

Status of leatherback turtles in Bangladesh

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1. The legal protection status for leatherback turtles

1.1. Overview

The Forestry Department, under the Ministry of Environment and Forestry, is the sole authority for the protection, conservation and management of all wildlife in Bangladesh, however, although marine turtles are under the mandate of their protection, they are not included in the list of protected species, Schedule III of the Bangladesh Wildlife (Preservation) (Amendment) Act 1974 (BWPA). The list of protected species is currently under review. Under this revision all wildlife species will be protected, and the government can through gazette notifications, indicate which species are liable for any form of exploitation or trade. Currently, the act is in the final stages of revision by the Forestry Department and marine turtles are included in the list of protected animals.

In addition the MFRI under the aegis of the Department of Fisheries (DOF), Ministry of Fisheries and Livestock (MFL) also claim that they are responsible for the protection and management of marine and freshwater turtles, and marine resources like cetaceans and crustaceans. Considerable revenue is at stake and this might underlie conflict between the two government agencies. This issue needs to be discussed at the top Government level to strengthen inter-departmental co-operation and co-ordination to ensure the conservation of turtles and other aquatic resources.

The 1999 government notification and declaration of Ecologically Critical Areas (ECA) were done on the basis of protecting the habitat of globally significant migratory species, including the nesting and coastal foraging habitat of marine turtles. There are three ECAs in Bangladesh that are important for marine turtle nesting; a) Sonadia Island, b) Cox's Bazar to Teknaf Peninsular coast and c) St. Martin Island.

The Government of Bangladesh has signed several international or regional agreements, conventions, treaties and protocols related to marine environment and biological resources (Islam 1996), which directly or indirectly affect marine turtles (Table 1). However, there are several limitations or gaps in the existing laws. The first and foremost limitation is the non-inclusion of marine turtles in the Protected List of Animals (Schedule III) of the BWPA. Rashid (1986) suggested their inclusion in the protected list. They will be incorporated in the list in the latest revision of the Act. There is little protection of nesting or foraging habitats, which are critical to marine turtle survival. Beaches are already under intense pressure for development by the tourism industry. Immediate steps have to be taken to identify and protect significant beaches and foraging areas. Some NGOs and Government projects are working on conservation in some areas, but it is not enough and the government has competing sectors such as tourism and infrastructure development that threaten nesting turtle populations as human use increases. Coastal development is occurring without Environmental Impact Assessments being conducted regarding marine turtle nesting habitat and overall ecosystem function.

1.2. Specific legislation

The following legislation is relevant to wildlife and marine turtles in Bangladesh:

- Bangladesh Wildlife (Preservation) Amendment Act (1974)
- National Environmental conservation Act, 1995;
- New Fisheries Management Policy, Bangladesh (1986)
- Revised Bangladesh Wildlife (Preservation) Amendment Act (1974) (not published)

Declaration of Ecologically Critical Areas (ECA): 19 APR 1999 REF # MOEF-4/7/87/99/245

The Government of Bangladesh has become convinced that unplanned activities severely hamper the ecosystem of certain coastal areas of the country. This degradation may continue and the natural system could face future dangers if immediate remediation measures are not taken. Therefore, to protect the natural environment by encouraging conservation, restoration and pollution prevention, and promote sustainable environmental management, the Government of Bangladesh, under the provision of Bangladesh Environmental Conservation ACT 1995(1st act of 1995) by its sub-section-1 of Section-5 and Section-4, declared seven areas as Ecologically Critical Areas.

The following activities are banned in the ECA zone:

- Any type of plant and forest destruction or collection,
- All wildlife killing and hunting
- Shell, turtle, coral and other wildlife catching and collection
- Flora and fauna habitat destruction
- Industry and structure establishment that can pollute soil, water, air and create sound pollution,
- Any activities that threaten the natural state of land and water.
- All destructive activities that threaten fish and other aquatic flora and fauna.

