Saudi Arabia

GENERAL INFORMATION

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

Saudi Wildlife Commission (SWC)

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

- Presidency of Meteorology and Environmental (PME, formerly MEPA)
- Department of Fisheries, Ministry of Agriculture

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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]

Five of the seven recognized marine turtles species have been recorded in Saudi Arabia's territorial waters, namely the Green turtle (*Chelonia mydas*), the Hawksbill turtle (*Eretmochelys imbricata*), the Loggerhead turtle (*Caretta caretta*), the Olive Ridley turtle (*Lepidochelys olivacea*), and the Leatherback turtle (*Dermochelys coriacea*). Due to their nesting areas and abundance within the Kingdom's waters, the green and hawksbill turtles are considered most important to the turtle conservation efforts in the Kingdom.

The other three species have been found in the Red Sea and Arabian Gulf but no breeding sites have been recorded within the Kingdom's boundaries. The most important nesting beaches in the Kingdom's territorial waters of the Arabian Gulf are located on the Arabian Gulf Islands (Karan Island; 27 deg 42' 45" N, 49 deg 49' 30" E, Jana Island ;27 deg 21' 50" N, 49 deg 54' 00" E, Jurayd Island; 27 deg 11' 30" N, 49 deg 59' 25" E.) These islands are regarded as the primary nesting sites for both green and hawksbill turtles in the Saudi Arabian portion of the Arabian Gulf.

In the Red Sea, the most important locations of nesting beaches exist in Ra's Baridi (24 deg 14' N, 37 deg 45' E to 24 deg) which is the most important nesting site for green turtles in the Red Sea, the Farasan Islands Protected Area, and the islands of Al-Wajh Bank.

A mortality of adult turtles (25 green turtles) was reported during one year from March 2001 to March 2002. The dead turtles were found washed up on the beach between Jazan and Ash-Shuqayq in the southern part of the Red Sea. The mortality could be a result of the incidental capture or propeller collision. Additionally, lost and discarded nets pose a threat to marine turtles as they may accidentally get caught in them.

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]

The Law of the Coast Guard on the Prevention of access to unpopulated islands except in cases of emergency, which has helped to preserve marine turtles and eggs from theft on these islands.

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]

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

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)

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

e) Longline (shallow or deepset): ■ YES ☐ NO

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: Statistics and Reports

b) Set gill nets

Fishing effort:

☐ RELATIVELY HIGH ☐ MODERATE ☐ RELATIVELY LOW ☐ NONE ■ **UNKNOWN**

Perceived Impact:

☐ RELATIVELY HIGH ☐ MODERATE ☐ RELATIVELY LOW ☐ NONE ■ **UNKNOWN**

Source: Statistics and Reports

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: Statistics and Reports

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: Statistics and Reports

f) Driftnet

Fishing effort:

☐ RELATIVELY HIGH ☐ MODERATE ☐ RELATIVELY LOW ■ **NONE** ☐ UNKNOWN

Perceived Impact:

☐ RELATIVELY HIGH ☐ MODERATE ☐ RELATIVELY LOW ■ **NONE** ☐ UNKNOWN

Source: Statistics and Reports

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 are fishing illegally. The application of fines is the problem, because not all offenders arrested.

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

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

Will soon

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

☐ YES ■ **NO** ☐ NOT APPLICABLE

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

■ **YES** ☐ NO ☐ NOT APPLICABLE

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

☐ YES ■ **NO** ☐ NOT APPLICABLE

f) **Net retention and recycling schemes**

☐ YES ■ **NO** ☐ NOT APPLICABLE

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

■ **YES** ☐ NO ☐ NOT APPLICABLE

h) **Effort management control**

■ **YES** ☐ NO ☐ 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

Vessel monitoring systems

☐ YES ■ **NO** ☐ NOT APPLICABLE

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

■ **YES** ☐ NO ☐ NOT APPLICABLE

Badly

Training programmes / workshops to educate fishers

■ **YES** ☐ NO ☐ NOT APPLICABLE

Informative videos, brochures, printed guidelines etc.

■ **YES** ☐ NO ☐ NOT APPLICABLE

Other (list and explain):

☐ 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

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 yet applied

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 Kingdom of Saudi Arabia is not using large-scale pelagic drift-net fishing in the high seas.

