



Indian Ocean – South-East Asian Marine Turtle Memorandum of Understanding



United Kingdom

GENERAL INFORMATION

Agency or institution primarily responsible for the preparation of this report:

UK Government Department - Department for Environment, Food and Rural Affairs

Other agencies, institutions, or NGOs that have provided input:

UK Government Department - Foreign and Commonwealth Office UK Government Statutory Advisers - Joint Nature Conservation Committee Swansea University

Designated Focal Point:

Ms. Stacey Hughes
Department for Environment, Food and Rural Affairs
International Biodiversity Sub-Programme Zone 1/15 Temple Quay House
2 The Square
Temple Quay
Bristol BS1 6EB
BS1 6EB United Kingdom

Tel: (+44 117) 372 3598
Fax: (+44 117) 372 3632
Email: Stacey.Hughes@defra.gsi.gov.uk
cc: Kelly.MacLeod@jncc.gov.uk

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OBJECTIVE I. REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY

1.1 Introduction to marine turtle populations and habitats, challenges and conservation efforts. [INF]

The British Indian Ocean Territory (BIOT), administered by the British Indian Ocean Territory Administration, comprises the 67 islands of the Chagos Archipelago. The land area is about 4788 ha, with a total coastline of about 226 km (Mortimer 2007). Below the territorial seas lies approx. 204,000km² of coral reefs (to 60 m depth). The reefs of the Chagos probably represent some of the most pristine and best protected in the Indian Ocean, primarily due to their history and continuing isolation, but also supported by current management measures. The Chagos Archipelago hosts significant populations of nesting *Eretmochelys imbricata* (hawksbill turtles - CR) and *Chelonia mydas* (green turtles - EN), with both species nesting on all five atolls (Mortimer & Day, 1999).

The most important nesting sites (in descending order) for the hawksbill turtle are Peros Banhos, Diego Garcia, Salomon, Egmont and Chagos Bank (Mortimer and Day 1999). Turtle Cove - a tidal creek at the southern end of the main inner

lagoon of Diego Garcia is an important foraging area for immature hawksbill turtles (Mortimer and Day 1999). For green turtles, the most important areas (in descending order) are Egmont Islands, Diego Garcia, Chagos Bank, Peros Banhos and Salomon (Mortimer and Day 1999).

The potential feeding habitats (coral reefs) available to hawksbills are quite extensive, while available green turtle feeding grounds (seagrass) are much fewer. Two other species may forage in the waters of the Chagos, namely loggerhead (*Caretta caretta*) and leatherback turtles (*Dermochelys coriacea* - EN; Mortimer and Day 1999).

Of the 226km of total coastline in the Chagos (excluding the inner lagoon of Diego Garcia), an estimated 59-70% comprise habitat suitable for turtle nesting (Mortimer and Day 1999). The only island currently inhabited is the southern most island, Diego Garcia. The movements of the base personnel are restricted and all wildlife is strictly protected. Fifty-eight percent (42km) of the coastline of Diego Garcia have been rated as optimal habitat (i.e. "good" or "adequate") for turtle nesting. Of the total optimal habitat recorded, 60.7% occurs within the "Nature Reserve" restricted area. More than 80% of hawksbill and 87% of green turtle nesting occurred within the boundaries of the Nature Reserve (Mortimer 2000). Human disturbance and ongoing habitat damage associated with the military base of Diego Garcia appears to be minor. Turtle nesting populations on many islands would benefit from the eradication of rats and feral cats. Commercial fishing has been banned in all BIOT waters since 2010 following the declaration of the world's largest "no-take" marine protected area. A senior Fisheries Protection Officer is employed who operates aboard a dedicated fishery patrol vessel throughout the year to enforce this. Nonetheless, some illegal fishing does take place. Recreational fishing is practiced by military base associated personnel and some visiting yachtsmen. Turtle poaching in the uninhabited outer islands has been reported (Mortimer 2007), but the extent of this practice and its effect on the nesting turtle population is unknown. Coastal erosion is thought to pose a significant threat turtle nesting beaches (Mortimer 2007). Sites that are particularly sensitive to erosion include the Salomon Atoll, western Peros Banhos and western Diego Garcia. On 1 April 2010, the BIOT Marine Protected Area (MPA) was established by proclamation within the Environment (Protection and Preservation) Zone proclaimed in 2003. It covers over half a million square kilometres and is currently the largest MPA in the world. A Science Advisory Group has been set up to make recommendations on priorities and a science strategy for the MPA. In sea turtles, the sex of offspring is determined by the incubation temperature with females being produced under warmer conditions. So an emerging threat as a result of climate change is the feminisation of populations through rising incubations temperatures. In 2012 the first temperature loggers were deployed on nesting beaches on Diego Garcia to collect data so that this threat can be assessed. In 2012 the first satellite tags were attached to nesting turtles on Diego Garcia to assess their pattern of movement.

1.2.1 Describe any protocol or approaches practiced in your country, which you consider exemplary, for minimising threats to marine turtle populations and their habitats, which may be suitable for adaptation and adoption elsewhere. [BPR]

A combination of approaches have been successfully adopted by the BIOT authorities, to secure the continued recovery of sea turtle populations in the Chagos archipelago, including: legislation, protected areas, scientific research, education and awareness campaigns to sensitize base personnel, habitat restoration and development of a comprehensive conservation management plan.

1.3.1 Describe any socio-economic studies or activities that have been conducted among communities that interact with marine turtles and their habitats. [BPR, INF]

Not applicable: there are no permanent inhabitants anywhere in BIOT.

1.3.2 Which of these adverse economic incentives are underlying threats to marine turtles in your country? [TSH]

- High prices earned from turtle products relative to other commodities
- Lack of affordable alternatives to turtle products
- Ease of access to the turtle resource (eg. by virtue of proximity or ease of land/water access)
- Low cost of land near nesting beaches

Low penalties against illegal harvesting

Other1:

Other2:

Other3:

None of the above or Not Applicable

Not applicable

1.3.3 Has your country has taken any measures to try to correct these adverse economic incentives? [BPR]

YES NO NOT APPLICABLE (no adverse economic incentives exist)

Not applicable - there are no permanent inhabitants anywhere in BIOT.

