

## UK (British Indian Ocean Territory) National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2017

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### INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

<p>In accordance with IOTC Resolution 15/02, final scientific data for the previous year was provided to the IOTC Secretariat by 30 June of the current year, <b>for all fleets other than longline</b> [e.g. for a National Report submitted to the IOTC Secretariat in 2016, final data for the 2015 calendar year must be provided to the Secretariat by 30 June 2016)</p>	<p>YES  09/06/2017</p>
<p>In accordance with IOTC Resolution 15/02, provisional <b>longline data</b> for the previous year was provided to the IOTC Secretariat by 30 June of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2016, preliminary data for the 2015 calendar year was provided to the IOTC Secretariat by 30 June 2016].</p> <p><b>REMINDER:</b> Final longline data for the previous year is due to the IOTC Secretariat by 30 Dec of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2016, final data for the 2015 calendar year must be provided to the Secretariat by 30 December 2016].</p>	<p>NO</p>
<p>If no, please indicate the reason(s) and intended actions:</p> <p>The UK British Indian Ocean Territory (BIOT) Administration 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.</p>	

## 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 (BIOT) National Report summarises fishing in its recreational fishery in 2016 and provides details of research activities undertaken to date within the MPA.

The recreational fishery landed 7.88 tonnes of tuna and tuna like species on Diego Garcia in 2016. 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. Recognising that yellowfin tuna are currently overfished and subject to overfishing in the Indian Ocean and that Resolution 17/01 seeks to address this, UK(BIOT) are taking action to reduce the number of yellowfin tuna caught in the BIOT recreational fishery and to encourage their live-release. Length frequency data were recorded for a sample of 133 yellowfin tuna from this fishery. The mean length was 73cm. Sharks caught in the recreational fishery are released alive.

IUU fishing remains one of the greatest threats to the BIOT ecosystem but a range of other threats exist including invasive and pest species, climate change, coastal change, disease, and pollution, included discarded fishing gear such as Fish Aggregating Devices. During 2016/7 the BIOT Environment Officer continued to take forward the BIOT Interim Conservation Management Framework. In 2016/7 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 waters of the British Indian Ocean Territory (BIOT) 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. 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.

The UK (BIOT) Administration does not operate a flag registry, BIOT does not have a fleet of commercial fishing vessels, and there is no commercial port in BIOT.

## 2. FLEET STRUCTURE

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

## 4. RECREATIONAL FISHERY

A small recreational fishery occurs in Diego Garcia. A total of 7.88 tonnes of tuna and tuna like species were caught in 2016 representing 42% of the recreational catch (the remainder are reef associated species). The principle commercial tuna species (yellowfin, bigeye and skipjack tunas) contributed 30% of the total catch of tuna and tuna like species of the recreational fishery (Recognising that yellowfin tuna are currently overfished and subject to overfishing in the Indian Ocean and that Resolution 17/01 seeks to address this, UK(BIOT) are taking action to reduce the number of yellowfin tuna caught in the BIOT recreational fishery and to encourage their live-release.

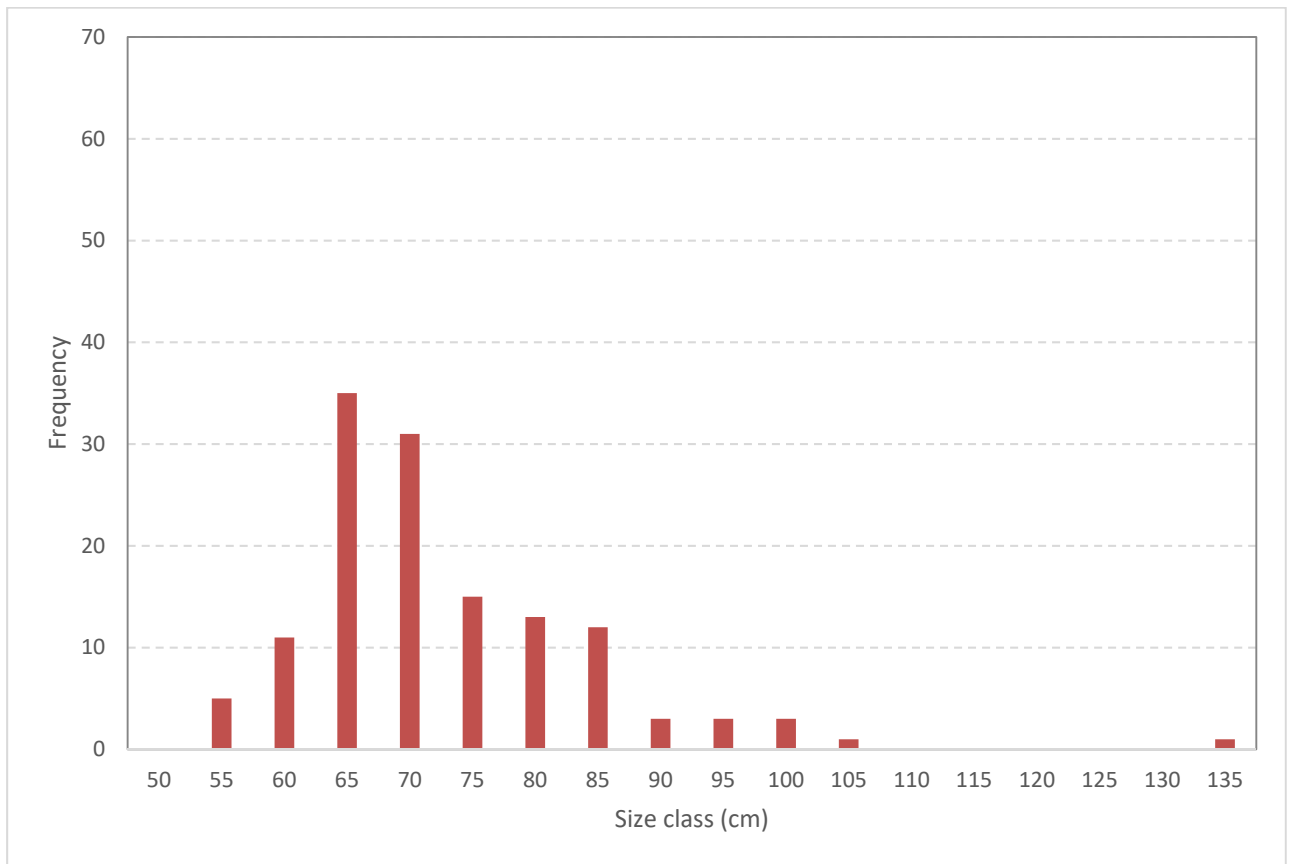
### Table 1).

Recognising that yellowfin tuna are currently overfished and subject to overfishing in the Indian Ocean and that Resolution 17/01 seeks to address this, UK(BIOT) are taking action to reduce the number of yellowfin tuna caught in the BIOT recreational fishery and to encourage their live-release.

**Table 1: Catches of tuna and tuna like species landed from the UK (BIOT) recreational fishery during the period 2012-2016.**

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
2012	181	102	1182	138	249	5359	370	80	3132	0	3582	7211	10793
2013	0	64	464	135	363	6844	317	101	3635	0	4052	7871	11924
2014	0	97	444	126	0	7259	290	106	1670	0	2067	7926	9992
2015	0	27	977	152	73	9005	197	179	1741	0	2118	10233	12351
2016	0	73	1033	169	0	4076	203	251	2075	0	2529	5350	7879

Length data have been collected for yellowfin tuna (*T. albacares*) from the recreational fishery since June 2009. A total of 133 fish were measured in 2016. The mean length of the *T. albacares* sampled was 73cm. For comparison, observer programmes on purse seiners (2005/6) and longliners (2003/4) operating in BIOT recorded mean lengths of 98cm (n=378) and 123cm (n=2385) respectively.



**Figure 1: Yellowfin tuna length frequency plot using data from the recreational fishery in 2016 (n=133)**

## 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 monitored. 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. However, in its recreational fishery, all sharks caught must be released alive.

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.

Other threats to the ecosystem that have been identified include invasive and pest species (e.g. introduced by visiting vessels), climate change (including weather changes; coral bleaching and mortality, sea level rise, likely increasing rates of erosion or inundation events; and oceanic chemical composition change), coastal change, disease (particularly of corals), and pollution [including discarded fishing gear and abandoned or lost fish aggregating devices (e.g. see the UKOT paper submitted to the IOTC ad hoc Working Group on FADs, Davies et. al. [http://www.iotc.org/sites/default/files/documents/2017/04/IOTC-2017-WGFAD01-08\\_Rev\\_1.pdf](http://www.iotc.org/sites/default/files/documents/2017/04/IOTC-2017-WGFAD01-08_Rev_1.pdf)), causing inter alia hazards to nesting turtles and ghost fishing].

### 5.1 Sharks

Sharks must be released alive when caught in BIOT's recreational fishery. Sharks continue to be caught illegally by IUU vessels in BIOT waters.

Research, including tagging of sharks in BIOT waters is planned for a BPMS Expedition in 2018.

**5.2 Seabirds**

Seabird bycatch does not occur in the recreational fishery and has not been observed in IUU fisheries.

**5.3 Marine Turtles**

No turtle bycatch / interaction was reported in the BIOT recreational fishery in 2016. 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. Field work continued in 2017 (See BPMS Expedition 3, Table 2)

**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. From the BIOT Patrol Vessel, opportunistic data is collected on sightings of marine mammals by the Senior Fisheries Protection Officer.

**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. A similar fisher based system was introduced in 2016 for shore based recreational fishers, although they tend not to catch tuna and tuna like species.

**6.2. Vessel Monitoring System (including date commenced and status of implementation)**

As there are no vessels flagged by the BIOT Authorities and no commercial vessels are licensed to fish inside the BIOT MPA, 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]**

NA. BIOT has no commercial port

**6.5. Unloading/Transshipment [including date commenced and status of implementation]**

As BIOT has no commercial ports there is no unloading or transshipment allowed. Transshipment by foreign fishing vessels is not permitted anywhere within BIOT waters.

**7. NATIONAL RESEARCH PROGRAMS**

In 2014 the BIOT Administration developed an Interim Conservation Management Framework (ICMF), (BIOT, no date) that sets out a strategic approach to the implementation of environmental monitoring and research within the MPA and defines the immediate monitoring needs (See Mees and Stevens, 2016). The BIOT Environment Officer is tasked with working on the next steps of the ICMF, and acting as an anchor for scientific expeditions to the Territory, ensuring that they reflect BIOT's needs. Due to the isolated nature

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of BIOT, most research activities occur in conjunction with an expedition. There is a four year Bertarelli Programme in Marine Science (BPMS) 2017-2021 built around four themes:

1. **Sentinel species** – a focus on understanding the behaviour and ecology of large, mobile species such as turtles, seabirds, reef sharks and pelagic sharks tuna and mantas, how they use the reserve and the seas beyond it.
2. **Coral reef resilience** – understanding the diversity and structure of the reef community, its vulnerability to disease and climate impacts and describing its resilience and what factors affect that as the reefs of BIOT recover from the bleaching event of 2015/2016.
3. **Science to management** – exploring factors affecting IUU fishing, sharing data and generating information with policy-makers on vulnerability assessments and collaborating with scientists and conservationists working in other large MPAs globally.
4. **Improving science communications** – Engaging the general public with BIOT science, using technology to bring science to people, creating immersive exhibits and maintaining an accessible collection of data and resources for wider use.

Table 2 indicates the activities undertaken during BPMS research expeditions in 2017.



**Table 2.** Summary table of national research programs: BPMS Scientific Expeditions to the British Indian Ocean Territory during 2017\*

Project title	Period	Institutions involved	Objectives	Outcomes (results, publications, future work)
<b>BPMS expedition 1</b> Rapid reef assessment of northern atolls	5 <sup>th</sup> -20 <sup>th</sup> April	Zoological Society of London, Bangor University, UCL, Scottish Association of Marine Science	<p><b>Overall objective:</b></p> <p>To assess the impact of the 2016 bleaching event on the reefs of the northern atolls.</p> <p><b>Specific objectives</b></p> <p>The April 2017 scientific and conservation expedition to the northern atolls aimed to undertake three separate, but logistically complementary projects:</p> <ol style="list-style-type: none"> <li>1) An assessment of reef condition post the 2016 bleaching event</li> <li>2) Check of the rat status of Ile Vache Marine post eradication</li> <li>3) Field test of hydrophone equipment for IUU enforcement application</li> </ol>	<p><b>Post-expedition report provided to the BIOT Administration.</b></p> <p><b>One publication resulting from the 2015 pelagic expedition:</b></p> <p>Letessier, T.B., Bouchet, P. &amp; Meeuwig, J.J. (2015) Sampling mobile oceanic fishes and sharks: implications for fisheries and conservation planning. <i>Biological Reviews</i>, DOI: 10.1111/brv.12246</p> <p><b>Key achievements</b></p> <ol style="list-style-type: none"> <li>1. Assessment of post-bleaching mortality of reef corals showed almost total mortality down to 15m. Below that extensive healthy reef survived and there was extensive recruitment onto the dead skeleton in shallower water already.</li> <li>2. Check of rat status on the island of Vache Marine concluded that the rat eradication operation in 2014 had been a success. Ship rats (<i>Rattus rattus</i>) were no longer present on the island.</li> <li>3. ZSL and JASCO Applied Sciences successfully trialed underwater acoustic sensors to detect vessels within the northern atolls of the BIOT MPA.</li> </ol>
<b>BPMS expedition 2</b> BIOT Animal Tracking & Monitoring Receiver Retrieval Expedition	27 <sup>th</sup> April-2 <sup>nd</sup> May	Stanford University, ZSL	<p><b>Overall objective:</b></p> <p>To retrieve acoustic receivers deployed in deep water via acoustic release and download data.</p>	<p><b>Post-expedition report provided to the BIOT Administration</b></p> <p><b>Key achievements</b></p> <p>The team recovered 12 of 16 AR receivers and serviced 2 VR4 Global units. The four remaining receivers were either unable to release or unresponsive. The units retrieved contained over 500,000 detections, underscoring the importance of the acoustic network to highlight the connectivity and role of seamounts throughout BIOT.</p>
<b>BPMS expedition 3</b> Tagging of nesting green turtles in BIOT	19 <sup>th</sup> September – 13 <sup>th</sup> October	Deakin University, Swansea University	<p><b>Overall objective:</b></p> <p>The research objective of this expedition is to increase understanding of sea turtle movements within and outside of BIOT by attachment of satellite tags to nesting green turtles.</p> <p><b>Specific objectives</b></p>	<p><b>Post-expedition report will be provided to the BIOT Administration</b></p> <p><b>Key achievements</b></p> <p>Field work still in progress. Tagged four nesting turtles so far with one already tracked halfway to Madagascar</p>



Project title	Period	Institutions involved	Objectives	Outcomes (results, publications, future work)
			To tag up to 10 nesting female green turtles with Fastloc-GPS satellite tags and track their return to home feeding territories across the WIO.	

\*Information provided by Rachel Jones, ZSL.



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

**Table 3.** Scientific requirements contained in Resolutions of the Commission, adopted between 2005 and 2016.

Res. No.	Resolution	Scientific requirement	CPC progress
16/06	On measures applicable in case of non-fulfilment of reporting obligations in the IOTC	Paragraph 1	As set out in this report, BIOT does not operate a flag registry, nor have a fleet of commercial fishing vessels, but a small recreational fishery exist on Diego Garcia that catches tuna and tuna like species. BIOT consistently fulfils all reporting obligations in a timely manner in respect of this fishery. Sharks caught in the recreational fishery are released alive. In 2016 steps were taken to improve data collection for catches taken by shore-based fishers, though it is not anticipated this will include significant catches of tuna or tuna like species. Reference to this information will be included in the Annual Report of Implementation.
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–10	Not applicable as BIOT has no flag registry or fleet of vessels.
15/02	Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)	Paragraphs 1–7	BIOT submits all mandatory statistical reports, including null reports
15/05	On conservation measures for striped marlin, black marlin and blue marlin	Paragraph 4	Not applicable as BIOT has no flag registry or fleet of vessels.
13/04	On the conservation of cetaceans	Paragraphs 7–9	Not applicable as BIOT has no flag registry. Cetaceans are not associated with the recreational fishery
13/05	On the conservation of whale sharks ( <i>Rhincodon typus</i> )	Paragraphs 7–9	Not applicable as BIOT has no flag registry. Whale sharks are not associated with the recreational fishery
13/06	On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries	Paragraph 5–6	Not applicable as BIOT has no flag registry and releases all sharks alive from the recreational fishery.
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	BIOT releases all sharks alive from the recreational fishery
12/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraphs 3–7	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.
11/04	On a regional observer scheme	Paragraph 9	Not applicable as BIOT does not have a flag registry.
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.

## 9. LITERATURE CITED

BIOT (no date) Interim Conservation Management Framework (CMF), 10 pages

Davies, Tim, David Curnick, Julien Barde, Emmanuel Chassot<sup>4</sup>, , Potential environmental impacts caused by beaching of drifting fish aggregating devices and identification of management solutions and uncertainties,



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IOTC-2017-WGFAD01-08 Rev\_1, [http://www.iotc.org/sites/default/files/documents/2017/04/IOTC-2017-WGFAD01-08\\_Rev\\_1.pdf](http://www.iotc.org/sites/default/files/documents/2017/04/IOTC-2017-WGFAD01-08_Rev_1.pdf)

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[http://www.iotc.org/sites/default/files/documents/2016/11/IOTC-2016-SC19-NR31\\_-\\_UK\\_OT\\_0.pdf](http://www.iotc.org/sites/default/files/documents/2016/11/IOTC-2016-SC19-NR31_-_UK_OT_0.pdf)