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 legal basis for marine turtle conservation and management in Saudi Arabia:

In the Kingdom of Saudi Arabia marine turtle protection is governed by two laws providing the necessary legislative frameworks

a) The Fishing Law:

Hunting, exploitation, and protection of the marine living natural resources in the territorial waters of the Kingdom of

Saudi Arabia is regulated by Ministerial Decision number 21911 dated on 27/3/1409H equivalent to 6/11/1988G issued by the Minister of Agriculture defining the Executive Bill of the law issued by the Royal Decree number M/9 dated 27/3/1408 H equivalent to 18/11/1987 G. In Addition to regulating all fishing and maritime commercial exploitation, this law inter alia, prohibits the taking of marine mammals, marine turtle and seabird eggs.

Competent authorities involved in implementation of this law in Saudi Arabia are: The Ministry of Agriculture and Water; The Ministry of Interior; National Commission for Wildlife Conservation and Development (NCWCD).

B) Marine Scientific Research Regulation:

This law also regulates all research in Territorial waters of the Kingdom of Saudi Arabia, which includes all technical and scientific activities conducted in marine areas including recording, aquatic studies and research as well as marine treasures in the territorial waters of the Kingdom of Saudi Arabia. This law was issued by a Ministerial Decision number 103 dated on 10/8/1413H equivalent to 1/2/1993G, approved by the Royal Decree number M/12 dated 11/8/1413H equivalent to 2/2/1993G.

The competent authority empowered with the implementation of this law in Saudi Arabia is: Department of Military Survey, The Ministry of Defence and Aviation.

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
Some fishermen illegally take the eggs of marine turtles.	
Shell products	
☐ YES ■ **NO**	☐ HIGH ☐ MODERATE ☐ LOW ☐ UNKNOWN
Fat consumption	
☐ YES ■ **NO**	☐ HIGH ☐ MODERATE ☐ LOW ☐ UNKNOWN
Traditional medicine	
■ **YES** ☐ NO	☐ HIGH ☐ MODERATE ■ **LOW** ☐ UNKNOWN
A few people in the southern Red Sea believe that the tail of the male turtle is an aphrodisiac.	
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:

For the illegal collection of turtle eggs, the impact of traditional harvest is very low (Reports from NCWCD rangers, and the Coast Guards); we have no clear picture of incidental capture of sea turtles.

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

☐ YES ☐ NO ■ **UNKNOWN**

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

In 1986 the Presidency of Metrology and Environment began to study and monitoring of marine turtles in the Kingdom. In 1989 the work was assigned to NSWCD. The study and monitoring of marine turtles has continued periodically up to the present.

Education / awareness programmes	
■ **YES** ☐ NO ☐ N/A	☐ EXCELLENT ■ **GOOD** ☐ LOW ☐ UNKNOWN

See paragraph 4.1.1

Egg relocation / hatcheries	
■ **YES** ☐ NO ☐ N/A	☐ EXCELLENT ■ **GOOD** ☐ LOW ☐ UNKNOWN

In response to beach erosion on Jana Island, the eggs from more than 150 nests of hawksbill turtles were transferred to an appropriate site (hatchery) during the years 1993, 1994, and 1995. The hatching success rate of the eggs transferred was 79-94%.

Predator control

☐ YES ■ **NO** ☐ N/A ☐ EXCELLENT ☐ GOOD ☐ LOW ☐ UNKNOWN

Vehicle / access restrictions

■ **YES** ☐ NO ☐ N/A ☐ EXCELLENT ☐ GOOD ■ **LOW** ☐ UNKNOWN

Some times in Ra's Baridi

Removal of debris / clean-up

■ **YES** ☐ NO ☐ N/A ☐ EXCELLENT ■ **GOOD** ☐ LOW ☐ UNKNOWN

Often, the nesting beaches in Jana and Karan in the Arabian Gulf and Ra's Baridi in the Red Sea are cleaned of debris before the start of the nesting season.

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

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 reproductive output of the Saudi Arabian turtles was similar to that reported for marine turtles elsewhere. The average number of eggs laid by green turtles (88.5) was lower in the Gulf than at Ra's Baridi (103) but the hatching success was similar (c. 80%. The average number of eggs laid by hawksbill turtles (75.2) was within the lower range world-wide.