1.4.1 Indicate, and describe in more detail, the main fisheries occurring in the waters of your country, as well as any high seas fisheries in which flag vessels of your country participate, that could possibly interact with marine turtles. [INF]

a) Shrimp trawls: YES NO

b) Set gill nets: YES NO

c) Anchored Fish Aggregating Devices (FADs): YES NO

d) Purse seine (with or without FADs): YES NO

Purse seine fishery for tunas in BIOT has been prohibited since April 2010.

e) Longline (shallow or deepset): YES NO

Longline fishery for tunas in BIOT has been prohibited since April 2010.

f) Driftnet: YES NO

g) Other1:

h) Other2:

None of the above

1.4.2 Please indicate the relative level of fishing effort and perceived impact of each of the above fisheries on marine turtles (e.g. in terms of by-catch). [TSH]

a) Shrimp trawls

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

b) Set gill nets

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

c) Anchored Fish Aggregating Devices (FADs)

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

d) Purse seine (with or without FADs)

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

e) Longline (shallow or deepset)

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

f) Driftnet

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

g) Other1 (from 1.4.1):

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

h) Other2 (from 1.4.1):

Fishing effort:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Perceived Impact:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source:

1.4.3 Describe any illegal fishing that is known to occur in or around the waters of your country that may impact marine turtles. Describe the measures being taken to deal with this problem and any difficulties encountered in this regard. [TSH]

There is evidence of illegal inshore fishing (Mortimer 2007). Sri Lankan fishermen have been found in camps on the archipelago fishing mainly for beche de mer and are known to catch turtles, though there has been no recent evidence of this. Measures taken: the problem has been raised at the IOTC, with the Sri Lankan High Commission in London and with the Sri Lankan Ministry of Foreign Affairs; tougher fines and sentences imposed on the illegal fishermen caught.

1.4.4 Which of the following methods are used by your country to minimise incidental capture/mortality of marine turtles in fishing activities? [IND]

a) **Appropriate handling** of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets)

YES NO **NOT APPLICABLE**

Not applicable.

b) **Devices that allow the escape of marine turtles** (e.g. turtle excluder devices (TEDs) or other measures that are comparable in effectiveness)

YES NO **NOT APPLICABLE**

Not applicable.

c) **Measures to avoid encirclement** of marine turtles in purse seine fisheries

YES NO **NOT APPLICABLE**

Not applicable.

d) **Appropriate combinations** of hook design, type of bait, depth, gear specifications and fishing practices

YES NO **NOT APPLICABLE**

Not applicable.

e) **Monitoring and recovery of fish aggregating devices** (FADs)

YES NO **NOT APPLICABLE**

Not applicable.

f) **Net retention and recycling schemes**

YES NO **NOT APPLICABLE**

Not applicable.

g) **Spatial and temporal control of fishing** (e.g. seasonal closures of fishing activities)

YES NO **NOT APPLICABLE**

Not applicable.

h) **Effort management control**

YES NO **NOT APPLICABLE**

Not applicable.

Other (list and explain):

None of the above

1.4.5 Which of the following programmes has your country developed - in consultation with the fishing industry and fisheries management organisations - to promote implementation of measures to minimise incidental capture and mortality of turtles in national waters and in the high seas? [IND]

Onboard observer programmes

YES NO **NOT APPLICABLE**

The BIOT Administration has a patrol vessel for various uses, but there has been no licensed fishery since April 2010.

Vessel monitoring systems

YES NO **NOT APPLICABLE**

The BIOT Administration (BIOTA) has co-sponsored a resolution tabled at the 18th Session of the Indian Ocean Tuna Commission (IOTC) in June 2014 to implement full on Vessel Monitoring Systems (VMS) on all vessels licensed by IOTC coastal states.

Inspections (i.e. at sea, in port, at landing sites)

YES NO **NOT APPLICABLE**

Training programmes / workshops to educate fishers

YES NO **NOT APPLICABLE**

No future plans to introduce training programmes/workshops.

Informative videos, brochures, printed guidelines etc.

YES NO **NOT APPLICABLE**

In 2000, educational signboards were produced under an FFI project to inform people visiting Turtle Cove about the importance of the foraging hawksbill population in the Cove (Mortimer, 2000). Those signs were still there in 2006. Independently, the management of BIOT erected viewing platforms adjacent to Turtle Cove, so that visiting base personnel could view the turtles without getting into the water. Base personnel are not allowed to swim in Turtle Cove.

Other (list and explain): Not applicable.

YES NO NOT APPLICABLE

None of the above

1.4.6 Are the mitigation measures described in 1.4.4 and 1.4.5, periodically reviewed and evaluated for their efficacy? [SAP]

YES NO UNSURE

Not applicable since April 2010.

1.4.7 In your country, what types of data collection, research and development have been undertaken to support the reduction of marine turtle incidental catch (while taking into consideration the impact of various mitigation measures on other species)? [SAP]

Not applicable.

1.4.8 Has your country exchanged information and provided technical assistance (formally or informally) to other Signatory States to promote the activities described in 1.4.4, 1.4.5 and 1.4.7 above? [SAP]

YES NO UNSURE

1.4.9 What legislative and practical measures has your country taken in support of UN General Assembly Resolution 46/215 concerning the moratorium on the use of large-scale driftnets? [SAP]

The use of drift nets is prohibited in BIOT waters.

1.5.1 Does your country have legislation to prohibit direct harvest and domestic trade in marine turtles, their eggs, parts and products; and to protect important turtle habitats? [IND]

YES NO UNSURE

The protection and preservation of Wild Life Ordinance 1970 (as amended) empowers the Commissioner to enact legislation to protect wildlife (including turtles), prohibit the purchase, sale or export of wildlife, and prohibit the introduction of wildlife. It also permits the seizure in certain circumstances, of any vessel which brought a suspected offender into the Territory and, if any fine imposed is not paid, the eventual forfeiture of that vessel. The Wild Life Protection regulations of 1984 makes it an offence to "intentionally kill or attempt to kill or injure, or to take or be in possession of" and "intentionally to destroy, damage or take any birds nest while the nest is in use or being built, or any birds egg or turtles eggs".

The Wild Life Protection (Amendment) Regulations 2000 (2003) extends this list to include possession of a dead animal or any part of an animal or of a dead animal. Green Turtles Protection regulations 1968 states that no person shall harpoon, kill, destroy or take possession of any turtle for any reason whatsoever (similar legislation was not passed for Hawksbills at this time because hawksbill flesh was not being hunted for its meat; however all turtles are protected under other legislation). The Prohibited Imports and Export Order, 1984 prohibits the exportation of wild animals, whether alive or dead, (includes turtle eggs).

The Trade in Endangered Species (Control) Ordinance 2007 provides for the application of CITES, appointing the Administrator as the Management Authority and requiring that advice be taken from a scientific authority a person or authority as the Commissioner may from time to time appoint. The Joint Nature Conservation Committee is appointed as the Scientific Authority under Section 5 of this Ordinance.