Out of seven ECAs the following areas have marine turtle nesting beaches;

1. Coastal Cox's Bazar - Teknaf peninsular beach area (area 10465 hectare);
2. St. Martin Island (590 hectare); and
3. Sonadia Island (4916 hectare).

1.3 International agreements affecting marine turtles

Table 1 lists the international agreements, conventions, treaties and protocols signed, accessed, ratified by the Government of Bangladesh, which directly or indirectly affects marine turtles.

Table 1. List of the international agreements that have been ratified by the Bangladesh Government

Conventions/Treaties/Protocols	Year ratified (r), signed (s) or accessed (a)
Convention on the Control of Trans boundary Movements of Hazardous Wastes and their Disposal, Basel, 1989.	1993 (a)
Agreement on the Network of Aquaculture Centres in Asia and the Pacific, Bangkok, 1988.	1990 (r)
Convention on the Continental Shelf, Geneva, 1958.	1990 (r)
Convention on Wetlands of International Importance especially as Waterfowl Habitat, RAMSAR, 1971.	1992 (r)
Convention Concerning the Protection of World Cultural and Natural Heritage, Paris, 1972.	1983 (r)
Convention on International Trade in Endangered Species of Flora and Fauna, Washington, 1973.	1982 (r)
Convention on Biological Diversity, Rio de Janeiro, 1992	1994 (r)
Convention on the Conservation of Migratory Species of Wild Animals, 1979.	2000 (s)
International Convention for the Prevention of Pollution of the Sea by Oil, 1954.	1981 (r)
International Convention on Oil Pollution Preparedness, Response and Cooperation, London, 1990.	1990 (s)
International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, Brussels, 1969.	1982 (r)
United Nations Convention on the Law of the Marine, Montego Bay, 1982	1982 (r)
United Nations Framework Convention on Climate Change, New York, 1992.	1994 (r)
Indian Ocean – South-East Asian Marine Turtle MoU	2004 (s)

1.2. Management agencies responsible for marine turtle conservation in Bangladesh

Operational level	Name and type of agency
National level	Ministry of Environment & Forestry & Ministry of Fisheries and Livestock
State level	Relevant Government state offices.
Local level	Local Government Departments such as forestry and fisheries, Local NGOs.

2. Nesting populations

2.1. Overview

There are numerous beaches in Bangladesh that are used by nesting marine turtles, however, surveys have covered only a few of them. To date most records result from incidental and sporadic records by few researchers.

To date leatherback nesting has not been confirmed in Bangladesh, but the following evidence suggests it may occur (or at least have occurred in the past);

1. Suspected nesting two decades ago at the Badamgonia area in St. Martin Island.
2. Suspected nesting in 2000 at St. Martin Island;
3. Report by an old Sonadia Islander that leatherback still nest at Sonadia Island, this has not been confirmed as regular monitoring was not conducted by local watchers prior to 2005/06.

Summary of surveys that have been conducted and nesting recorded in Bangladesh

Marine turtle surveys have been regularly conducted on St. Martin Island since October 1996. Bangladesh is located on the northern side of the Bay of Bengal in mainland Asia. Bangladesh's territorial waters supports five species of marine turtles including the olive ridley turtle, green turtle, hawksbill turtle, loggerhead turtle and leatherback turtle (Smith 1931, Husain 1976, 1979, Khan 1982, 1987, Sarker and Sarker 1988, Das 1991, Rashid 1997). The total mainland coastline of Bangladesh measures approximately 710 kilometres (ICZM 2003). Not the entire mainland coastline is suitable for nesting. Apart from the mainland coast, there are numerous offshore islands whose sandy beaches are suitable for marine turtle nesting.

Three species of marine turtles have been reported to nest in Bangladesh; olive ridley turtles (Ahmed et al 1986, Khan 1987, Rashid 1984, 1986, Rashid and Islam 1999, and in press, Islam 2002) and green turtles (Khan 1982, 1987, Rashid 1997, Rashid and Islam 1999) are common, while hawksbill turtles are rare (Rashid 1997, Islam 2002). Leatherback turtles are seldom encountered (Rashid and Islam 1999) and with no known records of nesting in Bangladesh. However, a recent crawl mark recorded in Cheradia, St. Martin's Island, in 2000 is suspected to have been made by a leatherback turtle.

The historical information was in anecdotal notes, district gazetteers, forest department reports, and newspaper reports on marine turtles by fishermen. There were no scientific publications or systematic surveys on marine turtles until recently. Some information from sporadic surveys and observations first started to appear in the 1980s (Khan 1982, 1985, 1987, Rashid 1984, 1986) and provided the impetus to conduct surveys and update available information on the status of marine turtles in Bangladesh. Much of the information was gathered over a period of two decades from irregular surveys and interviews with elderly and young fisher folk, and communities living in remote coastal areas and offshore islands. In October 1996, CARINAM initiated a study and conservation program on marine turtles on St. Martin's Island.

Table 2 (following page) describes the important nesting beaches that have been surveyed for marine turtle nesting in Bangladesh.

3. Foraging populations

3.1 Details of leatherback turtle foraging area census or tagging results such as tag recovery data

There has been no tag recoveries from leatherback turtles tagged in other countries.

3.2. Seasonality of leatherback turtles caught or seen in foraging areas

In May 2005 a live leatherback (personal observation (news in IOSEA in July 2005) was recorded in Cox's Bazar district inside a saltwater river (Islam 2005). Dead, or alive stranded leatherback turtles have been recorded in April, May, June and July (Zahirul Islam pers. Comm.).

Table 2. Marine turtle nesting beaches that have been surveyed in Bangladesh, and the species that use them – note that no leatherback turtle nesting has been recorded. OR = olive ridley turtle, HB = hawksbill turtle and GT = green turtle.

Location	Coordinates	Species	Monitoring started	Surveys
St. Martin's Island	20°34'–20°38' N, & 92°18'–92°22' E	OR/GT	1996	1984 & 1992
Shahporir Dwip	20° 45.06N; 92° 19.612E	HB		1996 to 1998
Khurer mukh	20° 49.112N; 92° 17.204E	OR	2000	2000
Teknaf	20° 50.790N; 92° 16.320E	OR	2005	2005
Bordail	20° 58.068N; 92° 12.079E	OR/GT		1987
Kocchopia	20° 57.043N; 92° 12.479E	OR/GT		1986 & 1989
Monkhali	21 ° 05.813N; 92° 06.859E	OR/GT		1985
Inani	21° 13.459N; 92° 02.727E	OR	1999	1984 & 1985
Cox's Bazar	21°25.0N; 91°90.0 E	OR		1989 & 1999
Najirartek	21° 27.676N; 91° 56.984E	OR/GT		1988 & 1989
Sonadia Island	21° 31.391N; 91° 50.707E	OR	2005	2005
Moheskhalia Island	21° 28.577N; 91° 53.731E	OR		1989, 2000, 2001
Kutubdia Island	21°32.0N; 91°41.0E	OR		1987
Sandwip Island	21°47.0N; 91°35.0E	OR	2002	1995
	22°23.0N; 91°30.0E	GT		1985
Nijhum Dwip (island)		OR		2000
Egg Island, Sunderban	21°50.0N; 89°46.0E	OR		1991 & 2003
Mandarbaria, Sunderban	21°41.0N; 89°15.0E	OR		2003
Hiron point, Sunderban				
Dubla Island, Sunderban	21° 45.111N; 89° 39.213E	OR		1994
Kotka beach, Sunderban		OR		2002, 2003
Samchari	21° 10.217N; 92° 03.249E	OR	2005	1999-00
Hiron point	21° 45.861N; 89° 26.881E	OR		2001, 2002, 2004
Pechar Dwip	21° 18.973N; 92° 02.019E	OR	2005	2005

3.3. Approximate size range of leatherback turtles caught or seen in foraging areas

There was one leatherback turtle recorded alive trapped in Cox's Bazar (Islam 2005); Three swimming leatherbacks were recorded by Fishermen during 2002-2003 (Islam 2004); 4 dead bodies recorded (Islam 2004) and two of these individuals were measured and CCLs between 137 - 138 cm.

