

Location



Introduction

The People's Republic of Bangladesh, located in South Asia, is bordered by Myanmar to the southeast, India to the northeast, north and west, and the Bay of Bengal to the south. The constitutional government consists of an elected president and a national parliament. Poverty, internal unrest, border tensions with India and the influx of refugees from Myanmar contribute to political instability.

The country, which has more than 740 km of coastline, is located in a transitional zone between South Asian and Southeast Asian biomes which contributes to rich biodiversity. The coastal climate is tropical while further north it is subtropical. Monsoon season, during which heavy flooding occurs, lasts from June to October, and more than 30% of the country remains under water. Warm, sunny winters are followed by a short hot spring (March to May).

Regional Seas and Biogeography

South Asian Seas (Bay of Bengal) administered by the South Asian Seas Programme (SACEP)

Large Marine Ecosystems (LMEs):

- Bay of Bengal
- South China Sea
- Sulu-Celebes Sea
- Indonesian Sea

Habitats

Nearly 80% of the country is made up of tidal flats and floodplains, created by the three major rivers that dissect the country. In addition to the *Sundarbans*, the largest contiguous mangrove forest in the world, on the *Ganges-Brahmaputra-Meghna Delta*, there are numerous wetlands which provide important habitat for wildlife.

-> **Tidal Flats/Wetlands:** Most of the country's coastline, more than 740 km long, consists of deltaic tidal flats starting with the *Ganges Tidal Plain* in the southwest, the *Meghna Deltaic Plain* along the central south coast and the *Chattogram Coastal Plain* in the east.

Tidal flats also extend far up the Meghna River, the convergence of the Padma (Ganges) and the Jamuna (Brahmaputra) Rivers. The mouth of the Meghna diverges into multiple smaller arms creating a complex of small islands and peninsulas which extend down to the Sundarbans. The majority of the southern two-thirds of the country consists of estuaries of these major rivers.

-> **Rocky shores:** Some stony beaches and rocky shores surround *St. Martin's Island* in the southeast.

-> **Mangroves:** The world's largest contiguous mangrove forest, the *Sundarbans*, is located in the southwest *Ganges-Brahmaputra-Meghna Delta*, with smaller patches of mangroves remaining along the southern and easter coast.

-> **Seagrasses:** There is limited information regarding seagrass beds in the country. However evidence of five species of seagrass has been reported on the coast near Cox's Bazar, around *St Martin's Island* and in the *Sundarbans*.

-> **Coral Colonies:** They are covering only about 0.5 square km, are limited to the shores of *St. Martin's Island* in the extreme southeast near the border with Myanmar.

Biodiversity Hotspots

In this section, acronyms are used for some of the most common types of hotspot: National Park (NP), Marine Protected Area (MPA), Important Bird Area (IBA), Important Marine Mammal Area (IMMA), Ramsar Wetland of International Importance (Ramsar).

-> Ramsar site

The *Sundarbans Reserved Forest* (also World Heritage site, IBA and IMMA) is the largest contiguous mangrove forest in the world but also a hotspot for the endangered Royal Bengal Tiger and very rich avifauna with 315 species, of which 84 are migratory and globally significant populations of Endangered Ganges river dolphins and Irrawaddy dolphins. It includes three wildlife sanctuaries established to protect wildlife breeding areas: *Sundarbans West, Sundarbans South and Sundarbans East*.

This Ramsar site, abuts another Sundarban Ramsar site, which in turn abuts the *Sundarbans NP* and World Heritage site in India. The two countries are working to manage these areas in cooperation.

-> Other protected areas

Three river-based sanctuaries, *Nazirganj, Nagarbari-Mohanganj* and *Shilanda-Nagdemra*, have been designated within the Padma-Jamuna confluence to protect the Ganges River Dolphin and Irrawaddy River Dolphin, both of which are IUCN listed as Endangered. However, the extent of the protection provided is not well documented. There are two further sanctuaries for these dolphins in the *Sundarbans: Pankhali* and *Shibsha*.

In the *Char-Kukri-Murkri Wildlife Sanctuary*, on *Kukri-Mukri Island* in the south of the country, several species of small wild fishing cats forage.

