INTERNATIONAL COMMISSION
for the
CONSERVATION of ATLANTIC TUNAS

R E P O R T
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INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS

CONTRACTING PARTIES

(as of 31December 2005)

Algeria, Angola, Barbados, Belize, 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

COMMISSION OFFICERS

Commission Chairman	*First Vice-Chairman*	*Second Vice-Chairman*
W. T. HOGARTH, United States (since 20 November 2005)	E-J. SPENCER, European Community (since 20 November 2005)	F. O. MBO NCHAMA, Equatorial Guinea (since 20 November 2005)

Panel No.	***PANEL MEMBERSHIP***	***Chair***
-1- Tropical tunas	Angola, Belize, Brazil, Canada, Cape Verde, China (People's Rep.), Côte d'Ivoire, Equatorial Guinea, European Community, France (St. Pierre & Miquelon), Gabon, Ghana, Guatemala, Honduras, Japan, Korea (Rep.), Libya, Mexico, Morocco, Namibia, Panama, Philippines, Russia, Sao Tome & Principe, Senegal, South Africa, Trinidad & Tobago, United Kingdom (Overseas Territories), United States, Venezuela	Côte d'Ivoire
-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	South Africa
-4- Other species	Algeria, Angola, Belize, 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, Tunisia, Turkey, United Kingdom (Overseas Territories), United States, Uruguay, Venezuela	Japan

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	Chair
STANDING COMMITTEE ON FINANCE & ADMINISTRATION (STACFAD)	J. JONES, Canada (since 21 November 1997)
STANDING COMMITTEE ON RESEARCH & STATISTICS (SCRS) Sub-Committee on Statistics: M. ORTIZ (United States), Convener Sub-Committee on Ecosystems: J.M. FROMENTIN (EC-France), Convener	G. SCOTT, United States (since 7 October 2005)
CONSERVATION & MANAGEMENT MEASURES COMPLIANCE COMMITTEE	F. WIELAND, EC (since 19 November 2001)
PERMANENT WORKING GROUP FOR THE IMPROVEMENT OF ICCAT STATISTICS AND CONSERVATION MEASURES (PWG)	

ICCAT SECRETARIAT

Executive Secretary: MR. D. MESKI
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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 II (2005)"***, which describes the activities of the Commission during the second half of said biennial period.

This issue of the Biennial Report contains the Report of the 19th Regular Meeting of the Commission (Seville, Spain, November 14-20, 2005) 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 Annual Reports of the Contracting Parties of the Commission and Observers, relative to their activities in tuna and tuna-like fisheries in the Convention Area.

The Report for 2005 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 Annual Reports of the Contracting Parties of the Commission and 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 2005 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 3 to ANNEX 9 of the 2005 Commission Report).

ANNUAL REPORTS OF CONTRACTING PARTIES

ANNUAL REPORT OF ALGERIA[1]

Part I (Information on fisheries, research and statistics)

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 the national level, the strategy for the development of fishing for 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; and
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 the 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.

As regards the creation of a national tuna fleet, it should be noted that of the 20 purse seiners foreseen by the PNDPA, three have already been purchased by private operators and the purchase of a fourth vessel is in process.

In this regard it is useful to point out 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.

[1] Original report in French.

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.

Section 1: Annual Fisheries Information

The total Algerian catches of tunas and tuna-like species amounted to 3,263 t in 2004. The breakdown of the catch is as follows:

- Bluefin tuna 1,541 t
- Swordfish 564 t
- Small tunas 1,158 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 27 purse seiners (2 of which are specialized), 155 artisanal longliners, and 12 chartered longliners measuring 45 m.

In this respect, it should be noted that in 2003 there was a modernization-reconversion strategy was initiated for part of the tuna fleet. This effort continued in 2004, which resulted in a reduction in the number of artisanal units in this fishery and, consequently, a reduction in the proportion of national catches and this, awaiting the start of activity of new fishing vessels.

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 from the sampling of about 2,075 bluefin tuna caught in April and May 2004, have shown that the size of the fish varies in a range from 90 cm and 300 cm with an average size of about 210 cm. Notwithstanding, the sample considered is mainly comprised of fish measuring from 200 cm to 250 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 2,075 fish, the weight of this species varies from 16 to 429 kg, with a predominance of fish weighing from 100 to 250 kg.

Figure 4 shows the overall size-weight relation of the bluefin tuna sampled in 2004.

The study on overall sex-ratio shows a clear difference between the abundance of males (42.80%) compared to that of females (52.20%). The overall sex-ratio is shown in **Table 1** and **Figure 5**.

Further, it is noted that there is a general predominance of females measuring between 150 cm to 220 cm; in sizes over 230 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 dates back to the 1970s, has undergone several changes and adjustments.

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

The agencies transmit data daily to the Wilaya Directorate which in turn transmits them periodically (every ten days or once a month) to the General Directorate where the data collected are compiled, processed and analyzed. The officers collect the information in two ways:

- By being present at the ports where the products are landed, and proceeding to on-cite checking;
- 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 report the quantities 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 should be 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 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 (in number of vessels).

Based on scientific advice, the fisheries administration has made changes to the scheme and has introduced a new scheme 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, vessel length and engine power).

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

This includes forms for the collection of information on the fishing areas, 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 compiled 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 need some improvements, particularly to collect the statistics required to complete the Task II forms, through a biological sampling network. To this effect, decisions have been taken and the necessary measures to adapt of these measures are currently 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.

To implement 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 tunas 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 of 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 based in part on statistical data collected since 1995 by observers on board tuna vessels.

In effect, from 2000 to 2004, scientists from the fishing sector have processed a sample comprised of 15,858 fish. This study was aimed at 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 ICCAT 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 is aimed at regulating the following:

- the conditions for carrying out fishing;
- the market sizes of the species caught;
- sanitary and health conditions; and
- 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.

Furthermore, 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].

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, the fishing sector has notified ICCAT and implemented the ICCAT Statistical Document Programs since August 2, 2005.

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 to reinforce 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”.

Finally, thanks to international cooperation, Algeria has implemented a VMS system for fishing vessel monitoring aimed at completing the general control mechanism already in place.

Section 5: Other Activities

The major 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 processing of data from these trips has resulted in an upward revision of the reserves of fish catches located in waters under Algerian jurisdiction.

Another notable aspect is the closer association of the scientific community with the professional sector in the national plan 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*	*%*
Males	888	42.80
Females	1,187	57.20
Total	**2,075**	**100.00**

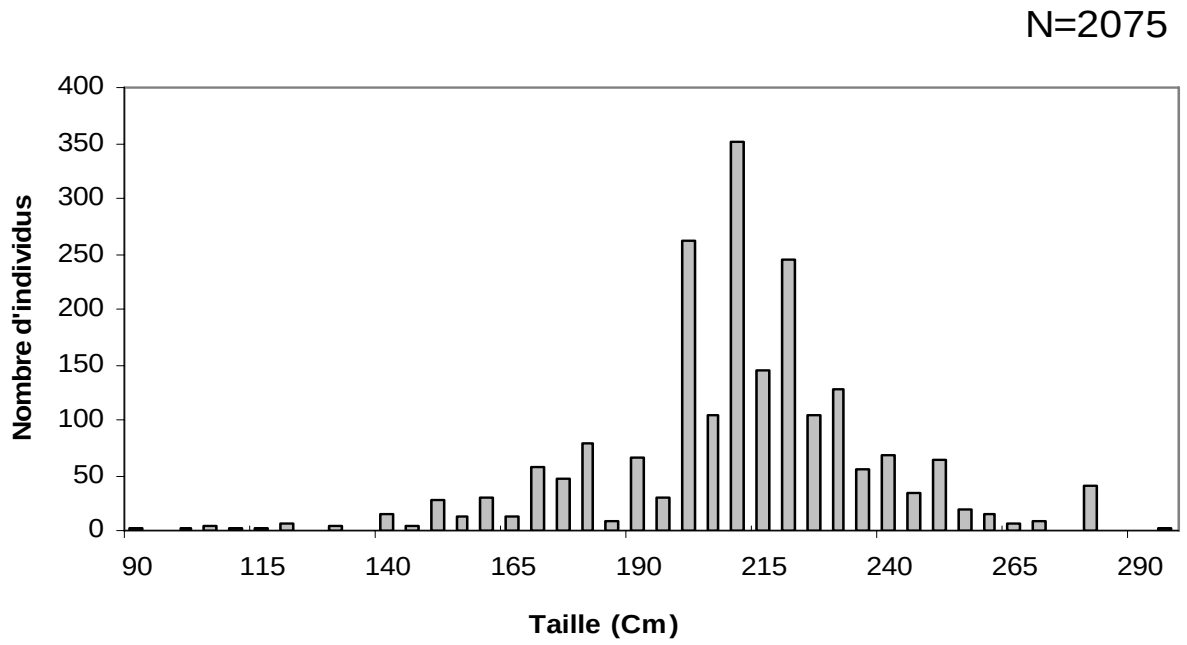

Figure 1. Distribution of size frequencies.

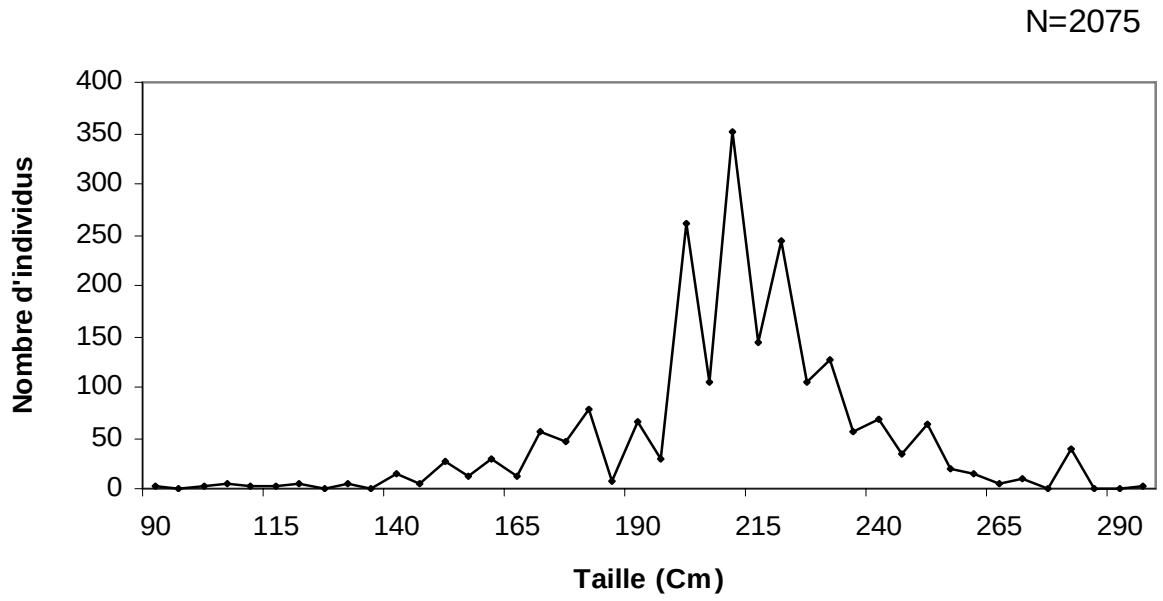

Figure 2. Size frequency curve.

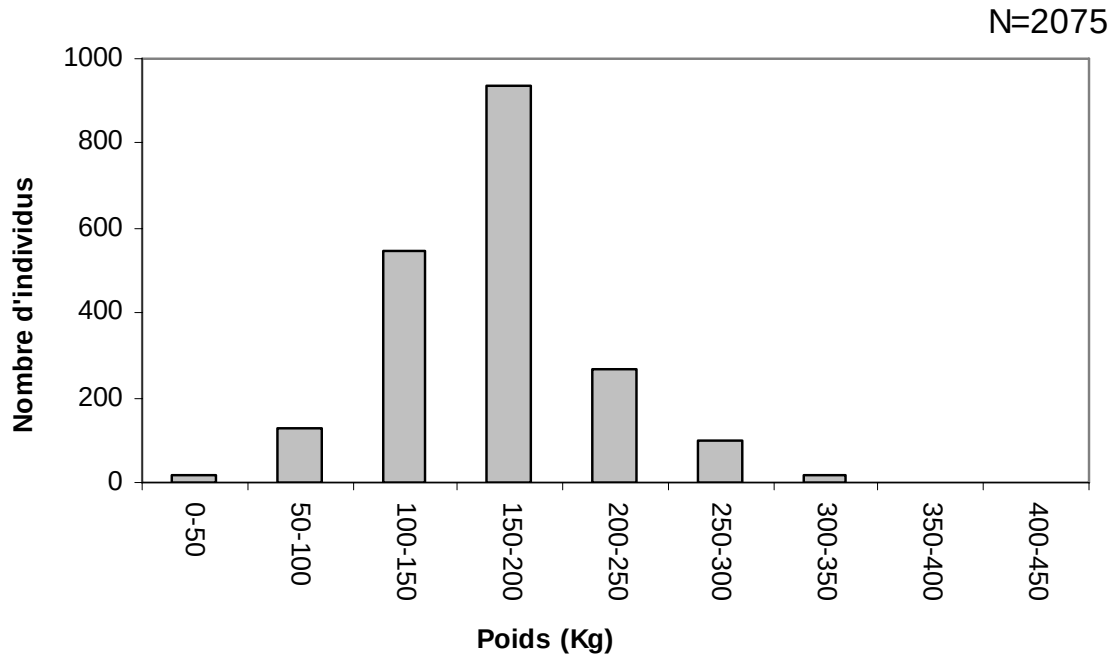

Figure 3. Distribution of weight frequencies.

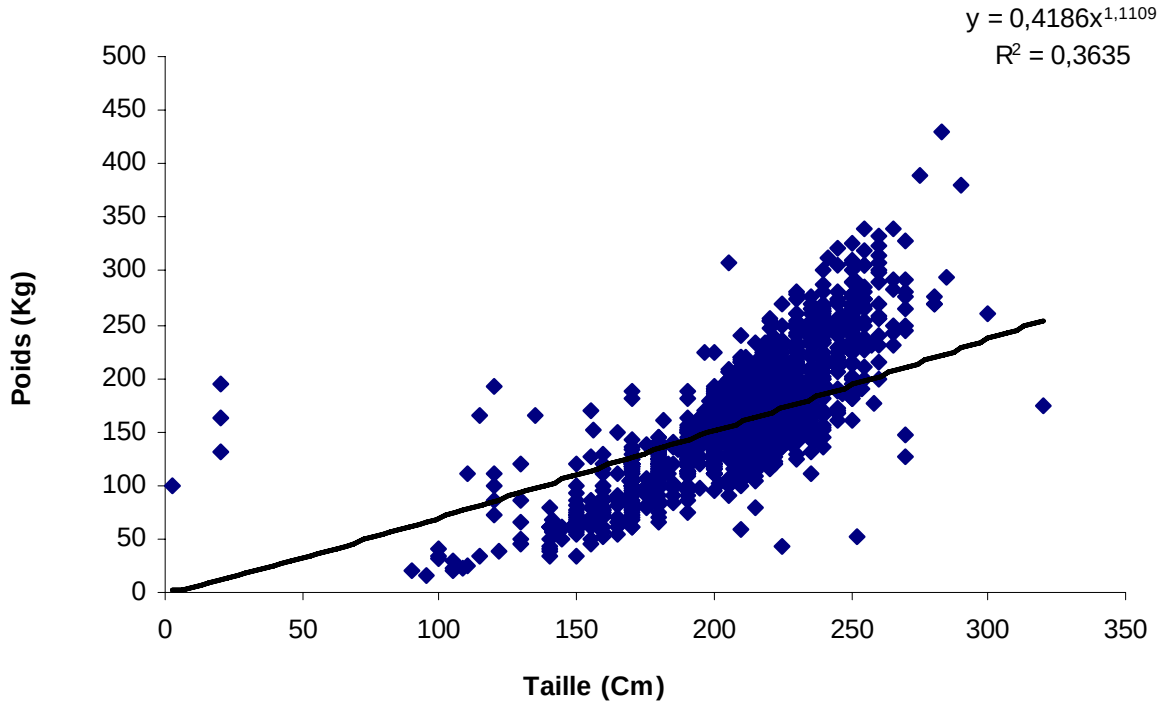

Figure 4. Size-weight relationship.

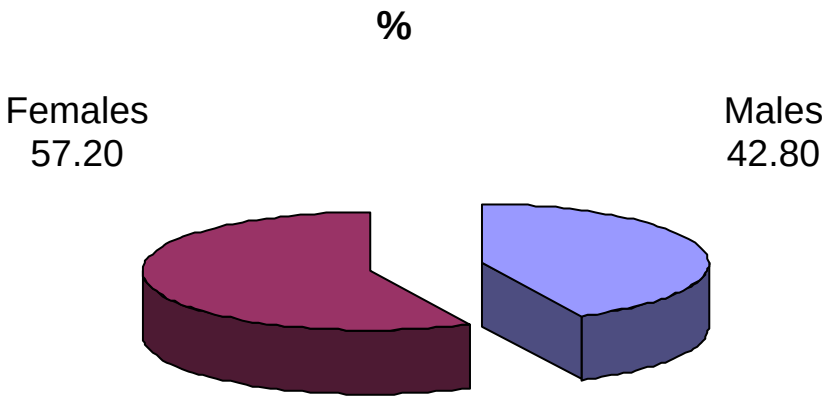

Figure 5. Percentage of males and females.

ANNUAL REPORT OF BELIZE[1]

A. Mouzouropoulos[2] and Beverly Wade[3]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

Belize, through its Ministry of Agriculture & Fisheries, is an active member of the following organizations: Food and Agriculture Organization of the United Nations (FAO), Caribbean Regional Fisheries Mechanism (CRFM), *Organización del Sector Pesquero y Acuícola del Istmo Centroamericano* (OSPESCA), *Organización Latinoamericana de Desarrollo Pesquero* (OLDEPESCA), *Programa Ambiental Regional Para Centroamérica* (PROARCA), *Comisión de Pesca Para el Atlántico Centro Occidental* (COPACO).

The Belize Fisheries Department, through its mission "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 2004 of US$59,143,150. 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 2004 fisheries production of conch meat, lobster head meat and marine shrimp showed increases of 17.3%, 1.6% and 41.98%, respectively, when compared to 2003.

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 GT and above as well as for any self-propelled tankers of up to 7500 GT 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 has ratified the ICCAT Convention and is a Contracting Party of the ICCAT Commission with effect from July 19, 2005. It has also applied for Co-operating non-Contracting Party status of the Inter-American Tropical Tuna Commission (IATTC), the Indian Ocean Tuna Commission (IOTC), the North East Atlantic Fisheries Commission (NEAFC), the Western & Central Pacific Fisheries Commission (WCPFC) and is in the process of ratifying the CCAMLR Convention with a view to becoming a Contracting Party but not Members of that Commission. Belize has also ratified 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 of 2003. This serves to formalize its commitment to the elimination of activities which diminish the effectiveness of conservation measures.

For your guidance, Belize has been placed on the IMO White List 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 2004 and in the Paris MOU from 24% to 12.23%.

[1] Original report in English.
[2] Director-General, International Merchant Marine Registry of Belize, Head Delegate of Belize to ICCAT.
[3] Fisheries Administrator, Fisheries Department, Head Scientist of Belize to ICCAT.

Section 2: Research and Statistics

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 in 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). In September of 2004, Belize's annual report on its conch fishery was submitted to the CITES Secretariat in Geneva, Switzerland.

Monitoring of lobster, conch and finfish continued at the reserves.

Ecosystems monitoring was standardized and regularized in 2003. The Ecosystems Management Unit (EMU) of the Fisheries Department consists of the marine reserves and the Conservation Compliance Unit (CCU). The new management paradigm has shifted from specific species and site protection to the protection of entire ecosystems and the regulation of the activities within those systems.

The National Protected Areas Policy and Systems Plan Project was officially launched on May 5, 2004 for which a Task Force was appointed by the Deputy Prime Minister to oversee its implementation.

The monitoring of turtle resting sites continues at all reserves.

2.2 Belize's high seas fleet

As already reported to ICCAT on July 27, 2005, there are no Belize registered fishing vessels on the high seas catching tuna or tuna like species. However some of our fishing vessels target sharks within the ICCAT Convention area. Consequently, Belize has submitted nil returns for Task II size sampling and Task II catch at size. Belize has also submitted completed data for Form I Fleet Characterization, Task I nominal catch estimates, Task II catch and effort statistics. Belize fishing vessels in the area target blue shark, shortfin mako shark, squid, saury, shrimp, grouper, sardine, sardinella, tristan de cunha rock lobster, West African horse mackerel, horse mackerel, grenadier, roundnose fish.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

At the Commission Meetings in 2001, 2002, 2003 and 2004, Belize expressed its commitment to implementing measures to eliminate the activities of fishing vessels which were identified as diminishing the effectiveness of ICCAT conservation. Belize is pleased to report that the implementation of the aforementioned measures was completed in 2003 and therefore wishes to summarize these measures as follows:

3.1 The 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 the 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."

3.2 The 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 ad Co-operation 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 form 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 who utilizes an 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 our format for such reporting which includes a detailed Fishing Log showing information regarding catch, landings etc.

Section 4: Inspection Schemes and Activities

For the purpose of ensuring compliance, surveillance is 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 25 inspections on vessels in the ICCAT Convention area during the period from January 1, 2004 to September 30, 2005. As ICCAT is aware, Belize is applying for catch quotas from ICCAT at the Meeting in November 2005 and Belize will ensure compliance with the ICCAT recommended inspection schemes.

Section 5: Other Activities

Reporting to FAO / other RFMOs

Belize has submitted its list of fishing vessels to FAO together with the information required per paragraphs 1 and 2 of Article VI of the FAO "Compliance Agreement".

Belize has submitted to all RFMOs in whose Convention areas registered fishing vessels are operating, its catch and effort statistics together with such other data and information as are required by their respective Resolutions. Apart from ICCAT, the other RFMOs are: IATTC, IOTC and WCPFC.

Belize is in the process of reviewing its National Plans of Action for IUU, fishing capacity and shark fishery. In this regard, FAO consultants visited Belize in August/September 2005. The reviewed documents will be formally lodged to the FAO in December 2005.

Belize believes that by the actions which 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, as ICCAT is aware, in the same way as other Contracting Parties, Belize is continuing to refine and improve its various systems and their efficacy.

ANNUAL REPORT OF BRAZIL[1]

Paulo Travassos[2], Fábio Hazin[3]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

In 2004, the Brazilian tuna longline fleet consisted of 89 vessels registered in the following ports: Rio Grande (2), Itajaí (1), Santos (11), Recife (19), Cabedelo (8), Natal (48). Of these 89 longliners, 55 were national and 34 were foreign chartered vessels. There was a decrease of 25.2% in the total number of vessels from 2003, when 119 vessels were operating. The number of baitboats operating in 2004 was 41, the same from 2003. 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 44,642.1 t (round weight), in 2004 **(Table 1)**, representing a decrease of about 8.6% from the catch in 2003 (48,828.4 t). The majority of the catch again was taken by baitboats (25,511.2 t; 57.1%), with skipjack tuna being the most abundant species (23,036.0 t), accounting for 90.3% of the baitboat catches. Catches of this species presented an increase of 12.8% from 2003. With a total catch of 2,838.4 t, yellowfin tuna was the second dominant species in the baitboat fishery.

The total catch of the tuna longline fishery (10,002.7 t) was about 32.7% lower than 2003, with swordfish being the most abundant species (2,913.6 t), accounting for 29.1% of the longline catches. Yellowfin tuna and blue shark, accounting for 19.7% (1,968.2 t) and 15.7% (1,568.3 t) of the catches, were respectively the second and third most caught species. Bigeye tuna ranked fourth in 2004, with 1,378.8 t, representing 13.8% of the total catch of longliners. Besides blue shark, 753.4 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 80.3 t, 194.0 t and 208.3 t, respectively.

Concerning discards of billfishes from the tuna longline fishery, data were collected by observers on board. The total discards by species were: white marlin - 3.9 t live and 2.0 t dead, blue marlin - 3.3 t live and 0.3 t dead, and sailfish - 5.6 t live and 1.6 t dead.

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 2004: *Universidade Federal Rural de Pernambuco* (Federal Rural University of Pernambuco, UFRPE) and the *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) and *Fundação Universidade do Rio Grande* (FURG University), 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 33,330 fish were measured at landing, as follows: yellowfin= 6648; bigeye= 9858; swordfish= 8527; and skipjack= 8297. 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 nineteen's.

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[1] Original report in English.

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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 follows:

Rule No. 02, 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 which 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 and blue marlins caught until December 31, 2004;

Rule No. 11, of November 11, 2004**,** establishing:

- The prohibition of sale of any white and blue marlins caught until December 31, 2005;

A rule (*Decreto* No. 4810; 10/08/2003) regulating the chartering of vessels was also published, establishing observers on board 100% of chartered vessels and a vessel monitoring system (VMS).

Table 1. Brazilian catch of tunas and tuna-like fishes in 2004. (t)

LONGLINE - TOTAL

REPORTING FLAG	FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	LTA	TUN	SWO	SAI	WHM	BUM	SPF	OTH BILL
BRAZIL	BRA + FOREIGN	LL	SW	10.002,7	0,0	1.968,2	286,1	1.378,8	0,9	0,0	0,0	45,9	2.913,6	208,3	80,3	194,0	0,0	0,5

DOL	WAH	FRI	BRS	KGM	OTH FISH	BSH	FAL	BTH	SPN	SMA	TIG	OCS	OTH SHRKS
78,1	174,8	0,0	0,0	0,0	351,7	1.568,3	192,5	38,5	165,9	177,5	0,0	0,0	179,1

BAITBOAT - TOTAL

REPORTING FLAG	FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	LTA	TUN	SWO	SAI	WHM	BUM	SPF	OTH BILL
BRAZIL	BRA-BRA	Misc.	SW	25.511,2	0,0	2.838,4	234,8	42,2	23.036,0	118,0	20,0	133,5	0,0	0,0	0,0	0,0	0,0	0,0

DOL	WAH	FRI	BRS	KGM	OTH FISH	BSH	FAL	BTH	SPN	SMA	TIG	OCS	OTH SHRKS
0,0	0,0	339,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

PURSE-SEINE - TOTAL

REPORTING FLAG	FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	LTA	TUN	SWO	SAI	WHM	BUM	SPF	OTH BILL
BRAZIL	BRA-BRA	PS	SW	1.415,4	0,0	31,8	0,0	0,0	0,0	0,0	300,0	26,9	0,0	0,0	0,0	0,0	0,0	0,0

DOL	WAH	FRI	BRS	KGM	OTH FISH	BSH	FAL	BTH	SPN	SMA	TIG	OCS	OTH SHRKS
0,0	0,0	74,5	0,0	0,0	982,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

SURF. (Misc) TOTAL

REPORTING FLAG	FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	LTA	TUN	SWO	SAI	WHM	BUM	SPF	OTH BILL
BRAZIL	BRA-BRA	Misc.	SW	7.712,8	0,0	2.147,0	1,5	74,5	0,0	0,0	0,0	152,5	84,5	325,6	0,2	0,8	0,0	27,8

DOL	WAH	FRI	BRS	KGM	OTH FISH	BSH	FAL	BTH	SPN	SMA	TIG	OCS	OTH SHRKS
2.081,0	344,5	0,0	813,9	246,6	248,5	99,1	93,1	43,8	2,9	60,5	0,0	187,0	677,7

REPORTING FLAG	FLAG	GEAR	REGION	TOTAL	BFT	YFT	ALB	BET	SKJ	BLF	LTA	TUN	SWO	SAI	WHM	BUM	SPF	OTH BILL
BRAZIL	BRA + FOREIGN	ALL	SW	44.642,1	0,0	6.985,3	522,5	1.495,5	23.036,8	118,0	320,0	358,7	2.998,1	533,9	80,5	194,8	0,0	28,3

DOL	WAH	FRI	BRS	KGM	OTH FISH	BSH	FAL	BTH	SPN	SMA	TIG	OCS	OTH SHRKS
2.159,0	519,3	413,8	813,9	246,6	1.582,5	1.667,4	285,6	82,2	168,7	238,0	0,0	187,0	856,8

ANNUAL REPORT OF CANADA[1]

M. Calcutt[2], S. Paul[3], J. Neilson[3] and A. McMaster[4]

Part I (Information on fisheries, research and statistics)

Section 1: Annual 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. The adjusted Canadian quota for the 2004 calendar year was 645.9 t. The Canadian nominal landings of Atlantic bluefin tuna in 2004 were 536.9 t **(Table 1)**. The 109.0 t shortfall in the 2004 fishery, along with adjustments for discards, will be carried over to 2005 in deriving the 2005 Canadian quota.

All traditional bluefin tuna fishing areas produced catches of tuna in 2004 **(Table 2)**, however, there were landings which were not accompanied by geographic data at the required scale for dividing catch into individual fishing areas within western Nova Scotia. These data were classified as 'unspecified' in **Table 2**, and therefore, areas within the western Nova Scotia fishing area (with the exception of the St. Margaret's Bay trap fishery) must be considered a minimum. The tended line fishery in the area between Georges and Browns Bank off southwest Nova Scotia known as the Hell Hole continued to be an important fishing area (60 t, minimum). The Gulf of St. Lawrence rod and reel fishery produced the largest fraction of the total Canadian landings in 2004 (239 t, 45% of total). The Gulf of St. Lawrence fish weighed 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 (32 t), from the rod and reel fishery off northeastern Nova Scotia (11 t), and from coastal fishing areas off Halifax and Liverpool, Nova Scotia (40 t). In the Bay of Fundy, 5 t were taken by electric harpoon. In 2004, catches on the Tail of the Grand Banks of Newfoundland were low. The Newfoundland fishery has shown marked fluctuations in recent years, due primarily to decreased effort as a result of market considerations and the availability of bluefin.

In 2004, 476 licensed fishermen 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 seven bluefin tuna trapnet licenses **(Table 3)**.

A new management approach was implemented for the 2004 fishery season, which results in each of the seven fleet sectors being assigned a specific share of the Canadian quota based on catch history. Fleets 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 2004 was 1348 t. Canada's adjusted quota for 2004 was 1493.1 t. Canadian nominal landings in 2004 were 1203.3 t **(Table 1)**, resulting in an underage of 289.8 t. The 2004 dead discard estimate was 44.8 t which will result in a balance to be carried forward and added to the 2005 initial catch limit.

The tonnage taken by longline was 1116 t (or 93% of the catch), while 87 t were taken by harpoon **(Table 4)**. The mean round weight of fish caught by longline and harpoon was 70 kg and 121 kg, respectively **(Table 4)**. Only 45 of the 77 licensed swordfish longline fishermen landed fish in the 2004 fishery **(Table 4)**. This number is slightly higher than 2003 but is still significantly lower than the mid-1990's when all, or nearly all, of the swordfish longline licenses were active **(Table 4)**. The reduced effort in recent years is a result of a combination

[1] Original report in English.
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[4] Fisheries and Oceans Canada, Resource Management, Dartmouth, NS B2Y 4T3.

of factors including the reduced quota, increased opportunities for fishing other species, relatively low market value, and the introduction of the ITQ system for this fishery. Although a total of 962 fishermen are eligible for harpoon licenses, only 86 were active in 2004 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. In 2004, however, the other tunas accounted for 21.4% of commercial large pelagic species landed. Yellowfin tuna was the most important other tuna species landed for the first time in recent years, followed by bigeye and albacore. Yellowfin tuna landings increased over 400% from 2003. Forty-six of the 78 licensed other tuna fishermen were active in 2004.

One Canadian offshore longline vessel has been authorized to direct for other tuna species with a bluefin tuna by-catch. The 77-vessel swordfish/other tunas longline fleet has been permitted to direct for other tunas and retain bluefin tuna by-catch under certain conditions in order to reduce dead discards. 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 2004 were 231.5 t of porbeagle, less than 1 t of blue shark and 79.5 t of shortfin mako **(Table 1)**.

In 2004, 28 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 more than 1000 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.

Section 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 2004 scientific research program at the Biological Station (St. Andrews) was as follows:

1) Using funds from the Bluefin Year Program, a program of biological sampling of bluefin tuna was undertaken in 2004 and continued in 2005. The results of the sampling activities benefited a number of international research programs and have been reported to the SCRS.

2) Canadian scientists pursued a suggestion from industry that the condition of bluefin tuna has declined in recent years in the Gulf of St. Lawrence. Using simple measures of condition standardized for month and fish length, a significant decline in condition was observed, but appears unrelated to prey availability (herring, mackerel). These results are being prepared for submission to the primary scientific literature.

3) Collaboration in a program of study of the inner ear of bluefin tuna, from the perspective of the sensitivity of this fish to seismic exploration for oil and gas. A paper has been prepared for submission into the primary scientific literature.

4) Canada has contributed to ICCAT's efforts to better understand the age and growth of bluefin tuna, through active participation in the *ad hoc* group of the SCRS led by EC-Spain examining this aspect of the biology of the species. Canada has obtained and is sharing collections of fin spines, vertebrae and otoliths, and has been suggesting methods for possible validation of ages derived from periodic structures on hard parts.

2.2 Swordfish Research

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

2) Canada reviewed and verified all records of conventional swordfish tagging and supplied the verified information to the ICCAT mark-recapture database. Canada reported on its conventional tagging work in a paper submitted to the Journal of the North Atlantic Fisheries Organization (accepted pending revisions).

3) In 2005, with the active cooperation of the swordfish harpoon fishery, Canada successfully applied eleven satellite archival tags to large swordfish in that fishery. Two more years of tagging effort is planned.

2.3 Other tunas

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

2.4 Sharks

1) The current shark management plan includes greatly reduced porbeagle quotas in order to facilitate stock rebuilding. Current 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. 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 2004). These data were combined with an analysis of commercial by-catches, standardized catch rates, tag-recapture analysis and mortality calculations to infer population status in Atlantic Canada and throughout the North Atlantic. This analysis was published in 2004.

3) Mako sharks are an important component of the by-catch of the pelagic longline fishery in Atlantic Canada. Standardized catch rates and a growth model based on validated ages were used to prepare a first look at the status of the mako fishery in Atlantic Canada. This report was published in 2004.

2.5 Incidental catch

Canada has initiated a study of by-catch in its pelagic longline fishery. The intent of the investigation is to relate patterns of by-catch to fishing practices. The potential to do such work is enhanced for certain years, when the Canadian fishery practices can be compared to Japanese practices in the same waters and months (for example, the Japanese fishery had high levels of Canadian observer coverage when it operated in the Canadian EEZ in 1999).

2.6 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 also a member of ICCAT *Ad Hoc* Working Group on Precautionary Approaches.

Part II (Management implementation)

Section 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[5]. 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)[5]. The 2004 quota was set at 645.9 t (see 1.1 above), and no person shall have in their 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) [5]. The 2004 quota was set at 1493.1 t (see 1.2 above), and there is a prohibition on the taking and landing of swordfish less than 25 kg in round weight, and/or less than 125 cm LJFL (with 15% tolerance). In 2002, a restructuring of the fleet, through the implementation of individual transferable quotas gave more control in managing the quota. In 1998 - 2004, 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 2004. A management plan which will combine measures for both swordfish and other tunas is expected to be published in 2005. 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 another tuna longline license. No person shall have in their possession any bigeye or yellowfin weighing less than 3.2 kg.

[5]Available from the Secretariat.

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.

3.3 Observer programs

Canada has had an excellent Observer Program since 1977. Observers collect biological data, and monitor compliance with fishing regulations. In 2004, 5% observer coverage (by sea days fished) on the pelagic longline fleet fishing for swordfish and 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

Canada has 8 licenses for large pelagic vessels over 24 meters in length. Most fishing is conducted within the 200 mile zone. All vessels are equipped with a VMS system as per the recommendation adopted by ICCAT. Canadian licensing measures permit these licenses to be used on smaller vessels such that in certain years less than 8 vessels over 24 meters in length may actually operate in the fishery.

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.

Section 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 section 2 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 (t, round weight) of large pelagic fish species, 1995-2004.

Species	*Landings*									
	1995	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Swordfish	1609.2	739.1	1089.5	1115.1	1118.5	967.8	1078.9	959.3	1284.9	1203.3
Bluefin tuna	576.1	598.0	504.5	596.0	576.1	549.1	523.7	603.7	556.6	536.9
Albacore tuna	11.5	23.9	30.8	23.2	38.8	121.7	51.0	112.7	55.7	27.1
Bigeye tuna	148.6	144.0	165.7	119.6	262.8	327.0	241.2	279.3	181.6	143.1
Yellowfin tuna	174.4	154.5	100.1	56.6	21.8	105.2	125.3	70.4	72.7	303.5
Unspec. tuna	0.0	0.0	0.0	0.0	0.0	0.5	0	0.1	0.4	0.2
Blue shark	137.8	11.8	10.9	4.5	53.5	18.4	0.4	5.1	6.0	0.3
Shortfin mako	111.2	67.4	110.1	69.5	70.4	77.8	69.3	78.2	73.3	79.5
Porbeagle	378.0	1015.4	1339.4	1007.8	958.2	902.3	498.6	236.6	142.4	231.5
Unspec. sharks	38.4	12.7	42.5	37.3	17.6	10.7	19.7	21.1	13.4	11.3
Marlin[1]	4.4	8.3	8.3	7.9	4.8	5.3	3.2	2.1	1.4	1.7

[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 (t, round weight) by fishing area, 1994-2004.

Bluefin fishing area (West to East)	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Western NS											
- Bay of Fundy	34	43	32	55	36	38	18	31	13	10	5
- Georges Bank											3
- Hell Hole	165	211	147	101	152	182	74	182	125	188	60
- SWNS(coastal)	0	0	60	84	106	93	113	61	114	28	40
- St. Marg's Bay	80	72	90	59	68	44	16	16	28	84	32
- Unspecified[3]											141
NE Nova Scotia	39	61	41	69	82	26	7	25	35	7	11
G of St. Lawren.	61	175	111	101	115	164	236	149	205	192	239
Newfoundland	5	10	95	30	21	10	71	51	68	33	5
Offshore	0	4	22	6	16	18	13	7	16	14	0.5
Year-end adj[1]	7	-	-	-	-	1	1	<1	<1	<1	-
Total landings	**391.6**	**576.1**	**598.0**	**504.5**	**596.0**	**576.1**	**549.1**	**523.7**	**603.6**	**556.6**	**536.9**
Discards[2]	-	-	-	6.0	16.3	10.7	46.0	13.2	36.9	14.0	14.6
Canadian quota	*510.0*	*613.5*	*613.5*	*552.6*	*600.7*	*577.7*	*569.5*	*553.0*	*594.7*	*580.0*	*645.9*

[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; 1998-2004 estimate for entire fishery based on Observer coverage (see SCRS/99/77).
[3] In 2004, there were landings which were not accompanied by geographic data at the required scale for dividing catch into individual fishing areas in the western Nova Scotia area.

Table 3. Distribution of tuna, swordfish longline and shark fishing licenses by region and species[1] in 2004.

	Number of licenses[1]							
	Bluefin		*Swordfish (LL)*		*Other tuna (LL)*[4]		*Sharks*	
Region	*Total*	*Active*	*Total*	*Active*	*Total*	*Active*	*Explor.*	*Rec.*
Gulf	601	399	0	0	0	0	10	34
Newfoundland	55[3]	12	6	2	6	2	0	26
Scotia-Fundy	42	42	71	43	72	44	16	1059
St. Margaret's Bay[2]	24	7	-	-	-	-	-	-
Quebec	54	23	0	0	0	0	2	0
Total	776	483	77	45	78	46	28	1119

[1]Bluefin tuna, swordfish, other tunas, and sharks (exploratory longline licenses) 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 license holders with 6 bluefin trapnet licenses 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 licenses, license conditions and tags, and submitted log records.

Table 4. Summary of 1994-2004 swordfish vessels landing fish, landings (t, 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.

