

UK National Report 2003

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Abstract

The UK National Report summarises tuna fishing in the British Indian Ocean Territory (Chagos Archipelago) Fisheries Conservation and Management Zone (FCMZ) during the 2002 / 2003 fishing season (April 2002 to March 2003). During this season, 37 longline vessels (mainly from Japan and Taiwan, China) caught a total of 1467 t, mainly of yellowfin and bigeye tuna, and 52 purse seine vessels (Spanish and French operated) caught 722 t of skipjack, yellowfin and bigeye tuna. An observer programme was again conducted in 2002/2003, with observations on 2 Japanese and 4 Taiwanese longliners. In this programme, biological sampling is carried out and data collected on target tuna, bycatch and discard species. In addition, complete hook-by-hook surveys are carried out of selected longline sets, for which all fish caught were landed. Collection of these observer data fulfils recommendations made by the WPDCS and WPTT.

1. Introduction

This report summarises fishery statistics relating to the tuna fisheries in the British Indian Ocean Territory (Chagos Archipelago) Fisheries Conservation and Management Zone (FCMZ) during the 2002 / 2003¹ fishing season and provides a comparison against previous years. It also reports on implementation of recommendations of the Scientific Committee and on the research carried out by the UK on tuna and tuna-like species in the Indian Ocean.

2. Fishery statistics

Three tuna fisheries operated in the British Indian Ocean Territory (Chagos Archipelago) Fisheries Conservation and Management Zone (FCMZ) during the 2002 / 2003 fishing season: a longline fishery, a purse seine fishery and a recreational fishery.

2.1 Longline Fishery in seasons 1998 / 1999 to 2002 / 2003

The 2002 / 2003 longline season ended with a total estimated catch of 1466 MT, based upon logbooks and on radio reports where logbooks have not yet been returned. Table 1 provides a summary showing the number of vessels, total catch and effort. There has been a substantial drop in the number of vessels licensed during the past two years, although the number of days fished has increased this year, with those vessels that have been licensed staying for longer periods.

1 For the purposes of this report, the fishing season for the BIOT FCMZ (Chagos Archipelago) is defined as running from the 1st of April through to the 31st of March the following year. This season definition is used because the main historical peaks in the purse seine and longline seasons in the BIOT FCMZ (Chagos Archipelago) occur during the months of December and January.

Table 1 Summary of the 1998 / 1999 to 2002 / 2003 longline fishing seasons

Year	1998/1999	1999/2000	2000/2001	2001/2002	2002/2003
Number of Vessels	71	49	64	36	37
Number of Days Fished	2100	1661	2052	901	1379
Total Catch (MT)	1989	1939	1828	1034	1467
CPUE (MT / day)	0.947	1.167	0.891	1.148	1.064
CPUE (MT / 1000 hooks)	0.316	0.389	0.297	0.382	0.399

The catch per unit effort for 2002 / 2003 was similar to previous years at an average of 1.064 MT day⁻¹ (or 0.399 MT / 1000 hooks). As in previous years, a small number of vessels have been achieving catch rates of greater than 1.25 MT day⁻¹ over the season as a whole.

The Japanese CPUE for 2002 / 2003 was 0.981 MT day⁻¹, which is lower than previous years. It is also lower for the first time than the catch rates achieved by Taiwanese vessels (1.118 MT day⁻¹). This may be explained in part in that a large number of the Japanese vessels operating in BIOT this year were new to the fishery and the vessels on average did not remain for long periods in the zone compared to the Taiwanese.

During the six months between April and September 2003, 27 Taiwanese longline vessels have fished in the BIOT FCMZ for a total of 614 days, with a total reported catch of 627 t.

The catch per unit effort for 2003 / 2004 is similar to previous years at an average of 1.022 MT day⁻¹ or 0.399 MT / 1000 hooks. Catch rates during the first six months of the BIOT season have historically been lower than the second half of the season.

The catch composition of the Taiwanese and Japanese longline fleets in 2000 / 2001 and 2001 / 2002 are shown in Table 2.