The Visitors and Visiting Vessels Ordinance 2006 states: No person shall without the written consent of the Commissioner in the outer islands engage in any of the following activities or undertakings, that is to say, any form of hunting; any collection or killing of any wildlife including molluscs and live or dead coral; any undertaking connected with forestry or agriculture; any cutting or other destruction or collection of any vegetation; any excavations, levelling of the ground or construction; any work involving the alteration of the configuration of the soil or the character of the vegetation; any act, of

whatever kind, which pollutes any source of water or watercourse or sea area; or any act, of whatever kind, likely to harm or disturb the fauna or flora of the outer islands; AND

No person shall without the written consent of the Commissioner introduce into, or allow to enter or land in the Territory or the territorial sea and internal waters adjacent thereto any non-indigenous fauna or flora.

Specific to Diego Garcia, restricted areas are defined under the Diego Garcia Conservation (Restricted Area) Ordinance 1994 and can only be entered under permit. A public Notice in 1997 provided clearer definitions and restrictions, including the establishment of the Restricted Area of Diego Garcia with a Nature Reserve Area and a Strict Conservation Area.

1.5.2 Which, among the following list, are economic uses and cultural values of marine turtles in your country? Please rate the relative prevalence / importance of each consumptive or non-consumptive use.
[INF]

USES / VALUES

RELATIVE PREVALENCE / IMPORTANCE

Meat consumption

YES NO

HIGH MODERATE LOW UNKNOWN

Egg consumption

YES NO

HIGH MODERATE LOW UNKNOWN

Shell products

YES NO

HIGH MODERATE LOW UNKNOWN

Fat consumption

YES NO

HIGH MODERATE LOW UNKNOWN

Traditional medicine

YES NO

HIGH MODERATE LOW UNKNOWN

Eco-tourism programmes

YES NO

HIGH MODERATE LOW UNKNOWN

Cultural / traditional significance

YES NO

HIGH MODERATE LOW UNKNOWN

Other

1.5.3 Please indicate the relative level and impact of traditional harvest on marine turtles and their eggs. [IND, TSH]

Level of harvest:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Impact of harvest:

RELATIVELY HIGH MODERATE RELATIVELY LOW **NONE** UNKNOWN

Source of information:

No exploitation since the early 1970s, but the impact of historic exploitation is still felt in the reduced size of nesting populations (Mortimer 2009).

1.5.4 Have any domestic management programmes been established to limit the levels of intentional harvest? [SAP]

YES NO **UNKNOWN**

Not applicable - no turtle fishery exists.

1.5.5 Describe any management agreements negotiated between your country and other States in relation to sustainable levels of traditional harvest, to ensure that such harvest does not undermine conservation efforts. [BPR]

Not applicable.

1.6.1 First, select one of the options at left to indicate whether or not your country has any of the following measures in place to minimise the mortality of eggs, hatchlings and nesting females. If yes, then estimate the relative effectiveness of these measures. [IND, SAP]

MEASURES

RELATIVE EFFECTIVENESS

Monitoring/protection programmes

YES NO N/A

EXCELLENT **GOOD** LOW UNKNOWN

A long-term monitoring programme for the sea turtle nesting population on Diego Garcia has been conducted by members of the Turtle Conservation Team (TCT), consisting of volunteers of military personnel and interested BIOT personnel. Department of Environment personnel on the US base have also conducted long term, but intermittent monitoring. Through the latter, seasonal patterns of nesting activity have been documented, as have patterns of nesting beach erosion (Mortimer 2000; 2007).

Education/awareness programmes

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

See section 3.1.2. for more information.

Egg relocation/hatcheries

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

Predator control

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

Rat eradication was attempted on Eagle Island in 2006 but it was not entirely successful. Predators remain a problem in other nesting areas (Sheppard and Spalding 2003). A further rat eradication pilot will conclude on Ille Vache Marine in July 2014, with the possibility of further projects across the Territory.

Vehicle / access restrictions

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

Removal of debris / clean-up

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

Frequent beach clean-up exercise conducted by military personnel in Diego Garcia; infrequent or none on all other islands.

Re-vegetation of frontal dunes

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

Building location/design regulations

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

The British representative on Diego Garcia does not allow building or access to the turtle beaches.

Light pollution reduction

YES NO N/A

EXCELLENT GOOD LOW UNKNOWN

Other (list and rate them)

YES NO N/A

1.6.2 Has your country undertaken any evaluation of its nest and beach management programmes? [SAP]

YES NO NOT APPLICABLE

The 'Chagos research expedition in 1996' provided the first systematic survey of turtle nesting activity. This was followed by a further survey in 1999 limited to Diego Garcia commissioned by the Foreign & Commonwealth Office; the study is reported in "Diego Garcia Marine Turtle Conservation Assessment" (Mortimer, 2000) where management efforts were reviewed and further recommendations proposed. A further indirect evaluation has been achieved through the Chagos Conservation Management Plan (2003). The last scientific expedition to BIOT was carried out in 2006 during which all five atolls were surveyed. Preliminary results have shown nesting activity to be greater than in 1996.

OBJECTIVE II. PROTECT, CONSERVE AND REHABILITATE MARINE TURTLE HABITATS

2.1.1 What is being done to protect critical habitats *outside* of established protected areas? (NB: It is assumed that legislation relating to established protected areas will have been described in Section 1.5.1) [BPR, SAP]

The British representative on Diego Garcia does not allow building or access to the turtle beaches. Several other turtle nesting islands can be visited, and this is controlled by information given to visitors.

2.1.2 Are assessments routinely made of the environmental impact of marine and coastal development on marine turtles and their habitats? [IND, SAP]

YES NO NOT APPLICABLE

2.1.3 Is marine water quality (including marine debris) monitored near turtle habitats? If yes, describe the nature of this monitoring and any remedial measures that may have been taken. [SAP]

YES NO NOT APPLICABLE

Yes. Although the water quality in relation to turtle habitats is not thought to be affected, recent activity in the Diego Garcia lagoon has led us to believe that there may be raised levels of nutrients there, as a result of the discharge of treated effluent and greywater from vessels over a number of years. A study assessing the water quality is underway and expected to conclude in summer 2014.

2.1.4 Are measures in place to prohibit the use of poisonous chemicals and explosives? [SAP]

YES NO NOT APPLICABLE

Yes. The Explosives Ordinance of 1984 states that no person shall import, manufacture, be in possession of or use explosives except in accordance with a permit granted by the Commissioner's Representative. Under the Fisheries (Conservation and Management) Ordinance of 1998 it is an offence to use explosives, poison or other noxious substances for the purpose of killing, stunning or disabling any marine animal (including turtles). It is also an offence to be in possession of the above for any of the purposes mentioned.

2.2.1 Are efforts being made to recover degraded coral reefs? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc). [IND, SAP]

YES NO **NOT APPLICABLE** (no degraded coral reefs)

The reefs of the Chagos probably represent some of the most pristine and best protected in the Indian Ocean.

2.2.2 Are efforts being made to recover degraded mangrove habitats that are important for turtles? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc.) [IND, SAP]

YES NO **NOT APPLICABLE** (no mangrove habitats important for turtles)

No significant mangrove habitat present.