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]

No measures are being taken to protect critical habitats outside of established protected areas, except in the Gulf Islands and at Ra's Baridi, where the NCWCD has been trying to get the local cement factory to install filters.

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

The assessment of debris has been conducted occasionally; the debris consists mainly of wood and glass, plastics, and tires. Also, nesting beaches in the Arabian Gulf Islands were assessed for pollution resulting from the major oil spill after the Gulf war in 1991.

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

Only the marine debris monitored near turtle habitat soccasionally.

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

■ YES ☐ NO ☐ NOT APPLICABLE

The regulation of the system of fishing, investment and protection of living aquatic resources in the territorial waters of Saudi Arabia, Royal Decree No. M / 9, dated 27/3/1408 H. Article (89) as follows:

"Prevent destructive fishing methods such as electric shock, explosives, chemicals and toxic substances, or methods that are harmful in any other way to living aquatic resources".

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)

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)

100,000 mangrove seedlings were planted in Ra's Tanurah, Arabian Gulf. It is believed that the cultivation of the plants will prevent the deposit of sediments in the seagrass areas in Tarut Bay.

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)

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]

Al-Mansi A. M. Nawab A. A. and Sagga, A. M. S., 1991. Sediment characteristics of green turtle nesting beaches on the eastern Red Sea coast, Bull. Fac. Sci. Alex. Univ. 31 (b), 384-401.

Al-Mansi A., M. A., Khushaim, O. A. and Al-Marghany M. M. H. 1999. On the effect of substrate on nesting success of the Green Turtles Chelonia mydas, in the Arabian Gulf. Zoology in the Middle East 19, 5-11.

Al-Mansi A. M. Bilal, S.A. Abdullah, E. O. and Elamin, S. M. 2003. The marine turtle in the Republic of Sudan: Their biology and conservation, unpublished technical report, PERSGA Jeddah.

Al-Mansi A. M., Ali N., and Mohammad N. Sougal A.A. 2003. The marine turtles in republic of Djibouti: Their biology and conservation, unpublished technical report, PERSGA, Jeddah.

Al-Mansi, A. M. 2003. Regional Status of Marine Turtle in the Red Sea and Gulf of Aden unpublished technical report, PERSGA Jeddah.

Al-Mansi, A. M. 2003. National Action Plan for the Conservation of Marine Turtles and their Habitats in Saudi Arabia, Red Sea. Unpublished technical report, PERSGA, Jeddah.

Al-Mansi, A. M., Sambas, A. Alfaredi, M.A., Abo-kaboos, B. and Abdualaziz A. S., 2007. The marine turtle in the Arabian Gulf, study of nesting season 2007. Unpublished Marine Research Department Technical Report to the National Commission for Wildlife Conservation and Development (NCWCD), Riyadh, Kingdom of Saudi Arabia.

Al-Mansi, A. M., Sambas, A. Z and Badawi, S. F., 2003. The marine turtle in Saudi Arabian Red Sea coast: Their Biology and Conservation. PERSGA technical report January 2003.

Al-Merghani, M., J.D Miller, A. Al-Mansi, O. Khushaim & N.J. Pilcher. 1996. The marine turtle s of the Arabian Gulf. NCWCD studies 1991-1994. in: A Marine Wildlife Sanctuary for the Arabian Gulf. Environmental Research an Conservation Following the 1991 Gulf War Oil Spill. Friedhelm Krupp, Abdulaziz H. Abuzinada and Iyad A. Nader (eds.). National Commission for Wildlife Conservation and Development (NCWCD), Riyadh, Saudi Arabia.

Al-Merghani, M., J.D. Miller, N.J. Pilcher, A. Al-Mansi, 2000. The green and hawksbill turtles in the Kingdom of Saudi Arabia: Synopsis of nesting studies 1986-1997. Fauna of Arabia 18: 369-384.

Miller, J. D., 1989. An assessment of the conservation status of marine turtles in the Kingdom of Saudi Arabia. Vol. I, Technical Report - Marine Turtles. XIX + 209 pp. MEPA Coastal and Marine Management Series, Report No.9. Jeddah, Meteorology and Environmental Protection Administration, Ministry of Defense and Aviation, Kingdom of Saudi Arabia.