Table 2. Catch species composition for Japanese and Taiwanese longliners in 2001 / 2002 and 2002 / 2003, based on data from logbooks only

	Japanese		Taiwanese	
	2001/02	2002/03	2001/02	2002/03
Yellowfin tuna	49.5%	67.0%	46.5%	51.9%
Bigeye tuna	50.5%	26.0%	40.8%	36.7%
Other	0.0%	7.0%	12.7%	11.4%

2.2 Purse Seine Fishery in 2002 / 2003

A total of 52 vessels were licensed during the 2002 / 2003 fishing season, comprising 48 purse seiners and 6 support vessels. Most of the purse seiners were European owned and managed, flying French and Spanish flags. The rest were registered under a number of flags including Seychelles, Belize, Panama, Iran and the Netherlands Antilles. One Japanese purse seine vessel also fished during the 2002 / 2003 season.

Total catches for the season of principal commercial species totalled 722 tonnes, the lowest catch recorded since the purse seine fishery started in 1993. This catch was taken in 62 days fishing, at an overall catch rate of 11.65 tonnes day⁻¹.

A summary of the 2002/2003 season and the four previous seasons is shown in Table 3.

Table 3. Summary of the 1998 / 1999 to 2002 / 2003 purse seine fishing seasons.

Year	1998/1999	1999/2000	2000/2001	2001/2002	2002/2003
Number of Vessels	51	17	48	50	52
Number of days fished	482	122	109	379	62
Total Catch (MT)	6275	3145	1064	5795	722
CPUE (MT per day)	13.02	25.78	9.76	15.29	11.65

The species composition this year was dominated by skipjack tuna which made up 67.87% of the total catch (490t), with smaller amounts of juvenile yellowfin (130t, 18.01%), juvenile bigeye (97t, 13.43%) and albacore (5t, 0.69%).

2.3 Observer Programme

As in previous years, the BIOT (Chagos Archipelago) offshore fisheries observer programme aimed to divide observations equally between longliners and purse seine vessels, however limited purse seine fishing in the 2002/2003 season restricted observations to longliners only.

Observations were conducted on two Japanese and four Taiwanese longline vessels. The observation period was from the 4th December 2002 to the 3rd February 2003 and the deployments are summarized in Table 4.

Table 4 Summary of observer deployment during the 2002 / 2003 observer programme

Vessel	Type	Flag	Period	Days
Oju Maru 3	LL	JP	04/12 - 06/12	3
Matsufuku Maru 58	LL	JP	16/12 - 17/12	2
Hung Fu I 212	LL	TW	22/12 - 26/12	5
Sunny	LL	TW	05/01 - 09/01	5
Yuh Yow 2	LL	TW	24/01 - 27/01	4
Wei Hsin 16	LL	TW	01/02 - 03/02	3

Work conducted was divided into two principal categories:

- Observations on the practical aspects of tuna fishing (search, effort and catch information, as well as environmental conditions).
- Biological sampling, data collection and analysis of the target tuna, by-catch, and discard species

As with previous years, length-weight relationships were estimated for the target tuna species. Additionally, length-weight relationships were estimated for all by-catch and discard species where sufficient data was available to present robust results, including albacore, skipjack tuna, black marlin, blue marlin, sailfish, swordfish, blue shark, bigeye thresher shark, pelagic thresher shark, silky shark, yugan, oilfish, wahoo, dolphinfish, bigscale pomfret, longnosed lancet fish and pelagic stingray.

A total of 186 bigeye tuna were sampled for sex and maturity, according to the standard tuna maturity scale adopted in previous years. The results indicated that 48% of the examined fish were female, and 52% male. The majority of the assessed females were at maturity stages IV and V, and the majority of males at stage V. As with previous years findings, a significantly greater proportion of males were at maturity stages VI and above, when compared to females, implying that males mature slightly earlier. Additionally, and again concurring with previous years findings, the ratio of males to females increases with length.

A total of 229 Yellowfin tuna were sampled for sex and maturity, according to the standard tuna maturity scale adopted in previous years. The results demonstrated that 63% of the examined fish were female, and 37% male. The vast majority of females and males were found to be at maturity stage IV. As with previous years findings, a significantly greater proportion of males were found to be at maturity stages VI and above, , again implying that males mature slightly earlier. As with the data gathered for bigeye, the ratio of males to females was found to increase relative to length.

In addition to the target tuna stocks, assessments of sex and maturity were made on all by-catch and discards where this was considered not to interfere with vessel operations and where sufficient time was available (priority was given to the collection of catch data). Sex data is briefly summarised below for all assessed species:

The proportion of target species catch, by-catch and discards caught on Japanese and Taiwanese longliners is shown in Table 5. All weights correspond to live weight.

Table 5 Proportion of target species, by-catch and discards caught on Japanese and Taiwanese longline vessels.

Catch	Japanese		Taiwanese	
	% by N	% by weight	%by N	% by weight
Target species	54.72	79.7	51.23	66.46
By-catches	15.09	15.4	24.01	30.59
Discards	30.19	4.9	24.76	2.95

A full breakdown of the number and proportion of all species in the overall catch on Japanese and Taiwanese vessels combined is shown in Table 6.

Table 6 Percentage catch composition by number and weight from longline vessels during the observation period.

Species code	Number	% Composition	Live weight kg)	% Composition
YFT	376	24.82	12474.5	35.56
BET	291	19.22	11708	33.38
ALB	4	0.26	94	0.27
SKJ	7	0.46	41.25	0.12
SWO	50	3.3	1712.5	4.89
BLZ	8	0.53	399	1.14
MLS	3	0.2	132	0.38
BLM	9	0.59	561	1.59
SFA	20	1.32	283	0.8
BSH	77	5.09	4747	13.53
BTS	4	0.26	293	0.84
CCT	4	0.26	6.75	0.02
CSK	3	0.2	9.25	0.03
PTS	16	1.06	556	1.59
OSK	1	0.07	10	0.03
FAL	6	0.4	152.25	0.43
DOL	15	0.99	105.25	0.3
LEP	31	2.05	175	0.49
WAH	12	0.79	133	0.38
RRU	1	0.07	5.25	0.01
SUN	3	0.2	-	-
OPA	3	0.2	121	0.34
XPO	23	1.52	166.5	0.47
AFX	358	23.65	885	2.52
SNK	1	0.07	1	>0.01
STT	176	11.62	156.15	0.45
OFI	11	0.73	135.5	0.39
GTU	1	0.07	13.5	0.04

2.4 Recreational fishery during 2002

In addition to the industrial fisheries reported above, a boat-based recreational fishery exists at Diego Garcia which also takes a small amount of tuna and tuna-like species. Fishing is undertaken for recreational purposes by military personnel stationed at Diego Garcia, and by civilian support staff. To a much lesser extent, recreational fishing activities occur from yachts visiting the outer islands of Chagos Archipelago. Fish caught in this fishery may be locally consumed, but are not to be sold. Catches are monitored by logsheets submitted by the recreational fishermen. A voluntary release scheme for shark and billfish introduced last year has been well accepted by fishermen and this has led to a reduction in the proportion of these species in reported catches.

Estimated catches of tuna and tuna-like species during the calendar year 2002 are shown in Table 7.

Table 7. Catch by species from the recreational fishery in 2002.

SPECIES	Catch (tonnes)
Yellowfin tuna	26.41
Skipjack tuna	0.86
Kawakawa	0.81
Dogtooth tuna	0.41
Tunas and bonitos NEI	0.08
Indo-Pacific blue marlin	0.47
Indo-Pacific sailfish	0.10
TOTAL	29.15

3. Implementation of recommendations of the Scientific Committee

Recommendations of the Scientific Committee and its various Working Parties implemented by the UK are listed briefly below. It should be noted that as a non-fishing nation, many of the recommendations do not apply directly to the UK

WPDCS 3. As described in section 2.3 of this report, the UK has implemented observer programmes on purse seine and longline vessels licensed to fish in the waters of the BIOT FCMZ (Chagos Archipelago). In this programme, biological sampling is carried out and data collected on target tuna, bycatch and discard species. These data are reported annually to the IOTC Secretariat.

WPTT 3, 5. The observer sampling programme includes complete hook-by-hook surveys of selected longline sets, for which by arrangement with the skipper all fish were landed. This allows a completely unbiased species composition of the catch to be determined, as well as hook occupancy rates. In addition, detailed information is collected on setting and hauling practices. These data should be valuable in helping clarify issues related to the targeting of tuna longlines.

WPTT 4. The observer programme also includes collection of information on the practical aspects of tuna fishing (search, effort and catch information, details of fishing practices, as well as environmental conditions).

4. National research programme

UK research activities on Indian Ocean tuna and tuna-like species are confined to the collection and analysis of data in its observer programme. This is described in earlier sections.