2.2.3 Are efforts being made to recover degraded sea grass habitats? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc.). [IND, SAP]

YES NO **NOT APPLICABLE** (no degraded sea grass habitats)

No significant seagrass habitat adjacent to any island other than Diego Garcia.

OBJECTIVE III. IMPROVE UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS THROUGH RESEARCH, MONITORING AND INFORMATION EXCHANGE

3.1.1 Give a list of available literature that includes baseline information from studies carried out in your country on marine turtle populations and their habitats. [INF]

Dutton R.A 1980. The herpetology of the Chagos Archipelago. *British Journal of Herpetology* 6:133-134. FitzSimmons N. 2010. Final report: Population Genetic Studies in Support of Conservation and Management of Hawksbill Turtles in the Indian Ocean. Marine Turtle Conservation Fund Award 98210-7-G126. Unpublished report to Multinational Species Conservation Fund. 24 pp. Frazier J.G. 1977. Marine Turtles in the Western Indian Ocean: British Indian Ocean Territories, Comoros. *Oryx* 13:162-175. Hahn A, Jensen MP, Broderick D, FitzSimmons NN, Bell I, Mortimer JA, Whiting S, Limpus CJ, Trott S. In prep. Stock composition of hawksbill turtle (*Eretmochelys imbricata*) feeding grounds in the Indo-Pacific region. Mortimer, J.A & Crain, D.A 1999. Sex steroid concentrations in immature hawksbill turtles (*Eretmochelys imbricata*) in the Chagos Archipelago. 173-184 p. In: Sheppard, C.R.C., Seaward, M.R.D. (Eds), *Ecology of the Chagos Archipelago*, 173-184 p. Linnean Society Occasional Publications 2, 173-184 p.

Mortimer, J.A., Day, M. 1999. Sea turtle populations and habitats in the Chagos Archipelago. 159-175 p. In: Sheppard, C.R.C., Seaward, M.R.D. (Eds.), *Ecology of the Chagos Archipelago*. 159-175 p. Linnean Society Occasional Publications 2, 159-175 p. Hays GC, Mortimer JA, Ierodiaconou D, Esteban N (2014). Use of long-distance migration patterns of an endangered species to inform conservation planning for the world's largest marine protected area. *Conservation Biology* (in press). Mortimer, J.A & Broderick, D 1999. Population genetic structure and developmental migrations of sea turtles in the Chagos Archipelago and adjacent regions inferred from mtDNA sequence variation. 185-194 p. In: Sheppard, C.R.C., Seaward, M.R.D. (Eds.), *Ecology of the Chagos Archipelago*, 185-194 p. Linnean Society Occasional Publications 2, 185-194 p.

Mortimer, J.A. 2000. Diego Garcia Marine Turtle Conservation Assessment (British Indian Ocean Territory). Final Report: on the Fieldwork to the British Indian Ocean Territory Department, Environment Science & Energy Department, and Foreign & Commonwealth Office. 69 pages.

Mortimer, J.A. 2000. Sea turtle conservation programmes: Factors determining success or failure. 1-371 p. In: Salm, R.V., Clark, J.R., Siirila, E. (Eds.), *Marine and Coastal Protected Areas: A guide for planners and managers*. 1-371 p. IUCN, Washington D.C. 1-371 p.

Mortimer, J.A., Day, M. & Broderick, D. 2002. Sea turtle populations of the Chagos Archipelago, British Indian Ocean Territory. 47-49 p. In: *Proceedings of the 20th Annual Symposium on Sea Turtle Biology and Conservation*. Compilers: Mosier, A., A. Foley, & B. Brost. NOAA Tech. Memo. NMFS-SEFSC-477, 369 p. Orlando, Florida. Mortimer JA. 2007. Final

report: Status & Conservation of Nesting Turtles in the Chagos Islands (BIOT). Marine Turtle Conservation Fund Award 98210-6-G073. Unpublished report to Multinational Species Conservation Fund. 8 pp. Mortimer, J. A. 2007. Sea turtles of the Chagos Archipelago - Populations in Recovery. IOSEA Profile of the Month (Archive) -- Sep 2007. http://www.ioseaturtles.org/pom_detail.php?id=60

Mortimer, J.A. 2009. History of turtle exploitation in Chagos. Chagos News 34: 14-16 p.

Proctor, D & Fleming L.V (eds) 1999. Biodiversity: the UK Overseas Territories. Peterborough Joint Nature Conservation Committee, In Sheppard C.R.C. & Seaward M.R.D. (Eds.), Ecology of the Chagos Archipelago. Linnean Society Occasional Publications 2.

Sheppard, C., Spalding, M. 2003. Chagos Conservation Management Plan. 1-52 p.

Spalding M.D et al 2001. World Atlas of Coral Reefs. UNEP World Conservation Monitoring Centre.

Stoddart D.R 1971. Geomorphology of Diego Garcia Atoll. In Stoddart D.R., Taylor JD (Eds) Geography and Ecology of Diego Garcia Atoll, Chagos Archipelago. Atoll Research Bulletin 149:7-27. Vargas SM, Jensen MP, Broderick D, FitzSimmons NN, Mobaraki A, Mortimer JA, Prince R, Bell I, dos Santos FR. In prep. Phylogeography of the hawksbill turtle (*Eretmochelys imbricata*) in the Indo-Pacific region. Vargas SM, Jensen MP, Mobaraki A, Santos FR, Broderick D, Mortimer JA, Limpus C, Whiting S, FitzSimmons N. (in press). Phylogeography of the Hawksbill turtles (*Eretmochelys imbricata*) from the Indo Pacific Region. Abstract, 24-30 April 2010. Proceedings of the 30th International Symposium on Sea Turtle Biology and Conservation.

3.1.2 Have [long-term](#) monitoring programmes (i.e. of at least 10 years duration) been initiated or planned for priority marine turtle populations frequenting the territory of your country? [\[IND, BPR\]](#)

YES NO UNSURE

Three index beaches on Diego Garcia have been identified for long-term monitoring (Mortimer and Day 1999), and baseline data was collected in 1999 and 2001. Unfortunately, data gathering was suspended because of increased military activity in Diego Garcia following the international events in 2001. Some ad hoc turtle monitoring activities were carried out in July 2003. A more systematic plan of data collection was reinstated in 2006 and between March 2006 and February 2007, 23 nest beach surveys were carried out, providing the first description of nesting seasonality in BIOT (Mortimer 2007). Since March 2011 the turtle monitoring was revived on Diego Garcia implemented by personnel of the US Naval Support Facility (NSF) Environmental Office in collaboration with Mortimer and the British Representative. While training materials and a monitoring protocol have been developed, encouragement of personnel by superiors is required to ensure that volunteers are available to continue the semi-monthly surveys. The high turnover of base personnel (maximum stay of 1 year) requires repeated training. Given the temperature anomalies experienced throughout the Indian Ocean in recent years, and the fact these are known to affect reproductive periodicity in nesting turtles, long term monitoring is regarded as extremely important.

3.1.3 Has the genetic identity of marine turtle populations in your country been characterised? [\[INF, PRI\]](#)

YES NO UNSURE

Patterns of mitochondrial DNA variation were first analysed after samples collection during the 'Chagos 1996 Scientific Expedition'. As reported in Mortimer & Broederick (1999), mtDNA from Chagos was compared to populations from other rookeries in the Indian Ocean: Republic of Seychelles, Arabian peninsula and Western Australia. Nesting hawksbills in Chagos and Seychelles are both characterized by high frequency mtDNA variants not recorded elsewhere in the world and differed from each other by significant haplotype frequency shifts. Nesting green turtles shared haplotypes with green turtle populations in both the eastern and western Indian Ocean, but were distinct from those in the Arabian Peninsula. Only 3 green turtles were sampled however.

Genetic studies and the inference that can be derived from them depends very much on the sample size used; one of the objectives of the 2006 scientific expedition was to collect many more genetic samples. Analysis of this material is completed

or nearly completed (FitzSimmons 2010, Hahn et al., in prep., Vargas et al., in prep, Vargas et al. in press). In the wider Indian Ocean, Vargas et al., (2010) subsequently identified nine genetically separated groupings, with those nesting in Chagos and Seychelles forming a single grouping distinct from those in the Arabian Gulf and more easterly sites including Western Australia, (Vargas et al., 2010, and Vargas et al., in prep). Analysis of DNA from foraging hawksbills indicate that most foraging hawksbills in Chagos derive from rookeries in Chagos and Seychelles, which also contribute substantially to foraging aggregations in Cocos (Keeling) (FitzSimmons, 2010 unpublished report; Hahn et al., in prep.).

3.1.4 Which of the following methods have been or are being used to try to identify migration routes of turtles? Use the text boxes to provide additional details. [INF, PRI]

Tagging YES NO

In 1996, 41 sea turtles were captured in Turtle Cove, Diego Garcia and tagged (Mortimer and Day 1999). Rates of recapture were used to evaluate patterns of migration in general, and also to compare how it varied from one size class to another. Results showed that of those originally tagged in 1996, 68% were recaptured in Turtle Cove in 1999. (27 out of the 40 turtles). This suggests that foraging populations in Turtle Cove are remarkably stable over time. There capture rate was notably highest amongst the larger turtles. Of the 17 turtles whose carapaces measured >50cm in 1996, 88% were recaptured in 1999 (Mortimer 2000).

Satellite tracking YES NO

In October 2012 satellite tags were attached to nesting green turtles by Graeme Hays, Nicole Esteban and Jeanne Mortimer (University of Swansea, UK; University of Deakin Australia; Seychelles). The project was a huge success with some tags still working in May 2014. Long-term migrations of some individuals were identified, with turtles travelling to mainland Africa, the Seychelles and the Maldives. In addition, travel to local foraging grounds locally on the Great Chagos Bank was identified, showing the existence of previously unknown sea grass beds (Hays et al. 2014 (in press)). It is hoped that the results of the genetics study of hawksbills in the wider Indian Ocean region currently underway in collaboration with Dr. Nancy Fitzsimmons of the University of Canberra in Australia, using genetic samples submitted by J.A. Mortimer, will shed some light on the origin of Turtle Cove hawksbill turtles.

Other

None of the above

3.1.5 Have studies been carried out on marine turtle population dynamics and survival rates (e.g. including studies into the survival rates of incidentally caught and released turtles)? [INF, PRI]

YES NO UNSURE

A study implemented in 1996, 1999 and 2006 is underway to determine the species, sex ratios, size classes, growth rates, and movements of turtle populations inhabiting - Turtle Cove - a tidal creek at the southern end of the main inner lagoon of Diego Garcia (Mortimer and Day 1999; Mortimer & Broderick 1999, Mortimer & Crain 1999, Mortimer 2007). Hawksbills were the most abundant turtle species in Turtle Cove, comprising more than 95% of the turtle encountered. All were juvenile and sub-adult, with maximum straight line carapace lengths ranging from 32 to 71 cm.

Plasma estradiol-17b and androgen concentrations were evaluated as indicators of the sex of immature hawksbill turtles captured on their foraging grounds in the Chagos archipelago (Mortimer and Crain 1999). Androgen concentrations showed the bimodal distribution demonstrated by previous studies to reflect gender differences and indicated a sex ratio (2.75 F: 1.00M, n = 51) significantly skewed towards female.

It is hoped that with the establishment of a long-term monitoring programme for sea turtle nesting populations at Diego Garcia, it will enable the sizes of the nesting populations of Diego Garcia to be accurately assessed, seasonal patterns of nesting throughout the year to be determined (to provide more precise population estimates as well as a better understanding of turtle behaviour), and also will allow long term annual fluctuations in nesting activity to be monitored. No specific work on survival rates has been conducted in Chagos Archipelago.

3.1.6 Has research been conducted on the frequency and pathology of diseases in marine turtles? [INF, PRI]

YES NO UNSURE

Turtles captured and released in Turtle Cover were examined for injury and obvious evidence of disease (Mortimer & Day, 1999; Mortimer 2007).

3.1.7 Is the use of traditional ecological knowledge in research studies being promoted? [BPR, PRI]

YES NO UNSURE

The only island currently inhabited is Diego Garcia - military facility.

3.2.1 List any regional or sub-regional action plans in which your country is already participating, which may serve the purpose of identifying priority research and monitoring needs. [INF]

IOSEA, especially the WIO Marine Turtle Task Force.

3.2.2 On which of the following themes have collaborative studies and monitoring been conducted? Use the text boxes to describe the nature of this international collaboration or to clarify your response. Answer 'NO' if the studies/monitoring undertaken do not involve international collaboration. [INF, PRI]

a) Genetic Identity YES NO NOT APPLICABLE

A study by Mortimer & Broderick (1999) looking at the population genetic structure and developmental migrations of sea turtles in the Chagos Archipelago and adjacent regions inferred from mtDNA sequence variation. The adjacent localities included Republic of Seychelles, the Arabian Peninsula and Western Australia.

The project was the result of collaboration between the survey team, US Naval Support Facility DG BIOT, Seychelles - EMPS-Project: Turtle and Tortoise Conservation - (funded jointly by the Govt. of Seychelles and the Global Environment Facility administered by the World Bank), the British Foreign & Commonwealth Office, Fauna and Flora International, the Chelonia Institute, National Science Foundation and Centre for Marine Conservation.

The results have been published in Sheppard et al (1999) Ecology of the Chagos Archipelago. Linnean Society Occasional Publications.

Currently an expanded version of that study is underway in collaboration with geneticist Dr. Nancy Fitzsimmons of University of Canberra. This new study is using the original samples collected for Mortimer & Broderick (1999), plus new samples collected by Mortimer in 1999 and 2006 (FitzSimmons 2010, Hahn et al., in prep., Vargas et al., in prep, Vargas et al. in press).

b) Conservation status YES NO NOT APPLICABLE

c) Migrations YES NO NOT APPLICABLE

Ongoing satellite tracking work has involved an international team from Swansea University (UK), Deakin University (Australia) and the Seychelles.

d) Other biological and ecological aspects YES NO NOT APPLICABLE

Other

3.3.1 List, in order of priority, the marine turtle populations in your country in need of conservation actions, and indicate their population trends. [PRI]

High Priority species:

Chelonia mydas and *Eretmochelys imbricata* are well protected by the administration of the BIOT and increases in nesting activity in response to this protection have been observed. In the long term it is hoped that this increase in reproductive output will result in true population increase when the large number offspring produced eventually mature and return to the nesting beaches as reproductive adults.

However given the global significance of its nesting populations the long-term survival and continued recovery of the turtle populations would be enhanced by conservation programmes.

Medium Priority species:

Caretta caretta, *Dermochelys coriacea* and *Lepidochelys olivacea* may occasionally forage in waters of Chagos. More work needs to be done to evaluate the importance of the habitats of Chagos to the survival of these three species. Population status and trends within Chagos are not known.

3.3.2 Are research and monitoring activities, such as those described above in Section 3.1 periodically reviewed and evaluated for their efficacy? [SAP]

YES NO UNSURE

3.3.3 Describe how research results are being applied to improve management practices and mitigation of threats (in relation to the priority populations identified in 3.3.1, among others). [SAP]

Research results are being used to improve the efficacy of conservation actions through management and threat mitigation.

3.4.1 Has your country undertaken any initiatives (nationally or through collaboration with other Range States) to standardise methods and levels of data collection? [BPR, INF]

YES NO UNSURE

- Index beaches - as described in Annex 2, 3 and 4 have been chosen for long-term monitoring on Diego Garcia.

A Monitoring Protocol has been adopted for Diego Garcia including standardization of equipment and frequency of surveys.

The type of data recorded has also been standardized.

Training materials have been produced to ensure volunteers are able to carry out surveys effectively.

3.4.2 To what extent does your country exchange scientific and technical information and expertise with other Range States? [SAP, IND]

OFTEN (SYSTEMATICALLY)

OCCASIONALLY

RARELY

NEVER

3.4.3 If your country shares scientific and technical information and expertise with other Range States, what mechanisms have commonly been used for this purpose? Comment on any positive benefits/outcomes achieved through these interactions. [INF]

Participation in (chaired by Dr Peter Richardson, Marine Conservation Society, UK) the Western Indian Ocean - Marine Turtle Task Force. Through publication of findings in scientific journals, and as conference proceedings.

3.4.4 Does your country compile and make available to other countries data on marine turtle populations of a regional interest? [INF]

YES NO UNSURE

Given the relationship with Hawksbill and Green turtle populations elsewhere in the region, especially the Seychelles, information on the status of turtle populations and habitats in Chagos, patterns of migration, genetic and morphometric relationships, etc will be of regional interest.

Recently, data from BIOT have been submitted by Dr Mortimer to SWOT report III (http://www.seaturtlestatus.org/Client/Documents/r3_hawksbills.pdf) for global hawksbill nesting map and also to the IUCN-MTSG 2007 Hawksbill Assessment.

OBJECTIVE IV. INCREASE PUBLIC AWARENESS OF THE THREATS TO MARINE TURTLES AND THEIR HABITATS, AND ENHANCE PUBLIC PARTICIPATION IN CONSERVATION ACTIVITIES

4.1.1 Describe the educational materials, including mass media information programmes that your country has collected, developed and/or disseminated. [INF, PRI]

Information signboards and leaflets - to inform the viewer (base personnel and visiting yachts) about the wildlife to instill an appreciation and respect for it.

Regulation board - informing base personnel and visiting yachts about the legislation/rules.

Draft training materials for volunteer surveyors, describing the monitoring protocol were produced & distributed in Feb 1999.

Designated Turtle Month (November) on Diego Garcia to encourage participation in monitoring programme.

- No entry - sign at Turtle Cove to prevent disturbance of turtles.

Two viewing platforms have been constructed at Turtle Cove.

Although BIOT does not have its own website, the metropolitan UK contributed to the costs of the IOSEA website. In addition "Chagos News" a newsletter is produced in England by the Chagos Conservation Trust for its members.

The United Kingdom can further contribute to the development of a web-based information resource for marine turtle conservation through providing migration data, information on projects and genetic identity.

4.1.2 Which of the following groups have been the targets of these focused education and awareness programmes described in above in Section 4.1.1? [PRI, INF]

- Policy makers
- Fishing industry
- Local/Fishing communities
- Indigenous groups
- Tourists**
- Media
- Teachers
- Students
- Military, Navy, Police**
- Scientists
- Other:And civilian contractor personnel associated with the military base.**
- None of the above

NB. Tourists: This applies to visiting yachts in northern atolls who are made aware of the strict no-take laws. The only island that is inhabited is Diego Garcia of which there is a non-resident population of approx. 3,000 military and civilian personnel. All military personnel are given an educational introduction to wildlife conservation when they are posted to the island. The teaching material on turtles has been prepared by Fauna and Flora International. It also includes leaflets, signs and notice boards. This material is also made readily available to the civilian population of contact employees from the Philippines and Mauritius.

4.1.3 Have any community learning / information centres been established in your country? [BPR, SAP]

YES **NO**

4.2 Alternative livelihood opportunities [IND, BPR] Describe initiatives already undertaken or planned to identify and facilitate alternative livelihoods (including income-generating activities) for local communities.

Not Applicable

4.3.1 Describe initiatives already undertaken or planned by your country to involve local communities, in particular, in the planning and implementation of marine turtle conservation programmes. Please include details of any incentives that have been used to encourage public participation, and indicate their efficacy. [BPR, IND]

Turtle Month (every November on Diego Garcia). Participation of base and military personnel in beach surveys and habitat restoration projects.