Miller, J. D., C.J. Limpus & J. P. Ross., 1989. Recommendations for the conservation of marine turtles in the Kingdom of Saudi Arabia. Vol. 2, Technical Report - Marine Turtles. VII + 63 pp. MEPA Coastal and Marine Management Series, Report No. 9. Jeddah, Meteorology and Environmental Protection Administration, Ministry of Defence and Aviation, Kingdom of Saudi Arabia.

Pilcher, N. J., 1992. Regional Action Plan for the Conservation of Marine Turtles and their Habitats in the Red Sea and Gulf of Aden. Unpublished technical report, PERSGA Jeddah.

Pilcher, N. J., 1992. The nesting habits of the green turtle Chelonia mydas and the hawksbill turtle Eretmochelys imbricata in the Arabian Gulf during 1991. Unpublished Marine Research Department Technical Report to the National Commission for Wildlife Conservation and Development (NCWCD), Riyadh, Kingdom of Saudi Arabia, 61 pp.

Pilcher, N. J. & Al- Merghani, M., 1992. Report on the marine turtle nesting season: Arabian Gulf, 1992. Unpublished Marine Department Technical Report to the National Commission for Wildlife Conservation & Development, Riyadh, Kingdom of Saudi Arabia, 24 pp.

Pilcher, N. J. & Al-Merghani, M., 1994. The Marine turtle nesting season, Arabian Gulf, 1992. pp. 514-533. In: Establishment of a marine habitat and wildlife sanctuary for the Gulf region, Final Report for phase II. (E. Feltkamp & F. Krupp, eds.). NCWCD, Riyadh. Kingdom of Saudi Arabia.

Pilcher, N. J., 0akley, S. G. & Nawwab, A. R., 1990. The green turtle Chelonia mydas at Ras Baridi.- An initial assessment. Unpublished Marine Department Technical Report to National Commission for Wildlife Conservation and Development. Riyadh, Saudi Arabia, 62pp.

Pilcher, N.J. & M. Al-Merghani, 2000. Reproductive biology of the green turtle Chelonia mydas at Ras Baridi, Saudi Arabia. Herpetological Review: 32(3): 142-147.

Pilcher N. J., 2000. The Green turtle Chelonia mydas in the Arabian Gulf. Chelonian Cons. Biol.3(4): 730-735.

Pilcher N. J., 1999. The Hawksbill turtle Eretmochelys imbricata in the Arabian Gulf. Chelonian Cons. Biol.3(2): 312-317.

Pilcher N. J., 1999. Cement dust as a cause of sea turtle hatchling mortality at Ras Baridi, Saudi Arabia. Mar. Poll. Bull. 38(11): 966-969.

Pilcher, N.J., 1991. Oil fouled marine habitats: The latest dive spots in Saudi Arabia - The Undersea Journal, 3: 41-42.

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

The number of new and recaptured turtles encountered on the Gulf Islands 1986-2007. Dashes (-)represent missed seasons.

Arabian Gulf							
	Chelonia mydas			Eretmochelys imbricata			
Season	New	Recaptured	Total	New	Recaptured		Total
1986	1124	0	1124	15	0		15
1987	330	0	330	20	0		20
1988	(-)	(-)	(-)	(-)	(-)		(-)
1989	(-)	(-)	(-)	(-)	(-)		(-)
1990	(-)	(-)	(-)	(-)	(-)		(-)
1991	894	0	894	145	0		145
1992	512	18	530	123	4		127
1993	999	29	1028	34	3		37
1994	378	60	438	39	16		55
1995	346	85	431	34	21		55
1996	(-)	(-)	(-)	31	17		48
1997	201	56	257	32	20		52
1998	(-)	(-)	(-)	(-)	(-)		(-)
1999	(-)	(-)	(-)	(-)	(-)		(-)
2000	(-)	(-)	(-)	(-)	(-)		(-)
2001	365	21	386	30	18		48
2002	400	41	441	29	11		40
2003	333	41	674	58	29		87
2004	(-)	(-)	(-)	(-)	(-)		(-)
2005	(-)	(-)	(-)	(-)	(-)		(-)
2006	(-)	(-)	(-)	(-)	(-)		(-)
2007	330	21	351	68	39		107
Total	6212	372	6584	658	178		836

The number of new and recaptured turtles encountered at Ra's Baridi 1986-2002. Dashes represent missed seasons.

Season	Red Sea, Ras Baridi		
	Cheloniamydas		
Season	New	Recaptured	Total
1986	15	0	15
1987	(-)	(-)	(-)
1988	(-)	(-)	(-)
1989	61	0	61
1990	16	1	17
1991	95	11	106
1992	19	15	34
1993	27	8	35
1994	20	14	34
1995	13	7	20
1996	(-)	(-)	(-)
1997	(-)	(-)	(-)
1998	(-)	(-)	(-)
1999	(-)	(-)	(-)

2000--------(-)----------(-)----------(-)
2001--------(-)----------(-)----------(-)
2002---------7----------1----------8
Total-------273----------57----------330

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

☐ YES ■ **NO** ☐ UNSURE

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

A total of 6212 green and 658 hawksbill turtles were tagged while nesting on the Gulf islands from 1986 through 2007. A total of 273 green turtles were tagged while nesting at Ra's Baridi from 1986 through 2002. The NCWCD planed to carry out Satellite tracking for marine turtles in the near future, and the taggig process will continue.

Satellite tracking ☐ YES ■ **NO**

☐ **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

Green turtles in the Arabian Gulf were found to nest four times per season, on average, with an inter-nesting interval of 14.3 days. The mean inter-nesting interval for green turtles at Ra's Baridi was 13.3 days. For hawksbill turtles, the mean inter-nesting interval was 18.2 days in the Arabian Gulf.

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

☐ YES ■ **NO** ☐ UNSURE

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

■ **YES** ☐ NO ☐ UNSURE

Traditional ecological knowledge represents multiple bodies of knowledge accumulated through many generations of close interactions between people and the natural world. Traditional ecological knowledge and its application via customary ecological management plans can be useful in modern conservation programs. Information such as sightings of sea turtles, nesting places in the islands, local names of each species depending on the local people and fishing communities description, are taken into account in research on marine turtles

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]

Region Action Plan for the Conservation of Marine Turtles and their Habitats in the Red Sea and Gulf of Aden.

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

b) Conservation status ☐ YES ■ **NO** ☐ NOT APPLICABLE

c) Migrations ☐ YES ■ **NO** ☐ NOT APPLICABLE

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]

Ra's Baridi in the Red Sea
Ra's Baridi is located to the north of Yanbu', extending from 24 deg 14' N, 37 deg 45' E to 24 deg 26' N, 37 deg 25' E. It is the largest single nesting site for green turtles located in the Red Sea. The populations estimated around 500 female green turtles.

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

The marine turtles nesting in the Saudi Arabian waters of the Arabian Gulf and those nesting along the Red Sea coast were studied during most of the summer nesting seasons of 1986-2007 to obtain information on numbers of nesting turtles, morphometrics and emergence success, and to investigate actual and potential threats. In the Arabian Gulf, green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricata*) turtles nest on the offshore islands, whereas only green turtles nest at Ra's Baridi, north of Yanbu', on the Red Sea coast. No other major Saudi Arabian mainland nesting aggregations occur in the Red Sea, although hawksbills are believed to nest at low densities along the entire coastline.

A total of 6212 green and 658 hawksbill turtles were tagged while nesting on the Gulf islands from 1986 through 2007. A total of 273 green turtles were tagged while nesting at Ra's Baridi during the same period. Green turtles in the Gulf were slightly smaller (mean Curved Carapace Length, CCL=98.8 cm) than those found at Ra's Baridi (mean CCL=104.7 cm), and within the lower range world-wide. Hawksbills in the Gulf were also smaller (mean CCL-71.5 cm), than those found nesting elsewhere in the world. The reproductive output of the Saudi Arabia turtles was similar to that reported for marine turtles elsewhere.

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]

In the last study conducted on the Farasan Islands, we discovered important turtle nesting sites that were not within the Farasan Islands Protected Area. The Farasan Islands Protected Area boundaries were then extended to include these important sites.

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

PERSGA has made significant progress in the standardization of research methods, with a training course for trainers held in Yemen in December 2000, and the development of standardized survey methods (SSMs) for marine turtles in nesting and foraging habitats of the region.

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]

One of the experts was brought to the Kingdom in 1993 by IUCN, and one of our experts was sent to the neighboring countries in 2003 through PERSGA.