The marine and coastal waters at the *Swatch of No Ground MPA* (also IMMA) is a submarine canyon just south of the *Sundarbans* and *Nijhum Dwip National Park*. This area of high wildlife diversity with wintering and migratory birds including Spoon-billed sandpiper, Spotted greenshank and Indian skimmer, and numerous cetaceans including significant populations of Indo-Pacific bottlenose dolphins and Bryde's whales as well as large numbers of spinner and spotted dolphins and small numbers of rough toothed dolphins and false killer whale.

The Bangladesh Forest Department is the management authority for all protected areas in the country other than the *Hilsa Sanctuaries* which are managed by the Department of Fisheries to protect the economically and culturally important hilsa shad.

At risk Wildlife

In this section, some individual wildlife species are mentioned followed by a letter in parentheses. These are species included in the IUCN Red List of Threatened Species within the top three categories of risk - Vulnerable to extinction (VU), Endangered (EN) or Critically Endangered (CR). A more complete list of IUCN listed species is found in Appendix 1.

➔ At risk birds

Bangladesh is located on both the Central Asian Flyway and the East Asian-Australasian Flyway Network, making much of the country's waterways important for migrating birds. Many species of waterbird, wading bird, shorebird and marsh birds are found near the coast and along the larger rivers. A wide variety of marine birds are found along the coast and offshore and include various species of gulls and terns. The mudflats of *Sonadia Island* are one of the most important wintering sites for the Spoon-billed sandpiper (CR) and the Sundarbans host possibly the largest population of Masked finfoot (EN) in the world.

The *Ganges-Brahmaputra-Meghna Delta* provides critical coastal habitat for wintering and migratory birds. Some IUCN listed species found there are Spoon-billed sandpiper (CR), Spotted greenshank (EN) and Indian skimmer (EN), in the south of Bangladesh.

An area of the *Jamuna-Brahmaputra* river not far from the dolphin sanctuaries is important for Indian skimmer (E), White-rumped vulture (CR) and Common Pochard (VU).

→ At risk reptiles

Significant numbers of Olive ridley turtle nests have been confirmed at *Cox's Bazar*, *Sonadia Island* and *St. Martins Island*, with smaller numbers found on numerous coastal islands (*Bordal*, *Inoni*, *Dubla* and *Egg Islands* in the *Sundarbans*, *Kochopia*, *Kutubdia Island*, *Moheskhali Island*, *Teknaf* and *Monkhali*). There are rare reports of Hawksbill nesting, particularly on *St. Martin's Island*. Green turtles, which are less widespread than Olive ridleys, reportedly nest on the southeast coast from *Cox's Bazar* to *Teknaf*, and on *Sonadia* and *St. Martin's Islands*. Loggerheads have been reported in local waters but are not known to nest consistently on the Bangladeshi coast.

Mangrove habitats (*Sundarbans*), estuaries, and inshore beds of marine vegetation are also home to the northern river terrapin (CR) which lives in fresh and brackish water.

At least twenty species of sea snake are found in Bangladeshi waters. Saltwater crocodiles are only found in the Sundarbans.

→ At risk mammals

A number of species have been recorded in Bangladeshi waters, including significant numbers of Ganges River dolphin (EN), which are freshwater dependent, and the world's largest population of Irrawaddy dolphin (EN) which is found along the coast and in the major inland rivers. Other confirmed cetaceans include the Indo-Pacific finless porpoise (EN) Indo-Pacific humpback (EN), Bottlenose, Pantropical spotted, Spinner and Rough-toothed dolphins; as well as Bryde's and Killer whales.

Bengal tigers (EN) may forage along the shore in the *Sundarbans*. Three species of otter inhabit the country's wetlands and mangroves, including Asian small-clawed (VU) and Smooth-coated (VU) otters.

Past experience with oil spill and potential risks

Prior to 2014 there had been no major spills in Bangladeshi waters, however many smaller incidents, particularly on the India-Bangladesh shipping route through the Sundarbans and in the areas around Mongla Port and Rampal where vessel traffic has increased significantly, contribute to significant long-term impact on the country's coast.

In December of 2014 the oil tanker *Southern Star 7* was struck by the *M/V Total*. *Southern Star 7* sank in the *Shela River* releasing approximately 350,000 litres of heavy fuel oil into the river and surrounding mangrove ecosystem.

The responsible party estimated that 68,000 litres were recovered. Initial response was handled by the Forest Department of the Ministry of Environment and Forests (now the Department of the Environment, Forests and Climate Change). The Government of Bangladesh requested technical assistance from the UNDP six days later.

A Joint UN/Bangladesh Sundarbans Oil Spill Response mission was formed which included 25 experts and officials from government agencies, universities, the UN Disaster Assessment and Coordination mechanism, UNDP, USAID, the European Union Civil Protection Mechanism, CEDRE (France) and the Wildlife Conservation Society (WCS). The mission lasted approximately 20 days. Acute impacts to wildlife were judged to be limited, however the mission recommended further monitoring to determine the extent of residual oil on the aquatic environment.

International and Regional Treaties and Agreements**→ Oil spill and HNS Response**

- CLC Convention 69
- CLC Protocol 76
- CLC Protocol 92
- FUND Protocol 76
- FUND Protocol 92
- FUND Protocol 2003
- LLMC Convention 76
- LLMC Protocol 96
- OPRC Convention 90
- HNS Convention 96

- HNS PROT 2010
- OPRC_HNS 2000
- BUNKERS CONVENTION 01

→ Marine Biodiversity Protection

- Indian Ocean South East Asia (IOSEA) Marine Turtle MoU
- South Asia Co-operative Environment Programme (SACEP)

Oil Spill Response and HNS Spill Response

→ National Contingency Plan?

A draft national contingency plan 'Oil and HNS Preparedness and Response Rules' was developed in 2009 and a follow-up workshop in 2015, in cooperation with the International Maritime Organisation (IMO) and South Asia Cooperative Environment Programme (SACEP) and funded by Norwegian Agency for Development Cooperation (NORAD). However, it does not appear to have been approved or activated.

→ Role of Competent National Authorities

The Department of Environment is the primary and coordinating agency for dealing with environmental disasters, including oil spill response, and the Director General of the Shipping Department coordinates response. Depending on the situation, the relevant Port Authority, and the Bangladesh Navy and Coast Guard may be activated. In the case of larger incidents, the assistance of other Member States of the SACEP may be requested.

Oiled Wildlife Preparedness and Response

→ Formal guidelines?

There do not appear to be any formal guidelines for response to oiled wildlife, however the Department of Environment, in its role in environmental disaster response would oversee wildlife response, with the Forest Department having responsibility for wildlife protection, including during disasters.

→ Response objectives and strategy

There are no clear response objectives nor strategy, however, during the 2014 *Southern Star 7* incident in the *Shela River*, the Forest Department was assisted by local communities and the Wildlife Conservation Society prior to international assistance being requested. Thus, it seems that a wildlife response is likely to be mounted during a significant incident.

→ Euthanasia or rehabilitation?

Rehabilitation would likely be allowed, however there is limited capacity within the country, therefore, international assistance would be needed.

→ Impact assessment

The Department of Environment would have oversight of impact assessment, likely with the assistance of the Forest Department, and technical experts from universities, such as Jahangirnagar University and NGOs such as WCS which has a country office in Bangladesh, and the Marinelife Alliance. Other field biology groups such as the Spoon-billed Sandpiper Task Force would also be likely to be involved.

→ Notification and early response

There is no system in place for notification and early response to oiled wildlife.

→ Wildlife responders

There are no experienced oiled wildlife responders, however, some of the agencies and groups involved in other wildlife activities would likely be able to provide some expertise in wildlife response. For oiled wildlife response, international assistance would be needed.

→ Cooperation between stakeholders

Many of the conservation agencies and organisations listed above have worked together and work closely with the Forest Department on wildlife related incidents

→ Permanent facilities

The Forest Service operates a wildlife rescue centre, but this is primarily for animals seized from the illegal trade. Jahangirnagar University opened the country's first Wildlife Rescue Centre in 2004, but this facility is located far inland, and it is unclear whether they would be able to assist with oiled wildlife rehabilitation.

There are a few other wildlife rehabilitation facilities located in Dhaka, Sylhet, Khulna and Rajshahi which have minimal facilities and are unlikely to be adequate for an oiled wildlife response,

→ Current processes

Joint oil spill response training and exercises for Bangladesh and India are listed in the Regional Contingency Plan, however, there are no oiled wildlife response preparedness actions being taken at this time.

Documentation and references

- ITOPF Country Profile (2009): <https://www.itopf.org/knowledge-resources/countries-territories-regions/countries/bangladesh/>
- IMO (2021): <https://www.imo.org/en/About/Conventions/Pages/StatusOfConventions.aspx>
- Birdlife International Country Profile: <http://datazone.birdlife.org/country/bangladesh>
- Important Marine Mammal Areas: <https://www.marinemammalhabitat.org/imma-eatlas/>
- IUCN Red List of Threatened Species: <https://www.iucnredlist.org/>
- UNEP WCMC –Ocean Data Viewer: <https://data.unep-wcmc.org/datasets/>
- Ramsar Country Profile: <https://rsis.ramsar.org>
- National Report to SACEP on the 2015 Consultation Workshop on National Oil Spill Contingency Plan, Bangladesh Sundarban Oil Spill Assessment, Joint UN/Government of Bangladesh Briefing: <https://incidentnews.noaa.gov/incident/8862#!21201>
- Country Paper of Bangladesh from the 13th Meeting of the Conference of the Parties to the Convention on Migratory Species (COP13): <https://www.cms.int/en/document/bangladesh-national-report-cop13>
- Report to the Indian Ocean-South-East-Asian Marine Turtle Memorandum of Understanding. 2014. Ministry of Environment and Forests: <https://www.cms.int/iosea-turtles/en/documents/national-reports/>
- State of the World's Sea Turtles (SWOT) Reports 2, 3, 5: <https://www.seaturtlestatus.org/swot-report>

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Appendix 1

→ At risk birds

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Spoon-billed sandpiper / *Calidris pygmaea* / CR / Migratory (winter) / Non-breeding
Masked finfoot / *Heliopais personatus* / EN / Resident / Breeding (spring/summer)
Great knot / *Calidris tenuirostris* / EN / Migratory (winter) / Non-breeding
Spotted greenshank / *Tringa guttifer* / EN / Migratory (winter) / Non-breeding
Indian skimmer / *Rynchops albicollis* / EN / Migratory (winter) / Non-breeding
Pallas's fish eagle / *Haliaeetus leucoryphus* / EN / Resident / Breeding (summer)
Far eastern curlew / *Numenius madgascariensis* / EN / Migratory (winter) / Non-breeding vagrant
Common pochard / *Aythya ferina* / VU / Migratory (winter?) / Non-breeding
River tern / *Sterna aurantia* / VU / Resident / Breeding (summer?)
Lesser adjutant (stork) / *Leptoptilos javanicus* / VU / Resident / Breeding (winter)
Black-legged kittiwake / *Rissa tridactyla* / VU / Migratory (winter?) / Non-breeding

→ At risk reptiles

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Hawksbill turtle / *Eretmochelys imbricata* / CR / Migratory (autumn to spring) / Nesting (rare, only one confirmed nest)
Northern river terrapin / *Batagur baska* / CR / Resident / Nesting (December to March)
Green turtle / *Chelonia mydas* / EN / Migratory (autumn to spring) / Nesting (October to April)
Olive ridley turtle / *Lepidochelys olivacea* / VU / Migratory (autumn to spring) / Nesting (October to April)
Loggerhead turtle / *Caretta caretta* / VU / Migratory (autumn to spring) / No confirmed nesting
Leatherback turtle / *Dermochelys coriacea* / VU / Migratory (autumn to spring) / Rare nesting (only one confirmed nest)
Mugger (Marsh crocodile) / *Crocodylus palustris* / VU / Resident / Breeding (unknown as population extremely small and not well studied)

→ At risk mammals

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Irrawaddy dolphin / *Orcaella brevirostris* / EN / Resident / Breeding (unknown possibly year round)
Ganges river dolphin (South Asian river dolphin) / *Platanista gangetica* / EN / Resident / Breeding (unknown, possibly year round)
Bengal tiger / *Panthera tigris tigris* / EN / Resident / Breeding (year round but more common between November and April
Indo-Pacific humpback dolphin / *Sousa chinensis* / EN / Resident / Breeding (unknown possibly year round)
Indo-Pacific finless porpoise / *Neophocaena phocaenoides* / EN / Resident / Breeding (unknown possibly year round)
Fishing cat / *Prionailurus viverrinus* / VU / Resident / Breeding (thought to be January/February with births 60-70 days later)
Asian small-clawed otter / *Aonyx cinereus* / VU / Resident / Breeding (year round)
Smooth-coated otter / *Lutrogale perspicillata* / VU / Resident / Breeding (August to December, during monsoon)