	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Number of vessels landing fish:											
Longline	74	77	77	60	49	53	61	63	46	44	45
Harpoon	32	97	112	105	109	66	92	84	71	89	86
Landings (t):											
Longline	1654	1421	646	1000	875	1101	873	957.6	922	1138[3]	1116
Harpoon	22	188	93	89	240	18	95	121.3	38	147	87
Total	1676	1609	739	1089	1115	1119	968	1078.9	959	1285	1203
Discards (t)[1]:	-	-	-	5.0	51.7	34.6	49.9	26.4	32.7	78.6	44.8
Ave. weight (kg):											
Longline	63	68	69	70	61	56	58	69	72	63	70
(# sampled)	(26279)	(20247)	(9077)	(14438)	(13447)	(19630)	(12991)	(13611)	(12859)	(17298)	(15368)
Harpoon	120	122	161	131	126	109	111	102	117	108	121
(# sampled)	(83)	(1131)	(561)	(652)	(1911)	(147)	(830)	(1,287)	(413)	(1364)	(658)
% small fish by number landed[2]:											
<125 cm	**11**	**9**	3	5	3	3	3	2	<1	2	**<<1**
<119 cm	6	4	**<1**	**2**	**<1**	**<<1**	**<<1**	**<1**	**<<1**	**<1**	<<1
% of catch sampled	99	94	97	100	95	100	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; 1998-2004 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 again in 2004. Regulation changed to <119 cm LJFL with no tolerance from 1996-2003.
[3] Includes 0.5 tons of swordfish caught on trolling gear by longline vessels.

ANNUAL REPORT CAPE VERDE[1]

Vanda Marques da Silva Monteiro[2]

Part I (Information on fisheries, research and statistics)

The fishing of tunas and tuna-like species is historically the most economically important fishery in Cape Verde. The accompaniment of the state of these resources as well as the research alternatives for their fishing constitute one of the country´s research priorities.

The major species of tunas and tuna-like species in Cape Verde are yellowfin tuna *(Thunnus albacares)*, skipjack tuna *(Katsuwonus pelamis)*, bigeye tuna *(Thunnus obsesus)*, Atlantic black skipjack *(Euthynnus alletteratus)*, frigate tuna (*Auxis* spp.), and wahoo *(Achanthocybium solandri)*, which comprise one of the most important resources of the country.

The major gear used in tuna fishing is baitboat (using live bait). The last assessment of the potential of the surface tunas (yellowfin, skipjack and bigeye) in the Cape Verde region has been estimated at 25,000 t (Hallier, 1996).

Tuna fishing in Cape Verde is an important activity in the Atlantic Ocean and other oceans. Tuna catches in Cape Verde have been very below our expectations in spite their importance in national landings.

The annual catches of tunas are approximately 3,600 t. In spite of some fluctuations in the annual catches, fishing effort has increased considerably.

Besides the national market, the tuna fishing products are destined for fresh, frozen and canned export.

Section 1: Annual Fisheries Information

1.1 Tuna fishing in Cape Verde

These resources are exploited by the artisanal fleet, comprised of vessels of various sizes, both with and without outboard motors, as well as by the industrial fleet, comprised of large size vessels, with interior engines. The catches of the artisanal fishery are not significantly different from those of the industrial fishery. Thus it can be said that there is relative stability **(Table 1).**

However, the annual industrial catch has fluctuated, with a declining trend.

1.2 Authorization to fish (fishing license)

To carry out fishing activities the national or foreign vessels must have an authorization to fish. The number of fishing authorizations has fluctuated considerably in recent years.

The foreign fleet that operates in the Cape Verde EEZ, through fishing agreements and contracts is comprised essentially of tuna fishing vessels (baitboats and purse seiners) and by surface longliners, the majority of which pertain to the European Union. The reported species that are most caught are shark, tunas and swordfish.

Section 2: Research and Statistics

Cape Verde continued with the collection of statistical data on the catches of tunas and tuna-like species and their entry into a database.

A Statistical Bulletin has been published every year since 1985, but there have been some problems in recent years.

Cape Verde provides information for the updating of the ICCAT stock assessments

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[1] Original report in French.

[2] Instituto Nacional de Desenvolvimento das Pescas (INDP), C.P. 132 Mindelo Sao Vicente, Cape Verde.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

Cape Verde has implemented the ICCAT measures on size limit for the conservation and management of tunas.

Table 1. Development of the artisanal catches of tunas (in t), 1995-2004.

Year	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Tunas	1,919	2,044	1,967	1,686	2,089	2,194	2,335	1,969	2,182	2,102

Source: Statistical Bulletins of the INDP.

Table 2. Development of the catches of tunas (in t) by the industrial fleet, 1995-2004.

Year	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Tunas	1737	1640	1233	1188	2065	1742	1 284	859	1398	1220

Source: Statistical Bulletins of the INDP.

Table 3. Development of the industrial fishing permits, 1995-2004.

Year	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
No. of authorizations										
- National vessels	11	11	11	23	19	23	17	21	21	17
- Foreign vessels	28	43	36	78	80	24	94	96	81	94
Total	39	54	47	101	99	47	111	117	102	111

Source: General Directorate of Fishing.

Table 4. Reported catches (t) of the foreign fleet, 1995-2003.

Year	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Total	241	368	1142	1074	507	938	335	851	796

Source: General Directorate of Fishing.

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

Song Liming, Xu Liuxiong, Dai Xiaojie[2]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

Longline is the only fishing gear utilized by the Chinese fishing fleet to fish tunas in the Atlantic Ocean. The total number of tuna longliners operating in the Atlantic Ocean was 31 in 2004, with 8622 t of total catch of tunas and tuna-like species, which is lower than that of 2003. The targeted species are bigeye tuna and bluefin tuna. Yellowfin tuna, swordfish and albacore are taken as by-catch. The fishing gear used is deepwater longline, with 17-19 hooks between two buoys. The branch line is 49-53 meters long. The length of the main line between the two branch lines is 46-51 meters. **Table 1** shows the species composition of the catch in the total Atlantic since 1993.

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 2004 was estimated at about 144.3 t, a 20.5% decrease as compared to that of the previous year (181.6 t), among which 32.1 t were caught in the North Atlantic Ocean and 112.2 t in the South Atlantic Ocean.

1.2 Bluefin tuna

Bluefin tuna were targeted by the Chinese longline fleet in the northeast Atlantic Ocean. The total catch in 2004 amounted to 41.0 t, an increase from the previous year (19.3 t in 2003).

1.3 Tropical tunas

Tropical tunas include bigeye tuna and yellowfin tuna in the Atlantic Ocean. The total catch of bigeye tuna in 2004 amounted to 6555.3 t, 16.9% lower than that of 2003 (7889.7 t), while the catch of yellowfin tuna was 1305.2 t, 24.3 % higher than that of 2003 (1049.7 t).

1.4 Swordfish

The total catch of swordfish in 2004 was 333.6 t, a 50.1% decrease from the previous year. Of this amount, 55.8 t (315.8 t in 2003) were caught in the North Atlantic Ocean and 277.8 t (353.3 t in 2003) were caught in the South Atlantic Ocean.

Section 2: Research and Statistics

Shanghai Fisheries University (SHFU) is in charge of the 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. One observer was sent to Chinese Atlantic tuna longline fishing fleet for data collection in August 2004. This observer analyzed the biology of bigeye tuna and yellowfin tuna, the catch composition and the nominal CPUE of the catch species during the duration of this investigation (from September 1, 2004 to March 14, 2005, **Table 2**).

Table 2 also shows the average nominal CPUE of bigeye (yellowfin) tuna is 6,760 (1,527) fish/1000hooks. The highest CPUE occurred in November (December), 10,313 (3,449) fish/1000 hooks.

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

[1] Original report in English.
[2] Shanghai Fisheries University, 334 Jungong Road, Shanghai 200090, People's Republic of China.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

3.1 Catch quota and minimum size limit

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

In order to implement the conservation and management measures for bigeye tuna, the fishery administration authority of China urged some of the tuna fleet operating in the Atlantic Ocean to leave the Atlantic Ocean.

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

3.2 Tuna Statistical Document Program

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

3.3 Fishing vessel management

It is noted that the Chinese Government has issued fishing licenses to all Chinese fishing vessels operating on the high seas of the world oceans on June 1, 2003. Each license specifies the type of fishery, fishing grounds, targeted species and quota, etc. This will facilitate inspection at the fishing port and also help the Chinese Government to effectively supervise its fleet.

A Vessel Monitoring System (VMS) is being implemented. This scheme will cover all the Chinese large-scale longliners operating on the high seas of the world oceans by the end of this year. Once the scheme is implemented, fishing position can be monitored simultaneously.

3.4 Observer program

In accordance with the Commission's recommendation on the bigeye tuna observer program adopted in 1997, China began to carry out a tuna observer program in ICCAT waters in 2001. A scientific observer has been dispatched to the Chinese Atlantic tuna longline fishing fleet for data collection since August, 2004. The observer covered area was 09°35′N-5°46′S, 18°30′W-38°54′W (the high seas area) and 771 bigeye tuna, 149 yellowfin tuna, and other tuna and tuna-like species were measured. The duration of the observer investigation was from August 25 to March 14, 2005. Another observer also will be placed on board in November, 2005.

Table 1. Catch of tunas and tuna-like species (in round weight, t), 1993- 2004.

Species	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
Bluefin tuna	----	97.4	136.9	92.8	48.7	85.3
Yellowfin tuna	139.0	155.9	200.0	124.3	83.6	698.3
Bigeye tuna	70.1	428.3	475.7	519.8	427.1	1502.9
Swordfish	72.5	85.7	104.2	131.9	39.6	365.3
Albacore	---	14.0	8.0	20.0	---	---
Skipjack	---	---	---	---	---	4.0
Unspecified shark	---	---	----	---	---	5.0
Short mako	---	---	----	---	---	
Spearfish	---	---	----	---	---	2.4
Blue marlin	---	---	----	---	---	
White marlin	---	---	----	---	---	3.6
Sailfish	---	---	----	---	---	---
Other	41.0	68.0	76.0	80.0	90.0	---
Total	322.6	849.3	1000.8	968.8	689.0	2666.9

Species	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Bluefin tuna	103	79.6	68.1	39.1	19.3	41.0
Yellowfin tuna	2190	1674.2	1055.8	696.7	1049.7	1305.2
Bigeye tuna	7347	6563.5	7210	5839.5	7889.7	6555.3
Swordfish	838	365.6	302.0	513.2	669.1	333.6
Albacore	60.0	104.7	82.7	225.7	181.6	144.3
Skipjack	---	---	---			
Unspecified shark	31.0	---	---			
Short mako	---	152.8	---			
Spearfish	---	---	---			
Blue marlin	---	23.2	91.6	87.8	88.5	58.4
White marlin	---	2.4	19.8	22.8	7.6	6.5
Sailfish	---	7.4	8.1	11.7	4.7	4.5
Other	415.0	234.2	532.4	590.3	137.4	173.1
Total	10984.0	9207.6	9370.4	8026.8	10048	8621.7

Table 2. Catch (kgs) composition and nominal CPUE (fish/1000 hooks) during the observer's investigation (September 1, 2004 to March 14, 2005).

Species		*Sep.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*Sub-total*
BET	No.	296	403	763	564	640	148	161	2975
	Catch	14270	14744	24539	18723	19089	5832	7919	105116
	CPUE	4.127	5.155	10.313	7.023	8.166	6.697	4.540	6.760
YFT	No.	7	43	231	277	106	6	2	672
	Catch	240	1772	8791	11409	4316	244	95	26867
	CPUE	0.098	0.550	3.122	3.449	1.353	0.271	0.056	1.527
SWO	No.	15	26	25	19	15	8	9	117
	Catch	647	1070	986	800	727	302	446	4978
	CPUE	0.209	0.333	0.338	0.237	0.191	0.362	0.254	0.266
BUM	No.	5	4	8	6	7	1	2	33
	Catch	270	340	729	580	538	82	220	2759
	CPUE	0.070	0.051	0.108	0.075	0.089	0.045	0.056	0.075
TOTAL	No.	323	476	1027	866	768	163	174	3797
	Catch	15427	17926	35045	31512	24670	6460	8680	139720
	CPUE	4.503	6.089	13.881	10.784	9.800	7.376	4.907	8.627

ANNUAL REPORT CÔTE D'IVOIRE[1]

J.B Amon Kothias, N'Da Konan[2] and Dedo G. René[3]

Part I (Information on fisheries, research and statistics)

Although Côte d'Ivoire does not have tuna fishing vessels, it plays a very important role in the management of Atlantic tunas. The *Centre de Recherches Océanologiques* (CRO) (Center for Oceanographic Research) is in charge of the research work on marine and high seas fisheries. As in previous years, in 2004 the industrial tuna fishery was monitored by the CRO, together with the *Institut de Recherche pour le Développement* (IRD) (Research Institute for Development) and the *Instituto Español de Oceanografía* (IEO) (Spanish Institute of Oceanography). However, compared to other years, tuna activities experienced several disruptions in November and December 2004. The costs (operation, equipment and personnel) are covered by the three centers that benefit from three sources of funding:

- General Operating Budget (BGF) of Côte d'Ivoire;
- European Union financing, through the IRD (France) and the IEO (Spain);
- European Union, EU (fishing agreements between Côte d'Ivoire and the EU).

Section 1: Annual Fisheries Information

In addition to the industrial fishery, there is an artisanal fishery that also lands small tunas and mainly billfishes (marlins and swordfish) and sharks. The monitoring of this fishery has been reinforced due to the ICCAT Program on Enhanced Research on Billfish ("Billfish Program"). By means of a subsidy, this Program enabled the hiring of a contract worker (researcher) to reinforce the collection of statistics.

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 canoe fishery with driftnets that operate along the Ivorian coasts.

The important quantities of "false tuna" landed (12,52% of the total catches) are also noteworthy. 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.

1.1 Tuna landings at the fishing port of Abidjan

Tuna landings at the fishing port of Abidjan in 2004 were mainly made by French, Spanish and Ghanaian purse seiners. In addition to these vessels, there were some vessels flying flags of other countries. A total of 45 boats landed or transshipped at the fishing port of Abidjan in 2004. The breakdown is as follows: 21 Spanish vessels or similar, 12 French, 11 Ghanaian and Guinean, and 2 cargo vessels. All these vessels, which entered in service between 1971 and 1993, have an active load capacity of 400 to 1,200 t.

Section 2: Research and Statistics

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 2004. This team is comprised of the following: 2 research scientists (CRO), 2 high level technicians (1 CRO and 1 IRD who was hired in the Seychelles at the end of the year), 1 data entry technician (European Union Convention), and 7 researchers (European Union Convention) and 2 "false tuna" researchers (IRD contract).

The monitoring of landings carried out throughout 2004 by the *Centre de Recherches Océanologiques* (CRO) shows the following results: 210 trips (equivalent to 6,498 days at sea), 103,825 tons of canned tuna and 14,861 tons of "false tuna" for the local market. A breakdown of the results, by flag, is as follows (see **Table 1** for details):

[1] Original report in French.
[2] Centre de Recherches Océanologiques (CRO), BP V 18 Abidjan, Côte d'Ivoire; E-Mail: ndakonanci@yahoo.fr
[3] E-Mail: Rene.Dedo@ird.ci

Spanish flag or similar:
- 95 trips
- 3,341 days at sea
- 42,476 tons of canned tuna
- 3,688 tons of "false tuna"

French:
- 83 trips
- 2,559 days at sea
- 35,939 tons of canned tuna
- 3,770 tons of "false tuna"

Guinean and Ghanaian:
- 30 trips
- 598 days at sea
- 18,204 tons of canned tuna
- 7,365 tons of false tuna

Cargo vessels:
- 7, 206 tons of canned tuna
- 38 tons of false tuna

2.1 Ivorian artisanal catches of other large pelagics

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 which has improved within the framework of ICCAT Billfish Program. The major 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, where they can easily sell their catches. The fishing zone is located 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 and other nearby landing sites.

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)*. Their size frequency distribution (**Figures 1 and 2**) shows the fact that: white marlins (**Figure 1** section A) and sailfish (**Figure 2** section A) are caught in a limited series of sizes whilst blue marlin (**Figure 1** section B) and real swordfish (**Figure 2** section B) are present in a large variety of sizes.

Shark catches are comprised mainly of silky shark *(Cacharhinus falciformis)*, smooth hammerhead shark *(Sphyrna zygaena)*, scalloped hammerhead shark *(S. lewini),* and mako shark *(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 alletteratus)* are caught incidentally. Large pelagics such as bigeye *(Thunnus obesus)*, rays *(Manta* spp.*)*, wahoo *(Acanthocybium solandri)*, dolphin fish *(Coryphena* spp.*)*, sea turtles *(Chelonia mydas, Dermochelys coriacea)* and some dolphins are caught by artisanal fishers. **Table 2** shows the total annual catches (nominal and weighted) of large pelagics (billfish and sharks) taken by the driftnet canoe fishery. Thus, more than 500 tons of large pelagics (billfish and sharks) are landed annually by this fishery, as are small tunas and other fish species. It is noted that these catches have decreased considerably since 1998.

2.2 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. Unfortunately, the political events at the end of 2004 have resulted in the closure of the main canning factory in Abidjan (SCODI), which has resulted in the loss of jobs of thousands of employees. The regular monitoring of statistics on 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 billfish 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, from Senegal to 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. Furthermore, 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 stocks of the central East Atlantic.

Table 1. List of tuna vessels that landed at the fishing port of Abidjan en 2004.

Flag	*Trips carried out*	*Days at sea*	*Landings (t)* *Tuna*	*False tuna*	*Total*
Spanish or similar	95	3,341	42,476	3,688	46,164
French	83	2,559	35,939	3,770	39,709
Guinean or Ghanaian	30	598	18,204	7,365	25,569
Others (cargo)	2		7,206	38	7,244
Total	**210**	**6,498**	**103,825**	**14,861**	**118,686**

Table 2. Côte d'Ivoire annual catches (t) of billfish and sharks by driftnet, from 1988 to 2004.

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		**143.3**
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	**262.5**
1993	7,707	39.5	139.5		14.42	90.1	**283.5**
1994	12,756	54.4	211.6		19.98	110.9	**396.9**
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	**377.9**
1997	12,874	65.1	222.1	1.8	17.66	91.1	**397.8**
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	20.10	47.4	**319.1**
2001	13,994	47.0	196.0	2.4	18.90	68.4	**332.7**
2002	13,061	65.4	77.9	1.8	19.00	63.2	**227.3**
2003	27,464	121.0	109.0	3	43.00	101.4	**377.4**
2004	36,779	72.6	114.7	0.9	28.60	48.1	**264.9**

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

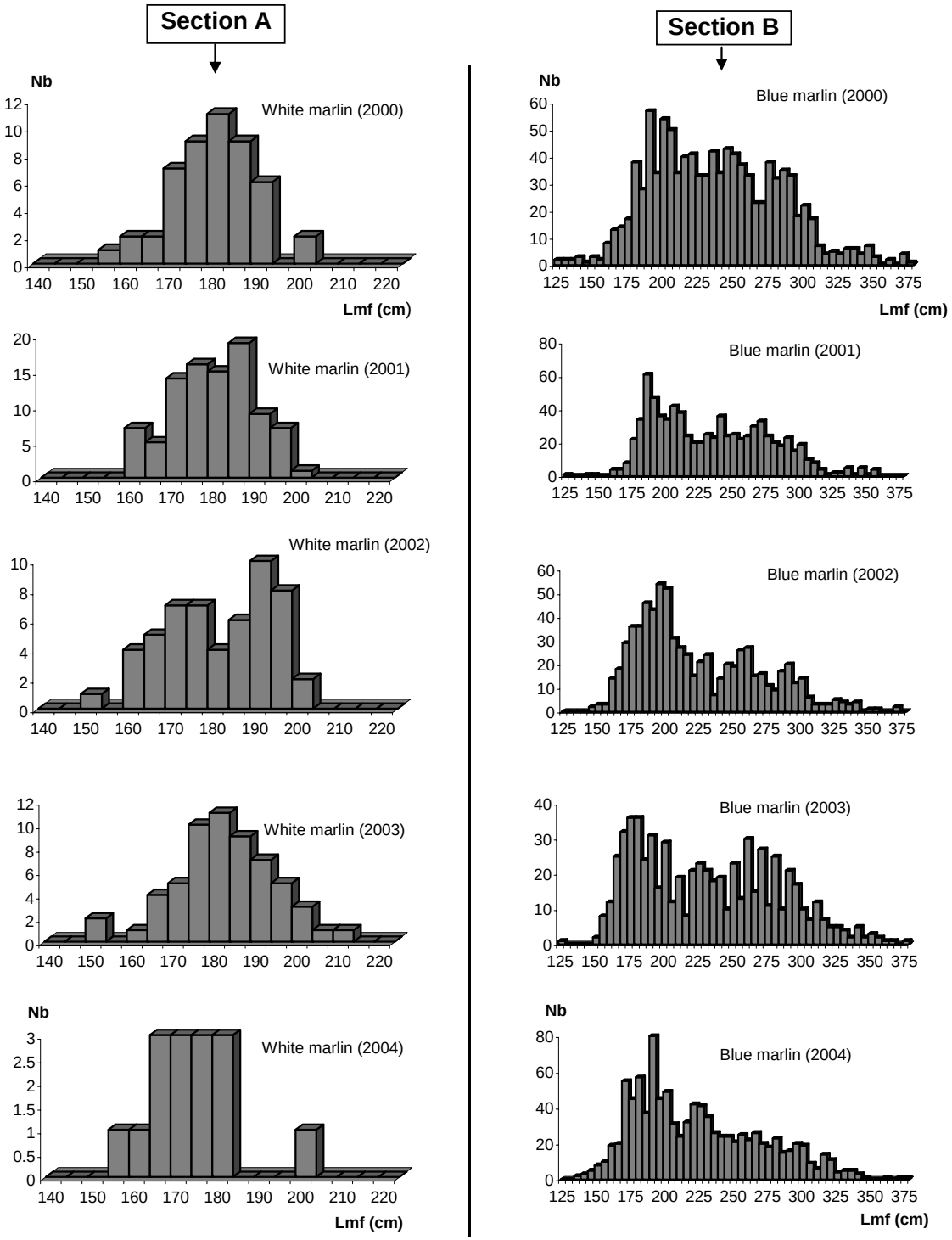

Figure 1. Size distribution of white marlin *(Tetrapturus albidus)* (Section A) and blue marlin *(Makaira nigricans)* (Section B) in the Ivorian artisanal maritime fishery during the last five years (Nb.=Number of fish; Lmf. = Average fork length).

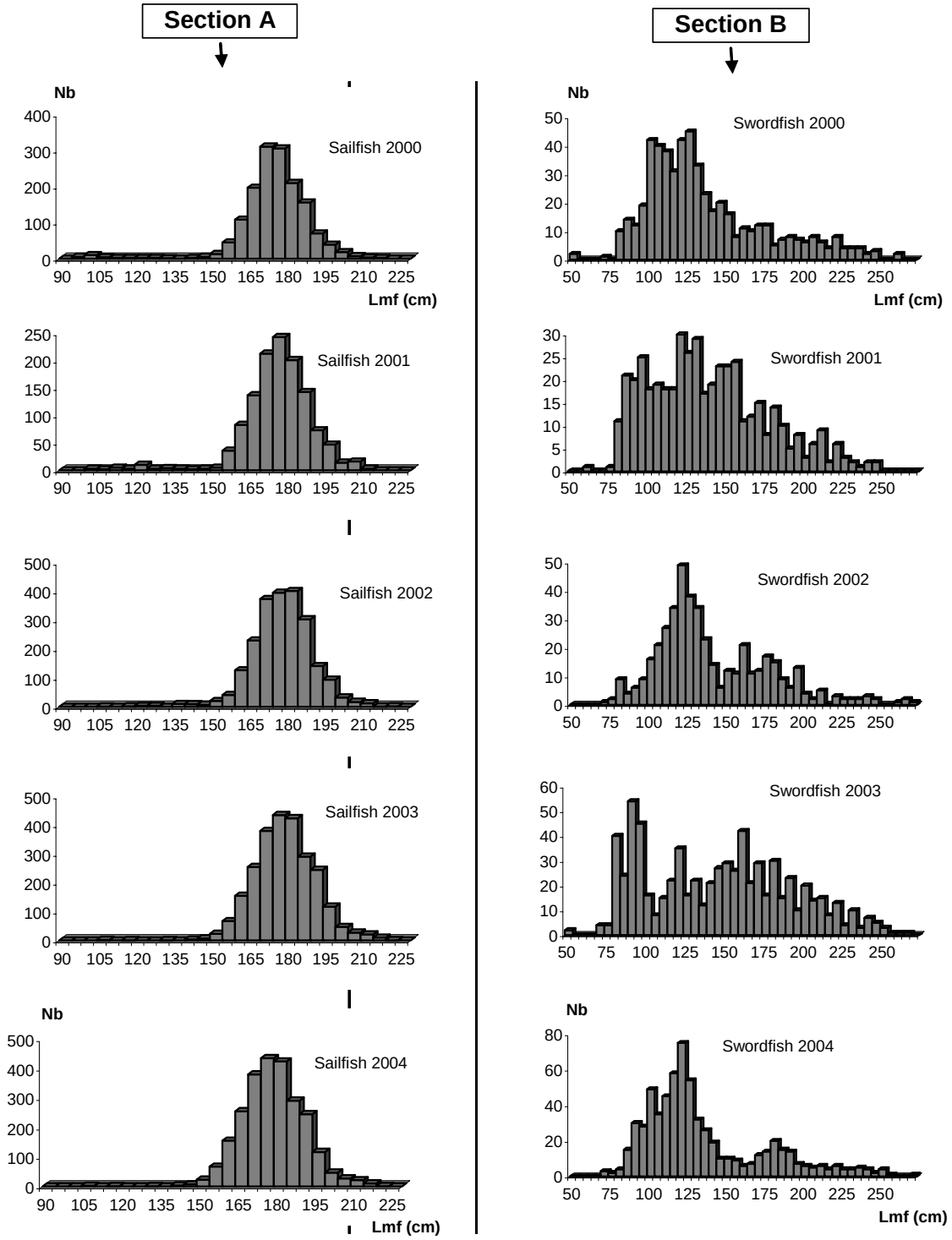

Figure 2. Size distribution of sailfish *(Istiophorus albicans)* (Section A) and swordfish *(Xiphias gladius)* (Section B) in the Ivorian artisanal maritime fishery during the last five years (Nb.=Number of fish; Lmf.= Average fork length).

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 2004 was 827 metric tons (t). Bluefin tuna comprise 100% of the catch. Almost the total catch has been caught by purse seine, and only 450 kg have been reported caught by sport fishing. The total purse seine catch is transferred into floating cages for growing purposes. Additionally, 447 t of large bluefin tuna have been imported in Croatia in 2004 from France and Spain for growing purposes. There were 31 licensed vessels actively fishing for tuna and tuna like species in 2004. Thirty-one (31) vessels have been reported as licensed large-scale vessels (>24 m), of which 15 of these were active in 2004.

Section 2: Research and Statistics

In 2004, a study on bluefin tuna farming based on the tagging of live specimens in captivity, within the framework of the Bluefin Year Program (BYP) continued as proposed, targeting specimens of approximately 12-25 kg in live round weight. Specimens that were tagged this year are harvested in December 2004. Additionally, samples of heart muscles have been taken for genetic studies and shipped. Some of the results obtained within the framework of the BYP farming study, particularly those concerning the new conversion factor estimated for conversion from GG product weight (originated from farming) in RWT, were reported in SCRS/2004/096.

All catch and farming 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, due to the small sample available.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

All conservation and management measures regarding bluefin tuna fisheries and farming are incorporated in national legislation.

Section 4: Inspection Schemes and Activities

Croatia has nothing to report at this time.

Section 5: Other Activities

Croatia has nothing to report at this time.

[1] Original report in English.

[2] Ministry of Agriculture, Forestry and Water Management, Directorate of Fisheries, Croatia, Ivana Mažuranića 30, 23000 Zadar, E-Mail: mps-uprava-ribarstva@zd.htnet.hr

ANNUAL REPORT OF THE EUROPEAN COMMUNITY[1]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

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 2004 was about 199,6556 tons, which, in fact, is a reduction of the catch from that in 2003. This decrease can be explained in particular as a result in the decrease in fishing effort of the Community fleet in the tropical tuna fisheries. The report also includes information relating to the fishing activities of the new Member States who acceded to the Community on 1 May 2004. Amongst the ten new Member States, there are two, Malta and Cyprus, who carry out fishing activities relevant to ICCAT competence (both farming and fishing) (**Table 1**).

The Annual Reports[2] 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.

Section 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 is included in the Annual Reports[2], which have been transmitted to the SCRS.

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 2004 under these European programs is as follows:

2.1.1 Bluefin tuna

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

[1] Original report in English.
[2] Available from the Secretariat.

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); and
- Evaluation of the biological parameters in collaboration with the FAO/COPEMED project and FAO/MedFisis.

2.1.3 Tropical tuna

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

In parallel to the Community programs, certain 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 2004.

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 the 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 of correction of the vessel log books;
- Data collection systems and processing of catch data and fishing effort for the various fleets concerned, and
- 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.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

3.1 At regulatory level

After each plenary session 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 2004, 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;
- 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.

The measures concerning the catch limits for bluefin tuna, southern and northern swordfish, southern and northern albacore, bigeye tuna, and white and blue marlin were transposed into Community legislation by the Council Regulation establishing TACS and quotas. The limit on the number of vessels permitted to fish for northern albacore was also transposed by Council Regulation (EC) No. 2287/2003 of 19 December 2003 fixing for 2004 the fishing opportunities and associated conditions for certain fish stocks and groups of fish stocks, applicable in Community Waters and for Community vessels, in waters where catch limitations are required (OJ L344 of 31/12/2003, p.01).

3.1.1 Statistical Document Programs

The Statistical Document Programs for bigeye tuna, bluefin tuna and swordfish, transposed into Community legislation by Council Regulation (EC) No. 1984/2003[3], are also extended to include the new Member States[4] following their accession to the European Community on 1 May 2004.

A specific information campaign was undertaken to help the new Member States to implement these schemes. The information received from the Member States in the context of implementing these programs, which indicated a clear interest in the correct application of the programs, were transmitted in due time to the ICCAT Executive Secretary so that they could be circulated to other ICCAT Parties.

This information, which in particular noted the prohibition of landings of swordfish, justified by the non-respect of the provisions regarding the statistical document programmes, such as the absence of validation by the competent authorities or false declarations of the catch areas (Indian or Pacific Ocean) thereby permitting the covering-up of the fishing activity in the Convention area.

Furthermore, the results of an investigation into the imports of bigeye tuna, bluefin tuna and swordfish, at a global level have been provided to the ICCAT Executive Secretary in order to draw the attention of exporting countries to the statistical document programs who have not yet notified their validating authorities to ICCAT.

3.1.2 Trade sanctions

The recommendation adopted by ICCAT, relating to the lifting of trade sanctions on imports of swordfish, bigeye tuna and bluefin tuna respectively, have been transposed into Community legislation by Council Regulations (EC) Nos. 826, 827 and 828 of 26 April 2004[5]. The English, Spanish and French language versions of these three Regulations were sent to the ICCAT Executive Secretary for distribution to the other ICCAT Contracting Parties.

[3] Official Journal of the European Community L 295 of 13 November 2003.
[4] Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Republic of Slovakia, the Czech Republic and Slovenia.
[5] Official Journal of the European Community L 127 of 29 April 2004.

3.2 Compliance

3.2.1 Catch limits

In 2004, the European Community respected all the catch limits adopted by ICCAT.

3.2.2 Minimum size

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

With regard to swordfish, the number of under-size 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 tuna, the number of under-size 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 mentioned by the Community and confirmed by the SCRS.

3.2.3 Vessels lists

The Community transmitted, in due time, the vessels lists fully respecting the formats required by ICCAT.

For 2004, the Community communicated the following details:

- 1,676 Community vessels greater than 24 meters authorized to fish in the ICCAT area;
- 1,207 Community vessels authorized to fish for northern albacore;
- 135 Community fishing vessels, supplying bluefin tuna for farming purposes in the ICCAT area; and
- 10 chartered Community vessels.

3.2.4 Large-scale longline vessels

The Community took the necessary measures to control the activities of its large scale long line vessels and to ensure that Tuna vessels on the ICCAT Record of Vessels over 24 meters are fishing in accordance with ICCAT Management and conservation measures.

3.2.5 Gulf of Guinea Moratorium

In 2004, 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. The document will be distributed during the meeting of 18 October.

3.2.6 Bluefin Tuna Farming Report

In 2004, the European Community fully respected the *Recommendation by ICCAT on Bluefin Tuna Farming*. The Community transmitted the following details:

- Quantity of bluefin tuna caged during 2004: 9,645 t.
- Quantity of bluefin tuna marketed during 2004: 12,547 t.

In 2004, the Community had 25 bluefin tuna farms with a total capacity of 19,652 tons.

3.2.7 Plan aimed at reducing the catches of juvenile bluefin tuna in the East Atlantic and Mediterranean

In 2004, the Member States shall develop specific scientific programs to identify the various fisheries that fish bluefin tuna and to provide more scientific information. The Member States shall develop also specific plans directed at reducing their catches of juvenile bluefin tuna in their Mediterranean fisheries. The Community transmitted the results obtained to the SCRS and to the Commission.

Globally, the implementation of the plan was positive and showed a reduction of catches of juveniles due to the development of the farming. In 2004, the Member States established a sampling program for the estimation of the size of the bluefin tuna caged which showed that the bluefin tuna caged was more than 10 kg. The results have been transmitted to 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.

3.4 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 simpler 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 widened to enable them ensure equity and effectiveness of controls in the Community; and
- 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 on 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, EC Official Journal No. 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, are to 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 logbook;
- 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 2005 for those greater than 15 meters, and
- 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 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 that:
    - a common approach for the establishment of fishery protection areas;
    - using fishing effort management as the principal tool of this policy;
    - improve fishing techniques to reduce the negative effects on resources and the marine environment;
    - intensify control and enforcement measures;
    - improve the quality of the scientific advice;
    - strengthen 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 which is still under discussion in the Council of Ministers. 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.

Section 4: Inspection Schemes and Activities

4.1 Member States

4.1.1 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.

4.1.2 Air and 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.

4.1.3 Implementation and results (2004)

- **Spain**:

  - In-port results:
    Atlantic: 143 vessels inspected (41 infringements),
    Mediterranean: 46 vessels inspected (25 infringements).

  - At sea results:
    Atlantic: 20 vessels inspected (7 infringements),
    Mediterranean: 79 vessels inspected (30 infringements).

  - Aerial surveillance: 280 in the Atlantic (0 infringements).
    394 in the Mediterranean (0 infringements);

  - Tropical tunas: On-board observers during the period 1 November 2004 to 31 January 2005, to ensure the respect of the moratorium in the Gulf of Guinea.

At the national level in Spain, inspection activities are primarily focussed on bluefin tuna in the Mediterranean Sea and on Albacore in the North Atlantic Ocean. Additionally, Spain has also concentrated on the control of swordfish and tunas, and has prohibited the landing/importation of tuna from vessels which have not respected ICCAT recommendations.

The objectives of the inspection activities are:

- To monitor and control, by maritime, aerial and land based means, the activities of longline and purse-seine vessels;
- To monitor and control cargo vessels which transport or tranship ICCAT managed species;
- To monitor and control vessels flying the flag of third countries and "flags of convenience";
- To monitor and control technical measures;
- To monitor and control minimum sizes, in particular of bluefin tuna in the framework of the reduction plan for juvenile tunas;
- The constant monitoring and control of fishing activities in waters falling under the jurisdiction of Spain.

- **France**:

  - In-port results:
    Mediterranean: 12 vessels inspected after the 12th August (0 infringements)

  - Bluefin tuna (the 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.

- The daily catch monitoring by the French authorities led to the closure of the bluefin tuna fishery by decree of 14 October 2004 (entered into force on 1 November 2004 and notified to the European Commission), this so as not to exceed the quota allocated to France.
- Tropical tunas: On-board observers during the period from 1 November 2004 to 31 January 2005, 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);
- 308 patrol vessels, 25 aircraft;
- 185 on-land inspections, 2 infringements;
- 290 at sea inspections, 3 infringements; and
- 5 aerial inspections, 0 infringements.

- **Portugal**:

- human, naval (Navy), and aerial resources;
- aerial surveillance missions, 60 missions (18 continental, 14 Madeira, 28 Azores), no infringement;
- 16 on-land inspections, including 6 long line vessels, one infringement (fishing swordfish without authorization);
- Landing controls (swordfish, tunas) through to marketing (minimum sizes, value, statistics, etc.); obligation to pass through the auction (fresh fish); and
- Control of tuna consignments intended for the processing industry.

For 2004, Portugal banned five imports of swordfish and one of bigeye tuna, in conformity with ICCAT Recommendations.

- **Greece**:

The control of fishing and trade of tunas is carried out by Port Authorities and particularly 156 inspection vessels and 7 aircraft were engaged in the controlling of fishing activities among with other tasks.

In 2004, 4384 inspection in fishing vessels took place by port authorities and as a result in five cases that all concern Greek fishing (no foreign fishing vessels caught fishing illegally in Greek waters). Administrative penalties and fines of 2,300 euros were imposed for infringements concerning the existing legislation as well as a suspension of fishing activities for 180 days.

- **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; and
- all vessels involved in the fisheries are inspected before engaging in fishing activities (via fishing authorization).

- **Malta**:

Malta has a team of Fisheries Protection Officers that carry out inspection on the activities of large pelagic species activities thus aiding the conservation of highly migratory species.
All bluefin tuna landed by Maltese vessels in 204 was inspected by Fisheries Protection Officers and the landing sites, transshipment vessels and markets. No tuna caught or fished by vessels of other Member States were landed in Malta. All the incoming bluefin tuna for farming activities were inpested at the arrival site. No inspections were carried out at sea.

- **Cyprus**:

During 2004, Cyprus deployed the following resources for monitoring and controlling fishing activities:

- Human resources: the Fisheries Inspectorate Service (29 Fisheries Inspectors), the Naval Service (10 persons) and a specialized personnel (3 persons) operating the Vessel Monitoring System; and
- 4 patrol vessels.

In 2004, a total of 159 inspections were carried out at sea, while 452 inspections were carried out at landing ports and fishing shelters, to ensure that minimum landing sizes of fish and legal fishing gears and method are respected. From a total of 74 reported infringements concerning fishing activities, none of them involved the violation of ICCAT Recommendations.

- **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.

4.2 The European Commission

In parallel to the Member States, the European Commission has 29 fisheries inspectors whose function is to supervise the inspection and control activities undertaken by the national services of the Member States.

During 2004, 12 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 North-East 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; and
- 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 2004, 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.

Section 5: Other Activities

5.1 The Community Fisheries Control Agency

In December 2003 the European Council in Brussels welcomed the Commission's intention to submit a proposal on the establishment of a Community Fisheries Control Agency and they agreed on the urgency to establish such an Agency, which shall have its seat in Spain. The Commission therefore presented its proposal in April 2004 and it was adopted by the Council in April 2005. Council Regulation (EC) No 768/2005 establishing the Agency entered into force in May 2005 and the Agency must be fully operational by May 2006.

The main task of the Agency will be to ensure operational co-ordination of fisheries control at Community and international levels. This will be achieved by pooling national means of inspection to ensure that there will be an effective inspection presence whilst avoiding a duplication of effort. The Agency will develop joint deployment plans that target specific stocks identified as being under threat.

As a specialised technical Community body, the Agency will carry out in addition to operational coordination, other tasks in the area of control and inspection within the scope of the CFP including tasks relating to the obligations of the Community under regional fisheries organisations and bilateral fisheries agreements.

5.2 Satellite-based VMS established by the European Community

The European Community introduced a satellite based Vessel Monitoring System (VMS) in 1998. In the first phase, from 30 June 1998, vessels exceeding 20 meters between perpendiculars or 24 meters overall length in the following categories were required to be equipped:

- vessels operating in the high seas, except in the Mediterranean Sea, and
- vessels catching fish for reduction to meal and oil.

In the second phase, which started on 1 January 2000, all the vessels exceeding 20 meters between perpendiculars or 24 meters overall length wherever they operate were subject to VMS. Since 1 January 2000 *third country* fishing vessels operating in the Community fishing zone must also be equipped with a VMS position monitoring system.

In the final phase in accordance with Article 22 (1b) of EC regulation 2371/2002 all EC fishing vessels exceeding 18 meters in length overall must have installed onboard a fully functioning Vessel Monitoring System (VMS) unit from 1 January 2004 and this has applied to all vessels exceeding 15 meters in length overall since 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[6].

An obligation is placed on Member States to establish and operate Fisheries Monitoring Centres which will be equipped with the appropriate staff and resources to enable Member States to monitor the vessels flying their flag as

[6] 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.

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 analyse 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 travelling at, above or below a given speed; and
- a vessel landing abroad.

Sophisticated VMS software may be capable of detecting complex events which might be a combination of those referred to above. Furthermore with VMS the time of arrival in port and 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 CFP.

The main provisions of the detailed rules 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.

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 ensures that VMS is used in bilateral fisheries agreements with third countries and in the framework of regional fisheries organisations.

5.3 Developments in electronic reporting and remote sensing systems

The reinforcement of the system of control and enforcement of fishing activities was one of the pillars of the reform of the CFP adopted in 2002, as defined in Council Regulation (EC) No 2371/2002. Within this framework, the basic Regulation foresaw that the Council would decide in 2004 on the obligation to transmit information on fishing activities electronically, including landings, transhipments and sales notes as well as on the obligation on authorities to put in place means of remote sensing. The Commission therefore presented in 2004, a proposal for a Council Regulation on electronic recording and reporting of fishing activities and on means of remote sensing.

5.3.1 Electronic reporting

Under Community rules, masters of fishing vessels of overall length greater than 10 meters are required to keep a logbook of their operations, indicating particularly the estimates of the quantities of each species caught and kept on board, the date and location of such catches and the type of fishing gear used. Logbooks must be brought up to date on a daily basis and at the time of arrival in port. This information is currently recorded by the masters of fishing vessels in a paper logbook. Information concerning transhipments, landings, sales and transport is also recorded on paper. The process of gathering, analysing and transmitting the information to authorities is slow, costly and can be prone to errors which can hinder the quality of the data. In order to make it more efficient, accurate and less costly, the Commission favours an electronic recording and reporting system which will replace the current manual and process.

5.3.2 Remote sensing

VMS has greatly strengthened fisheries control. However the system only monitors the behaviour of those who obey the VMS rules. It does not check those whose system is switched off or malfunctioning and it cannot identify vessels from non EC countries which do not have the system fitted. Vessels that do not obey the rules can be detected using remote sensing technology known as the Vessel Detection System (VDS) which relies on remote sensing through satellite radar technology. The aim of the Vessel Detection System (VDS) is to determine the number of fishing vessels and their position in a given area, to cross-check the positions of the fishing vessels detected by VDS with position reports from VMS and signal the possible presence of fishing vessels from which no position reports have been received through VMS. The Commission would therefore like to ensure that Member States make the necessary arrangements with existing monitoring centres to that they can carry out such cross-checks.

5.4 Community financial assistance for fisheries control

The Community has been providing financial assistance to Member States for fisheries control since 1991. This policy is based on the fact that policing involves high costs, particularly on action at sea, and that such policing in no few occasions involves co-operation amongst Member States, constant training needs, investment in technology and Information Technology (IT) networks and heavy expenditure on patrol vessels & aircraft used for control.

With this objective in mind, three Council Decisions have been adopted providing for Community financial support for Member States' expenditure on fisheries inspection (Decisions 89/631/EC, 95/527/EC and 2004/465/EC). Each decision provides for a financial envelope covering a multi-annual time-frame.

The Commission thereafter adopts each year a Decision on the eligibility of expenditure for the year concerned (providing for financial assistance for Member States that have foreseen expenditure on fisheries control in their yearly fisheries Control Programme)".

Table 1. Summary of European Community catches of large migratory species in 2004 (Total = 199,655.6 t).

	BFT East/Med	*SWO North*	*SWO South*	*SWO Med.*	*ALB North*	*ALB South*	*ALB Med.*	*BET*	*YFT*	*SKJ*	*WHM*	*BHM*	*SAI*	*Others*
Spain	5154	5376	5483	949.9	13687	484.3	138.1	7800	21343	36911	1.8	12.9		
France	7028	101.7		19	2537	19.3		2926	23949	21879				**177.9**
Portugal	26.7	1319.6	345.2	120.2	513.2	8.8	0	3203.5	5.1	8506.6	18.8	27.3	30.2	**5223.6**
United Kingdom		0											0.88	**19**
Ireland	1.0	1.5			175.42									
Netherlands														
Greece	388.6			1120.3			772.8			98.6				**1547**
Italy	4686			6942			3670							**4046**
Malta	264.3			195.2			10.354							
Cyprus	104.7			49.1			249.8							**5.5**
TOTAL EC	**17653.3**	**6798.8***	**5828.2**	**9395.7**	**16912.6**	**512.4**	**4841**	**13929.5**	**45297.1**	**67395.2**	**20.6**	**40.2**	**31**	**11000**

* Of which 369 tons (264.2 t Malta and 104.7 t Cyprus) will be deducted from the ICCAT «Others» quota.

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

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

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 is dependent, for the most part, on maritime fishing, a traditional activity and the major economic sector of St. Pierre and Miquelon.

In spite of the general decline in fisheries resources reported in recent years, the fishing industry continues to be an essential activity for St. Pierre and Miquelon. Thus, this industry employs more than 250 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.

Information on the national fishery

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 Canadian and French maritime areas, and which are based on the recognition of reciprocal fishing rights on the stocks concerned.

The local fishing activities proceed from 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 these dates has participated in the work of these two organizations.

Section 2: 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 activities and fishery research 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 the work of statistical monitoring of the catches, which depends from the competent administrative services of the State present in St. Pierre and Miquelon.

Part II. (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures (as concerns the bluefin tuna stock relevant to ICCAT)

The bluefin tuna fishing carried out in St. Pierre and Miquelon, within the possibilities that ICCAT established, taking into account the level of quota available, constitute a supplemental activity for the island's small artisanal

[1] Original report in French.

fishing companies. This corresponds to a type of subsistence fishing. A more important fishery has been started in international waters through the chartering of a Canadian vessel.

In order to fish, 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.

Section 4: Inspection Schemes and Activities

All the regulatory measures indicated in Section 3 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.

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

Section 5: Other activities

Catches in 2004

The maritime fishing catches by the overseas territory of St. Pierre & Miquelon are as follows for 2004:

Under ICCAT

– Bluefin tuna	9.79 kg
– Bigeye tuna	28.27 kg
– Swordfish	35.65 kg
– Sharks	7.01 kg
– North Atlantic albacore	7.06 kg

Under NAFO

– 528.70 t of shrimp, NAFO area 3L and 3M (international waters)

Under fishing agreements between Canada and France

NAFO area 3Ps

– Atlantic cod: 2,331 t (of which 1,698 t were caught by Canadian vessels and landed and processed at St. Pierre & Miquelon)
– Rockfish: 17 t (of which 16 t were caught by Canadian vessels and landed and processed at St. Pierre & Miquelon)
– Gray plaice: 37 t (of which 12 t were caught by Canadian vessels and landed and processed at St. Pierre & Miquelon)
– Canadian plaice: 72 t (of which 29 t were caught by Canadian vessels and landed and processed at St. Pierre & Miquelon)

NAFO area 2 3K

– Black halibut: 18 t (Canadian EEZ)

National stocks - all in NAFO area 3Ps
- Snow crab 162 t
- Lumpfish 225 t
- Whelk 54 t
- Other species 866 t

Summary of tuna catches in 2005 for the archipelago of St. Pierre and Miquelon

The total landings of bluefin tuna (*Thunnus thynnus*) carried out in the archipelago up to October 15, 2005 (caught in international waters) represent a total catch volume of 4,974.82 kgs.

Besides bluefin tuna, Canadian longline, chartered by the company PROPECHE SARL, has proceeded to distribute the following quantities of tuna:

- Bigeye tuna 5,768.66 kg
- Swordfish 48,463.14 kg
- Sharks 2,678.56 kg
- North Atlantic albacore 2,126.61 kg

ANNUAL REPORT OF GHANA[1]

Part I (Information on fisheries, research and statistics)

The Ghanaian tuna fleet comprises mainly the baitboats and purse seiners fishing off the EEZ of Ghana and exploiting mainly skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*) and bigeye tuna (*Thunnus obesus*). A total of 36 vessels (26 baitboats and 10 purse seiners) operated during the year under review. This report highlights the activities undertaken by the country in respect of ICCAT programmes and measures taken to implement ICCAT Recommendation.

Section 1: Annual Fisheries Information

1.1 Resources

The tuna and tuna-like species including the billfishes that occur in Ghanaian waters are part of a large community in the entire East Atlantic Ocean. The most abundant of the species exploited are the skipjack tuna, followed by yellowfin tuna and bigeye tuna. Tuna baitboats are the main exploiters of tunas in Ghanaian waters, using anchovy (*Engraulis encrasicolus*) and other small pelagics as the main bait for their operations. In addition to the use of anchovy to attract tunas, bamboo rafts ("payaos") are used as Fish Aggregating Devices (FADs).

Section 2: Research and Statistics

The Marine Fisheries Research Division (MFRD) of the Fisheries Directorate is the government agency responsible for tuna research and statistics in Ghana. Monitoring of exploitation of the resources by the different fleets, collection of biological data and observance of the moratorium on the use of FADs (Rec. 99-01) among others were all executed by the Division.

Catch statistics computed from returns from fishing companies (Task I) show a decrease of 4% in nominal landings between 2003 and 2004 (i.e., 65152.72 t in 2003, as compared to 62741.93 t in 2004). The percentage contributions of fish were as follows: skipjack 56%, yellowfin, 24%, bigeye 9%, and other tuna-like species including black skipjack (*Euthynnus alletteratus*) 11%. Increases in bigeye catches in both the baitboat and purse seine landings can be attributed to improved sampling in conformity with ICCAT's supersampling scheme of 2003 (SCRS/2003/010) which was initiated by ICCAT's SCRS Tropical Species Working Group.

Billfishes have been of immense importance to ICCAT. Like all large pelagics in the Atlantic Ocean, ICCAT has a mandate to conserve these fish species abounding in the Atlantic Ocean. Four main billfish species abound off the coast of Ghana mainly in the western end, namely; sailfish (*Istiophorus albicans*), swordfish (*Xiphias gladius*), blue marlin (*Makaira nigricans*) and white marlin (*Tetrapturus albidus*).

Billfish are caught primarily from small drifting nets employed from large dugout canoes used off the central and western shores of Ghana. Data on catch and effort for the year 2004 have been submitted accordingly **(Table 1)**.

Sampling of the three major species of tuna was carried out from the port of Tema to determine, among others, length frequency distribution to be used for stock assessment purposes. Sampling at port (quayside) of tunas is done following the ICCAT *Field Manual* (Miyake & Hayasi 1972) and the super sampling scheme. All data collected (Task I, II and III) for 2004 were forwarded to ICCAT in July 2005.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

3.1 Implementation of ICCAT SCRS Super Sampling Scheme

Three stages have characterized the Ghanaian tuna fishery. Firstly, the dominance of the pole and line fishery over the past three decades. Secondly, the use of Fish Aggregating Devices (FADs) since the early 1990s has

[1] Original report in English.

also been noted and its attendant effect on fish species. Thirdly, within the last six years the re-introduction of the purse seine fleet and the association or catch sharing between baitboats and purse seiners and the use of Fish Aggregating Devices (FADs). All these have rendered inadequate the present ICCAT port sampling methodology.

In 2003, the SCRS Tropical Species Working Group designed the super sampling scheme as means of improving the quality of the statistics. Ghana is implementing the super sampling scheme and there has been marked improvement in the statistics especially for Task II reporting. The sample size has now increased from 100 to 500 per boat sampled.

3.2 Japan Data Improvement Project (JDIP)

The Project, which started in December 2004, was established to provide capacity-building assistance in some of the Contracting Parties so as to help them perform their duties to collect and report the required data. Ghana is one of the countries that has benefited since the inception of the Project. In June 2005, ICCAT selected Ghana and Brazil as main beneficiaries during year one of the program. The capacity of these countries is to be built in collection and processing of statistical data. A training program in the use of the computer software ADVTH was organized for four Ghanaian technicians in Tema, Ghana from October 24-28, 2005 by ICCAT with a resource person from EU. This will improve Ghana´s collection and reporting of ICCAT Task I and II data. One Ghanaian scientist was sponsored under the Project to attend the SCRS meeting from September 24 to October 7, 2005.

3.3 Implementation of Moratorium on the use of FADS

In 1998, ICCAT recommended a periodic restriction on the use of Fish Aggregating Devices (FADs) by tuna purse seine vessels fishing in the Atlantic Ocean. With the emergent collaboration between purse seiners and pole and line vessels (baitboats) in fishing, the moratorium was extended to baitboats in 2000.

With the support of the United States of America Government, Ghana undertook to implement the 2004/2005 ICCAT moratorium on the use of FADs in the Gulf Guinea (ICCAT Recommendation 99-01). A program was drawn up to place observers on all Ghana-flag tuna baitboats (pole and line) and purse seiners from November 1, 2004 to January 31, 2005. The main objective of the program was to observe and record fishing activities of vessels, with particular reference to activities on and around FADs in the prohibited zone in the Gulf of Guinea.

In all, a total of 27 vessels participated in the program with each carrying an observer onboard and all duly complied with the moratorium with a few violations. The report on the observance of the moratorium 2004-2005 has been submitted to ICCAT and listed as SCRS/2005/062.

3.4 Implementation of internal measures relating to compliance of Recommendation by ICCAT on a Multi-Year Conservation and Management Programme for Bigeye Tuna [Rec. 04-01]

This Recommendation entered into force June 13, 2005 and among others, limits vessel numbers, TAC and catch limits and area/season closures. There is no observer program to ensure the enforcement of the moratorium. As a measure to monitor that Ghanaian vessels do not fish in the closed area, the Government has been implementing a Vessel Monitoring System since early January 2005. Control stations have been established at strategic locations, factory acceptance test has been conducted, pilot phase involving eight vessels have been completed and transponders have been installed on all tuna vessels to monitor the movements. Laptops have also been installed for the transmission of catch data to control stations. The transmission of catch data will enable effective monitoring of bigeye tuna catches to ensure compliance with the catch limit allocated to Ghana. It will also ensure that tuna vessels do not fish in the closed area during the closed season. The Directorate of Fisheries has written a letter informing the tuna companies of the closed area and the duration of the closure. A total of 90 vessels, of which 36 are tuna vessels, have been fitted with transponders. The VMS is funded solely by the Government of Ghana and will be commissioned by November 28, 2005. It is anticipated that the implementation of the VMS will improve the position monitoring of Ghana flag tuna vessels.

3.5 ICCAT request for information on vessels greater than 24 meters for the ICCAT Record of Vessels [Rec. 02-22]

At the 13th Special Meeting of the Commission, held in Bilbao, Spain, ICCAT adopted a Recommendation [Rec. 02-22] requesting all Contracting Parties to report their fishing vessels larger than 24 meters and ensure

that they are all fishing in accordance with ICCAT management and conservation measures. The list was updated at the beginning of the year and is on now ICCAT website http:/www.iccat.int.

The Ghanaian Fisheries Act 625 of 2002, ensure that all Ghana Flag vessel conform to internationally recognized standards in accordance to international maritime laws.

Under the Fisheries Act 625 of 2000, transhipment at sea is forbidden and all vessels have to report at port in Ghana to formalize all documents before fish cargo is transhipped. All these measures among others are aimed at preventing any violation of maritime laws and prevent illegal fishing activities. Vessels that do not comply with such requirements by law within international norms are subjected to punitive actions such as fines and suspension of fishing licences or both.

3.6 Recommendation by ICCAT Concerning the ICCAT Bigeye Tuna Statistical Document Program [Rec. 01-21]

This Recommendation by ICCAT entered into force on September 21, 2002. Section 4 mandates Contracting Parties that export or import bigeye tuna to compile data from the program aimed at obtaining reliable data from target and by-catch fisheries. The Recommendation also requires the validation of the ICCAT Bigeye Tuna Re-export Certificate by a government official. A letter dated August 17, 2005 to ICCAT mandated the Marine Fisheries Research Division (MFRD) as the institution responsible for validation of the document and also indicated the officers mandated to sign. During the review period, a total of 250 t of bigeye tuna were exported under the program with the fish accompanied by validated and signed statistical documents. Copies of the validated and signed statistical documents were forwarded to ICCAT in accordance with the Recommendation.

3.7 Recommendation by ICCAT Establishing a Swordfish Statistical Document Program [Rec. 01-22]

This Recommendation by ICCAT entered into force on January 1, 2003. Section 4 mandates Contracting Parties, which export or import swordfish to comply data from the programme aimed at obtaining reliable data from target and by-catch fisheries. The Recommendation also requires the validation of the ICCAT Swordfish Re-export Certificate by a government official. A letter dated August 17, 2005 to ICCAT mandated the MFRDas the institution responsible for validation of the document and also indicated the officers mandated to sign. During the review period, a total of 1.8 t of swordfish were exported under the program with the fish accompanied by validated and signed statistical documents. Copies of the validated and signed statistical documents were forwarded to ICCAT in accordance with the Recommendation.

Section 5: Other Activities

5.1 Ghana's concerns

5.1.1 Calculation of ICCAT contributions for Contracting Parties

Ghana wishes to express the following concern on the calculation of ICCAT dues for Contracting Parties:

- Allocation of ICCAT contributions for Contracting Parties is based on tonnage caught by the vessels plus the tonnage processed by the canneries in each country as a percentage of the total of all ICCAT Members. However, historical data are used in the calculation and this does not reflect correctly on what is happening in the Member States. For instance, the 2005 ICCAT were calculated using 2000 data and Ghana believes some countries are benefiting from this at the expense of others. Ghana suggests that data to be used in the calculations of the contributions of Contracting Parties should not be more than two years.

- A critical look at the 2005 ICCAT Budget indicates that Ghana was allocated nearly 15% of the total ICCAT budget. Ghana is therefore the second highest contributor after the EC to the ICCAT budget. Considering Ghana's fleet number and the capacity and ages of the fleet used compared with those operating elsewhere, it is necessary as matter of urgency for ICCAT to investigate the tonnages declared by Contracting Parties. For example, a member State with three canneries and a total capacity of nearly 60,000 t per annum was allocated zero canned tuna while Ghana, with canneries having a total capacity of 40,000 per annum, was allocated 44,000 t of canned tuna. In 2004, Ghanaian vessels supplied a total of 27,000 t of tuna to canneries of this Member State, yet they were allocated zero canned tuna. Ghana thinks there have been some errors in the calculations in the allocation of ICCAT contributions to Contracting Parties.

- During the 2005 SCRS meeting, a Member State revised its longline statistics for the period 1998-2004. This Member State has been declaring its statistics based on gutted weight instead of whole weight. Definitely, this Member States have benefited at the expense of Ghana that has been declaring the true statistics of her producers and canneries.

- In conclusion, it is obvious from the above-mentioned concerns that some Contracting Parties are under declaring their tonnages to avoid being allocated a higher percentage of the ICCAT budget.

- Ghana proposed a write off of 50% of its arrears in payment of ICCAT contribution debt in view of the revelations expressed in our concern.

5.2 Submission of payment schedule for Ghana's arrears in ICCAT contributions

ICCAT, in its letter of March 21, 2005, among others, requested Ghana to submit a payment schedule on Ghana's arrears in ICCAT contributions by November 2005. A payment schedule was submitted to ICCAT in June 2005 in accordance to the terms of the said letter. A total of €400,000 have been paid in accordance with the payment schedule.

5.3 Conclusion

Over the review period Ghana has implemented all the ICCAT Recommendations that affects her. Ghana has made efforts to fulfil its financial obligations to ICCAT. Ghana hopes that ICCAT will look seriously into the concerns expressed in this report.

Ghana once again wishes that in the interest of equity and fair play, Recommendations 93-01, 98-03, and 01-01 limiting the effort/number of vessels not to exceed the 1992 level thereof in terms of fleet size/effort be entirely revised since other nations fishing in the Atlantic Ocean have far larger vessels in terms of their horse power/capacity (effort exerted on fishery), which cannot in any terms be compared with the effort exerted by Ghanaian registered vessels.

Ghana promises ICCAT that it will play its role in ICCAT activities for the benefit of the organization.

Table 1. Summary of billfish catches (t) for 2004.

Species	*Sailfish*	*Blue marlin*	*White marlin*	*Swordfish*	*Effort (trips)*
2003	551.10	414.93	1.38	734.28	25,841
2004	503.46	400.44	1.12	342.57	37,477

ANNUAL REPORT OF JAPAN[1,2]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

1.1 Types 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 commercial tuna fishermen as well as biological data. The final coverage of the logbook from the Japanese longline fleet operating in the Atlantic has been very good (90-95%). To reach this level, however, it takes almost two to three years after the completion of a given calendar year. The current coverage, which completed collation in electronic form for 2004, is estimated to be about 50%. This is slightly slower than scheduled. Since some trips made by the Japanese longline boats are often longer than 12 months, the coverage for the latter part of 2004 is much lower than for the earlier part of that year. Therefore, caution is required when readers refer to 2004 catch and effort statistics as well as figures that indicate geographical distributions of those statistics shown in this paper. Information for total-raising for catch and effort statistics was already collected up until 2003 and was incorporated in the raising process.

With regard to the implementation of conservation measures on North Atlantic swordfish, Japan instructed its fishermen to retain only dead fish and to release all the swordfish caught alive in the North Atlantic (North of 5°N) starting from August 2004. At the same time, the Fisheries Agency of Japan (FAJ) requested fishermen to submit release information in a designated format. The amount of these discards is now in being estimated, and will be provided in near future.

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

1.3 Fishing effort trends

The number of Japanese longliners that operated in the Atlantic in 2003 and 2004 was estimated at 205 and 222, respectively (**Table 1** and **Figure 1**). The number in 2002 was the lowest since 1989 but that of 2003 and 2004 recovered slightly. This decline had continued since 1996 indicating a decline of nearly one-third. Fishing days also exhibited a similar trend, but much more precipitous. In 1996, fishing days were 47,100 days, which was the highest since 1981, but those values in 2002 and 2003 were lower than 50% and 35% suggesting the fleet exerted a lesser amount of time in the Atlantic in recent years. The 2002 fishing days was the fourth lowest since 1981.

The annual geographical distribution of longline fishing effort in 2003 and 2004 (**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 coast 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, almost no fishing effort was observed in the waters off southern America. In 2004, fishing effort off South Africa (0°-20°E, 40°S-45°S) was reduced considerably. This appears to have resulted from the poor fishing of southern bluefin tuna in this area. Seasonal distribution (**Figure 3**) clearly indicated a high concentration of fishing effort in areas such as the South of Iceland as well as off Namibia during the latter half, while the tropical fishing grounds are fished all year round.

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[1]Original report in English.

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1.4 Catch trends

Reflecting 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 60% of the total tuna and tuna-like fish catch. In terms of weight, bluefin tuna, yellowfin, albacore, southern bluefin tuna and swordfish are next important species in this order during the most recent years. The 2003 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 29,847 t (**Table 2**). This is a 4,300 t (metric tons) or 20% recovery from 2002, staying at the lowest level since 2001. As shown in **Tables 1 and 2**, it is worth noting that although the total amount of fishing effort in 2003 is similar to 1982, the total catch is only 60% of that year. This difference is attributable to a decline of bigeye catch (by 14,000 t), yellowfin (by 3,300 t) and swordfish (by 2,700 t), as compared to 1982 (**Table 3**). The 2004 provisional catch of tunas and tuna-like fishes was 27,635 t, and this is a slight down by 2,300 or 9% over the 2003 figure. Bigeye and southern bluefin showed the most apparent decline but yellowfin and albacore showed nearly a 100% increase. All billfish species also showed an increase except for white marlin.

The area breakdown of catch by species is also shown in **Table 4** for the most recent two years (2003-2004). 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**). The same amount for the 2003-2004 is now being estimated. Albacore and yellowfin increased both in the North and the South Atlantic. For bigeye, the catch increased in the South Atlantic but decreased in the North Atlantic.

The geographical 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, those distributions for bigeye tuna reflect the geographical 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 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 catch composition by species.

1.5 New developments or shifts in the fishery

No new development or change was 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 it appears to have up-turned slightly thereafter. 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 of the fleet to other oceans due mainly to the lower CPUE of bigeye tuna.

Section 2: Research and Statistics

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

2.1 Fishery data

The NRIFSF provided the ICCAT Secretariat with almost final 2003 catch, catch/effort and part of size frequency data (Task I, II and biological sampling) for the longline fishery. The compilation of the same data for 2004 has been in progress but appears to be left behind a little. The preliminary 2004 catch estimates are given in this report.

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 2004 and January 2005. Most of the trips were made on boats targeting bluefin in the North Atlantic (39°-62°N, 11°W-65°W) and relatively fewer observations were made in the tropical and subtropical waters off Abidjan. A total of 365 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, 2006). Pop-up tagging was also conducted during these trips, and five tags were used only for bigeye tuna. So far, two of those have popped off. However, no analysis was yet attempted due to time constraints. This year's activities, that have already started, will be conducted in a similar scale as in the past. A total of nine trips is scheduled between August 2005 and January 2006, putting more emphasis on the observation of bluefin fishing.

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.

This year the NRIFSF and other affiliated scientists participated the following ICCAT related meetings in addition to the regular SCRS meetings; 3rd Meeting of the Working Group to Develop Integrated and Coordinated Atlantic Bluefin Tuna Management Strategies (Fukuoka, Japan, April 20-23. 2005), the Billfish Data Preparatory Meeting (Natal-RN, Brazil, May 9-13, 2005), the Planning meeting for bluefin tuna research (Madrid, June 27-30, 2005), the Workshop on Methods to Reduce Mortality of Juvenile Tropical Tunas (Madrid, July 4-8, 2005).

Two papers were presented to the Billfish Data Preparatory Meeting (Saito and Yokawa 2006, Yokawa and Saito 2006).

Part II (Management implementation)

Section 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 Catch reporting by radio

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

- 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 in real time their catches and vessel positions through VMS. The other vessels are required to report their positions through VMS. All Japanese longline vessels operating in the Convention area are equipped with satellite tracking devices (VMS) onboard (installation was initiated in 1992). Some vessels are in the process of improving their devices in order to meet the minimum standards of VMS provided 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 and 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 of bluefin tuna, swordfish, blue marlin, white marlin and bigeye tuna. The 2004 quotas for these tunas are applied to the 2004 Fishing Year which started on August 1, 2004 and ended on July 31, 2005.

iii) Bluefin catch in the central Atlantic Ocean

For 2003 and 2004, the 2002 ICCAT Resolution calls 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, the Japanese bluefin catch in the central Atlantic Ocean was 1,144 t and 974 t, respectively. For 2003 and 2004, it was 390 t and 457 t, respectively.

3.1.4 Number of fishing vessels

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

Since 1998, the FAJ has limited the number of vessels actually fishing for bigeye tuna in the Convention area to 245, by means of a mandatory check in/out reporting system via radio as well as the VMS based on the 2004 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 the catch of undersized fish with an exemption of a certain percentage of tolerance, by a Ministerial order. 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 August 2005 to implement the 2004 Recommendation on bluefin tuna size limit.

All the Japanese pole and line vessels ended their operations in the Convention area to comply with 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 to operate in the Mediterranean from June 1 to July 31 by a Ministerial order in accordance with the 1993 ICCAT Recommendation. The FAJ also has prohibited Japanese longline vessels from operating in the Gulf of Mexico during the first half of the year.

3.4 National Observer Program

Based on the 2002 ICCAT Recommendation on the rebuilding program for North Atlantic swordfish, the FAJ has implemented a national observer program of vessels operating in the North Atlantic. For 2004, the national observer program covered about 10 percent (9.7%) of the total number of fishing vessels operating in the North Atlantic Ocean. Similarly, the program covered about 4 percent (4.1%) of the total number of fishing vessels operating in the entire Atlantic Ocean, in accordance with the 2004 Recommendation on a multi-year conservation and management program for bigeye tuna.

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

Japan has prohibited the import of Atlantic bigeye tuna and its products in any form from Bolivia and Georgia since July 10, 2003 and July 28, respectively, in accordance with ICCAT recommendations.

The import prohibition on Atlantic bluefin tuna from Equatorial Guinea and Sierra Leone was lifted on February 24, 2005. The import prohibition on Atlantic swordfish from Sierra Leone was lifted on February 24, 2005. The import prohibition on Atlantic bigeye from Cambodia, Equatorial Guinea and Sierra Leone was lifted on February 24, 2005. Japan conducts DNA examination against imported tunas to prevent false imports.

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

From September 1, 1993, the Japanese Government started to collect BFTSD for frozen products in accordance with the 1992 Recommendation. In addition, from June 1, 1994, the Japanese Government started to collect 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 to collect the information on farmed bluefin tuna products in accordance with 2003 Recommendation.

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

From July 1, 2002, the Japanese Government started to collect BETSDs for frozen products in accordance with the 2001 recommendation in 2001.

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 Program (SWOSD)

From January 1, 2003, the Japanese Government started to collect SWOSDs for fresh and frozen products 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 from November 14, 2003. Species and product type covered by the measure are frozen bluefin tuna, frozen bigeye tuna and frozen swordfish, currently. If there are tunas caught by LSFVs that are not entered on the record, the import is not permitted by the Japanese Government.

Since November 22, 2004, the Japanese Government has implemented the Positive Listing Measures on Farming Facilities based on the 2003 Recommendation.

Section 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 during the 2004 fishing season. These vessels also observed fishing activities of other nations' fishing vessels.

4.2 Random inspection of landing at Japanese ports

All Japanese tuna fishing vessels that land their catch 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 minimum size limit.

4.3 Management of transshipment at foreign ports

Prior permission from 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 landings at Japanese ports when longline vessels or reefers return to Japanese ports.

Section 5: Other Activities

5.1 Annual catch statistics

Every 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 following the end of 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 the 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 turtle, 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 is conducting 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, they are required to use a device, Tori-pole, to avoid seabirds from approaching the hooks and bites when they launched. In other areas, fishermen are also encouraged to use the device. In 2001, Japan established the National Plan of Action (NPOA) for the Conservation and Management of Sharks and for Reducing Incidental Catch of Seabirds in Longline Fisheries. In 2003, Japan reported the assessment of the implementation of Japan's NPOA to the FAO Committee on Fisheries (COFI). Also, Japan will submit a revised NPOA for the Conservation and Management of Sharks at the 26th COFI Meeting in 2005.

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 in response 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 products e.g., frozen, fresh or chilled. Japan also improved its import statistics in 1997 and 1998 regarding swordfish in order to collect more accurate import data on this fish species.

5.5 Effort limitation

The number of longline vessels that can operate in the western Atlantic North of 35ºN and the Mediterranean were 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 the FAJ an advance notice of their planned operations, which enables the FAJ to instruct the relevant fishing vessels to shift fishing grounds, if necessary. The number of longline vessels fishing for bigeye tuna was limited 245 in 2004, in accordance with the Recommendation on a multi- year conservation and management program for bigeye tuna.

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 escape from the FAJ's control even when a vessel is conducting fishing operation 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 that may diminish the effectiveness of international conservation measures. When Japan implemented its fleet reduction program, the Federation of Japan Tuna Fisheries Co-operative Association resolved that the export 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 so that they would not 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 fisher's activities 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) urged importers, transporters and other concerned people to refrain from engaging in transaction and transshipment of tuna and tuna-like species caught by the IUU fishing vessels, (ii) informed general public of IUU fishing activities and urged them not to purchase fish harvested by the IUU fishing vessels, and (iii) urged 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

To implement the Japan-Chinese Taipei Action Programs to eliminate the IUU fishing vessels, the Japanese Government budgeted for scrapping IUU tuna longline vessels of Japanese origin during 2001-2003. The total amount of the budget for this three-year program was about US$28 million (32.7 billion Japanese yen). 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 (Seychelles and Vanuatu) and Japan, and the vessels participating in the scheme were placed under proper management.

- Measures so that the fishing vessels in question obtain Japan's licenses for large-scale longline vessels and freeze those licenses were taken for the purpose of reinforcing and complementing the cooperative management scheme mentioned above as well as preventing the increase of overall fishing capacity.

Those 69 vessels will not operate in the Atlantic any more.

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 representatives from fishermen, importers, distributors, processors and consumers. One of the main tasks of 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. The 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, China and Ecuador have joined OPRT.

5.12 Experimental study on management of at-sea transshipment

The OPRT conducted an experimental study on the management of at-sea transshipment this year in cooperation with reefer companies, fishermen, government and other related organizations. Under this program, the OPRT dispatched its observers to three reefer vessels that operated in the Atlantic Ocean and collected information on at-sea transshipment and the effectiveness of the management program.

Table 1. Annual number of Japanese tuna boats operated in the Atlantic and Mediterranean, 1981-2004.

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	148	-	-
2000	208	355	171	-	-
2001	199	276	139	-	-
2002	185	243	131	-	-
2003[*1]	205	304	148	-	-
2004[*2]	222	320	144	-	-

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

Table 2. Japanese catch (t) of tuna and tuna-like fishes by type of fisheries, Atlantic and Mediterranean, 1981-2004. 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	37,370	-	-	37,370
2001	27,128	-	-	27,128
2002	25,037	-	-	25,037
2003[*1]	29,847	-	-	29,847
2004[*2]	27,635	-	-	27,635

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

Table 3. Catches (t) of tuna and tuna-like fishes taken by the Japanese longline fishery, 1981-2004.

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	1,241	24,605	4,061	954	883	2	83	39	40	734	37,370	-	583	696	38,649
2001	3,083	376	1,467	18,087	2,692	686	335	1	56	9	23	313	27,128	-	578	675	28,381
2002	3,501	1,244	926	15,472	2,082	903	280	2	16	21	28	562	25,037	-	239	913	26,189
2003[*3]	3,068	1,649	983	19,055	2,720	972	468	0	34	26	65	807	29,847	-	102[*5]	1,031	30,980
2004[*4]	3,123	84	1,637	15,202	5,457	1,169	528	3	29	54	86	263	27,635	-	-[*5]	1,745	29,380

[*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.
[*5] Currently being estimated.

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 5ºN and 30ºW, respectively. The Mediterranean Sea is separated from both west-east and north-south area division.

2003[*1]

Species	*West*	*East*	*North*	*South*	*Medit*	*Total*
Bluefin	57	2,695	2,752	0	316	3,068
Southern bluefin	0	1,649	0	1,649	0	1,649
Albacore	602	381	684	299	0	983
Bigeye	5,023	14,032	6,164	12,891	0	19,055
Yellowfin	727	1,992	1,280	1,440	0	2,720
Swordfish [*2]	138	834	0	972	0	972
White marlin	19	16	22	13	0	34
Blue marlin	130	338	158	311	0	468
Black marlin	0	0	0	0	0	0
Sailfish	8	18	9	17	0	26
Spearfish	44	21	43	23	0	65
Skipjack	0	0	0	0	0	0
Blue shark	238	591	509	320	1	830
Other sharks	86	114	108	92	0	201
Other fishes	49	757	73	734	0	807
Total	7,121	23,438	11,802	18,761	317	30,878

[*1] Almost final.
[*2] Discards of 102 t in the north Atlantic is not included.

2004[*3]

Species	*West*	*East*	*North*	*South*	*Medit*	*Total*
Bluefin	470	2,015	2,485	0	638	3,123
Southern bluefin	0	84	0	84	0	84
Albacore	772	866	1,169	468	0	1,637
Bigeye	6,062	9,141	9,102	6,101	0	15,202
Yellowfin	1,085	4,372	2,445	3,013	0	5,457
Swordfish [*4]	389	774	640	523	3	1,169
White marlin	12	17	17	11	0	29
Blue marlin	84	444	168	359	0	528
Black marlin	0	3	1	2	0	3
Sailfish	4	51	11	43	0	54
Spearfish	60	26	59	27	0	86
Skipjack	0	0	0	0	0	0
Blue shark	536	937	1,223	249	1	1,473
Other sharks	122	149	171	100	0	272
Other fishes	60	204	107	156	0	263
Total	9,656	19,083	17,598	11,136	642	29,380

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

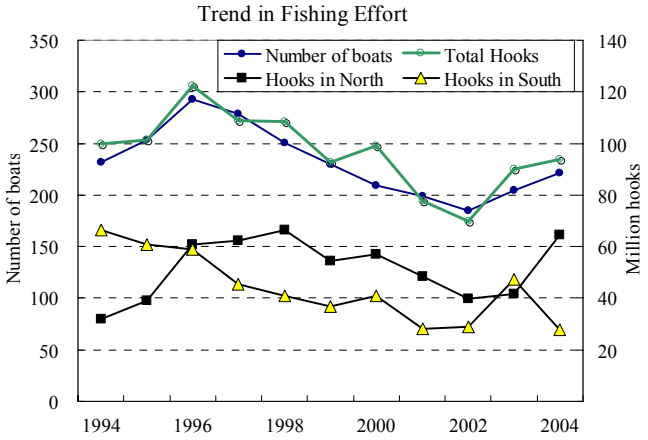

Figure 1. Trends in fishing effort (number of boats operated and number of hooks used) exerted by the Japanese longline fishery, 1994-2004.

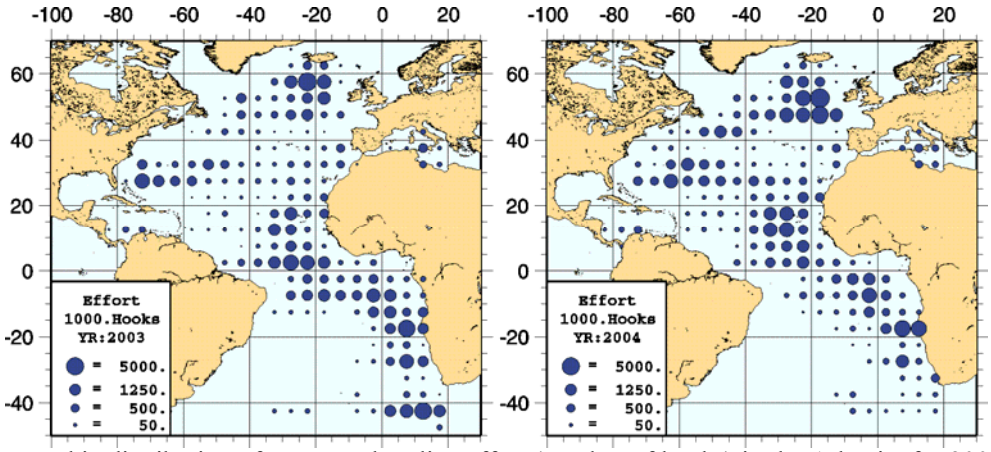

Figure 2. Geographic distribution of Japanese longline effort (number of hooks) in the Atlantic, for 2003 (left panel) and 2004 (right panel). Coverage for 2004 is much lower than 2003, especially in the latter half of the year, so that the figure for 2004 should be viewed with caution.

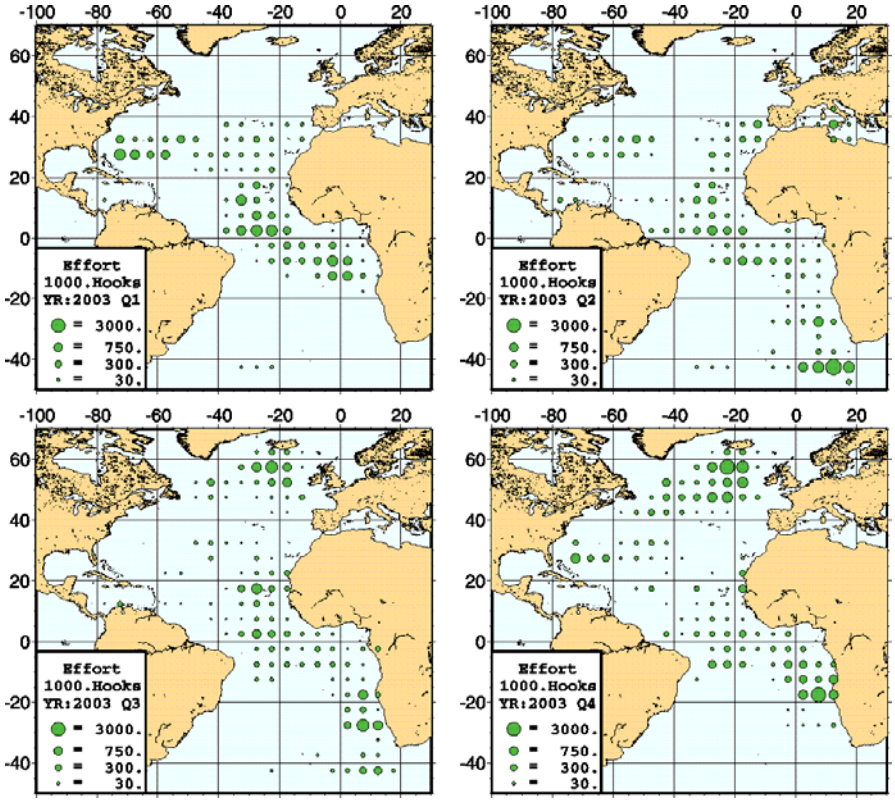

Figure 3. Quarterly distribution of Japanese longline effort (number of hooks) in the Atlantic for 2003.

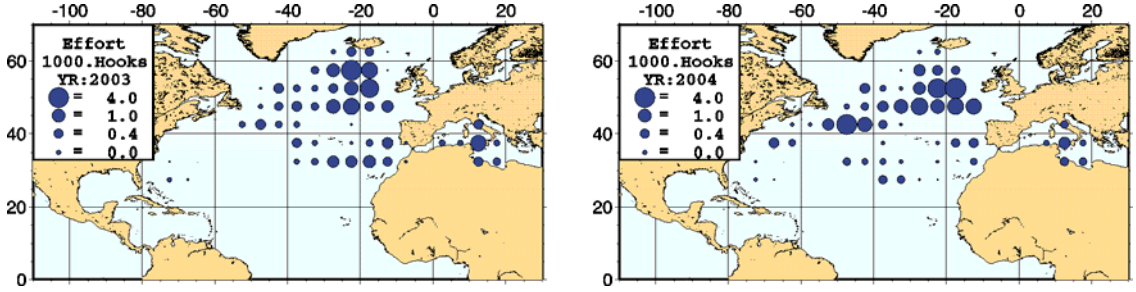

Figure 4. Geographic distribution of bluefin catch (number) in the Atlantic for 2003 (left panel) and 2004 (right panel). Coverage for 2004 is much lower than 2003, especially in the latter half of the year, so that the figure for 2004 should be viewed with caution.

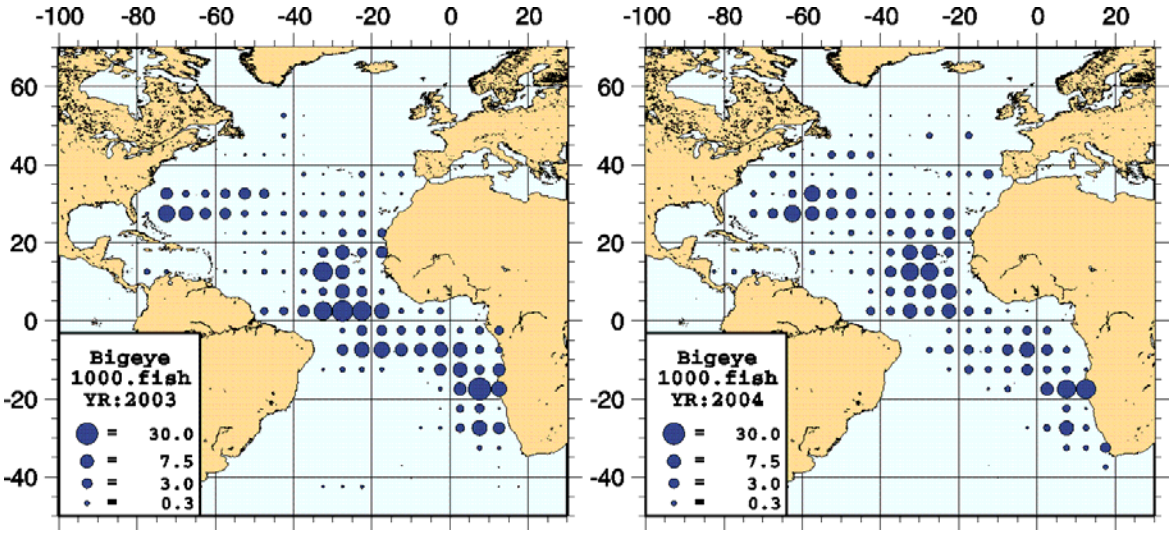

Figure 5. Geographic distribution of bigeye catch in number in the Atlantic for 2003 (left panel) and 2004 (right panel). Coverage for 2004 is much lower than 2003, especially in the latter half of the year, so that the figure for 2004 should be viewed with caution.

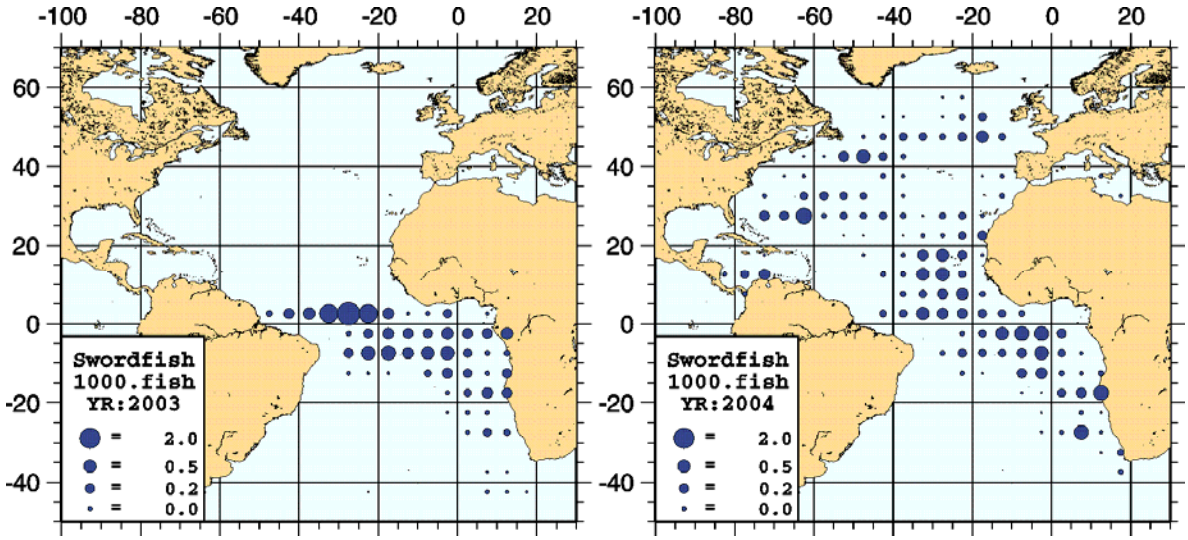

Figure 6. Geographic distribution of swordfish catch (number) in the Atlantic for 2003 (left panel) and 2004 (right panel). Coverage for 2004 is much lower than 2003, especially in the latter half of the year, so that the figure for 2004 should be viewed with caution.

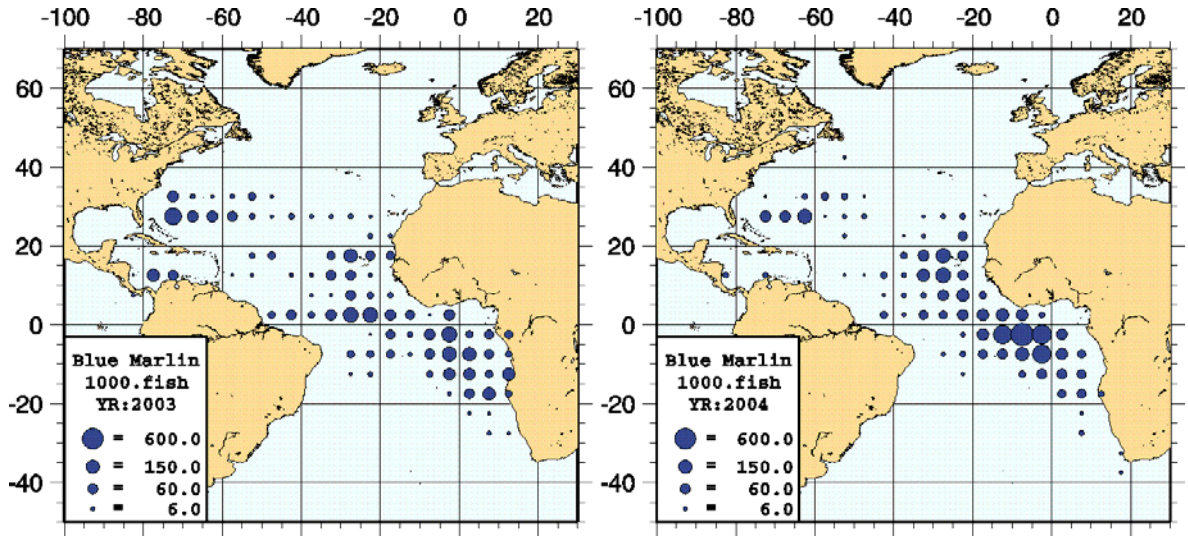

Figure 7. Geographic distribution of blue marlin catch (number) in the Atlantic for 2003 (left panel) and 2004 (right panel). Coverage for 2004 is much lower than 2003, especially in the latter half of the year, so that the figure for 2004 should be viewed with caution.

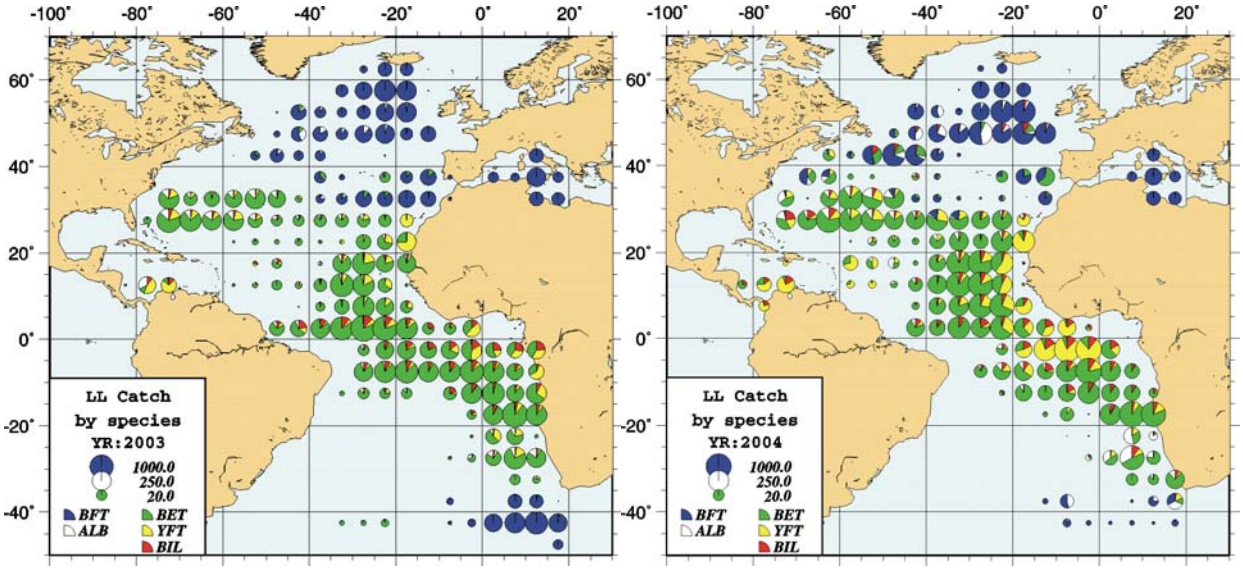

Figure 8. Species composition in the Japanese longline catch in weight for 2003 (left panel) and 2004 (right panel). Species are categorized into five groups: BFT (bluefin and southern bluefin), ALB (albacore), BET (bigeye), YFT (yellowfin) and BIL (swordfish and all billfishes).

ANNUAL REPORT OF KOREA[1]

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

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

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 Ocean, but the fisheries for Atlantic tunas and tuna-like species have shown a gradual decline year after year since 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 catch. Since the mid-1990s, even though 54 longliners are registered in the IOTC area, many registered vessels migrate between the Indian and Atlantic Oceans, depending on the conditions of each fishing grounds. The gear-type-based licensing in Korea, which does not limit the fishing grounds, enables the switches of fishing grounds for those tuna longliners.

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

The total catch of tunas and tuna-like species in the Atlantic in 2004 was estimated at 2,607 t, representing an increase by over 2,205 t from the previous year's figure. A Korean longline vessel operated in the EEZ area of the People's Republic of Angola and the Republic of South Africa and caught yellowfin and bigeye tuna as the main target fish in 2004. The total catches in **Table 1** include 700 t of bluefin tuna that were caught by a chartered Turkish purse seiner in the Mediterranean Sea; these bluefin tuna catches were reported by an on-board Turkish observer.

Almost 85% of the total 2004 catch of the longline fishery in the Atlantic was comprised of two species: yellowfin tuna and bigeye tuna, among which 984 t were yellowfin and 629 t bigeye tuna. Until recent years, bigeye and yellowfin tunas were the most important tuna species for the Korean tuna longline fishery, not only for catches but also their higher commercial value for sale on the sashimi market than other species.

Bigeye and yellownfin tunas are the target species of the Korean longline fishery and the catch distribution of these species largely depends on the distribution in Atlantic Ocean. The fishing area of Korean longliners in the Atlantic Ocean was mainly the east waters of Africa and scattered from 30 degrees west longitude to 30 degrees east longitude in 2004 **(Figure 1)**. However, the catch distribution has shown annual fluctuation depending on the fishing and oceanographic conditions for the target species.

Section 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 collections of catch and fishing effort statistics from the Korean tuna longliners operating in the Atlantic Ocean. Task I and 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 tuna fisheries. Five observers received training from the pelagic fishery observer program at NMFS in 2002 and two observers in 2004 were deployed on a Korean purse seine fishing vessel operating in the Pacific Ocean and one observer researched a southern bluefin tuna longline fishing vessel operating in the EEZ of South Africa. Five observers worked in the Pacific and Indian Oceans for scientific purposes. Also, two observers were on-board the chartered Turkish purse seiner to monitor the catches of target and by-catch species in 2005.

[1]Original report in English.

[2]National Fisheries Research and Development Institute (NFRDI), Busan, Korea, National Fisheries Research and Development Institute, Busan, Korea. E-mail: jrkoh@nfrdi.re.kr.

2.2 Data reporting system

The NFRDI has established a new database system for easy 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, the possibility of minor correction in Korean fishery statistics in the future is not excluded.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

To implement the recommendations adopted by ICCAT, Korea has introduced the minimum size limit for bigeye, yellowfin, bluefin tuna and swordfish in its domestic regulations. 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, 1985-2004.

Year	*No. of Vessels*	*BFT*	*YFT*	*ALB*	*BET*	*SBF*	*SKJ*	*SWO*	*BUM*	*WHM*	*SAI*	*Others*	*Total*
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
2002		-	7.8	-	87.3	-	-	1.5	-	-	-	-	97
2003	※3	-	209	5	143	-	-	24	-	11	-	10	402
2004	13	700	984	37	629	-	-	70	-	40	-	147	2,607

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

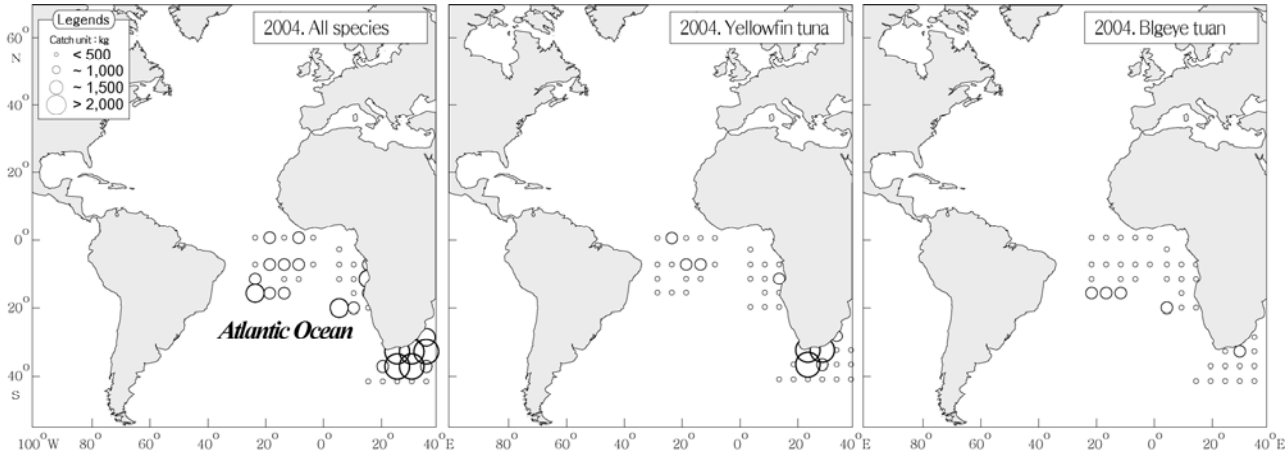

Figure 1. Catch distribution of Atlantic tuna and tuna-like species by the Korean longline fishery in 2004.

ANNUAL REPORT OF LIBYA[1]

Part I (Information on fisheries, research and statistics)

Bluefin tuna (*Thunnus thynnus*) fishing constitutes an important component of the total large pelagic fishing activities in Libya, and are part of an old Libyan tradition since the beginning of the last century during late spring and early summer each year. It is believed that this species and other related species migrate to the Mediterranean from the Atlantic Ocean through the straight of Gibraltar during the spawning season. The migration route usually takes place partially along the North African coast where it reaches Libyan waters. Most of the fish are large in size, mature, and ready for spawning. Taking this opportunity, the fish are caught by several methods namely, fixed trap nets, longline and purse seining.

Section 1: Annual Fisheries Information

In 2004, bluefin tuna fishing was carried out by the following methods:

1.1 Fixed trap nets

Only two trap nets were in operation during 2004.

1.1.1 Zreg tuna trap

As indicated in previous reports, this trap is situated in the western part of the Libyan coast, about 200 km east of Tripoli around the coast of Musrata between 32º26'10"N and 14º54'20"E. Fishing takes place at depths of 36 meters, and the bottom quality is a mixture of sand and rock. Fishing starts with a leader net 3200 meters from the coast. The total body length of the net is 475 meters.

In 2004, the number of fish caught was about 400 fish and the total weight was 26,600 kg.

1.1.2 Gazera tuna trap

This trap net is situated about 5 km east of the Zreg tuna trap, between 32º20'N, and 15º09'E. Usually the net is assembled at a water depth of 40 meters, where the bottom quality of the area is a mixture of sand and rock, similar to the Zreg tuna trap. The leader net length is 3200 meters from the coast, while the length of the body net is 480 meters. As occurred in 2003, the net was damaged by a fishing vessel in the year 2004. The total bluefin tuna caught was only 81 fish (total weight 7,243 kg) during the season. All the fish caught from both traps were exported.

1.2 Longline

In 2004, a total of six longliners were used to catch bluefin tuna. These vessels pertain to six Libyan fishing companies. The total catch amounted to 393,333 kg of bluefin tuna, 2,439 kg of swordfish, 935 kg of dog fish and 325 kg of other fish (except for bluefin tuna, all the other species were not targeted fish).

1.3 Purse seine

A total of ten purse seiners were in operation in 2004, five of which pertain to a Libyan-Tunisian fishing company. The total catch was 2,091,824 kg of bluefin tuna, most of which were transferred alive to fish farms in several counters (such as Turkey, Malta, Spain, etc.). Several vessels from different nations took part in transferring the bluefin tuna cages to the final destination.

[1] Original report in English.

Section 2: Research and Statistics

Biological studies were carried out on a total of 372 bluefin tuna for fork length, total weight, and sex determination. Fork lengths ranged between 106 to 233 cm while sizes ranged between 23 to 200 kg. Females constitute more than 66% of the total population. Furthermore, two scientific observers on board longliners also collected similar information. All the data will be published in the scientific journal of the marine biology research center.

2.1 Tuna farming

Although there are more than three sites dedicated to tuna fattening, the scientific information available was reported in the national report survey form on the current bluefin tuna farming facilities in the Mediterranean during the GFCM/ICCAT *Ad Hoc* Working Group on Sustainable Tuna Farming/Fattening Practices in the Mediterranean (Rome, Italy, March 16-18, 2005).

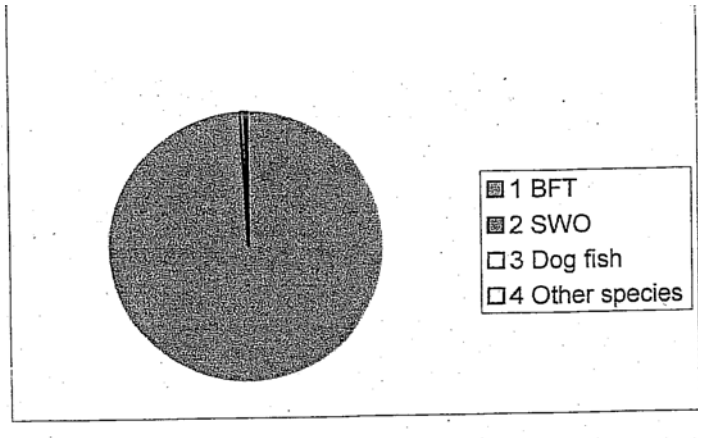

Figure 1. Distribution of longline catch, by species, for 2004.

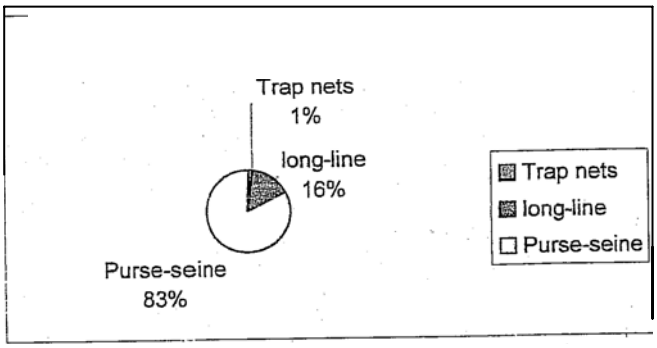

Figure 2. Distribution of bluefin tuna catches, by gear, for 2004.

ANNUAL REPORT OF MEXICO[1]

Part I (Information on fisheries, research and statistics)

In 2004, and in compliance with the provisions established by ICCAT, Mexico's efforts were orientated towards determining, on scientific bases, the levels of fishing effort, updating and adapting current regulations, strengthening institutional capacity, and improving statistical information.

Section 1: Annual Fishery Information

The Mexican tuna fishery in the Gulf of Mexico is carried out throughout the year by a fleet of medium-sized longliners (measuring between 20 and 26 feet) with a carriage capacity of 15 t and a maximum autonomy of 30 days. The fishing effort of this fleet is directed at yellowfin tuna (YFT) *(Thunnus albacares).* However, there was a reduced incidental catch of highly migratory species such as other tunas, billfish, and sharks, among others.

In 2004, there were 32 active vessels which carried out a total of 408 fishing trips, reporting a catch of 33,684 yellowfin tunas, equivalent to 1,207 t. This catch, in weight, represents 75% of the total catch by Mexico in the Gulf of Mexico. The largest catch of this species was obtained in June and July, with 23% of the total number of individuals caught.

Besides catching yellowfin tuna as the target species in the Gulf of Mexico, by-catch or incidental catches are also obtained. However the most important species, for their market value are: bluefin tuna *(Thunnus thynnus)*, whose catches decreased to 9 t (38 fish), which represented 0.7% of the total catch of tunas. The highest number of bluefin tuna caught incidentally in this fishery was reported in the first three months of the year.

Other tuna species caught incidentally were: bigeye tuna *(Thunnus obesus)* with 4 t (0.3% of the tuna catch), skipjack tuna *(Katsuwonus pelamis)*, with 9 t (0.7% of the tuna catch), blackfin tuna *(Thunnus atlanticus)* with 8 t (0.7% of the tuna catch).

In the Mexican longline fishery targeting yellowfin tuna in the Gulf of Mexico, an incidental catch is also observed of highly migratory species, such as billfish and similar species of Istiophoridae and Xiphidae, pertaining to four genuses: Istiophorus, Makaira, Tetrapturus and Xiphias. Swordfish *(Xiphias gladius)* is a species that is present in the incidental catch of this fishery. In 2004, there were a total of 1,112 individuals caught, which overall represented 43 t of the catch. This species was present during practically the entire year, although a higher catch was observed in September and November. Another species of importance in the incidental catch was sailfish *(Istiophorus albicans)* with 2,731 fish, or about 51 t. Incidental catches of this species are higher in May and June. Other species caught incidentally were Atlantic blue marlin *(Makaira nigricans)* with 2,273 individuals and Atlantic white marlin *(Tetrapturus albidus)* with 1,561 individuals caught.

With regard to by-catches of sharks in the Gulf of Mexico, these pertain mainly to the Carcharhinus genus, of which the most important are: Carcharhinidae, Sphyrnidae, Alopiidae and Lamnidae. There was a total reported catch of 48 oceanic whitetip sharks *(Carcharhinus longimanus)*, 220 blacktip sharks *(Carcharhinus limbatus)*, and 77 shortfin mako sharks *(Isurus oxyrhinchus).*

The artisanal fishery for small tuna species along the coasts of the Gulf of Mexico and the Caribbean Sea is carried out from small boats (launches) with outboard motors. These boats fish close to the coast at depths ranging from 1 to 12 fathoms. Of these species, the most noteworthy were Atlantic Spanish mackerel *(Scomberomorus maculatus)* with 4,564 t, king mackerel *(Scomberomorus cavalla)* with 3,641 t and Atlantic bonito *(Sarda sarda)* with 1,065 t reported in 2004.

Section 2: Research and Statistics

With regard to statistics, work related to the *Sistema de Información de Atún*, SIA (Tuna Information System) in the Gulf of Mexico has continued, aimed at complying in timeliness and format with the statistical requirements of ICCAT for the conservation and management of yellowfin tuna (*Thunnuns albacares*) and by-catches. On the

[1] Original report in Spanish.

other hand, information on small tunas was collected, compiled, and verified with the aim of updating the database (1993-2004).

The data used for this report is provided by the PNAAPD, through its observer program in the Gulf of Mexico from the reports of trips carried out (statistics on catch, size, fishing effort and environmental conditions, among others). In 2004, there was 100% coverage of the fishing trips were covered, in accordance with the *Norma Oficial Mexicana* NOM-023-PESC-1993 (Official Mexican Law) that regulates tuna longline fishing in the Gulf of Mexico. **Table 1** gives the longline catch statistics on yellowfin tuna (*Thunnus albacares*) and sampling coverage in the last 10 years in the Gulf of Mexico.

Regarding the configuration of the database, work continued in 2004 on the relational database model known as the *Sistema de Información de Atún*, SIA (Tuna Information System) in the Gulf of Mexico. Its objective is the administration and management of data, which includes the storage and management of information from the fishery that is collected by various sources such as the Observer Program and the Official Fishing Logbooks.

In 2004, meetings were held with the participation of the INP and PNAAPD, the academic sector and the industrial sector to coordinate the activities related to the collection, correction, administration, processing and analysis of data obtained by the on-board observers.

Currently, the INP is carrying out research to assess the effect of longline fishing operations on stock structure and the abundance of highly migratory pelagic species in the Gulf of Mexico, through the compilation of information on the volume of catch and the species composition, the technical characteristics of the vessels and the fishing gear used, as well as the assessment of the effect of the use of different types of hooks on non-target species and the analysis of time and area variations of accompaniment fauna associated with the yellowfin tuna (*T. albacares*) longline fishery in the Gulf of Mexico.

As regards to the On-board Observer Program, the total coverage of longline trips in the Gulf of Mexico continued, aimed at collecting information regarding fishing maneuvers. The training and updating of on-board observers has been carried out by staff of the *Programa Nacional de Aprovechamiento del Atún y Protección al Delfín,* PNAAPD (National Program of Tuna Use and Dolphin Protection) and the *Instituto Nacional de Pesca,* INP (National Fisheries Institute). Joint meetings were held with the academic and industrial sectors to strengthen commitments at the national and international level.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

Likewise, inspection and monitoring activities in the Atlantic and Gulf of Mexico have been strengthened, as regards both the fishing and aquiculture resources, with priority on the adoption of measures aimed at discouraging and fighting illegal fishing activities with emphasis on the establishment of vessel monitoring systems (VMS).

In 2004, the matters of interest to Mexico in the framework of the Commission were the establishment of clear and transparent regulations for the transfer of quotas, the full implementation of the allocation criteria for fishing possibilities, activities aimed at combating illegal, unreported and unregulated fishing and their fair implementation and, as a last resort and non discriminatory trade sanctions, as well as the implementation of conservation and management measures based on the best scientific evidence.

[Rec. 96-14] *Recommendation by ICCAT Regarding Compliance in the Bluefin Tuna and North Atlantic Swordfish Fisheries.*

This Recommendation regulates the catch limits of these species. It should be noted that since 2002 Mexico has an allocation quota of 25 t of bluefin tuna and 110 t of swordfish. In 2004, 9 t of bluefin and 44 t of swordfish were caught, thus complying with that established in the Recommendation as these amounts are less than the allocated quota. The catch of these two species is incidental.

[Rec. 97-01] *Recommendation by ICCAT to Improve Compliance with Minimum Size Regulations* and
[Rec. 98-07] *Recommendation by ICCAT to Establish a Rebuilding Program for Western Atlantic Bluefin Tuna.*

In compliance with these Recommendations, Mexican law establishes that incidental catches of bluefin tuna (*Thunnus thynnus*) can only be retained if the individuals weigh at least 30 kg or have a fork length of 115 cm. Likewise, it establishes that fish weighing or measuring less than that established must be released in good condition for survival. Furthermore, Mexico makes efforts to attain the recovery of the species, avoiding catches directed at the spawning bluefin tuna stocks in the Atlantic in spawning areas in the Gulf of Mexico.

[Rec. 99-07] *Resolution by ICCAT on Improving Recreational Fishery Statistics.*

Sport fishing is carried out at approximately 44 ports in both Mexican coasts (Pacific and Atlantic), as well as in 50 inland reservoirs. In all of these, sport fishing is directed especially at 99 fish species, of which 80 are billfish and 19 sweet water species.

On the basis of the provisions of the Fishing Law and according to the research studies of the INP, as well as FAO reports, these "highly migratory" species that are present in Mexican coasts and which are reserved for sport fishing are comprised of nine species: six pertain to billfish species: Atlantic blue marlin (*Makaira mazara*), striped marlin (*Tetrapturus audax*) black marlin (*M. indica*), shortbill spearfish *(T. angustirostris)*, sailfish (*Istiophorus albicans*) and swordfish (*Xiphias gladius*), as well as three other species: dolphin fish (*Coryphaena* spp.), tarpon (*Megalops atlanticus*) and hogfish (*Lachnolaimus maximus*).

The distribution of catches of species reserved for sport fishing activities indicates that the Pacific Ocean provides nearly 80% of the total. In the Gulf of Mexico and Mexican Caribbean, tarpons are the most abundant all along the coast (40% of the total), billfish species in the southern area of the Gulf of Mexico and Mexican Caribbean (40%) and dolphin fish in the north region of the Gulf of Mexico (20% of the total). It is important to note that as part of the actions in the Action Plan for the Development of Sport Fishing, efforts are being made to generate a complete database based on direct sources.

There are 15,167 sport fishing vessels in Mexico, of which 90% is dedicated exclusively to this activity: 60% privately (private service) and 20% commercially. In marginal proportions, vessel activities also account for trade fishing (5%) and the transport of passengers (3%). Only 7% of the total number of these vessels is dedicated to this activity as a secondary activity (other types of vessels that also carry out sport fishing). 50% of the total sport fishing fleet is located in the Pacific coast, and the remainder is divided in proportional parts between the Gulf-Caribbean coast and coast-less areas. More than 85% of the vessels belong to national sport fishers.

Sport fishing in Mexico is generally regulated by the Fishing Law and its Regulation. Likewise, the Official Mexican Law NOM-017-PESC-1994, which regulates recreational sport fishing activities in the maritime waters of the Federal Jurisdiction of the Unites States of Mexico. The aim of this regulation is to establish the terms and conditions for the adequate utilization and conservation of the aquatic fauna species by means of recreational sport fishing activities. The object species of the regulation are billfish, dolphin fish, hogfish and tarpon, which are exclusively destined for this activity within a coastal range of 50 nautical miles, counted from the base line from which the Territorial Sea is measured.

The regulation establishes a maximum catch limit of 10 fish per fisher, with the following species composition:

- No more than five individuals of the same species;
- As regards to billfish, sailfish, swordfish and sharks, the maximum fish limit per fisher and day will be one fish only of these species, which will be equivalent to five fish of other species;
- In the case of tarpon, dolphin fish or hogfish, the maximum limit will be two fish of any of these species, which will also be equivalent to five fish of other species.

Recreational sport fishing is subject to minimum sizes and weights of catches by species and area, established by the competent authority and based on the scientific research that is carried out.

As part of the actions to monitor compliance of this regulation, the service providers must have the corresponding permit on board and show it to the competent authorities whenever request, as well as the logbook

and provide any data requested, allow and facilitate the personnel accredited by the competent authorities to carry out inspections as well as allow the observer designated by the competent authority on board the vessel.

[Res. 01-20] *Resolution by ICCAT Concerning a Management Standard for the Large-scale Tuna Longline Fishery.*

As regards the measures taken to ensure that Mexican vessels do not support or carry out illegal, unregulated and unreported (IUU) fishing in national waters, and in order to monitor larger and coastal fishing vessels, the Fishing Law established a National Fishing Registry that must be provided, including contractors, official agents, and persons authorized to carry out fishing activities. Likewise, in order to carry out activities regarding catch, extraction and cultivation of the resources, permits and the corresponding authorizations are required, as established in the Fishing Law.

For the purpose of verifying the legal origin of the fishing products, notifications of arrival[2], harvest, production or collection must be verified; or, if warranted, accompanied by the invoice or written evidence of donation or award. Considering that these are species caught in sport-recreational fishing, the legal source is authorized with the corresponding permit.

In order to guarantee the adequate compliance of this regulation and legal provisions in force, an Inspection and Monitoring Program has been established with the aim of monitoring that all the phases of the productive chain up to consumption are carried out legally.

To strengthen these activities, 100% of longline tuna fishing trips in the Gulf of Mexico had an observer on board. Scientific observers on board the Mexican fleet continued to be the source of direct information, which supports the quality of the data regarding tuna catches and other species caught incidentally, which were then transmitted to ICCAT in Task I and Task II format.

Those interested in obtaining an authorization to fish on the high seas or in foreign jurisdictional waters, with vessels with Mexican registry and flag, must comply with the requirements and obligations such as: accrediting with the Secretariat (competent authority) the use of the vessels, fishing gear, technical and economic capacity, as well as the persons authorized to make catches, exclusively use vessels flying a Mexican flag or registered in the Flagging Program, pursuant to the Law on Navigation, and respect and strictly comply with the international provisions concerning navigation and fishing, in particular those established by the foreign governments in waters under their jurisdiction.

Furthermore, it has been established that those authorized to fish on the high seas or in foreign jurisdictional waters, with vessels with Mexican flag and registry, are required to present the corresponding notifications of arrival.

These overall instruments serve to verify the legal conditions to access the resource, to monitor fishing activities and to regulate the techniques, methods and gear used for fishing, in order to increase their selectivity and reduce their impact on associated species (i.e., to reduce the incidental catch of non-commercial and non-target species).

In order to carry out complete and efficient monitoring, control and surveillance of fishing from its start to its final destination, as mentioned above, work has been initiated to develop a Fishing Manual. This document will be required for the transport of fishing products between coastal States and from any of these to the interior of the country and is an auxiliary tool for the activities to combat furtive fishing and the illegal movement of fishing products, which undermine the conservation and sustainable use of natural resources.

Section 4: Inspection Schemes and Activities

In 2004, inspection and surveillance activities have been orientated towards the strengthening and participation of the personnel of Fishery sub-delegations of the Secretariat of Agriculture, Stockbreeding, Rural Development, Fisheries and Food (*Secretaria de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación, SAGARPA*), in the different entities of the Republic of Mexico. For this purpose the Commission of Aquaculture and Fisheries of SAGARPA, through the General Directorate of Inspection and Surveillance has trained 210 Federal Fishing Officers distributed in a strategic way throughout the Republic of Mexico. Of these, 28% are assigned to carry out work on the Gulf of Mexico coast and the Mexican Caribbean. In addition, there are other activities by

[2]According to Article 35 of the Fishing Law, "the notification of arrival is the document in which the amount of catch obtained, by species, during a fishing day or fishing trip is reported to the competent authority."

the Maritime Secretariat to carry out technical work and oversee safety work on the vessels fishing in the Atlantic Ocean.

[Rec. 03-14] *Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area.*

In addition, as part of the actions to combat, eliminate and halt illegal, unregulated and unreported (IUU) fishing in 2004, an evaluation of the registry of fishing vessels, among them the tuna fleet in the Gulf of Mexico and the Caribbean Sea. Action was also taken to install satellite devices on tuna vessels, on the East coast of the Mexican Republic. As concerns the Atlantic, 100% installation of a vessel monitoring system (VMS) is contemplated for the tuna fleet in 2005.

Section 5: Other Activities

No other activities were reported.

Table 1. Total catch (t) and sampling coverage for longline fishing of yellowfin tuna (*Thunnus albacares*) in the Gulf of Mexico.

	1995	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Total catch	1,126	771	826	788	1,283	1,390	1,084	1,133	1,362	1,207
Sampling rate of fishing activities	100%	100%	NA	100%	100%	100%	100%	100%	100%	100%
No. of fish sampled	27,504	8,097	5,040	8,074	NA	24,266	22,693	32,461	36,875	33,684

NA: Data not available.

ANNUAL REPORT OF MOROCCO[1]

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

Part I (Information on fisheries, research and statistics)

Fishing for tunas and tuna-like species continues to be an important component of the marine fishing sector, taking into account Morocco's geographic and climatic characteristics, which make it an area where large pelagic species must pass on their migrations between the Atlantic and Mediterranean.

Section 1: Annual Fisheries Information

1.1 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 ranging in size from 30 to 250 kg for the major tunas and smaller sizes for the minor tunas.

Swordfish continue to be landed at the Mediterranean ports, in particular, at the maritime district of Tangier. In recent years, the southern ports of Morocco, notably Dakhla, have seen the important quantities of swordfish landed increase markedly.

As concerns bluefin tuna, the traps continue being the major gears to catch this species since these target large-size fish.

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

1.2 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 are also caught in the Atlantic.

The major swordfish fishing areas are located in the Mediterranean.

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

1.3 Fishing methods

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

1.3.1 Trap

This gear mainly targets bluefin tuna and small tunas. In 2004, 11 traps were set in national waters, one of them in the Mediterranean. The active period of the traps is between the months of April and July.

1.3.2 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).

[1] Original report in French.

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

[3] Institut National de Recherche Halieutique (Centre de Tanger).

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

1.3.3 Purse seine

This fishing technique is utilized by about 300 purse seiners that only fish tunas occasionally and as by-catch. This activity is mostly carried out 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.

1.3.4 Driftnet

From time to time, coastal vessels of the "longline" and "coastal longline" type fish with this gear. However, it should be noted that about 70% of these vessels are based at Tangier 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).

With the entry into force of new measures taken within the framework of a national Action Pan aimed at the progressive and gradual eradication of this fishing gear, there has been some involvement and availability of representatives from the profession to work in this sense.

1.4 Catches

The national fishing statistics on tunas and tuna-like species are shown in **Tables 1 to 5**. **Table 6** shows the development of the catches of squalids and sharks.

In 2004, the catches of tunas and tuna-like species amounted to 10,947,000 kg (10,947 t).

This increase, as compared to 2003, is essentially due to the increase in the catches of small tunas.

1.4.1 Bluefin tuna fishing

In 2004, bluefin tuna catches reached 2,780 t.

The catches in the Mediterranean amounted to 816 t, which is about 29% of the total catch of this species.

Hand line fishing this year, carried out mainly in the Mediterranean, contributed about 597 t this year, which represents 21% of the total catches of bluefin tuna.

The traps (11 active in the Atlantic in 2004) contributed approximately 39% 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).

Purse seine fishing contributed about 30% of the total catches in the Atlantic while this was 20% last, and 8% in the Mediterranean

1.4.2 Swordfish fishing

In 2004, swordfish catches were 3,588 t, as compared to 3,659 t in 2003.

Swordfish catches are broken down as follows:
- Atlantic: 335 t; and
- Mediterranean: 3,253 t

The catches made in the Mediterranean constitute the major part of the total swordfish catches by Morocco during the course of this year. The use of driftnets in this region contributed about 36% of the total production whereas this was 63% and 47% of this production in 2002 and 2003, respectively. This indicates that the fishers have already started to adhere to the national Action Plan aimed at eliminating the use of this gear in national waters in a gradual and progressive manner over time.

Longline fishing contributed about 62% of the total swordfish catches of which 1,954 t were caught in the Mediterranean and 255 t in the Atlantic.

1.4.3 Bigeye tuna fishing

This year, bigeye tuna fishing showed a slight increase in catches of about 4% as compared to 2003, from 889 t to 929 t.

This species is caught mainly by the coastal fleet vessels and the artisanal fleet vessels fishing in the Atlantic in the Moroccan EEZ. This catch is generally destined for the domestic market with some occasional export operations to European markets.

1.4.4 Small tuna fishing

In 2004, the catches of small tunas amounted to 3,346t.

The catch of frigate tuna generally made by the coastal fishing fleet increased about 48%, as compared to the 2003 level.

Atlantic bonito catches also showed a slight increase.

Numerous catches of small tunas were also taken by small longliners of the artisanal fleet and the vessels have improved their fishing methods and techniques.

The catches of these species, by gear and by area, are summarized in **Table 4**.

Section 2: Research and Statistics

In 2004, the *Institut National de Recherche Halieutique* (National Institute of Fishing Research), through its Regional Center in Tangier and that in Nador, monitored the fishing activities and carried out a study on the biology and exploitation of tunas. These studies concerned, in particular, the biological aspects of swordfish and bluefin tuna (indices of abundance, estimate of fishing effort, population study, etc.).

Further, in the framework of the Action Plan for the progressive eradication of driftnets, scientific teams contributed, in particular, to the collection of scientific data on the swordfish fisheries from the area of the Strait.

In this respect, and to improve knowledge on the fishing areas of the two stocks of swordfish, in the area between the North Atlantic and the Mediterranean, the *Direction des Pêches Maritimes et de l'Aquaculture* (Directorate of Maritime Fishing and Aquaculture) envisages conducting a joint study whose objectives have been established as follows:

- Contribute to knowledge on the swordfish fishing areas in the region;
- Improve knowledge on the fleet and the precise identification of fishing effort; and
- Direct the observation of fishing operations, monitoring of the sizes of the catches and the landing operations.

This study will also review the state of the active fishing fleet in this segment, identify the different fishing sites for a better understanding of the socio-economic aspects linked to this activity as well as all the aspects linked to the swordfish fishing gears in the Atlantic and those that operate in the Mediterranean.

Furthermore, the results of this study should be presented to the ICCAT scientific community at the 2006 Meeting of the SCRS provided that all the conditions necessary for the study are met, particularly the human and material means.

In effect, the implementation of action plans aimed at eradicating the use of driftnet, such as are included in the planning schedule, must mobilize sufficient and consistent human and material means. Thus, this Department should envisage the request for collaboration for the study from parties concerned with swordfish fishing in the area, since the benefit of the results will serve to obtain a clearer vision on the future management perspectives of this species.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

3.1 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 supplements the decree of October 3, 1988, which establishes the minimum market size of species fished in Moroccan waters.

3.2 Limit on fishing effort

In application of Circular No. 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.

Section 4: Inspection Schemes and Activities

4.1 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 consists of 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), the inspection of fishing activities (logbooks, legality of the fishing activity with regard to the fishing period and 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:

4.1.1 At-sea monitoring

This is carried out by the maritime control authorities and by the teams 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 and regulations in force.

With regard to the traps, it should be noted that a scientific observer is constantly present, whose task is to monitor the sizes, species and catch amounts, and the collection of 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.

4.1.2 Land-based monitoring

This is carried out by delegates from the Ministry of Maritime Fishing, officers from the National Office of Fishing and by representatives of the team 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 verified by the authorities that monitor highway traffic, and sales records.

In addition to these procedures, the Department of Maritime fishing has in place, since June 2004, a practical scheme to determine the origin of the swordfish caught in the North Atlantic and in the Mediterranean.

This scheme, entitled the "Scheme to Monitor and Identify the Origin of the Catches of Swordfish in the Catches by the Moroccan Fleet" will result in improved refining of the catch data on this species, particularly catches by the vessels carrying out fishing in Moroccan zones, and on the location of the catches.

In the case of this scheme, it is not meant to revise the current monitoring scheme on swordfish fishing activities, which is carried out in an efficient manner, but to expand it by methods that will mainly result in determining the exact origin of the swordfish catch.

These measures are also integrated within the framework of the application of the provisions of the national Action Plan to the abandonment of driftnets and the reconverting of the fleets that use them.

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

Within the framework of rational management of the fishing resources and with an aim towards assuring better monitoring of the fleet activity over a wide 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 have been implemented to complete the electronic systems already in place by the authorities in charge of monitoring fishing activities.

Thus, these measures are included in the national Action Plan to prevent, combat and eliminate illegal, unreported and unregulated fishing which the Ministry of Maritime fishing has developed during the course of this year.

Finally, it should be noted that the Ministry of Maritime Fishing is responsible for and coordinates these activities at the National Monitoring Center for Fisheries.

Section 5: Other Activities

5.1 Trade data

With regard to exports, crosschecking is carried out in collaboration with the services of the Office of Exchange and the Customs Administration, the State organism in charge of enacting the measures related to the regulation of these exchange operations by authorizing, in a general or particular manner, the transfers to foreign destinations and in overseeing necessarily transferable resources (acceptances of export of goods and services), which are under the Ministry of Economy and Finance, to verify the amounts declared for export and crosschecking with the amount of currency repatriated.

All these procedures have been implemented to reinforce further the provisions of monitoring of the trade operations of the tuna species.

Table 1. Statistics on tuna catches in 2004 (in t).

Species	*Total*
Yellowfin tuna (YFT)	95
Albacore (ALB)	120
Bigeye tuna (BET)	929
Bluefin tuna (BFT)	2,780
Atlantic black skipjack (LTA)	92
Skipjack tuna (SKJ)	809
Atlantic bonito (BON)	1,067
Frigate tuna (FRI)	868
Plain bonito (BOP)	510
Swordfish (SWO)	3,588
Others	89
Total	**10,947**

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

Species	*Atlantic*	*Mediterranean*	*Atl. + Med*
Bluefin tuna	1,961,000	819,000	2,780,000
Bigeye tuna	929,000	0	929,000
Swordfish	335,000	3,253,000	3,588,000
Albacore	120,000	0	120,000
Yellowfin tuna	95,000	0	195,000
Small tunas	2,932,000	414,000	3,346,000
Others	55,000	34,000	89,000
Total	**6,427,000**	**4,520,000**	**10,947,000**

Table 3. State of bluefin tuna (BFT) catches, by area and by gear, for the 1995-2004 period (in metric tons, t).

BFT	*Gear*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Atl	Trap	210	699	1,240	1,615	852	1,540	2,330	1,670	1,305	1,098
Atl	PS	458	323	828	692	709	660	150	884	490	855
Atl	LL	0	0	0	0	0	0	0	0	02	8
Atl	Gill	10	13	0	34	30	28	17	11	00	0
Med	Hand	816	541	455	634	600	650	195	407	570	597
Med	Gill	92	30	17	18	6	6	9	14	20	0
Med	PS	0	0	0	0	0	0	0	0	170	222
Med	LL	0	0	0	0	0	0	0	0	0	0
Med	Trap	127	15	63	35	30	39	307	0	0	0
Tot-Atl		678	1,035	2,068	2,341	1,591	2,228	2,497	2,565	1,797	1,961
Tot-Med		1,035	586	535	687	636	695	511	421	760	819
Total		**1,713**	**1,621**	**2,603**	**3,028**	**2,825**	**2,923**	**3,008**	**2,986**	**2,557**	**2,780**

Table 4. Swordfish (SWO) catches, by area and by gear, for the period 1995-2004.

SWO	*Gear*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Atl	Trap	12	7	5	2	13	3	7	4	7	3
Atl	PS	7	98	10	10	11	22	9	1	1	1
Atl	Gill	32	322	13	179	60	51	243	64	98	76
Atl	LL	28	35	239	0	35	38	264	154	223	255
Med	LL	169	273	245	323	259	205	754	1,149	1,670	1,954
Med	Gill	1,518	2,461	4,653	2,905	2,979	2,503	2,266	2,230	1,629	1,299
Med	PS	0	0	0	0	0	0	4	0	0	0
Med	Hand	0	0	0	0	0	0	0	0	0	0
Med	Trap	9	0	2	0	0	0	2	0	1	0
Tot-Atl		79	462	267	191	119	114	523	223	329	335
Tot-Med		1,696	2,734	4,900	3,228	3,238	2,708	3,026	3,379	3,300	3,253
Total		**1,775**	**3,196**	**5,167**	**3,419**	**3,357**	**2,822**	**3,550**	**3,602**	**3,629**	**3,588**

Table 5. Catch statistics on small tunas, by gear, in 2004 (in t).

Species		*Atl. black skipjack (LTA)*	*Atlantic bonito (BON)*	*Skipjack (SKJ)*	*Frigate tuna (FRI)*	*Plain bonito (BOP)*	*Total*
Atl	Trap	0	6	2	147	0	155
Atl	Hand	0	0	14	5	2	21
Atl	Gill	1	47	82	90	0	220
Atl	LL	0	0	269	102	201	572
Atl	PS	90	936	440	198	300	1,964
Med	Trap	0	0	0	0	0	0
Med	Hand	0	0	0	78	2	80
Med	Gill	0	0	0	96	4	100
Med	LL	0	0	0	97	0	97
Med	PS	1	78	2	55	1	137
Tot.Atl.		91	989	807	542	503	2,932
Tot.Med.		1	78	2	326	7	414
Total		**92**	**1,067**	**809**	**868**	**510**	**3,346**

Table 6. Development of the catches (in t) of squalids and sharks for the 1995-2004 period (preliminary data).

Years	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Catches	1,636	2,866	1,256	2,245	2,130	3,460	2,200	2,161	2,923	2,996

NOTE: It should be noted that the following species populate Moroccan waters:

Heptranchias perlo, Hexanchus griseus, Centrophorus granulosus, Centrophorus squamosus, Centrophorus uyato, Centroscymnus coelolepis, Centroscymnus crepidater, Dalatias licha, Deania calcea, Etmopterus spinax, Scymnodon ringens, Squalus acanthias, Squalus blainvillei, Squatina aculeata, Squatina squatina, Squatina oculata, Eugomphodus taurus, Odontaspis ferox, Alopias vulpinus, Cetorhinus maximus, Carcharodon carcharias, Isurus oxyrinchus, Lamna nasus, Galeus melastomus, Scyliorhinus canicula, Scyliorhinus stellaris, Galeorhinus galeus, Mustelus asterias, Mustelus mustelus, Carcharhinus leucas, Carcharhinus longimanus, Carcharhinus obscurus, Prionace glauca, Sphyrna lewini, Sphyrna mokarran, Sphyrna zygaena.

ANNUAL REPORT OF THE PHILIPPINES[1]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

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, about 250,000 t of tuna or about 10% of the western and central Pacific tuna catch has been attributed to the domestic fisheries of the Philippines.

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

The tuna fisheries are divided into two sectors, the municipal and commercial sectors. The municipal fisheries involve vessels less that 3 GRT and the commercial sector, with vessels more that 3 GRT and are prohibited to fish in municipal waters 15 kilometers from the shoreline. The commercial sector provides the majority of the catch of oceanic tunas (201,550 t in 2003, or 70% of the official tuna catch). The municipal sector takes similar quantities of oceanic and neritic tunas using handline as the predominant gear.

Since the mid 1980s larger purse seine vessels operated by Philippine companies have fished in neighboring countries under access, joint venture agreements or at local companies, with most of their catch being landed in Philippine ports for processing. With the passage of the Philippine Fisheries Code in 1998 providing for incentives for Philippine fishing vessel operators to fish further in the Philippine EEZ and beyond have encouraged them to venture in other oceans, such as the Atlantic and Indian Oceans, not to mention the western and central Pacific Ocean. A number of fishing companies taking advantage of the incentives provided acquired several longline fishing vessels through outright purchase or through lease purchase agreements.

Section 2: Research and Statistics

The Bureau of Agricultural Statistics (BAS) 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. These data are all reported to ICCAT and IOTC, respectively.

In 2004, the catches of tunas and tuna-like species in the Atlantic by the Philippine longline vessels totaled 2,226.5 tons.

Last year, the following species were caught: bigeye (1,854 t), yellowfin (367 t) and swordfish (5.5 t).

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

As a new member of the Commission (2004), the Philippines continue to implement relevant ICCAT conservation and management measures as well as Philippine fisheries laws and regulations. Philippine fishing vessels before they are allowed to fish in Philippine waters are required to secure a Commercial Fishing Vessel and Gear License (CFVGL). If they want to fish outside Philippine waters they are also required to secure an International Fishing Permit and Certificate from the Philippine Bureau of Fisheries and Aquatic Resources (BFAR). They are also required to keep a daily record of fish catch and spoilage, landing points, and gear, species, quantity and value of fish caught, and those off-loaded for transshipment, sale and/or other disposal. The report is submitted to BFAR for record and validation. Failure to submit this requirement is a ground for non-renewal of the CFVGL and International Fishing Permit.

[1] Original report in English.

Tuna Statistical Document Programs

Since July 2002, the Philippines have implemented the ICCAT Tuna Statistical Document Program for bluefin, bigeye and swordfish. For your information, the Philippines are also submitting to IOTC and CCSBT the same statistical documents.

Section 4: Inspection Schemes and Activities

The Fisheries Code also provide the establishment of a monitoring, control and surveillance system to ensure that the fisheries and aquatic resources in Philippine waters and adjacent waters and also in the Oceans where our fishing vessels are operating are judiciously and wisely utilized and managed on a sustainable basis. The Philippines just entered into a Memorandum of Agreement with Bluefinger to provide the required vessels monitoring system for the Philippines. It is hoped that this will be set-up in the near future.

The Philippine National Tuna Industry Council (NTIC), a council created by the Department of Agriculture composed of Government and Private sector as a forum to discuss issues and concerns of the tuna industry, approved the Philippine Tuna Management Plan in July 2005. The management options provided for in the Plan are, among others: control of fishing capacity, control of catch of immature fish through regulation of net mesh size, limitation of Fish Aggregating Devices (FADs) by putting a ceiling on the number, etc.

Section 5: Other Activities

Fisheries information of Philippine vessels in the Atlantic Ocean

In 2004 there were 18 Philippine flagged fishing vessels authorized to fish in the ICCAT Convention area (the list of vessels has already been provided ICCAT). However, at the 2004 meeting of ICCAT in New Orleans the Philippines was authorized for eight vessels to fish in the area in any given year.

ANNUAL REPORT OF RUSSIA[1]

Part I (Information on fisheries, research and statistics)

In Russia, work relevant to research on tunas and tuna-like species is carried out by the Atlantic 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 to tuna-catch vessels operation. Statistical data of this report are presented on the calendar year basis.

Section 1: Annual Fishery Information

No specialized purse tuna fishery was carried out in 2004 or in the first half of 2005 due to repairs and modernization of purse seiners.

The trawl fishing fleet caught, as by-catch, 158 t of tunas (102 t of bullet tuna, *Auxis rochei*, 56 t of frigate tuna, *Auxis thazard*), including 156 t in the central eastern Atlantic and 2 t in the southwestern Atlantic Ocean. The catch of Atlantic bonito (*Sarda sarda)* in the central eastern Atlantic amounted to 16 t. The tuna by-catch in 2004 was comparable to the level of 2003 (160 t and 191 t, respectively). The by-catch of Atlantic bonito decreased from 461 t in 2003 to 16 t in 2004.

During the first half of 2005 the vessels of the trawling fishery caught 112 t of tunas (79 t of bullet tuna, 33 t of frigate tuna) and 0.3 t of Atlantic bonito in the central eastern Atlantic.

In January-March 2005, experimental work was carried out on the longline fishing vessel “Askele” in the equatorial Atlantic Ocean. According to the preliminary data, the tuna catch was 2.3 t (1.7 t of yellowfin tuna, *Thunnus albacares* and 0.6 t of bigeye tuna, *T. obesus*); the swordfish, *Xiphias gladius*, catch was 0.4 t, sailfish 0.5 t, billfish 0.5 t, and sharks 9.2 t. The catch per unit effort attained 47 kg per 100 hooks for all species.

Section 2: Researches and Statistics

In 2004 and January-July 2005, observers collected data on tunas and tuna-like species from trawl catches from the EEZ of Mauritania and Morocco. The species and length composition of tunas and their proportion in total fish catches were determined.

Research on blue shark (*Prionace glauca*) distribution on the seamounts and in adjacent areas was carried out. The data for 1978-1987 collected in scientific expeditions were used as the material. The data of 290 longline sets (76,931 hooks) were analyzed. It was found that besides blue shark, other oceanic and neritic-oceanic shark species, such as shortfin mako (*Isurus oxyrinchus*), bigeye thresher *(Alopias superciliosus*), smooth hammerhead *(Sphyrna zygaena)* were abundant on the seamounts. Shark abundance indices in these areas were 20 times higher than in the oceanic waters. Such distribution pattern is typical of the eastern Atlantic over the Meteor, Yer, Erving and Atlantis seamounts in the northern hemisphere, and the Whale Ridge in the southern hemisphere. In the eastern part of the Pacific Ocean such aggregations were observed on the Nazca seamounts and to the west of the Galapagos Islands. Blue shark is the dominant species in these aggregations. The aggregations consist mainly of adult males of blue shark measuring 170-280 cm in length. As is known (Litvinov, 2004), the eastern Atlantic aggregations, in the neritic waters of Morocco and Namibia, are formed by young sharks 50-140 cm in length. Therefore, paired groupings (schools of adult males) on the seamounts and young sharks are observed in the neritic waters. Most likely, these groupings of males are formed for the first copulation with young females migrating from the neritic waters to the ocean. A similar situation is observed in the eastern Pacific Ocean with young blue shark in Santa Barbara and Ensenada. The same localization may be presumably expected in the neritic waters off South America. Dense aggregations of males are extremely vulnerable during fishery operations and it is reasonable to adopt some protective measures. However, it is not known if these aggregations exist all year round or only seasonally. It is evident only that these aggregations consist of sharks being at the top trophic level and they considerably affect oceanic ecosystems, including seamounts. Specific interactions between large pelagic aggregations of sharks and fish and invertebrate populations inhabiting seamounts are still unstudied. Therefore, on one hand sharks aggregations need protection

[1] Original report in English.

and on the other hand their impact on other hydrobionts should be considered in planning the exploitation of species inhabiting seamounts.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

In the fishery within areas where tunas and tuna-like species occurred in catches, ICCAT requirements and recommendations concerning the ban on the fishing of species under quotas and the restriction of young yellowfin and bigeye tuna catches were applied. To improve the quality of statistics, observers on trawl vessels operating in the Convention area are collecting data on the by-catch of tunas and tuna-like species on an annual basis. The “Novtekhstroy” company, owner of longline vessel “Askele”, started fishing operations in 2005, and has been provided with the respective ICCAT documents regulating longline tuna fishery in the Convention area, as well as the forms for reporting biological information.

ANNUAL REPORT OF SENEGAL[1,2]

Youssouph Diatta[3], Siiy Ndao[4] et Taïb Diouf [5]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

Senegal has a 718 km marine coastline with an exclusive economic zone (EEZ) of approximately 60,000 km^2 and 400 km^2 of continental waters. This situation has favored the development of important types of artisanal and industrial fishing targeting all pelagic as well as demersal species. This report focuses on the exploitation of tuna resources by the fleets flying the Senegalese flag.

1.1 The industrial fishery

Tuna fishing is mainly centered 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 Dakar-based baitboat fleet, where all the catches are landed and by a longline fishery that targets bigeye and yellowfin, and swordfish as by-catch. However, no catches were made in the Atlantic in 2004.

Table 1 presents the catches by species, fishing effort and catch-per-unit-of-effort (CPUE) of Senegalese baitboats from 1991 to 2004 (there were no boats in 1992). **Table 2** presents the main characteristics of the vessels flying Senegalese flag in 2004. **Table 3** shows nominal effort in number of vessels by type of fishing. **Figure 1** presents the annual development of Senegalese baitboat catches from 1991 to 2004. These catches seem more important since 1998 and reached their maximum in 1999.

It is hoped that the Commission increases Senegal's annual quota of tuna landings to 12,000 t. The quota authorized by ICCAT has been assessed at 6,500 t per year. However, Senegal increased its fleet with three new vessels and almost all the catches are absorbed by the canneries. These vessels supply the primary material for processing by the canneries for canning purposes.

1.2 The artisanal fisheries

The artisanal fisheries catch small tunas by hand line, troll and purse seine (Atlantic black skipjack (LTA-*Euthynus alletteratus*, West African Spanish mackerel (MAW-*Scomberomorus tritor*), Atlantic mackerel (SSM-*Scomber japonicus (maculatus))* plain bonito (BOP-*Ocinopsis unicolor*) and Atlantic bonito (BON-*Sarda sarda*) as well as billfishes: Swordfish (SWO-*Xiphias gladius*), Atlantic blue marlin (BUM-*Makaira nigricans*) and sailfish (SAI-*Istiophorus albicans*). The landing statistics of these species from 1996 to 2004 are given in **Table 4**. These catches vary according to species. **Figure 2** shows the seasonal variation of the catches taken by the canoe fisheries in 2004.

1.2.1 Development of the artisanal fleet

A census of the canoes and the infrastructures linked to artisanal fishing carried out from October 21 to 25, 2002 showed the results that are shown in **Table 5**. These canoes generally measure between 6 and 18 m. The largest are found on the long coast. Depending on the type of fishing, the canoes that fish with seine are the largest with an average length of 18 m, the canoes that fish with surrounding gillnets are usually about 16 m, the canoes that fish with hand line and with ice are about 12 m, and the canoes that fish with hand line generally measure from 7 to 9 m, and finally the canoes with longline measure around 8 m. The types of fishing carried out vary depending on the origin of the canoe.

[1] Original report in French.
[2] Became a Contracting Party to ICCAT on December 21, 2004.
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1.3 Sport fishing

During the fishing season, May to November, this fishery targets billfish, sailfish and swordfish. In Senegal, the sport fisheries are well monitored with two large fishing centers in Dakar and in Mbour. The majority of the catches are reported in number and no sampling is carried out on these species except for the catch records. **Table 6** presents catch, effort and CPUE of sailfish and billfish from 1996 to 2004. The table also shows that the major sport fishing season, in which the highest catches are reported, is from June to August.

Section 2: Data collection schemes

Regular scientific monitoring is carried out by the *Centre de Recherche Océanographique de Dakar Thiaroye* (CRODT). This monitoring includes the collection of statistics on catch and fishing effort. This scheme is based on a detailed daily survey by tuna vessel captains at each landing, supplemented by the effective catches from various sources (factories, boat owners, port manifests, and the *Direction des Pêches Maritmes*-DPM). This work is carried out at the fishing port of Dakar where four technicians (three in charge of the surveys and one for data entry). The overall information collected is compiled, coded and entered into a computer, and then later centralized in Abidjan and Dakar after verification and correction. Data management is carried out in collaboration with the *Institut de Recherche et Développement* (IRD) and the *Instituto Español de Oceanografía* (IEO). Activities are all financed by the European Union (EU), within the framework of fishing agreements, the IRD and the IEO.

As regards, the artisanal fishery, the data collection system is carried out according to the same procedure, or at the different landing sites.

In order to improve statistics on fishing, sampling is also carried out at the time of landing at port or in the canneries or at the landing sites.

With regard to the industrial fishery, 399 multi-species size samples were reported in 2004 from the overall purse seine and baitboat fisheries as well as from transport vessels that landed at Dakar, as compared to only 303 samples in 2003. This sampling was carried out by a team of three samplers at the port of Dakar. For the artisanal fishery sampling was conducted out by various samplers at different landing sites.

For the sport fishing, every year Senegal collects catch information, in number, on billfishes at the sport fishing centers.

Tags are also recovered from boat owners and sent to the ICCAT Secretariat each year for entry to a database.

This scheme results in obtaining the necessary data for a rational management of the fishery.

2.1 Canneries

The tuna fishery is closely linked to the canning industry whose development has been very different in recent years. Currently, only three canneries are in operation (SE-SNDS, PFS and INTERCO); however they do not operate regularly.

In the framework of fishing agreements between Senegal and the EU, the mandatory landing estimated at 5,000 t for baitboats and 12,500 t for purse seiners is needed for the effective functioning of the Senegalese canneries. However, due to the deficient condition of the canneries, the landings seem irregular.

At the end of 1999, two of the three canneries closed. In 2000 the three canneries operated but in an unequal manner. In 2003 and 2004 two canneries were operational and a decrease in production was noted, mainly linked to problems of supply.

Part II (Management and implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

In order to implement the ICCAT recommendations, Senegal takes all the measures to regulate the tuna fishery. A monitoring, control and surveillance scheme of all the fishing activities has been established, as well as port

inspection and identification of any vessel that carried out illegal fishing activities. All these measures assure that the fishing resources are appropriately managed. All the vessels are equipped with a vessel monitoring system (VMS).

Table 1. Catches, by species, effort and catch-per-unit-effort (CPUE) of Senegalese baitboats, 1991 to 2004.

	Purse seine catches (t)					*Effort (fishing*	*CPUE (t/day)*				
Year	*YFT*	*SKJ*	*BET*	*LTA*	***Total***	*days)*	*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	1679	676	3	**2610**	511	0.49	3.28	1.32	0.01	**5.10**
1999	834	1479	1473	2	**3788**	572	1.46	2.59	2.57	0.00	**6 .62**
2000	252	1506	1131	3	**2892**	697	0.36	2.16	1.62	0.00	**4.15**
2001	295	1271	1308	0	**2874**	512	0.58	2.48	2.55	0.00	**5.61**
2002	447	1046	565	0	**2058**	395	1.13	2.65	1.43	0.00	**5.22**
2003	279	733	407	0	**1419**	370	0.75	1.98	1.1	0.00	**3.83**
2004	668	1261	548	0	**2477**	691	0.96	1.82	0.79	0.00	**3.58**

Table 2. Characteristics of Senegalese tuna vessels in 2004.

Nationality	*Name*	*License No.*	*Conservation*	*Type of fishing**	*GRT*	*Gear*	*Length (m)*	*Width (m)*	*Holds (m)*	*Engine hp*	*Boat owner*
Senegalese	CDT Biame Thiaw	Dak 1124	Freezer	hs pel.	160	BB	30.80	7.15	3.70	1300	Dakar Thon
Senegalese	PDT Magatte Daaick	Dak 1123	Freezer	hs pel.	160	BB	30.70	7.15	3.70	1150	Dakar Thon
Senegalese	PDT Matar Ndiaye	219	Freezer	hs pel.	302,2	BB	35.00	8.52	4.25	900	Sert SA
Senegalese	Robaleira	Dak 1129	Freezer	hs pel.	284,6	PS	48.80	8.20	3.60	1320	Viera mar

*High seas pelagic.

Table 3. Number of active vessels, 1991 to 2004.

Year	*Baitboats*	*Longliners*
1991	1	0
1992	0	0
1993	1	0
1994	2	0
1995	3	0
1996	2	0
1997	2	0
1998	3	0
1999	4	0
2000	6	0
2001	2	0
2002	2	0
2003	4	1
2004	3	1

Table 4. Monthly landings (t) of tunas and billfishes by the artisanal fishery, 1990 to 2004.

1990	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Ago*	*Sep*	*Oct*	*Nov*	*Dec*	*Total*
Spotted Spanish mackerel	387.7	369.6	210.2	104	182	55.1	31.8	14.2	14	26.5	281	502.9	2179
W. African Spanish mackerel	7	103.4	6406	28.7	140.5	82.8	19.7	45.9	34.4	99.9	24.6	18.9	670.4
Atlantic bonito	81.3	104.5	51.4	24.1	255	175.1	15.6	10.5	6.8	3.9	2.8	9.6	740.6
Atlantic black skipjack	87.5	71	306.6	49.5	87.4	498.6	252.9	191.5	99.1	283.6	443	19.7	2390.4
Sailfish	0	0	0	0	0	1	166.6	62.3	156.1	50.5	76.5	1.5	514.5
1991													
Spotted Spanish mackerel	425.7	89.8	121.8	52.4	74.2	8.9	12.3	18.3	3.2	5.6	6.3	128.2	946.7
W.African Spanish mackerel	3.8	2.8	4	19	18.5	15.5	24.7	20.3	17.2	92.1	86.2	28.1	332.2
Atlantic bonito	31.7	1.5	209	8.6	5.2	13.1	25.8	33.2	9.8	10.1	20.3	1.2	369.5
Atlantic black skipjack	41.3	42.9	15.3	12.6	19.1	66.9	98.4	73.8	46.2	133.1	60.1	28.5	638.2
Sailfish	0.8	0.5	0.7	0	0	5.8	32.6	50.8	46.4	20.4	6.2	1.2	165.4
1992													
Spotted Spanish mackerel	122.2	133.1	81.3	20.6	42.8	5.4	2	0	0	43.5	40	101.7	592.6
W. African Spanish mackerel	27	28.5	904	30.2	51.2	23.8	25.4	14.7	165.2	280.7	360.7	58.2	1074.8
Atlantic bonito	12.9	8.2	4.1	21.2	45.9	18	40.1	24.2	7	3	13.1	17.7	215.2
Atlantic black skipjack	45.5	13.4	17.3	22.1	120.7	48.6	37.5	47.2	441.3	485.2	168.9	72.9	1520.6
Sailfish													
Swordfish	0	0	0	0	15.3	8.6	19.3	82.9	35	6	0	93.2	260.2
1993													
Spotted Spanish mackerel	948.02	84.05	73.92	37.75	23.3	23.45	13.84	19.08	11.24	14.05	66.26	49.67	1364.63
W. African Spanish mackerel	110.24	94.27	57.48	86.5	89.31	58.27	91.15	58.85	62.79	70.74	134.94	143.58	1058.12
Atlantic black skipjack	95.71	97.84	77.81	51.49	67.59	93.35	56.69	91.41	480.01	162.6	110.98	111.13	1496.61
Atlantic bonito	29.99	80.94	38.00	27.98	67.21	23.12	24.93	33.82	24.69	24	28.31	32.22	435.21
Swordfish	1.59	1.54	1.74	1.68	2.35	2.04	4.34	5.1	4.48	7.9	1.95	7.1	41.81
Total	**1185.6**	**358.64**	**249**	**205.4**	**249.8**	**200.2**	**191**	**208.3**	**583.21**	**279.29**	**342.44**	**343.7**	**4396.38**
1994													
Spotted Spanish mackerel	333.5	123.6	189.2	59	26	22.3	7.1	1.9	9.1	319.5	4.5	20.3	1116
W. African Spanish mackerel	28.6	13.9	20.1	77.4	164.5	109.9	78.91	43.3	37.7	146.5	74	60.8	855.61
Atlantic bonito	4.8	0.13	71	94.5	103.8	103.3	37.6	6.1	6.4	12.8	2.3	10.6	453.33
Atlantic black skipjack	92.9	331.5	151.3	155.9	124.8	81.8	26.4	37	254.1	258.3	46.1	69.1	1629.2
Swordfish	0	2.8	0	1.5	0.2	21.6	72.4	41	9.3	3.7	0.5	0	153
1995													
Spotted Spanish mackerel	1028.9	357.91	69.19	43.71	9.88	24.18	8.86	3.37	7.04	1.74	15.28	135.38	1705.43
W. African Spanish mackerel	33.44	29.44	26.21	85.01	147	95.09	57.7	69.18	168.86	334.69	123.39	79.30	1249.31
Atlantic black skipjack	54.57	77.55	375.90	173.2	88.46	34.67	60.07	120.8	32.75	60.47	41.19	83.15	1202.69
Atlantic bonito	47.22	76.07	16.00	64.73	56.48	18.01	1.05	5.23	48.54	2.38	1.10	8.59	345.4
Swordfish	2.80	0.10	0.00	0.00	0.00	28.89	46.84	42.23	23.95	52.95	5.42	1.29	204.47
Total	**1166.9**	**541.07**	**487.3**	**366.6**	**301.8**	**200.8**	**174.5**	**240.8**	**281.14**	**452.23**	**186.38**	**307.71**	**4707.3**

1996													
Spotted Spanish mackerel	298.15	211.43	137.3	19.05	11.14	27.84	10.45	5.31	3.40	6.35	5.31	299.39	1035.14
W. African Spanish mackerel	87.47	34.81	68.09	28.1	99.32	63.52	89.89	67.54	130.74	244.97	89.26	55.30	1059
Atlantic black skipjack	67.96	15.81	22.97	77.79	132.2	75.19	0.35	77.84	70.67	367.79	105.55	52.35	1066.49
Atlantic bonito	79.948	38.34	41.86	40.44	42.91	46.22	26.24	29.87	16.90	10.26	17.92	67.80	458.698
Swordfish			36.10		3.50	25.50	44.82	44.28		38.315	10.95	2.75	206.21
Total	**533.52**	**300.39**	**306.3**	**165.4**	**289.1**	**238.3**	**171.7**	**224.8**	**221.71**	**667.68**	**228.99**	**477.59**	**3825.52**
1997													
Spotted Spanish mackerel	230.97	1005.1	126.9	49.94	16.58	4.32	0.00	0.2	0.9	0.66	1.00	233.38	1669.94
W. African Spanish mackerel	39.45	55.93	27.79	17.39	36.32	32.78	34.27	26.81	188.72	275.00	143.01	38.41	915.88
Atlantic black skipjack	68.01	221.4	227.9	18.85	105.4	291.7	199.4	142	130.61	36.89	54.56	64.05	1560.8
Swordfish	0.00	96.14	0.65	1.9	0.54	1.22	165.3	153.6	8.81	61.96	14.70	4.50	509.29
Total	**410.55**	**1550.6**	**437.4**	**121.3**	**271.8**	**371.5**	**400.6**	**324.7**	**333.34**	**378.96**	**222**	**380.82**	**5203.43**
1998													
Spotted Spanish mackerel	1142.1	513.02	195.9	72.49	31.07	39.24	3.60	1.20	13.35	6.70	23.07	74.90	2116.64
W. African Spanish mackerel	20.09	197.68	36.42	24.20	19.49	35.60	20.60	18.32	6.48	79.62	194.07	47.48	700.05
Atlantic black skipjack	183.95	104.9	126.5	47.13	156.5	80.77	140.7	45.32	134.9	42.06	76.05	260.59	1399.37
Atlantic bonito	182.76	702.93	421.5	162.4	123.9	47.86	10.31	6.25	0.49	0.90	2.36	48.75	1710.37
Sailfish	0.80	0.00	1.00	0.00	0.00	0.3	15.7	10.25	107.76	2.40	53.58	0.73	192.52
Swordfish	1.00	0.00	0.50	0.00	0.00	0.00	29.31	53.25	29.7	46.72	0.60	6.75	167.83
Total	**1530.7**	**1518.5**	**781.7**	**306.2**	**331**	**203.8**	**220.19**	**134.59**	**292.68**	**178.40**	**349.73**	**439.20**	**6286.78**
1999													
Spotted Spanish mackerel	34.7	229.8	42.9	26.5	12.4	46.2	16.0	7.6	12.1	5.6	43.1	504.4	981.30
W. African Spanish mackerel	54.1	52.7	23.1	38.3	53.1	21.1	16.9	15.2	36.3	34.1	88.0	44.7	477.60
Atlantic black skipjack	133.6	9.0	6.1	7.5	15.3	18.8	75.9	35.4	13.0	7.2	56.8	70.6	449.20
Atlantic bonito	33.3	14.9	18.3	35.8	177.3	38.8	1.8	5.2	4.1	1.1	5.3	1.2	337.10
Sailfish	0.0	0.0	0.0	0.0	0.0	6.1	8.8	11.9	26.6	24.4	0.9	0.4	79.10
Swordfish	0.6	0.1	0.1	0.0	3.0	15.0	0.5	53.4	34.1	19.9	0.1	0.0	126.80
Total	**256.3**	**306.5**	**90.5**	**108.1**	**261.1**	**146**	**119.90**	**128.70**	**126.2**	**92.3**	**194.2**	**621.30**	**815.50**
2000													
Spotted Spanish mackerel	486.68	1181.8	63.20	98.23	136.7	15.80	13.00	23.05	9.60	18.06	66.58	542.22	2654.90
W. African Spanish mackerel	31.62	144.09	24.01	41.01	39.81	24.81	19.60	27.10	40.85	51.02	86.70	25.57	556.19
Atlantic black skipjack	47.12	72.02	46.79	207.10	40.99	59.85	26.95	63.00	242.3	54.01	92.58	188.65	1141.36
Atlantic bonito	4.15	26.95	9.25	4.57	30.79	6.21	71.87	5.01	0.38		7.42	6.24	172.84
Sailfish	0.65				7.20	16.64	63.6	161.45	184.4	11.36	0.87	0.50	446.71
Swordfish							5.60	10.00	5.15	0.25	18.00		39.00
Total	**570.22**	**1424.9**	**143.25**	**350.9**	**255.5**	**123.31**	**200.66**	**289.61**	**482.68**	**134.7**	**272.15**	**763.18**	**5011.00**
2001													
Spotted Spanish mackerel	276.95	715.35	807.1	140.20	55.01	12.29	14.88	4.00	18.4	25.15	8.45	631.50	2709.25
W. African Spanish mackerel	73.76	57.08	54.46	96.60	52.16	47.00	30.90	19.76	21.55	45.78	55.60	184.07	738.72
Atlantic black skipjack	8.50	9.78	166.10	101.2	71.28	30.45	30.81	191.8	923.69	31.67	26.98	18.00	1610.22
Atlantic bonito	0.20	5.62	5.04	35.72	9.37	5.20	5.41	0.75	17.42	12.66	4.30	14.17	115.86
Sailfish					2.00	18.50	29.26	57.14	115.79	19.01	18.26	6.47	266.43
Swordfish							16.50	12.40	3.70			2.20	34.80
Total	**359.41**	**787.83**	**1033**	**373.69**	**189.8**	**113.4**	**127.76**	**285.84**	**1100.6**	**134.3**	**113.59**	**856.41**	**5475.28**

2002													
Spotted Spanish mackerel	1987.1	1787.1	142.50	145.50	128.2	188.5	123.68	18.82	17.30	27.55	88.86	1922.24	6577.36
W. African Spanish mackerel	81.90	33.20	45.57	276.81	240.8	12.49	28.57	22.85	32.79	57.39	49.95	43.71	926.00
Atlantic black skipjack	6.60	8.45	99.80	144.20	114.5	82.32	37.20	34.65	65.85	73.40	168.50	113.63	949.07
Atlantic bonito	20.10	4.05	38.41	73.15	43.87	14.55	15.25	10.52	7.71	25.06	32.02	42.33	327.02
Sailfish	0.60	0.20			6.50	3.00	5.83	27.01	62.93	22.91	9.46	0.5	138.94
Swordfish	3.00	0.20				1.00	6.97	12.80	15.80	5.00	13.80		58.57
Total	**2099.3**	**1833.2**	**326.28**	**639.66**	**533.8**	**301.9**	**217.50**	**126.65**	**202.38**	**211.3**	**362.59**	**2122.41**	**8976.96**
2003													
Spotted Spanish mackerel	6105	540	406	1435	166	493	4	5	3	13	190	4826	14186
W. Africa Spanish mackerel	16	13	1	14	71	208	15	53	37	21	37	44	531
Atlantic black skipjack	49	4	55	610	408	638	647	496	1604	229	242	402	5383
Atlantic bonito	53	9	7	33	28	23	21	1	2	0	12	6	196
Sailfish	22	4	0	15	4	15	130	175	216	78	14	0	673
Total	**6246**	**570**	**469**	**2106**	**677**	**1377**	**817**	**730**	**1862**	**340**	**495**	**5279**	**20969**
2004													
Spotted Spanish mackerel	2779.3	1173.8	409.4	368.5	254.8	57.02	8.575	5.95	15.18	60.27	55.84	141.398	5329.95
W. African Spanish mackerel	33.28	27.1	53.55	32.19	21.32	9.585	18.85	18.59	20.53	23.945	51.37	65.1	375.403
Plain bonito	0	0	0	0	0	0	0	0	0	0	2.5	0	2.5
Atlantic black skipjack	131.65	90.12	226	130.4	131.9	197.3	51.14	329.1	128.93	165.87	94.92	187.94	1865.16
Atlantic bonito	25.1	6.8	16.04	22.9	7.03	4.32	5.26	7.49	12.19	10.57	21.595	20.13	159.425
Skipjack	0	1.5	0	0	0	0.5	0	0	0	1.5	3.2	3.7	10.4
Yellowfin	1	0	0	0	0	0	0	1.5	3	1.075	3.34	3.5	13.415
Bigeye	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailfish	0.55	0.3	0	0	0	3.3	43.43	77.08	105.72	22.77	5.39	4	262.535
Swordfish	1.2	0.85	0.15	0	0.4	0	90	5.04	2.905	1.075	3.27	2.84	107.73
Total	**2972.1**	**1300.4**	**705.1**	**553.9**	**415.4**	**272**	**217.3**	**444.8**	**288.45**	**287.08**	**241.43**	**428.608**	**8126.52**

Table 5. Breakdown of the number of canoes from 2003 to 2004, by fishing zones.

	2003		*2004*	
No. of canoes	*With motors*	*Without motors*	*With motors*	*Without motors*
Dakar	2378	130	2551	625
Thies	2510	61	1566	876
St Louis	158	-	173	-
Fatick	1167	211	774	421
Ziguinchor	764	1862	770	1740
Louga	21	119	92	38

Long coast = St Louis-Louga.
Short coast = this sauf Kayar.
Cape Verde = Dakar.
Casamance = Ziguinchor.
Sine saloum = Fatick-Kaoloack.

Table 6a. Catch, effort and catch-per-unit-effort of sailfish and billfish from the sport fishery in Dakar, 1996 to 2000.

Year			*Sailfish*		*Billfish*	
	Month	*Effort (no. of trips)*	*Catch (number)*	*CPUE (no. by trip)*	*Catch (number)*	*CPUE (no. by trip)*
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	O	9	0,9
	June	81	105	1,3	17	0,2
	July	88	206	2,3	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**
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
	Novemer	25	16	0,6	0	0
	TOTAL	**894**	**1271**	**1,9**	**62**	**0,07**
1999	May					
	June					
	July	264	516	1,95	0	0
	Agust	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**	**1582**	**1,58**	**63**	**0,07**
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
	September	171	278	1,62	14	0,08
	October	263	288	1,09	19	0,07
	November	24	47	1,95	5	0,2
	TOTAL	**1131**	**1753**	**1,54**	**152**	**0,13**

Table 6b. Catch, effort and catch-per-unit-effort of sailfish from the sport fishery at Mbour (Hotel Espadon de Saly), 1999 to 2004.

Year	*Month*	*Effort*	*Sailfish*		
		(no. of trips)	*Catches (number)*	*CPUE (no. by trip)*	*Discards (number)*
1999	July	107	245	2,29	128
	August	94	185	1,97	98
	September	48	53	1,10	35
	October	87	107	1,23	57
	November	14	12	0,86	10
	TOTAL	**350**	**602**	**1,72**	**328**
2000	June	36	149	4,14	58
	July	98	198	2,02	59
	August	103	207	2,01	63
	September	53	81	1,53	32
	October	33	71	2,15	36
	TOTAL	**323**	**706**	**2,19**	**248**
2001	June	98	78	0,80	32
	July	89	98	1,10	40
	August	73	111	1,52	33
	September	43	85	1,98	31
	October	72	32	0,44	50
	November	41	82	2,00	30
	December	10	15	1,50	4
	TOTAL	**426**	**501**	**1,18**	**220**
2002	June	15	46	3,07	26
	July	59	136	2,31	57
	August	78	169	2,17	99
	September	40	33	0,83	8
	October	72	97	1,35	22
	November	42	30	0,71	11
	TOTAL	**306**	**511**	1,67	**223**
2003	June	38	70	1,84	40
	July	81	301	3,72	191
	August	83	212	2,55	129
	September	24	25	1,04	3
	October	100	130	1,30	34
	November	37	70	1,89	25
	TOTAL	**363**	**808**	**2,23**	**422**
2004	June	53	72	1,36	25
	July	95	162	1,71	100
	August	76	149	1,96	76
	September	35	62	1,77	17
	October	109	198	1,82	99
	November	19	46	2,42	24
	TOTAL	**387**	**689**	**1,78**	**341**

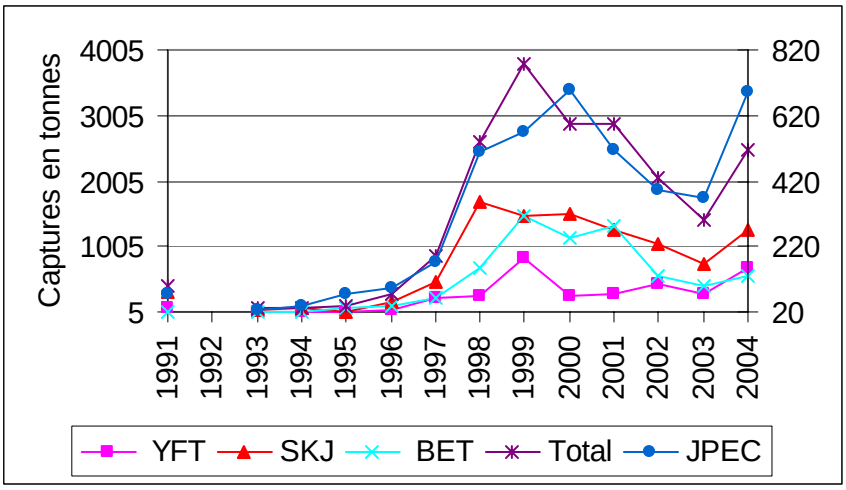

Figure 1. Annual development of Senegalese baitboat catches from 1991 to 2004.

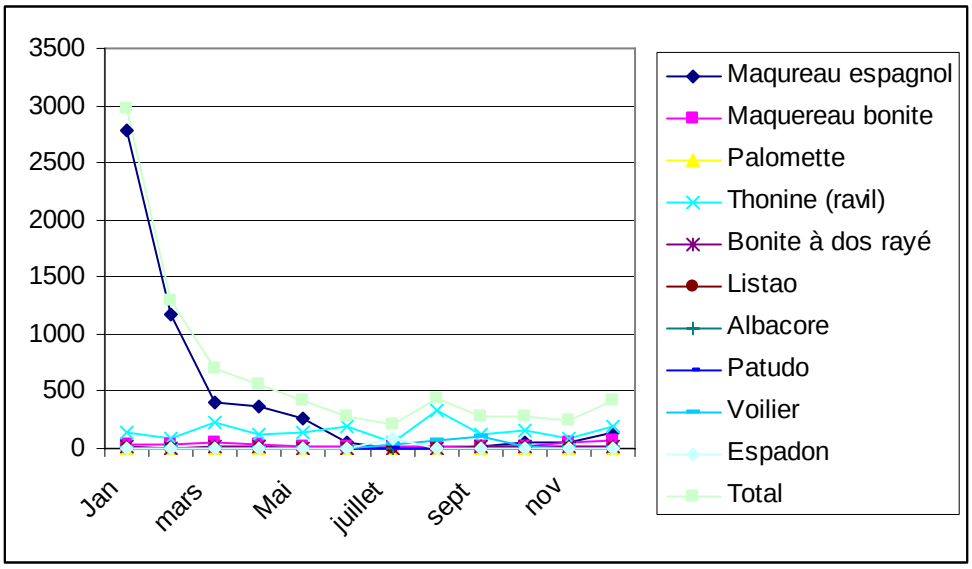

Figure 2. Seasonal variation of catches taken by the artisanal fishery in 2004.

ANNUAL REPORT OF SOUTH AFRICA[1]

Craig D. Smith[2]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

1.1 Poling, rod and reel, and sport fishery

Poling has been used to target juvenile albacore in near-shore waters of South Africa since the 1970s. The fishery generally operates between September and May along the west coast of South Africa. Almost all the albacore is exported for canning purposes. Although annual albacore landings have fluctuated around 5,5000 t round weight there has been a decreasing trend since 1993 **(Table 1)**. The annual fluctuations appear to be strongly influenced by foreign exchange rates and the availability of albacore in the inshore waters. The number of active vessels in the fishery increased from 88 in 2003 to 116 in 2004, which resulted in an increase in reported fishing effort from 2,673 sea days in 2003 to 3,370 sea days reported in 2004. Albacore export data reflected over 1,000 t increase from 3,470 t in 2003 to 4 561 t in 2004, which is a reflection of increased albacore landings by the poling fleet, estimated at 4,153 t. Nominal albacore CPUE was 55.8 $kg.crew^{-1}.day^{-1}$. The poling fleet also reported 140 t of yellowfin, 49 t of bigeye, 2 t of skipjack and further 430 t of unspecified tuna of which 92% is most likely albacore. Mean albacore FL decreased from 86.5 cm in 2003 to 85.0 cm in 2004 **(Figure 1)**, but was still larger than the mean albacore size in 1995-2002.

Since 2003, the rod and reel component of the poling fishery became more prominent. This component operates in the vicinity of Cape Town during the same season as the rest of the poling fleet. Unlike the rest of the poling fleet these vessels target high quality yellowfin tuna for sashimi markets. The number of rod and reel vessels reporting catches for 2004 was 16. Total reported catch (dressed weight) for 2004 was 218 t of yellowfin. Nominal yellowfin CPUE was 52.5 $kg.crew^{-1}.day^{-1}$. The rod and reel vessels also reported 201 t of albacore with a nominal CPUE of 48.6 $kg.crew^{-1}.day^{-1}$. A further 4 vessels reported 96 t of albacore and 5 t of yellowfin using handline. The nominal CPUE for albacore and yellowfin was 54.6 $kg.crew^{-1}$ and 7.9 $kg.crew^{-1}$.

The sport fishery also operates in the vicinity of Cape Town and targets albacore and yellowfin using rod and reel from small fishing vessels (5-8m). It was not possible to quantify the catch or effort of the sport fishery in 2004 but it is estimated to have increased compared to 2003 due to the increased availability of yellowfin and albacore in the inshore waters of South Africa.

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, due to the shallow nature of the fishing method used and vessels being equipped with American monofilament gear and light sticks. In 2004, the fishery still operated under experimental permit conditions. The fleet size remained the same as 2003, but the number of South African flagged vessels active in the fishery declined due to the unfavourable Rand/US dollar exchange rate. Many of the remaining vessels also concentrated fishing effort in the Indian Ocean due to poor swordfish catch rates in the Atlantic. An allocation process for the issuing of long-term longline fishing rights was held at the end of 2004. The policy for allocation of rights made provision for foreign flagged vessels to operate in the fishery. Consequently, many permit holders transferred their permits to foreign flagged vessels of Japan and South Korea in an attempt to benchmark performance. The foreign flagged vessels mainly targeted bigeye and yellowfin and most fishing effort was concentrated in the Indian Ocean.

In 2004, 23 longline vessels reported catches, including vessels from Japan and South Korea. Total reported effort increased by 15% from 711,516 hooks in 2003 to 816,340 hooks in 2004 **(Table 2)**. Bigeye reported catches doubled to 222 t in 2004. Swordfish reported catches for 2004 was similar to that of 2003 at 277 t live

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weight. Reported catches of mako and blue sharks were also similar to that of 2003, with 27 t of mako and 55 t (dressed weight) of blue shark reported in 2004. Reported catches for yellowfin, albacore and southern bluefin tuna declined to 17 t, 52 t and 9 t respectively. Nominal CPUE of bigeye tuna increased by 85%, from 147 kg.1000 hooks^{-1} in 2003 to 272 kg.1000 hooks^{-1} in 2004. Nominal CPUE for swordfish declined by 18% from 411 kg.1000 hooks^{-1} in 2003 to 339 kg.1000 hooks^{-1} in 2004. Comparisons of nominal CPUE is problematic, as fleet characteristics have changed between 2003 and 2004.

Size frequency distributions are presented for swordfish **(Figure 2)**, bigeye **(Figure 3)**, and yellowfin tuna **(Figure 4)**. The mean length was 177.1 cm for swordfish, 138 cm (bigeye) and 145.2 (yellowfin). Mean lengths of all three species increased in 2004. However, it is not sure whether this is a result of the much reduced sample size in 2004 or due to the effect of different targeting strategies employed by Asian flagged longliners.

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 increased from seven in 2003 to nine in 2004 as a result of good market prices and good catches of shark, particularly mako sharks. Although total fishing effort increased by 78% there was a decrease in effort for the ICCAT region as most effort was concentrated in the Indian Ocean. Reported effort in the Atlantic Ocean was 91 562 hooks. Catches of blue shark decreased from 132 t in 2003 to 43 t in 2004. Similarly, mako sharks decreased from 96 t in 2003 to 82 t in 2004. Nominal CPUE decreased for blue shark from 1123.4 kg.1000 hooks^{-1} in 2003 to 466.2 kg.1000 hooks^{-1} in 2004, which may indicate increased fining activity in 2004 or a reduction in carcass size retained. In contrast, mako nominal CPUE increased from 817 kg.1000 hooks^{-1} in 2003 to 889 kg.1000 hooks^{-1} in 2004. The increase in mako 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 more efficient at targeting mako sharks.

Section 2: Research and Statistics

2.1 Poling, rod and reel, and sport fishery

Permit holders in the poling fishery have been required to complete daily logs of catches since 1985. Daily logs indicate quantity of catch by species by area. Under-reporting is a problem in this fishery with an estimate of 35% of catches not reported. Customs and Excise records are a more reliable estimate of total albacore landed as almost all albacore is frozen whole and exported. The problem with this figure is that it reflects the total albacore landed by all South African fisheries. This problem is minimized by subtracting known albacore catches of the longline and rod and reel fisheries from the export figure to obtain a more accurate estimate of total albacore landed by the poling fishery. Like the poling fleet, rod and reel and the handline fleets are also required to complete daily logs of catches. Reporting of catches is better than that of the poling fleet and is estimated at 90%. There is no coverage of by-catch or discarded catches, but these are expected to be low. There was no statistical system in place to record recreational catches.

Three port sampling trips were undertaken to obtain length frequencies of albacore landed by the poling fleet.

This is less than 20% of the intended coverage as there was insufficient staff capacity to conduct port sampling.

2.2 Tuna/swordfish longline fishery

Permit holders in the tuna/swordfish longline fishery have been required to complete daily logs of catches since 1997. Prior to 2004 the US trade statistics provided a useful means of verifying reporting levels of the longline fishery as most of South Africa's swordfish was exported to the United States of America. The comparison between reported catch statistics and US trade statistics indicated that the level of reporting improved after 2001 **(Table 3)**. However, these statistics were not as useful in 2004 as most of the active fleet was Asian flagged vessels, which supplied swordfish to the Japanese market. Furthermore, South African flagged vessels also

conducted more freezer trips, allowing for swordfish to be exported to markets in Europe and Japan. Reporting levels in the longline fishery are still considered to be high, with an estimate of 90% of all swordfish, yellowfin and bigeye catches being reported.

Since 1998, South Africa has implemented an on board observer programme for the longline fishery. This programme was developed to describe fishing techniques and compliance with permit conditions, validate CPUEs, provide swordfish biological material and length frequencies of target and by-catch species, and to determine discard levels. The intended observer coverage is 20% of all fishing trips. Only 5% observer coverage was achieved in 2004 due to the numerous vessel transfers that were undertaken. The observer programme has indicated that the longline fishery, in general, grossly under-reported albacore and all by-catch species, particularly birds, turtles, and sharks. Also little attention is paid to permit conditions to mitigate against catches of by-catch species. Finning of sharks, particularly blue sharks, has also been a common practice amongst all flagged vessels.

2.3 Shark longline fishery

Permit holders in the shark longline fishery are also required to complete daily logs of catches. Levels of reporting are reasonable in this sector and are estimated to be above 75%. Determining the effort in this fishery is problematic as the vessels are permitted to target pelagic and demersal sharks. No size frequencies have been collected from this fishery and neither has any observers been placed on any of these vessels. A standardized length measure is required for sharks.

2.4 Research

Research in South Africa is mainly focussed on the life history and stock delineation of swordfish in southern African waters. The observer programme has been used since 1998 to collect swordfish length frequencies and biological material for age and growth studies, sexing, maturity staging and dietary studies. Over 2 500 swordfish samples have been processed from 1998-2004. Swordfish tissue samples have been collected since 2004 for genetic studies to better understand the mixing dynamics of swordfish in the boundary region between the Atlantic and Indian Oceans. A pilot tagging programme for swordfish, bigeye and yellowfin, using commercial longliners as a tagging platform, was developed in 2004. Approximately 100 large pelagics were tagged in 2004 in the Indian Ocean.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

3.1 Catches and minimum sizes

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).

[Rec. 02-01]: As South Africa's reported bigeye tuna catch was less than 2,100 t in 1999 it is exempted from this resolution.

[Rec. 02-03]: South Africa was issued a swordfish catch limit of 1,009 t for 2004, which it adhered to.

[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 2004, 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.
- Bait is 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.

3.2 Other

[Rec. 99-07]: 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. No statistical system is in place to quantify catches made by the recreational fishery.

[Rec. 01-20]: All vessels active in the South African tuna and swordfish longline fishery in 2004 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. No transhipments at sea are permitted. See attached table for ICCAT management standard for large-scale tuna longline vessels.

[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.

3.3 Vessel Monitoring System (VMS)

[Rec. 03-14]: 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.

3.4 General

[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, Seychelles, South Korea, Namibia, Panama, United States of America and Japan. These vessels were under the control of South African regulations and permit conditions. All vessels were 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. 04-17]: National report has been formatted accordingly.

3.5 Relating to individual species

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

3.5 Trade sanctions

[Recs. 02-16, 02-17, 02-18, 02-19 & 03-18]: As South Africa does not import but rather exports tuna and swordfish, there has been no official ban on imports from the respective countries.

Section 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.

Section 5: Other Activities

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 1993-2004.

	1993-2004 data	
Year	*Logbooks*	*Exported*
1985	6697	
1986	5930	
1987	7275	
1988	6570	
1989	6890	
1990	5280	
1991	3410	
1992	6360	
1993	6743	6881
1994	5268	6931
1995	4246	5213
1996	2856	5635
1997		6708
1998		8412
1999		5101
2000		3610
2001		7236
2002		6507
2003		3470
2004		4561

Table 2. Nominal catch and effort data for the most important species landed by large pelagic fisheries in 2003 and 2004.

			Reported catch by species per year (in t dressed weight, except for poling and sport)											
Fishing sector	*Total reported effort 2003*	*Total reported effort 2004*	*Albacore*		*Swordfish*		*Yellowfin*		*Bigeye*		*Blue shark*		*Shortfin mako*	
			2003	*2004*	*2003*	*2004*	*2003*	*2004*	*2003*	*2004*	*2003*	*2004*	*2003*	*20 04*
Poling	2,673 sea days	3,370 sea days	2744	2873	0	0	256	140	8	49	0	0	0	0
Rod and reel		568 sea days		201		0		218		0		0		0
Handline		92 sea days		96		0		6		0		0		0
Sport	Unavailable	Unavailable	82		0	0	12		0		0		0	
Tuna longline	711,516 hooks	816,340 hooks	65	52	219	210	24	15	90	196	46	55	25	28
Shark longline	117,700 hooks	91,562 hooks	0	0	0.1	0.2	0.6	5	0	0.1	132	43	96	82
		TOTAL	**2891**	**3222**	**219.1**	**210.2**	**292.6**	**384**	**98**	**245.1**	**178**	**98**	**121**	**110**

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	1041.5
2000	252.1	909.9
2001	621.7	791.6
2002	1091.1	993.7
2003	807.9	807.9
2004	424	124

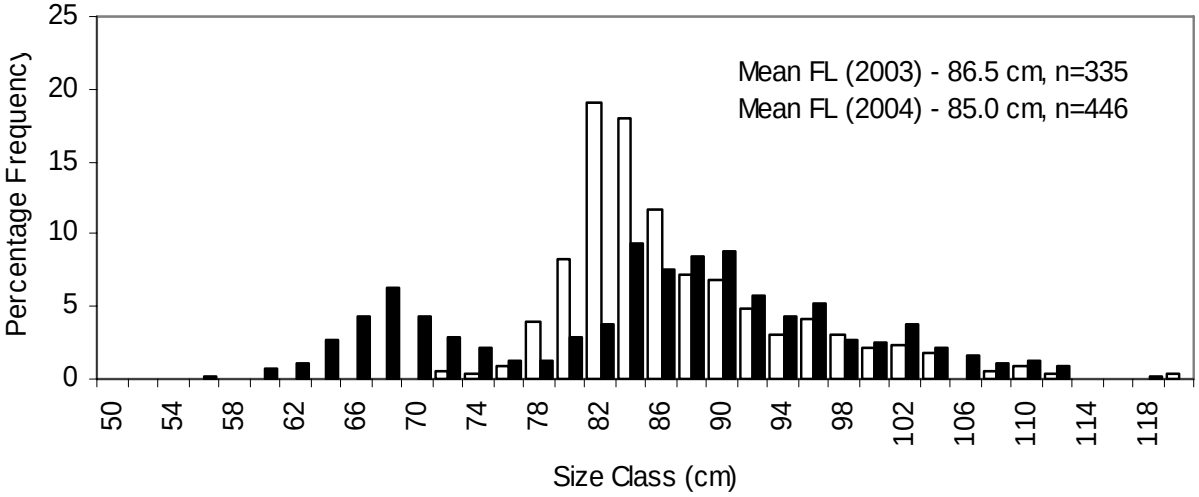

Figure 1. Albacore fork length frequency in 2003 (light bars) and 2004 (dark bars).

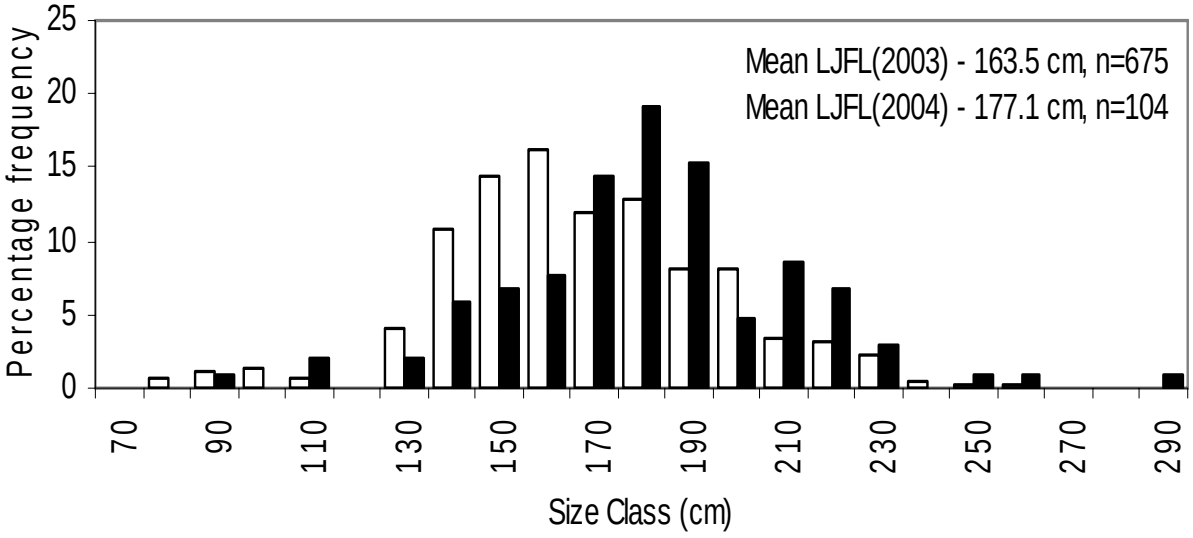

Figure 2. Swordfish length frequency (LJFL) in 2003 (light bars) and 2004 (dark bars).

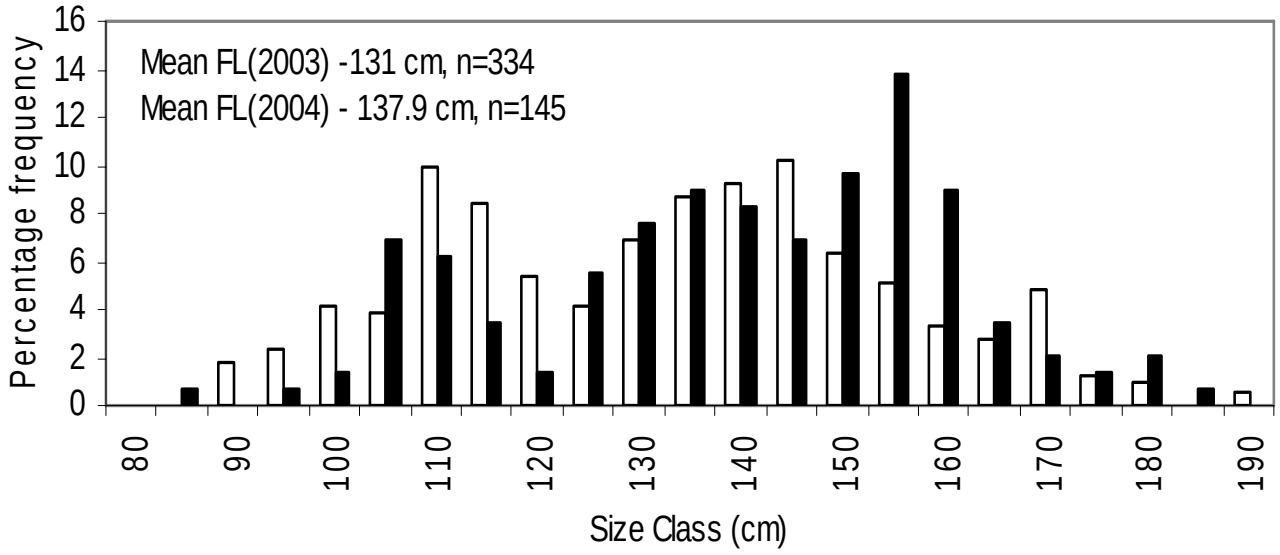

Figure 3. Bigeye fork length frequency in 2003 (light bars) and 2004 (dark bars).

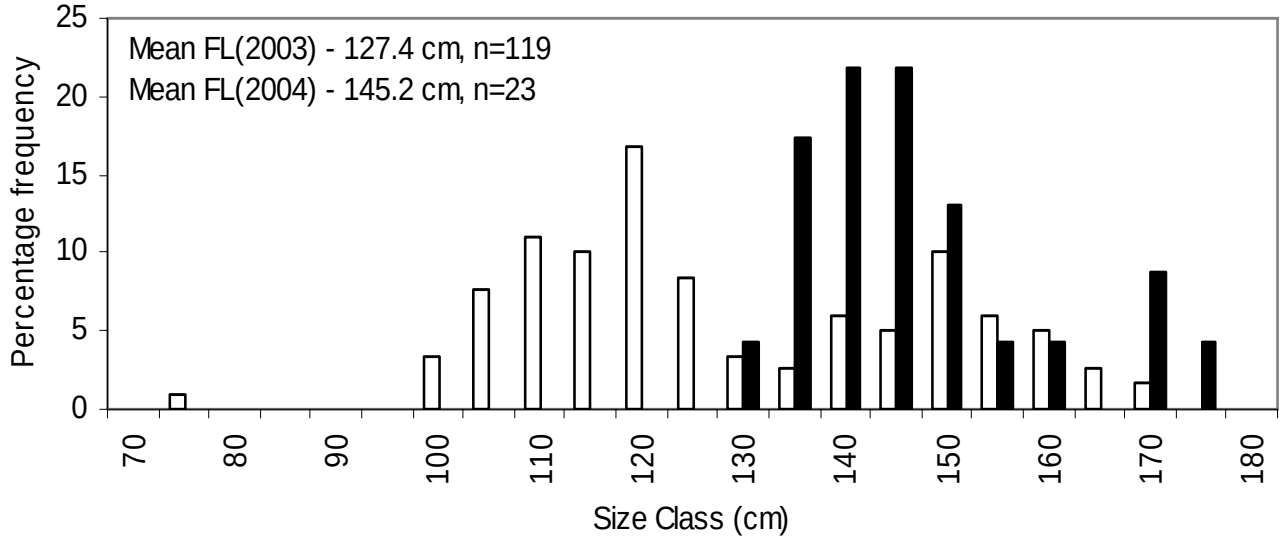

Figure 4. Yellowfin fork length frequency in 2003 (light bars) and 2004 (dark bars).

ANNUAL REPORT OF TRINIDAD AND TOBAGO[1]

Louanna Martin[2]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

The estimated catch of tuna and tuna-like species and sharks in the year 2004 for the Republic of Trinidad and Tobago is 5,122 t. The catch was estimated from the landings of commercial vessels and four of the five major game fishing tournaments held. In the catch of tunas, bonitos, billfishes, Spanish mackerels and sharks; notable quantities of Serra Spanish mackerel (*Scomberomorus brasiliensis*), King mackerel (*S. cavalla*), Frigate tuna (*Auxis thazard*), Atlantic bonito (*Sarda sarda*), Smooth-hound shark (*Mustelus* spp.), Yellowfin tuna (*Thunnus albacares*) and Swordfish (*Xiphias gladius*) (listed here in descending order of estimated catch) were harvested. The catch of sharks (several species) was also notable **(Tables 1 and 2)**.

It is estimated that fleet sizes remained stable in 2004. In 2005 there was in increase in the number of longliners from 10 to 14. The size range of these vessels also increased and is now approximately 14 to 23 m.

Section 2: Research and Statistics

A preliminary stock assessment of King mackerel was conducted in 2005 under a technical cooperation project between the Ministry of Agriculture, Land and Marine Resources and the Japan International Cooperation Agency (JICA). The paper is currently being prepared.

Trinidad and Tobago participated in the first meeting of the Caribbean Regional Fisheries Mechanism (CRFM) Ad Hoc Working Group on Methods, held in Barbados in May 2005. The CRFM came into effect by Agreement in 2002 among twelve (12) CARICOM countries to support a mechanism which facilitates sustainable management and conservation of regional shared stocks. The Working Group aims to review fisheries assessment methods that are suitable for application to Caribbean fisheries and on that basis to develop, test and recommend assessment tools and methods which could be better applied to the types and quality of data collected by CRFM countries.

In 2004 the Government of the Republic of Trinidad and Tobago collaborated with the Food and Agriculture Organization of the United Nations (FAO) in the implementation of regional capacity-building workshops of relevance to the work of ICCAT. The Regional Workshop on the Elaboration of National Plans of Action (NPOA) to prevent, deter and eliminate Illegal, Unreported and Unregulated (IUU) Fishing was held in November 2004. The main objective was to develop national capacity to elaborate NPOAs to confront IUU fishing and consequently meet the requirements of the International Plan of Action (IPOA). Regional Workshops on Vessel Monitoring Systems (VMS) were held in July 2004 (Workshop for English-speaking countries) and August 2005 (Workshop for Spanish-speaking countries).

At the 14th Special Meeting of the Commission, Trinidad and Tobago indicated its intension to prepare and present a paper in 2005 providing data and information to facilitate the application of a more appropriate breakdown of our reported billfish catches in order to update the Task I and compliance tables. Trinidad and Tobago has conducted investigations on the issue and has concluded that assistance is required for the completion of the study. Trinidad and Tobago will therefore seek technical advice on the preparation of the paper and will be working in the coming intercessional period to produce the paper for circulation within ICCAT.

[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

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

Trinidad and Tobago is in the process of putting the necessary legislation in place to implement several ICCAT recommendations. The fisheries legislation is currently being updated and will take into account FAO's Code of Conduct for Responsible Fisheries and the relevant International Plans of Action (IPOAs). This exercise is included in the Development Program of the Ministry of Agriculture, Land and Marine Resources.

The operationalization of a monitoring, surveillance and enforcement unit within the Fisheries Division of the Ministry of Agriculture, Land and Marine Resources is imminent. In the absence, at this time, of enforcement capability for size limit regulations, attempts are being made to capture individual weights of fish for species managed by such tools, such as bigeye tuna, yellowfin tuna and swordfish. The results of basic analysis of these data are provided in the compliance tables. It is estimated that there were no undersized bigeye tuna or yellowfin tuna in the catch.

In June 1999, Trinidad and Tobago implemented a Swordfish Certificate of Eligibility (COE) for export of Swordfish to the United States of America. This was consistent with ICCAT's minimum size requirements for the export of Swordfish. Trinidad and Tobago has now implemented the Swordfish Statistical Document Program in keeping with ICCAT's guidelines and an approved list of authorized officers has been sent to ICCAT for its records.

At the St. John's Conference on High Seas Fisheries held in Newfoundland in May 2005, the Government of the Republic of Trinidad and Tobago agreed in principle to sign on to the United Nations 'Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of December 10, 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks'. Currently a Cabinet note is being prepared to facilitate the Cabinet's commitment.

Section 4: Inspection Schemes and Activities

The National Monitoring Committee on Foreign Fishing and Related Matters (NMCFFRM) has recently undertaken action to ascertain the prevalence of transshipment operations at undesignated fish landing sites around the country. This exercise will also be effected through the work of the enforcement unit.

Efforts are being made in respect of transshipment and transshipment port monitoring. A Transshipment Monitor was hired in December 2004. Duties of the position include: the observation of operations at transshipment ports, the monitoring of foreign fishing vessel use of transshipment ports particularly as this relates to IUU fishing activities and the compilation of transshipment-related data. Data are being complied in collaboration with transshipment companies.

Table 1. Trinidad and Tobago reported catches (t) of Atlantic tuna and tuna-like species and sharks for the year 2004.

Gear	*Tunas and bonitos*	*Spanish mackerels*	*Billfish*	*Sharks*	*Totals*
Longline (TRI*)	243	0.7	109	25	377
Artisanal and semi-industrial multi-gear (TRI)	719	2680	3	1330	4732
Sport fishing tournaments (TRI)	0.09	2	0.8	0	3
Artisanal and semi-industrial multi-gear (TOB**)***	6	4	0.05	0.3	10.4
Totals	968	2687	113	1354	5122

Tunas and bonitos = Catches of YFT, ALB, BET, BLF, BON, FRI, TUN.
Mackerel = Catches of WAH, KGM, BRS.
Billfish = Catches of SAI, BUM, WHM, SWO, BIL.

*TRI refers to 'Trinidad' and signifies that data are captured under the data collection system based in Trinidad.
**TOB refers to 'Tobago' and signifies that data are captured under the data collection system based in Tobago.
***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)*
Yellowfin tuna YFT	224			
Albacore ALB	12			
Bigeye tuna BET	5			
Blackfin tuna BLF			0	5
Atlantic bonito BON		279	0	1
Frigate tuna FRI		414		
Wahoo WAH	0.7	0.6	2	3
King mackerel KGM	0*	577	0.4	0.4
Sailfish SAI	10		0.05	0.05
Blue marlin BUM	10		0.7	
White marlin WHM	6			
N. Atlantic swordfish SWO	83			
Tunas NEI TUN	2	26	0.07	
Billfish unclassified BIL		3		
Serra Spanish mackerel BRS		2102	0	0.2
Atlantic sharks	*Longline (TRI)*	*Artisanal and semi-industrial multi-gear (TRI)*	*Sport fishing tournaments (TRI)*	*Artisanal and semi-industrial multi-gear (TOB)*
Thresher shark THR	3			
Blacktip shark CCL	0.05	9		
Smalltail shark CCR		0.2		
Shortfin mako SMA	0.6			
Longfin mako LMA	0.4			
Mako shark MAK	0.9			
Blue shark BSH	2			
Tiger shark TIG	0	0.07		
Nurse shark GNC	0	0.8		
Smoothhounds SDV		273		
Hammerhead spp. SPN	0.1	5		
Mixed species of sharks	17	1042		0.3

NOTE: '0' indicates that catches were less than 0.05 tons.

ANNUAL REPORT OF TURKEY[1]

I. K. Oray, F.S. Karakulak[2]

Part I (Information of fisheries, research and statistics)

Section 1: Annual Fisheries Information

Bluefin tuna were harvested in Turkish waters from May to July in the eastern Mediterranean Sea. In October-November bluefin tunas were targeted in the Aegean Sea.

The total bluefin tuna catch in 2004 was 1,075 tons. Almost all of the catch was caught by purse seiners. The number of licenced vessels to fish bluefin tunas was 68. Almost all of the total purse seine catch was transferred into floating cages for ongrowing.

There were no official catch data for swordfish, bonito, bullet tuna and Atlantic skipjack in 2004.

Section 2: Research and Statistics

In 2004, funds from the Bluefin Year Program were utilized for biological and larval sampling of bluefin tunas.

A tuna larval survey (TUNALEV) in the northern Levantine Basin (Cilician Basin) was conducted from June 5 to 18, 2004. Further evidence of spawning of bluefin tuna and the other tuna species in the eastern Mediterranean Sea was given. Samples of bluefin tuna larvae were shipped for genetic studies to the USA. Results of this study are underway.

In 2004, the collaboration between Turkish and ICCAT scientists and the Reprodott Program continued.

The otoliths samples of bluefin tuna collected by Turkish scientists in 2001-2004 in Turkish waters are being studied jointly by Turkish, Greek and U.S. scientists.

A study on size and age at sexual maturity of female bluefin tuna from the Mediterranean Sea by Turkish and EC scientists in 2001-2004 was completed.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

3.1 Conservation and management measures

All conservation and management measures regarding bluefin tuna, swordfish, bonito, bullet tuna, Atlantic black skipjack fisheries and bluefin tuna farming are enforced.

Minimum size and catch restrictions:

Bluefin tuna	90 cm FL
Swordfish	125 cm FL
Bonito	April 1 to September 1
Bullet tuna	May 1 to September 1
Atlantic black skipjack	May 1 to September 1

Section 4: Inspection Schemes and Activities

Turkey has nothing to report at this time.

[1] Original report in English.
[2] University of Istanbul, Faculty of Fisheries, Ordu cad. No. 200 34470 Laleli, Istanbul, Turkey.

ANNUAL REPORT OF UNITED KINGDOM (OVERSEAS TERRITORIES)[1]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

The Bermuda commercial fishing fleet consisted of 212 vessels during the year 2004 with approximately one-third 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 including two offshore banks while longline vessels work further offshore.

The Bermuda domestic fleet is made up largely of fiberglass commercial fishing vessels. Bermuda-based longliners are equipped with an Andronics satellite-based vessel monitoring system (VMS).

For the year 2004, the total catch of tuna and tuna-like species was 186 metric tonnes. This represents an increase in landings of 31 t over the previous year. Details of the catch composition are presented in **Table 1**.

Section 2: Research and Statistics

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, is ongoing. However, there were no further deployments of these tags in Bermuda waters in 2004. In addition, tournament sampling of blue marlin continues to provide important data on reproductive seasonality with peak spawning occurring in July. 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 tuna, blackfin tuna and dolphinfish. Conventional tagging of blue marlin by charter fishing vessels has been active during the past year.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

The fisheries regulations which introduced minimum sizes of retention for blue marlin (250 lbs/114 kg) and white marlin (50 lbs/23 kg) continue to be evaluated for their effectiveness. It was determined that there has been a high level of compliance with these regulations as the charter fishing fleet supports these conservation measures.

The collection of scientific data on billfish, wahoo, yellowfin tuna and blackfin tuna species is ongoing. Tagging programs for pelagic species, in cooperation with both commercial and recreational fishermen are ongoing. 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 helping to ensure compliance with all ICCAT recommendations.

Table 1. Summary table of tuna and tuna-like species catches, Bermuda 2004.

Species	*Weight (t)*
Yellowfin Tuna	82
Bluefin Tuna	0
Bigeye Tuna	<1
Blackfin Tuna	4
Albacore Tuna	<1
Atlantic Black Skipjack Tuna	5
Skipjack Tuna	<1
Wahoo	88
Blue Marlin	2
White Marlin	<1
Swordfish (North Atlantic)	<1
Total	**186**

[1] Original report in English.

ANNUAL REPORT OF THE UNITED STATES OF AMERICA[1, 2]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

Total (preliminary) reported U.S. catch of tuna and tuna-like fishes (including swordfish, but excluding other billfishes) in 2004 was 25,824 t, a decrease of about 5% from 27,353 t in 2003. Estimated swordfish catch (including estimated dead discards) decreased 136 t to 2,685 t, and provisional landings from the U.S. fishery for yellowfin in the Gulf of Mexico decreased in 2004 to 2,079 t from 2,527 t in 2003. The estimated 2004 Gulf of Mexico landings of yellowfin tuna accounted for about 32% of the estimated total U.S. yellowfin landings in 2004. U.S. vessels fishing in the northwest Atlantic landed in 2004 an estimated 973 t of bluefin, a decrease of 441 t compared to 2003. Provisional skipjack landings increased by 24 t to 102 t from 2003 to 2004, estimated bigeye landings decreased by 69 t compared in 2003 to an estimated 414 t in 2004, and estimated albacore landings increased from 2003 to 2004 by 200 t to 449 t.

Section 2: Research and Statistics

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 2003 and 2004 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 3,800 billfishes (swordfish, marlins, sailfish, and spearfish) and 1,796 tunas in 2004. This represents a decrease of 21.3% for billfish and a 195.5% increase for tunas from 2003 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 Fishery 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 decreased to 6,500 t in 2004, from the 2003 landings estimate of 7,702 t (Appendix Table 2.1, YFT). The 2004 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 NW Atlantic (3,434 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) increased from 78 t in 2003 to 102 t in 2004 (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.

[1] Original report in English; the appendices are available from the Secretariat.
[2] U.S. Department of Commerce, NOAA Fisheries.

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 2004 decreased by 69 t from 483 t in 2003 to 414 t (Appendix Table 2.1, BET). Note that like yellowfin, the estimates of rod & reel catch are considered 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. 2004 provisional estimated landings and discards from the northwest Atlantic (including the Gulf of Mexico) were 899 t and 71 t, respectively. Those estimated landings and discards represent a decrease of 509 t from the 2003 estimates. The 2004 landings by gear were: 32 t by purse seine, 41 t by harpoon, 1 t by handline, 180 t by longline (including discards) of which 103 t were from the Gulf of Mexico, 716 t by rod and reel.

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 2004 rod and reel fishery off the northeastern U.S. (including the North Carolina winter fishery) for landings in several size categories were 264 fish < 66 cm, 10,193 fish 66-114 cm, 3,414 fish 115-144 cm and 634 fish 145-177 cm (an estimated 1.5, 198, 142, and 49 T, respectively). Note that additional rod and reel landings of bluefin >177 cm SFL, monitored through a sales reporting system, are included in 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 is shown in Appendix Figure 2.1, ALB. Estimated total catches of albacore were 646 t in 2004, an increase of 197 t from 2002 (Appendix Table 2.2, ALB).

2.1.3 Swordfish fishery statistics

For 2004 the provisional estimate of U.S. vessel landings and dead discards of swordfish was 2,684 t (Appendix Table 2.3, SWO). This estimate is lower than the estimate of 2,821 t for 2003. The provisional landings, excluding discard estimates, by ICCAT area for 2004 (compared to 2003) were: 430 t (441 t) from the Gulf of Mexico (Area 91); 1,042 t (1,195t) from the northwest Atlantic (Area 92); 279 t (273 t) from the Caribbean Sea (Area 93); and 591 t (613 t) from the North Central Atlantic (Area 94A), and 15 t (20 t) from the SW 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 21,443 fish discarded dead in 2004. For the North Atlantic, the estimated tonnage discarded dead in 2004 is 271 t, of which 266 t are estimated due to longline gear. Overall, the estimates of dead discarded catch slightly decreased by 11 t as compared to the 2003 level, but remained about 12% of the landed catch.

Total weight of swordfish sampled for sizing U.S. landings by longline, otter trawl, and handline was 2,251 t, 2.8 t, and 17.8 t in 2004. The weight of sampled swordfish landings in 2004 were 98%, 37%, and 89% of the U.S. total reported annual landings of swordfish for longline, trawl, and handline. Again, incorporation of late reports into the estimated 2004 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 1996-2004.

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. As sufficient data are not yet available to address the estimation method issues raised, 2004 estimates of rod and reel landings of marlins are based on direct observations of landed fish. 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. Estimates, which take this feature into account, will be available for the next stock assessment of these species.

The estimates of 2004 U.S. rod and reel landings from the RBS for blue and white marlins were 24 t and 0.8 t, respectively. The estimated 2004 rod and reel landings of sailfish were 33 t.

Estimates of the billfish by-catch discarded dead in the U.S. commercial longline and other commercial fisheries for 2004 were 34 t for blue marlin, 27 t for white marlin, and 7 t for sailfish. The estimated 2003 U.S. discarded dead by-catch was 19 t, 17 t, and 5 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 U.S., successful management has required participation by both federal and state management agencies. At present, none of the King or Spanish mackerel stocks are considered overfished.

Annual yields of king mackerel have ranged from 4,365 T to 8,772 t between 1983 and 2004 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. These regulations were implemented in 1999 and have been in effect since then. Presently, the commercial quotas for pelagic sharks (and other species groups) are split equally between three trimester seasons.

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 through 2003 (although some of the data for 2003 are preliminary and subject to change). Commercial landings of pelagic sharks in weight steadily increased from the early 1980's, peaked in 1996, declined the next three years, and show an increasing since 1999 (Appendix Table 2.6a, SHK). Recreational landings in numbers estimated from the MRFSS survey during 1981-2003 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 2003, 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 7,000 fish according to available estimates and assumptions about average weights (Appendix Table 2.6c, SHK). 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 since the meat of this species is highly valued. Total catches ranged from about 5,000 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

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 2004 and 2005. 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 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. The results of this work will be reported as they become available. U.S. scientists also collaborated in development of the larval working group agenda for the CLIOTOP 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. 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 for several year-classes has been moderate ranging from 60-90%, and classification functions show strong year-to-year variability. In SCRS/2005/083 the utility of an alternative chemical marker in otoliths, carbon and oxygen stable isotopes to discriminate bluefin tuna from natal regions was reported upon. The discriminatory power of stable isotopes ($\delta^{13}C$, $\delta^{18}O$) in otoliths of yearlings (age-1) was high, with 91% of individuals classified correctly to eastern and western nurseries. These stable isotopes and in particular $\delta^{18}O$ can be used to reliably predict nursery origin of Atlantic bluefin tuna. An initial application compared otolith core material (corresponding to the first year of life) of large school, medium, and giant category bluefin tuna to reference samples of yearling signatures to determine their origin. A large fraction (~43-64%) of the Atlantic bluefin tuna collected in the western Atlantic fishery (comprised primarily of large school and medium category fish) originated from nurseries in the east. Alternatively, medium and giant category bluefin tuna from the Mediterranean were largely (~82-86%) of eastern origin. Thus, initial evidence suggests that the western fishery received high input from the Mediterranean population.

Scientists from the 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 2004. 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/2005/108 further examined some implications of incorporating electronic tagging information on transfer rates into virtual population analyses. SCRS/2005/084 examined yield and spawner per recruit consequences of different assumed levels of mixing between eastern and western bluefin stocks to provide guidance to the Commission as requested at the 3rd Meeting of Working Group to Develop Coordinated and Integrated Bluefin Tuna Management Strategies. Researchers at the Imperial College, London, continue work 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/2005/048). Operating models are being developed which will use conventional and electronic tagging data and fishing effort by management area. These models will be used to examine possible harvest control rules and the evaluation of possible management procedures.

U.S. scientists from Stanford and Duke University along with the Monterey Bay Aquarium and National Marine Fisheries Service have placed over 700 electronic tags in bluefin tuna in the region along the US coast of North Carolina. The data from implantable archival tags has been critical for establishing the basic biology of Atlantic bluefin and the patterns of movements to feeding and breeding grounds. Results from a large number of these tags were interpreted in a paper in the journal Nature this year (Block *et al.* 2005. Nature 434: 1121-1127. Electronic tagging and population structure of Atlantic Bluefin Tuna). Tagging off the Carolinas, in the Gulf of Maine, and elsewhere continued in 2004 and 2005. Of the more than 90 tags placed in fish off the Carolinas in 2005. The tags are due to report 7-9 months from the deployment dates, and will be further reported upon as results become available.

US scientist from the University of New Hampshire have placed over 200 pop-up satellite archival tags have on New England blue fin tuna. Ongoing efforts include examining short and long-term dispersals of blue fin in the Gulf of Maine, the identification of spawning grounds, the spatial correlation between blue fin locations and oceanographic features and continuing to determine Atlantic-wide migratory paths. Results from much of this tagging effort was recently published in the journal Marine Biology (Wilson, *et al.* 2005. Movements of bluefin tuna (*Thunnus thynnus*) in the northwestern Atlantic Ocean recorded by pop-up satellite archival tags. Marine Biology 146: 409- 423).

A new research initiative in 2005, involving scientist from the University of New Hampshire, the Virginia Institute of Marine Science and Virginia Sea Grant will place electronic tags on juvenile bluefin from off the US coast of Virginia. As results become available they will be reported upon.

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 2005 SCRS. Estimates of small swordfish by-catch for 2002-2004 were compared to the average levels estimated for the late 1990s and were found to be substantially lower (see Appendix).

Fisher reported and observed swordfish catch, size and catch rate patterns through 2004 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/2005/085).

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.

U.S. scientists collaborated with Brazilian scientists in conduct of catch rate standardization procedures by offering a course on the topic in Brazil in mid-2005. Central to this collaboration is development of fisheries research capacity in Brazil through graduate student training and of stronger scientific cooperation between Brazil and the US.

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. Results of this research into reducing mortality of marine turtles interacting with pelagic longlines was recently published (Watson, *et.al.* 2005. Fishing methods to reduce sea turtle mortality associated with pelagic longlines. Can. J. Fish. Aquat. Sci.. 62(5): 965-981). Additional cooperative research in the Gulf of Mexico was carried out in 2004 and in additional regions in 2005. Results of these research projects will be reported to SCRS as they become available.

2.2.3 Tropical tunas research

In addition to monitoring catch and effort statistics for tropical tunas, 4 US scientists participated in the 2005 ICCAT Workshop on Methods to Reduce Mortality of Juvenile Tropical Tunas, held in Madrid from July 4-8, 2005. Document SCRS/2005/063 used the ICCAT Task II catch and effort data to estimate expected changes in the catches of tropical tunas attributable to replacing the current moratorium with a time-area closure [Recommendation 04-01]. The results indicate that catches of tropical tunas are expected to increase substantially if the time-area closure replaces the current moratorium. Considering that the current ICCAT hypothesis is that purse-seine fleet efficiency gains 3% per year, the net change could in fact be a large overall increase to levels above the pre-moratoria fishing mortality rate levels. SCRS/2005/079 explored the expectations for catches of undersized bigeye tuna considering the agreement reached in [04-01]. In all cases examined, total catches can be expected to increase from 5.5 to 6.7% as a result of [04-01], and catches of BET can be expected to increase from 16-22.1%. In all cases, catch of juvenile bigeye tuna increases.

U.S. scientists from the University of Miami's Rosenstiel School of Marine and Atmospheric Science continue to collaborate with EC scientists on the EU-funded FEMS project, on management strategy evaluations related to tropical tuna fisheries.

2.2.4 Albacore research

U.S. scientists prepared document SCRS/2005/081 which described population models for North Pacific albacore (*Thunnus alalunga*) that have been developed and reviewed within the North Pacific Albacore Workshop (NPALBW) forum since 2000. Currently, the NPALBW relies on a Virtual Population Analysis (VPA) model for purposes of formulating an international-based consensus regarding the 'status' of this fish stock. Recently, an equally important research directive from the Workshop has been to develop alternative, more detailed statistical-based models, in efforts to evaluate more fully the relationship between this species' population dynamics and associated fishery operations (i.e., areas of uncertainty in an overall stock assessment). We have developed one candidate model based on the Age-structured Assessment Program (ASAP), which generally represents a maximum likelihood-based numerical approach for conducting relatively straightforward, forward-simulation catch-at-age analyses. In addition the document presents a brief discussion concerning development of other alternative stock assessment models, particularly length-based/age-structured platforms (e.g., MULTIFAN-CL and Stock Synthesis 2).

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 generally 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 recently completed, 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.

In 2004 and 2005, US scientists collaborated with Caribbean nations under the banner of the Caribbean Regional Fisheries Mechanism in initiating stock assessment analyses for small tuna (and other) stocks of mutual concern.

2.2.6 Shark research

The ICCAT Sub-Committee on By-catches conducted an assessment of blue sharks and shortfin makos in Tokyo, Japan, in June 2004. US scientists contributed eight working documents for this meeting on various aspects of shark biology and methods to assess stock status.

In response to a Commission request, document SCRS/2005/086 provided an evaluation of the validity of the continued use of the 5% fin weight to carcass weight ratio using available data from various fishery-independent and fishery-dependent sources. The fin to carcass ratio is highly variable, depending on species, fin set, and finning procedure. If species-specific management is not feasible, the available data suggest that the aggregated 5% ratio is not inappropriate when using the primary fin set in the calculations. In all, the only guaranteed method to avoid shark finning is to land sharks with all fins attached.

A cooperative shark research project between Brazil (*Universidade Federal Rural de Pernambuco*) and the US (NOAA Fisheries and the University of Florida's Florida Museum of Natural History) is being developed. Central to conducting the research is development of fisheries research capacity in Brazil through graduate student training and of stronger scientific cooperation between Brazil and the United States.

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 western Atlantic Ocean. Major accomplishments in the western Atlantic in 2004 were documented in SCRS/04/028. Highlights include 11 at-sea sampling with observers on Venezuelan industrial longline vessels in September 2004. Of the trips accomplished to date, four 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 2004 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 2004; a total of 44 tag recovered billfish and sharks were submitted to the Program Coordinator in 2004. Age, growth, and reproductive samples from several very large billfish were obtained during 2004.

A study conducted by the Virginia Institute of Marine Science (VIMS) to evaluate post release survival and habitat use from the recreational fishery for Atlantic white marlin using pop-up satellite archival tags (PSATs) was finalized in 2004 and published in the peer review literature.

A separate study conducted by VIMS on U.S. longline vessels to evaluate post release survival of marlin, as well as evaluating hook performance and related mortality was also finalized in 2004. These data have been submitted to a peer journal and are currently under review. 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 4 years with deployments ranging from a month to 5.5 months. Several peer review papers summarizing these results are in press 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. Three cruises have been completed to date. This work in ongoing and should be finished sometime in 2006.

Cooperative billfish research between U.S. and Brazilian scientists was initiated in 2005. Results of that research will be presented to SCRS when they become available.

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. Others at the University of Miami's Rosenstiel School and elsewhere are conducting research on early life history, reproductive biology and ecology of billfishes, as well as age and growth estimation.

Document SCRS/2005/31 presented an update of standardized CPUE for blue and white marlin from the US LL fishery in the NW Atlantic and Gulf of Mexico. Regarding the treatment of Area in the model, the authors explained that all areas were treated equally independent of the size of the area.

Document SCRS/2005/30 presented an update of standardized CPUE for blue and white marlin from the US recreational tournament fishery in the northwestern Atlantic and Gulf of Mexico. During discussion, there were questions about the merging of statistics from different sources (the Recreational Billfish Survey used in the analyses and other more general fishery surveys). It was noted that there is an ongoing review of the estimation of marlin fishery statistics and that this work will be finalized by the next stock assessment.

Document SCRS/2005/25 presented standardized CPUE for blue and white marlin from the Venezuelan LL fishery in the western central Atlantic and off the Caribbean Sea. During discussion, it was noted that there is little overlap between the Venezuelan and Brazilian LL fisheries because they operate in similar longitudes but different latitudes.

SCRS/2005/26 presented standardized catch rates for blue marlin and white marlin for the Venezuelan artisanal gillnet fleet fishing in what is considered a billfish 'hot spot'. Estimations were obtained from port sampling data collected by the Enhanced Billfish Research Project in Venezuela for the period of 1991-2004.

Document SCRS/2005/029 attempted to measure the hook depth of longline sets made off the Windward Passage during an experimental cruise in 2003. The gear configuration used was four hooks between floats, a shallow deployment scheme. Results indicated prediction of gear depth with Temperature Depth Recorders (TDRs) using this configuration in this location was difficult (no differences in hook depth were observed). Major causes of variations of set hook depth among baskets are change of shortening ratio and hooking of fishes, which should be introduced into the current simulation model.

Document SCRS/2005/034 provided data on vertical habitat use of white marlin in numerous locations of the western North Atlantic using PSAT tags. Most of these deployments were very short (5 to 10 days) as the primary objective was to determine post release survival. However, these data indicated that white marlin use more of the vertical habitat than previously thought, making numerous deep dives to and below the thermocline during the tracks, implying that white marlin are feeding in the mid and deep layers as well as in the surface layer.

Document SCRS/2005/035 characterized the depth distributions of 52 blue marlin in relation to exposure to longline gear using PSAT tags. The actual depths explored varied greatly because the depth of the thermocline varied by area and season. The fractions of time spent by each fish within each degree of water temperature relative to the temperature of the surface mixed layer resulted in highly variable results. The paper recommended that simulations be drawn randomly from the observed frequency distributions to simulate interactions between fish and hooks on longline sets. Blue marlin often made deep, short duration dives that took them into relatively cold environments (less than 10ºC) and this indicated a much greatly use of the vertical water column than previously reported.

Document SCRS/2005/037 presented a quantitative framework and numerical method for characterizing vertical habitat use by large pelagic animals using pop-up satellite tag data. The method, termed vertical habitat envelopes, was tested and validated using archived data from a recovered PSAT tag, as well as transmitted data

from the same tag. There were virtually no differences in the habitat envelopes computed from these two sources and it was concluded that the method works well for transmitted PSAT data. The method consolidates time at depth and time at temperature matrices while computing a three-dimensional representation of vertical habitat use.

In document SCRS/2005/033, pop-up satellite archival tags (PSATs) were deployed on white marlin caught on pelagic longline gear for periods of 5 - 43 days. Twenty of 28 (71.4%) tags transmitted data at the pre-programmed time and transmitted data from 17 of 19 tags were consistent with survival for the duration of the tag deployment. Estimates of post-release survival ranged from 63.0% (assuming that all non-reporting tags were mortalities) to 89.5% (excluding non-reporting tags from the analysis). The authors concluded that white marlin can generally survive the trauma of capture on longline gear and suggests that current management measures requiring the release of live white marlin will reduce fishing mortality on the stock.

Document SCRS/2005/044 reported that anal fin spines are being collected from blue and white marlin along with basic biological information from artisanal and commercial fishing fleets on both sides of the Atlantic as well as in the Caribbean. Ages are being estimated from anal fin spine sections using relative marginal increment analysis. The validation of the age estimates may prove to be problematic.

Document SCRS/2005/039 reported that seven white marlin and one blue marlin were tagged with PSAT tags off the eastern end of Hispanola, Dominican Republic. Larval sampling was conducted in the same area in which tagging took place in order to determine if spawning was occurring. Seven of the PSAT tags reported data for periods ranging from 28 to 40 days. Movements ranged from 32 to 268 nautical miles. Average movements appeared constrained in comparison to other marlin PSAT tagging studies. A total of 18 istiophorid larvae were collected including eight white marlin, four blue marlin and six which could not be identified to species. This finding confirmed that there was spawning occurring in the area. In addition, ovarian sections from one white marlin contained histological features, which indicated recent and imminent spawning. It is speculated that the constrained movement patterns may be associated with spawning activity in the area.

Document SCRS/2005/032 presented the CPUE simulator developed in response to the 2003 Methods working group recommendations. The intention was to develop a simulated CPUE data set similar to the Japanese longline CPUE data set but with a known true abundance trend, so that the GLM and habitat-based methods to standardize CPUE could be compared. The simulator integrates species distributions with longline hook distributions by latitude, longitude, depth, year and month, to produce catch per set of white marlin, blue marlin and four target species. The spatial distribution of longline sets by month is based on the distribution of the Japanese longline fleet in the Atlantic from 1956 through 1995. The depth distribution of blue marlin and white marlin were predicted from an assumed habitat preference for temperatures relative to that in the surface mixed layer (Delta T). The stocks were assumed to be either stable or declined with time. The spatial distribution was either uniform or proportional to the long-term average CPUE of each species in longline sets in the ICCAT data time series. The simulator has all of the capabilities requested by the Methods WG, but it has not yet been used to predict bigeye tuna CPUEs due to lack of data about habitat use by bigeye tuna. The simulated CPUE recreates many of the characteristics of the Japanese longline fishery CPUE data. In particular, the unstandardized simulated CPUEs of blue and white marlin overestimate the true decline in abundance from 1975 onward, during the period when the Japanese longline fishery was shifting to deeper sets. During discussion, it was suggested to simulate CPUE data based on the Chinese Taipei longline fishery as well, because Chinese Taipei has also shifted from shallow fishing to deep fishing in recent years. This would require Chinese Taipei scientists to provide detailed set-by-set information about gear configurations in this fishery, and the range of hook depths for each gear configuration.

Document SCRS/2005/27 applied several GLM-based standardization methods to the data simulated in SCRS/2005/32, and compared the standardized indices to the known biomass trends. Habitat-based methods were not applied. The standardization methods were a classical GLM assuming a normal distribution of the log transformed nominal CPUE values by set, a delta-Poisson GLM applied to the set by set data, and a delta-lognormal GLM applied to data aggregated by 5º latitude and longitude squares. For both blue and white marlin, for all four distribution and biomass trend scenarios, the GLM-standardized CPUE series were similar to the nominal CPUE trends. The GLM methods failed to capture the true biomass trend. Also, the nominal CPUEs and the GLM standardized indices showed a decrease between 1970 and 1971 which could not be explained by the hooks per basket (HPB) factor which was used as a proxy for depth of fishing, because HPB did not begin to increase until 1975. When the data were analyzed separately for 1956 to 1974 and 1975 to 1995, the GLM standardized indices were similar to the true biomass trend, except for the period from 1971 to 1974, implying that the discrepancy in 1971 has not yet been explained.

Document SCRS/2005/28 presented a prototype assessment of white marlin, which incorporated either a GLM-based or a habitat-based standardization of CPUE data into the population dynamics model used in assessment. Usually during a stock assessment, CPUE data are standardized to produce an annual index of abundance, and then a population dynamics model is fitted to this index of abundance. Integrating CPUE standardization into the assessment model has been advocated as a way to more accurately characterize the uncertainty in CPUE as a measure of abundance. The method was implemented with the WinBUGS Bayesian statistical software, and applied to the simulated data from SCRS/2005/032.

Document SCRS/2005/077 pointed out that the ICCAT Working Group on Assessment Methods recommended that CPUE standardization methods for the Japanese longline time series be evaluated against simulated data where the true abundance trend is known. The simulation model developed to fulfill this recommendation used longline CPUE to characterize monthly trends in the spatial distributions of blue and white marlin. The ICCAT Working Group on Assessment Methods compared the simulated monthly distributions to observed monthly distributions for several coastal and recreational fisheries. Some of the predicted and observed distribution patterns were quite similar while others matched poorly. This result is presumably a consequence of the poor representation of longline effort in the near-coastal environment and other areas where recreational fishermen interact with marlin. Seasonal patterns of the 52,275 and 44,351 tag releases of blue and white marlins by recreational fishermen offer independent predictors of the seasonal distributions of blue and white marlin in the near shore environment where recreational fisheries are important. These data are compiled by 1x1 degrees, and larger grids selected to represent particular coastal areas. Sample sizes are adequate to predict average seasonal abundances in many coastal areas if it can be reasonably assumed that tagged and released catch is proportional to abundance. Even if this assumption is not entirely valid, the predicted seasonal distributions should be sufficient to initialize simulations to test CPUE standardization methods should the simulator be extended to other than longline fisheries.

Document SCRS/2005/080 provided evaluations of alternative standardization methods using simulated longline CPUE data failed to identify a useful CPUE standardization methodology. This unsatisfactory result could be a consequence of problems with the simulator, the assumptions or data used in the simulations or the standardization methods themselves. Diagnostic evaluations of the simulator and input show that the simulated catch depths and simulated catch by hook position performed as expected. There was a very large change in simulated catchability between 1956-1970 and 1971 and beyond. This change was almost entirely a consequence of the change in assumed fishing depths for the single 5-hpb gear assumed to fish during the early (1954-1970) period as compared to the 5-hpb gear and other gear configurations assumed for the later years. GLM methods could not be expected to capture this effect since there was no overlap between simulated gear type catchabilities, even though the 5-hpb gear configuration occurred pre and post 1970. It is unlikely that the simulated data actually reflect the true condition of the fishery during the pre-post 1970 period, and the simulation results provide little guidance for the best standardization approach. A better analysis of the fishing depths of the gears and other factors could substantially improve the utility of the simulation data.

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 3,800 billfishes (including swordfish) and 1,796 tunas in 2004. This represents a decrease of about 21% for billfish and an increase of 195% for tunas from 2003 levels. A number of electronic tagging studies involving bluefin tuna and billfish were also carried out in 2004. These are discussed in the bluefin and billfish research sections above.

There were 21 billfish recaptures from the CTC and TBF reported in 2004, representing a decrease of 82% from 2003. Among the 2004 CTC billfish recaptures there were four blue marlin, 12 sailfish, four swordfish, and one spearfish. For the CTC and TBF, a total of 11 tunas were recorded recaptured in 2004; these were seven bluefin, three yellowfin, and one blackfin tuna. These recaptures represent a 52% decrease with respect to year 2003 values. The ICCAT Enhanced Research Program for Billfish (IERPBF) in the western 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.

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 2004 (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 7,624 sets (5,658,827 hooks) were recorded by observer personnel from the SEFSC and NEFSC programs from May of 1992 to December of 2004. Observers recorded over 215,500 fish (primarily swordfish, tunas, and sharks), in addition to marine mammals, turtles, and seabirds during this time period. The percent of fleet coverage through 2004 ranged from 2.5% in 1992 to 9.0% in 2002. Fleet effort for 2004 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. Data collected by the SEFSC, Miami Laboratory Pelagic Observer Program is available on the Internet at http://www.sefsc.noaa.gov/pop.jsp for the years 1992 to 2004.

In 2004, an experimental gear design study was initiated in cooperation with three U.S. pelagic longline vessels that fished in the Gulf of Mexico (GOM) to compare differences in catch rates of tuna target species and sea turtles using the 16/0 size circle hook (no offset), historically used in the GOM by these vessels, and the 18/0 circle hook (no offset) being required by regulations of U.S. vessels fishing outside of the GOM. A total of 60 sets (30,290 hooks fished) were observed aboard these three vessels in the GOM. Results of this gear design experiment were used by managers in instituting U.S. regulatory actions.

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 2004, observers monitored 32 drift gillnet sets and 25 strike gillnet sets on 73 trips.

Part II (Management implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

3.1 Catch limits and minimum size

3.1.1 Rebuilding Program for West Atlantic Bluefin Tuna [Rec. 98-7; 02-07].

Recommendation 02-07 revised the annual WBFT quota for the United States to 1489.6 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 2004 fishing year of June 1, 2004 through May 31, 2005. The overharvest from 2003 was deducted to result in an adjusted quota of 1294.8 t for the 2004 fishing year. Measures were applied in the U.S. domestic fisheries to moderate landings due to the reduced amount available for harvest. During the 2004, calendar year, the United States landed an estimated 971 t of bluefin tuna, which includes an estimated 71.8 t of dead discards (see Appendix, page 19).

3.1.2 Recommendation to Establish a Plan to Rebuild Blue Marlin and White Marlin Populations [Rec. 00-13; 01-10; 02-13; 04-09].

Phase I requires that countries capturing marlins commercially reduce white marlin landings from pelagic longline and purse seine fisheries by 67% and blue marlin landings by 50% from 1996 or 1999 landings (whichever is greater). 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% initially, with an objective of 10% 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 2006. Recommendation 04-09 extended Phase I of the blue and white marlin rebuilding plan through 2006, and also specified that stock assessments for these species would be conducted in that year. Recreational catch and release rates for marlin 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 August 19, 2005, (70 FR 48804) that would codify the 250 fish limit and establish procedures to remain within the limit. In addition, the August 19, 2005, proposed rule contained measures that would prohibit all landings of

white marlin; require the use of circle hooks when using natural baits in billfish tournaments; prohibit the retention of billfish on most commercial vessels; and establish a permit condition requiring that recreational vessels possessing an HMS permit abide by Federal regulations regardless of where fishing, unless a state has more restrictive regulations. These proposed management measures are expected to substantially reduce marlin mortality (landings and dead discards) attributable to the United States.

As noted in section 2.1.4 “Marlins and sailfish fishery statistics" of this report, the United States is working to resolve uncertainty pertaining to estimation methodologies for rod and reel catches and landings of marlins. Preliminary 2004 calendar year data from the Recreational Billfish Survey of recreational fishing tournaments recorded landings of 115 blue marlin and 31 white marlin. Preliminary 2004 fishing year data indicate landings of 7 marlin. This survey is not inclusive of fishing activities outside of tournaments. As such, the United States implemented a mandatory reporting program for billfish landed by recreational anglers who are not participating in registered tournaments in March 2003. 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 non-permitted 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, the United States will continue to implement appropriate changes to its management programs.

3.1.3 Recommendation to Establish a Rebuilding Program for North Atlantic Swordfish [Rec. 99-07; 02-02; 04-02].

The 1999 recommendation established an annual landings quota of 2951 t for the United States. Recommendation 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 2002 fishing year, there was an underharvest of 3348.9 t ww. This underharvest was added to the landings quota for the 2003 fishing year. Landings and discard estimates for the 2003 fishing year and 2004 calendar years are provided in the U.S. Compliance Tables (see Appendix). 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 codified the provisions from Recommendation 02-02 in November 2004. Recommendation 04-02 amended the Rebuilding Program for North Atlantic Swordfish by extending for one year management measures in place for 2005 as identified in paragraphs 2, 3c, and 7 of ICCAT Recommendation 02-02.

3.1.4 Recommendation on South Atlantic Swordfish [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 engaged in rulemaking to establish these provisions. The United States landed 20.35 and 15 t in fishing years 2002 and 2003 and 15 t in calendar year 2004, respectively. It should be noted that the 15 t of South Atlantic swordfish reported for fishing year 2003 (1 June 2003-31 May 2004), are the same fish identified as landed in calendar year 2004. These landings occurred in the latter half of the 2003 fishing year, which overlaps with the first five months of calendar year 2004.

3.1.5 Recommendation on Revision and Sharing of the Southern Albacore Catch Limit [Rec. 02-06, 03-07, 04-04].

The United States was subject to a catch limit of 100 t in 2003 and 2004. However, the United States does not have a directed fishery for southern albacore. The United States landed 1.97 t in fishing year 2002. Estimated landings of southern albacore tuna were 1.97 t in fishing year 2003 and 0.6 t in calendar year 2004.

3.1.6 Recommendation on North Atlantic Albacore Catch Limits [Rec. 02-05, 03-06].

The United States was allocated a landings quota of 607 t ww for 2004, 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, new domestic regulations have been proposed that would require the United States to work with ICCAT to establish the foundation for developing an international rebuilding program. 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 2005 and/or 2006. The United States landed 487.8 t and 446.3 t during the 2002 and 2003 fishing years, respectively. Calendar year landings for 2004 were 645.9 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 on Bigeye Tuna Conservation Measures [Rec. 02-01, 03-01, 04-01].

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 345.0 t in fishing year 2003 and 413.7 t in the calendar year of 2004. Bigeye tuna provisions were carried forward to the fishing year of 2005.

3.1.8 Resolution on Atlantic Sharks [Res. 01-11 and 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, and 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. A new large coastal shark stock assessment will begin during the fall of 2005, with a data workshop currently scheduled for October 31-November 4, 2005 in Panama City, Florida, to collect and analyze the necessary data. The LCS stock assessment will follow the Southeast Data Assessment and Review (SEDAR) process and have assessment and review workshops in early 2006. The process should be completed in 2006.

3.1.9 Recommendation for the Conservation of Sharks [Rec. 04-10].

The 2004 recommendation established, among other things: reporting requirements for shark catches, including available historical data on catches; full utilization of shark catches; a requirement that CPCs prevent their vessels from having shark fins onboard that total more than 5% of the weight of sharks; a requirement that the ratio of fin-to-body weight of sharks be reviewed by the SCRS by 2005; prohibitions on fishing vessels retaining, transshipping or landing any fins harvested in contravention to the Recommendation; and, a timeline for review of the shortfin mako population assessment and development of management alternatives (2005), as well as reassessment of blue sharks and shortfin mako (2007) by SCRS. The recommendation also encouraged the release of live sharks, especially juveniles in fisheries not directed at sharks, as well as additional research to improve the selectivity of fishing gears and identify shark nursery areas. The United States fulfills the requirements of Recommendation 04-10 through existing data collection programs and fishery restrictions.

3.2 Closed seasons

3.2.1 Recommendation on the Establishment of a Closed Area/Season for the Use of Fish-Aggregation Devices [Rec. 99-3].

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). Effective January 1, 2005, the United States implemented a Mid-Atlantic shark closed area for bottom longline gear from January through July of each year to protect dusky shark and juvenile sandbar sharks in pupping and nursery areas.

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 2005 [Rec. 01-15, 02-16, 02-17, 02-18, 02-19, 02-20, 03-17, 03-18, 04-13, 04-14, and 04-15].

On December 6, 2004, the United States published a final rule (69 FR 70396) that implemented or lifted trade restrictions on several countries in accordance with recommendations adopted at the 2001, 2002, and 2003 ICCAT meetings. Trade restrictions were implemented against bigeye tuna, bluefin tuna, and swordfish imports from Sierra Leone (02-19) and bigeye tuna imports from both Georgia (03-18) and Bolivia (02-17). This rule lifted trade restrictions on Honduras for bigeye tuna (02-18), bluefin tuna (01-15), and swordfish (01-15). Trade restrictions were also lifted against Belize for bluefin tuna (02-16), bigeye tuna (02-16), and swordfish (02-16) imports. Lastly, trade restrictions for bigeye tuna (02-20) imports from St. Vincent's and the Grenadines were also lifted.

In 2005, the United States published a final rule on May 17, 2005 (70 FR 28218) that implemented Recommendations 04-13, 04-14, and 04-15 to lift the trade restrictions on imported bigeye tuna (04-15) from

Cambodia, bigeye and bluefin tuna from Equatorial Guinea (04-13), and bigeye tuna, bluefin tuna, and swordfish from Sierra Leone (04-14).

3.3.2 Statistical Documentation Programs

The U.S.' 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 2005, the United States Implemented ICCAT's recommendation 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. Previously, the United States had a domestic documentation program for swordfish called the Certificate of Eligibility (COE). Updated data (2004) from the U.S. Swordfish COE program are currently unavailable due to complications from Hurricane Katrina. The United States will provide updated Swordfish COE data as it becomes available. Either the domestic COE form or the ICCAT Swordfish Statistical Document meets the domestic reporting requirements.

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 online at: http://www.st.nmfs.gov/st1/nop/index.html. 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 Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in *the ICCAT Convention Area [Rec. 03-14, 04-11]*.

The United States implemented the fleet-wide VMS requirement in the Atlantic pelagic longline fishery effective 1 September 2003 (June 25, 2003, 68 FR 37772), consistent with the terms of recommendations 03-14 and 04-11. The United States is in compliance with these recommendations. In addition to what is required by these recommendations, in December 2003, the United States issued a rule requiring VMS for bottom longline vessels operating in the vicinity of a time/area closure and for shark gillnet vessels operating during the right whale calving season to improve domestic Atlantic shark management.

3.6 Measures to ensure effectiveness of ICCAT conservation and management measures and to prohibit illegal, unreported and unregulated fishing

3.6.1 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 19 tuna longline vessels over 24 meters in overall length. The U.S. submission is provided in the Appendix on page 21.

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, pg. 48.

3.7.2 Resolution 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 released to improve their survivability. The resolution also calls for 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 of 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 de-hookers 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 are 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 are used on boated turtles to allow access to internally lodged hooks. U.S. gear experts have presented this by-catch reduction technology and data from the research activities at approximately 15 international events that included fishing communities and resource managers between 2002 and mid-2005.

In 2004 (July 6, 2004; 63 FR 40734), the United Stated codified regulations that implemented 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, the United States will continue to help export these technologies to other fishing nations.

3.7.3 Recommendation by ICCAT on Vessel Chartering [Rec. 02-21, 03-12].

A final rule was published on December 6, 2004, (69 FR 70396) to implement recommendation 02-21 concerning vessel chartering. Recommendation 03-12 implemented monitoring measures for contracting parties, including maintaining up to date records of fishing vessels entitled to fly its flag and/or authorized to fish species managed by ICCAT in the convention area, which is an integral component of vessel chartering arrangements. NMFS is complying with these recommendations by collecting all relevant information for monitoring before issuing the permits necessary to engage in vessel chartering arrangements.

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 on Improving Recreational Fishery Statistics [Rec. 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 (70 FR 48804); 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 submitted the list of vessels required, pursuant to this recommendation, to the Secretariat in April 2005. At that time there were 239 U.S. vessels that met the appropriate criteria.

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 provided below.

3.7.9 U.S. Swordfish Certificate of Eligibility Program

A summary of data collected through this program in 2003 is provided in the Appendix, page 24.
Updated data (2004) from the U.S. Swordfish COE program are currently unavailable due to complications from Hurricane Katrina. The United States will provide updated Swordfish COE data as it becomes available.

3.7.10 U.S. Enforcement Actions

A summary of actions taken in ICCAT fisheries is provided in the Appendix, page 25.

Section 5: 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.

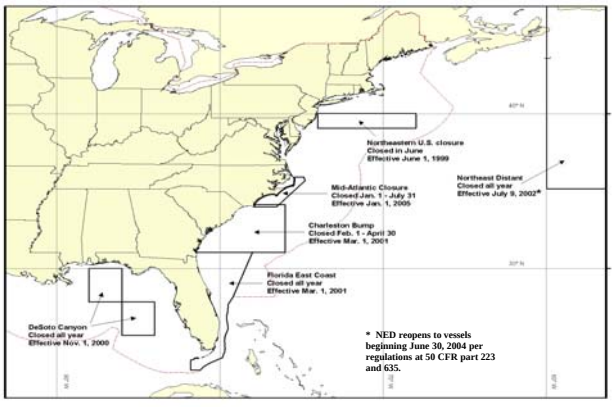

Figure 1. Closures to the Atlantic pelagic longline fishery.

ANNUAL REPORT OF URUGUAY[1]

Olga Mora[2], Andrés Domingo[3]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

The Uruguayan tuna fleet continues to fish with surface longline and mainly in its territorial waters. In 2004, there were 12 Uruguayan flag vessels in operation, which is the same number of vessels as in 2003 (12). Of these, six vessels were based at the port of Montevideo and six at the port of La Paloma. The majority of the vessels are less than 200 GRT and less than 24 m in length.

The total catches landed in 2004 by this fleet amounted to 2,544 t, which represent a 3.2% increase as compared to 2003 (2,464 t). Of this total, 1,105 t corresponded to swordfish, 364 t to tunas, 1,050 to sharks and 25 t to other pelagic species of lesser commercial importance (oilfish, billfish, wahoo, etc.) **(Table 1)**. Swordfish is the major target species for the major part of the fleet, whereas for other vessels the target species are sharks and tunas. Tuna catches in 2004 were 38% higher than those of 2003, due to an increase in the percentage of yellowfin tuna. Tiger shark was the most caught shark species (492.5 t), followed, in importance, by longfin mako (275 t), while sharks of the Carcharihinus genus was the group with the most number of species caught (n=7) (213 t).

There were discards of sharks and other pelagic fish, turtles, sea birds and those tunas and swordfish caught alive that were damaged or under-sized.

Section 2: Research and Statistics

In Uruguay statistical monitoring, research and management of these resources is the responsibility of the *Dirección Nacional de Recursos Acuáticos*, DINARA (National Directorate of Aquatic Resources), formerly the *Instituto Nacional de Pesca,* INAPE (National Fishing Institute). Since 2002, the pelagic resources sector has two operative centers, one in Monevideo and another at the port of La Paloma. For monitoring purposes, information from the fishing logbooks, controls at landing, trade information and sampling is processed. Since a few years ago, the catches transmitted to the Commission are estimated based on the various sources of information. The possibility is being studied to implement a Port Sampling Program to supplement the National Observer Program. In 2004 a total of 12 scientific observer trips were carried out in which information was routinely reported on the gear, fishing method, environmental data, total catch by species, destination of the catch, and size and sex sampling was conducted on the major species caught. Samples were obtained for systematic studies on age and growth, reproduction and genetics. Macroscopic analyses were carried out on stomach contents, and the sighting of mammals and sea birds and tagging of turtles were carried out. Samples of parasites, plankton, epibionts, etc. were collected. The sampling coverage of this program was improved significantly and, in addition, some size samples were taken at landing of fish measured on board. The results were presented in various scientific documents presented at international meetings.

Part II (Management Implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

At present, due to the change in government and DINARA authorities each one of the fishing permits issued up to now is being analyzed, and those that do not comply with the investment program approved and with the current national and international regulations will be canceled. DINARA continues its efforts to maintain the catches within precautionary limits in the hopes that the new allocation criteria adopted by the Commission, are correctly applied, respecting the rights of coastal countries with developing fisheries, as is the case of Uruguay.

[1] Original report in Spanish.

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It is reiterated that the Uruguayan Government includes, among its regulations, those on the minimum catch sizes of swordfish (25 kg, 15% tolerance) and yellowfin and bigeye (3.2 kg). On-board size sampling has shown that of swordfish, yellowfin and bigeye continue to be mainly of large-size adults, as is expected from a longline fishery in this area.

Monitoring has been initiated of the implementation of the regulations, to avoid the discard of dead sharks. A registry has been started of vessels that use torry lines.

Currently all the Uruguayan flag tuna vessels have a VMS system.

Table 1. Number of active vessels in the Uruguayan tuna fleet and the catches of tunas and tuna-like species retained, by species, as reported by Uruguay for the 2002-2004 period.

Year	*No. of Vessels*	*SWO*	*BET*	*YET*	*ALB*	*BFT*	*BIL*
2002	9	768	56	80	92	0	1
2003	12	850	59	95	108	0	19
2004	12	1105	40	204	120	0	4

REPORTS OF OBSERVERS FROM COOPERATING NON-CONTRACTING PARTIES, ENTITIES, OR FISHING ENTITIES

ANNUAL REPORT OF CHINESE TAIPEI[1]

Fisheries Agency, Council of Agriculture[2]

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

1.1 General overview

Chinese Taipei started to fish tuna and tuna-like species in the Atlantic Ocean since the early 1960s. The number of vessels has been declined from 201 in 1996 to 143 in 2004. Among these only three are categorized as vessels less than 24m LOA in 2004. By conducting a Fishing Capacity Reduction Program, the total number of vessels will be decreased substantially in 2005.

The fishery targeted albacore only in the beginning in both the North and South Atlantic Ocean, and since the development of deep longline operations from late 1980s in the tropical Atlantic Ocean, some of the fishing effort has shifted to target on bigeye and yellowfin tunas. Those three species constituted over 85% of the recent annual catch (**Table 1**).

Overall catches by this fleet was consequently declined from 57,822 t (excluding shark by-catch) in 1996 to 42,093 t in 2004 (**Table 1**). Bigeye and yellowfin catches were made mainly 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 (**Figure 1**). Annual catch and catch composition of the Chinese Taipei registered small-scale longline fleet (<100 GRT) was summarized as in **Figure 2**. More detailed information on 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. Chinese Taipei longliners fished albacore all year round in the Atlantic Ocean. The annual catch of South Atlantic albacore fluctuated between 16,000 t and 18,000 t in the last decade but has significantly decreased to 13,288 t in 2004. The North Atlantic catch in 2004 was 4,278 t, similar to the previous year's catch. Total catch of this species in 2004 was estimated to be 17,566 t, a decrease of 4,120 t from 2003.

1.3 Bluefin tuna

The Chinese Taipei longline fleet has targeted the eastern Atlantic Ocean and Mediterranean Sea stock since 1993. The longline fishery has shown little change in the fishing regions of eastern Atlantic Ocean and Mediterranean Sea, in the season (from April to May every year), in the operational mode, and in the capacity of fishing vessels. Due to the decrease of the number of fishing vessels in 2004, the catch of bluefin tuna, which was 445 t in 2003, was 51 t in 2004.

1.4 Tropical tunas

The catches of bigeye tuna and yellowfin tuna from the Atlantic Ocean in 2004 were estimated to be about 17,719 t and 5,825 t, respectively. The catch of bigeye tuna showed a decrease from the previous year (21,563 t in 2003). The catch of yellowfin tuna also decreased from the previous year (6,106 t in 2003).

1.5 Swordfish

In order to comply with ICCAT resolutions, the catch was reduced. The preliminary estimate of swordfish catch in the Atlantic Ocean was 775 t in 2004, with a decrease from 2003, and was comprised of 30 t from the North Atlantic Ocean and 745 t from the South Atlantic Ocean.

[1] Original Report in English
[2] No. 2, Chao-Chow Street, Taipei, Chinese Taipei

1.6 Billfish species

The kinds of billfish species include white marlin, blue marlin, black marlin and other marlins. The white marlin catch constituted about 1% to 2% of the total Chinese Taipei tuna and tuna-like catches in 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 172 t, 315 t, 10 t and 49 t in 2004, respectively.

1.7 Sharks

A preliminary estimation was provided to the By-catch Working Group meeting held in June, 2004. **Table 2** gives the preliminary blue shark by-catch estimate (in round weight, t) of Chinese Taipei during 1996-2002. With the implementation of observer program since 2002 and a new logbook sheet for separation of shark statistics by major species since 2003, the estimate of shark by-catch becomes available. The final data will be revised in the future when more of the observer data and new logbook data are recovered.

Section 2: Research and Statistics

***2.1** Data collection and processing system*

Routine collection and compilation of data for tuna and tuna-like species are applied for all the longline vessels. The Task I and Task II data for all tuna and tuna-like species under ICCAT competence, as well as the number of fishing vessels have been reported to ICCAT Secretariat in accordance with ICCAT requirements.

Task I data have been estimated based on five sources of information: (1) traders' sales records, (2) verification of fishing vessels' sales settlement, (3) certified weight reports of Shin Nihon Kentei Kaisha (New Japan Surveyors and Swom Measures Association, NJSSMA), (4) verification by the Tuna Boatowners and Exports Association, and (5) Statistical Documents data. The trader's sales records and verification of fishing vessels' sales settlement continued to be used and are particularly important for albacore Task I data. The other data sources of (3)-(5) are used as the main bases to estimate Task I for bigeye, yellowfin and the other major tuna and tuna-like species. Data source (3) has now been replaced by similar landing records from Organization for the Promotion of Responsible Tuna Fisheries (OPRT) since 2004. The Task I catch estimate (in round weight, t) for the Chinese Taipei tuna longline fishery that operated in the Atlantic Ocean in 1991-2004 is herewith attached as **Table 1**.

As for Task II catch and effort data, all the data were compiled 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. The Task I data was then used for the conversion of Task II.

As for the Task II size data, fishermen are requested to measure the first 30 fish landed every data, regardless of the species. Those size data have been sent to the ICCAT Secretariat as actual size data. Besides, the catch-at-size data base were 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.

2.2 Statistics improvement programs

For the improvement of the statistical system, Chinese Taipei takes the following measures to collect the fishery-independent data. When more data from these sources are available, crosschecking and reviewing will be carried out on the Task II catch/effort data and size data to increase the accuracy of scientific information.

2.3 Port sampling

Since most of far seas longliners of Chinese Taipei unloaded their catches at overseas ports, there was a need to launch a port sampling program at major foreign ports to collect fishery-independent data. After a period of preparation and training, three sampling trips have been designed for the three Oceans since September of 2005, which is one of the main seasons for vessels entering ports. For the Atlantic Ocean, the sampling program started from September 2005 for Cape Town, to collect fishing information and biological data.

2.4 Observer program

The first official experimental observer program was launched in 2001 in the Indian Ocean. There were two observers for the three Oceans at the beginning, and the number increased to six each year in 2002-03 and to nine in 2004. To improve the collection of reliable data, the number of observers has also been increased.

For the Atlantic Ocean, there were four observers with 726 observer days (excluding navigation days) in 2004. The number of observers dispatched increased to five in 2005 and will be six onboard bigeye vessels and three on albacore vessels. The observer coverage was about 5% in 2004 and increased to about 8% in 2005. Observers will collect fishery data and size measurements on major catch species and by-catch species. Biological samples of bigeye, albacore, swordfish and by-catch/incidental catch species will also be collected.

Further, the annual budget input for the observer program has increased to about US$ 330,000 dollars in 2004 from US$ 180,000 dollars in 2003, which accounted for an 83% increase. In addition, the budget for 2005 has further increased to US$ 850,000 dollars, an increase of 160%.

2.5 Vessel Monitoring System (VMS)

All the longline vessels of Chinese Taipei operating in the Atlantic Ocean are required to install VMS with a workable spare set. The data from VMS will be incorporated into the statistical system and used to verify the position of the vessel and calculate the fishing days, to improve data quality. The annual budget to promote VMS programs had been kept at the level of US$ 110,000 dollars in 2003 and 2004 respectively.

2.6 Research

Chinese Taipei supports research programs on main tuna and tuna-like species, not only for domestic programs but also for programs implemented by ICCAT. From 1998 to 2003, Chinese Taipei donated US$ 15,000 to the ICCAT Secretariat, US$ 10,000 for the Bigeye Tuna Program, US$ 238,560 for the four-year Bigeye Tuna Yearly Program (BETYP), US$ 30,000 for the Bluefin Tuna Program (BYP), US$ 35,000 for the Billfish Program (BIL Program), 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. Chinese Taipei also contributed US$ 80,000 to the ICCAT Secretariat for budget year of 2004.

For domestic research program, research centered on standardization of catch per unit efforts for many tuna species in the past. The research results were presented at the regular meetings and inter-sessional working group meetings of SCRS. Besides, with the implementation of the observer program, more data and biological samples are available for research. Currently, research relating to tunas include: stock assessments, DNA studies on bigeye, swordfish, and albacore (and incidental catch species), size samples by sex for swordfish, conversion factors for major tuna species, shark fin ratio, shark by-catch re-estimation, incidental catch rate of sea bird and sea turtles. For research, Chinese Taipei annually budgeted about US$ 910,000 and 780,000 dollars in 2003 and 2004 respectively, and this was further increased about 15% to US$ 900,000 in 2005.

Part II (Management implementation)

Section 3. Implementation of ICCAT Conservation and Management Measures

3.1 Limit on the number of fishing vessels

3.1.1 Bigeye Tuna [Rec. 03-01]

The number of fishing vessels to catch bigeye tuna was limited to 125 in 2004 in accordance with the *Recommendation by ICCAT on the Bigeye Tuna Conservation Measures* [Rec. 03-01]. The number in 2004 was 98.

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 to catch northern albacore was set at the average number for the period of 1993-1995, and a list of vessels fishing for northern albacore in 2004, 2005 was transmitted to the ICCAT Secretariat on May 25, 2004 and May 5, 2005 respectively. The number of Northern Atlantic albacore fishing vessels was 17 in 2003 and 14 in 2004.

3.2 Catch limits and minimum sizes

In accordance with the relevant ICCAT Recommendations, catch limits have been set 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 fish for 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 2004 are provided in the Compliance Tables (see Appendix[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], Chinese Taipei is subject to a catch limit of 16500 t in 2004 for legitimate fishing vessels. The estimated catch of bigeye tuna in the Atlantic Ocean was 17,719 t in 2004. Besides, there is also a restriction on the minimum size of 3.2 kg for bigeye tuna caught in this region.

As for the payback program in accordance with the *Recommendation by ICCAT on a Multi-Year Conservation and Management Program for Bigeye Tuna* [Rec. 04-01], the Fisheries Agency has already implemented a fishing capacity reduction program and fishing vessels monitoring and management scheme in 2005 to ensure that the catch limit of bigeye tuna will not exceed the quota limit 14,900 t.

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 for Chinese Taipei based on the traditional shares of 1.5% will only be activated in a given year when they individually fished its current level of underages. The catches of this species were 445 t in 2003 and 51 t in 2004, which were within the catch limit. In addition, in compliance with Recommendation 02-08, vessels were restrained from fishing western Atlantic bluefin tuna. The size limitation of 10 kg on the bluefin tuna catch in the regions was applied.

3.2.3 Northern albacore [Rec. 03-06]

According to *Recommendation by ICCAT on North Atlantic Albacore Catch Limits* [Rec. 03-06], a catch limit of 4453 t was set for Chinese Taipei. The catch of this species amounted to 4,278 t in 2004.

3.2.4 Southern albacore [Rec. 03-07]

According to the *Recommendation by ICCAT on the Southern Albacore Catch Limit and Sharing Arrangement for 2004* [Rec. 03-07], 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 for each individual country. In 2004, information on the accumulative catches of southern albacore was reported to the Secretariat every two months. The catches of this species were 17,351 t in 2003 and 13,288 t in 2004.

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 2004. However, because the catch exceeded the catch limit in 2001 and 2002, the catch quota was reduced to 52 t [Rec. 96-14]. The total catch of north swordfish for Chinese Taipei vessels in the Atlantic Ocean was estimated to be about 30 t in the North Atlantic Ocean.

In addition, restrictions on minimum weight (< 25 kg) and size (lower jaw fork length (LJFL) < 119 cm) of swordfish for vessels operating in this region were applied.

[3] Available from the Secretariat

3.2.6 South swordfish [Rec. 02-03]

According to the *Recommendation by ICCAT on the 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 overages from 2001 and 2002, Chinese Taipei was allocated a quota of 1,124 t and 825 t in 2004. The total catch of swordfish was estimated about 1,089 t in 2003 and 745 t in 2004.

3.2.7 Atlantic white marlin and blue marlin [Rec. 00-13, Rec. 02-13]

In 2002, the *Recommendation by ICCAT to Amend the Plan to Rebuild Atlantic Blue Marlin and White Marlin Populations* [Rec. 02-13] was adopted. 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. The catches of blue marlin and white marlin were 315 t and 172 t, respectively, in 2004, both within the catch level recommended.

3.3 Closed seasons [Rec. 93-07]

In accordance with the 1993 ICCAT Recommendation [Rec. 93-07], a regulation to prohibit longline vessels to fish for bluefin tuna in the Mediterranean from June 1 to July 31 was implemented.

3.4 Ban on imports

According to ICCAT Recommendations [Rec. 04-13], [Rec. 04-14], [Rec. 04-15], [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], [Rec. 99-10], imports of products of bluefin tuna, swordfish, and bigeye tuna caught by countries, including Bolivia and Georgia, as referred to the Recommendations have been prohibited. The trade sanctions on Belize and St. Vincent and the Grenadines were lifted in 2004. The trade sanctions on Cambodia, Equatorial Guinea, and Sierra Leone will be lifted in 2005.

3.5 Vessel Monitoring System [Rec. 04-11]

According to *Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area* [Rec. 03-14] and the *Recommendation by ICCAT Concerning Implementation of the VMS Recommendation* [Rec. 03-14] [Rec. 04-11], 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 a satellite-based vessel monitoring system (VMS). In 2005, the coverage of the vessel monitoring system of Chinese Taipei large-scale tuna longline vessels is 100%. To ensure that the VMS works continuously without excuse of damage, all LSTLVs are required to install a spare VMS.

3.6 Measures to ensure effectiveness of ICCAT Conservation and Management measures and to prohibit Illegal, Unreported, and Unregulated fisheries

In accordance with *Resolution on Calling for Further Actions Against Illegal, Unregulated, and Unreported Fishing Activities by Large-Scale Tuna Longline Vessels in the Convention Areas 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 Areas* [Res. 00-19], 48 flag of convenience (FOC) vessels that were built in our ship yards have been re-registered to our registry, 13 of which 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 ICCAT *Resolution Concerning More Effective Measures to Prevent, Deter and Eliminate IUU Fishing by Tuna Longline Vessels* [Res. 01-19], the following measures have been taken: (1) Administrative guidance has been given to the industry not to engage in FOC/IUU activities that might diminish ICCAT conservation and management measures. (2) Administrative guidance has been given to banking institutions not to grant loans to IUU fishers.

Furthermore, in accordance with *Resolution Concerning Further Defining the Scope of IUU Fishing* [Res. 01-18], vessels that have been identified as carrying out IUU fishing, were prohibited to access the fishing ports of Chinese Taipei.

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 is available.[4]

Likewise, in accordance with the Establishment of an ICCAT Record of Vessels over 24 Meters Authorized to Operate in the Convention Area (02-22), a list of updated respective vessels larger than 24 meters length overall that were licensed authorized to fish for tuna and tuna-like species operate in the ICCAT Convention area was transmitted to ICCAT Secretariat on August 5, 2005.

3.7 Transshipment

According to *Resolution by ICCAT on 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 of 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 2004, there were 36 transshipment vessels that transshipped for around 320 trips. Up to September 2005, there were 12 transshipment vessels that transshipped for around 200 trips.

3.8 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 US domestic regulation on the import of swordfish, regulations on the application of swordfish Certification of Eligibility were implemented starting from June 1999 and November 2000 for the US and Japan, respectively. Furthermore, system for issuing the "ICCAT Bigeye Tuna Statistical Document" in accordance with ICCAT Recommendation has been conducted as from July 1, 2002. In 2004, about 2800 Statistical Documents were issued for bigeye tuna, bluefin tuna and swordfish for three oceans in total. Among these, 750 SDs were issued for catch in the Atlantic Ocean. Of those SDs, 80% were issued for bigeye tuna. Most of the catch was exported to Japan (93%), while export to the United States ranked second (5%). In comparison to the landing data of Japan, the export data of bigeye and bluefin from Chinese Taipei are similarly close. In regard to swordfish, the reports from import countries are not enough to make a comparison.

Section 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 Fish laundering investigation

As regards fish laundering, 12 vessels involved in such practices have been penalized and completed. In addition, stringent measures for monitoring and controlling our fishing vessels have been implemented.

Section 5. Others activities

5.1 Fishing Capacity Reduction Program

To have fishing capacity in commensurate with our catch quota, Chinese Taipei has launched a fleet reduction program. The program is aimed to scrap a total of 120 large-scale tuna longline vessels in three oceans (73 in 2005 in the first phase and 47 in 2006 in the second phase). This program will cost US$125 million to compensate owners of the scrapped vessels. In the Atlantic Ocean, there were 100 longline vessels targeting bigeye tuna in 2004, as reported to ICCAT. By end of June 2005, the remaining number of vessels in operation had been reduced to 76 through the reduction program.

[4] Available from the Secretariat.

Table 1. Catch estimate (in round weight, t) for Chinese Taipei tuna longline fishery operated in the Atlantic Ocean, 1996-2004. Estimates of shark by-catch were not included in the total due to the processing of data, reviewing and revising.

Year	*ALB*	*BET*	*YFT*	*BFT*	*SBF*[*2]	*SWO*	*BIL*	*SKJ*	*OTH*	*Total*
1996	22,861	21,850	6,653	472	24	3,395	1,369	15	1,183	57,822
1997	21,495	19,242	4,466	506	89	3,074	2,215	47	650	51,784
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	21,651	18,483	4,659	666	16	1,474	658	39	758	48,404
2003	21,686	21,563*[3]	6,106	445	86	1,312	515	40	923	52,676
2004*[1]	17,566	17,719	5,825	51	17	775	546	43	871	42,093

Note:*[1] Preliminary data.
*[2] Catch estimate of SBF has been revised to be consistent with CCSBT database in 2004.
*[3] Preliminary data including estimate of catch was misreported.

Table 2. The catch estimates (in round weight, t) for the Chinese Taipei blue shark fishery that operated in the Atlantic Ocean, 1996-2002. The catch estimates are recommended by the Inter-Sessional Meeting of the Sub-Committee on By-catch held on June 14-18, 2004. These estimates are preliminary and may be revised in the future.

Year	*Blue shark*
1996	7,434
1997	6,378
1998	5,620
1999	6,288
2000	6,242
2001	5,708
2002	5,930

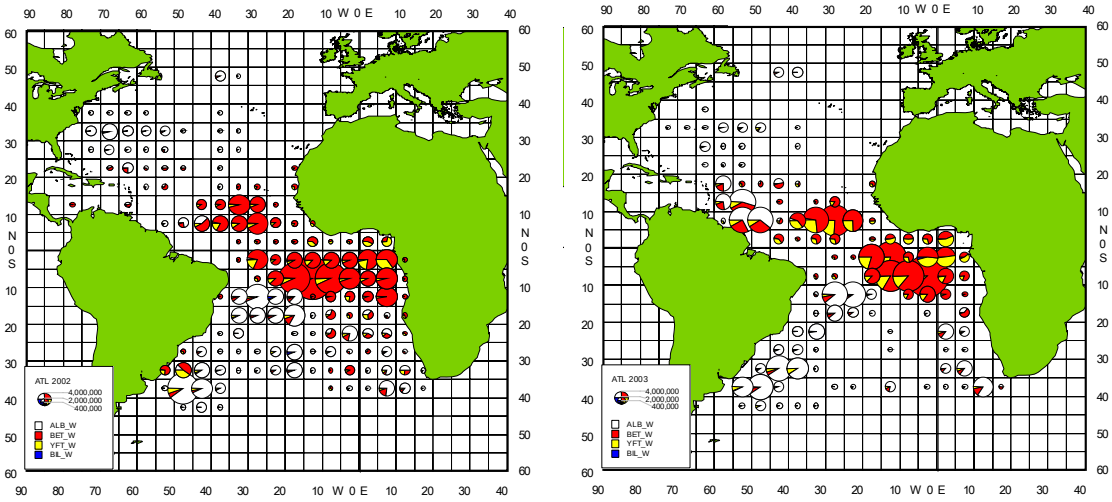

Figure 1. Distribution of catch and catch composition of the main tuna species in the Atlantic Ocean in 2002 (left panel) and 2003 (right panel, preliminary data).

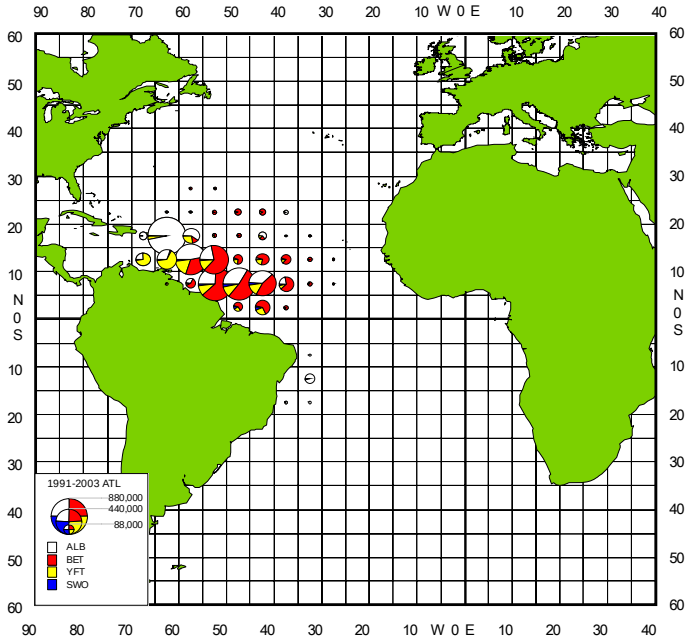

Figure 2. Distribution of catch and catch composition of the main tuna species (in annual average bases) caught by Chinese Taipei registered small-scale longline vessels (< 100 GRT) operating in the Atlantic Ocean during the 1991 to 2003 period.

ANNUAL REPORT OF GUYANA[1]

Ingrid Peters & Dawn Maison

Part I (Information on fisheries, research and statistics)

Section 1: Annual Fisheries Information

Since 2003, all artisanal vessels are required to be registered with the Maritime Administration Department (MARAD) before the renewal of licenses with the Fisheries Department. Prior to 2003, trawlers and vessels that harvested deep slope fish (red snapper, groupers, etc.) were the only vessels that were required to be registered with the Maritime Administration Department.

Following consultations with Member States, the Caribbean Regional Fisheries Mechanism Secretariat has developed a regional strategy and project proposal for Monitoring, Control, Surveillance at the national and regional levels. In 2004 and 2005, representatives from Guyana attended FAO and CRFM workshops on Illegal, Unreported and Unregulated (IUU) Fishing and Vessel Monitor System (VMS).

1.1 Description of the fishery

In Guyana, there is an inshore artisanal fishery, in which six gear types, namely (i) Chinese seine / fyke net, (ii) pin seine, (iii) caddell, (iv) gillnet (nylon and polyethylene), (v) handline, and (vi) fish pots, are being used to catch mainly demersal fish species, with some pelagics and sharks as incidentals **(Table 3)**. All the boats are made from wood and are manufactured locally. The boats range from 6 to18 meters in overall length and are powered by sails, outboard, or inboard engines.

1.1.1 Fishing gear

Chinese seines are funnel-shaped nets, 16 m (52 ft) long and 4-6 m (13.1-19.6 ft) wide at the mouth. The mesh size gradually tapers from 8 cm at mouth to 1 cm at funnel. 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 2 m outwards. Caddell or demersal longline fishing vessels range in size from 6.71-9.15 m (22-30 ft) in length.
Each vessel carries between 4-5 wooden trays with each tray having 2-6 main lines.

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.

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 an 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 fishing is done in coastal/shallow waters. The fishers normally target demersal fish groups, such as grey snapper and sea trout (sciaenids), and gillbacker (marine catfishes) with, depending on the season, scombrids and sharks being caught as incidentals **(Tables 2 and 4)**.

The gillnet polyethylene gear is responsible for capturing about 90% of the sharks landed in Guyana **(Table 1)**. For a normal fishing trip a vessel would spend 7-21 days at sea. Sharks are harvested all year round; however, during July-January there is an increase in landings. There is strong competition within the fishery for sharks, 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.

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

[1] Original report in English.

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 (*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.

1.1.3 Plans for expansion

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 a pelagic fishery. However, this will take some time, as Guyana is a developing State with limited resources. The development of a 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.

Section 2: Research and Statistics

Sharks are landed dressed, i.e., headless and gutted. Only the juvenile sharks (caught by either caddell, chinese seine or gillnet nylon), 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 made by CARICOM Regional Fisheries Management Secretariat for a one-year study to improve collection of data on shark catches. The Department is seeking funding for the project.

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.

Part II (Management Implementation)

Section 3: Implementation of ICCAT Conservation and Management Measures

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. However, in 2004 there was an extension of the duties (monitoring the smuggling of fuel and narcotics) for the members of the Coast Guard. Thus, they were only able to conduct eight fisheries surveillance trips (4 aerial reconnaissance and 4 on water), with no apprehensions being made. The added duties, with some members of staff being overseas on training, made it difficult to achieve more extensive surveillance.

Table 1. Production of shark in 2004 by gear type.

Gear type	*#Vessels*	*Production (kg) 2004*
Gillnet polyethylene (cabin cruiser) 6-8" mesh size	308	1,225,734.2
Gillnet polyethylene (inboard) 8" mesh size	63	99,761
Gillnet nylon 2" mesh size	441	1,488,311
Caddell # 5-9 hooks	80	219,067.4
Chinese seine 4-5 bundles (25-30 lbs each)	46	701.27
Pin seine	35	-
Handline # 6-9 hooks	18	34,322
Total	**991**	**3,067,897**

Table 2. Scombrids and shark production by species (kgs).

	Shark species				*Scombrids*		
Month	*G. cuvier*	*S. zygaena*	*C. limbatus*	*Unidentified shark species*	*Scomberomorus brasiliensis*	*Scomberomorus cavalla*	*Total*
Jan	-	581	771.4	703,837.3	20,226.7	13,023.6	**741,775.9**
Feb	-	270.4	931.6	213,257	5,349.7	7,714	**227,913.4**
Mar	-	-	-	163,546.8	26,047.2	14,025.4	**206,544.7**
Apr	-	62.1	250.4	125,217.2	44,230.2	37,868.7	**229,646.5**
May	-	-	-	213,687.8	41,134.6	15,928.9	**287,421.5**
Jun	-	400.7	230.4	191,517.5	41,595.4	18,633.8	**263,087.2**
Jul	-	-	-	44,230.2	62,984.3	56,402.3	**181,479.2**
Aug	6,632	-	3176.7	245,395.3	59,477.9	53,597.2	**387,533**
Sep	-	-	-	356,446.9	75,977.8	25,225.7	**471,144.8**
Oct	-	-	-	98,067.9	49,750.2	22,701.2	**176,379.9**
Nov	-	621.1	1332.4	210,843.6	58,736.6	17,020.8	**289,174.6**
Dec	-	-	-	485,931.9	8,184.8	28,952.5	**524,381.5**
Total	**6,632**	**2,494.3**	**6,691.9**	**3,051,978.4**	**493,735.4**	**311,094.1**	**3,986,482.2**

Note: It should 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 2004.

L.O.A (meters)	*Code* *N = Number* *GT = Gross tonnage* *P = Power*		*Pin seine*	*Chinese seine*	*Gill netters*	*Caddell*	*Longline*
	100	N	43	252	342	71	
Up to 11.9		GT	-	-	-	-	
		P	HP	HP	HP	HP	
	110	N	2		201	6	20
12 – 17.9		GT	-		-	-	-
		P	HP		HP	HP	HP
	120	N			5	2	
18 – 23.9		GT			-	-	
		P			HP	HP	
	130	N	1	1	9		
24 – 29.9		GT	-	-	-		
		P	HP	HP	HP		
Total			**46**	**253**	**557**	**79**	**20**

Table 4. Large pelagic landings statistics for 1998-2004 (t).

Species	*Landings (t)*							
	1998	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*Total*
S. brasiliensis	625	1143	308	329	441	389	493	3728
S. cavalla	440	398	214	239	267	390	311	2259
C. hippos	118	78	233	58	99	148	114	848
R. porosus	-	-	192	114	306	13	-	625
G. cuvier	-	-	-	4	-	-	7	11
C. limbatus	-	-	50	14	86	20	7	177
S. zygaena	-	-	11	-	4	.1	3	18.1
Shark spp.	2562	2175	903	666	842	1778	3047	11973
Total	**3745**	**3794**	**1911**	**1424**	**2045**	**2738.1**	**3982**	**19639.1**

REPORTS OF OBSERVERS FROM INTERGOVERNMENTAL ORGANIZATIONS

ANNUAL REPORT BY THE CARIBBEAN COMMUNITY & COMMON MARKET (CARICOM)[1,2]

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Part I (Information on fisheries, research and statistics)

This report provides statistics and other fisheries information on behalf of the following CRFM/CARICOM countries that are currently neither Contracting Parties nor Co-operating Parties to ICCAT, but which have submitted data and information on large pelagic fisheries to the CRFM and ICCAT Secretariats: Grenada, Commonwealth of Dominica, St. Kitts and Nevis, and St. Lucia.

Section 1: Annual 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. However, fishing methods have undergone minor changes in recent years, mainly as a result of the introduction of FAD technology.

1.1 Grenada

Most of the vessels (~75%) that operated in 2004 were less than 6 m. using light LL gear and tackle. These vessels are basically 'day boats', called ‘pirogues’, that leave in the morning, return at night, and operate about 10 miles offshore.

The longline and trolling gear of the ‘pirogues’ are fully manually operated. The larger vessels are called ‘launches’ and range from 9 to 15 m in length. These larger vessels can stay at sea for 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. Additionally, about 20 wooden boats (<12 m LOA) that were involved in the demersal fishery up to the mid-1990s, switched to manually operated longline gear and began targeting large pelagic species. This increase in large pelagic fishing effort is likely the cause for the observed increases since the mid to late 1990s in large pelagic catches, especially blue marlin. 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 2004. In 2004, the most important species comprising the landings were the same as observed in 2003: yellowfin tuna (*Thunnus albacares*), blackfin tuna (*T. atlanticus*), sailfish (*Istiophorus albicans*), swordfish (*Xiphias gladius*) and blue marlin (*Makaira nigricans*). Sharks are not targeted, but are taken as by-catch in other fisheries. Catches of sharks in 2004 were not significant, and hence the catches were not sorted into species for sampling purposes.

1 Original report in English.
2 Report prepared by the Caribbean Regional Fisheries Mechanism (CRFM) on behalf of Grenada, Commonwealth of Dominica, St. Kitts and Nevis, and St. Lucia.
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1.2 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 2004, i.e. 342 vessels. These 'pirogues' are 6 to 8 m in length. Fishing with FADs commenced in 1999. The introduction of FADs has made fishing operations more efficient from an economic standpoint. The FADs are constructed using simple materials that are readily available locally. A management framework has been established to govern the fishing practice, as well as the maintenance and financing of FADs. In 2004, there were 8 anchored FADs in operation, compared to 12 used in 2002. Most of the trolling is done using single lines. No out -rigger gear is used in the fishery. Surface longline gear is no longer used in the pelagic fishery mainly due to the high replacement cost of such gear. With the increasing utilization of FADs, the hand line is emerging as the predominant gear. All gears are manually operated.

The fishing operations involving FADs have recorded some recent reductions in catches due to the influence of a higher level of strong ocean currents, which can result in the submergence of the FADs, and associated loss of fishing access. The reduced landings observed in 2004 was also likely due to increased fuel costs that limited the number of possible fishing trips, and also the retirement of a small number of active older fishers. The Fisheries Division is making every effort to recruit younger fishers into the industry, to ensure stability of the industry and its continued contribution to local food security and foreign exchange earnings.

As observed in 2003, the most important landings for 2004 were those of yellowfin tuna (*T. albacares*), blue marlin (*M. nigricans*), skipjack tuna (*Katsuwonus pelamis*), and blackfin tuna (*T. atlanticus*). The Fisheries Division is currently working with the CRFM Secretariat to improve its data and information system through the use of the CARIFIS fisheries software program.

1.3 St. Kitts and Nevis

Open boats with outboard engines are usually used for offshore operations. Additionally, the beach seine fishery catches notable amounts of skipjack tuna (*K. pelamis*) and blackfin tuna (*T. atlanticus*) that come close to the shore. As reported in 2003, there is an increasing 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.

1.4 St. Lucia

A total of 669 fishing vessels participated in large pelagic fishing operations in 2004. This figure was the same as that recorded in 2003. The majority of vessels are 6-11.9 m LOA, but some smaller and larger–sized vessels also operate in the fishery. Most of the vessels are 'pirogues', same as those described for Grenada. The 'pirogues' are used for single-day trips only. Vessels continue to 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 are manually operated.

At present, there are about six FADS deployed along the east, south, and northwest coasts of the island. The increase in the number of FADS has been facilitated mainly by a partnership arrangement between the Department of Fisheries and the Fishermen's Cooperatives: this arrangement has provided funding for the construction, deployment and maintenance of the FADS. Recently, the Department of Fisheries has been exploring and promoting greater use of locally available material for the construction of FADs, e.g. bamboo.

The majority of fishers engages in trolling around the FADs, and usually catch species such as small tunas, wahoo and dolphin fish. However, some fishers set individual long lines, and this method tends to yield catches of yellowfin tuna, blue marlin and shark species. Though data collectors record the fish caught by the FAD fishery, the Fisheries Department has to yet to organize the computerization of these data.

There is a small, active recreational fishery, with some catch data recorded during tournaments. As in 2003, the most important species comprising the landings are: wahoo (*A. solandri*), yellowfin tuna (*T. albacares*) and skipjack tuna (*K. pelamis*).

Section 2: Research and Statistics

Table 1 provides currently available best estimates of commercial landings of large pelagic species in 2004 in Grenada, Commonwealth of Dominica, St. Kitts and Nevis, and St. Lucia. The fisheries in these countries are multi-species and multi-gear fisheries that fish opportunistically. While there is a natural annual fluctuation in observed landings of various species, fishing methods have been changing in recent years. In particular, there is an increasing use of FADs that tends to increase catches of large tunas, billfishes and sharks.

2.1 First Meeting of the CRFM ad hoc Working Group on Methods

The CRFM Ad Hoc Working Group on Methods held its first meeting in May 2005. During this meeting, the Working Group, in accordance with its terms of reference, reviewed and discussed several assessment methods and their potential for application to fisheries within the Caribbean region. Two smaller working groups were established to examined issues pertaining to (i) data availability and quality; and (ii) communications between scientists and managers. Testing of the application of three assessment methods to real data available from local fisheries also commenced during the meeting. These tests were expected to continue in the inter-sessional period. The report of this Meeting will be presented at the Second Annual CRFM Scientific meeting, scheduled to take place in early 2006.

Table 1. The 2004 annual commercial large pelagic fish landings (mt) of Grenada, Commonwealth of Dominica, St. Kitts and Nevis and St. Lucia.

Country	*Common name*	*Scientific name*	*2004*
Grenada	Yellowfin tuna	*Thunnus albacares*	460.4
	Skipjack tuna	*Katsuwonus pelamis*	20.8
	Blackfin tuna	*Thunnus atlanticus*	267.5
	Bigeye tuna	*Thunnus obesus*	0
	King mackerel	*Scomberomorus cavalla*	0
	Wahoo	*Acanthocybium solandri*	-
	Atlantic bonito	*Sarda sarda*	-
	Albacore*	*Thunnus alalunga*	24.6
	Atlantic sailfish	*Istiophorus albicans*	112.2
	Blue marlin	*Makaira nigricans*	44.7
	White marlin	*Tetrapturus albidus*	33.1
	Swordfish	*Xiphias gladius*	73.1
	Sharks unspecified		15
Commonwealth of Dominica	Skipjack tuna	*Katsuwonus pelamis*	29.6
	Blackfin tuna	*Thunnus atlanticus*	19.8
	Bigeye tuna	*Thunnus obesus*	0.02
	Wahoo	*Acanthocybium solandri*	5.7
	King mackerel	*Scomberomorus cavalla*	-
	Marlin unspecified		-
	Tuna unspecified		7.5
	Atlantic sailfish	*Istiophorus albicans*	1.4
	Swordfish	*Xiphias gladius*	0.1
	Blue marlin	*Makaira nigricans*	36.3
St. Kitts	Tuna and mackerels unspecified		7.8
Nevis	Tuna and mackerel unspecified		3.5
	Wahoo		5.5
St. Lucia	Yellowfin tuna	*Thunnus albacares*	147
	Skipjack tuna	*Katsuwonus pelamis*	137
	Blackfin tuna	*Thunnus atlanticus*	96
	Albacore tuna	*Thunnus alalunga*	5
	Tuna unspecified		0.92
	Atlantic bonito	*Sarda sarda*	0.6
	Bullet tuna	*Auxis rochei*	0.1
	King mackerel	*Scomberomorus cavalla*	0.53
	Spanish mackerel	*Scomberomorus maculatus*	0.07
	Cero mackerel	*Scomberomorus regalis*	0.27
	Wahoo	*Acanthocybium solandri*	238
	Blue marlin	*Makaira nigricans*	17
	Bigeye tuna	*Thunnus obesus*	0.14
	Atlantic swordfish	*Xiphias gladius*	2
	Bignose shark	*Carcharhinus altimus*	0.006
	Tiger shark	*Galeocerdo cuvier*	10
	Lemon shark	*Negaprion brevirostris*	2
	Blacktip shark	*C. limbatus*	2
	Oceanic whitetip shark	*C. longimanus*	0.26
	Sandbar shark	*C. plumbeus*	0.12
	Sand tiger shark	*Carcharias taurus*	0.05
	Nurse shark	*Ginglymostoma cirratum*	0.7
	Hammerhead sharks nei	*Sphyrna spp.*	0.21
	Sharks unspecified		2

* The 'albacore' reported by Grenada is believed to consist of a mixture of albacore, and other tunas.

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