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

In 2003 a national report on marine turtles nesting in the Red Sea submitted to PERSGA.

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 and awareness-raising materials produced on sea turtles:

1- Two radio programs on sea turtles and coral reefs, broadcast in 1992.
2- Documentary film about sea turtles with a focus on species that nest on the shores of the Kingdom, broadcast in 1990.
3- Series on human and nature, the duration of each film is 20 minutes.
4- Series of articles in the journal of Environment and Wildlife "Al-Wudaihi" V:2, Riyadh 1996.
5- Poster on sea turtles in the Kingdom,1989.
6- Video clips in several documentaries on the activities of the NCWCD, broadcast in 1996.
7- Video clips in several films of Wildlife Caravan (sessions Farasan Islands, and Arabian Gulf).

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:
☐ None of the above

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

■ **YES** ☐ NO

There are two of Environmental Awareness Centers, one in the Secretariat building in Riyadh, and the other in the Marine Wildlife Sanctuary in Jubail.

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.

There are no people who depend on marine turtles for their income.

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]

Not Applicable

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 students, the local communities, and the Presidency of Meteorology and Environmental were involved in the monitoring and research of marine turtles. The Ministry of Agriculture and the Coast Guard reported to NCWCD the cases of dead marine turtles found on the coasts of the Red Sea and Arabian Gulf.

Certificates were awarded to Participants after the end of the program.

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

Not permits were issued for import or export of sea turtles or their products.

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

■ **YES** ☐ NO ☐ NOT APPLICABLE

Two courses were completed in cooperation with the World Federation for Animal Welfare (IFAW), namely:

1- Education course on the CITES Convention and its appendices. Participants were from the Department of Licensing (NCWCD) and some neighboring Arab countries.

2- Training session for the preparation of qualified trainers to explain the CITES Convention. Participants were from the Department of Licensing and some neighboring Arab countries.

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

There is no mechanism to monitor the illicit trafficing routes, information received on illicit trafficing through the reports.

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]

The Fourth Meeting of the IOSEA Signatory States held in Muscat, Sultanate of Oman during 11-14 March 2006, has formally adopted a resolution to promote and strengthen marine turtle conservation in the Northwestern Indian Ocean sub-region, witch was presented by The Kingdom of Saudi Arabia. The resolution sought to promote and strengthen marine turtle conservation in a number of areas especially in relation to the exchange of information and expertise, making use of existing institutions within the region.

Furthermore the Kingdom of Saudi Arabia has tabled this resolution on the agenda of the fifth meeting of the Convention on the Conservation of Wildlife and Natural Habitats in the Countries of the Gulf Cooperation Council (GCC) Standing Committee held in the Kingdom of Bahrain during 7-8 November 2006. This meeting adopted the recommendation of the Saudi Arabian delegation to establish a marine turtle specialist working group under the Convention's Standing Committee, entrusted with the coordination of marine turtle conservation in the Member States, and to develop and sustain linkages with other Range States. This sought to enhance and strengthen compliance related to IOSEA Memorandum of Understanding in achieving the objectives expressed in its Conservation and Management Plan (CMP).

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]

There is a circular issued by the Ministry of the Interior (No. 29/1/796) dated 29/9/1422 H "prevent the import of all types of reptiles, including sea turtles and their products unless authorized by the NCWCD".

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

In 1995, NCWCD in cooperation with PERSGA completed a national action plan for conservation of marine turtles in the Kingdom of Saudi Arabia. The plan includes actions to be achieved in short-term, medium-term, and the long-term periods.

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]

The most important locations to be among the highest priorities a are Jana Island, Karan Island, and Ra's Baridi.

The highest priority actiony for conservation and management of marine turtles are:
1- Identify population trends
2- Identify migratory routes through the use of satellite tracking
3- Encourage the incorporation of marine turtle biology and conservation issues into school curricula
4- Exchange and discuss information on compliance and trade issues at regular intervals, such as through annual reporting to the MoU Secretariat and at meetings of the Signatory States

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	☐ ESSENTIAL ☐ IMPORTANT ■ **LIMITED** ☐ NOT AT ALL
Incidental capture by foreign fleets	☐ ESSENTIAL ■ **IMPORTANT** ☐ LIMITED ☐ NOT AT ALL
Enforcement/patrolling of territorial waters	☐ ESSENTIAL ☐ IMPORTANT ☐ LIMITED ■ **NOT AT ALL**
Hunting/harvest by neighboring countries	☐ ESSENTIAL ☐ IMPORTANT ☐ LIMITED ■ **NOT AT ALL**
Poaching, illegal trade in turtle projects	☐ ESSENTIAL ☐ IMPORTANT ■ **LIMITED** ☐ NOT AT ALL
Development of gear technology	☐ ESSENTIAL ■ **IMPORTANT** ☐ LIMITED ☐ NOT AT ALL
Oil spills, pollution, marine debris	☐ ESSENTIAL ☐ IMPORTANT ■ **LIMITED** ☐ NOT AT ALL
Training / capacity-building	☐ ESSENTIAL ☐ IMPORTANT ■ **LIMITED** ☐ NOT AT ALL
Alternative livelihood development	☐ ESSENTIAL ☐ IMPORTANT ☐ LIMITED ■ **NOT AT ALL**
Identification of turtle populations	☐ ESSENTIAL ☐ IMPORTANT ■ **LIMITED** ☐ NOT AT ALL
Identification of migration routes	■ **ESSENTIAL** ☐ IMPORTANT ☐ LIMITED ☐ NOT AT ALL
Tagging / satellite tracking	☐ ESSENTIAL ☐ IMPORTANT ■ **LIMITED** ☐ NOT AT ALL
Habitat studies	☐ ESSENTIAL ■ **IMPORTANT** ☐ LIMITED ☐ NOT AT ALL
Genetics studies	☐ ESSENTIAL ■ **IMPORTANT** ☐ LIMITED ☐ 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]

The Kingdom has cooperation with ROPME and PERSGA states. Through PERSGA, in 2003 one of our marine experts conducted a marine turtle research and trained the staff in Sudan and Djibouti.

Also we have been exchanging information through meetings and workshops.

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

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]

We need the latest modern and dedicated computer software to analyze the data for marine turtle research.

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]

A number of NCWCD rersonnel have received field training in technques for the conservation and monotoring of sea turtles, and the results have been reviewed in several local and regional workshops.

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]

We are participating in a network for cooperative management of shared turtle populations in the Red Sea and Gulf of Aden through PERSGA.

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]

For example, the NCWCD rangers caught a fisherman who was illegally poaching turtle eggs in the Farasan Protected Area. The Coast Guard fined the boat owner and prevented the boat from sailing for a specified period. This process gave a lesson for the rest of the fishermen

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

At this time the Ministry of Agriculture is updating the Regulations of the System of Fishing, Investment and Protection of Living Aquatic Resources in the Territorial Waters of Saudi Arabia.

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

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]

During regional conferences and bi-lateral meetings, we have as individuals encouraged neighboring countries to sign the IOSEA MoU, and will continue to do so.

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**

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]

The NCWCD will meet all financial commitments contained in the IOSEA memorandum of understanding.

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]

A programme study has been conducted on marine turtles and their habitats targeted to their conservation and management to understand their ecology and populations.

The NCWCD spends about US$ 30,000 annually on the program. The future plan for the marine turtles is going to be satellite tracking for marine turtles in the Red Sea and Arabian Gulf. The project will continue for a period of five years, starting in 2009. The project budget will be about US$ 200,000.

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

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.

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

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

Agencies responsible for implementation and enforcement of marine turtle conservation measures:

- National Commission for Wildlife conservation and Development (NCWCD)
- Presidency of Meteorology and Environmental (PME, formerly MEPA)
- Department of Fisheries, Ministry of Agriculture
- The Coast Guard is responsible for implementation and enforcement of the law.

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

Agencies responsible for marine turtle conservation meet occasionally; the responsibilities of the agencies are:

- The National Commission for Wildlife Conservation and Development (NCWCD) is responsible for marine turtle conservation measures;
- The Presidency of Meteorology and Environmental (MEPA) is responsible for marine pollution and coastal management;
- The Department of Fisheries, Ministry of Agriculture, is responsible for fishing; and
- The Coast Guard is responsible for implementation and enforcement of the law.

Comments/suggestions to improve the present reporting format:

Additional information not covered above: