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UK (British Indian Ocean Territory) National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2013

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

In accordance with IOTC Resolution 10/02, final scientific data for the previous year was provided to the Secretariat by 30 June of the current year, **for all fleets other than longline** [e.g. for a National report submitted to the Secretariat in 2013 final data for the 2012 calendar year must be provided to the Secretariat by 30 June 2013)	YES Recreational fishery only - 25/06/2013
In accordance with IOTC Resolution 10/02, provisional **longline data** for the previous year was provided to the Secretariat by 30 June of the current year [e.g. for a National report submitted to the Secretariat in 2013, preliminary data for the 2012 calendar year was provided to the Secretariat by 30 June 2013). **REMINDER:** Final longline data for the previous year is due to the Secretariat by 30 Dec of the current year [e.g. for a National report submitted to the Secretariat in 2013, final data for the 2012 calendar year must be provided to the Secretariat by 30 December 2013).	NO
If no, please indicate the reason(s) and intended actions: The UK (BIOT) Authority does not operate a flag registry, BIOT does not have a fleet of commercial fishing vessels, and there is no commercial port in BIOT. The waters of the Territory were declared a Marine Protected Area (MPA) on 1 April 2010 and from 1 November 2010 became a no-take MPA to commercial fishing. An MPA exclusion zone covering Diego Garcia and its territorial waters exists where pelagic and demersal recreational fisheries are permitted. The recreational fishery catches some tuna and tuna like species.	

EXECUTIVE SUMMARY

UK (BIOT) waters have been a Marine Protected Area (MPA) since April 2010. Diego Garcia and its territorial waters are excluded from the MPA and include a recreational fishery. UK (BIOT) does not operate a flag registry and has no commercial tuna fleet or fishing port. The United Kingdom National Report summarises fishing in its recreational fishery in 2012 and provides details of research activities undertaken within the MPA.

The recreational fishery landed 10.79t of tuna and tuna like species on Diego Garcia in 2012. Principle target tuna species of the industrial fisheries (yellowfin, bigeye and skipjack tunas) contributed 30% of the total catch of tuna and tuna like species of the recreational fishery. Length frequency data were recorded for a sample of 378 yellowfin tuna from this fishery. The mean length was 75cm. Sharks caught in the recreational fishery are released alive.

IUU fishing remains the greatest threat to the BIOT ecosystem. A Science Advisory Group has been formed to define a science strategy for BIOT and future research priorities, including those relevant to the pelagic ecosystem and IOTC fisheries. Recommendations of the Scientific Committee and those translated into Resolutions of the Commission have been implemented as appropriate by the BIOT Authorities and are reported.

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1. BACKGROUND/GENERAL FISHERY INFORMATION

The UK (BIOT) does not operate a flag registry, UK (BIOT) does not have a fleet of commercial fishing vessels and there is no commercial port in BIOT. The waters of the Territory were declared a Marine Protected Area (MPA) on 1 April 2010 and from 1 November 2010 became a no-take MPA to commercial fishing after which time all licensed foreign fishing ceased. Diego Garcia and its territorial waters are excluded from the MPA (the MPA exclusion zone).

Pelagic and demersal recreational fisheries are permitted by personnel stationed on Diego Garcia within the MPA exclusion zone. Permitted recreational fisheries also include visiting yachts that fish outside the exclusion zone within the waters of the MPA, but not within Strict Nature Reserves. Such fishing must be for consumption within three days. Yachts must apply for a permit to moor in designated areas.

2. FLEET STRUCTURE

N/A: As stated above, UK (BIOT) does not have a flag registry and fleet of commercial fishing vessels. The recreational fishery is described in section 4.

3. CATCH AND EFFORT (BY SPECIES AND GEAR)

N/A: As stated above, UK (BIOT) does not have a flag registry and fleet of commercial fishing vessels.

