Blue Belt Overseas Territory Work Plan: British Indian Ocean Territory

Extended Overseas Territory Plan

Author(s): Simeon Archer-Rand, Emily Hardman, Martin Collins, Andrew Deary

Issue Date: 02/10/2018

This Work Plan has been developed on the basis of a Blue Belt Programme annual budget of £4m. The Work Plan detail is subject to updates to reflect ongoing delivery. The Programme budget for FY19/20 (and therefore associated activities for FY19/20) is yet to be confirmed.

Marine Management Organisation

Centre for Environment Fisheries & Aquaculture Science

Funded by UK Government

Document Control

Submitted to:	Blue Belt Programme Board
Date submitted:	7 June 2018
Project Manager:	Patricia Falconer & Philip Crabtree
Report compiled by:	Simeon Archer-Rand, Emily Hardman, Martin Collins, Andrew Deary
Quality control by:	Martin Collins & Jo Stockill
Approved by and date:	Blue Belt Programme Board & BIOTA
Version:	V1.2

Version Control History			
Version	Author	Date	Comment
0.1	Simeon Archer-Rand	27/02/2018	First Draft
0.2	Emily Hardman	28/02/18	MMO workstreams added and JS comments
0.3	Andrew Deary	07/03/2018	Work stream 6 inserted
0.4	Simeon Archer-Rand	14/03/2018	Comments addressed
0.5	Martin Collins	17/03/2018	
1.0	Emily Hardman	26/04/2018	Address comments from programme board
1.1	Simeon Archer-Rand	30/05/2015	Address comments from Principle Investigators
1.2	Simeon Archer-Rand	12/06/2018	Upload to SharePoint
1.3	Simeon Archer-Rand	17/09/2018	Update to Milestones

1.4	Jo Stockill & Martin Collins	02/10/2018	Approval and sign-off of V1.3

Table of Contents

Table of Acronyms

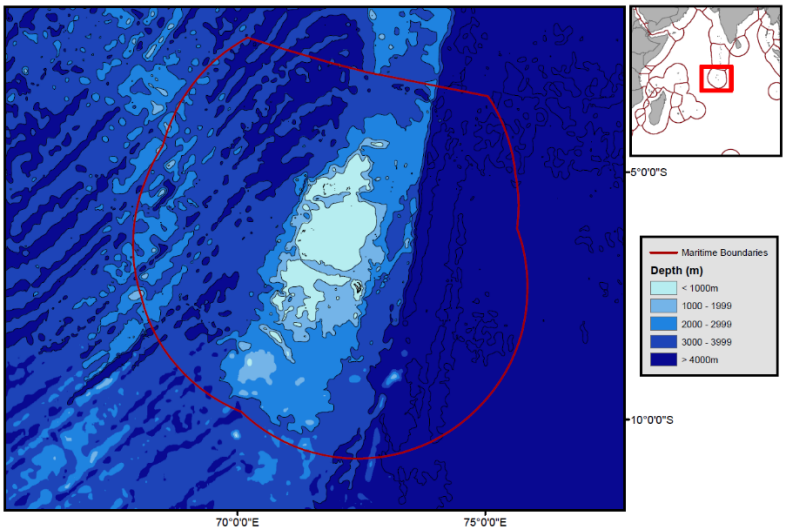
Acronym	Full
BIOT	British Indian Ocean Territory
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CMP	Conservation Management Plan
COSSH	Control of Substances Hazardous to Health
CSSF	Conflict Stability and Security Fund
D+	Darwin Plus
EEZ	Exclusive Economic Zone
EFZ	Exclusive Fishing Zone
FCMZ	Fisheries Conservation and Management Zone
FCO	Foreign and Commonwealth Office
FY	Financial Year
DG	Diego Garcia
IUU	Illegal, Unreported and Unregulated (fishing)
MMO	Marine Management Organisation
MPA	Marine Protected Area
RFMO	Regional Fisheries Management Organisation
TBD	To Be Determined
UKOT	United Kingdom Overseas Territory

Introduction

Background information

The British Indian Ocean Territory (BIOT; also known as the Chagos Archipelago) consists of five low lying coral atolls (58 islands in total) surrounded by a 640,000 km^2 maritime zone which in 1991 was declared a Fisheries Conservation and Management Zone (FCMZ) and then an Environment (Protection and Preservation) Zone (EPPZ) in 2003. The archipelago lies around 500 km south of the Maldives. The largest island, Diego Garcia, is located to the south east of the archipelago. BIOT consists of around 6,000 km^2 of shallow reef zones with the remainder of bathyal and abyssal depth (>2,000 m). The majority of BIOT waters are tropical and oligotrophic.

Since the early 1970s, the Outer Islands have been largely uninhabited, whilst Diego Garcia, which hosts a US-British airbase, has around 3,000 temporary inhabitants. BIOT has its own laws and Administration, which is led by a Commissioner, with the support of an Administrator, both of whom are based in London.



The whole FMCZ was declared a full 'no-take' marine protected area (International Union for Conservation of Nature (IUCN) Category I) in April 2010.

The objective of the Blue Belt initiative is to enhance the protection of the marine environment across the UK's Overseas Territories (UKOTs). The project stems from the UK Government's commitment to 'create a Blue Belt around the UK's 14 Overseas Territories, subject to local support and environmental need', with a goal to protect over 4 million km^2 of ocean by 2020.

Biodiversity

BIOT is home to a rich, diverse and near-pristine marine environment that makes it a unique and a prime location for science. The archipelago has high reef diversity, with over 220 species of hard corals, being among the highest recorded in the Indian Ocean. Nearly 800 species of fish and 400 molluscs have also been identified, including 4 endemic species. Bird breeding populations are amongst the

densest in the Indian Ocean. There are relatively few endemic species, supporting the case for high connectivity between BIOT and other areas.

Fisheries

Prior to 2010, foreign-flagged fishing vessels were permitted to fish within the BIOT maritime zone. Inshore fisheries mainly targeted demersal species, including snappers (Lutjanidae), emperors (Lethrinidae) and groupers (Serranidae). The majority of fishing effort was expended on the Great Chagos Bank in the north east of the central plateau (64 % of landings), with a mean catch of 200 tonnes per year (1977-2009), well below the estimated maximum sustainable yield of the time.

Offshore, foreign-flagged purse seiners and longliners were licensed to fish in BIOT waters for migratory tuna (skipjack, yellow fin, and bigeye) and billfish. The fisheries followed the migration of these species through the western Indian Ocean, with purse seiners often spending much of December and January in the western half of the BIOT zone. Longline fishing activity was more evenly distributed throughout the year, peaking between August and October.

In 2010 the entire BIOT FCMZ was declared a no-take marine reserve (MPA) (with the exception of 3nm around Diego Garcia) and subsequently no fishing licences have been issued. The only exceptions are recreational fishing <3 nm from Diego Garcia for persons lawfully present in BIOT or by visiting yachts throughout BIOT. The no-take zone may provide limited protection for highly migratory species, but will protect the reefs and associated fish assemblages that were previously exploited.

BIOT has a fisheries patrol vessel (*RV Grampian Frontier*) and full-time Fisheries Protection Officers, but there is still a risk of illegal fishing, notably from small vessels from Sri Lanka & India.

Other threats to the marine environment

Tourism is not permitted in BIOT although innocent passage is permitted to passing yachts and some occasionally shelter off uninhabited islands (outside of the Strict Nature Reserves). Wastewater discharge by vessels is prohibited throughout BIOT's internal and territorial waters, although this remains a threat. BIOT is subject to high levels of debris comprising largely of plastics, polystyrene and rope, which are thought to originate principally from land-based sources around the Indian Ocean and maritime activities throughout it. Floating debris includes discarded fishing gear and Fish Aggregating Devices which regularly drift into BIOT waters and represent a threat to marine fauna. There are possible human impacts from Diego Garcia, such as impacts to water quality from coastal construction works, discharges of contaminated water, or from the introduction of invasive species.

Local capacity

BIOT has an Environment Officer (currently Harri Morrall) and has a contract with MRAG for a Senior Fisheries Protection Officer, who are embarked on the patrol vessel and to attend IOTC as the UK-OT delegation.

Current status (linked to FCO Mandate)

Design: The entire Fisheries (Conservation and Management) Zone, except 3 nm around Diego Garcia, is closed to commercial fishing;

Designation: An IUCN Category I Marine Protected Area was declared in April 2010, encompassing the whole FCMZ;

Management: Since the MPA declaration the Administration has ceased to issue fishing licences; an interim Conservation Management Framework was produced in September 2014 by the BIOT Administration and the vast majority of proposed actions are now in progress. A new Conservation Management Plan is being produced during 2018 and will be in place until 2023.

Monitored: There is no formalised observer programme, monitoring subsistence landings from the recreational fishing vessels in Diego Garcia is undertaken by Morale, Welfare and Recreation (MWR) staff with landings data routinely provided to MRAG. The shore-based recreational fishery on Diego Garcia has been monitored via creel survey and catch returns are voluntary;

Enforced: BIOT has a fisheries patrol vessel.

Desired Outcome for 2020

BIOT has a marine environment that is managed to the highest international standards, with effectively regulated marine activities underpinned by robust science.

BIOT Work Programme

This work programme has been planned to assist the BIOT Administration develop, implement and enforce marine protection strategies within the MPA, as Part of the Blue Belt Programme. Proposed deliverables have been planned to meet BIOTA's needs and comply with the objectives that underpin the Blue Belt mandate. All work proposed as part of this plan is discussed and agreed with BIOTA. Quarterly update meetings will be held with BIOTA, MMO and Cefas to discuss issues, progress and changes to the work programme.

Workstream 1: Legislation, policy and strategy

Activity: Advice on, and support for, the development of legislation, management strategies and policies

BIOT have made a commitment to establishing a regime for marine protection around the waters of their FCMZ by 2023. Although they have designated an IUCN Category I (No-take) Marine Protected Area (MPA), not all the requisite legislation is in place. The following deliverables and activities are planned to support the development of legislation, management strategies and policies (Table 1).

Table1. Planned tasks for BIOT legislation, policy and strategy workstream.

Outcome	Activity	ID	Tasks	Description	Deliverables / Outputs	Mandate Objectives	When	Who
LEGISLATION, POLICY AND STRATEGY								
Laws and policies to underpin designation and management.	Advice on, and support for, the development of legislation, management strategies and policies.	BIOT 1.1	Review fisheries legislation and provide advice/update legislation.	The BIOT Administration recognises that there is a need to strengthen current management of recreational fishing in the Territory. This could involve minor revisions to the Fisheries (Conservation and Management) Ordinance 2007 or development of a Code of Conduct for recreational fisheries (to include bag limits and restrictions on landing threated species) Advice and support could be provided to BIOT to develop a code of conduct or revise the existing legislation as appropriate.	1. Updated legislation / code of conduct (as required)	Designation Management	March 2020	**BIOTA,** MMO, Cefas
		BIOT 1.2	Conservation Management Plan	Support BIOTA in the development of a Conservation Management Plan for the Territory to reflect new information. The initial stages of this process will involve a stakeholder workshop to agree the vision, objectives and management actions. This will be followed by supporting the drafting of relevant sections of the plan s.	1.Stakeholder workshop to define vision, objectives and actions 2. Draft Conservation Management Plan 4. Final Conservation Management Plan (following consultation)		March 2018 Sept 2018 March 2019	**BIOTA,** MMO, Cefas,

Outcome	Activity	ID	Tasks	Description	Deliverables / Outputs	Mandate Objectives	When	Who
		N/A	Ad hoc support and advice	Ongoing support and advice provided on legislation, policy and strategy.	-		Ongoing	MMO, Cefas

Workstream 2: Assessment and management of Resources and Human Activities

Activity: Determine sustainable harvests for fisheries (lobster and reef fish) and advise on sustainable fisheries strategies and management plans

Although no commercial fisheries exist within the BIOT FCMZ there is a level of recreational fishing from the inhabitants of the air and naval base situated on Diego Garcia. While chronic overfishing in not likely in BIOT, more data is required to confirm that the recreational fishery is sustainable and not having any ecological impact. Some previous work has been carried out on estimating the total fisheries impact however further investigations would provide a long-term legacy for BIOT. (Tasks BIOT 2.1 – 2.3, Table 2).

The OTs are vulnerable to the introduction of potentially harmful invasive non-native species, because these threaten island biodiversity, food security and sustainable development. Pressures are increasing with the continual growth of international trade, the main driver of the spread of invasive species, which results in higher numbers of individuals of more species being moved around the world, both deliberately and accidentally.

Activity: Assess current and future threats and advise on management strategies

The human activity within BIOT tends to be restricted to the base activity on Diego Garcia. The environment is managed under the Natural Resources Management Plan (2005) and the environmental policy of the US Navy (OPTAVINST 5090.1). Tourism is not permitted in BIOT, although innocent passage is permitted to passing yachts that sometimes moor off the uninhabited islands. Despite the near pristine chemical status of its waters, BIOT is subject to high levels of debris which mainly originate from outside of the Territory such as plastics, polystyrene and discarded fishing gear, posing a major hazard to marine species and seabirds. Wastewater discharge by vessels and dumping of additional pollutants, is prohibited throughout BIOT's internal and territorial waters, although remains a threat. There is also a risk of marine pollution incidents from international shipping that passes through the FCMZ.

Table 2. Planned tasks for BIOT *Assessment and management of Resources and Human Activities* workstream.

Outcome	Activity	ID	Tasks	Description	Deliverables / Outputs	Mandate Objectives	When	Who
ASSESSMENT AND MANAGEMENT OF RESOURCES AND HUMAN ACTIVITIES								
Sustainable fisheries management plans in place	Determine sustainable harvests for fisheries and advice on sustainable fisheries strategies and management plans.	BIOT 2.1	Fisheries Profile	Description of BIOT fisheries, including a review of species, catches, governance, management and IUU fishing. Identifies gaps in knowledge.	1. Report	Design Management	June 2018	Cefas
		BIOT 2.2	Assessment of nearshore and offshore recreational fisheries	Support BIOTA with the assessment of the impact of recreational fishing and other human activities on the nearshore and offshore fish stocks.	1. Data collation from published literature and reports 2. Analysis results and write up If required: 3.Tagging programme planning 4. Data collection and tagging 5. Progress report 6. Final report	Design Monitoring Management	May 2018 Aug 2018 Aug 2018 Nov 2018 – Nov 2019 Aug 2019 Dec 2019	Cefas, BIOTA

Outcome	Activity	ID	Tasks	Description	Deliverables / Outputs	Mandate Objectives	When	Who
	Assessment of the threats to the marine environment of human activities and development of mitigation strategies.	BIOT 2.5	Assessment of risk (waste water) & mitigation strategy	Support will be provided to the BIOT Administration to develop a programme of basic management-relevant environmental monitoring to capture impacts arising from pollution events or algal blooms and to develop a marine water quality strategy (where required). The review will include a consideration of waste water from yachts as well as from Diego Garcia.	1.Baseline review and risk assessment 2. Management review 3. Develop water quality monitoring programme	Management Monitoring	June 2019 June 2019 Sep 2019	**Cefas**, MMO
		BIOT 2.6	Water quality monitoring within the lagoon and waters surrounding DG.	Water quality will be monitored within the lagoon of DG and on the outer coast of the island. This will specifically be looking at the potential impacts of leachates from the land-fill site and waste water from the sewage outfalls.	1. Planning 2. Data collection 3. Analysis results and write up		Sep 2018 Dec 2018 Apr 2019 – Sep 2019	**Cefas**, BIOTA
		BIOT 2.7	Marine pollution response plan	The BIOT Administration has requested a comprehensive environmental response plan for grounded ships in the Territory and a detailed marine emergency response (MER) plan. The latter will be addressed through the cross-cutting work-plan (Activity XOT 2.2). Blue Belt will also use data on vessel movements to highlight areas at high risk from collisions (Activity XOT 2.3) and will provide interim advice on how to respond to a ship grounding /	1.Review of existing protocols for responding to ship groundings / marine pollution incidents 2. Recommendations on an interim response to ship groundings/marine pollution incidents (to consider intervention		Oct 2018 Mar 2019	**MMO**, Cefas

Outcome	Activity	ID	Tasks	Description	Deliverables / Outputs	Mandate Objectives	When	Who
				marine pollution incident to mitigate environmental impacts until a comprehensive MER plan is developed.	actions and environmental monitoring).			
An assessment of current level of IUU fishing is produced	Analysis of historic and current IUU levels to provide baseline	BIOT 2.8	Analysis of IUU levels conducted by MMO and MRAG	MMO to use NMIC to analyse large vessel IUU levels in BIOT Combine with small vessel/inshore vessel IUU from MRAG	1. Written assessment 2. Inclusion in or informing of management plan	All	Oct 2018	MMO/MRAG
Input into management plan	Input strategies for reducing IUU into the management plan	BIOT 2.9	Strategies utilising technology and NMIC/intelligence hub to reduce IUU fishing	MMO/MRAG write the relevant section of the management plan	1. Management plan	All	Oct 2018	MMO/MRAG
Marine protection strategies implemented	As requested.	N/A	Ad-hoc support and advice	Ongoing support and advice provided as necessary.	-	-	Ongoing	Cefas, MMO

Workstream 3: Marine Environment and biodiversity.

Activity: Develop an understanding of the biodiversity of marine environment.

The waters and inshore areas within the BIOT FCMZ are considered a pristine environment and have been recommended as a 'reference' site for investigations into changes in other areas of the Indian Ocean and further afield. Although many papers have been published on BIOT, there are still gaps in the science for the islands. A workshop in 2009 undertook the task of identifying these gaps and another workshop due in 2018 will also hopefully be able to help identify any gaps in our understanding and push forward the science for the territory. For the Blue Belt Programme additional studies (Table 3) have been identified to supplement existing knowledge of both the marine environment and human activities that occur there. This information will support MPA management (of the threats to native habitats and species), whilst also providing a baseline from which to monitor in future. The proposed work will draw on both existing and newly collected data.

Table 3. Planned tasks for BIOT *Marine Environment and biodiversity* workstream.

Outcome	Activity	ID	Tasks	Description	Deliverables / Outputs	Mandate Objectives	When	Who
MARINE ENVIRONMENT AND BIODIVERSITY								
Species and habitat management plans in place	Develop an understanding of the biodiversity of marine environment.	BIOT 3.1	Environment Profile	Background review or 'characterisation' of BIOTs environment and biodiversity. Detailed review / collation of bathymetric, environmental and biodiversity data.	1. Habitats and biodiversity assessment	Design Management Monitoring	October 2018	Cefas
		BIOT 3.2	Assessment of Megafauna throughout the Territory	Make an assessment from literature of the habitat use and passage of marine megafauna throughout the territory and what the associated threats may be.	1. Report	Design Management Monitoring		Cefas
		BIOT 3.3	Tuna tagging	Working with a consortium of institutions headed by Stanford University and the Zoological Society of London (ZSL) the study will be looking to investigate the interactions between pelagic species and the marine reserve.	Final report and results due in 2021	Management Monitoring	Begin Sept 2018	Cefas, ZSL, Stanford Uni

Workstream 4: Capacity Building and Local Engagement

Activity: Training, capacity building, facilities and local engagement

Capacity building and provision of support to BIOTA staff is an integral part of the delivery of the Blue Belt objectives and essential for the long-term legacy of the programme. Training will be provided (where necessary).

Table 4. Planned tasks for BIOT *Capacity Building and Local Engagement* workstream.

Outcome	Activity	ID	Tasks	Description	Deliverables / Outputs	Mandate Objectives	When	Who
CAPACITY BUILDING AND LOCAL ENGAGEMENT								
BIOT has the expertise required to deliver long-term management	Training, capacity building and local engagement.	BIOT 4.1	Ongoing training as required	Training will form part of the majority of planned activities and will be reviewed throughout the lifetime of the project.		All	Ongoing	Cefas, MMO

Key Milestones and Deliverables

There are a number of key milestones that will indicate success of the Blue Belt programme in supporting BIOT to achieve its desired outcome by 2020. Identified milestones are listed in no particular order, but reflect the desired outcomes identified for BIOT and the outputs that contribute towards delivery of those outcomes. Milestones can be, therefore, be achieved through a culmination of work carried out across the Blue Belt programme (and described in the: 1) BIOT; 2) Cross-Territory; and 3) RFMO Work Plans).

1. Finalised Conservation Management Plan published (Jan 2019);
2. Requisite legislation is in place for MPA Management (Mar 2020);
3. Sustainable harvest of recreational fisheries and management plans published for each species where appropriate (Sep 2019);
4. Current and future IUU risk is understood and advice provided on the development and implementation of cost effective and proportionate monitoring and enforcement strategies (see Cross-Territory Work Plan)(Mar 2020);

Key Milestones are supported by the following key deliverables:

1. Key reports to enhance understanding of biodiversity of the marine environment;
    a. Assessment of marine habitats and biodiversity (Oct 2018).
    b. Interactions between pelagic species and the marine reserve (Mar 2021).
2. Baseline review of water quality around Diego Garcia (Sep 2019)
3. Water quality monitoring programme and risk strategy (Sep 2019)
4. Marine pollution response plan (Mar 2019)

Cross territory deliverables relevant to the designation and management of the BIOT MPA

1. Compliance and enforcement process and procedures developed
2. The development and implementation of emergency response procedures
3. A review and assessment of biosecurity procedures in relation to invasive species
4. A comprehensive Marine Emergency Response plan is in place
5. Data management systems reviewed and methods investigated to enhance data management.