3.4. Information on diet of leatherback turtles

There have been no studies on the diet of leatherback turtles in Bangladesh

3.5. Other biological studies conducted on leatherback turtles in foraging areas

No systematic marine turtle foraging habitat survey have been conducted in Bangladesh. During a survey for cetacean species in February 2004 a group of 14 international scientists observed 1,018 kilometres of water in the Bay of Bengal (Smith 2004). The team searched for cetaceans along track lines for 89.6 hours with a mean vessel speed of 11.4 km/hr). Additionally, the team spent 7.8 hours searching for cetaceans in the Swatch-of-No-Ground, a deep sea canyon that extends to within 42 km of the shore in the far western portion of the Bay of Bengal in Bangladesh. The study revealed the presence of dolphins and whales in the Bangladesh territorial waters. During the survey the observers recorded other species such as marine turtles and no leatherback turtles were sighted.

Short incidental offshore boat trips into the Bay of Bengal were made between 1997 and 2005 and the only marine turtle species observed were olive ridley or green turtles. However these incidental surveys lacked scientific rigour and were generally short in length. Naval personnel have not been interviewed. But fishermen in the Bay of Bengal recorded sighting live swimming leatherback turtles in 2002 and 2003 around 200 to 370 km offshore from the Cox's Bazar region (Islam 2004).

3.6. Threats to foraging populations of leatherback turtles

No systematic studies have been conducted in Bangladesh on the threats to leatherback turtles in their foraging habitat. According to local fishermen the deep sea shrimp trawlers and drifting nets from large mechanised boats from Cox's Bazar and Chittagong are the major fishery sectors responsible for turtle by-catch (Rashid 1997). Entanglement of marine turtles during offshore fishing activity have been reported in the following fisheries sectors (Rashid 1997); Marine Set Bag Net, Drifting Gill Net, Long lines etc, Shrimp Trawling etc.

Turtle Excluder Devices are not being used in Bangladesh trawlers. While a survey conducted during 1996 indicated that turtles are not vulnerable to shrimp trawling (Rashid 1997), trawling without TEDs is a potential threat that remains to be examined and its affects quantified in Bangladesh.

All species of marine turtle are in great trouble in Bangladesh waters as shrimp trawlers are not using TEDs; gillnets, longlines and other fishing activity do not act to lessen the by catch of endangered species. Anecdotal evidence suggests that hundred to thousands of dead animals are seen every year in Bangladesh. These are likely to be a mixture of species. However the numbers or the threats have never been effectively investigated. A very short by by-catch study will be done in offshore areas with shark fisheries trawlers by the researchers of Marine Life Alliance (NGO) in Jan-Feb 2006.

3.7. Fisheries bycatch of leatherback turtles and the fisheries involved

No data available

3.8. Other activities being undertaken to improve the conservation of leatherback turtle foraging populations

Areas of change	Summary including report references
Legislation changes	ECA declaration MARINE RESERVE in Bay of Bengal
Awareness raising programmes	Primary school education on environments and marine turtle (by GO and NGO projects)
Research activities	Tagging, low scale hatchery research - Offshore by-catch survey Planned in JAN-FEB 2006.
Physical interventions	Local community based conservation initiative to save nesting beach (in planning position).
Fishery controls	Marine reserve in Bay of Bengal 69,800 hectares, Gazette, October 2000
Managed turtle based tourism	Not yet done, some initiative in planning stage
Annual nesting beach surveys	Nesting beach survey, in St. Martin Island, Sonadia Island, part of Kutubdia Island, Cox's Bazar –Teknaf peninsular area by GO and NGO
Managed hatcheries	Hatcheries at St. Martin, Sonadia, Cox's Bazar –Teknaf peninsula
Planned protected areas	Marine reserve in Bay of Bengal 69,800 hectares, Gazette, October 2000 (ICZMP 2004)

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