4.3.2 Describe initiatives already undertaken or planned to involve and encourage the cooperation of Government institutions, NGOs and the private sector in marine turtle conservation programmes. [IND, BPR]

The joint Fauna and Flora International-Defra (UK's Department for Environment, Food and Rural Affairs) Flagship Species Fund receives funds from Defra and the corporate sector. The Fund provides support to practical and locally-run conservation projects on high-profile species, including turtles. Most recently funds have been used to support turtle conservation initiatives in the Galapagos Islands and Cape Verde. The Darwin Initiative, funded by UK Government, assists countries that are rich in biodiversity but poor in financial resources to meet their objectives under the Convention on Biological Diversity (CBD) - in particular relating to the Nagoya Protocol on Access and Benefit Sharing (ABS); the Convention on International Trade in Endangered Species (CITES) and the International Treaty on Plant Genetic Resources for Food and Agriculture (Plant Treaty) through the funding of collaborative projects. The Initiative has funded a number of turtle projects.

OBJECTIVE V. ENHANCE NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION

5.1.1 Has your country undertaken a national review of its compliance with Convention on International Trade in Endangered Species (CITES) obligations in relation to marine turtles? [SAP]

YES NO NOT APPLICABLE

BIOT's CITES legislation was reviewed in 2001, and again in 2007 when the Trade in Endangered Species (Control) Ordinance 2001 and amending Ordinance of 2006 were consolidated to form the Trade in Endangered Species (Control) Ordinance 2007. At the 61st Meeting of the CITES Standing Committee in August 2011, the CITES Secretariat confirmed that the 2007 Ordinance fully met the requirements of the Convention. It therefore provides for the implementation of CITES and associated obligations in relation to marine turtles.

5.1.2 Does your country have, or participate/cooperate in, CITES training programmes for relevant authorities? [SAP]

YES NO NOT APPLICABLE

The Joint Nature Conservation Committee and Royal Botanic Gardens Kew, in their capacity as the CITES Scientific Authorities for Metropolitan UK and BIOT, regularly provide training on the scientific aspects of CITES implementation to CITES Authorities in other Signatory States.

5.1.3 Does your country have in place mechanisms to identify international illegal trade routes (for marine turtle products etc.)? Please use the text box to elaborate on how your country is cooperating with other States to prevent/deter/eliminate illegal trade. [SAP]

YES NO NOT APPLICABLE

The metropolitan UK secures intelligence from the world customs organizations, TRAFFIC International and Interpol. Any intelligence would be passed on to customs offices in the region through appropriate channels, including the Foreign and Commonwealth Office and may also be passed on to the UK's National Wildlife Crime Unit.

5.1.4 Which international compliance and trade issues related to marine turtles has your country raised for discussion (e.g. through the IOSEA MoU Secretariat, at meetings of Signatory States etc.)? [INF]

None

5.1.5 Describe measures in place to prevent, deter and eliminate domestic illegal trade in marine turtle products, particularly with a view to enforcing the legislation identified in Section 1.5.1. [INF]

See answer given to 1.5.1 and those given to the questions in 4.1.

5.2.1 Has your country already developed a national action plan or a set of key management measures that could eventually serve as a basis for a more specific action plan at a national level? [IND]

YES NO

The Chagos Conservation Management Plan was finalised in early 2004 and provided a series of recommendations along three broad themes: large protected areas from which no extraction should take place; the establishment of a scientific advisory panel; and a simple system of regular monitoring. A subsequent management plan, which recognises the conservation ambitions started with the declaration of the Marine Protected Area, is under development and will be introduced in summer 2014. Ongoing monitoring for management purposes takes place, although irregularly.

5.2.2 From your country's perspective, which conservation and management activities, and/or which particular sites or locations, ought to be among the highest priorities for action? [PRI]

1. Conduct long-term monitoring of nesting and foraging populations in order to identify critical habitat requiring special protection, define the nesting seasons and evaluate long-term population trends. (3.1)
2. Continue to conduct public awareness campaigns to sensitize base personnel. (4.1)
3. Improve surveillance of fishing vessels to discourage turtle poaching in the outer islands. (1.4)
4. Eradicate rats and feral cats to minimize predation of turtle eggs and hatchlings. (1.6)
5. Knowledge of migratory patterns across the Indian Ocean into BIOT waters are would allow an assessment of the value of BIOT to Indian Ocean turtle populations. Satellite, tagging and genetic studies in the region should be highly supported. Recent studies have shown the utility of satellite tracking (3.1) 6. Ongoing monitoring of sand temperatures so that the risk of feminisation of populations through rising incubations temperatures can be objectively identified.

5.2.3 Please indicate, from your country's standpoint, the extent to which the following local management issues require international cooperation in order to to achieve progress. [PRI]

- | | |
|---|--|
| Illegal fishing in territorial waters | <input type="checkbox"/> ESSENTIAL <input checked="" type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL |
| Incidental capture by foreign fleets | <input type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input checked="" type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL |
| Enforcement/patrolling of territorial waters | <input type="checkbox"/> ESSENTIAL <input checked="" type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL |
| Hunting/harvest by neighboring countries | <input checked="" type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL |
| Poaching, illegal trade in turtle projects | <input type="checkbox"/> ESSENTIAL <input checked="" type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL |
| Development of gear technology | <input type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input checked="" type="checkbox"/> NOT AT ALL |
| Oil spills, pollution, marine debris | <input type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input checked="" type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL |
| Training / capacity-building | <input type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input checked="" type="checkbox"/> NOT AT ALL |

Alternative livelihood development	<input type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input checked="" type="checkbox"/> NOT AT ALL
Identification of turtle populations	<input checked="" type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL
Identification of migration routes	<input checked="" type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL
Tagging / satellite tracking	<input type="checkbox"/> ESSENTIAL <input checked="" type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL
Habitat studies	<input type="checkbox"/> ESSENTIAL <input checked="" type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL
Genetics studies	<input checked="" type="checkbox"/> ESSENTIAL <input type="checkbox"/> IMPORTANT <input type="checkbox"/> LIMITED <input type="checkbox"/> NOT AT ALL

5.3.1 Identify existing frameworks/organisations that are, or could be, useful mechanisms for cooperating in marine turtle conservation at the sub-regional level. Please comment on the strengths of these instruments, their capacity to take on a broader coordinating role, and any efforts your country has made to enhance their role in turtle conservation. [INF, BPR]

Information exchange was identified as a high priority by the IOSEA Western sub-regional group at the 2nd meeting of Signatory States (16-19 March 2004). We exchanged e-mail addresses and contact details with key partners within the region. We nominated two turtle biologists with field experience in the region to serve on the interim Western Indian Ocean - Marine Turtle Task Force.

5.3.2 Has your country developed, or is it participating in, any networks for cooperative management of shared turtle populations? [BPR, INF]

YES NO NOT APPLICABLE

5.3.3 What steps has your country taken to encourage Regional Fishery Bodies (RFBs) to adopt marine turtle conservation measures within Exclusive Economic Zones (EEZs) and on the high seas? [SAP]

None to report

5.4.1 Describe your country's needs, in terms of human resources, knowledge and facilities, in order to build capacity to strengthen marine turtle conservation measures. [PRI]

With no permanent inhabitants based on BIOT and a high turnover of military personnel, training volunteers in survey techniques and establishing a regular monitoring programme has proved difficult.

5.4.2 Describe any training provided in marine turtle conservation and management techniques (e.g. workshops held, training manuals produced etc.), and indicate your plans for the coming year. [PRI, INF]

All personnel on military base are given an educational introduction to wild life conservation and we have teaching material on turtles prepared by Fauna and Flora International - leaflets, signs, and noticeboards. These are also made readily accessible for the US and British servicemen as well as the civilian population of contract employees from the Philippines and Mauritius.

5.4.3 Specifically in relation to [capacity-building](#), describe any partnerships developed or planned with universities, research institutions, training bodies and other relevant organisations. [\[BPR\]](#)

An international team of scientists from Swansea University (UK), Deakin University (Australia) and the Seychelles are working with base personnel on studies involving satellite tracking, monitoring incubation conditions and nesting numbers.

5.5.1 National policies and laws concerning the conservation of marine turtles and their habitats will have been described in Section 1.5.1. Please indicate their effectiveness, in terms of their practical application and enforcement. [\[SAP, TSH\]](#)

5.5.2 Has your country conducted a review of policies and laws to address any gaps, inconsistencies or impediments in relation to marine turtle conservation? If not, indicate any obstacles encountered in this regard and when this review is expected to be done. [\[SAP\]](#)

YES NO UNSURE

We are currently in the process of consolidating all environmental legislation to clarify the existing laws and to remove any minor anomalies.

5.5.3 From the standpoint of law enforcement, has your country experienced any difficulties achieving cooperation to ensure compatible application of laws across and between jurisdictions? [\[TSH\]](#)

YES NO UNSURE

Not applicable.

OBJECTIVE VI. PROMOTE IMPLEMENTATION OF THE MoU INCLUDING THE CONSERVATION AND MANAGEMENT PLAN

6.1.1 What has your country already done, or will it do, to encourage other States to sign the IOSEA MoU? [\[INF\]](#)

The United Kingdom has encouraged other MoU signatory States to join CMS. Metropolitan UK Ministers visiting countries not party to CMS have been briefed to mention joining CMS if and when the opportunity arose.

6.1.2 Is your country [currently](#) favourable, in principle, to amending the MoU to make it a legally binding instrument? [\[INF\]](#)

YES NO NO VIEW

6.1.3 Would your country be favourable, over a [longer time horizon](#), to amending the MoU to make it a legally-binding instrument? [\[INF\]](#)

YES NO NO VIEW

At this stage we consider such a step premature. Although the Secretariat has been successful in securing the membership of additional range states since the last meeting, we still consider that against that background resources should be directed at practical conservation and securing participation from key range states rather than seeking to alter

the legal status of the agreement.

6.2 Secretariat and Advisory Committee

6.2.1 What efforts has your country made, or can it make, to secure funding to support the core operations of the IOSEA MoU (Secretariat and Advisory Committee, and related activities)? [IND]

In the past, the UK has provided funds for practical conservation projects and the Year of the Turtle initiative. The UK continues to contribute towards the Secretariat's ongoing administration costs.

6.3.1 What funding has your country mobilised for domestic implementation of marine turtle conservation activities related to the IOSEA Marine Turtle MoU? Where possible, indicate the specific monetary values attached to these activities/programmes, as well as future plans. [IND]

(1) 2006 Scientific expedition to Chagos - which included re-surveying of turtle nesting activity and the collection of dozens of samples for marine turtle DNA work, as part of a pan-tropical study and lots of additional observations regarding beach erosion, coral condition, etc which are also relevant to turtle conservation.

(2) Chagos Ecological Restoration project 2006 - CERP was directed by Fauna and Flora International and funded by the Overseas Territories Conservation Forum (UK Foreign and Commonwealth Office and Department for International Development), the Flagship Species Fund (Department for Environment, Food and Rural Affairs) and the Chagos Conservation Trust (a charitable organisation). Collaboration and logistical support were also provided by the BIOT administration. (3) An ongoing programme to monitor turtle nesting activity at Diego Garcia is currently being implemented by personnel of the US Naval Support Facility (NSF) Environmental Office in collaboration with a member of the 2006 Scientific Expedition to Chagos. (4) Darwin Initiative Challenge Fund project funded by the Department for Environment, Food and Rural Affairs (totalling GBP24,985) in 2012-2013. A Swansea University project on sea turtles in the British Indian Ocean Territory. (5) Ile Vache Marine Restoration Project (with Darwin Plus funding of GBP32,256 from the Department for Environment, Food and Rural Affairs, Foreign and Commonwealth Office and Department for International Development) from May 2013 to July 2014. With co-funding also provided by the BIOT Administration, Chagos Conservation Trust, RSPB, Royal Botanic Gardens, Kew, Warwick University, Zoological Society London and local logistical support provided by G4S LLC and UK military forces based in BIOT, the project aims to restore the ecosystems of Ile Vache Marine, a tiny island in the Chagos Archipelago, by eradicating the invasive black rat. This will improve the breeding conditions for hawksbill and green turtles.

6.3.2 Has your country tried to solicit funds from, or seek partnerships with, other Governments, major donor organisations, industry, private sector, foundations or NGOs for marine turtle conservation activities? [IND]

YES NO

There have not been any approaches made. However, Fauna and Flora International approached the UK Government at the end of the 1990's and this led to the creation of their Flagship Species Fund. This has been used to fund some turtle projects in the Indian Ocean region.

The UK Government provided funds for non-government organisations to undertake a rodent eradication project on Eagle Island and funded the production of a leaflet on wildlife conservation in the Chagos archipelago.

6.3.3 Describe any initiatives made to explore the use of economic instruments for the conservation of marine turtles and their habitats. [BPR]

None to report.

6.4.1 Has your country designated a lead agency responsible for coordinating national marine turtle conservation and management policy? If not, when is this information expected to be communicated to the IOSEA MoU Secretariat? [IND]

YES NO

The metropolitan UK's Department for Environment, Food and Rural Affairs.

6.4.2 Are the roles and responsibilities of all government agencies related to the conservation and management of marine turtles and their habitats clearly defined? [IND]

YES NO UNSURE

The UK's Scientific Advisors, the Joint Nature Conservation Committee, are the designated lead agency.

6.4.3 Has your country ever conducted a review of agency roles and responsibilities? If so, when, and what was the general outcome? If not, is such a review planned and when? [SAP],

YES NO UNSURE

The interagency roles and responsibilities are clearly defined and not in need of further review at this stage.

Comments/suggestions to improve the present reporting format:

The online reports cannot easily be saved into WORD format (some of the formatting is lost). This causes some difficulties when distributing the report to stakeholders for contributions.

Additional information not covered above: