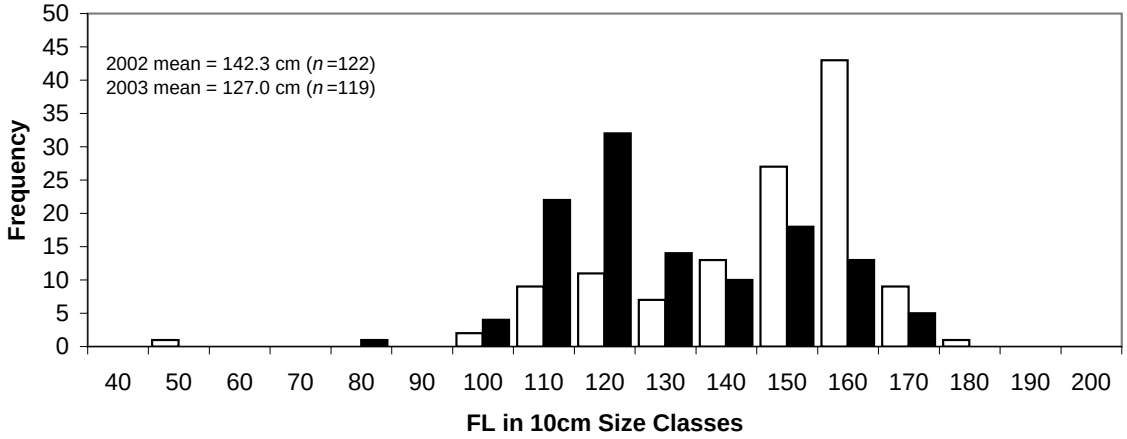

Figure 5. Length frequency distribution of yellowfin tuna catches made by South African longline fleet in ICCAT region for 2002 (light bars) and 2003 (dark bars) as measured by onboard observers.

ANNUAL REPORT OF TRINIDAD AND TOBAGO[1]

Louanna Martin[2]

Part I. Information on fisheries, research and statistics

Section 1: Annual fisheries information

The Republic of Trinidad and Tobago reports a catch of 4,336 t of tuna and tuna-like species and sharks for the year 2003. An estimated 1,470 commercial vessels harvested 4,332 t, and 4 t were harvested at six of seven game fishing tournaments; the majority (2.7 t) of which was wahoo (*Acanthocybium solandri*). The catch was composed of tunas, billfishes, mackerels and sharks **(Tables 1** and **2)**.

Approximately 42 semi-industrial vessels (10 longliners 14-19 m in length and 32 multi-gear vessels 8-23 m in length) and 1278 artisanal vessels (7-10 m in length) targeted the tuna and tuna-like species. The remaining vessels (150), which harvested a minimal quantity of the resources, are demersal trawlers. Longliners operate mainly within a 5 degree latitude and 10 degree longitude area (10º to 15ºN and 55º to 65ºW) in the northwestern Atlantic and Caribbean Sea. The average length of a fishing trip is 18 days whereas the average number of fishing days per trip is 13. The semi-industrial, multi-gear vessels targeting both demersal and pelagic species, fish off the north and east coasts of Trinidad and off the western and northwestern coasts of Tobago on trips that last between 7 and 15 days. When targeting pelagic species a surface line method (locally called *a-la-vive*) utilising hooks and live-bait is employed. Artisanal vessels, from which multiple gear types are deployed, target pelagic species in the inshore waters around Trinidad and Tobago using surface line methods including a-la-vive, trolling and switchering (a baited stationary line) and gillnets. Serra Spanish mackerel (*Scomberomorus brasiliensis*) and King mackerel (*S. cavalla*) constitute the majority of the catch of this fleet and are the most abundant of all finfish species caught by Trinidad and Tobago vessels. Relatively large quantities of sharks of various species are also caught by the artisanal fleet. This shark by-catch is of cultural importance to the people of Trinidad and Tobago; and it is pertinent to note that the entire animal is utilised as food. Artisanal fishing trips are conducted within a single day.

Section 2: Research and statistics

Biological data collection for serra Spanish mackerel and king mackerel resumed in March 2004. Length frequency data are currently being collected from the artisanal fleet operating out of Trinidad. The coverage with respect to landing sites around the island is 17%.

A stock assessment exercise on Serra Spanish mackerel, using ASPIC, Version 3.9.1 (Prager 1994), was completed by Louanna Martin (Fisheries Division, Ministry of Agriculture, Land & Marine Resources, Trinidad & Tobago) and Joshua Sladek Nowlis (Southeast Fisheries Science Center, National Oceanic and Atmospheric Administration, USA) (in press) at the First Annual Scientific Meeting of the Caribbean Regional Fisheries Mechanism (CRFM), held in St Vincent and the Grenadines in June 2004. The CRFM was inaugurated in March 2003 and its mandate is advisory, as well as, to coordinate fisheries research and management in the CARICOM region. The stock assessment exercise formed part of the activities of the CRFM Large Pelagic Fisheries Working Group.

Preliminary conclusions are that the Serra Spanish mackerel stock biomass appears to lie slightly below MSY biomass (75% of B_{msy}) and the stock appears to be experiencing fishing mortality rates slightly above MSY fishing mortality rate levels. The performance of each of three effort management strategies (status quo, F_{msy} and $0.75F_{msy}$ is postulated.

A continuation of the assessment exercise incorporating size and age data is planned for 2005. The use of spatial information for understanding migration patterns and the examination of earlier catch and effort data were among the recommendations for research and monitoring.

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[1] Original report in English.

[2] Fisheries Division, Ministry of Agriculture, Land & Marine Resources, 35 Cipriani Boulevard, Port of Spain. E-mail: mfau@tstt.net.tt

Prior to Trinidad and Tobago becoming a Contracting Party to ICCAT, the SCRS applied a breakdown for billfishes that was not formally verified with the national fisheries authority of Trinidad and Tobago. Trinidad and Tobago has since improved its data collection system and has recently conducted investigations on billfish catch trends. Analyses have revealed that a different breakdown for billfishes is required for Trinidad and Tobago.

Additionally, upon examination of the blue marlin and white marlin Compliance Table, we wish to point out that the catch stated for the reference year (1996) in the Blue marlin section is billfish catch, as reported to the Secretariat in 2000, and therefore the figure includes catches of white marlin. Against the above background, Trinidad and Tobago will present a paper in 2005 which will provide the necessary data and information that will facilitate application of a more appropriate breakdown of our reported billfish catches in order to update the Task I and Compliance Tables.

Part II. Management implementation

Section 3: Implementation of ICCAT conservation and management measures

The Government of the Republic of Trinidad and Tobago, through the Fisheries Division, Ministry of Agriculture, Land and Marine Resources currently issues Certificates of Eligibility (COE) for Atlantic swordfish caught by Trinidad and Tobago flagged vessels. This is a regulatory requirement of the United States of America to ensure compliance with the size limit specified by ICCAT. The large majority of swordfish is exported to the United States of America and each shipment bound for the United States is inspected and issued a swordfish COE.

Section 4: Inspection schemes and activities

A National Monitoring Committee on Foreign Fishing and Related Matters (NMCFFRM), composed of representatives of relevant Ministerial Agencies, a Quasi-government Research Institution, an umbrella environmental Non-governmental Organization and a Game Fishing Association, was established by the Government of Trinidad and Tobago in September 1991. As a result of the State's expanded responsibilities the Committee's Terms of Reference were amended and are currently under review. The amended Terms of Reference include:

- To monitor the operation of all foreign fishing vessels in the waters under the jurisdiction of Trinidad and Tobago, including their compliance with the terms and conditions of access;
- To monitor the characteristics of foreign fishing vessels, including the fishing gear, that use Trinidad and Tobago for transshipment and/or landings to ensure compliance with the resolutions of international organizations, the regulations of national entities that have influence on Trinidad and Tobago's fishing industry etc;
- To bring to the attention of the Minister responsible for Fisheries, information on fishing and allied activities that may adversely affect the conservation and management of the living marine resources of Trinidad and Tobago;
- To board and inspect vessels and/or undertake any tasks falling under the purview of the Committee.

The Cabinet of the Government of the Republic of Trinidad and Tobago has approved the implementation of a Memorandum of Agreement between the Ministry of Agriculture and the National Fisheries Company (1995) Limited, which operates a transshipment facility in Port of Spain (refer to National Report of Trinidad and Tobago for 2001). Among the areas of co-operation specified in the Agreement are:

- Data collection and reporting on transshipment operations,
- Reporting of vessel sightings and at sea transshipments,
- Port inspection and identification of vessels engaged in IUU fishing activities, and
- Ensuring compliance by transshipment companies.

The NMCFFRM is mandated to ensure that the monitoring procedures are in place to implement this MOU.

Table 1. Trinidad and Tobago reported catches (t) of Atlantic tuna and tuna-like species and sharks for 2003.

	Tuna	*Mackerel*	*Billfish*	*Shark*	*Totals*
Longline (TRI[1])	286	0.7	28	50	364.7
Artisanal and semi-industrial multi-gear (TRI)	416	2,668	5	868	3957
Sport fishing tournaments (TRI)	0.09	3	0.4	0	3.49
Artisanal and semi-industrial multi-gear (TOB[2])[3]	6	4	0.05	0.3	10.35
Totals	708.09	2,675.7	33.45	918.3	4,335.54

Tuna = Catches of YFT, ALB, BET, SWO, BON, TUN.
Mackerel = Catches of WAH, KGM, BRS.
Billfish = Catches of BUM, WHM, BIL, SAI.

[1] TRI refers to 'Trinidad' and signifies that data are captured under the data collection system based in Trinidad.
[2] TOB refers to 'Tobago' and signifies that data are captured under the data collection system based in Tobago.
[3] Unraised data; sample data only.

Table 2. Trinidad and Tobago reported catches (t) of Atlantic tuna and tuna-like species and sharks for 2003, by species.

Tuna and tuna-like species	*Longline (TRI)*	*Artisanal and semi-industrial multi-gear (TRI)*	*Sport fishing tournaments (TRI)*	*Artisanal and semi-industrial multi-gear (TOB)*	*Totals*
Yellowfin tuna YFT	186				186
Albacore ALB	12				12
Bigeye tuna BET	6				6
Wahoo WAH	0.7	0.4	3	3	7
Sailfish SAI	7		0.2		7
Blue marlin BUM	3		0.2		3
White marlin WHM	9				9
N. Atlantic swordfish SWO	78				78
Mixed species of tuna TUN	4	229			233
Billfishes BIL	9	5			14
Atlantic bonito BON		187		1	188
King mackerel KGM		801	0.4	0.4	802
Serra Spanish mackerel BRS		1,867		0.2	1,867
Blackfin tuna BLF				5	5
Totals	315	3089	4	10	3,418
Atlantic Sharks					
Blacktip shark CCL		17			17
Tiger shark TIG		0.3			0.3
Nurse shark GNC	0.2	0.7			1
Smoothhounds SDV		71			71
Hammerhead spp SPN	3	5			8
Thresher shark THR	5				5
Shortfin mako SMA	0.6				0.6
Longfin mako LMA	0.9				1
Mako shark MAK	2				2
Blue shark BSH	3				3
Mixed species of sharks	35	774		0.2	809
Totals	50	868		0.2	918
Totals	**365**	**3,957**	**4**	**10**	**4,336**

ANNUAL REPORT OF TUNISIA[1]

Abdallah Hattour[2]

1. Introduction

Fishing of large pelagics in Tunisian seas, specifically bluefin tuna and swordfish, has been subject to monitoring since 1998 within the framework of a contractual research program carried out between the laboratory on live resources of the National Institute of Marine Sciences and Technology (INSTM) and the Secretariat of State of Scientific Research and Technology, and also in the framework of a regional research program, co-financed by the FAO COPEMED project and the INSTM. Therefore, a line of research is defined, which takes into account the ICCAT recommendations concerning the improvement of knowledge on Mediterranean fisheries, statistics, the fisheries, and biological and environmental research. This improved understanding should undoubtedly contribute, by means of common and standardized work, towards carrying out assessments of the major species for better management of resources, both in the Mediterranean and in the Atlantic Ocean.

Parallel to the monitoring of the landings of these species on the Tunisian coasts by the competent authorities of the *Direction Générale de la Pêche et de l'Aquaculture* (General Directorate of Fishing and Aquaculture), particular attention has been given to the landings of large pelagics at the major ports of the country. This situation is particularly regulated by the new conjuncture of fishing for bluefin tuna that is then destined for supplying the fish farms for fattening purposes. For this reason, after fishing, the fish are destined for fattening. Measurements and sampling programs for bluefin tuna catches have become more and more difficult to carry out.

2. Information on the fisheries

The large pelagics occupy an important place in the Tunisian economy, since they have a very high market value and comprise a preferential product for the export market.

The fishing gears used to catch these species are mainly purse seine, surface longline, and traps, but these species may be caught incidentally with nets, lights and pelagic trawl.

2.1 Fishing areas

In Tunisia, bluefin tuna are mainly caught by purse seiners off the northern coast of the country up to the area bordering on Libya where, in recent years, they have competed with French, Spanish and Italian fishers during the months of April to June. In effect, since the early 1980s a there has been a particular rhythm which has affected the tuna activities of the purse seiners. Due to an ever-increasing demand for their fishing products (bluefin tuna), these tuna vessels fish annually on fishing grounds that have now become traditional. They fish from October to March in the Gulf of Gabès and close to the Tunisian-Libyan border. They target average size tunas from 25 to 70 kg, destined exclusively for export. They fish again from May until the end of June, following the drift of the spawners that take them from North of the country to the extreme south (Hakl el bouri, on the Tunisian-Libyan border, where the highest catches are made). All these catches are presently destined for fish farms which have been active since 2003. The weight of these fish varies between 50 kg to more than 250 kg.

Swordfish fishing has become an activity that has extended along the entire Tunisian coast. Due to this, the southeast area contributes more than 80% of the national catches of this species.

Although small tunas have become a secondary target species for the purse seiners, they are caught all along the Tunisian coast.

The ports of Tabarka, Bizerte, Kélibia, Mahdia and Sfax comprise the major landing ports for these species.

[1] Original report in French.

[2] Institut National des Sciences et Technologies de la Mer (INSTM); abdallah.hattour@instm.rnrt.tn

In 2003, Tunisia has taken the necessary steps to put into practice capture-based aquaculture of bluefin tuna, strictly dependent on fishing **(Figure 1)**. An observation should be made on what occurred this year, which is that this activity is strongly dependent on two major factors, i.e., the availability of the natural resource of bluefin tuna (purse seine catches) and the level of demand of this product by consumer countries, without referring at this time to the complexity of the commercial context in which this species is involved.

Like all the other bluefin tuna farms, Tunisian farms are based on the storage and fattening of fish in cages prior to their sale, obviously during the most favorable periods, i.e., the not coincidental with periods of peak production (genetic concentrations) generally from September to March. The tuna are transferred from purse seiners to specially made transport cages that are towed slowly (1-2 N) to the farm where they are then transferred to floating cages. **Table 5** shows the breakdown for 2003.

It should be noted that although this is valid for all the Mediterranean purse seiners, efforts have been made to carry out studies or to design an organization whose objective is to better evaluate the catches of bluefin tuna fishing vessels destined for fattening (working groups, units established in the fishing area, fishing, common service unit, etc). Evidently, this requirement is going to increase fishing effort on a stock that is already over-exploited, in spite of the quotas imposed by ICCAT on countries fishing this species.

2.2 The fishing fleets

2.2.1 Longline fleet

Swordfish fishing has developed considerably in recent years. A census carried out in 2002, with the collaboration of regional authorities, has shown that there are 90 vessels fishing in Tunisian waters. This figure seems to be confirmed in 2003. Some fishing gears contribute to the landings of swordfish (traps, fishing with lights, pelagic trawl), but the majority are from longliners whose numbers have practically doubled in the last two years. Many artisanal vessels (not officially included among the vessels targeting swordfish) engage in this activity during periods when these fish aggregate. Fishing effort which is concentrated on the northern coast of Tunisia is now distributed all along the Tunisian coast.

2.2.1 Tuna vessels

In 2003, 53 tuna purse seiners engaged in tuna fishing along the Tunisian coast. These purse seiners have wooden hulls, with a draft between 15 and 38 meters, gross registered tonnage between 17.98 and 298 (t), and are equipped with diesel engines whose engine power varies from 110 to 999 hp.

The purse seine landings of bluefin tuna currently comprise 97% of the national catches.

2.2.2 Traps

In 2003 three traps were set in the Gulf of Tunis, approximately 20 km south east of Cape Bon. These gears are based on an ancient principle, which consists of catching the fish that are going towards the eastern Mediterranean to spawn in the waters that have a specific temperature and salinity.

2.3 The catches

2.3.1 Large pelagics

Up to 2001 there was a general increasing trend in the catches of large pelagics. Since then, the trend has reversed, probably due to the shift of the purse seiners to bluefin tuna farming which is more profitable than fishing for small tunas. The landings have gone from 5,523 t in 2001 to only 2,496 t in 2003, thus representing a decrease of close to 45.2%

This decrease was accented by low catches that affected both bluefin tuna and swordfish **(Table 1, Figure 2)**.

2.3.1.1 Swordfish

Swordfish fishing, which has continued to increase over the years, showed a marked decline in 2003, i.e., from 1,150 t in 2002 to less than 300 t in 2003 **(Figure 3)**. Peak landings are reported during the months of May to September, particularly for surface longliners **(Table 2)**.

2.3.1.2 Bluefin tuna

The same situation occurred for purse seine catches, which had considerable effect on the national catches of bluefin tuna. The national catches only amounted to 791 t as compared to 2,528 t in 2002. This decline is attributed to the bad weather in the month of June, which was when more than 75% of national landings of this species are made **(Table 3, Figure 4)**.

2.3.1.3 Small tunas

Small tuna catches represent an important wealth for the country. Further, considering that they represent an important component of the national catches of large pelagics (40 to 70%), these species also contribute effectively as a source of food a large part of the Tunisian population, who appreciate these species for their fair value. It should also be noted that Atlantic black skipjack continue to be high in demand by industries later process them for canned tuna.

The following four species are in the most demand throughout the year: Atlantic black skipjack (*Euthynnus alletteratus*), Atlantic bonito (*Sarda sarda*), bullet tuna (*Auxis rochei*), and plain bonito (*Orcynopsis unicolor*), which is becoming more and more scarce.

Table 4 shows the national catches in the last seven years.

3. Biological parameters

Following the recommendations made at the *Ad Hoc* Joint GFCM/ICCAT meeting on research activities for large pelagics, a research plan was developed to carry out an annual standardized study on the biological parameters of the most important species of large pelagics (bluefin and swordfish) and thus, effectively contribute to the work of estimates made by ICCAT SCRS working groups. These parameters include:

3.1 Size distribution by species, gear, and time-area strata]

Figures 6, 7, 8, 9 and **10** show the various demographic divisions of tuna and swordfish catches by different type of fishery.

3.2 Size-weight relationship

a-Swordfish	*b-Bluefin tuna (purse seine caught)*	*c-Fattened bluefin tuna*
We = 5E-07Ljfl3.6199 R2 = 0.9153 N = 301	y = 2E-05x2.9643 R2 = 0.987	Wen = 6E-06Lf3.3009 R2 = 0.9416

3.3 Reproduction

The histological analysis of age-4 female bluefin tuna and sampling in Tunisian waters has shown that they had reached maturity. In the stock assessment, the ICCAT Scientific Committee used age-5 as the age-at-first sexual maturity. Notwithstanding, the results, as confirmed by sampling carried out on tunas in Libyan traps, have shown that the age-at- first maturity of Mediterranean tuna species could be less than 5 years.

In the case of swordfish, it was concluded that there is multiple spawning with an asynchronic development of the ovocytes: the perinuclear ogives and ovocytes are present throughout the year, general composition of the ovary, and a continuous distribution of the different stages of development of the ovocytes. These characteristics suggest that swordfish is a species with undetermined fecundity. This fecundity thus depends on the assessments of the fecundity of each spawning (emission) and spawning frequency in order to determine annual potential fecundity. The spawning season is in summer, with a peak period in July.

3.4. Growth studies

Growth studies have centered on the establishment of age-size and age-weight keys, for swordfish and bluefin tuna, obtained from fin ray spines.

3.5 Stock structure

Tunisia has collaborated with Spain, Malta and Libya in the collection of biological samples of bluefin tuna muscles. These samples were sent to the University of Gerona. Once again, the analysis has shown the genetic homogeneity of Mediterranean tuna and confirms the hypothesis of a unique stock in this sea. (Document SCRS/2002/172).

The conclusions of research work carried out in 2003 were presented in the following scientific documents:

SCRS/2004/068 Reproductive characteristics of swordfish (*Xiphias gladius*) caught in the southwestern Mediterranean during 2003. Macías D., A. Hattour, J.M. de la Serna, M.J. Gómez-Vives and D. Godoy.

SCRS/2004/083 Updated standardized catch rates bluefin tuna *(Thunnus thynnus)* from the trap fishery in Tunisia. Hattour, A., J.M. de la Serna, J.M. Ortiz de Urbina.

SCRS/2004/084 Concernant l'activité d'engraissement du thon rouge dans les eaux tunisiennes. Hattour, A.

SCRS/2004/085 Les prises accessoires des madragues et des sennes tournantes tunisiennes. Hattour, A., D. Macias, J.M. de la Serna.

SCRS/2004/086 Commentaires des prises de thon rouge a la madrague tunisienne de Sidi Daoud. Hattour, A.

Table 1: Development of landings of large pelagics caught in Tunisian waters.

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Bluefin tuna	114	1073	975	1997	2523	1617	2147	1992	1662	2263	2184	2493	2528	791
Small tunas	3586	2633	1363	1363	627	1238	1612	1630	2061	2954	3893	5523	3008	2496
Swordfish	176	181	178	354	298	378	352	346	414	468	483	567	1138	288
Total large pelagics	**3876**	**3887**	**2516**	**3714**	**3448**	**3233**	**4111**	**3968**	**4137**	**5685**	**6560**	**8583**	**6674**	**3575**

Table 2. Monthly swordfish catches (in t), by fishing type, in 2003.

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Total*
Longline	3253	2894	6736	6712	6089	36135	84234	67402	37870	22974	9777	924	**285001**
Fire fishing	62	15	0	541	98	242	227	150	436	0	205	23	**1996**
Trap	0	0	0	0	25	290	0	0	0	0	0	0	**315**
Trawl	0	60	0	105	0	0	0	146	0	0	0	0	**312**
Total	**3315**	**2969**	**6736**	**7358**	**6212**	**36666**	**84461**	**67697**	**38306**	**22974**	**9981**	**947**	**287624**

Table 3. Bluefin tuna catches, by fishing type, 1990-2003.

Type of fishery	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Purse seine	114	1073	975	1997	2523	1617	2147	1992	1662	2263	2134	2432	2510	740
Trap	249	243	175	92	169	223	154	95	35	46	13	3	3	5
Hand line	43	50	45	43	81	57	92	113	48	43	37	58	15	46
Total	**461**	**1366**	**1195**	**2132**	**2503**	**1897**	**2393**	**2200**	**1745**	**2352**	**2184**	**2493**	**2528**	**791**

Table 4. Breakdown of small tuna catches, by species (in t).

Species	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
At. black skipjack *(Euthynnus alletteratus)*	333	1,113	752	1,453	1,036	960	657
Bullet tuna *(Auxis rochei)*	32	93	45	15	2300	932	989
Plain bonito *(Orcynopsis unicolor)*							3
Atlantic bonito *(Sarda sarda)*	611	855	1,350	1528	1,183	1,112	848
Unclassified small tunas	654	0	807	897	1,004	4	0
Total	1,630	2,061	2,954	3893	5523	3,008	2497
Total large pelagics	**3,968**	**4,137**	**5,685**	**6,560**	**8583**	**6,674**	**3,576**
%	41.1	49.8	52.0	59.3	64.3	45.1	69.8

Table 5. Annual summary of bluefin tuna farming in Tunisia (in t).

	Allocated quota	*Quantity introduced*		*Catch*	*Exported tuna*	*Imported food*
		Local product	Imported product			
Total	2,400	587	745	1,627.3	1,192.3	6,761

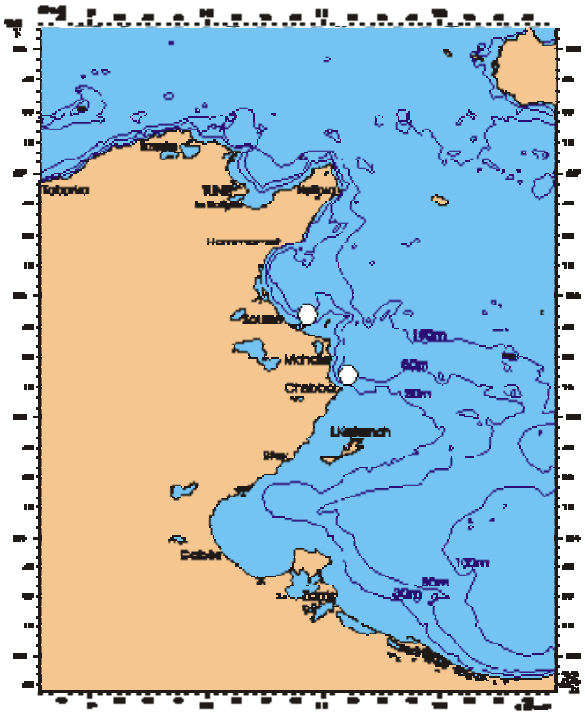

Figure 1. Locations of the fish farms.

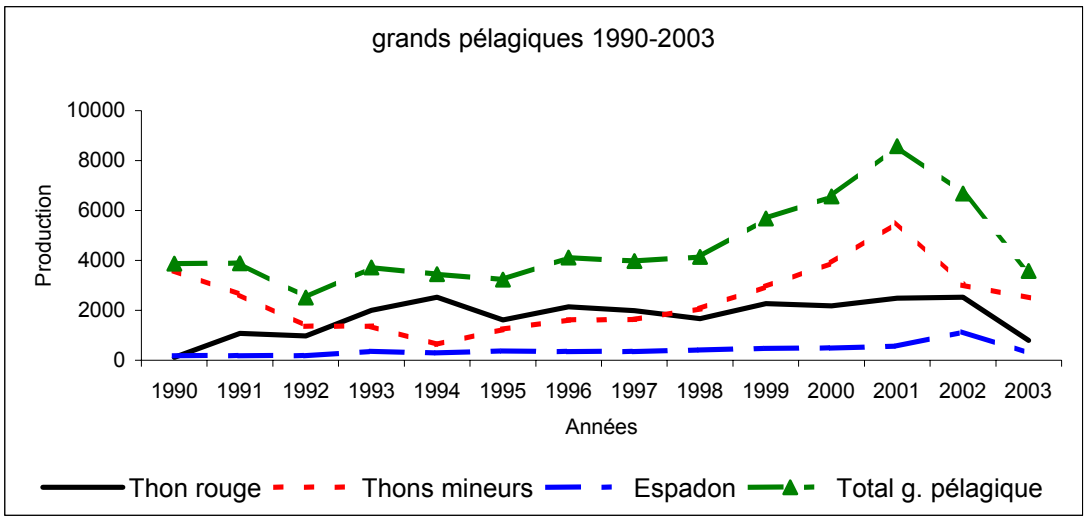

Figure 2. Development of landings of large pelagics caught in Tunisian waters.

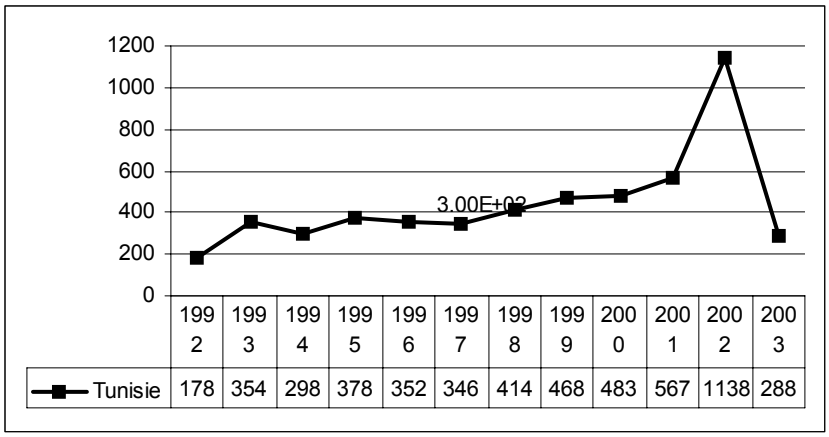

Figure 3. Swordfish catches (all gears mixed) 1992-2003.

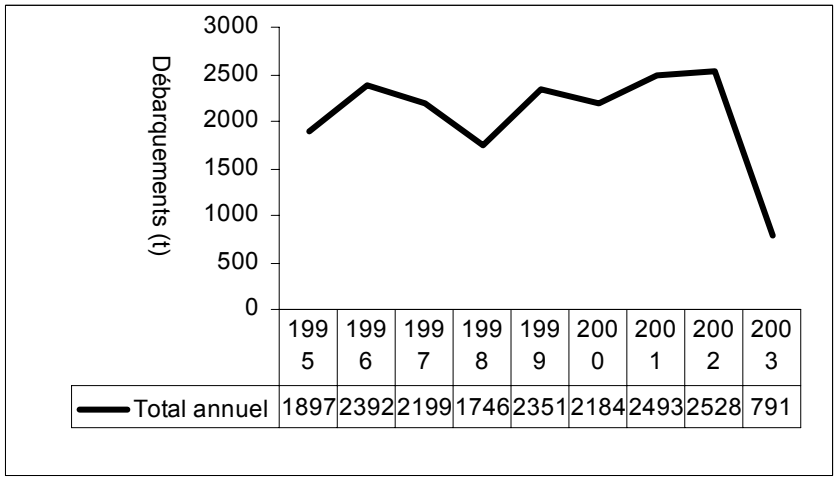

Figure 4. Development of the national catches of bluefin tuna (all gears mixed) 1995-2003.

Fattening

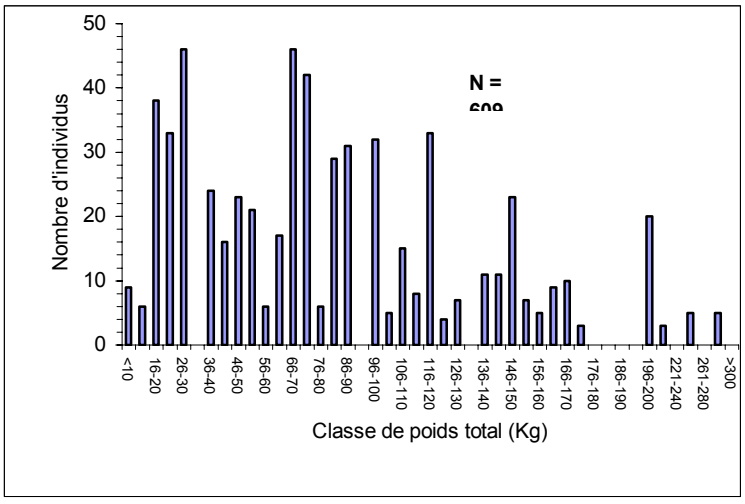

Figure 5. Distribution of total mass of dead fish sampled throughout different phases of the fattening process.

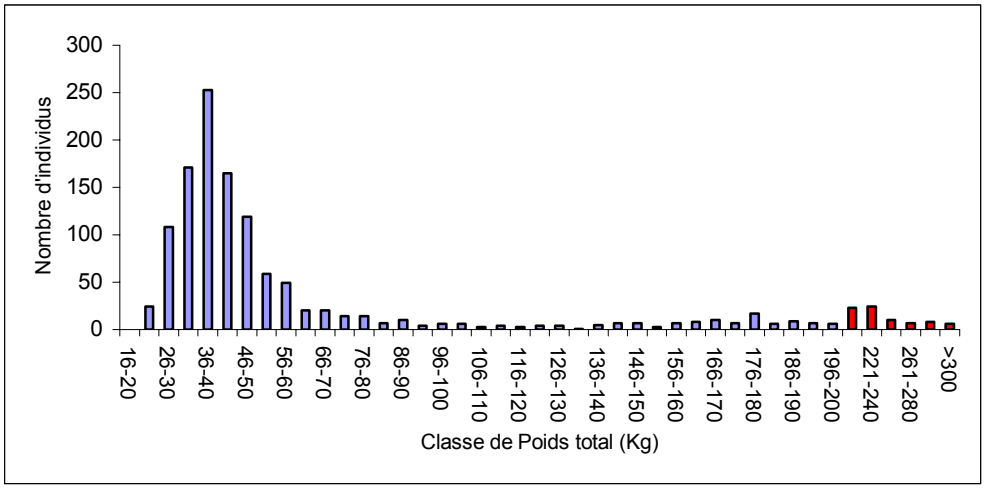

Figure 6. Distribution of total mass of fattened fish, sampled at the time of export.

Bluefin caught by purse seine

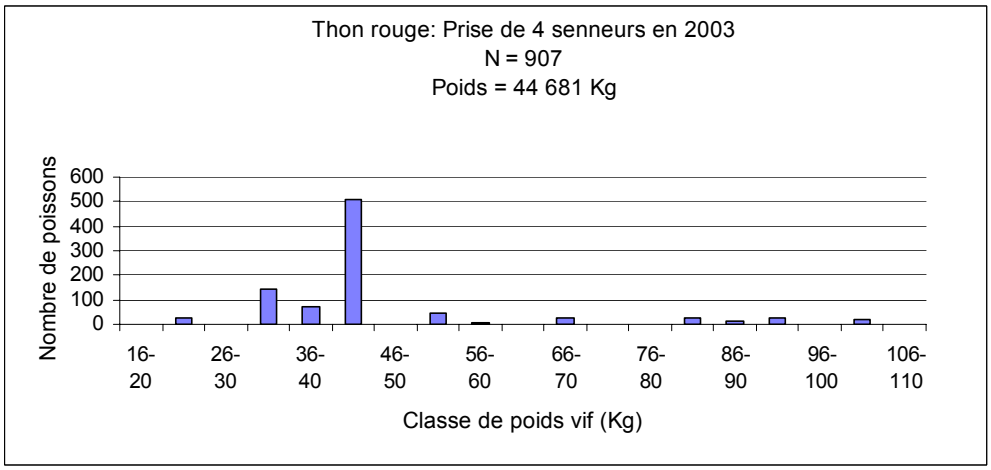

Figure 7. Distribution of total mass of fish caught by purse seine.

Bluefin tuna caught by traps

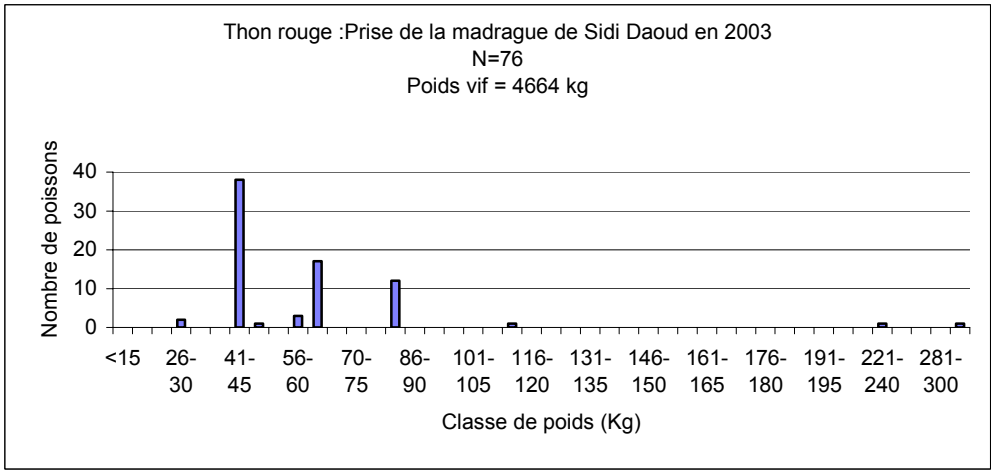

Figure 8. Distribution of total mass of fish caught by traps.

Swordfish caught by traps

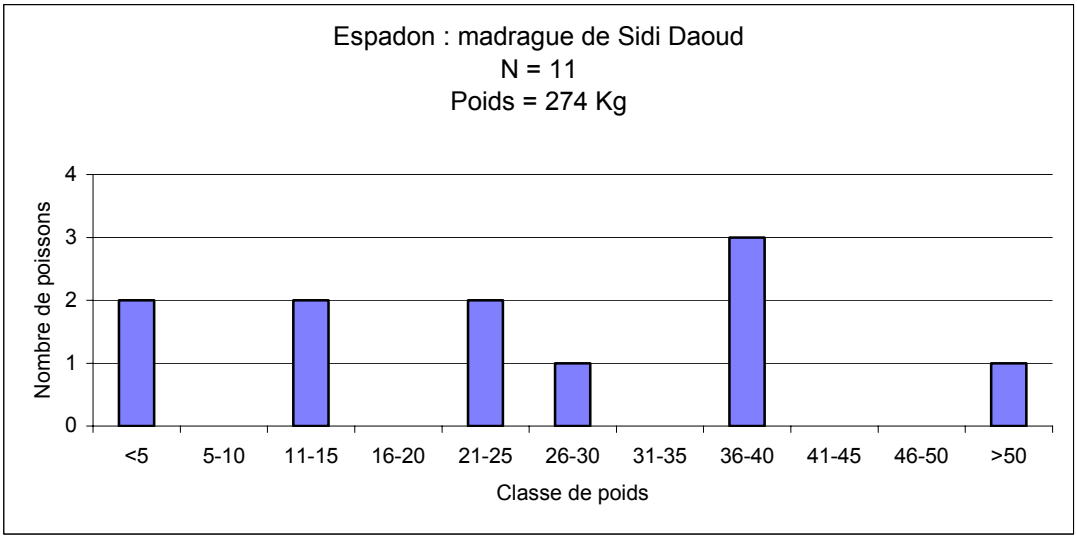

Figure 9. Distribution of total mass of fish from traps.

Swordfish caught by longliners

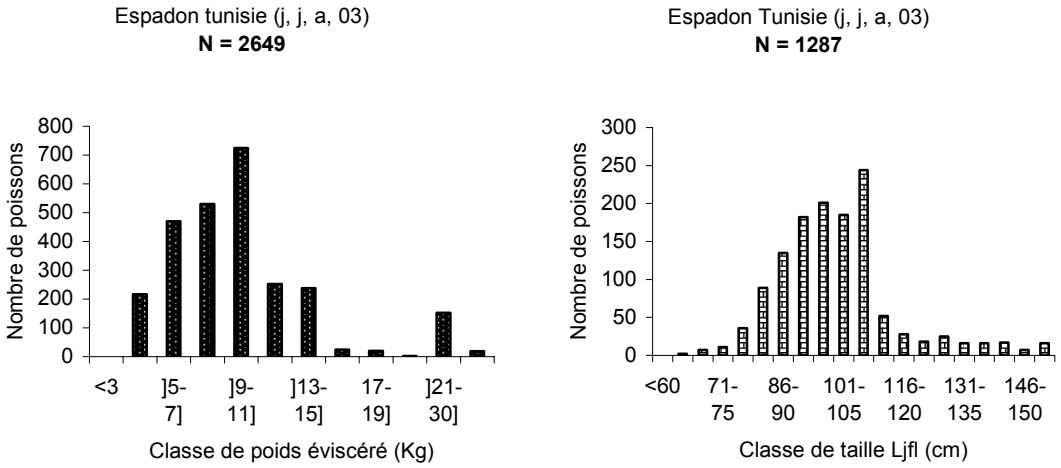

Figure 10. Distribution of total mass of swordfish sampled at some ports.

ANNUAL REPORT OF TURKEY[1]

I. K. Oray[2]

Part I. Information on fisheries, research and statistics

Section 1: Annual fisheries information

The total Turkish catch of bluefin tuna in 2003 was 3,300 t. Practically all of the catch was caught by purse seiners. The number of licensed vessels fishing for bluefin tuna in 2003 was 50. Almost the total purse seine catch was transferred into floating cages for ongrowing. The total Turkish catch of bonito in 2003 was around 6,000 t.

There was no official catch data for bullet tuna and Atlantic black skipjack in 2003.

Section 2: Research and statistics

In 2003, biological sampling of bluefin tuna (gonads, liver, muscle, dorsal spines, and otoliths) from the purse seine fisheries as well as from farming was conducted. Histological evidence of the presence of spawning bluefin tuna in the Levantine Sea in May 2003 was given. It was shown that their reproductive period in the eastern Mediterranean can be dated to around mid-late May, almost one month earlier than this spawning period in the other Mediterranean spawning grounds.

Forty-three (43) tunas donated by Turkish purse seiners and bluefin tuna farms were tagged in the Levantine Sea. The tagging of bluefin tunas using pop-up satellite tags, carried out in the same period when gonad samples were collected, showed that no bluefin tuna tagged in the Levantine Sea moved toward the Strait of Gibraltar after spawning.

Part II. Management implementation

Section 3: Implementation of ICCAT conservation and management measures

Regarding the obligatory reporting of bluefin tuna farming in Turkish waters, a new regulation has entered into force in 2003.

[1] Original report in English.

[2] Istanbul University, Faculty of Fisheries, Ordu cad. No. 200, Laleli-Istanbul, Turkey; email: isikoray@yahoo.com

ANNUAL REPORT OF UNITED KINDOM-OVERSEAS TERRITORIES[1]

1. The fisheries

1.1 Bermuda

The Bermuda commercial fishing fleet consisted of 220 vessels during 2003 with approximately 75 of the vessels actively fishing for tuna and tuna-like species. Most of the fishing effort is carried out in the inner 50 km of the Bermuda Exclusive Economic Zone, which includes two offshore banks, while longline vessels work further offshore.

The Bermuda domestic fleet is made up largely of fiberglass commercial fishing vessels although there is a purpose-built steel longline vessel. All Bermuda-based longliners are equipped with an andronics satellite-based vessel monitoring system (VMS).

For 2003, the total catch of tuna and tuna-like species was 155 t. This represents a considerable increase in the catch over the previous year. Details in catch composition are presented in **Table 1**.

Bermuda remained active in the ICCAT Enhanced Program for Billfish Research. A study on the post-release survival of blue marlin caught on recreational fishing vessels in the western Atlantic, utilizing pop-up satellite tags, continued this year. There were further deployments of these tags in Bermuda waters. In addition, tournament sampling of blue marlin continued to provide important data on reproductive seasonality at Bermuda's northerly latitude (32°N). The Bermuda Marine Resources Division (formerly Fisheries) continues to be engaged in a number of regional research programs directed at various pelagic species including wahoo, yellowfin and blackfin. Conventional tagging of blue marlin by charter fishing vessels increased during the past year.

The regulations which were passed in 2001, which introduced minimum sizes of retention for blue marlin (250 lb/114 kg) and white marline (50 lb/23 kg), were evaluated for their effectiveness in 2003. It was determined that there has been a high level of compliance with these regulations and the charter fishing fleet supports these conservation measures.

The collection of scientific data on billfish, wahoo, yellowfina and blackfin tuna species is ongoing. Scientists act as observers on fishing vessels when sampling pelagic species as well as conducting tagging programs in cooperation with fishermen. Data collection provides material for research programs and helps ensure compliance with management measures. In addition, recreational fishing for tuna and tuna-like species is monitored (mainly through tournaments) thus ensuring compliance with all ICCAT recommendations.

1.2 Turks and Caicos Islands

In the Turks and Caicos Islands (TCI), large pelagic species are not harvested for commercial purposes. Currently, the TCI large pelagic species fishery consists of game fishing tournaments. Two tournaments take place, one in Providenciales and one in Grand Turk. The Grand Turk Tournament is comprised of locally owned vessels. However, the Providenciales Tournament is comprised of local and international vessels. The vessels ranged from 34-70 feet in length. The tournaments take place between 5-20 miles off the Turks and Caicos Islands. All gear utilized during the tournaments is up to 100lb line class.

2. Statistics and research

2.1 Turks and Caicos Islands

A workbook (in Excel) was prepared which provides all the information collected during the fishing tournaments.[2] During 2004, the TCI fisheries department collaborated with the operators of the tournaments to collect biological data collection during the tournaments as well as vessel information. This is the start to collecting accurate information on this fishery in the TCI.

[1] Original report in English.

[2] Available from the Secretariat.

3. Implementation of ICCAT conservation and management measures

3.1 Turks and Caicos Islands

Billfish tagging has yet to commence in the Turks and Caicos Islands. The fishery is not utilized as a commercial fishery. However, if during a tournament a tag is discovered information will be documented by the tournament and provided to the Department of Environmental and Coastal Resources. The information will then be forwarded on to ICCAT.

Table 1. Summary table of catch of tuna and tuna-like species by Bermuda in 2003.

Species	*Weight (t)*
Yellowfin tuna	47
Bluefin tuna	<1
Bigeye tuna	<1
Blackfin tuna	9
Albacore	<1
False albacore	4
Skipjack tuna	<1
Wahoo	87
Blue marlin	2
White marlin	<1
Swordfish (North Atlantic)	<1
Total	155

ANNUAL REPORT OF THE UNITED STATES[1, 2]

1. National fisheries information

Total (preliminary) reported U.S. catch of tuna and tuna-like fishes (including swordfish, but excluding other billfishes) in 2003 was about 27,000 t, an increase of about 9% from about 25,000 t in 2002. Estimated swordfish catch in 2003 (including estimated dead discards) marginally decreased (25 t) and was about 2,800 t. Provisional landings from the U.S. fishery for yellowfin in the Gulf of Mexico increased in 2003 to about 2,500 t from about 2,400 t in 2002. The estimated 2003 Gulf of Mexico landings of yellowfin tuna accounted for about 33% of the estimated total U.S. yellowfin landings in 2003. U.S. vessels fishing in the northwest Atlantic landed in 2003 an estimated 1,489 t of bluefin, a decrease of 400 t compared to 2002. Provisional skipjack landings decreased by 9 t to 78 t from 2002 to 2003, estimated bigeye landings decreased by 117 t compared to 2002 to an estimated 483 t in 2003, and estimated albacore landings decreased from 2002 to 2003 by 39 t to 449 t.

2. Statistics and research

In addition to monitoring landings and size of swordfish, bluefin tuna, yellowfin tuna, billfish, and other large pelagic species through continued port and tournament sampling, logbook and dealer reporting procedures, and scientific observer sampling of the U.S. fleet, major research activities in 2002 and 2003 focused on several items. Research on development of methodologies to determine the genetic discreteness of large pelagic fishes in the Atlantic was continued as were larval surveys for bluefin tuna and other large pelagics in the Gulf of Mexico. Research on development of robust estimation techniques for population analyses and on approaches for characterization of uncertainty in assessments and methods for translating that uncertainty into risk levels associated with alternative management approaches was further conducted. U.S. scientists also continued to coordinate efforts for the ICCAT Enhanced Research Program for Billfish and for the Bluefin Year Program. Participants in the Southeast Fisheries Science Center's Cooperative Tagging Center (CTC) and the Billfish Foundation tagging program tagged and released 4,829 billfishes (swordfish, marlins, sailfish, and spearfish) and 608 tunas in 2003. This represents a decrease of 43% for billfish and a 9% decrease for tunas from 2002 levels. Electronic tagging studies of bluefin tuna and of marlins were substantially enhanced. Cooperative research was conducted with scientists from other nations on development of assessment methodologies, on biological investigations and on development of indices of abundance for species of concern to ICCAT.

2.1 Fisheries statistics

2.1.1 Tropical tuna fishery statistics

Yellowfin Tuna. Yellowfin is the principal species of tropical tuna landed by U.S. fisheries in the western North Atlantic. Total estimated landings increased to 7,702 t in 2003, from the 2002 landings estimate of 5,710 t (Appendix Table 2.1-YFT). The 2003 estimate is considered provisional and may change owing to incorporation of late reports of commercial catches as they become available and to possible revisions in estimates of rod & reel catches made by recreational anglers. A high proportion of the estimated landings were due to rod & reel catches of recreational anglers in the Northwest Atlantic (4,672 t). Estimates of U.S. recreational harvests for tuna and tuna-like species continue to be reviewed and this may result in the need to report additional revisions to the available estimates in the future. Nominal catch rate information from logbook reports (longline catch per 1,000 hooks) for yellowfin by general fishing areas is shown in Appendix Figure 2.1-YFT.

Skipjack tuna. Skipjack tuna also are caught by U.S. vessels in the western North Atlantic. Total reported skipjack landings (preliminary) decreased from 89 t in 2002 to 78 t in 2003 (Appendix Table 2.1-SKJ). Estimates of recreational harvests of skipjack continue to be reviewed and could be revised again in the future. Appendix Figure 2.1-SKJ presents nominal catch rate information (longline catch per 1,000 hooks) based on fishing logbook reports.

Bigeye tuna. The other large tropical tuna reported in catches by U.S. vessels in the western North Atlantic is bigeye tuna. Total reported catches and landings (preliminary) for 2003 decreased by 117 t from 600 t in 2002 to 483 t (Appendix Table 2.1-BET). Note that like yellowfin, the estimates of rod & reel catch are considered

[1] Original report in English; the appendices are available from the Secretariat.
[2] U.S. Department of Commerce, NOAA-Fisheries.

provisional and may be revised based on results of a future review of recreational harvest estimates. Appendix Figure 2.1-BET presents nominal catch rate information (longline catch per 1,000 hooks) based on fishing logbook reports.

2.1.2 Temperate tuna fishery statistics

Bluefin tuna. The U.S. bluefin fishery continues to be regulated by quotas, seasons, gear restrictions, limits on catches per trip, and size limits. To varying degrees, these regulations are designed to restrict total U.S. landings and to conform to ICCAT recommendations. U.S. 2003 provisional estimated landings and discards from the northwest Atlantic (including the Gulf of Mexico) was 1,481 t. Those estimated landings and discards represent a decrease of 401 t from the 2002 estimates. The 2003 landings by gear were: 265 t by purse seine, 88 t by harpoon, 3 t by handline, 81 t by longline (of which 54 t were from the Gulf of Mexico), 991 t by rod and reel (of which, 315 t was the preliminary estimate for bluefin less than 145 cm SFL from off the northeastern United States).

In response to 1992 regulations limiting the allowable catch of small fish by U.S. fishermen, in conformity with ICCAT agreements, enhanced monitoring of the rod and reel fishery was implemented in 1993 for the purpose of providing near real-time advice on catch levels by this fishery. This monitoring activity has continued and has included estimation of catches by finer scale size categories than reported above. The preliminary estimates for the 2003 rod and reel fishery off the northeastern United States (including the North Carolina winter fishery) for landings in several size categories were 73 fish < 66 cm, 7,598 fish 66-114 cm, 4,481 fish 115-144 cm and 1,517 fish 145-177 cm (an estimated 0.33, 138, 177, and 111 t, respectively). Note that additional rod and reel landings of bluefin >177 cm SFL, monitored through a sales reporting system, are included in Appendix Table 2.2-BFT.

Albacore. Albacore are landed by U.S. vessels; however, historically, albacore has not been a main focus of the U.S. commercial tuna fisheries operating in the North Atlantic. Reported commercial catches were relatively low prior to 1986; however, these catches increased substantially and have remained at higher levels throughout the 1990s, with nearly all of the production coming from the northeastern U.S. coast. The U.S. landings from the Caribbean increased in 1995 to make up over 14% of the total U.S. harvest of albacore, but have since remained below 4% of the total. Nominal catch rate information from U.S. longline logbook reports are shown in Appendix Figure 2.1-ALB. Estimated total catches of albacore were 449 t in 2003, a decrease of 39 t from 2002 (Appendix Table 2.2-ALB).

2.1.3 Swordfish fishery statistics

For 2003 the provisional estimate of U.S. vessel landings and dead discards of swordfish was 2,821 t (Appendix Table 2.3-SWO). This estimate is only slightly lower than the estimate of 2,846 t for 2002. The provisional landings, excluding discard estimates, by ICCAT area for 2003 (compared to 2002) were: 441t (455 t) from the Gulf of Mexico (Area 91); 1,195 t (1,041t) from the northwest Atlantic (Area 92); 273 t (312 t) from the Caribbean Sea (Area 93); and 613 t (576 t) from the North Central Atlantic (Area 94A), and 20 t (199 t) from the Southwest Atlantic (Area 96).

U.S. swordfish landings are monitored in-season from reports submitted by dealers, vessel owners and captains, NMFS port agents, and mandatory daily logbook reports submitted by U.S. vessels permitted to fish for swordfish. This fishery is also being monitored via a scientific observer sampling program, instituted in 1992. Approximately 5% of the longline fleet-wide fishing effort is randomly selected for observation during the fishing year. In the past few years, the target sampling coverage has been elevated to 8%. The observer sampling data, in combination with logbook reported effort levels, support estimates of approximately 22,600 fish discarded dead in 2003. For the North Atlantic, the estimated tonnage discarded dead in 2003 is 278 t, of which 273 is estimated due to longline gear. Overall, the estimates of dead discarded catch slightly increased by 15 t compared to the 2002 level, but remained about 10% of the landed catch.

Total weight of swordfish sampled for sizing U.S. landings by longline, otter trawl, and handline was 2,443 t, 1.5 t, and 8 t in 2003. The weight of sampled swordfish landings in 2003 were 98%, 25%, and 68% of the U.S. total reported annual landings of swordfish for longline, trawl, and handline. Again, incorporation of late reports into the estimated 2003 landings figure will likely result in changes in the sampled fraction of the catch. Recent estimates of rod and reel landings of swordfish based on surveys of recreational anglers, range from about 5-48 t per year within the period 1996-2003.

2.1.4 Marlins and sailfish fishery statistics

Due to concerns over estimates of rod and reel catches and landings of marlins, estimates for 2002 and 2003 were reviewed by a scientific committee convened to advise on the appropriateness of the methods and data used and to recommend future improvements needed to reduce uncertainty in the estimates. Removals from recreational fishing tournaments monitored through the Recreational Billfish Survey (RBS) represent a portion of total removals and thus represent an underestimate of total removals by recreational anglers. Removals based solely on RBS will not be adequate for stock assessments which must consider all removals.

The estimates of 2003 U.S. rod and reel landings from the RBS for blue and white marlins were 19 t and 0.6 t, respectively. The estimated 2003 rod and reel landings of sailfish were 53 t.

Estimates of the billfish by-catch discarded dead in the U.S. longline and other fisheries for 2003 were 19 t for blue marlin, 16 t for white marlin, and 5 t for sailfish. The estimated 2002 U.S. discarded dead by-catch was 48 t, 33 t, and 7 t, respectively for the three species.

2.1.5 Mackerels fishery statistics

Significant catches of king and Spanish mackerels by U.S. fishermen have occurred since the 1850's for Spanish mackerel and since the 1880's for king mackerel. The major gears currently exploiting these species are handlines and gillnets. Purse seines were also used to harvest king mackerel during the 1980's. Gillnets have historically been the main commercial gear for Spanish mackerel however in recent years, recreational removals have become an important component in total catches for both species. The majority of king mackerel catches are taken off North Carolina and Florida and it is believed that a major production area off Louisiana, is recovering. The primary Spanish mackerel catch areas include the Chesapeake Bay and Florida. Current fisheries are co-managed under the Coastal Migratory Pelagic Resources FMP enacted in 1983 and regulations adopted by the South Atlantic and Gulf of Mexico Fishery Management Council and implemented by NMFS. Annual catches are monitored closely by NMFS and within season management measures include commercial trip limits, size limits, seasonal and area quotas, and recreational per person daily bag limits. Because these species occur in both federal and state territorial zones of United States, successful management has required participation by both federal and state management agencies. At present, none of the king or Spanish mackerel stocks are any longer considered overfished.

Annual yields of king mackerel have ranged from 4,365 t to 8,772 t between 1983 and 2003 with an average production of about 7,000 t since 1995. Annual catches of Spanish mackerel have ranged from 2,784 t to 5,957 t from 1983 to 2003 with the average catch of about 4,500 t since 1995. Reported 2003 U.S. catches of king mackerel and Spanish mackerel are preliminary. The reported landings of king mackerel and Spanish mackerel were 6,983 t and 4,611 t, respectively. Harvest of both species has stabilized in recent years although large fluctuations in estimates of recreational catches in some years have occurred and overages in commercial landings and recreational quotas can occur. The stabilization in yields is thought to be the direct impact of regulations which have been implemented in an effort to sustain future production. The primary management factors contributing to fluctuations in annual recreational harvests include difficulties of enforcement of differential bag limits imposed in individual states, large inter-annual variances in recreational harvest estimates, and regulations that permit the sale of king mackerel from recreational charter boats after the closure of commercial fisheries.

2.1.6 Shark fishery statistics

The U.S. Federal Fisheries Management Plan (FMP) implemented in 1993 (NMFS 1993) identified three management groups: large coastal sharks, small coastal sharks, and pelagic sharks. The pelagic complex included ten species: shortfin mako (*Isurus oxyrinchus*), longfin mako *(Isurus paucus*), porbeagle (*Lamna nasus*), thresher (*Alopias vulpinus*), bigeye thresher (*Alopias superciliosus*), blue (*Prionace glauca*), oceanic whitetip (*Carcharhinus longimanus*), sevengill (*Heptranchias perlo*), sixgill (*Hexanchus griseus*), and bigeye sixgill (*Hexanchus vitulus*). The 1993 FMP classified the status of pelagic sharks as unknown because no stock assessment had been conducted for this complex. The Maximum Sustainable Yield (MSY) for pelagic sharks was set at 1,560 t dressed weight (dw), which was the 1986-1991 commercial landings average for this group. In 1997, as a result of indications that the abundance of Atlantic sharks had declined, commercial quotas for large coastal, small coastal and pelagic sharks were reduced. The quota for pelagic sharks was set at 580 t. In 1999, the U.S. FMP for Atlantic Tunas, Swordfish, and Sharks (NMFS 1999) proposed the following measures affecting pelagic sharks: 1) a reduction in the recreational bag limit to 1 Atlantic shark per vessel per trip, with a minimum

size of 137 cm fork length for all sharks, 2) an increase in the annual commercial quota for pelagic sharks to 853 t dw, apportioned between porbeagle (92 t), blue sharks (273 t dw), and other pelagic sharks (488 t dw), with the pelagic shark quota being reduced by any overharvest in the blue shark quota, and 3) making the bigeye sixgill, sixgill, sevengill, bigeye thresher, and longfin mako sharks prohibited species that cannot be retained. All these regulations were implemented in 1999 and have been in effect since then.

Landings of sharks by US longline fishermen holding permits to land and sell swordfish caught in the Atlantic and dead discards of sharks in the US longline fleet targeting tunas and tuna-like species are monitored and reported to ICCAT. There are also additional catches and landings of Atlantic pelagic sharks across the range of US fleets that harvest them, including recreational fisheries, that are updated annually. These total catches are updated herein up to 2002 (although some of the data for 2002 are preliminary and subject to change) in anticipation of an assessment of pelagic sharks by ICCAT in 2004. Commercial landings of pelagic sharks steadily increased from the early 1980's, peaked in 1995, and have shown a declining trend since that year (Appendix Table 2.6a-SHK). Recreational landings in numbers estimated from the MRFSS survey during 1981-2002 peaked to a maximum of 93,000 fish in 1985, and showed a declining trend since that year, fluctuating between about 42,600 fish in 1986 to about 3,800 fish in 2001 (Appendix Table 2.6a-SHK). Pelagic longline dead discards also fluctuated between 1987 and 2002, but generally declined from a maximum of 30,500 fish in 1993 to a minimum of about 3,500 fish in 1999. Total catches ranged from about 12,500 fish in 1981 (no commercial landings or discard estimates were available for that year) to about 95,000 fish in 1985, as a result of the peak in recreational landings that year.

Blue shark (*Prionace glauca*) commercial landings were generally very low (Appendix Table 2.6b-SHK). Recreational landings in numbers ranged from about 500 fish in 1994 and 1995 to over 20,000 fish in 1987. Pelagic longline discards reached 29,000 fish in 1993, but otherwise oscillated between a minimum of about 2,800 fish in 1999 to a maximum of about 19,000 fish in 1996 (Appendix Table 2.6b-SHK). The trends in recreational landings and dead discards were very similar from 1992 to 1997. Total catches ranged from 0 fish in 1982 (a year in which no commercial or recreational landings were reported) to about 43,500 fish in 1993, the year in which dead discard estimates peaked (Appendix Table 2.6b-SHK).

Shortfin mako (*Isurus oxyrinchus*) commercial landings never exceeded 5,000 fish according to available estimates (Appendix Table 2.6c-SHK). Commercial landings from 1995 to 2002 in the quota monitoring and general canvass data collection programs are also assigned to an unclassified "mako" category, in addition to the "shortfin mako" category. Adding these landings of unclassified makos, which are likely to be shortfin makos, would increase commercial landings for this species, but would not affect significantly total catches. Most of the landings were attributable to the recreational fishery, whose landings in numbers peaked in 1985 to about 80,000 fish, and ranged from less than 1,400 fish to over 31,000 fish in the remaining years. Pelagic longline discards of shortfin makos were negligible. Total catches ranged from about 3,500 fish in 1999 to almost 82,000 fish in 1985, when recreational catches peaked (Appendix Table 2.6c-SHK).

Catches of other pelagic species, such as longfin mako (*Isurus paucus*), oceanic whitetip shark (*Carcharhinus longimanus*), porbeagle (*Lamna nasus*), bigeye thresher (*Alopias superciliosus*), and thresher shark (*Alopias vulpinus*) were very small. Only for thresher shark, did total landings exceed 1,000 fish for more than one year in a row.

2.2 Research activities

Research continued on genetic discreteness of large pelagic fishes in the Atlantic, larval surveys for bluefin tuna and other large pelagics in the Gulf of Mexico, new methods for estimating and indexing abundance, robust estimation techniques for sequential population analyses, and estimating discards based on direct observations by scientific fishery observers. Research was also conducted on approaches for characterization of uncertainty in assessments and methods for translating that uncertainty into risk levels associated with alternative approaches. U.S. scientists also continued to coordinate efforts for the ICCAT Enhanced Research Program for Billfish and for the Bluefin Year Program. Collaborative research with scientists from ICCAT member nations and cooperating parties continues.

2.2.1 Bluefin tuna research

As part of its commitment to the Bluefin Program, research supported by the United States has concentrated on ichthyoplankton sampling, reproductive biology, methods to evaluate hypotheses about movement patterns, spawning area fidelity, stock structure investigations and population modeling analyses.

Ichthyoplankton surveys in the Gulf of Mexico during the bluefin spawning season were continued in 2003 and 2004. Data resulting from these surveys which began in 1977 are used to develop a fishery-independent abundance index of spawning West Atlantic bluefin tuna. This index has continued to provide one measure of bluefin abundance that is used in SCRS assessments of the status of the resource. During the 2003 a U.S. scientist participated in the Spanish TUNIBAL project studying the relationships between bluefin larval and adult distributions and hydrography in waters near the Balearic Islands in the Mediterranean Sea. During the 2004 U.S. ichthyoplankton survey, a plankton net of a type used in the Spanish surveys was fished in addition to the nets normally used to determine the impact of using a wider net mouth and larger mesh on the size and catch rates of bluefin in the Gulf of Mexico.

Scientists at Virginia Institute of Marine Science and Texas A&M University have used nuclear and mitochondrial DNA to investigate the population structure of bluefin tuna in the Mediterranean Sea (SCRS/2004/165). Young of the year bluefin were studied to reduce possible migratory effects. Their results indicate homogeneity within the western Mediterranean basin (Balearic Islands and Tyrrhenian Sea) and differences between the eastern (Ionian Sea) and western basins. Samples collected for these studies were obtained by or in cooperation with European scientists from multiple locations including Spain and several locations in Italy; financial and logistical assistance was also provided by the ICCAT bluefin year program.

Since 1998, researchers from Texas A&M University and the University of Maryland with assistance of researchers from Canada, Europe, and Japan have studied the feasibility of using otolith chemical composition (microconstituents and isotopes) to distinguish bluefin stocks. Recent research has investigated the value of using additional microconstituent elements (transitional metals) to enhance classification success (see Appendix 3.1-BFT). By themselves the transitional metals provided little discriminatory power, but when combined with the other trace elements (for 13 elements in all), the classification success was improved to about 80-90%. Studies of classification success using oxygen isotopes continue.

Scientist University of Maryland, Virginia Institute of Marine Science and Texas A&M University have continued to sample specimens for genetic and otolith chemistry studies of stock structure. Roughly 10-20 young of the year were collected in 2003. In addition limited sampling of ages 1 and older continues. Efforts are also continuing to obtain samples from juveniles and mature bluefin from the Mediterranean Sea and adjacent waters.

In response to the ICCAT Commission's request for options for alternative approaches for managing mixed populations of Atlantic bluefin tuna SCRS/2003/108 examined approaches to developing more complex models of bluefin population dynamics including detailed spatial information and methods for assessing the resources and examining management procedures. SCRS/2003/105 proposed the evaluation of possible age structured assessment using more complex geographic stratification (6 box) and movement scenarios than have been used in recent assessments and the greater use of Bayesian approaches to more fully model data inputs and population characteristics than is currently done by the SCRS with its conventional VPA analyses. Document SCRS/2004/166 further extends that work and shows that, under the proposed model structure, West Atlantic bluefin population trends from the conventional ICCAT assessments can be replicated while the most recent east Atlantic assessment trends can not. It also corroborated earlier results from 2-area VPAs that showed that estimated West Atlantic population trends are influenced by assumptions about movement rates and patterns. In May 2004 scientists from (1) Stanford University and the Monterey Bay Aquarium and (2) the New England Aquarium and the University of New Hampshire made presentations on their research findings to the SCRS meeting on bluefin tuna management strategies held in France. Researchers at the Imperial College, London are working with the University of Miami, the University of New Hampshire and the National Marine Fisheries Service to develop methods to estimate bluefin movement and fishing mortality rate patterns (SCRS/2004/164). An operational model is being developed which will use conventional and electronic tagging data and fishing effort by management area. The operational model will be used to examine possible harvest control rules and the evaluation of possible management procedures (see Appendix 3.4-BFT).

2.2.2 Swordfish research

Data from observer samples were compared against self-reported information from the U.S. large pelagic mandatory logbook reporting system, and estimates of discard mortality of swordfish, billfish, sharks and other species from the U.S. fleet were developed from that analysis for the 2003 SCRS. Estimates of small swordfish by-catch for 2002 and 2003 were compared to the average levels estimated for the late 1990's and were found to be substantially lower (see Appendix).

Preliminary evaluations of the comparative effectiveness of closed areas and minimum size measures for the conservation of swordfish stocks were provided in SCRS/2004/128. This research establishes a framework within which the conservation equivalency of various minimum size and marine protected area management measures could be evaluated.

Fisher reported and observed swordfish catch, size and catch rate patterns through 2003 were examined in support of monitoring the recovery of north Atlantic swordfish. Standardized indices of abundance were updated for the Western North Atlantic using data from the U.S. pelagic longline fleet (SCRS/2004/130).

Research is also underway to improve methods by which tag return data can be incorporated into the next swordfish stock assessment (SCRS/2004/129). The approach taken makes use of Bayesian statistical methods to characterize the uncertainty in assessment results.

Collaborative research with Venezuelan scientists continues on estimating the age-structure of the catch of swordfish. Results of this research will be available for the next assessment of north Atlantic swordfish.

Research on measures to mitigate the interactions between pelagic longline and by-catch of marine turtles continued under a cooperative research program involving the U.S. Atlantic pelagic longline fishery. The Northeast Distant Fishery Experiment was conducted from 2001 through 2003 on the high seas of the Western Atlantic Ocean, in an area off New Foundland known as the Grand Banks. In cooperation with Blue Water Fishermen's Association and the Fisheries Research Institute, NOAA Fisheries worked to test various fishing methods, such as bait and gear type, to determine which combinations worked best to minimize sea turtle encounters in pelagic longline fisheries. Thirteen American longline vessels were contracted to carry out the research with NOAA Fisheries scientists and private sector gear developers to find combinations used to achieve up to a 90 percent reduction in fishing gear-sea turtle interactions for leatherbacks and loggerheads. This research also led to development of new gear so fishermen could safely dehook and disentangle the few turtles that were accidentally caught. NOAA Fisheries and partners are now launching an international education initiative to invite all fishing nations with pelagic longline fleets to begin exploring this technology. Gear and techniques developed by this program are being tested in research programs in several countries, and results of this research are being used in other fisheries and countries that operate longline gear. A report on the research progress for this program can be found at http://www.mslabs.noaa.gov/mslabs/docs/watson2.pdf. Other material of interest on this topic can be found at http://www.nmfs.noaa.gov/mediacenter/turtles/.

2.2.3 Tropical tunas research

During 2003, several collaborative studies were conducted by U.S. scientists in cooperation with scientists from other countries. Cooperative research by the U.S. NMFS and the INP in Mexico continued and resulted in a joint analysis of U.S. and Mexican longline catch-per-unit-effort (CPUE) of yellowfin in the Gulf of Mexico (SCRS/2003/061). Cooperative research plans include further development of abundance indices for sharks and other tunas, as well as the refinement of the yellowfin tuna indices as additional data become available. Cooperative research on yellowfin tuna abundance indices, catch at age, and life-history studies is also continuing with Venezuelan scientists. One document on Venezuelan longline catch rate patterns resulted from this collaboration in 2003 (SCRS/2003/054) and additional working papers based on this collaboration are expected in future years.

U.S. scientists participated in the 2003 ICCAT Yellowfin Tuna Stock Assessment (Merida, Mexico, July 21-26 2003), and submitted several other working papers. Two relative abundance patterns (one for the Gulf of Mexico and another for the Atlantic regions fished by U.S. longline vessels) based on U.S. pelagic longline data from 1981 to 2002 were presented in SCRS/2003/060. Additionally, a relative abundance index based on data collected through the Large Pelagic Survey from the Virginia-Massachusetts rod and reel fishery (1986-2002) was presented in SCRS/2003/062.

New information from a genetic study was presented in SCRS/2003/063. The phylogenetic analysis conducted on samples from the Gulf of Mexico and Gulf of Guinea by researchers at Texas A&M, Galveston, revealed the presence of siblings in several sampling tows for juvenile tuna. Given the high level of genetic diversity at both the mitochondrial and microsatellite loci, the probability of such sampling is extremely low and can best be explained by the unequal reproductive output of certain females. Increases in vulnerability of juvenile yellowfin tuna could be of concern in terms of genetic integrity of the population if levels of reproductive variance are confirmed to be large.

U.S. scientists also worked in cooperation with outside experts to study alternatives for improving the collection of catch statistics in the U.S. recreational yellowfin tuna fishery. A U.S. scientist attended the Tuna Statistics Meeting (Tema, Ghana, February 2-5, 2003) and collaborated with scientists from other nations (including Ghana) in the design of a pilot study to develop a sampling scheme for Ghana's tropical tuna fishery.

During 2004, U.S. scientists participated in both the Bigeye Tuna Year Program (BETYP) Symposium (Madrid, Spain, March 8-9 2004) and the Second World Bigeye Tuna Meeting (Madrid, Spain, March 10-13 2004). Contributed papers included SCRS/2004/038, describing the simulated aggregation of bigeye tuna in free schools versus those associated with fish aggregating devices, and SCRS/2004/059, which reviewed published work on yellowfin tuna growth and compared parameter estimates in the context of potential impact on the catch-at-age matrices used for stock assessment.

U.S. scientists took part in the 2004 ICCAT Bigeye Tuna Stock Assessment (Madrid, Spain, June 28-July 3 2004). For this meeting, relative abundance patterns based on U.S. pelagic longline data from 1982 to 2003 were presented in SCRS/2004/133.

A thorough review of recreational catch estimation procedures was conducted during 2004, focusing on a survey program covering the rod and reel fishery along the Atlantic Coast of the United States from Virginia northward.

U.S. scientists also worked cooperatively with scientists in Brazil, instructing a course on CPUE standardization methods and applications to stock assessment (Recife, Brazil, June 7-12, 2004).

2.2.4 Albacore research

In 2003, an analysis of U.S. longline CPUE (SCRS/2003/086) was prepared in support of the ICCAT assessment of North and South Atlantic albacore.

2.2.5 Mackerels and small tunas research

U.S. small tuna research is directed mainly on king and Spanish mackerel stocks as the amount landed of other small tunas such as cero mackerels by U.S. fishermen is very low. The focus of research is collection of primary fishery catch statistics, and biostatistical sample data, fishery age samples, and abundance indices. Critical research areas regarding mackerels relate to the adequacy of sampling of the age structure of the stocks, the amount of mixing between management units, and increasing the precision associated with the mackerel assessment abundance indices. Because assessment and management are by necessity by geographical units, continued research on migration of king mackerel in particular is important. An updated assessment of king and Spanish mackerel stock status was completed this year, including evaluations of stock status under various hypotheses about interchange rates between Gulf of Mexico and U.S. Atlantic migratory groups. The results of the assessment were used to advise the Gulf and South Atlantic Fishery Management Councils on biologically appropriate harvest levels corresponding with the Councils' objectives for sustainable harvest.

Information on morphometry of wahoo (*Acanthocybium solandri*) based on U.S. pelagic longline observer data was presented in SCRS/2004/167.

2.2.6 Shark research

The ICCAT Sub-Committee on By-catch conducted an assessment of blue sharks and shortfin makos in Tokyo, Japan, in June 2004. The information available on biology, fisheries, stock structure, catch, catch rate, and size of these species was reviewed and an evaluation of the status of stocks conducted using surplus production, age-structured, and catch-free stock assessment models. Assessment results and conclusions were considered very preliminary because of the limitations on quantity and quality of information available for the stock assessment of these two species. The Group recommended increased research and monitoring efforts for sharks in particular and other by-catch species in general to improve the advice on their status as well as on the impacts of tuna fisheries on these species. In general, preliminary results for blue sharks indicated that current biomass in both the North and South Atlantic appears to be above the biomass at MSY. Current shortfin mako biomass may be below that producing MSY in the North Atlantic and above MSY in the South Atlantic, but results were highly conditional on the assumptions made and data available. U.S. scientists contributed eight working documents for this meeting on various aspects of shark biology and methods to assess stock status.

2.2.7 Billfish research

The NMFS SEFSC again played a substantial role in the ICCAT Enhanced Research Program for Billfish in 2004, with SEFSC scientists acting as General Coordinator and Coordinator for the West Atlantic Ocean. Major accomplishments in 2003 were documented in SCRS/2003/025. Highlights include 18 at-sea sampling with observers on Venezuelan industrial longline vessels in September, 2003. Of the trips accomplished to date, five observer trips were on Korean type vessels fishing under the Venezuelan flag. Most of these vessels are based out of Cumaná targeting tuna, swordfish, or both at the same time. Biological sampling of swordfish, Istiophorids, and yellowfin tuna for reproductive and age determination studies, as well as genetics research were continued during the 2003 sampling season. Shore-based sampling of billfish landings for size frequency data, as well as tournament sampling was obtained from Venezuela, Grenada, U.S. Virgin Islands, Bermuda, Barbados, and Turks and Caicos Islands. Program participants in Venezuela, Grenada, and Barbados continued to assist in obtaining information on tag-recaptured billfish, as well as numerous sharks, in the Western Atlantic Ocean during 2003; a total of 75 tag recovered billfish and sharks were submitted to the Program Coordinator in 2003. Age, growth, and reproductive samples from several very large billfish were obtained during 2003.

A study conducted by the Virginia Institute of Marine Science (VIMS) to evaluate post release survival and habitat use of Atlantic white marlin using pop-up satellite archival tags (PSATs) continued in 2003. Short-duration (5 or 10 day) deployments of pop-up satellite archival tags were used to estimate survival of white marlin released from four locations in the western North Atlantic recreational fishery. Forty-one tags were attached to white marlin caught using dead baits rigged on straight-shank ("J") hooks (n = 21) or circle hooks (n = 20) offshore of the U.S. Mid-Atlantic region, the Dominican Republic, Mexico, and Venezuela. Survival was significantly ($p < 0.01$) higher for white marlin caught on circle hooks (100%) relative to those caught on straight shank ("J") hooks (65%). These results, along with previous studies on circle hook performance, suggest that a simple change in hook type can significantly increase the survival of white marlin released from recreational fishing gear. Data from these short term deployments also suggest that white marlin strongly associated with warm, near surface waters. However, based on the frequency, persistence, and patterns of vertical movements, white marlin appear to direct a considerable proportion of foraging effort well below surface waters, a behavior that may account for relatively high catch rates of white marlin on some pelagic longline deployments.

A separate study conducted by VIMS is also being done on U.S. longline vessels to evaluate post release survival of marlin, as well as evaluating hook performance and related mortality. In addition, hook timers and time-depth-recorders are being used to examine the depth distribution and performance of the fishing gear. To date over 90 sets on longline vessels have been completed but preliminary analyses are not yet available.

The SEFSC has conducted several studies in the Northwest Atlantic and the Pacific coast of Central America to evaluate habitat use and reproductive biology of billfish using PSAT technology. About 200 PSATs have been deployed in this effort over the last 2/3 years with deployments ranging from a month to 5.5 months. Several peer review papers are under review at this time, while other papers are currently in preparation. In addition, SEFSC is also currently conducting pelagic longline research to evaluate gear behavior, and the effects of gear modification on catch rate and survival of target and non-target species. Two cruises have been completed to date.

The Fishery Management Group of the University of Miami is carrying out research on Atlantic billfish on three areas, population parameter estimation, population modeling and development of socio-economic indicators.

2.2.8 Tagging

Participants in the Southeast Fisheries Science Center's Cooperative Tagging Center (CTC) and the Billfish Foundation Tagging Program (TBF) tagged and released 4,829 billfishes (including swordfish) and 608 tunas in 2003. This represents a decrease of about 43% for billfish and a decrease of 9% for tunas from 2002 levels. A number of electronic tagging studies involving bluefin tuna and billfish were also carried out in 2003. These are discussed in the bluefin and billfish research sections above.

There were 118 billfish recaptures from the CTC and TBF reported in 2003, representing a decrease of 44% from 2002. Among the 2003 CTC billfish recaptures there were 16 blue marlin, 4 white marlin, 32 sailfish, 9 swordfish, and 5 striped marlin. For the CTC and TBF, a total of 223 tunas were recorded recaptured in 2003; these were 215 bluefin, 6 yellowfin, 1 albacore, and 1 blackfin tuna. These recaptures represent a 38% decrease

with respect to year 2002 values. The ICCAT Enhanced Research Program for Billfish (IERPBF) in the West Atlantic Ocean has continued to assistance in reporting tag recaptures to improve the quantity and quality of tag recapture reports, particularly from Venezuela, Barbados and Grenada. A total of 75 billfish and 5 shark tag recaptures were reported from the IERPBF during 2003.

2.2.9 Fishery observer deployments

Domestic longline observer coverage. In accordance with ICCAT recommendations, randomized observer sampling of the U.S. large pelagic longline fleet was continued into 2003 (see Appendix Figure 2.2-Observers). Representative scientific observer sampling of this fleet has been underway since 1992. The data collected through this program have been used to quantify the composition, disposition, and quantity of the total catch (both retained and discarded at sea) by this fleet which fishes in waters of the northwest Atlantic Ocean, Gulf of Mexico, and the Caribbean Sea. Selection of the vessels is based on a random, 8% sampling of the number of sets reported by the longline fleet. A total of 6,982 sets (5,153,550 hooks) were recorded observed by personnel from the SEFSC and NEFSC programs from May of 1992 to December of 2003. Observers recorded over 379,354 fish (primarily swordfish, tunas, and sharks), in addition to marine mammals, turtles, and seabirds during this time period. The percent of fleet coverage through 2003 ranged from 2.5% in 1992 to 8.8% in 2002. Fleet effort for 2003 has not been finalized, but percent observer coverage is estimated near 8% for the year. Sampling fraction of the U.S. pelagic longline fleet was increased in 2002 to 8%. Document SCRS/04/168 provides a more detailed summary of the data resulting from observer sampling between 1992 and 2002.

In 2001 through 2003, an experimental gear design study was initiated in cooperation with the U.S. pelagic long line fleet with a history of fishing on the Grand Banks of the North Atlantic, to develop gear modifications that might prove useful in reducing the rate of interaction and limit severity of injury to marine turtles incidentally captured while at the same time minimizing loss of the targeted catch. The gear modifications being tested include the type of bait used, color of bait (dyes), the size and type of hooks used (circle vs. J-style vs. various hook offsets), as well as the positioning of hooks relative to surface floats. It was viewed that these technologies could have application to the international longline fleets. During these three years, 100% observer coverage was required of the participating vessels. Results of these gear design experiments are available at http://www.mslabs.noaa.gov/mslabs/docs/pubs.html.

Southeast U.S. shark drift gillnet fishery Observer Coverage. The directed shark gillnet fishery is currently comprised of four to six vessels that operate year round in coastal waters from Georgia to Florida (USA). Sharks are the primary target species. Observations of this fishery have been conducted by on-board observers from 1993-1995 and 1998-present and reports of the catch and by-catch from these observations are available. In 2003, Observers spent 116 days at sea and observed 65 sets.

Foreign fishery observers. There was no foreign fishing activity in the U.S. Exclusive Economic Zone (EEZ) off the East coast during 2003.

3. U.S. implementation of ICCAT conservation and management measures

3.1 Catch limits and minimum sizes

3.1.1 Recommendation by ICCAT to establish a Rebuilding Program for West Atlantic Bluefin Tuna [*Rec. 98-07; Rec. 02-07]*

The 1998 rebuilding program for West Atlantic bluefin tuna (WBFT) established an annual quota for the United States of 1,387 t. This quota was applied to the 2002 fishing year of June 1, 2002 through May 31, 2003. The underharvest of 248.3 t from the 2001 fishing year was carried forward to adjust the 2002 fishing year quota. During the 2002 fishing year, the United States landed an estimated 1853 t of bluefin tuna. In addition, U.S. fishing vessels accounted for an estimated 56.38 t of dead discards (see Appendix, page 1).

Recommendation [Rec. 02-07] revised the annual WBFT quota for the United States to 1,489.6 t and allocated 25 t of this total to account for incidental catch by pelagic longline vessels in the vicinity of the management area boundary. This quota was applied to the 2003 fishing year of June 1, 2003 through May 31, 2004. The overharvest from 2002 was deducted to result in an adjusted quota of 1,265.7 t. Measures were applied in the U.S. domestic fisheries to moderate landings due to the reduced amount available for harvest. During the 2003 fishing year, the United States landed an estimated 1,428.2 t of bluefin tuna. In addition, U.S. fishing vessels

accounted for an estimated 51.4 t of dead discards (see Appendix, page 1). Additional measures are being applied in the U.S. domestic fisheries for the current 2004 fishing year to reduce landings relative to prior years.

3.1.2 Recommendation by ICCAT to Establish a Plan to Rebuild Blue Marlin and White Marlin Populations [Rec. 00-13; Rec. 02-13]

Phase I requires that countries capturing marlins commercially reduce white marlin landings from pelagic longline and purse seine fisheries by 67 percent and blue marlin landings by 50 percent from 1999 levels; the United States has prohibited all commercial retention of billfish since 1988. For its part of the rebuilding program, the United States agreed to maintain regulations that prohibit all landings of marlins by U.S. pelagic longline fishermen, and to continue monitoring billfish tournaments through scientific observer coverage of at least 5 percent initially, with an objective of 10 percent coverage by 2002. The United States now exceeds these observer requirements. The United States also agreed to limit annual landings by U.S. recreational fishermen to 250 Atlantic blue marlin and white marlin, combined, per year, through 2005. Recommendation [Rec. 02-13], among other things, extended phase 1 of the blue and white marlin rebuilding plan through 2005 and the time frames of the next stock assessments. Catch and release rates are estimated to be very high (90-95%) based on tournament data, and minimum sizes have been established at 168 cm (66 inches) for white marlin and 251 cm (99 inches) for blue marlin. A proposed rule was published on September 17, 2003, (68 FR 54410) proposing the 250 marlin mandate. The United States is undertaking rulemaking to reduce mortality (landings and dead discards) of marlin in both its commercial and recreational fisheries.

In the 2003 fishing year (June 1, 2003-May 31, 2004), the Recreational Billfish Survey of recreational fishing tournaments recorded landings of 99 blue marlin and 20 white marlin. The survey is not inclusive of fishing activities outside of tournaments and the United States has implemented a mandatory reporting program for billfish landed by recreational anglers who are not participating in registered tournaments. In addition, the United States has taken steps to improve statistical information collection on recreational fishing in the Commonwealth of Puerto Rico and the U.S. Virgin Islands. These efforts have resulted in qualitative information that indicates that billfish landings may have been underestimated in past years. These figures may be significant; however, efforts to produce quantitative historical estimates of non-tournament billfish landings for both U.S. mainland and Caribbean ports have been problematic due to estimation techniques that are subject to imprecision and bias. In an effort to reduce mortality in U.S. recreational fisheries, steps have been taken to improve data collection in Puerto Rico and to increase enforcement activities in response to reports of illegal sales, unregistered tournaments and unpermitted anglers. Also, the U.S. Congress appropriated $2.5 million in fiscal year 2004 to enhance research programs on billfish, including means of reducing mortality. As the results of these research projects are obtained in 2005 and future years, the U.S. will implement appropriate changes to its management programs.

3.1.3 Recommendation by ICCAT to Establish a Rebuilding Program for North Atlantic Swordfish [Rec. 99-7; Rec. 02-02]

The 1999 recommendation established an annual landings quota of 2951 t for the United States. Recommendation [Rec. 02-02] established new quotas for the United States for 2003-2005, a dead discard allowance of 80 t for 2003, a provision allowing up to 200 t of North Atlantic swordfish to be caught between 5 degrees North latitude and 5 degrees South latitude, and a provision to transfer 25 t to Canada. The landings quota and discard allowance are applied to a fishing year of June 1-May 31. During the 2001 fishing year, there was an underharvest of 1,437 t ww. This underharvest was added to the landings quota for the 2002 fishing year. Landings and discard estimates for the 2002 and 2003 fishing years are provided in the U.S. Compliance Tables (see Appendix, pages 1-5). The United States has a minimum size of 33 lb (15 kg) dressed weight, which is designed to correspond to 119 cm, with zero tolerance. Information on compliance with the minimum size is provided in the U.S. compliance tables. The United States is engaged in final rulemaking to codify the provisions from Recommendation [Rec. 02-02].

3.1.4 Recommendation by ICCAT on the South Atlantic Swordfish catch limits [Rec. 02-03]

This recommendation establishes catch limits for the United States for 2003-2006 at 100 t for 2003 through 2005 and 120 t for 2006 and allowed that underharvests in 2000 may be carried over to 2003. The United States is in the final stages of rulemaking to establish these provisions. The United States landed 92.83, 20.35, and 15.05 t in fishing years 2001-3, respectively.

3.1.5 Recommendation by ICCAT on the Southern Albacore Catch Limit and Sharing Arrangements for 2004 [Rec. 02-06, Rec. 03-07]

The United States was subject to a catch limit of 100 t in 2003 and 2004, however, does not have a directed fishery for southern albacore. The United States landed 2 t in calendar year 2001. Landings data indicate that for both fishing year 2002 and calendar year 2003, harvests were 1.97 t.

3.1.6 Recommendation by ICCAT on North Atlantic Albacore Catch Limits [Rec. 02-05, Rec. 03-06]

The United States was allocated a landings quota of 607 t ww for 2003, which is a level consistent with average landings for the United States over the past ten years. The 2002 recommendation applied for one year only, whereas the 2003 recommendation applies to three fishing years (2004-2006). Given the minor share of U.S. mortality in this fishery (< 2%), and given that the ICCAT recommendation provides for the adjustment of next year's catch level in the case of overharvest or underharvest, no new regulations have been proposed for this fishery in the United States. The recommendation provides that overages/underages of this annual catch limit should be deducted from or added to the catch limit established for the year 2004 and/or 2005. The United States landed 453 and 487.8 t during the 2001 and 2002 fishing years, respectively. Calendar year landings for 2003 were 448.8 t.

In addition, pursuant to ICCAT's recommendation concerning the limitation of fishing capacity on North Atlantic albacore (1998), the United States submits annually the required reports providing a list of U.S. vessels operating in the fishery.

3.1.7 Recommendation by ICCAT on Bigeye Tuna Conservation Measures [Rec. 02-01, Rec. 03-01]

No catch limits apply to the United States, since 1999 catch was less than 2100 t. The United States has implemented a higher minimum size than that required by ICCAT, which provides additional protection for juvenile bigeye. This minimum size of 27 inches (approximately 6.8 kg) applies to all U.S. fisheries landing bigeye tuna, both commercial and recreational. The United States landed 595.6 t in fishing year 2002 and 483.24 t in the calendar year of 2003. Bigeye tuna provisions were carried forward to the fishing year of 2004.

3.1.8 Resolution by ICCAT on Atlantic Sharks [Res. 01-11 and Res. 03-10]

The 2001 shark resolution calls for the submission of catch and effort data for porbeagle, shortfin mako, and blue sharks; encourages the release of live sharks to the extent possible; encourages the minimization of waste and discards in accordance with the Code of Conduct for Responsible Fisheries; and calls for voluntary agreements not to increase fishing targeting Atlantic porbeagle, shortfin mako, and blue sharks until an assessment can be conducted. Furthermore, the 2003 shark resolution requests ICCAT parties and cooperating parties, in preparation for the 2004 shark assessment to provide to the SCRS by-catch committee with information on shark catches, effort by gear type, and landings and trade of shark products and calls on the full implementation by ICCAT parties and cooperating parties of National Plans of Action (NPOAs) in accordance with the FAO International Plan of Action for the Conservation and Management of Sharks.

The United States submits catch and effort data for sharks and has catch limits in place for Atlantic porbeagle, shortfin mako, and blue sharks. In addition to providing data to the SCRS for the 2004 shark assessment, scientists from the United States participated in the shark assessment meeting. In 2002, pursuant to the 2000 Shark Finning Prohibition Act, the United States banned the practice of finning nationwide (67 FR 6194, February 11, 2002), which will reduce waste associated with finning. Additionally, the United States adopted a National Plan of Action for the Conservation and Management of Sharks in February 2001, consistent with the International Plan of Action for Sharks, which calls for management measures to reduce waste to the extent practicable and to protect vulnerable life history stages, such as juveniles.

The United States has managed sharks in the Atlantic Ocean under domestic fishery management plans (FMP) since 1993. The 1993 FMP, among other things, established a fishery management unit for Atlantic sharks, prohibited shark finning by requiring that the ratio between wet fins/dressed carcass not exceed 5 percent, and established other commercial and recreational shark management measures. The 1999 Atlantic Highly Migratory Species FMP established further management measures for Atlantic sharks, including a limited access permit system, recreational retention limits, reduced commercial quotas, and expansion of the prohibited shark list to 19 species. In 2002, the United States completed stock assessments for large and small coastal sharks, then undertook to develop Amendment 1 to the 1999 FMP to reassess shark management. Amendment 1, which was

completed at the end of 2003, addressed, among other things, commercial quotas, quota management and administration, a time/area closure for sandbar and dusky shark nursery and pupping areas, and vessel monitoring system requirements for shark vessels to facilitate enforcement of closed areas.

3.2 Closed seasons

3.2.1 Recommendation by ICCAT on the Establishment of a Closed Area/Season for the Use of Fish-Aggregation Devices [Rec. 99-01]

No U.S. action is necessary for this measure. The United States does not have any surface fleets fishing in the area covered by this recommendation.

3.2.2 Domestic Time/Area Closures for ICCAT Species

At present, the Atlantic pelagic longline fishery of the United States is subject to several discrete time/area closures that are designed to reduce by-catch in the pelagic longline fishery by prohibiting pelagic longline fishing for ICCAT species in those areas during specified times. These closures affect offshore fishing areas up to 200 nautical miles (nm) from shore (see **Figure 1**). Those closures are as follows: (1) Florida East Coast: 50,720 nm^2 year-round; (2) Charleston Bump: 49,090 nm^2 from February through April each year; (3) DeSoto Canyon: 32,860 nm^2 year-round; (4) the Northeastern United States: 21,600 nm^2 during the month of June each year; and (5) Northeast Distant Statistical Sampling Area (NED): 2,631,000 nm^2 year-round (per regulations at 50 CFR part 223 and 635).

NMFS has conducted a three-year experimental fishery in the NED closed area to develop sea turtle by-catch reduction measures with the intention of reopening the NED closed area and exporting the measures to international fishing fleets. Results indicate that various circle hook and bait combinations may reduce sea turtle interactions and post-release mortality, depending upon hook treatment and species. In addition, researchers tested dehookers, line clippers, and other sea turtle release equipment, and as a result of the experiment, revised NMFS' sea turtle careful release and handling protocols and list of release equipment. Vessels that possess and/or use specified hook and bait treatments and that use required, approved sea turtle release gear in accordance with the release and handling protocols, may fish in the NED.

3.3 Ban on imports

3.3.1 Trade restrictive Recommendations adopted in 2002 and 2003

The United States is currently engaged in rulemaking to implement recommendations regarding trade restrictions from the 2002 and 2003 annual meetings. The proposed rule published on May 6, 2004 (69 FR 25357) and final rulemaking is underway. Trade restrictions prohibit imports of bigeye tuna from Bolivia and Georgia and imports of bluefin tuna, bigeye tuna, and swordfish from Sierra Leone. A recommendation to continue trade measures against Equatorial Guinea was codified on November 20, 2002, (67 FR 70023). Import restrictions will be lifted against Belize and Honduras for bigeye tuna, bluefin tuna, and swordfish and also lifted against St. Vincent and the Grenadines for bigeye tuna.

3.3.2 Statistical Document Programs

The United States' Bluefin Tuna Statistical Document program has been in place since the 1990s. As required under the program, the United States submits reports to ICCAT twice yearly providing information on the implementation of the program. In 2001, ICCAT recommended that frozen bigeye tuna and all swordfish be accompanied by an ICCAT Bigeye Tuna or Swordfish Statistical Document, respectively, when those species are imported into the territory of a Contracting Party. The United States already has a domestic documentation program for swordfish called the Certificate of Eligibility (COE). Data from the U.S. Swordfish COE program is provided (see Appendix page 8). Neither the domestic COE form nor the ICCAT Swordfish Statistical Document meets the domestic reporting requirements. The United States is developing regulations to implement these measures and the 2002 refinements to the statistical document forms.

3.4 Observer programs

The U.S. observer program currently meets two main objectives: monitoring of interactions between fishing gear and protected species (marine mammals, sea turtles, and to a lesser degree, sea birds), and monitoring of fishing

effort and catch (estimation of total landings of target species and/or by-catch of non-target or prohibited species). An overview of observer programs in the United States can be found at our website at: http://www.st.nmfs.gov/st1/nop/. Click on the bullets under "About US" for info about both the National Observer Program, which is a coordinating office for NMFS observer programs in our headquarters outside of Washington, DC, and the Regional Programs. Observers for U.S. vessels in ICCAT fisheries are deployed from Miami, Florida and Panama City, Florida.

3.5 Vessel monitoring

3.5.1 Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area [Rec. 03-14]

The United States adopted fleet-wide VMS requirements in the Atlantic pelagic longline fishery in May 1999, but was subsequently sued by an industry group. By order dated September 25, 2000, the U.S. District Court for the District of Columbia prevented any immediate implementation of VMS in the Atlantic pelagic longline fishery, and instructed the National Marine Fisheries Service (NMFS) to "undertake further consideration of the scope of the [VMS] requirements in light of any attendant relevant conservation benefits." Pursuant to that order, NMFS conducted an analysis of HMS pelagic longline vessels to determine whether the VMS requirement could be restricted to a subset of HMS pelagic longline vessels. On October 15, 2002, the District Court for the District of Columbia issued a final order upholding the VMS regulation. The United States implemented the fleet-wide VMS requirement in the Atlantic pelagic longline fishery effective September 1, 2003.

3.6 Measures to ensure effectiveness of ICCAT conservation and management measures and to prohibit Illegal, Unreported and Unregulated Fishing

3.6.1 Resolution by ICCAT Concerning a Management Standard for the Large-Scale Tuna Longline Fishery [Res. 01-20]

In 2001, ICCAT resolved that minimum management standards should be established for issuance of fishing licenses to tuna longline vessels greater than 24 meters in overall length and that an annual report should be submitted to ICCAT using a specific format. The United States issued permits to 17 tuna longline vessels over 24 meters in overall length. The U.S. submission is provided on page 6 of the Appendix.

3.7 Other recommendations

3.7.1 Resolution by ICCAT on Incidental Mortality of Seabirds [Res. 02-14]

This resolution encourages ICCAT parties to inform the SCRS and the Commission of the status of their National Plans of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (NPOA-Seabirds) and to voluntarily submit all available information on interactions with seabirds, including incidental catches in all fisheries under the purview of ICCAT, to the SCRS. The United States submitted an update on the implementation of its NPOA-Seabirds and observer data on seabird interactions in the Appendix.

3.7.2 Resolution by ICCAT on Sea Turtles [Res. 03-11]

The 2003 resolution on sea turtles encourages ICCAT Parties and Cooperating Parties to collect and provide the SCRS with information on interactions with sea turtles in ICCAT fisheries, including incidental catches and other impacts on sea turtles. The measure also encourages the release of all sea turtles that are incidentally caught alive and to share information, including technical measures, to reduce the incidental catch of sea turtles, and to ensure the safe handling of all turtles that are release to improve their survivability. The resolution also calls the development of data collection and reporting methods for the incidental by-catch of sea turtles and to support efforts by the FAO to address the conservation and management of sea turtles. The United States complies with all these requests.

In addition to the above activities, the United States has undertaken extensive research activities in its longline fleet for ways to reduce sea turtle interactions and increase survivability of sea turtles incidentally caught in longline fisheries. Results from U.S. research in the Atlantic Ocean have shown that larger circle hooks significantly reduce turtle catches in the pelagic longline fishery (e.g. with mackerel bait, the number of loggerhead turtles caught was reduced by 65%). Unlike "J" hooks, which are often swallowed, circle hooks often become anchored in the mouth, and therefore hook extraction is easier and safer for sea turtles. There are a number of devices available to remove hooks and line from turtles caught on pelagic longlines. Long handled

line cutters and long handled dehookers are used to remove gear from turtles too large to be boated. The Epperly Biopsy Pole is used with a stainless steel corer to take tissue samples for genetics. Short handled de-hookers used to remove hooks from animals that are boated. Miscellaneous tools have been developed to remove line, hooks, or the barb or eye of hooks on boated turtles. A dip net is used to bring small (<50 kg) turtles aboard. Mouth openers and gags used on boated turtles to allow access to internal hooks. U.S. gear experts presented this by-catch reduction technology to the international fishing community and resource managers at the International Fisheries Forum in Honolulu (2002), and at the NOAA-sponsored International Technical Expert Workshop on Marine Turtle By-catch, in Seattle, WA (2003).

The United States recently published a final rule (July 6, 2004; 63 FR 40734) that requires the implementation of measures to reduce sea turtle by-catch. These measures pertain to the entire U.S. pelagic longline fishery, and include: mandatory bait specifications depending on fishing locale, use of circle hooks (size of hook depending on fishing locale), and the mandatory possession and use of sea turtle handling and release gear on board all vessels with pelagic longline gear. As new technological solutions are discovered, we will continue to help export these technologies to other fishing nations.

3.7.3 Recommendation by ICCAT on Vessel Chartering [Rec. 02-21]

A proposed rule was published on May 6, 2004, (69 FR 25357) to implement Recommendation [Rec. 03-12] and the final rule is expected to publish before the 2004 annual meeting. The chartering and the flag countries would be required to submit information to the ICCAT Executive Secretary at the start and end of the chartering agreement. Additionally, the rule states that catches taken pursuant to the chartering arrangement shall be counted against the quota of the chartering party and that observers should be on board on at least 10 percent of the chartered vessels or during 10 percent of the fishing time. As such, the final rule would require prior notification and approval from NOAA Fisheries, via issuance of a chartering permit, before a vessel begins to fish under a chartering arrangement.

3.7.4 Recommendation by ICCAT Concerning the Recording of Catch by Fishing Vessels in the ICCAT Convention Area [Rec. 03-13]

The United States requires all commercial fishing vessels over 24 m in length to keep either bound or electronic logbooks. For information on the implementation of this recommendation relative to recreational fishing vessels, see the section, *Resolution on Improving Recreational Fishery Statistics,* below.

3.7.5 Resolution by ICCAT on Improving Recreational Fishery Statistics [Res. 99-13]

Recreational landings are estimated through a combination of tournament surveys (the Recreational Billfish Survey), the Large Pelagic Survey (LPS), the Marine Recreational Fishing Statistics Survey (MRFSS), and state landings data. Final regulations adopted in 1999 require selected HMS charter/headboat vessels that do not already do so to complete a logbook; implementation of this requirement is underway. In 1999, NMFS mandated the registration of all recreational tournaments for Atlantic highly migratory species. All tournaments are now required to submit landing reports, if selected. Currently, 100% of billfish tournaments are selected for reporting. The United States finalized regulations effective in March 2003 that implemented a mandatory recreational landings self-reporting system for Atlantic blue and white marlin, west Atlantic sailfish, and North Atlantic swordfish (68 FR 711). The United States is also in rulemaking to make recreational reporting requirements consistent across all tunas, billfish, and swordfish (68 FR 54410); implementation of this requirement is underway.

3.7.6 Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels over 24 Meters Authorized to Operate in the Convention Area [Rec. 02-22]

The United States has submitted the list of vessels required pursuant to this recommendation to the Secretariat.

3.7.7 Recommendation by ICCAT on Bluefin Tuna Farming [Rec.03-09]

No U.S. action is necessary for this measure. The United States does not engage in bluefin tuna farming in the Atlantic at this time.

3.7.8 Recommendation by ICCAT Concerning the Duties of Contracting Parties and Cooperating Non-Contracting Parties, Entities, Fishing Entities in Relation to Their Vessels in the ICCAT Convention Area [Rec. 03-12]

The United States currently implements all the elements of this measure. A reporting of the enforcement actions taken on ICCAT species is provide in the Appendix (see Appendix, page 8).

3.7.9 U.S. Swordfish Certificate of Eligibility Program

A summary of data collected through this program in 2003 is provided on page 7 of the Appendix.

3.7.10 U.S. Enforcement Actions

A summary of actions taken in ICCAT fisheries is provided on page 8 of the Appendix.

4. Other activities

Recent U.S. management actions for Atlantic highly migratory species can be found online at: http://www.nmfs.noaa.gov/sfa/hms/.

Federal Register notices containing the full text of proposed and final regulations can be found at: http://www.access.gpo.gov/su_docs/aces/aces140.html.

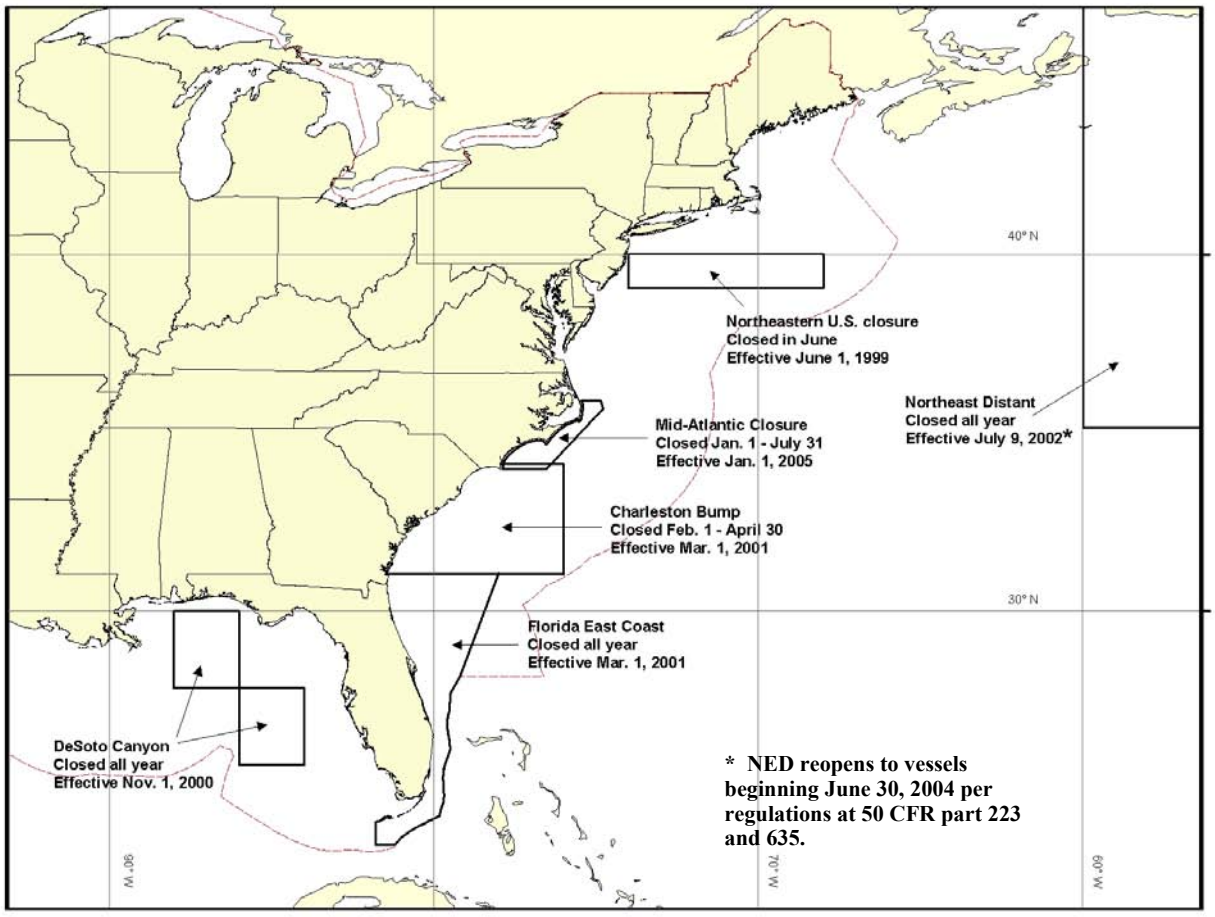

Figure 1. Closures to the Atlantic pelagic longline fishery.

ANNUAL REPORT OF VENEZUELA[1, 2]

1. Introduction

In Venezuela, the *Instituto Nacional de Investigaciones Agrícolas* (INIA) is the agency in charge of carrying out programs on agricultural research, including the fishing sector. The *Instituto Nacional de Pesca y Acuicultura* (INAPESCA) is the agency responsible for the management and administration of the fishery resources.

The research projects on tunas and billfishes are carried out at the *Centro de Investigaciones Agropecuarias* of the States of Sucre and Nueva Esparta (CIAE-Sucre/N. Esparta), with headquarters in Cumaná, in cooperation with various national and international institutions, such as INAPESCA, the University of Oriente, ICCAT and the IRD.

2. The fisheries

2.1 Purse seine

The Venezuelan fleet is comprised of 32 purse seine vessels, 7 of which fished in the western Atlantic Ocean and the remainder fished in the eastern Pacific Ocean **(Table 1)**. The fishing area of the Venezuela purse seiners is between 5° and 15°N latitude and 51° and 73°W longitude.

The catch taken by the purse seine fleet in 2003 amounted to 7,780.4 metric tons (t), which showed an increase of 28% with respect to 2002. Yellowfin tuna *(Thunnus albacares)*, comprised 59.2% of the catches of the fleet, and skipjack tuna *(Katsuwonus pelamis)* comprised 29.5%. Other species caught by the fleet were blackfin tuna *(Thunnus atlanticus)*, frigate tuna *(Auxis thazard)*, albacore *(Thunnus alalunga)* and bigeye tuna *(Thunnus obesus)*. These species represented 11.3% of the catch **(Table 2)**. The effort exerted by these vessels in 2003 was 1,068 days at sea, with the highest effort corresponding to the months of March and November.

2.2 Baitboat

The Venezuelan baitboat fleet was comprised of 12 fishing vessels in 2003 and these operate in the same areas as the purses seiners. The catch taken by these vessels amounted to 3,700.1 t, a catch level 21% less than that of 2002. The major species taken by this fleet were yellowfin tuna *(Thunnus albacares)* 66.9% and skipjack tuna *(Katsuwonus pelamis) with* 25.7%, while blackfin tuna (*T. atlanticus*) contributed with 2.9% of the total landings of the fleet **(Table 3**). The effort applied by the baitboat fleet for this year was 1,279 days at sea.

2.3 Longline

Twenty-one (21) Venezuelan longliners fished in the Atlantic Ocean in 2003.

Catches by this fleet were 652.7 t. Yellowfin tuna *(Thunnus albacares)* was the most important species in the catch (47.5%), while catches of other tunas, namely albacore *(T. alalunga)* and bigeye tuna *(T. obesus)* represented 30.8% of the catch; billfishes comprised 9.2% of the catch **(Table 4)**.

2.4 Artisanal fleet

Playa Verde (central Venezuelan coast)

Billfish fishing activities in this region are carried out throughout the year. The fleet that operated is comprised of 33 vessels, ranging in size from 7 to 10 m, and the fishing gear used is floating driftnet.

The catch of this fishery is mainly comprised of fish of the Istiophoridae family, particularly sailfish *(Istiophorus albicans)* and blue marlin *(Makaira nigricans)*, with catches of 93.2 and 54.6 t, respectively; tuna landings were 7.0 t.

[1] Original report in Spanish.
[2] Instituto Nacional de Investigaciones Agrícolas (INIA) and Instituto Nacional de Pesca y Acuicultura (INAPESCA).

Other species in the catch included various shark species, dolphinfish *(Coryphaena hippurus)* and Atlantic black skipjack *(Euthynnus alletteratus)* **(Table 5)**.

Juangriego (eastern area of Venezuela)

This is the base port for 72 artisanal longline vessels that target king mackerel *(Scomberomorus cavalla)* and billfishes. Their fishing activities are carried out in the northeastern area of Venezuela. These vessels are of an artisanal nature with lengths ranging between 9 and 14 m, and which fish using hooks and surface drift longline.

In this fishery, the catches indicate that billfishes, i.e. sailfish *(Istiophorus albicans)and* white marlin *(Tetrapturus albidus)* and were the most abundant, with catches of 29.2 t and 22.5 t, respectively. There were 2.7 t of tunas landed, comprised mainly of yellowfin tuna with 12.61 t. One species that in recent years has acquired importance due to its market value is dolphinfish *(C. hippurus)* and landings of this species amounted to 42.0 t **(Table 6)**.

3. Activities in research and statistics

Venezuela carries out research on the fishery for large pelagics, including tunas and billfishes. Biological sampling continued on the various species landed at the ports of the States of Sucre, Anzoátegui and Nueva Esparta. In 2003, sampling was carried out on 7,501 tunas and billfish from industrial fishing landings, and 4,718 fish from the artisanal fishery **(Tables 7** and **8)**. The percentage composition of the catch was determined from multi-species sampling at the ports to correct the landings reported in the logbooks. The results indicate that the most important species in the landings of the various fisheries is yellowfin tuna, comprising from 44.3 to 77.5% of the purse seine catches, from 51.9 to 84.7% of the baitboat catches, and from 39.4 to 55.4% of the longline catches, respectively **(Tables 9** and **10)**.

Monitoring of catch and effort was carried out on the industrial vessels that fished in the western Atlantic using baitboat, purse seine and longline. The industrial fleet carried out 298 trips and the overall coverage rate was 91.3%, while by fishing type, the coverage rates were 100% for purse seine, 88.2% for baitboat and 91.8% for longline **(Table 11)**.

Within the ICCAT Enhanced Research Program for Billfish, sponsored and coordinated by the International Commission for the Conservation of Atlantic Tunas (ICCAT), billfish sampling continued at the ports of Playa Verde and Juangriego, in the central coastal area and the eastern area of Venezuela, respectively, as well as monitoring of the sport fishing tournaments at the Play Grande Club and at the Puerto Viejo Marina. In addition, trips were made on tuna longline vessels. In 2003, 19 scientific observer trips were carried out on these types of vessels, with a 17% coverage rate on all the trips carried out by this fleet.

4. Implementation of the ICCAT conservation and management measures

- Resolution INAPESCA-006, published in the Official Gazette No. 37.472, which established the Consultative Council on Tuna and the Local Committees on Tuna Monitoring.

- The Administrative Law No. 69/2003 was published on October 1, 2003 in the Official Gazette No. 37.787, extending Resolution DM/No. 020, to regulate the fishing and commercialization of Istiophoridae and Xiphiidae species, including:

  - The prohibition of catches and commercialization of the following species in the entire national territory: longbill spearfish *(Tetrapturus pfluegeri)*, roundscale spearfish *(Tetrapturus georgei)*, which pertain to the Istiophoridae family.

  - The establishment of a fishing protection zone for species of the Istiophoridae and Xiphiidae families.

  - The prohibition of fishing by commercial vessels of more than 10 units of gross registered tonnage (10 GRT) that use trawl, purse seine nets or surface longline.

  - The prohibition of the fishing of these species by all the artisanal commercial fishing vessels fishing from ports other than the sector known as Playa Verde of the State of Vargas, that use purse seine and/or surface longline.

- The implementation of regulations for the fishing gear on vessels that fish in the fishing protection area, as established in this law, which should have the following characteristics:

  - One (1) net per vessel;
  - No use of monofilament nets and the union between nets during the fishing operation;
  - Cannot be replaced or changed for the duration of the permit issued;
  - All authorizations documents required by the Law of Fishing and Aquiculture must be valid.

The Administrative Law No. 07-2004/INAPESCA, published in the Official Gazette No. 37.862 on January 21, 2004 regulates the installation of gear, equipment, and vessel position equipment on fishing vessels over 10 units of gross registered tonnages (10 GRT).

Table 1. Composition of the Venezuelan industrial fleet in the Atlantic Ocean, by vessel size, 2003.

Size		*LL*	*BB*	*PS*	*Total*
0	50	12			12
51	100	4	1		5
101	150	5	6		11
151	200		5		5
201	250				1
251	300			1	1
301	350				
351	400				
401	450				
451	500				
501	550				
551	600			6	6
601	650				
Total		**21**	**12**	**7**	**40**

Table 2. Venezuelan purse seine catches (t) in the central West Atlantic in 2003.

Month	*YFT*	*SKJ*	*FRI*	*ALB*	*BET*	*BLF*	*Total*
Jan	259.1	107.6	16.6	13.2	37.0	1.8	435.4
Feb	116.1	48.2	7.4	5.9	16.6	0.8	195.0
Mar	588.9	244.6	37.7	30.0	84.2	4.2	989.6
Apr	740.8	167.7	3.3	23.4	13.8	6.6	955.7
May	107.5	24.3	0.5	3.4	2.0	1.0	138.7
Jun	681.8	154.3	3.1	21.5	12.7	6.1	879.5
Jul	42.8	16.9	0.1	2.0	2.8	1.9	66.6
Aug	280.4	111.0	0.8	13.4	18.5	12.6	436.7
Sep	508.1	201.2	1.5	24.3	33.5	22.9	791.4
Oct	265.5	252.9	6.9	15.2	28.6	30.2	599.4
Nov	523.4	498.5	13.6	30.0	56.4	59.5	1,181.4
Dec	492.2	468.8	12.8	28.2	53.0	56.0	1,111.0
Total	**4,606.5**	**2,296.3**	**104.3**	**210.6**	**359.0**	**203.6**	**7,780.4**

Table 3. Venezuelan baitboat catches (t) in the central West Atlantic in 2003.

Month	*YFT*	*SKJ*	*FRI*	*ALB*	*BET*	*BLF*	*Total*
Jan	183.7	61.9	0.0	34.5	17.6	5.2	302.9
Feb	105.6	35.6	0.0	19.8	10.1	3.0	174.1
Mar	123.3	41.6	0.0	23.2	11.8	3.5	203.3
Apr	104.5	43.0	0.0	0.0	3.8	4.2	155.5
May	136.8	56.4	0.0	0.0	5.0	5.5	203.7
Jun	137.5	56.6	0.0	0.0	5.0	5.5	204.6
Jul	103.5	89.0	0.0	0.0	4.7	2.1	199.2
Aug	274.3	235.9	0.0	0.0	12.4	5.6	528.2
Sep	250.9	215.8	0.0	0.0	11.3	5.1	483.1
Oct	371.0	40.3	0.0	0.0	3.2	23.6	438.0
Nov	263.0	28.6	0.0	0.0	2.2	16.7	310.5
Dec	420.8	45.7	0.0	0.0	3.6	26.7	496.9
Total	**2,475.0**	**950.3**	**0.0**	**77.5**	**90.6**	**106.7**	**3,700.1**

Table 4. Venezuelan longline catches (t) in the central West Atlantic in 2003.

Month	*YFT*	*ALB*	*BET*	*WAH*	*DOL*	*WHM*	*BUM*	*SAI*	*SWO*	*SPF*	*SHK*	*Total*
Jan	5.5	1.4	8.4	0.0	0.0	0.0	0.3	0.1	1.2	0.0	1.5	18.5
Feb	17.7	7.4	8.3	0.1	0.3	2.3	5.0	0.6	2.3	0.0	13.3	57.5
Mar	19.9	2.8	2.3	0.2	0.3	0.5	0.4	0.7	1.3	0.0	5.3	33.5
Apr	36.2	6.1	6.0	0.7	0.6	1.4	1.0	1.9	1.8	0.5	3.7	59.8
May	38.7	30.7	0.2	0.6	0.2	6.5	1.3	0.4	0.7	0.0	2.6	82.0
Jun	21.3	18.3	0.1	0.0	0.1	0.6	0.4	0.1	0.6	0.0	0.3	41.9
Jul	30.6	28.0	0.2	0.0	0.0	1.2	0.8	1.0	0.6	0.0	2.7	65.1
Aug	37.1	9.2	1.5	0.3	0.2	1.8	6.0	2.2	1.5	0.7	4.8	65.4
Sep	30.0	4.4	0.2	0.4	0.1	3.1	1.2	0.6	1.5	0.0	4.1	45.6
Oct	31.1	8.7	19.7	0.2	0.1	1.8	0.9	0.7	4.4	0.6	5.1	73.3
Nov	21.1	3.2	4.4	0.3	0.1	1.3	1.8	0.6	1.6	0.0	1.9	36.4
Dec	21.2	14.5	14.7	0.5	0.2	2.1	4.4	1.7	7.4	1.4	5.7	73.7
Total	**310.3**	**134.8**	**66.0**	**3.3**	**2.3**	**22.8**	**23.7**	**10.5**	**24.9**	**3.2**	**51.0**	**652.7**

Table 5. Catches (t) by the artisanal driftnet fleet off the central Venezuelan coast in 2003.

Month	*YFT*	*ALB*	*WAH*	*DOL*	*WHM*	*BUM*	*SAI*	*SWO*	*SHK*	*BON*	*LTA*	*FRI*	*Total*
Jan	0.1	0.0	0.1	0.3	0.2	2.2	1.1	0.2	0.2	0.0	12.1	2.2	18.7
Feb	0.7	0.0	0.4	0.8	0.5	3.9	2.1	0.5	4.8	0.8	20.5	3.0	38.1
Mar	0.9	0.2	0.5	0.9	1.1	8.1	6.3	0.8	1.7	1.6	13.8	1.3	37.1
Apr	0.2	0.0	0.2	1.2	0.3	11.4	16.6	0.2	0.2	0.5	0.0	0.2	31.1
May	0.9	0.1	0.8	1.6	0.6	9.2	6.5	1.9	1.4	6.6	0.0	0.0	29.5
Jun	0.4	0.2	0.5	1.7	0.8	6.2	12.1	0.9	0.5	1.0	0.0	0.0	24.1
Jul	0.3	0.0	0.2	1.8	1.1	4.2	5.1	6.2	2.0	1.5	0.0	0.0	22.5
Aug	0.4	0.0	0.2	0.9	2.2	4.0	16.8	1.1	0.1	0.9	0.0	0.1	26.7
Sep	0.4	0.0	0.1	0.7	2.7	2.4	16.8	0.2	0.5	0.2	0.1	0.7	24.8
Oct	0.9	0.0	0.2	0.4	0.2	1.5	7.1	0.8	0.7	0.0	0.0	0.2	12.1
Nov	0.7	0.0	0.2	0.3	0.1	1.1	2.5	1.0	1.3	0.0	0.0	0.0	7.4
Dec	1.0	0.0	0.1	0.1	0.2	0.4	0.3	1.9	2.4	0.1	3.3	0.5	10.2
Total	**6.8**	**0.6**	**3.6**	**10.7**	**10.0**	**54.6**	**93.2**	**15.6**	**16.0**	**13.3**	**49.8**	**8.2**	**282.4**

Table 6. Billfish catches (t) of the artisanal longline fishery in the east of Venezuela and adjacent areas in 2003.

Month	*YFT*	*WAH*	*BLF*	*DOL*	*WHM*	*BUM*	*SAI*	*SWO*	*SHK*	*Total*
Jan	0.0	0.2	1.7	0.0	2.7	0.0	3.4	3.9	11.9	23.7
Feb	1.7	0.5	0.5	3.3	0.7	2.0	1.5	0.1	0.0	8.6
Mar	2.0	0.0	2.1	4.9	0.4	3.0	3.1	0.0	0.1	15.3
Apr	2.2	0.5	2.0	10.1	0.0	0.5	3.6	0.0	0.0	18.6
May	3.0	0.0	0.7	0.0	0.1	0.5	1.2	0.0	0.6	5.4
Jun	0.1	0.2	0.0	6.4	0.9	0.0	0.3	0.0	1.2	12.0
Jul	0.5	0.2	0.0	3.6	1.7	0.0	1.9	0.0	0.0	7.6
Aug	1.9	0.0	0.1	7.6	2.0	0.0	5.7	0.3	0.3	16.5
Sep	0.8	0.2	0.0	4.2	3.0	0.0	4.0	0.0	0.7	13.9
Oct	0.4	0.1	2.0	1.3	5.2	0.0	2.9	0.0	1.5	13.7
Nov	0.0	0.1	0.0	0.7	5.9	0.0	1.7	0.0	0.0	22.4
Total	**12.6**	**2.0**	**9.1**	**42.0**	**22.5**	**6.0**	**29.2**	**4.2**	**16.4**	**157.7**

Table 7. Biological sampling of tunas in the industrial tuna fishery in the western Atlantic Ocean, 2003.

Species	*BB*	*%*	*PS*	*%*	*Total*	*%*
Yellowfin tuna YFT	344	49.14	2063	30.33	2407	32.09
Skipjack tuna SKJ	286	40.86	3654	53.73	3940	52.53
Frigate tuna FRI		0.00	465	6.84	465	6.20
Albacore ALB	5	0.71	55	0.81	60	0.80
Bigeye tuna BET	26	3.71	386	5.68	412	5.49
Blackfin tuna BLF	39	5.57	178	2.62	217	2.89
Total	**700**	**100.00**	**6801**	**100.00**	**7501**	**100.00**

Table 8. Biological sampling of billfish species in the artisanal driftnet fishing in 2003.

Species	*Artisanal driftnets*
White marlin WHM	468
Blue marlin BUM	767
Sailfish SAI	3,189
Swordfish SWO	294
Spearfish SPF	
Total	**4,718**

Table 9. Species composition (in percentage, by quarter) of the catches by the surface tuna fleet, baitboat (BB) and purse seine (PS) in the central West Atlantic in 2003.

Species	*BB*				*PS*			
	I	*II*	*III*	*IV*	*I*	*II*	*III*	*IV*
Yellowfin tuna YFT	60.65	67.18	51.94	84.70	59.5	77.5	64.2	44.3
Skipjack tuna SKJ	20.45	27.67	44.66	9.20	24.7	17.5	25.4	42.2
Frigate tuna FRI	0.00	0.00	0.00	0.00	3.8	0.3	0.2	1.2
Albacore ALB	11.39	0.00	0.00	0.00	3.0	2.4	3.1	2.5
Bigeye tuna BET	5.80	2.45	2.34	0.72	8.5	1.4	4.2	4.8
Blackfin tuna BLF	1.71	2.70	1.06	5.38	0.4	0.7	2.9	5.0
Total	**100.00**	**100.01**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Table 10. Species composition (in percentage, by quarter) of the tuna catches by the tuna longline fleet (LL) in the central West Atlantic in 2003.

Quarter	*I*	*II*	*III*	*IV*
Yellowfin tuna YFT	39.42	52.34	55.44	39.98
Albacore ALB	10.64	29.98	23.63	14.41
Bigeye tuna BET	17.32	3.44	1.07	21.17
Blackfin tuna BLF	0.00	0.01	0.00	0.00
Wahoo WAH	0.25	0.73	0.41	0.50
Dolfinfish DOL	0.52	0.50	0.19	0.24
White marlin WHM	2.56	4.65	3.51	2.85
Blue marlinBUM	5.24	1.52	4.60	3.86
Sailfish SAI	1.29	1.30	2.14	1.62
Swordfish SWO	4.38	1.67	2.04	7.33
Spearfish SPF	0.04	0.27	0.37	1.08
Sharks SHK	18.34	3.59	6.60	6.95
Total	100.00	100.00	100.00	100.00

Table 11. Trips by industrial tuna vessels in the central West Atlantic in 2003.

	PS		*BB*		*LL*			*Total*
Month	*R*	*C*	*R*	*C*	*R*	*C*	*C*	*R*
Jan	1	1	11	7	1	5	13	13
Feb	2	2	11	10	10	11	23	23
Mar	3	3	12	10	9	9	24	22
Apr	3	3	9	9	12	10	24	22
May	3	3	11	10	14	9	28	22
Jun	3	3	10	10	11	5	24	18
Jul	3	3	9	9	7	8	19	20
Aug	3	3	14	10	11	11	28	24
Sep	3	3	11	11	11	10	25	24
Oct	5	5	13	13	6	11	24	29
Nov	5	5	12	9	14	10	31	24
Dec	7	7	12	11	16	13	35	31
Total	**41**	**41**	**135**	**119**	**122**	**112**	**298**	**272**
%		**100.00**		**88.15**		**91.80**	**100.00**	**91.28**

TR: Total trips made, C: Trips monitored.

REPORTS OF OBSERVERS FROM COOPERATING NON-CONTRACTING PARTIES, ENTITIES OR FISHING ENTITIES

ANNUAL REPORT OF CHINESE TAIPEI[1]

Fisheries Agency, Council of Agriculture[2]

1. Annual fisheries information

1.1 General overview

Chinese Taipei started fishing tuna and tuna-like species in the Atlantic Ocean in the early 1960s. The change in the number of fishing vessel is shown in **Figure 1**. Large-scale longline vessels (>200 GRT) have been declined since 1996, particularly those vessels larger than 500 GRT, whereas Chinese Taipei registered small-scale tuna longline vessels (< 100 GRT) that operated in the western tropical Atlantic Ocean **(Figure 2)** numbered about 17 in the same time period.

The fishery only targeted albacore since its inception in both the North and South Atlantic Ocean, and ever since the development of deep longline operations since the late 1980s in the tropical Atlantic Ocean, some of the fishing effort has shifted to target bigeye and yellowfin tunas. Those three species constituted of over 86% of the annual catch since 1991 **(Table 1)**.

In recent years, a relative higher catch of bigeye tuna has been noted in the waters off the west coast of northwest Africa; this species mostly appeared in the area between 15°N and 15°S. A higher composition of albacore was observed in the area north of 15°N and in the area south of 15°S **(Figures 3 and 4)**. The catch composition of the Chinese Taipei registered small-scale longline fleet is preliminarily summarized as in **Figure 5**. It has shown a target status very similar to that of large-scale longline vessels.

Swordfish were mainly a by-catch species to the fishery, although some small longliners have been targeting the species for the fresh fish market and some large longliners had accessed to fishing in Brazilian waters for swordfish seasonally in the past. The Chinese Taipei fleet has represented a very stable status in targeting albacore and tropical tunas (except skipjack).

The total number of vessels operating in these areas was 163 in 2003, including 13 re-registered vessels. The total catch made by the fleet was preliminarily estimated to be about 51,400 t in 2003, including 2,537 t from re-registered vessels, under the encouragement of ICCAT and the Japan-Chinese Taipei Joint Action Plan (in February 1999). The catch data are given in **Table 1**. More detailed information on the major tuna species is described as follows:

1.2 Albacore

In the Atlantic Ocean, two stocks of albacore, separated by 5°N, were assumed for fishery management. The annual catch of South Atlantic albacore fluctuated between 16,000 t and 18,000 t in the last decade. Chinese Taipei longliners fished albacore all year round in the Atlantic Ocean. The total catch of this species in 2003 was estimated at 21,686 t, of which 4,539 t were caught in the North Atlantic Ocean and 17,147 t in the South, with an increase for the North Atlantic Ocean of 4,305 t over the previous year, and with a decrease for the South Atlantic Ocean of 17,222 t from that of the previous year.

1.3 Bluefin tuna

Chinese Taipei longline fleets have targeted the eastern Atlantic Ocean and Mediterranean Sea stock since 1993. The longline fishery has shown little change in the fishing regions of the eastern Atlantic Ocean and Mediterranean Sea, seasons (from April to June every year), operational modes, and fishing vessel capacity. The catch of bluefin tuna was 445 t in 2003 and 666 t in 2002.

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[1] Original report in English.

[2] No. 2, Chao-Chow Street, Taipei.

1.4 Tropical tunas

Catches of bigeye tuna and yellowfin tuna from the Atlantic Ocean in 2003 were estimated at about 17,719 t and 6,106 t, respectively. The catch of bigeye tuna includes a quota transfer from Japan (1,250 t in 2003), totally shown as an increase from the previous year (16,503 t in 2002). The catch of yellowfin tuna also increased over the previous year (4,542 t in 2002).

1.5 Swordfish

For the southern stock, the annual catch was about 200-1,300 t in the 1970s and 1980s, but has increased to 1,000-2,900 t in the 1990s. The increase was mainly due to the development of deep longline operations in the tropical area for bigeye and yellowfin tunas. Due to the enhanced catch regulation by ICCAT in 1998, the catch was then reduced to be around 1,100 t. The preliminary estimate of swordfish catch in the Atlantic Ocean was 1,312 t in 2003, with a decrease from 2002, with 223 t from the North Atlantic Ocean and 1,089 t from the South Atlantic Ocean.

1.6 Billfish species

The billfish species include white marlin, blue marlin, black marlin and other marlins. The white marlin catch comprised about 1% to 2% of the total Chinese Taipei tuna and tuna-like catches during the recent ten years. The preliminary catch estimates of Chinese Taipei vessels operating in the Atlantic Ocean for white marlin, blue marlin, black marlin and other marlins were 104 t, 298 t, 10 t and 99 t in 2003, respectively.

1.7 Sharks

The shark by-catch of Chinese Taipei tuna longline vessels was never reported until 1981 because of its low value compared with tunas. The preliminary catch estimate by the By-catch Working Group meeting held in June, 2004 (in round weight, t) for blue shark caught by the Chinese Taipei fleet that operated in the Atlantic Ocean during 1991-2002 is shown in the attached as **Table 2**. The final data will be revised in the future.

1.8 Catch estimates for re-registered vessels

To eliminate IUU fishing activities by large-scale tuna longliners in the Atlantic Ocean and other areas, under a joint action plan with Japan, Chinese Taipei has been exerting their best effort to establish avenues to permit those vessels newly built in its shipyards to seek re-registration under its registry. Thirteen (13) vessels under the re-registration program, which were previously operating in the Atlantic Ocean, are allowed to operate in Atlantic Ocean continuously.

Since then, all those 13 vessels had completed their process of re-registration, and became Chinese Taipei-licensed vessels by 2003. The catch by re-registered vessels has been reported in Chinese Taipei's catch report. The preliminary catch estimates of re-registered vessels operating in the Atlantic Ocean for albacore, bigeye tuna, yellowfin tuna and swordfish were 222 t, 1,822 t, 380 t and 74 t in 2003, respectively. The detailed data are shown in **Table 1**.

2. Research and statistics

2.1 Statistics

Routine collection and compilation of data procedures for tuna and tuna-like species are applied. The data, including Task I and Task II for all tuna and tuna-like species under ICCAT competence, as well as the number of fishing vessels have been reported to the ICCAT Secretariat in accordance with ICCAT requirements.

Task I data have been estimated based on traders' sales records, on verification of fishing vessels' sales settlement, certified weight reports of Shin Nihon Kentei Kaisha (New Japan Surveyors and Swom Measures Association, NJSSMA), and on verification by the Tuna Boatowners and Exports Association. Trader's sales records and verification of fishing vessels' sales settlement continued to be used and is particularly important for albacore Task I data. The certificated weight reports and the verification by the Tuna Boatowners and Exporters Association, and furthermore, the Statistical Documents data are used to estimate bigeye tuna Task I. The Task I catch estimate (in round weight, t) for the tuna longline fishery of Chinese Taipei that operated in the Atlantic Ocean during 1991-2003 is herewith attached as **Table 1**.

As for Task II catch and effort data, all the data were complied based on logbooks, which the fishermen are requested to submit to the authorities. The logbooks require the reporting of daily position, number of hooks used, catch in number of fish, and weight by species. All the logbooks were verified first for accuracy and validity before entering the data. Also, crosschecking of the logbooks for the departure and arrival dates and location, with sales records, the total amount for sales against reported catches in the logbooks, etc. are used for verification. Then the Task I data are used for the conversion of the Task II.

As for the Task II size data, fishermen are requested to measure the first 30 fish landed every day, regardless of the species. Those size data were sent to the ICCAT Secretariat as actual size data. Besides, the catch-at-size database is created based on these size data, in conjunction with Task I and II catch data, by the Chinese Taipei scientists and sometimes by the Secretariat.

Contrary to tuna statistics, shark by-catch statistics of the Chinese Taipei tuna longline vessels had never been reported until 1981. In order to be in accordance with the international trend on the management of shark species, our government has not only initiated the Observer Program but has also improved the national data collection systems to achieve this goal. Specifically, the column on shark statistics in the original logbook sheets is sub-divided into four columns for different shark species in the revised logbook sheet format.

In addition to conventional data collection, another focus for fishing activities and catch information of small-scale longline vessels is planned, incorporating a port sampling program, to start in the coming year.

2.2 Research

Chinese Taipei supports research programs on the main tuna and tuna-like species. Scientists also conducted research, such as the standardization of catch-per-unit effort for many tuna species. The research results are presented at the regular meetings and inter-sessional working group meetings of SCRS. The scientific papers presented to recent ICCAT meetings were as follows:

- Standardized catch per unit effort of bigeye tune (*Thunnus obesus*) caught by Taiwanese longline fleets in the Atlantic Ocean. (SCRS/2004/137)
- Standardized CPUE for South Atlantic albacore *(Thunnus alalunga)*, from the Taiwanese longline fishery during 1968-2001. (SCRS/2003/075)
- Standardized CPUE trend of Taiwanese longline fishery for northern Atlantic albacore from 1968 to 2001. (SCRS/2003/076)
- Comparison between optimal searching algorithm versus knife-edge cutting method for conversion of length distribution into age composition. (SCRS/2003/077)
- Catch, effort and standardized catch per unit effort for the eastern Atlantic and Mediterranean bluefin tuna stock caught by the Taiwanese longline fishery up to 2001. (SCRS/2002/102)
- Development of standardized catch rate of South Atlantic swordfish for the Taiwanese longline fleet. (SCRS/2002/120)
- Analysis of Taiwanese white marlin catch data and standardization of its catch rates. (SCRS/2002/056)
- Standardized CPUE for sharks and blue sharks caught by the Chinese Taipei longline fishery in the South Atlantic Ocean. (SCRS/2004/126).
- Observed by-catch of the Taiwanese tuna longline fishery in Atlantic Ocean. (SCRS/2004/184)

2.3 Observer program

There were two observers assigned to carry out observation missions in the Atlantic Ocean. Three trips were observed in 2002 and 2003, respectively. In 2004, there were four observers dispatched to the tuna longliners operating in the Atlantic Ocean to collect information on fishing activities. These fishing trips were all made in the South Atlantic Ocean; one fishing trip was made in the temperate area targeting albacore and the other two trips were made in the tropical area targeting bigeye tuna. **Figures 6 and 7** show the tracks of the longliners during observation in 2002 and 2003. The information and data collected through this program can be classified into three categories, including fishing effort and catch data, oceanographic and weather information (SST) and biological information on target species and by-catch species. The analysis of the data collected is in process.

2.4 Financial contribution to scientific researches

In addition to the domestic research conducted by Chinese Taipei scientists, the government has continued providing financial contribution for the scientific research programs implemented by ICCAT. From 1998 to 2003,

Chinese Taipei donated US$15,000 to the ICCAT Secretariat, US$10,000 for the ICCAT Bigeye Tuna Program, US$238,560 for the four-year ICCAT Bigeye Tuna Year Program (BETYP), US$30,000 for the ICCAT Bluefin Tuna Program (BYP), US$35,000 for the ICCAT Enhanced Research Program for Billfish, US$3,000 for the 4th Meeting of the ICCAT *Ad Hoc* Working Group on Allocation Criteria, and US$50,000 for the Coordination of Research. An amount of US$80,000 has been contributed to the ICCAT Secretariat for the 2004 budget year.

3. Implementation of ICCAT conservation and management measures

3.1 Limit on the number of fishing vessels

3.1.1 Bigeye Tuna [Rec. 02-01]

The number of fishing vessels catching bigeye tuna was limited to 125 in 2003 in accordance with the *Recommendation by ICCAT on the Bigeye Tuna Conservation Measures* [Rec. 02-01]. The number in 2003 was around 110.

3.1.2 Northern albacore [Rec. 98-08]

In accordance with the 1998 *Recommendation by ICCAT on the Limitation of Fishing Capacity on Northern Albacore* [Rec. 98-08), the number of fishing vessels for catching northern albacore was set at the average number for the period of 1993-1995, and a list of vessels fishing for northern albacore in 2003 and 2004 was transmitted to ICCAT Secretariat on August 15, 2003 and May 25, 2004, respectively. The number of northern Atlantic albacore fishing vessels was 17 in 2003.

3.2 Catch limits and minimum sizes

In accordance with the relevant ICCAT Recommendations, catch limits on northern and southern albacore, bigeye tuna, eastern bluefin tuna, northern and southern swordfish, blue marlin and white marlin have been set. Measures to prohibit the catch of undersized yellowfin tuna, bigeye tuna, bluefin tuna and swordfish were also implemented. More detailed information is described below.

As for the *Recommendation by ICCAT Regarding Compliance with Management Measures which Define Quotas and/or Catch Limits* [Rec. 00-14], Chinese Taipei will take into account the relevant adjustment of underage/overages from one year to be added to/subtracted from the quota/catch limit immediately after or one year after that year. Catch estimates and overages/underage status in 2003 are provided in the Compliance Tables (see Appendix 1)[3].

3.2.1 Bigeye tuna [Rec. 03-01, Rec. 03-02]

According to the *Recommendation by ICCAT on Bigeye Tuna Conservation Measures* [Rec. 03-01) and the *Resolution by ICCAT to Authorize a Temporary Catch Limit Adjustment in the Bigeye Tuna Fishery* [Res. 03-02] and overage from 2002, Chinese Taipei is subject to a catch limit of 17,747 t in 2003 for legitimate fishing vessels. The estimated catch of bigeye tuna in the Atlantic Ocean was 17,719 t in 2003. Besides, there is also a restriction on the minimum size of 3.2 kg for bigeye tuna caught in this region. The catch of bigeye tuna by 13 re-registered vessels (1,822 t in 2003) was excluded from catch limit.

3.2.2 Bluefin tuna [Rec. 02-08]

According to the *Recommendation by ICCAT Concerning a Multi-year Conservation and Management Plan for Bluefin Tuna in the East Atlantic and Mediterranean* [Rec. 02-08], fishing possibilities to Chinese Taipei based on the traditional shares of 1.5% will only be activated in a given year when they individually have fished their current level of underages. Catch of this species were 666 t in 2002 and 445 t in 2003, which were within the catch limit. In addition, in compliance with Recommendation [Rec. 02-08], vessels were restrained from fishing western Atlantic bluefin and operating in the Mediterranean Sea between June 1 and July 31. A size limit of 6.4 kg on the bluefin tuna catch in the regions was applied.

[3] Available from the Secretariat.

3.2.3 Northern Albacore [Rec. 02-05]

According to the *Recommendation by ICCAT North Atlantic Albacore Catch Limits* [Rec. 02-05], a catch limit of 4,453 t was set for Chinese Taipei. The catches of this species were 4,305 t in 2002 and 4,539 t in 2003.

3.2.4 Southern Albacore [Rec. 02-06]

According to the *Recommendation by ICCAT on the Southern Albacore Catch Limit and Sharing Arrangement for 2003* [Rec. 02-06], a catch limit of 27,500 t of southern albacore was set for Chinese Taipei, South Africa, Brazil and Namibia. There was no agreement on the allocation of catch quota by individual country. During 2003, information on the accumulative catches of southern albacore was reported every two months. The catches of this species amounted to 17,222 t in 2002 and 17,351 t in 2003.

3.2.5 North Swordfish [Rec. 02-02]

According to the *Recommendation by ICCAT Relating to the Rebuilding Program for North Atlantic Swordfish* [Rec. 02-02], Chinese Taipei was allocated a quota of 310 t in 2003. The total catch of swordfish for Chinese Taipei vessels in the Atlantic Ocean was estimated to be about 223 t in the North Atlantic Ocean. In addition, restrictions on minimum weight (< 25 kg) and size (< 125 cm) of swordfish for vessels operating in this region were applied.

Overage explanation

3.2.6 South Swordfish [Rec. 02-03]

According to the *Recommendation by ICCAT on South Atlantic Swordfish Catch Limits* [Rec. 02-03], the *Resolution by ICCAT to Authorize a Temporary Catch Limit Adjustment in the South Atlantic Swordfish Fishery* [Res. 03-05] and overage from 2001 and 2002, Chinese Taipei was allocated a quota of 1,124t in 2003. The total catch of swordfish was estimated about 1,073 t in 2002 and 1,088 t in 2003.

3.2.7 Atlantic white marlin and blue marlin [Rec. 00-13, Rec. 02-13]

In 1997, ICCAT adopted a Recommendation on the conservation of Atlantic white marlin and blue marlin, requesting 25% reduction on the catch of these two species from the 1996 catch level within 1998 and 1999 [Rec. 97-09]. The recommendation requested Chinese Taipei to further reduce its catch of blue marlin to 495 t and its catch of Atlantic white marlin to 424.5 t. In 2002, ICCAT adopted a Recommendation to amend the plan rebuilding Atlantic white marlin and blue marlin populations [Rec. 02-13]. The recommendation requested Chinese Taipei to further reduce its catch of Atlantic white marlin to 186.8 t and its catch of blue marlin to 330 t. Catches of blue marlin and white marlin were 298 t and 104 t, respectively, in 2003 both within the catch level as recommended.

3.3 Closed seasons [Rec. 93-07]

In accordance with the 1993 ICCAT Recommendation [Rec. 93-07], a regulation was implemented to prohibit longline vessels to fish for bluefin tuna in the Mediterranean from June 1 to July 31.

3.4. Ban on imports

According to ICCAT Recommendations: [Rec. 03-17], [Rec. 03-18], [Rec. 02-16], [Rec. 02-17], [Rec. 02-18], [Rec. 02-19], [Rec. 02-20], [Rec. 01-15], [Rec. 01-14], [Rec. 00-16], Rec. 00-15], [Rec. 99-8], and [Rec. 99-10], imports of products of bluefin tuna, swordfish, and bigeye tuna caught by countries, including Cambodia, Equatorial Guinea, Sierra Leone, Bolivia and Georgia, as referred to in the recommendations, have been prohibited. Trade sanctions imposed on Belize and St. Vincent and the Grenadines were lifted in 2004.

3.5 Observer programs

For purposes of better understanding the fishing activities and the by-catch issue of the longline fishery and to be in line with the international requirement for conserving marine resources, the government has lunched an experimental observer program since 2001. There were two observers assigned to carry out observation missions in the Atlantic Ocean; three trips and 264 and 280 fishing days were observed in 2002 and 2003, respectively. This year, four observers have been dispatched to the tuna longliners operating in Atlantic Ocean to collect information on fishing activities. The results are described in the previous section.

3.6 Vessel Monitoring System [Rec. 03-14]

According to the *Recommendation by ICCAT Concerning a Vessel Monitoring System Pilot Program* [Rec. 97-12], Chinese Taipei started implementING a pilot VMS program in 1998. Furthermore, according to the *Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area* [Rec. 03-14], all large-scale tuna fishing vessels that were authorized to fish for tuna and tuna-like species in the ICCAT Convention area were required to install satellite-based vessel monitoring system (VMS). In 2004, the coverage of vessel monitoring system of Chinese Taipei large-scale tuna longline vessels is 100%.

3.7 Measures to ensure effectiveness of ICCAT conservation and management measures and to prohibit illegal, unreported, and unregulated fisheries

In accordance with the *Resolution by ICCAT Calling for Further Actions Against Illegal, Unregulated, and Unreported Fishing Activities by Large-Scale Tuna Longline Vessels in the Convention Area and Other Areas* [Res. 99-11**]**, and the *Supplemental Resolution by ICCAT to Enhance the Effectiveness of the ICCAT Measures to Eliminate Illegal, Unregulated and Unreported Fishing Activities by Large-Scale Tuna Longline Vessels in the Convention Area* [Res. 00-19**]**, 48 flag of convenience (FOC) vessels that were built in Chinese Taipei shipyards have been re-registered to the Chinese Taipei registry; 13 of these vessels were operating in Atlantic Ocean. The changes of re-registration vessel list were also reported to the Secretariat on July 7, 2003.

In accordance with the *Resolution by ICCAT Concerning More Effective Measures to Prevent, Deter and Eliminate IUU Fishing by Tuan Longline Vessels* [Res. 01-19], the following measures have been taken: (1) Administrative guidance has been given to the industry for not being engaged in FOC/IUU activities that might diminish ICCAT conservation and management measures; And (2) Administrative guidance has been made to banking institutions for not granting loans to IUU fishers.

Furthermore, in accordance with the *Resolution by ICCAT Concerning Further Defining the Scope of IUU Fishing* [Res. 01-18], vessels that have been identified to be performing IUU fishing, were prohibited to access Chinese Taipei fishing ports.

Pursuant to the *Resolution by ICCAT Concerning a Management Standard for the Large-Scale Tuna Fishery* [Res. 01-20], the Report of Implementation of the ICCAT Management Standard for Large-Scale Tuna Longline Vessels was submitted to the Secretariat.[4]

Likewise, in accordance with the *Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels over 24 Meters Authorized to Operate in the Convention Area* [Rec. 02-22], a list of respective vessels larger than 24 meters length overall that were licensed authorized to fish for tuna and tuna-like species in the ICCAT Convention area was transmitted to the CCAT Secretariat on June 30, 2003 and 25 May, 2004.

3.8 Transshipment

According to the *Resolution by ICCAT Concerning the Measures to Prevent the Laundering of Catches by Illegal, Unreported and Unregulated (IUU) Large-Scale Tuna Longline Fishing Vessels* [Res. 02-25**]**, fishing vessels are required to have prior authorization for at sea or in port transshipment and obtain the validated Statistical Document, whenever possible, prior to the transshipment of their tuna and tuna-like species. Transshipments should also be consistent with the reported catch amount of each vessel in validating the Statistical Document and require the reporting of transshipment. In 2003, carrier vessels transshipped over 800 trips in the Atlantic Ocean.

3.9 Statistical Document **([Rec. 03-19], [Rec. 03-09], [Rec. 01-21], [Rec. 97-04], [Res. 94-05])**

In accordance with the ICCAT Recommendation, regulations on the application of Bluefin Tuna Statistical Document were implemented as from 1994. To meet the requirement of Japanese and U.S. domestic regulations on the import of swordfish, regulations on the application of the Swordfish Certification of Eligibility were implemented starting from June 1999 and November 2000 for the United States and Japan, respectively. Furthermore, a system for issuing the "ICCAT Bigeye tuna Statistical Document" in accordance with ICCAT Recommendation has been conducted since July 1, 2002. In 2003, about 3,500 Statistical Documents were issued for bigeye tuna, bluefin tuna and swordfish for the three oceans. Of this amount, 23% (about 800 SDs) were for the Atlantic Ocean. 80% were for bigeye tuna. Most of the catch is exported to Japan (56%), followed by exports to the United States (23%).

[4] Available from the Secretariat.

4. Inspection scheme and activities

4.1 Inspections

The catches landed at domestic ports are required to undergo inspections according to ICCAT Resolutions/Recommendations, upon receipt of reports on alleged violations.

4.2 Related activities

To double check actual landings and reported landings, landing data were collected from traders stationed at foreign landing ports as well as at fish markets for those landings made at domestic ports. Furthermore, certified weight reports were obtained from the public surveyors who supervised the offloading of catch at importing countries, especially Japan, for crosschecking of landing/import/trade data.

5. Other information

5.1 Information submitted to the ICCAT Secretariat

Related data provided by Chinese Taipei in 2004 are shown in **Table 3**.

5.2 Shark and small scale tuna longliners investigation

Chinese Taipei has dispatched a Survey Group to the areas concerned to collect the relevant information. The group visited Panama and Costa Rica from May 1 to 15, 2004. The Survey Group visited Panamanian and Costa Rican authorities and the WWF, and found:

- In Panama, there are about 30 longline vessels less than 24 m. Those vessels usually operated in the eastern Pacific Ocean off Panama and caught sharks seasonally. Vessels fishing in the region are subject to the coastal States' government regulations. No finning has been found.

- In Costa Rica, there are about 50 longline vessels less than 24 m. Those usually operated in the eastern Pacific Ocean off Costa Rica and seasonally targeted sharks. However, Costa Rica has issued relevant regulations prohibiting finning. No finning has been found.

- All the officials of those authorities and organizations which were visited were greatly concerned about the shark resources and expressed their willingness to cooperate with Chinese Taipei in the future to jointly collecting catch information or to conduct surveys on shark resources.

5.3 By-catch

5.3.1 Seabirds

1. To mitigate the incidental catch of seabirds, some vessels that caught southern bluefin tuna were equipped with "tori line" under the auspices of the Fisheries Agency. It was suggested that fishermen that catch southern bluefin tuna set the gear at night and use fully thawed bait.

2. To improve research on seabirds, Chinese Taipei has been conducting surveys about what has been done by Chinese Taipei fishermen to avoid the seabird by-catch and the mitigation effect since 1995. In 2001, six observers were appointed with one of their task being to record related by-catch statistics of seabirds.

3. To disseminate information on seabird conservation, pamphlets and leaflets were distributed to fishermen, the fishery industries and domestic conservation groups to promote the concept of seabird conservation in recently years.

4. Chinese Taipei participated in many international meetings, such as International Fisheries Forum, the 12th Meeting of CITES, which was focused on the issues of seabird conservation. In 2004, Chinese Taipei supported the "International Technical Workshop on Preventing Incidental Catch of Sea Birds" sponsored by the International Bird Life, which is to be held in Kaohsiung.

5.3.2 Sea turtles

The measures for the protection of the sea turtles are as follows,

1. Legislative protection: The Wildlife Animal Conservation Law in Chinese Taipei has designated five sea turtles, namely, green turtle, loggerhead turtle, hawksbill turtle, olive Ridley turtle, and leatherback turtle, as endangered animal species for conservation.

2. Educational Guidance: The Chinese Taipei fisheries agencies concerned have not only produced identity pad and guidance books on relevant issues of conservation but have also encouraged longline-fishing fishermen to carry with them dip net and line clipper during their fishing operations with a view to avoiding the sea turtle's being entangled in their fishing equipment. Chinese Taipei has also distributed educational leaflets to its fishermen according to the information provided by the Western and Pacific Committee of the United States.

3. Data Collection: Since 2000, Chinese Taipei has also deployed observers on distant water tuna longline vessels to record the length, species and related information on by-catch. It is expected that a data bank of by-catch will be constructed.

4. Research: Chinese Taipei is strengthening research on the sea turtle species, so as to provide the reference for management.

5.3.3 Sharks

1. Chinese Taipei will continue to improve the collection of shark catch data, so as to be used as a reference for the fishing management and stock assessments.

2. Since 1995, numerous budgets and programs proceeded on related research on shark resources and ecology. In 2002, Chinese Taipei held an International Shark Conference in Taipei. More than forty experts and organizations participated. The national plan of action of shark management and conservation will soon be completed, in accordance with the International Plan of Action of Management and Conservation of Sharks.

Table 1. Catch estimate (in round weight, t) for the Chinese Taipei tuna longline fishery that operated in the Atlantic Ocean during the 1991-2003 period.

YEAR	*ALB*	*BET*	*YFT*	*BFT*	*SBF***	*SWO*	*BIL*	*SKJ*	*OTH*	*TOTAL*
1991	24,201	13,850	4,172	0	223	2,031	2,548	37	2,023	49,085
1992	25,272	11,546	4,528	0	46	2,127	1,455	29	1,103	46,106
1993	25,700	13,426	4,196	334	108	974	1,946	11	946	47,641
1994	28,982	19,680	6,660	729	56	3,336	2,375	17	1,541	63,376
1995	22,328	18,023	4,699	502	584	3,365	1,678	5	1,103	52,287
1996	22,861	21,850	6,653	472	24	3,394	1,369	15	1,183	57,821
1997	21,495	19,242	4,466	506	89	3,074	2,215	48	650	51,785
1998	19,204	16,314	5,328	456	42	1,433	1,495	75	121	44,468
1999	23,162	16,837	4,411	249	30	1,453	1,282	40	558	48,022
2000	22,520	16,795	5,661	313	24	1,650	1,087	41	714	48,805
2001	20,232	16,429	4,805	633	223	1,448	441	25	975	45,211
2002	21,527	16,503	4,542	666	16	1,359	643	39	758	46,053
2003*	21,686	17,719	6,106	445	86	1,312	512	40	914	48,820
2002#	124	1,980	117	0	0	115	15	0	0	2,351
2003*#	222	1,822	380	0	0	74	31	0	8	2,537

* Preliminary data.
** The catch estimate of southern bluefin tuna (SBF) has been revised to be consistent with CCSBT database in 2003.
# Catch by re-registered vessels.

Table 2. Estimated catch (in round weight, t) of the Chinese Taipei blue shark fishery that operated in the Atlantic Ocean during 1991-2002.

Year	*Blue shark**
1991	6,397
1992	5,876
1993	6,401
1994	8,277
1995	6,138
1996	7,434
1997	6,378
1998	5,620
1999	6,288
2000	6,242
2001	5,708
2002	5,930

* The catch estimates are adopted from the Inter-Sessional Meeting of the Sub-Committee on By-catch held on June 14-18 2004. Based on the recommendation of the meeting, these estimates are preliminary and will be revised in the future.

Table 3. Summary of data requests from ICCAT and the date submitted.

Data type	*Deadline for submission*	*Date submitted*	*Reference number*
Atlantic tuna and shark statistics	July 31, 2004	May 28, 2004- Task I, Task II and length frequency data	0931330863
Compliance table	October 15, 2004	October 15, 2004	
Southern albacore catch limit	Every two months	April 29, 2004 June 27, 2004 September 13, 2004	0931330700 0931330990 0931331429
List of albacore vessels	June 1, 2004	May 28, 2004	0931330722
Number of bigeye vessels	Not specified		
Vessels involved in IUU fishing	July 15, 2004	None	
Vessel chartering	July 31, 2004	None	
List of vessels greater than 24 meters	September 30, 2004	May 28, 2004	0931330700
Bluefin tuna farming reports	August 31, 2004	None	
Data from ICCAT Statistical Document Programs and validation seals	April 1/October 1, 2004	May 18, 2004	0931330797
Trade measures	September 15, 2004	None	
Annual reports (Scientific) (Commission)	October 4, 2004 November 15, 2004	October 4, 2004 October 15, 2004	

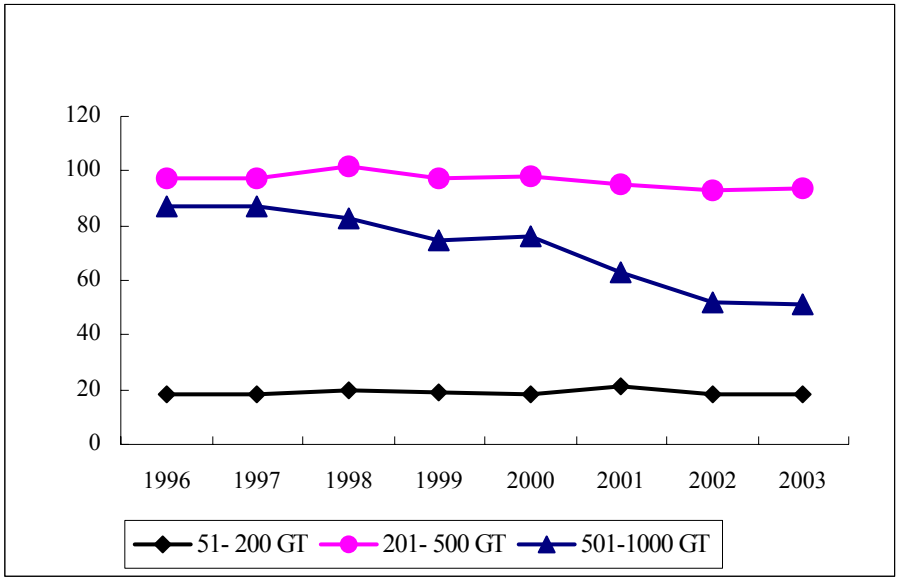

Figure 1. The number of longline vessel, by category, operating in the Atlantic Ocean.

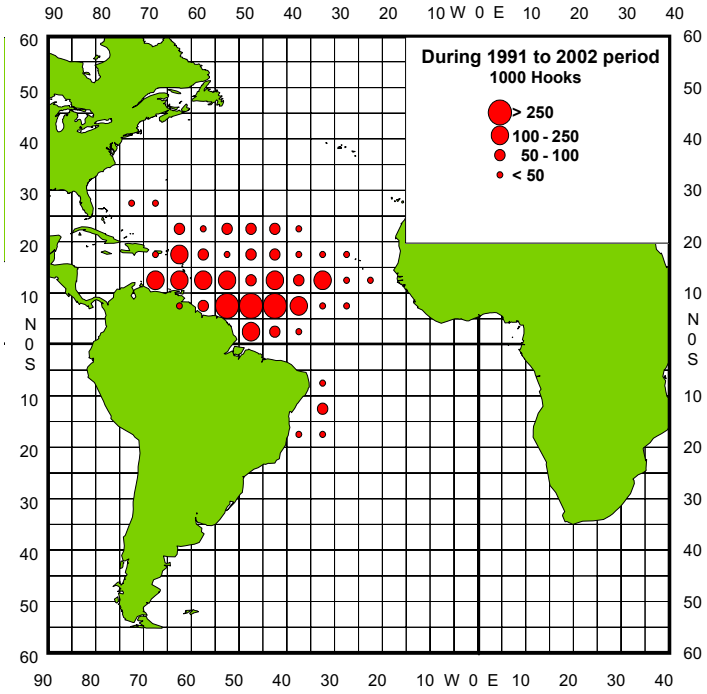

Figure 2. Distribution of fishing effort of the Chinese Taipei registered small-scaled longline vessels (< 100 GRT) operating in the Atlantic Ocean during the 1991 to 2002 period.

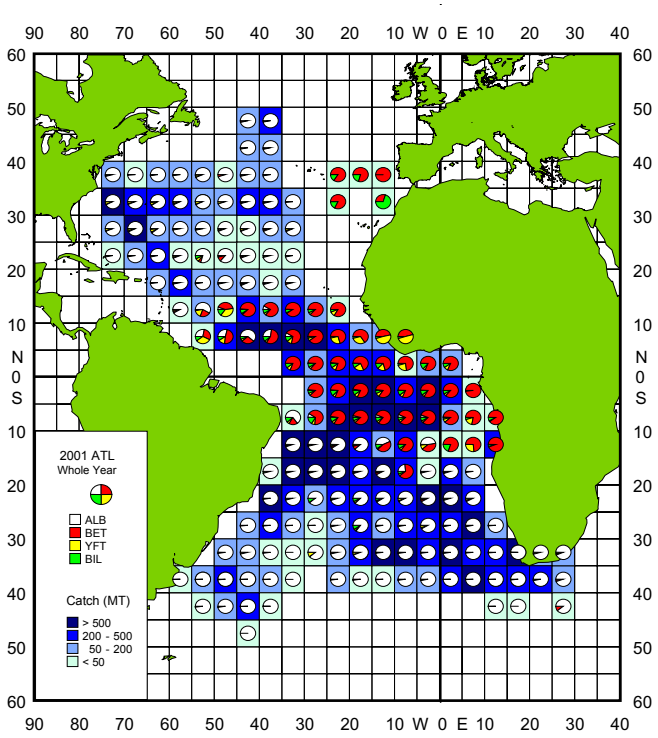

Figure 3. Distribution of catch and catch composition of the main tuna species in the Atlantic Ocean in 2001.

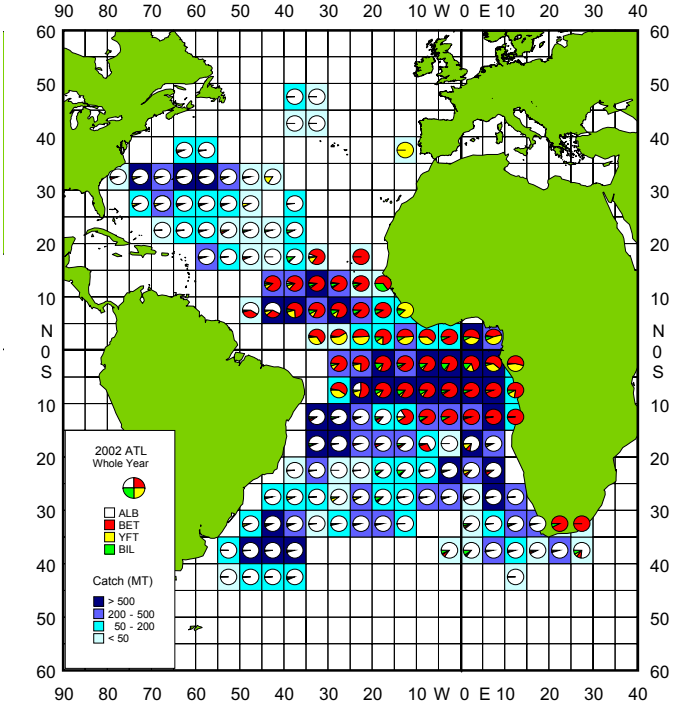

Figure 4. Distribution of catch and catch composition of the main tuna species in the Atlantic Ocean in 2002 (Preliminary data).

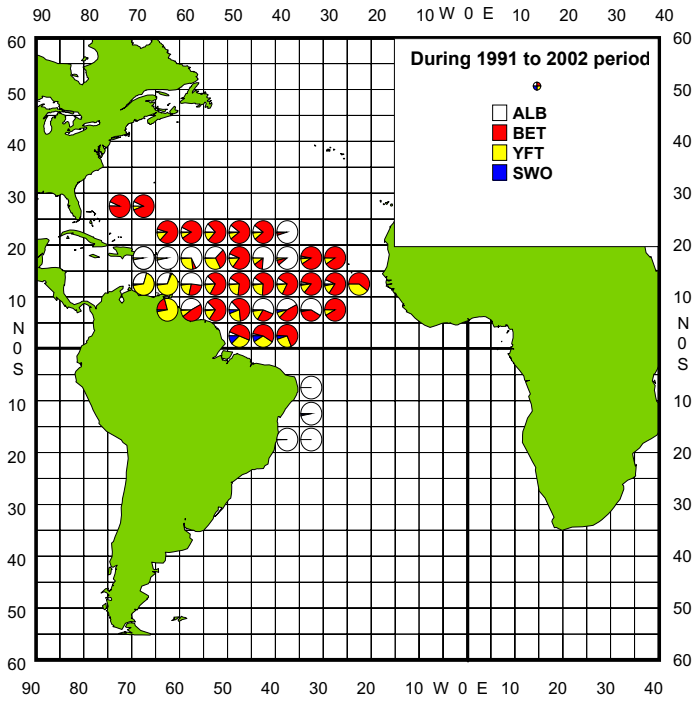

Figure 5. Catch composition of the main tuna species caught by Chinese Taipei registered small-scaled longline vessels (< 100 GRT) operating in the Atlantic Ocean during the 1991 to 2002 period.

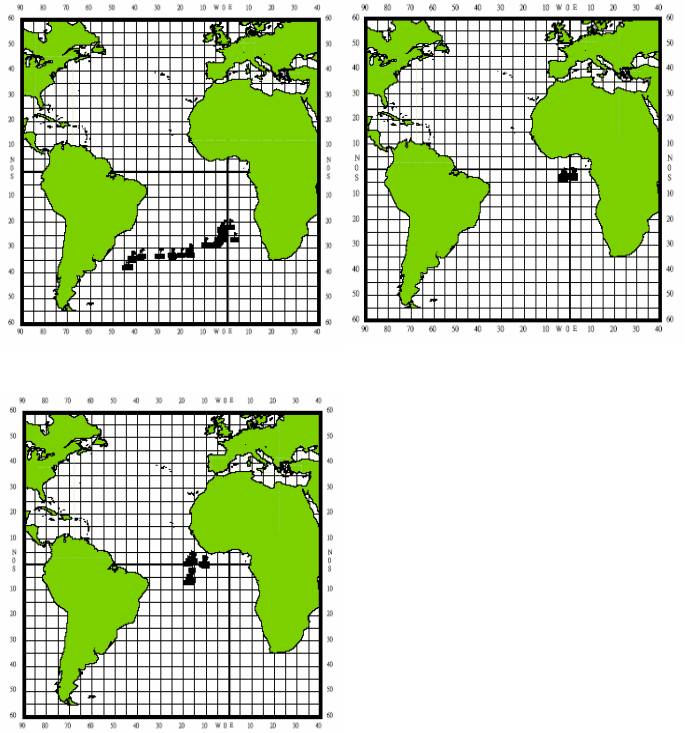

Figure 6. Tracks of three observed trips in the Atlantic Ocean in 2002.

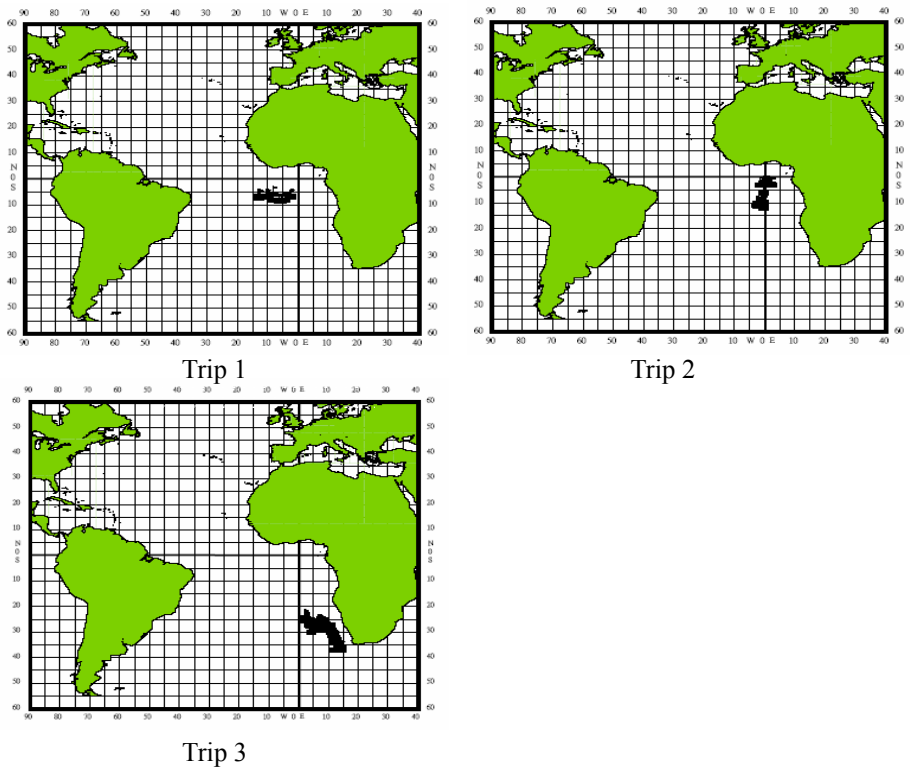

Figure 7. Tracks of three observed trips in the Atlantic Ocean in 2003.

ANNNUAL REPORT OF GUYANA[1]

1. National fisheries information

The emphasis on the capturing of shark started during the late 1970s and early 1980s when there was a ban imposed on the imports of fish products.

In order to replace the banned products, the local cottage industry started to process dried fish products. This was done using the excess by-catch landed from the trawling vessels. This also proved insufficient for the market and an alternative source of fish had to be found for drying. The development of the shark fishery helped to improve the market supply.

1.1 Description of the fisheries

In Guyana, there is an inshore artisanal fishery (fishermen use locally made boats exploiting both the demersal and pelagic species found near shore and within the EEZ). In this fishery the fishers utilizes six gear types namely: (i) Chinese seine/fyke net, (ii) pin seine, (iii) caddell, (iv) gillnet (nylon and polyethylene), (v) handline, fish pots, and (vi) circle seines.

All the boats are made from wood and are manufactured locally. The boats range from 6 to 18 m in overall length and are powered by sails, outboard, or inboard engines.

1.1.1 Fishing gear

Chinese seine, caddell and pin seine vessels are flat-bottom dories powered by sail, paddle or small outboard engines which give more maneuverability over shallow, muddy and sandy bottom areas. Chinese seines are funnel-shaped nets, 16m (52 ft) long and 4-6m (13.1-19.6 ft) wide at the mouth. The mesh size gradually tapers from 8cm at mouth to 1 cm at funnel.

Caddell or demersal longline fishing vessels range in size from 6.71-9.15m (22-30 ft) in length. A caddell line consists of a horizontal/ground line anchored at each end, with a series of about 800 dangling/vertical lines, set with baited hooks at 2m outwards. Each vessel carries between 4-5 wooden trays with each tray having 2-6 main lines.

Gillnet nylon boats are v-bottom boats ranging in size from 7.63 to 9.15 m (25-30 ft) in length. These boats have no cabin but are equipped with icebox and are usually powered by 48-hp outboard engines. The fishers therefore conduct daily fishing trips. Vessels using the gillnet polyethylene gear are v-bottom vessels with a length range of 12.2-15.25 m (40-50 ft). These vessels have a cabin and utilize diesel-powered inboard engines. The length of the trip for the polyethylene vessels is usually 10-21 days.

Approximately 60% of the artisanal vessels use gillnets and 80 % of the gears target sharks. Fishing is done in coastal / shallow waters. The fishers would normally target snappers and trout, with sharks comprising the main portion of the by-catch. The gillnet polyethylene gear is responsible for capturing 90% of the sharks landed in Guyana.
There is strong competition within the industry, as there is a ready market for the products and by-product (fins, glue (bladder) and bones). There are three licensed shark processors in Guyana.

During the fishing season (July-September) the processors fund the shark fishing trips. During the fishing trips the vessels would spend 7-15 days at sea and at the end of the season would land approximately 3182 t of dressed sharks.

1.1.2 Composition of the fleet

Sharks and scombrids are exploited in Guyana mainly with the gillnet gears. There are three sizes of gill nets that catch the shark species. These are the two, six and eight inch mesh sizes. This gear type is non-specific and catches all species of fish. The two-inch mesh size catches smaller amounts of sharks and smaller sizes of the various species since they fish in shallower waters. Their main target, however, is the smaller ground fish species

[1] Original report in English.

(*Macrodon ancylodon, Nebris microps and Micropogonias furnieri*). Due to the incidental nature of the shark catches, this makes it difficult to control the harvest of juvenile sharks caught in the shallower waters.
Other gear types that catch sharks are the caddell lines (manual longline), handline, trawl nets and pin seine.

2. Research and statistics

Sharks are landed dressed, i.e. headless and gutted. Only juvenile sharks (caught by either caddell, Chinese seine or gillnet nylon), and which account for 2% of the total catch, are landed whole. In view of this, it continues to be difficult to record shark catches by species. The Fisheries Department has noted the need for continued special technical assistance to address the issue of identification of dressed sharks, and is finalizing a proposal for a one-year study to improve collection of data on shark catches.

All the landings data for sharks and scombrids are reported to ICCAT, together with the numbers of fishing vessels involved in these fisheries. At present effective fishing effort is not recorded, and hence only Task I data have been reported this year.

3. Implementation of ICCAT conservation and management measures

Guyana's artisanal fishery is currently harvesting sharks, Spanish mackerel and king mackerel. At present, therefore, Guyana does not harvest any tuna or tuna-like species that is subjected to formal management measures adopted by ICCAT.

There are no plans to expand the artisanal fishery. The Department of Fisheries is considering a proposal to limit the amount of vessels per gear type as a precautionary approach for conserving the fishery.

The government is looking at the possibility of developing the large pelagic fishery. This will take some time as Guyana is a Developing State with limited resources. The development of the large pelagic fishery will require introduction of new technology and, increased monitoring systems to ensure that the new fisheries comply fully with all of ICCAT's regulations.

4. Inspection scheme and activities

Guyana's Coast Guard is responsible for monitoring all of the fishing activities within Guyana's Exclusive Economic Zone with the assistance from the Fisheries Department. In 2003, the Coast Guard conducted 27 fisheries surveillance trips and apprehended 3 vessels. The limited resources make it difficult to achieve more extensive surveillance.

Table 1. Production of shark in 2003 by gear type.

Gear Type	*#Vessels*	*Production (t) 2003*
Gillnet polyethylene (cabin cruiser) 6 –8" mesh size	308	1,072
Gillnet polyethylene (inboard) 8" mesh size	63	97.3
Gillnet nylon 2" mesh size	441	558
Caddell # 5-9 hooks	80	67
Chinese seine 4-5 bundles (25 –30 lbs each)	46	13
Pin seine	35	-
Handline # 6-9 hooks	18	4
Total	**991**	**1,811.3**

Table 2. Scombrid and shark catches by species (t).

	Shark species				*Scombrids*		
Month	*Carcharhinus porosus*	*Sphyrna zygaena*	*C.limbatus*	*Unidentified shark species*	*Scomberomorus brasiliensis*	*S.cavalla*	*Total*
Jan	-	-	0.1	131.1	33.1	2.2	166.5
Feb	-	-	-	222.2	8.2	11.0	241.4
Mar	-	-	-	77.4	12	66.0	155.4
Apr	1.4	-	-	98.1	24.3	24.3	148.6
May	-	-	1.0	112.0	17.4	15.3	145.7
Jun	-	-	6.0	91.0	44.4	44.3	185.7
Jul	11	-	5.0	322.1	9.2	20.4	367.6
Aug	0.1	0.1	-	91.13	130.1	126.2	347.6
Sep	-	-	0.5	131.0	80.2	29	240.3
Oct	-	-	4.0	377.1	21.3	49.4	451.7
Nov	-	-	3.2	125.2	8.1	3.3	139.8
Dec	-	-	-	0.2	-	.03	.23
Total	**13**	**0.1**	**20.0**	**1,778.2**	**388**	**390**	**2,590.51**

Note: It must be emphasized that the shark species are landed dressed (headless, finless and gutted) and hence the Fisheries Department's Data Collectors were unable to do any identification.

Table 3. Number of fishing vessels using each gear type in 2003.

L.O.A (Meters)	*Code: N = Number P = Power*	*Pin seine*	*Chinese seine*	*Gill netters*	*Caddell*	*Longline*
Up to 11.9	100 N P	43 HP	252 HP	342 HP	71 HP	
12 – 17.9	110 N P	2 HP		201 HP	6 HP	20 HP
18 – 23.9	120 N P			5 HP	2 HP	
24 – 29.9	130 N P	1 HP	1 HP	9 HP		
Total		**46**	**253**	**557**	**79**	**20**

REPORTS OF OBSERVERS FROM NON-CONTRACTING PARTIES, ENTITIES OR FISHING ENTITIES

ANNUAL REPORT OF BELIZE[1]

A. Mouzouropoulos[2] and Beverly Wade[3]

1. National fisheries information

Belize, through its Ministry of Fisheries, Cooperatives, Commerce and Industry, is an active member of the following organizations: FAO, CRFM, (Caribbean Regional Fisheries Mechanism), OSPESCA (*Organización del Sector Pesquero y Acuícola del Istmo Centroamericano*), OLDEPESCA (*Organización Latinoamericana de Desarollo Pesquero*), PROARCA (*Programa Ambiental Regional para Centroámerica*), COPACO (*Comisión de Pesca para el Atlántico Centro Occidental*).

The Belize Fisheries Department, through its mission is "to provide the country and the people of Belize with the best possible management of aquatic and fisheries resources with a view to optimize the present and future benefits through efficient and sustainable management", continues to ensure the steady development of the sector and the integrity, productivity and sustainability of Belize's ecosystems.

Over the last decade, the local fishing industry of Belize has made a significant contribution to the development of the country by providing direct employment to fishermen and processing personnel. It is an important foreign exchange earner and continues to contribute significantly to Belize's economy with export earnings in 2003 of US$55,322,008. The local fishing activity is carried out within the shallow protected waters of the main barrier reef as well as the three atolls. It revolves around lobster and conch fisheries as well as shrimp trawling. In 2003 fisheries production of conch meat, lobster head meat and farmed shrimp showed increases of 26.3%, 8.4% and 111.9%, respectively, when compared to 2002.

The fleet which fishes on the high seas is registered by the International Merchant Marine Registry of Belize (IMMARBE) and is licensed by the Fisheries Department. IMMARBE is dedicated to providing "an efficient, cost effective quality ship registration service and to enforce national laws and international Conventions which have been ratified by Belize in the interest of safety at sea and the protection of the environment." It is a Gold Corporate Sponsor of Belize's Audubon Society which became the first Belizean member of the World Conservation Union, the world's largest environment organization, based in Switzerland. As part of its own eco-shipping policy, with effect from January 1, 2003, IMMARBE introduced a 15% rebate on the Annual Tonnage Tax for vessels of 7501 GRT and above as well as for any self-propelled tankers of up to 7500 GRT which attain certification for the Green Award of the ISO 14001 Environmental Standard. Belize is the first shipping Registry to have introduced such an incentive.

Belize is in the process of ratifying the ICCAT Convention and will be Contracting Party prior to the meeting of the ICCAT Commission in November 2004. It has also applied for Cooperating non-Contracting Party status in the Inter-American Tropical Tuna Commission (IATTC), the Indian Ocean Tuna Commission (IOTC) and the North East Atlantic Fisheries Commission (NEAFC) and is in the process of ratifying the CCAMLR Convention with a view to becoming a Contracting Party but not a member of the Commission. Belize is also in the process of ratifying the FAO "Compliance" Agreement, the "Fish Stocks" Agreement and the "IOPA-IUU", the provisions of which have already been incorporated into Belize's High Seas Fishing Act 2003. This serves to formalize its commitment to the elimination of activities which diminish the effectiveness of conservation measures.

Belize has been placed on the IMO White List in November 2001 and the Shipping Registry attained ISO 9002 accreditation in November 2001. In 2003 it attained accreditation to the new ISO 9001:2000. Furthermore, as a result of its quality measures involving the de-registration of some 1,584 vessels of all types, the Port State Control three-year rolling detention ratios for the Belize registered fleet have improved dramatically, e.g., in the U.S. Coast Guard from 23.08% in 2001 to 7.5% in 2003 and in the Paris MOU from 24% to 14.1%.

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[1] Original report in English.

[2] Director General, International Merchant Marine Registry of Belize.

[3] Fisheries Administrador, Fisheries Department.

2. Statistics and research

2.1 Within Belize's territorial waters

In compliance with the mandate issued by the Secretariat of the Convention for the Regulations of International Trade Endangered Species (CITES), to Queen Conch exporting countries in the Caribbean, Belize initiated the necessary surveys in November 2003 with the assistance of the Caribbean Regional Fisheries Mechanism (CRFM).

- Monitoring of lobster, conch and finfish continued at the reserves.
- Ecosystems monitoring was standardized and regularized in 2003.
- Staff from the various reserves and from CCU participated in a national grouper aggregation monitoring during January, February and March 2003. This was funded by the Nature Conservancy and WWF.
- The monitoring of turtle resting sites continues at all reserves.

2.2 Belize's high seas fleet

As already reported to ICCAT on July 21, 2004, there are no Belize registered fishing vessels on the high seas catching tuna, tuna like species or sharks within the ICCAT Convention Area. Consequently, Belize has submitted nil returns for Task I catch statistics, Task II fishing power (fleet) statistics, Task II catch and effort statistics, Task II size data, catch-by-size data. Belizean fishing vessels in the area target squid, saury, shrimp, bass, grouper, sardine, sardinella, tristan de cunha rock lobster, cod, haddock, capelin, blue whiting, crabs, hake, bluefish and dentex.

3. Implementation of ICCAT conservation and management measures

At the meetings of the Commission in 2001, 2002 and 2003, Belize expressed its commitment to implement measures to eliminate the activities of fishing vessels which were identified as diminishing the effectiveness of ICCAT conservation. Belize is now pleased to report that the implementation of the aforementioned measures has been completed. These measures are summarized as follows:

3.1 De-registration of non-compliant fishing vessels

Belize has already submitted to the ICCAT Secretariat the names of 513 fishing vessels which were de-registered during the period from September 1, 2001 to October 11, 2002. Vessels which are ascertained as fishing illegally are not only de-registered but also fined in accordance with our Registration of Merchant Ships (Disciplinary Regulations, 1999) S.I. Number 56 of 1999 which includes as an offence "the violation of any International Conventions ratified by Belize, or Resolutions issued by the competent bodies of the United Nations" as well as our Resolution No.195 Section 8(c) for violation of "the fishing regulations and conservation programs for the protection of certain marine species and areas which have been set in place by Regional Agreement and/or organizations such as ICCAT, IATTC, CCAMLR, IOTC, NAFO, NASCO and other."

Belize is pleased to report that the level of non-compliance has dropped dramatically and consequently Belize has not de-registered "ex-officio" any vessels during the period November 2003 to September 2004 for offenses relating to their fishing operations. Furthermore, during this period Belize has not received any complaints from any fishing organizations worldwide in respect of Belizean vessels. Also, there are no outstanding cases under investigation.

3.2 Implementation of the High Seas Fishing Act 2003 (HSFA)

This Act came into force on February 1, 2003. It basically follows the model recommended to Belize by the CARICOM Fisheries Unit/Caribbean Regional Fisheries Mechanism. This Act embodies the requirements of the 1993 FAO Compliance Agreement, the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, the Fish Stocks Agreement insofar as these relate to the Flag State in relation to its high seas fleet and cooperation with other States in this regard. Briefly, the Act provides for:

- Part III Section 4: the mandatory licensing of all high seas vessels in compliance with the abovementioned Agreements.

- Section 3(2): the "monitoring, control and surveillance of the operations of fishing vessels of Belize pursuant to Articles V and VII of the Compliance Agreement".

- Part IV: International Co-operation which includes the provision of information to international organizations as well as the exchange of information with other States in compliance with Articles V and VI of the Compliance Agreement, Sections 23-32 of the IPOA as well as Articles 20 and 21 of the Fish Stocks Agreement.

- Part V: Enforcement of the Act which incorporates the provisions of the Merchant Ships (Disciplinary Regulations 1999) S.I. Number 56 of 1999.

- Part IV: Prohibition and Offence which, *inter alia*, prohibits activities which undermine the effectiveness of international conservation and management measures.

3.3 Fishing vessel licensing

In addition to compliance with the requirement of the Registration of Merchant Ships Act as amended in 1996, the Registration of Merchant Ships (fishing vessels of 24 meters in length and above) Safety Regulations, all new registrations as well as fishing vessels which are already registered are required to apply for a High Seas Fishing License by completing the relevant Application Form detailing, *inter alia*, a description of the vessel, its fishing gear, area of fishing, the species targeted, method of processing etc. Vessels that wish to fish in breach of conservation measures, or for species for which Belize has no agreed catch quotas from ICCAT, are not registered or licensed. Belize has not issued any licenses for fishing tuna or tuna like species in the Atlantic or neighboring seas. All licenses are valid for one year. Renewal is dependent upon license holder having adhered to all conditions of this license.

3.4 Vessel monitoring (VMS)

Belize has successfully implemented VMS Reporting on its fishing vessels. It is based on INMARSAT, utilizing INMARSAT C, INMARSAT Mini C and INMARSAT D+ equipment. The provider is Pole Star Space Applications Limited, which utilizes automatic, real time, internet-based services called Purple Finder Vessel Management Solutions. This reporting system complies with the recommendations by ICCAT.

3.5 Catch and effort reporting

Fishing vessel owners/operators are required to submit data of their fishing operations based on Belize's format for such reporting which includes a detailed Fishing Log showing information regarding catch, landings etc.

4. Inspections schemes and compliance

For the purpose of ensuring compliance, surveillance will be conducted on a regular basis or as a result of an investigation by: boarding at sea or in port, plant checks, observer teams, requesting the assistance of other Governments/organizations as necessary. Belize has carried out inspections during 2003-2004. As ICCAT is aware, Belize hopes to obtain catch quotas from ICCAT at the forthcoming meeting in November 2004 and Belize will ensure compliance with the ICCAT recommended inspection schemes.

Belize believes that by the actions that it has taken and the results thereof, Belize has fully demonstrated not only its commitment to, but also its effective implementation of, ICCAT conservation and management measures. However, in the same way as other Contracting Parties, Belize is continuing to refine and improve its various systems and their efficacy.

REPORT OF ST. VINCENT AND THE GRENADINES[1]

Leslie Straker[2]

1. National fisheries information

1.1 The local fishing fleet

The local pelagic fishing fleet of St. Vincent and the Grenadines is a predominantly artisanal one. In 2003 there were 648 registered vessels and 1,600 fulltime fishers. Because of the small-scale nature of fishing operations any one of these vessels is likely to catch tunas and tuna-like species opportunistically. However, it is estimated that 250 of these vessels (500 fishers) target these species. More than 95% of these vessels are open fiberglass boats less than 8m in length. They are equipped with 15-125 Hp gasoline outboard engines. The other 5% of the pelagic fishing fleet is comprised of six longliners (13m in length) and several "day tour" boats that are engaged in sport fishing.

In general, a fishing trip has a duration of one day for the open fiberglass vessels (4:00am - 4:00pm) and up to five days for the longliners. The smaller vessels fish predominantly in the eastern waters of the state, 50 miles off-shore. The longliners conduct fishing in the western waters, 150 miles off-shore. Trolling by the open vessels, longlining by the longliners, beach seining and gillnetting are the primary fishing gears used to catch tuna and tuna-like species.

1.2 The high seas fishing fleet

St. Vincent and the Grenadines is also responsible for a high seas fishing fleet. These vessels are foreign owned vessels registered with St. Vincent and the Grenadines and conduct their fishing activities on the high seas. In 2003 there were 42 vessels fishing in the Atlantic. Tuna and tuna-like species were caught with yellow fin tuna being the main species targeted. The areas of 10^{o}-15^{o}N and 40^{o}-60^{o}W, and 10^{o}-15^{o}N and 60^{o}-70^{o}W were the two main areas for fishing activity in the Atlantic by these vessels in 2003.

In **Table 1** the length and gross tonnage of St. Vincent and the Grenadines high seas fishing vessels are shown. Twenty-three (23) vessels in 2003, fishing in the Atlantic, were over 24 meters in length. Of these vessels seven were less than 30 meters, five were between 30-40 meters, 11 were between 40-50 meters and one was over 50 meters.

2. Research and statistics

2.1 Local statistics

Landings of tuna and tuna-like species by the local artisanal fishing fleet for 2003 increased for most of these species as compared to 2002 (Task I, artisanal). In particular, yellowfin tuna (*Thunnus albacares*) and skipjack tuna (*Katsuwonus pelamis*) increased by 15 and 32 metric tons (t), respectively. Blackfin tuna (*Thunnus atlanticus*) and wahoo (*Acanthocybium solanderi*) also increased by 5 and 23 t, respectively. However, these increased landings in 2003 are consistent with the average annual landings for these species for the years 1996 to 2001.

2.2 High seas statistics

Reported catch from the two main areas of fishing activity for the high seas vessels totaled 2,574 t and 1,014 t, respectively, for all species (Task I, high seas). Total reported landings of 3,983 t for 42 vessels fishing in the Atlantic in 2003 were greater than the 3,738 t in 2002 (Task II). In particular, landings of yellowfin tuna decreased substantially from 1,162 t in 2002 to 543 t in 2003. On the other hand, catches for big-eye tuna increased from 14 t in 2002 to 103 t in 2003. Landings for albacore increased from 502 t to 1,556 t. However, in 2001 landings for albacore were 5,662 t. The miscellaneous category, showed a slight increase from 1,663 t in 2002 to 1,701 t in 2003.

[1] Original report in English.
[2] Fisheries Division, Ministry of Agriculture Lands & Fisheries, Tel: 784 45-62738; Fax: 784 45-62304; Email: fishdiv@caribsuf.com

3. Implementation of ICCAT conservation and management measures

3.1 Legislation

The Fisheries Division operates under the Ministry of Agriculture Lands and Fisheries and is responsible for the overall management and development of the fisheries sector. The Division has the following pieces of legislation to assist in this task:

- The Maritime Areas Act of 1983
- The Fisheries Act, No1 of 1986
- The Fisheries Regulations, No 8 of 1987 to the Act No 1 of 1986
- The Fisheries Processing Regulations of 2001
- The High Seas Fishing Act of 2001
- The High Seas Fishing Regulations, November 2003

3.2 Compliance

3.2.1 Moratorium

The moratorium on the registration of new high seas fishing vessels established in June 2001 is still in effect. This moratorium prevents further increases in the overall tuna fishing effort in the ICCAT Convention area by St. Vincent and the Grenadines fishing vessels. The measure is also contributing to the effort limitation regulations in effect for yellowfin and bigeye tunas and the catch limitations for other species. While no historical data are available for 1992, recent trends show that yellowfin catches for St. Vincent and the Grenadines have reduced from over 2,000 t in 2000 to less than 570 t in 2003. With respect to Atlantic swordfish, billfish and marlin, current high seas vessel licensing agreements do not allow the taking of these species, hence they are not targeted.

3.2.2 Other measures

St.Vincent and the Grenadines recognizes that the present level of albacore catches is still significantly high in the context of the ICCAT management measures for this species and St. Vincent and the Grenadines's commitments in this regard. St. Vincent and the Grenadines will therefore continue to work towards further decreasing catches for albacore, hence facilitating greater compliance with ICCAT regulations. With respect to the "miscellaneous" category, St. Vincent and the Grenadines has already made request to all vessel agents to provide information on this category retroactively, for the years of 2002 and 2003. This information would be analyzed, further disaggregated, and made available to ICCAT in 2005.

Table 1. Length and GRT of St. Vincent and the Grenadines high seas fishing vessels fishing in the Atlantic which are greater than 24 meters in length (2003).

Name of vessel	*Former name*	*Call Sign*	*Length*	*GRT*	*Gear*
BRAVO	NA	J8AN3	27.8	91.74	Longline
BOUNTIFUL	NA	J8AM9	27.3	181	Longline
STUPENDOUS	AQUARIUS	J8AM8	27.3	181	Longline
BRIGHTNESS	NA	J8AM7	27.3	181	Longline
EMILY NO.12	WEN SHUN 622	J8AN9	33.5	204	Longline
EMILY NO. I6	WEN SHUN 626	J8AO1	33.5	204	Longline
MARINA	TUNA MAR 111	J8AO2	49.0	627	Longline
EMILY NO. 11	WEN SHUN 621	J8AN8	33.5	204	Longline
EMILY NO. 21	NA	J8AQ1	42.95	607	Longline
EXQUISITE	TUNA MAR 22	J8AP9	43.63	506	Longline
OCEANUS	TUNA MAR 611	J8AQ7	42.47	530	Longline
TUNA BRAS NO. 216	NA	J8PB9	57.38	632	Longline
TUNA BRAS NO. 11	NA	J8AP8	43.63	506	Longline
OCEAN EAGLE	CHANG YOW 212	J8AT9	49.35	664	Longline
GLORIA	TUNAMAR 612	J8AQ8	49.01	624	Longline
NATIONAL 101	NA	J8AR7	25.71	96.79	Longline
TUNA MAR 112	NA	J8AQ3	49.0	627	Longline
SOUTHERN STAR 136	HSIANG CHANG 136	J8AO13	43.5	537	Longline
OCEAN HARVEST	NA	J8AN5	34.0	420	Longline
SOUTHERN STAR 102	HSIANG CHANG 102	J8AS3	43.8	347	Longline
HSIANG PAO 101	NA	J8A10	27.0	91	Longline
HSIANG PAO 102	NA	J8A11	27.0	91	Longline
MIRANDA	NA	J8VB3	48.1	863	Longline

REPORTS OF OBSERVERS FROM INTERGOVERNMENTAL ORGANIZATIONS

ANNUAL REPORT BY THE CARIBBEAN COMMUNITY & COMMON MARKET (CARICOM)[1,2]

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1. Introduction

This report provides statistics, research and management information on behalf of the following CRFM/CARICOM countries that are currently neither Contracting Parties nor Cooperating Parties to ICCAT, and which have submitted data and information on large pelagic fisheries to the CRFM: Grenada, Commonwealth of Dominica, St. Kitts and Nevis, and St. Lucia.

2. Fisheries information

Large pelagic fisheries in these countries continue to have a substantial artisanal component, which provides employment for the rural poor and an important natural domestic source of protein.

2.1 Grenada

In Grenada, in 2003, tuna and tuna-like species were fished using mainly longline and troll gear. There were 761 fishing vessels operating, of which about 360 vessels participated in large pelagic fishing operations: 280 'pirogues' and 80 'launches', the same number as in 2002. The description and operation of these two types of fishing vessels also did not change in 2003. That is to say, the 'pirogues' are small, narrow vessels (5 - 9 m LOA), and are powered by outboard engines. 'Pirogues' are deckless vessels, without cabins, and are therefore restricted to engaging in single-day fishing trips. The longline and trolling gear of the 'pirogues' are fully manually operated. The 'launches' range from 9 to 15 m in length. These larger vessels are used for fishing trips lasting 3-7 days at a time. The launches use longline gear, with the main lines usually deployed and retrieved mechanically but with the hook and float lines operated manually. There is also a small, active recreational fishery, with some catch data recorded during annual tournaments. Table 1 gives the large pelagic landings data by Grenadian vessels fishing in 2003. In 2003, the most important species landed were: yellowfin tuna (*Thunnus albacares*), blackfin tuna (*T. atlanticus*), sailfish (*Istiophorus albicans*), swordfish (*Xiphias gladius*), and blue marlin (*Makaira nigricans*).

2.2 Commonwealth of Dominica

In Dominica, the number of 'pirogues' (similar to the 'pirogue' vessel described for Grenada) participating in the large pelagic fishery did not change in 2003, i.e. 342 vessels. In Dominica, the 'pirogues' are 6 to 8 m in length. Fishing with FADs has been conducted since the 1980s, but their use as a fishing aid has become more common and more organised in the last three years. This has made the fishery more efficient to operate from an economic

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1 Original report in English.

2 Prepared by the Caribbean Regional Fisheries Mechanism (CRFM) on Behalf of Grenada, Commonwealth Oo Dominica, St. Kitts and Nevis, and St. Lucia.

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standpoint. The FADs are constructed from local materials, and fishers pay a small fee every time they fish around a FAD. In 2003, there were 8 anchored FADs in operation, compared to 12 used in 2002. Artisanal methods of trolling and longlining have been used traditionally in the past. However, with the increasing utilization of FADs, the hand line is emerging as the predominant gear. All gears are manually operated. In 2003, the most important landings were those of yellowfin tuna (*T. albacares*), blue marlin (*M. nigricans*), skipjack tuna (*Katsuwonus pelamis*), and blackfin tuna (*T. atlanticus*).

2.3 St. Kitts and Nevis

In 2003, the same 135 vessels (<9 m LOA) operated in St. Kitts and Nevis. The fishing trips were all daily fishing trips, with all gears being manually operated. Recently, the beach seine fishery has also been targeting skipjack tuna (*K. pelamis*) and blackfin tuna (*T. atlanticus*) that come close to the shore. In 2003, the seine fishery was responsible for landing about 12 t, just over 50% of the catch. There has been a gradual increase in the use of FAD technology on both islands. In St. Kitts, fishing methods include trolling and single vertical long lines that are set around the FADs. In Nevis, troll and hand line gears are used around the FADs. There is also a small, active recreational fishery. Although landings are not generally recorded by species, the 2003 landings consisted of the following species: yellowfin tuna (*T. albacares*), skipjack tuna (*K. pelamis*), blackfin tuna (*T. atlanticus)*, Atlantic black skipjack (*Euthynnus alleteratus*), king mackerel (*Scomberomorus cavalla*), cero mackerel (*S.regalis*) and wahoo (*Acanthocybium solandri)*.

2.4 St. Lucia

No new information was received from St. Lucia on its fisheries descriptions in 2003. The data submitted to ICCAT noted that 669 fishing vessels participated in large pelagic fishing operations in 2003. Except for one vessel, vessels range from 4 to 20 m in length. Most of the vessels are 'pirogues', same as those described for Grenada. The 'pirogues' are used for single-day trips only. Vessels operate in coastal waters, and the main gears used are hand lines, bottom line, trolling gear, and tuna gillnets locally known as 'seine bonik' (used to encircle schools of tunas close to shore). All gears being manually operated. FADs are also used, but the extent of their contribution to landings is currently unknown. There is a small, active recreational fishery, with some catch data recorded during tournaments. In 2003, the most important species landed were: wahoo (*A. solandri)*, blackfin tuna (*T. atlanticus)*, yellowfin tuna (*T. albacares*) and skipjack tuna (*K. pelamis*).

3. Statistics and research

Table 1 provides currently available best estimates of commercial landings of large pelagic species in 2003 in Grenada, Commonwealth of Dominica, St. Kitts and Nevis, and St. Lucia. The fisheries in these countries are multi-species, multi-gear fisheries that fish opportunistically. In view of this, annual fluctuations in species landings probably reflect fluctuations in local abundance, as well as the availability of the different species to the fisheries concerned. Having noted this, Dominica and St. Kitts and Nevis continue to record increasing use of FADs in their large pelagic fisheries, and this is believed to have influenced both the amount, as well as the species composition of the reported landings (see **Table 1**) in these two countries.

Grenada informed the CRFM/CARICOM that albacore catches are minimal, and that the catch identified as albacore in 2002 was misidentified. In view of this, an explanatory footnote is placed at the end of **Table 1**, pending confirmation of the actual species classification by Grenada9.

3.1 First Annual CRFM Scientific Meeting

In June 2003, the CRFM held its first annual scientific meeting. During this meeting, there was an attempt to examine available data on wahoo (*A. solandri*) collected from several commercial fisheries operating in countries within the Eastern Caribbean and also Spanish mackerel (*S. brasiliensis*) data collected from the commercial fishery of Trinidad and Tobago. While it was not possible for the CRFM meeting to attempt an assessment of wahoo because of the inadequacy of the data, a preliminary assessment of the Spanish mackerel fishery was carried out. These reports will be made available to ICCAT in the near future.

9 Grenada was badly devastated by Hurricane Ivan in September 2004, and hence the CRFM/CARICOM was unable to obtain a final update on the species misidentification problem noted by Grenada earlier in the year.

Table 1. The 2003 annual commercial large pelagic fish landings (t) of Grenada, Commonwealth of Dominica, St. Kitts and Nevis, and St. Lucia.

Country	*Common name*	*Scientific name*	*2003*
Grenada	Yellowfin tuna	*Thunnus albacares*	748.8
	Skipjack tuna	*Katsuwonus pelamis*	15.5
	Blackfin tuna	*Thunnus atlanticus*	334.7
	Bigeye tuna	*Thunnus obesus*	0
	King mackerel	*Scomberomorus cavalla*	0
	Wahoo	*Acanthocybium solandri*	44.1
	Atlantic bonito	*Sarda sarda*	
	Albacore*	*Thunnus alalunga*	46.1
	Atlantic sailfish	*Istiophorus albicans*	171.4
	Blue marlin	*Makaira nigricans*	71.9
	White marlin	*Tetrapturus albidus*	0
	Swordfish	*Xiphias gladius*	88.0
	Shark unspecified		
	Spanish mackerel	*Scomberomorus brasiliensis*	
	Frigate tuna	*Auxis thazard*	
	Tuna unspecified		
Commonwealth of Dominica	Yellowfin tuna	*Thunnus albacares*	119
	Skipjack tuna	*Katsuwonus pelamis*	50.8
	Blackfin tuna	*Thunnus atlanticus*	41.9
	Bigeye tuna	*Thunnus obesus*	
	Wahoo	*Acanthocybium solandri*	10
	King mackerel	*Scomberomorus cavalla*	
	Marlin unspecified		
	Tuna unspecified		
	Atlantic sailfish	*Istiophorus albicans*	
	Swordfish	*Xiphias gladius*	
	Blue marlin	*Makaira nigricans*	74.8
St. Kitts	Tuna and mackerels unspecified		18.5
Nevis	Tuna and mackerel unspecified		3.8
	Wahoo		6.7
St. Lucia	Yellowfin tuna	*Thunnus albacares*	138.8
	Skipjack tuna	*Katsuwonus pelamis*	132.4
	Blackfin tuna	*Thunnus atlanticus*	168.5
	Albacore tuna	*Thunnus alalunga*	10
	Atlantic black skipjack	*Euthynnus alletteratus*	0.6
	Tuna unspecified		0.42
	Atlantic bonito	*Sarda sarda*	
	Bullet tuna	*Auxis rochei*	0.02
	King mackerel	*Scomberomorus cavalla*	0.45
	Spanish mackerel	*Scomberomorus maculatus*	0.05

St. Lucia (Cont'd)	Cero mackerel	*Scomberomorus regalis*	1.6
	Wahoo	*Acanthocybium solandri*	169.3
	Blue marlin	*Makaira nigricans*	18
	Shark unspecified		
	Bigeye tuna	*Thunnus obesus*	2.5
	Billfish unspecified		
	Atlantic swordfish	*Xiphias gladius*	0.2
	Atlantic sailfish	*Istiophorus albicans*	0.3
	Bignose shark	*Carcharhinus altimus*	0.006
	Tiger shark	*Galeocerdo cuvier*	0.45
	Lemon shark	*Negaprion brevirostris*	0.18
	Blacktip shark	*C. limbatus*	1.6
	Oceanic whitetip shark	*C. longimanus*	0.86
	Sandbar shark	*C. plumbeus*	0.19
	Sand tiger shark	*Carcharias taurus*	0.46
	Nurse shark	*Ginglymostoma cirratum*	1.0
	Hammerhead sharks nei	*Sphyrna spp.*	0.24
	Sharks unspecified		0.65