4. RECREATIONAL FISHERY

A small recreational (sports) fishery occurs under licence at Diego Garcia. A total of 10.79 tonnes of tuna and tuna like species were caught in 2012 representing 51% of the recreational catch (the remainder are reef associated species). Principle target tuna species of the industrial fisheries (yellowfin, bigeye and skipjack tunas) contributed 30% of the total catch of tuna and tuna like species of the recreational fishery (
Table 1).

Table 1 Catches of tuna and tuna like species landed from the UK (BIOT) recreational fishery during the period 2008-2012.

Year	Estimated catch of tuna and tuna like species (Kg)										TOTAL (kg)		
Species	Blue Marlin	Dolphinfish	Kawakawa	Rainbow runner	Sailfish	Wahoo	Dogtooth tuna	Skipjack tuna	Yellowfin tuna	Other tuna nei	Tunas	Tuna like spp	All
2008	0	908	102	16755	29	5671	419	317	729	308	1774	23465	25239
2009	386	166	469	130	68	13661	64	90	17542	1284	18980	14879	33859
2010	91	88	1056	196	300	17847	150	100	8573	36	8859	19578	28438
2011	363	113	1050	144	104	10757	406	24	8386	0	8815	12532	21347
2012	181	102	1182	138	249	5359	370	80	3132	0	3582	7211	10793

Length data have been collected for yellowfin tuna (*T. albacares)* from the recreational fishery since June 2009. A minimum landing size of 45 cm has been imposed. A total of 307 fish were measured in 2012. The mean length of the *T. albacares* sampled was 74.6 cm. For comparison, observer programmes on purse seiners (2005/6) and longliners (2003/4) operating in BIOT recorded mean lengths of 98 cm (n=378) and 123 cm (n=2385) respectively.

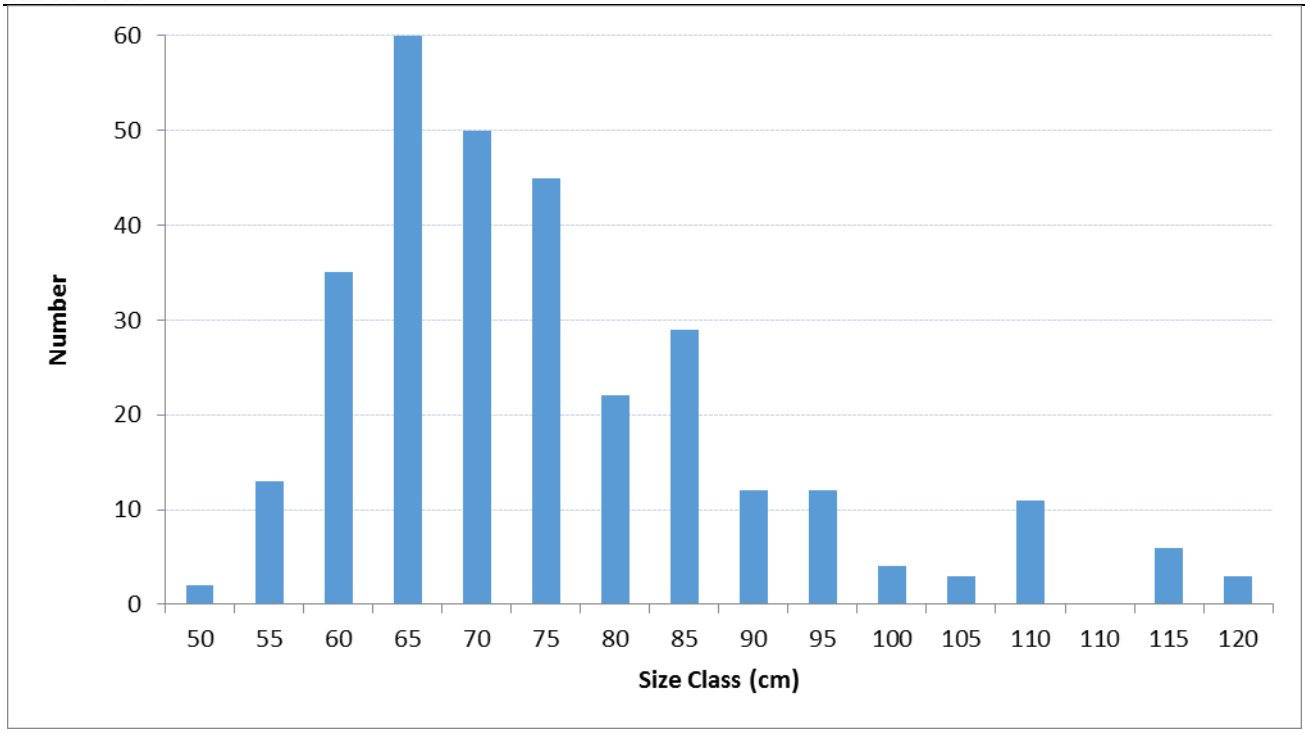

Figure 1 Yellowfin tuna length frequency plot using data from the recreational fishery in 2012 (n=307)

5. ECOSYSTEM AND BYCATCH ISSUES

The BIOT zone, excluding territorial waters around Diego Garcia, is a no-take MPA closed to commercial fishing. The recreational fishery on Diego Garcia is currently permitted and is monitored.

The current ecosystem threats relate to illegal unreported and unregulated fishing of which a number of events have been detected by the BIOT Patrol Vessel and have resulted in a number of successful prosecutions. This information is reported separately to the Compliance Committee.

In particular IUU vessels target oceanic and reef associated sharks with longlines and gillnets. The surveillance strategy of the BIOT Patrol vessel is based on a combination of ecological risk assessment and intelligence on IUU activities. Beyond the blanket protection of all species through the declaration of the MPA, there are currently no separate national plans of action in place for individual species or species groups.

5.1 SHARKS

Sharks must be released alive when caught in BIOT's recreational fishery. UK (BIOT) presented data on sharks illegally caught within BIOT waters to the Working Party on Ecosystems and Byctach (WPEB) (Martin *et. al*, 2013a). Shark catches in the wider Indian Ocean were also examined through investigation of transhipment records (Martin et al 2013b).

5.2 SEABIRDS

No seabird bycatch occurred in the BIOT recreational fishery in 2012. There are about 10 Important Bird Areas (IBAs) reported on the islands of the Chagos Archipelago with some of the Indian Ocean's densest populations of several seabird species.

5.3 MARINE TURTLES

No turtle bycatch has occurred in the BIOT recreational fishery in 2011. The BIOT area includes undisturbed and recovering populations of hawksbill and green turtles. Island sweeps are conducted as part of the normal monitoring programme, where part or entire islands are inspected and regularly encounter and record turtle nesting tracks. Research into the location and frequency of turtle nesting is currently in progress.

5.4 OTHER ECOLOGICALLY RELATED SPECIES (E.G. MARINE MAMMALS, WHALE SHARKS)

No incidental mortality / annual catches on other ecologically related species such as marine mammals and whale sharks has been observed in the recreational fishery.

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

6.1. LOGSHEET DATA COLLECTION AND VERIFICATION (INCLUDING DATE COMMENCED AND STATUS OF IMPLEMENTATION)

Logbook data collection for the recreational fishery is completed by the vessel charterer for each trip conducted. The system was introduced in 2006 and provides 100% coverage of all boat based recreational fishing activity. Prior to that a system of logbooks to be completed by fishers was utilised but proved less effective and did not achieve 100% coverage.

6.2. VESSEL MONITORING SYSTEM (INCLUDING DATE COMMENCED AND STATUS OF IMPLEMENTATION)

As there are no vessels flagged by the BIOT Authorities the BIOT VMS is currently not operational.

6.3. OBSERVER PROGRAMME (INCLUDING DATE COMMENCED AND STATUS; NUMBER OF OBSERVER, INCLUDE PERCENTAGE COVERAGE BY GEAR TYPE)

Length frequency data collection was initiated for the recreational fishery on Diego Garcia in June 2009.

6.4. PORT SAMPLING PROGRAMME [INCLUDING DATE COMMENCED AND STATUS OF IMPLEMENTATION]

As BIOT has no commercial ports there is no opportunity for a port sampling programme.

6.4. UNLOADING/TRANSHIPMENT [INCLUDING DATE COMMENCED AND STATUS OF IMPLEMENTATION]

As BIOT has no commercial ports there is no unloading or transhipment allowed.

7. NATIONAL RESEARCH PROGRAMS

A UK (BIOT) Science Advisory Group has been set up to make recommendations on a research strategy for implementation of environmental monitoring and research within the BIOT MPA. Current research is indicated in Table 2.

The islands, reef systems and waters of BIOT in terms of preservation and biodiversity are among the richest on the planet and contain about half of all the reefs of the Indian Ocean which remain in good condition. There are about 10 Important Bird Areas (IBAs), with some of the Indian Ocean's most dense populations of several seabird species. The area also includes undisturbed and recovering populations of Hawksbill and Green Turtles. The territory thus offers great scope for the future development of research in all fields of oceanography, biodiversity, aspects of climate change, in both the pelagic ecosystems relevant to the IOTC and the reef systems of the Chagos Archipelago.

Table 2 Summary table of national research programme, including dates.

Project title	Period	Countries involved	Funding source	Objectives	Short description
PhD study (Imperial college/MRAG Ltd) Exploring the uncertainties surrounding the implementation of large-scale marine protected areas in the open ocean	2011-2014	UK	External	The aim of this PhD to understand how spatial management affects the effort allocation dynamics of a large commercial offshore fishery and to quantify the ecological impacts resulting from these changes. More generally this work will contribute to reducing uncertainty	The PhD is centred around a case study of the western Indian Ocean tuna purse seine fishery and the spatial restrictions associated with that fishery (e.g. Indian Ocean Tuna Commission time-area closures, coastal state marine reserves etc.). The research has three objectives, as follows: 1.To identify the factors that govern fishing effort dynamics in

Project title	Period	Countries involved	Funding source	Objectives	Short description
				in how resource users respond to spatial management, an area of research that remains underdeveloped	the Indian Ocean tuna purse seine fishery 2.To develop a model that predicts the reallocation of fishing effort in response to spatial management 3.To investigate the ecological consequences resulting from effort reallocation (e.g. changes in bycatch rates) under a number of alternative spatial management scenarios
Monitoring programme to assess the sea turtle population in BIOT	2012-	UK	Darwin Initiative Scoping Award	Assessment of sea turtle populations in BIOT, including an assessment of nesting locations.	The University of Swansea has undertaken a Darwin Initiative Scoping Award to establish a monitoring programme to assess the sea turtle population in BIOT. A number of turtles were tagged during October 2012. The Senior Fisheries Protection Officer has assisted in implementing this project.
Use of underwater video technology to explore pelagic communities.	2011-2013	UK / Australia		The aim is to also explore pelagic tuna and shark communities.	The University of Western Australia and the Zoological Society of London (ZSL) have collaborated on using underwater video technology to explore communities below 15m depth and the aim is to also explore pelagic tuna and shark communities.
Strengthening the world's largest Marine Protected Area: Chagos Archipelago	2012-2015	UK	Darwin Initiative	Setting of baseline monitoring against which change can be assessed in the BIOT MPA.	The University of Bangor has a Darwin initiative project to develop a comprehensive approach to long term marine and island ecosystem monitoring against which change can be assessed, and develop an understanding to assess the magnitude and significance of potential impacts from several scenarios, including climate change, island ecosystem restoration and possible human resettlement.
PhD study (ZSL/UCL) Impact of large scale closures on pelagic predators	2012-2015	UK	External	To assessing whether large-scale spatial fishery closures affect the diversity and abundance of pelagic predators.	The project is investigating the efficacy of large MPAs for pelagic predators. Research focuses on analysing existing fisheries data and satellite tagging individuals to understand spatial, temporal and demographic distributions, movement between populations, habitat utilisation and site fidelity of focal species within, and adjacent to, the MPA.
Strengthening Indian Ocean	2012-	UK / Sri	Darwin	To contribute to	Shark fisheries in the Indian

Project title	Period	Countries involved	Funding source	Objectives	Short description
migratory elasmobranch conservation policy and fisher livelihoods	2015	Lanka	Initiative	capacity building and policy development to improve environmental outcomes for shark fisheries.	Ocean benefit through the improved management of fishing fleets in compliance with obligations under CBD, CMS and IOTC for biodiversity conservation. Livelihoods of fishing households sustainably improved through elasmobranch conservation and uptake of viable livelihood improvement schemes. Policy recommendations on improvements to the sustainability of elasmobranch fishing.
Animal tagging and tracking in BIOT	Feb/Mar 20013 - ongoing	USA and Australia	Bertarelli Foundation	To tag and track large pelagic species in order to assess how much protection the no-take MPA is providing (note that reef associated species have also been tagged)	Five different types of electronic tags were deployed in this study: Wildlife Computer's pop-up mini-pat archival tags; Wildlife Computer'sSmart Position or Temperature Transmitting tag,; Lotek international archival tags, Vemco coded acoustic transmitters and conventional identification tags (Grey reef shark, 38 tags; silvertip shark, 36; silky shark, 5; dogtooth tuna, 2; yellowfin tuna, 14; sailfish, 2; manta ray, 2; total 99)
February 2013 Chagos Expedition	Feb 2013	UK (BIOT)	External, various	Continue ongoing environmental monitoring	Research undertaken included: - the health of the coral reefs, focussing on younger 'juvenile' coral - 'cryptofauna' - smaller species living amongst coral - behaviour of breeding seabird colonies - reef fish migration patterns - the sea cucumber population's recovery from poaching - change in sea temperature and how this affects coral

8. IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS AND RESOLUTIONS OF THE IOTC RELEVANT TO THE SC.

Table 3 Scientific requirements contained in the Resolutions of the Commission, adopted from 2005 to 2013.

Res. No.	Resolution	Scientific requirement	CPC progress
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1–12	No sharks are retained in BIOT. Sharks caught in the recreational fishery are released alive. Sharks caught by IUU fishing vessels are reported in communications to the Compliance Committee.

Res. No.	Resolution	Scientific requirement	CPC progress
			BIOT is a partner in the Darwin project 'Strengthening Indian Ocean migratory elasmobranch conservation policy and fisher livelihoods'
10/02	Mandatory statistical requirements for IOTC members and cooperating non contracting parties	Paragraphs 1–7	Data have been submitted as per the requirements of 10/02.
10/06	On reducing the incidental bycatch of seabirds in longline fisheries. **Reminder**: Resolution 12/06 will supersede Resolution 10/06 on 1 July 2014	Paragraphs 3–7	Not applicable as BIOT does not have a flag registry.
11/04	On a regional observer scheme	Paragraph 9	Not applicable as BIOT does not have a flag registry.
13/03	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–11	Not applicable as BIOT does not have a flag registry.
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–10	Parts relating to flag vessels are not applicable as BIOT does not have a flag registry. Nesting sites in BIOT are monitored on island visits.
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	Not applicable as BIOT does not have a flag registry. All sharks caught in the recreational fishery are released alive.
13/06	On a scientific and management framework on the Conservation of sharks species caught in association with IOTC managed fisheries	Paragraphs 5–8	Not applicable as BIOT has no flag registry and releases all sharks alive from the recreational fishery.

9. LITERATURE CITED

Martin, S.M., Moir Clark, J, Pearce, J. and Mees, C.C. (2013a) Catch and bycatch composition of illegal fishing in the British Indian Ocean Territory (BIOT) IOTC–2013–WPEB09–46 Rev_1

Martin, S.M., Moir Clark, J.C. Pearce, J. and Mees, C.C (2013b) Summary of the transhipment of shark products by longliners in the Indian Ocean IOTC–2013–WPEB09–16 Rev_1