BIODIVERSITY OF TANGUAR HAOR: A RAMSAR SITE OF BANGLADESH

Volume I: Wildlife (Amphibians, Reptiles, Birds and Mammals)

INTERNATIONAL UNION FOR CONSERVATION OF NATURE

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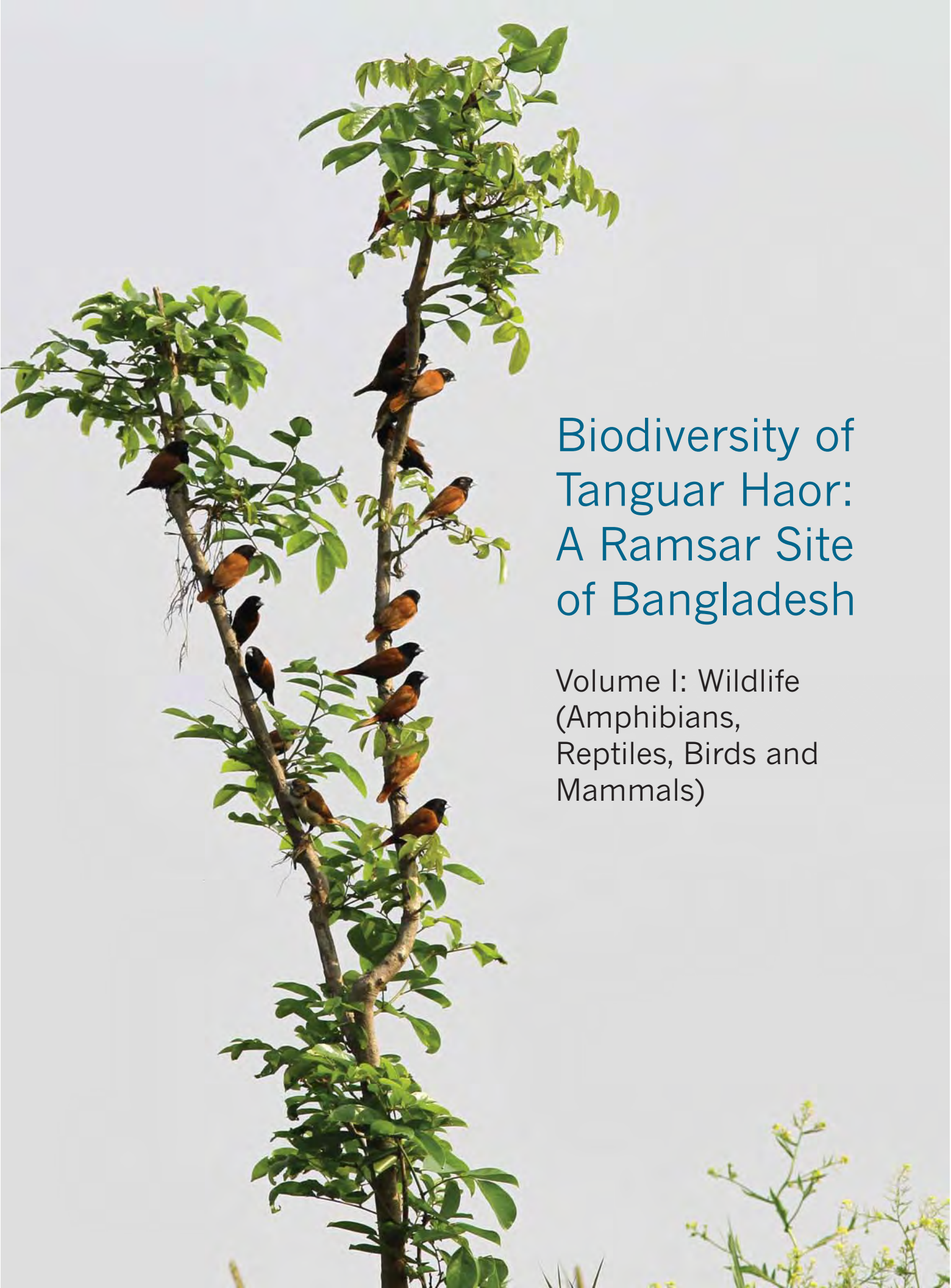

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Preface

Wetlands are amongst the Earth's most productive ecosystems. In Bangladesh these are of great importance because of the extensive food webs and rich biodiversity they support. In the past, wetlands have been undervalued. However, in recent times, awareness increases of the fact that natural wetlands provide many services toward mankind through various functions, products e.g., fish, fuelwood, timber, rice, and attributes i.e., biodiversity, aesthetic beauty, cultural heritage and archaeology.

Bangaldesh's most important freshwater wetlands occur in the Hoar Basin apart from the Ganges-Brahmaputra delta, which is low lying plains in eastern Mymensingh and western Sylhet Divisions, in the north-eastern part of the country. Tanguar haor is located in two Upazillas (sub-districts) namely Tahirpur and Dharmapasha of Sunamganj district in Sylhet Division. The Tanguar Haor basin, which is an area of 10,000 hectares of land, also supports about 60,000 populations with its resources.

Tanguar haor has outstanding conservation value, being a natural freshwater wetlands in the country,seasonally harbouring up to 60,000 migratory waterfowl along with many resident birds, more than 140 fish species and last vestiges of swamp forest. But the floral and faunal diversity of Tanguar Haor is under extensive threat because of unsustainable use of resources.

In 1999, Government of Bangladesh declared the Tanguar Haor Basin as an “Ecologically Critical Area” to highlight its ecological importance and to monitor its environmental quality. In 2000, the haor basin was declared as the country's second RAMSAR site – wetland of international importance.

With the declaration of Tanguar Haor as a RAMSAR site, government has its commitment to preserve the ecosystem and floral and faunal diversity including its migratory birds from illegal hunters. Government developed a comprehensive management plan – the Tanguar Haor Management Plan (THMP), which envisaged 'wise use' of its natural resources vis-à-vas a plan to uplift economic conditions of the local people. Importance were given to aware local community for preserving the natural resources and biodiversity and eventually protect it from degradation and overexploitation.

On the above context, IUCN Bangladesh has taken an initiative to carry out this recent study on biodiversity under the project "Community Based Sustainable Management of Tanguar Haor". The project is being implemented by the Ministry of Environment and Forest through IUCN Bangladesh Country Office with financial assistance from Swiss Agency for Development and Cooperation (SDC). As an outcome of the project this book is to share information on threatened and most important biodiversity with the local community in Tanguar Haor.

This is an expectation of IUCN Bangladesh that the book will be of immense help to monitor changes of important floral and faunal diversity of the Tanguar Haor. We also hope that this book help local people of Tanguar Haor to categorize, understand flora and fauna, watch and take conservation initiatives by stopping overexploitation, hunting, poaching of natural resources. On the other hand, this book will also be a great source of material for the researchers who are currently or in future will continue their study on flora and fauna of Tanguar Haor.

Dhaka
March 2012

Ishtiaq Uddin Ahmad
Country Representative
IUCN Bangladesh

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IUCN Bangladesh would like to acknowledge the support from Swiss Agency for Development and Cooperation (SDC) for carry out the project “Community Based Sustainable Management of Tanguar Haor, Phase-II".

We express our sincere gratitude to the Ministry of Environment and Forest for giving us the opportunity for conducting this recent study on biodiversity under this project.

We would like to express our gratitude to Nur Ali, President, Central Committee of Tanguar Haor Community (CCC) and also the Chairman of four Union Committee (UCCs).

Thanks should be given to Mohammad Yamin Chowdhury, Deputy Commissioner of Sunamganj for his kind guidance and support in conducting the study.

The assistance of a number of persons had been essential during compilation and preparation of this book. We specially acknowledge Enam al Haque, Dr. S.M.A. Rashid, Dr. Ronald Halder, Dr. M. Monirul Hasan Khan, Suprio Chakma, Sayam U. Chowdury, Samiul Mohsanin, Saniar Rahman Rahul, CM Reza, Sourav Mahmud, Thouhidur Rahman, Tania Khan, Philip D. Round, Nick Dimond, Kevin, Bill, Quazi Ahmed Hussain, Munir Ahmed, M. Ahsanul Haq Khokan, and relevant staff of IUCN for their valuable suggestions and guidance and also permit us to use their own collected photos of different species from Tanguar Haor in this book.

Special thanks for all staff of Tanguar Haor project.

We humbly acknowledge the contribution of Bangladesh Bird Club (Bbc) for providing waterfowl census data conducted in different years of Tanguar Haor .

Dhaka
March 2012

Research Team

Acronyms, Abbreviation and Glossary

Bbc	Bangladesh Bird Club
beel	more or less permanent bodies of water that remain in haors or floodplains during the dry season
BNH	Bangladesh National Herbarium
CBD	Conservation on Biological Diversity
CBSTP	Community Based Sustainable Management of Tanguar Haor Project
CWBMP	Coastal and Wetland Biodiversity Management Project
ECAMU	Ecologically Critically Management Unit
FGD	Focus Group Discussion
GoB	Government of Bangladesh
GRIS	Global Resistance on Invasive Species
haor	Backswamps or bowl shaped depressions between the natural levees of a rever, that are fooded every year by monsoonal floods from April until October
haor basin	A low lying region in northeastern Bangladesh where most of the country's haors occur
IUCN	International Union for Conservation of Nature
Kandas	Hillocks,levees or (artificial)mounds, often used for habitation
Khal	Small channel (natural/ artificial)
Khas land	Government land
MoEF	Ministry of Environment and Forests
NCS	National Conservation Strategy
NCSIP	National Conservation Strategy Implementation Programme
NCSIP	NCS Implementation Project No.1
NERP	Northeast Regional Water Management Project
NERP	Northeast Regional Water Management Project (FAP 6)
NGO	Non Government Organization
Ramsar site	Wetland of International Importance (Under the 'Convention of Wetlands of International Importance, especially with regard to waterfowl', also known as the Ramsar Convention after the Iranian city of Ramsar, where it was launched in 1971)
RCS	Ramsar Convention Strategy
RCSP	Ramsar Convention Strategic Plan
Reeds	Tall, robust grass like vegetation of swamps; usually refers to the species Phragmites karka, Common Reed
SDC	Swiss Agency for Development and Cooperation
Swamp forest	Forest that is seasonally flooded with freshwater
Union	Smallest administrative unit of local government in Bangladesh
WI	Wetland International

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Chapter 1

Introduction

Bangladesh, located in the delta of one of the world's major river systems, is a land of vast water and wetlands. More than two thirds landmass of this country may be classified as wetlands according to the definition of the enunciated in the Ramsar Convention. Wetland ecosystems are of great importance to Bangladesh due to its extent and of the critical economic and ecological roles that play in sustaining life and livelihoods options in the country.

Tanguar Haor - Md. Abdul Quayyum

Tanguar Haor is one of the most important wetlands not only of Bangladesh but also of South Asia (BirdLife International, 2012). It is a unique wetland ecosystem of great national importance in Bangladesh and has now gained international focus. The Government of Bangladesh declared Tanguar Haor as an Ecologically Critical Area in 1999 considering its critical condition as a result of overexploitation of its natural resources and declared as a Ramsar site in 2000 (GoB, 2004). The rich biodiversity, notable occurrence of wildlife especially waterfowl is one of the most significant features that allowed this area to gain the designation as a Ramsar site. Tanguar Haor is also extremely rich in terms of fisheries resources that play a critical role in Bangladesh's economy. It directly sustains the livelihoods of over 56,000 people from 88 surrounding villages and largely contributes to the country's food production and security.

Different scenes in different seasons
(summer, rainy season & winter) - A.B.M.Sarowar Alam

A project titled 'Community Based Sustainable Management of Tanguar Haor' is being implemented by the Ministry of Environment and Forest through the IUCN Bangladesh Country Office with financial assistance from Swiss Agency for Development and Cooperation (SDC). To achieve the wise use principles of Ramsar Convention, the project aims at setting up and completing a series of activities, one of which most importantly, is to conduct a study on biodiversity assessment and a study to improve ecosystem integrity. Among the other essentials, wildlife assessment is an integral part of the management plan to improve and restore ecosystem functions.

The most intensive series of studies carried out at Tanguar Haor prior to the NCSIP-1 (National Conservation Strategy Implementation Project) was a project named North-East Regional Project (NERP, 1990-93) under the Flood Action Plan. Under this study (Wetland Specialist Study by FAP 6), the whole haor basin in greater Sylhet and Mymensingh districts was studied in detail. Moreover, it had also studied hydrology, fisheries and socio-economics of the region as well as producing a portfolio of investment plans for the wetlands. Subsequently, NCSIP-1 studied the biodiversity of Tanguar Haor in late 1990s. Under this project small scale

Black-tail Godwit Sayam U. Chowdhury

winter bird census has been carried out by the 'Wetland International' voluntarily helped by Bangladesh Bird Club during this period. Moreover, no single study has been conducted on wildlife involving the community people in Tanguar Haor.

Considering the lack of sufficient knowledge on wetland biodiversity of this region, an initiative has been taken through this present study to collate all the information available in literature and incorporate the results of research so far conducted by the IUCN and its partners. A comprehensive survey on biodiversity of Tanguar Haor has been conducted to understand the present status, habitat classification, population density and diversity of wildlife. During the wildlife survey, conducted between March and April 2011, the status of wildlife (focusing on waterfowl) including habitat condition, comparative analysis of some beels (beels- smaller wetlands, some of which combine forming a haor, in terms of water birds diversity) was studied. Consequently, another census on waterfowl has been carried out during January 2012 which depicts a clear view on the status of this wetland.

The survey findings will act as a baseline which would be monitored time to time with some specific monitoring indicators. Biodiversity monitoring will be done by biodiversity experts (baseline survey) and trained community people (ongoing monitoring). A user friendly monitoring format (See Table- 6.1, Chapter 6) has been developed for the community to perform biodiversity monitoring.

1.1 Diversity of Fauna in Tanguar Haor

Based on Nishat (1993), Karim (1993), NERP (1993a) and BNH (1997), it is estimated that a total of 200 wetland plant species, 141 fish species, 11 amphibians, 34 reptiles (6 turtles, 7 lizards and 21 snakes), 206 birds and 31 mammals occur in this haor (Gieson and Rashid, 1997).

Wetland International (WI) conducts waterfowl census every year in different wetlands in Bangladesh with the help of Bangladesh Bird Club (Bbc). On an average fifty thousand individuals of around 70-80 species are found every year from the Tanguar Haor. Every winter about 60 species of migratory birds come to this Tanguar Haor as this haor is an ideal place for their food and habitat.

Based on DoZ (1997), Nurazzaman (1997) and Khan (1997) the estimated number of fish species is 141 under 35 families. The number is more than half of Bangladesh's total 260 freshwater fish species. The notable amongst these include Rui *(Labeo rohita)*, Mrigel *(Cirrhinus cirrhosus or Cirhhinus mrigala)*, Shoal *(Channa striatus)*, Puti *(Puntius ticto)*, Chanda *(Chanda nama)*, Boal *(Wallago attu)* and invertebrate Chingri or shrimp *(Penaeus sp.)*, etc. The other important fish species are Aier *(Mystus aor)*, Magur *(Clarius batracus)*, Baem *(Anguilla bengalesis)*, Gutum *(Lepidocephalus guntea)*, Lasu *(Cirrhinus reba)*, Fali *(Notopterus notopterus)* etc. In the 1999-2000 fiscal year, the government earned Tk 70,73,184 as revenue just from fisheries of the haor (Talukder, 2006). Three species Channa barca (Pipla, or Tila Shol), Labeo boggut, Labeo nandina (Nandina) are considered as extinct, 16 species are critically endangered and 26 are endangered (Gieson and Rashid, 1997).

Different types of fishes
(Rui, gonia, gojar, chingri & meni)- from top to bottom - A.B.M.Sarowar Alam

1.2 Diversity of Flora in Tanguar Haor

Principle wetland habitats of Tanguar Haor include open water (with submerged and floating aquatic vegetation), seasonally-inundated mixed herbaceous vegetation, reed beds and rice fields. Hijol *Barringtonia racemosa/* and Koroch *Milletia pinnata* (old name *Pongamia pinnata*) were dominant species in swamp forests, but these have now disappeared except for an occasional isolated tree and nearly a pure formation in the Rongchi 'forest', which is an 8-hectare stand of 800+ severely-lopped and old trees (Gieson and Rashid, 1997). During last couple of years again *Barringtonia racemosa* species were replanted on *Kandas*. Different types of habitat and vegetation found in Tanguar Haor are as follows:

- **Submerged vegetations** e.g., *Hydrilla verticillata, Potamogeton crispus, Najas sp Ottelia alismoides* etc., are fully under water vegetations. Migratory dabbling ducks and some resident aquatic birds feed on parts of these vegetations.
- **Free floating vegetations** e.g., *Eichhornia crassipes, Utricularia aurea, Sylvania natans,* etc., found in the Tanguar Haor are used as nesting sites by some aquatic birds such as Pheasant-tailed Jacana, Bronze-winged Jacana, Purple Swamphen, Whiskered Tern, etc. Rodents found in haor also live in and build nests inside such floating vegetation, especially *Eichhornia*.
- **Rooted floating vegetations** e.g., *Trapa maximowiczii, Echinochloa colona, Hygrorhyza aristata, Limnophila indica*, etc. Fish fingerlings often take refuge in such plants when others eat algae accumulated on these. Aquatic insects and snails also feed on these plants.
- **Sedges and meadows vegetations** e.g., *Alternanthera philoxeroides, Clinogyne dichotoma (*old name *Schumannianthus dichotomus), Eclipta alba, Enhydra fluctuans, Scirpus juncoides*, etc. These types of vegetation provide shelter and food source for some aquatic animals. Local people also take some vegetation as food and some are used for making mats of various types.
- **Reed vegetations** e.g., *Asclepias curassavica, Asparagus racemosus, Ficus heterophylla, Lippia javanica*, etc., are the main nesting ground of some resident ducks viz., Spot-billed Duck, Cotton Pygmy Goose and some other aquatic resident birds.
- **Fresh water swamp forest vegetations** e.g., *Crataeva nurvala, Phyllanthus distichus, Trewia nudiflora,* etc., may be natural and locally introduced species consists of evergreen trees forming dense canopy. Some birds and mammals use this type of forest as roosting and nesting places.
- **Crop field vegetations** e.g., *Alternanthera sessilis, Cotula hemisphaerica, , Cynodon dactylon, Cyperus cephalotes*, etc., have been found around the Tanguar Haor which are the important source of food for the migratory ducks and fodder for cattle.
- **Homestead vegetations** e.g., *Barringtonia acuatangula, Bambusa arundinacea, Dendrocalamus strictus, Musa paradisiaca, Areca cathecu, Calamus tenuis, Caryota urens and Cocos nucifera, Albizzia procera,* etc., have been found in Tanguar Haor with rich species diversity. Many species of terrestrial birds take shelter in such vegetation and build nest or roost on the trees and bamboos.

Different types of plants-row-wise (*Rosa Clinophyla, Oxystelma esculentum, Limnophylla heterophylla, Ceratophyllum demersum, Pongamia pinnata, Najas minor, Hygroriza aristata, Eclipta alba, Lippia alba, Asparagus racemosus*) - A.B.M.Sarowar Alam

Different types of plants-row-wise (*Salix tetrasperma, Persicaria sp., Asperagus racemosus* (Flower), *Lindernia antipoda, Commelina benghalensis,Cleome hassleriana, Nymphoides indica, Salvinia cuculata, Oxystelma esculentum* (Flower), *Cyprus compressus*)
- A.B.M.Sarowar Alam

Butterfly, dragonfly, moth & snail-from top to bottom
- A.B.M.Sarowar Alam

1.3 Diversity of Phytoplankton in Tanguar Haor

In any aquatic ecosystem the phytoplankton works as the backbone of all zoo planktons that in turn keep the predatory animals alive in wetlands and other aquatic environments. The phytoplankton communities of the Tanguar Haor wetlands are very much linked with zooplankton and fish productivity. Several studies have highlighted these issues. One among these, Muzaffar and Ahmed (2006) so far found 107 genera of phytoplankton representing five classes. These are as follows:

- **Chlorophyceae:** *Radiofilum, Eudorina, Gonium, Pandorina, Pleodorina, Platydorina, Volvox, Pyrobotrys, Sphaerocystis, Gloeocystis, Palmodictyon, Nannochloris, Ulothrix, Chlorococcum, Mycanthococcus, Golenkinia, Dictyosphaerium, Characium, Pediastrum, Euastropsis, Ankistrodesmus, Cerasterias, Glaucocystis, Kirchneriella, Pachycladon, Selenestrum, Trochiscia, Westella, Coelastrum, Crucigenia, Scenedesmus, Mougeotia, Eremosphera, Spirogyra, Gonatozygon, Closterium, Pleurotaenium, Cosmarium, Sirocladium, Micrasterias, Staurastrum, Xanthidium, Arthrodesmus, Spondylosium, Desmidium, Hyalotheca, Sphaerosozma, Euglenoidea, Trachelomonas* and *Pyrobotrys*.
- **Xanthophyceae:** *Botryococcus*.
- **Chrysophyceae:** *Synura, Uroglenopsis, Dinobryon, Gloeobotrys* and *Phaeosphaera*.
- **Bacillariophyceae:** *Melosira, Coscinodiscus, Biddulphia, Fragilaria, Synedra, Navicula, Pinnularia, Nitzschia, Amphora, Cymbella* and *Suriella*.
- **Dinophyceae:** *Ganyaulux, Ceratium, Peridinium, Glenodinium* and *Attheya*.
- **Cyanophyceae:** *Chrooccus , Gloeocapsa, Synechocystis, Aphanocapsa, Synechococcus, Microcystis, Merismopedia, Eucapsis , Dactylococcopsis, Coelosphaerium, Spirulina, Oscillatoria, Borzia, Lyngbia, Schizothrix, Trichodesmium, Anabaena, Nostoc, Anabaenopsis, Nodularia, Tolypothrix, Rivularia* and *Gloeotrichia.* Blooms of *Microcystis* dominated the phytoplankton community throughout the study period but were particularly acute during the early part of the high water period.

1.4 Threats to Tanguar Haor

Tanguar Haor supports a spectacular array of flora and fauna but these are now facing serious threats due to natural resource depletion, habitat degradation, soil erosion, water pollution, forest degradation, and poaching of wildlife highlighted here.

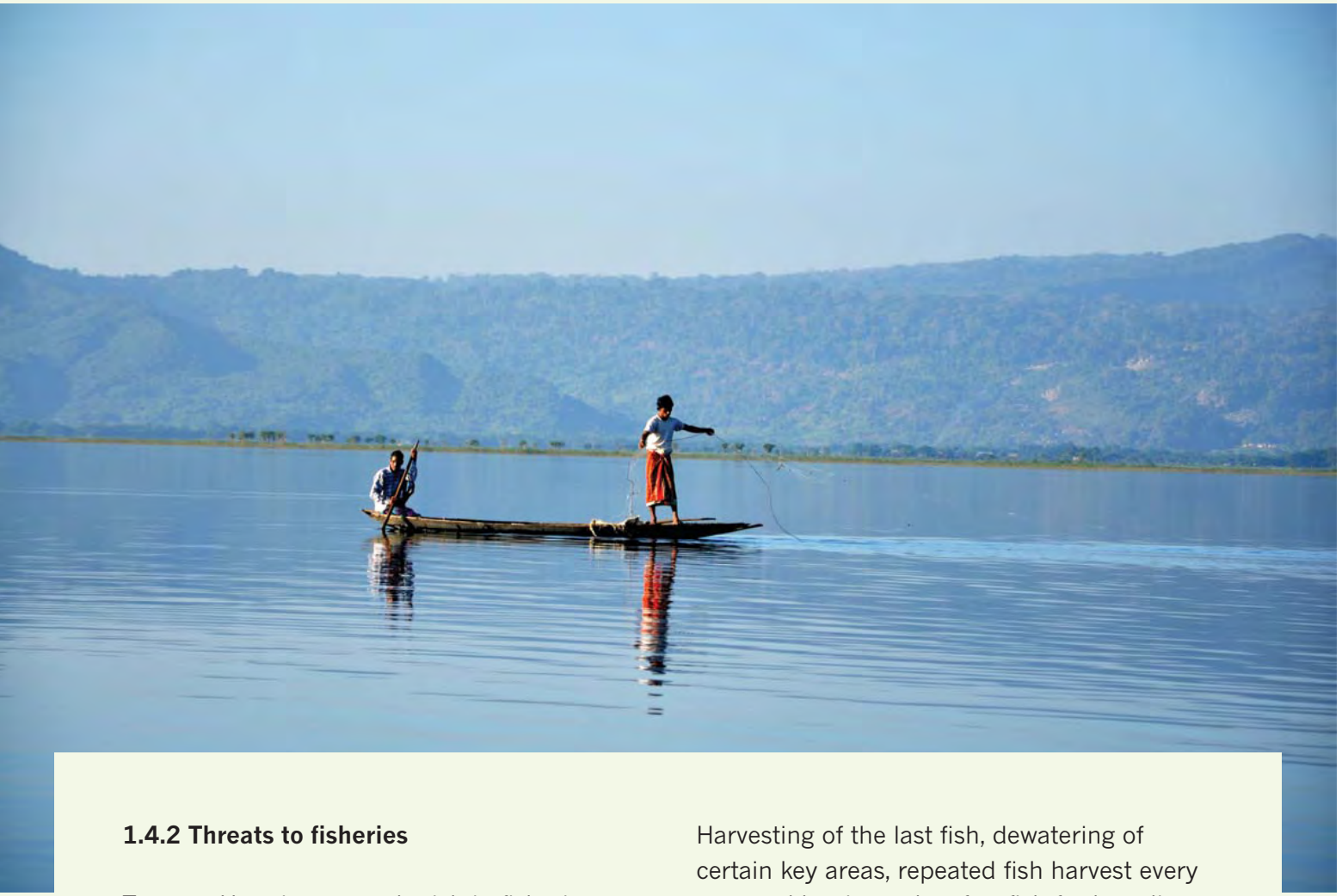
1.4.1 Threats to swamp forest and reed beds

The Swamp forests that once used to be common in Tanguar Haor have now become very rare due to clearing, cutting and other anthropological activities, and the last vestiges of it remains in area called Ronchi. On the other hand no natural regeneration of this forest is occurring anywhere in the wetlands.

The reed beds have also been severely reduced because of continued over-harvesting for fuel and converting land into agricultural fields. As a result, certain aquatic species that used to be common in the area, have now become very rare or are fast disappearing. This process threatens the integrity of the haor ecosystem (GoB, 2004).

Degradation of the conditions of swamp forests and reed beds has lead to several impacts on resource use and livelihoods of the local people. Swamp forest provides feed and shelter for fish population and therefore a reduction in fish production, animal diversity and the waterfowl population have been observed over the past few years.

Cut down of trees and vegetations - A.B.M.Sarowar Alam



1.4.2 Threats to fisheries

Tanguar Haor is extremely rich in fisheries resources. The varied number of fish species is linked with a complex network of food web in the entire ecosystem and so maintaining the integrity of the food web is a must for ecological balance of the haor and to increase fish production in Bangladesh.

Illegal fishing by fishing gears
- A.B.M.Sarowar Alam & Alison Darcy

Harvesting of the last fish, dewatering of certain key areas, repeated fish harvest every year and leaving only a few fish for breeding are the most unsustainable methods used for fishing in Tanguar Haor. These have probably contributed to disappearance of a large number of fish in the natural ponds which would lead to genetic erosion and is a threat to indigenous fish species (GoB, 2004).

On the other hand, unsustainable use and destruction of swamp forests and reeds bring a negative effect to fisheries resources as it provides the shelter and feed to the fish. Water pollution is another threat to floral and faunal species which sometimes occurs due to coal collection in Tekerhat point. Thousands of boats continuously pollute the water through oil contamination which will ultimately affect the fish population,

1.4.3 Threats to wildlife

Tanguar Haor is well recognized and acknowledged as home to a large number of waterfowl, both resident and migratory. It provides a breeding area for many birds and other wildlife animals. The interplay of huge flocks of water birds and luxuriant swamp vegetation was used to attract naturalists and tourists. This glory is however now lost. Each year about 60,000-120,000 waterfowl visit Tanguar Haor. They are mostly the migratory bird species. But this number is dropping continuously. During the last waterfowl survey in January 2012 only 28876 individuals of 47 species are observed in Tanguar Haor which is alarming.

This situation is mainly due to a combination of different natural factors: habitat degradation (e.g., disappearance of swamp forest and reed beds), shortages of food, human pressure and illegal hunting, decreasing numbers of fish species and polluted water (GoB, 2004).

Wildlife *(birds and turtle)* sized by local people A.B.M.Sar owar Alam

Water pollution by coal and oil spillage - A.B.M.Sarowar Alam

Over the past few decades many species of wildlife have disappeared. Some are threatened nationally and globally. For example, the globally threatened Pallas's Fish Eagle (*Haliaeetus leucoryphus*) has a population of about 2,500 to 10,000 which remain in the whole world. This species was included in 2009 IUCN Red List Category (as evaluated by BirdLife International- the official Red List Authority for birds of IUCN) as a vulnerable one. The Pallas's Fish Eagle can only be found in Tanguar Haor area and a few areas of Bangladesh, builds nests only in Tanguar Haor and in adjacent areas of tall trees along the periphery of haor during the winter season. It is threatened due to the destruction of its nesting sites. Conservation efforts can help to increase the number of this bird as well as other wildlife species.

In addition, the migrant fisher folk sometimes harvest turtles and tortoises for consumption and lead to over-exploitation of fish resources as well. At the same time, these temporary fishers build fishing camps which use fuel wood from swamp forests and the swamp vegetation (reeds) for construction of temporary hamlets which is also unsustainable in use and pose threats to birds and other wildlife species.

1.4.4 Biodiversity conservation strategy: major challenges

The conservation strategy should include a balanced approach to fishing (through restrictions by space and by time) that must protect swamp forests, reed beds as well as provide shelter for all the migratory birds which take refuge during the winter months. But there are some limitations in implementing any conservation initiative. According to the presentation by Ecologically Critical Area Management Unit (ECAMU) - Coastal and Wetland Biodiversity Management Project (CWBMP)[1] and Bevanger *et al*, (2001), the main challenges for biodiversity conservation at Tanguar Haor are:

- illiteracy of local haor dependent people;
- lack of community participation;
- poverty of the local haor dependant people;

1. ECAMU-CWBMP, <http://www.undp.org.bd/projects/prodocs/CWBMP/Study%20Tour%20Tanguar%20Haor%20Draft%20ppt.pdf> accessed on 8 January 2012

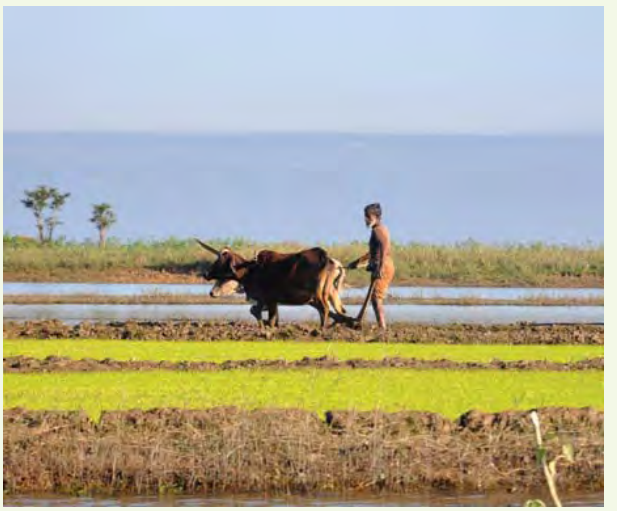
- biodiversity status may be disrupted after termination of the existing management system, because community motivation and system involvement is absent; and
- insufficient policy frameworks and legislative provisions for biodiversity conservation and protected wetland management.

1.5 Economic Value of Tanguar Haor

Tanguar Haor systems have a great economic value as they provide various services without any investment towards nature making a vital contribution to human health and well-being. Wetland ecosystems of this haor are a part of our natural wealth. According to the Ramsar Convention on Wetlands (2011), the set of Ramsar Factsheets outline the 'ecosystem services' the benefits of people obtain from ecosystems pr ovided by wetlands. They illustrate the great diversity of ecosystem services delivered by wetlands and their values which covers: flood control, groundwater replenishment, shoreline stabilization and storm protection, sediment and nutrient retention and export, water purification, reservoirs of biodiversity, wetland products, cultural values, recreation and tourism, climate change mitigation and adaptation. However, not all wetlands provide all of the services at a time. Different wetlands provide a range of services according to their type, size and location.

Economic evaluation of Tanguar Haor could be assessed as below through evaluation of services which the haor ecosystem provides:

Haor provides fishes and crops - A.B.M.Sarowar Alam



1.5.1 Biological set up

Tanguar Haor is a large water logged area between levees or banks of large river systems at the foothill of the Indian Meghalayan- Joyanti Hill Cherapunji rainforest, i.e, water is available here all year round, but the most important fact is that, water can be found here even in the dry season. Water supply varies from 7000 cubic meter/Sec to 220 cubic meter/sec in July and February respectively. The haor is enriched with clear water which is mainly due to low sediment levels in the water. In case of a river the water flows constantly, but in a haor the water flow is subdued which provides a shallow depth of water in most areas - a unique ecology.

The Tanguar Haor is different from others as no large river passes through it which is one of the major causes of low sedimentation. However, in the monsoon, hill streams contribute some sedimentation in the upper edge of the haor and in adjacent cluster villages. This also creates a unique character to the beels which provides a good breeding ground and habitat for the shallow water fish. Siltation trends are not significant hence it is considered that it does not hamper the habitat of fish species, instead adds some nutrients to the soil which has a positive impact on agricultural activity. The higher grounds, known locally as *Kanda*, located in between beels which is planted with wetland plants in order to restore wetland forests. In *Kandas*, some agricultural practices are done by the local community but mainly use for grazing land for cows, buffalos and birds. Fishes are known to breed here when these become submerged. Tanguar Haor includes rice-field habitats that play important ecological roles and support a range of biodiversity, including internationally important populations of migratory waterbirds.

1.5.2 Large fishing ground

There is a great importance of Tanguar Haor for fish production, maintaining biodiversity, meeting local and regional demands and also serve as a good source of fish fry supply for other water bodies. Perennial flooded parts of the Tanguar Haor are rich in fish resources. Unlike other haors, there are no major khals or rivers that directly connect with Tanguar Haor. This provides the haor as a wetland of low sediment and with clear water which provides a good breeding ground for fish and act as a shelter for mother fish. Submerged vegetation is a good habitat for small and medium size fish, where as natural reeds and other vegetation provide a natural ecological balance for shelter of other mother fish. Moreover there is a good abundance of food and biological environment to boost up the maturity of fishes that is greatly augmented by the supply of additional water from hill streams which keeps the reservoir on flow even during the dry season. The recent trend shows that 70% of households depend on fishing resources of the Tanguar Haor

1.5.3 Occupational status of the haor people

Wetland resources play a critical role in the lives of those residing in and around Tanguar Haor. Most economic activity carried out in the area, including commercial fishing, trade in fuel wood, hunting and trapping waterfowl, the harvesting and sale of grasses and reeds and farming is based on these resources. Earlier studies confirmed that more than two-thirds of households in Tanguar Haor are either directly or indirectly dependent on the haor. Fishing and farming are the principal occupations of people living in Tanguar Haor.

An estimation of economic activities of local community of Tanguar Haor area has been given below in Table 1.1. It is clear from this that occupational status is gradually changing. People of Tanguar Haor are becoming more engaged in fishing than agriculture.

1.5.4 Recreation, tourism and research

The natural beauty as well as the diversity of animals and plant life in Tanguar Haor makes it an ideal location for recreational activities, tourism and research work. Hundreds of ornithologists and bird watchers visit the area every year. There are a whole range of recreational activities associated with it's wetlands. The environment for tourism should be developed so that local community could benefit from it and generate income locally and nationally, from boating and other water sports to hunting, watching wildlife and even art and literature.

Table 1.1: Involvement of local community in different occupation

Occupation	Percentage (%) of involved household head		
	According to NCS fisheries report (1987)	According to Kabir and Amin (2007) from field survey of 2005	According to household survey, IUCN (2008)
Agriculture	62	56	36.78
Fishing	8	15.7	21.56
Day labour	18	7.3	21.07
Businessman	2	2	7.55
Sand and coal collection	-	-	3.4
others	-	19 .3	9.87

Traditionally, in the winter season residents of Tanguar Haor were able to graze their cattle in fallow land situated between paddy fields and the beels. Grasses, reeds, twigs and leaves were harvested for fuel and thatching. Branches or whole tree-tops were collected from swamp forests for use in constructing enclosures, called *khola* or *kathha*, which entice fish to breed in them. The Hijal *(Barringtonia racemosa)*, a wetland tree species, is widely favored for this purpose.

Human and waterfowl - A.B.M.Sarowar Alam

1.5.5 Indirect value of Tanguar Haor

There are some activities which do not have direct value but play an important ecological role. Among them grazing of cows, buffalos, goats, harvesting reeds, vegetations and collecting fuel woods, singra and other food materials are very important especially for the local people. Usually for women, duck rearing is a good option in this area. Local habitants have these privileges without providing any fee.

However, their unlimited access to these valuable resources should be kept under control to help restore biodiversity for future uses.

1.6 Conservation Importance of Tanguar Haor

Tanguar Haor, listed in the Directory of Asian Wetlands (Scott, 1989) has been identified by Rasid and Scott (1992) as a key wetland site of international importance, especially because of its vital link in an international network of sites for migratory waterbirds. Tanguar Haor fulfills at least three of the criteria established for declaring a wetland of international importance, as adopted by the Montreux Conference of the contracting parties (Davis,1994), each of which alone is sufficient for proposing a Ramsar site. The three criteria met by Tanguar Haor are:

Criterion 1: *A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.*
Tanguar Haor qualifies for this criterion based on it hosting a critically endangered bird, several endangered, vulnerable and threatened floral and faunal species such as Baer's Pochard, Pallas's Fish Eagle, Fishing Cats, Bengal Rose, Ferruginous Pochard etc.

Criterion 2: *A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.*
Tanguar Haor supports around 50,000 waterfowl, on an average, during the winter migratory season.

Criterion 3: *A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.*
In 2001, a minimum of 2500 Baer's Pochard was counted, which represents 50% (estimated global population is 5000 by BirdLife International, 2001) and 90,900 (2002) Ferruginous Poachard from Tanguar Haor, which represents 90% of the global population estimated (100000) by Birdlife International, 2002.

1.7 Wise Use of Ramsar site

According to RCS (2010) an updated definition of wise use , has been given as bellow: Wise use of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches[2], within the context of sustainable development[3].

According to the Ramsar Convention Strategic Plan (RCSP) 2009-2015, Goal 1 covers wise use of wetlands and the related benefits for biodiversity and human well-being. The strategies for wise use of all wetlands have been expressed as below:

1.7.1 RCSP 2009-15: GOAL 1. Wise Use

To work towards achieving the wise use of all wetlands by ensuring that all Contracting Parties develop, adopt and use the necessary and appropriate instruments and measures, with the participation of the local indigenous and non-indigenous population and making use of traditional knowledge, while at the same time ensuring that conservation and wise use of wetlands contribute to poverty eradication, mitigation of and adaptation to climate change, as well as prevention of disease and of natural disasters.

2. Including inter alia the Convention on Biological Diversity's "Ecosystem Approach" (CBD COP5 Decision V/6) and that applied by HELCOM and OSPAR (Declaration of the First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions, Bremen 25-26 June 2003).

3. The phrase "in the context of sustainable development" is intended to recognize that whilst some wetland development is inevitable and that many developments have important benefits to society, developments can be facilitated in sustainable ways by approaches elaborated under the Convention, and it is not appropriate to imply that 'development' is an objective for every wetland.

STRATEGY 1.1

Wetland inventory and assessment

Describe, assess and monitor the extent and condition of all types of wetlands as defined by the Ramsar Convention and wetland resources at relevant scales, in order to inform and underpin implementation of the Convention, in particular in the application of its provisions concerning the wise use of all wetlands. (CPs, advised by STRP and assisted by IOPs)

STRATEGY 1.2

Global wetland information

Develop a global wetland information system, through partnerships, to be covered by voluntary contributions, to increase accessibility of data and information on wetlands. (CPs, Secretariat, advised by STRP and assisted by IOPs)

STRATEGY 1.3

Policy, legislation and institutions

Develop and implement policies, legislation, and practices, including growth and development of appropriate institutions, in all Contracting Parties to ensure that the wise use provisions of the Convention are being effectively applied. (CPs, Secretariat)

STRATEGY 1.4

Cross-sectoral recognition of wetland services

Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply, coastal protection, integrated coastal zone management, flood defense, climate change mitigation and/or adapation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands. (CPs, Secretariat, STRP, IOPs)

STRATEGY 1.5

Recognition of role of the Convention

Raise the profile of the Convention by highlighting its capacity as a unique mechanism for wetland ecosystem management at all levels; promote the usefulness of the Convention as a possible implementation mechanism to meet the goals and targets of other global conventions and processes. (CPs, Secretariat, STRP, IOPs)

STRATEGY 1.6

Science-based management of wetlands

Promote successful implementation of the wise use concept by ensuring that national policies and wetland management plans are based on the best available scientific knowledge, including technical and traditional knowledge. (CPs, Secretariat, STRP, IOPs)

STRATEGY 1.7

Integrated Water Resources Management

Ensure that policies and implementation of Integrated Water Resources Management (IWRM), applying an ecosystem-based approach, are, included in the planning activities in all Contracting Parties and in their decision-making processes, particularly concerning groundwater management, catchment/river basin management, coastal and nearshore marine zone planning, and climate change mitigation and/or adaptation activities. (CPs, STRP, IOPs)

STRATEGY 1.8

Wetland restoration

Identify priority wetlands and wetland systems where restoration or rehabilitation would be beneficial and yield long-term environmental, social, or economic benefits, and implement the necessary measures to recover these sites and systems. (CPs, Secretariat, IOPs)

STRATEGY 1.9

Invasive alien species

Encourage Contracting Parties to develop a national inventory of invasive alien species that currently and/or potentially impact the ecological character of wetlands, especially Ramsar sites, and ensure mutual supportiveness between the national inventory and IUCN's Global Register on Invasive Species (GRIS); develop guidance and promote procedures and actions to prevent, control or eradicate such species in wetland systems. (CPs, STRP, other agencies, IOPs)

STRATEGY 1.10

Private sector

Promote the involvement of the private sector in the conservation and wise use of wetlands. (CPs, Secretariat)

STRATEGY 1.11

Incentive measures

Promote incentive measures that encourage the application of the wise use provisions of the Convention. (CPs, Secretariat, IOPs)

1.7.2 Additional guidance on the implementation of the wise use concept (1993)

Research

Research can be anything that expands upon basic knowledge. Particular areas that may deserve attention are both identification and quantification of wetland values, sustainability of wetland use, and landscape functioning and modification. Contracting Parties should take positive steps to acquire and, when possible, share any knowledge developed on wetland values, functions and uses.

Training

Training activities and transfer of appropriate knowledge should be an integrated component of all wise use projects. Those activities should be as catalytic as possible, and seek to train potential trainers at regional level who can then pass on their expertise to lower levels, and involve the cooperation of governmental and non-governmental organizations, using local resources and institutions whenever possible. Three broad types of training appear to be of particular relevance for wetland professionals:

- Courses on integrated management
- Courses on wetland management techniques
- Courses for field staff

1.8 Preceding Exploration in Tanguar Haor

In the study report on "Resource Rights, Sustainable Livelihoods, Environmental Security and Conflict Mitigation in South Asia" of IUCN Asia, the management system of wetland in pre-colonial Bangladesh has been described as below (Waliuzzaman, et al.,undated):

"Fisheries were traditionally managed and dominated as common property resources through complex systems of rights evolved in and enforced by local communities. It was during this period that the traditional property rights of fishers and non-fishers began to be regulated and restricted through statutory law. Leasing was often short-term, with few incentives to protect fish stocks and every incentive to maximise income by intensive fishing. Some fishers managed to become lessees but the majority did not and throughout the colonial period had practically no property rights in water or in fish.

Leasing in Tanguar Haor was abolished by law in 2001 when the area was designated an ecologically critical area, and the lessee was removed in 2003. Tanguar Haor, currently and until 2011, is being managed by the Ministry of Environment and Forests. The role of local communities in this new arrangement is in the process of being defined but it appears that the new regime will involve a measure of exclusion and further curtailment of their rights to access and use the wetland resources."

In another study on Tanguar Haor, Kabir and Amin (2007) stated that most of the villagers depend on the haor for fishing, grazing, farming, and wetland vegetation for fuel. Most importantly, the haor is also used for rice (staple food) cultivation during the winter flood-free season. Total exclusion of local people from the current management practices greatly impacted the local people whose livelihood depends on the resources of the haor. This study illustrates the importance of Tanguar Haor resources on local peoples, livelihood and their willingness, constraints and opportunities to participation in the haor management.

Until now, limited research has been carried out on Tanguar Haor mainly by NERP (1993), the annual Asian Waterfowl Census, and National Conservation Strategy Implementaiton Project (NCSIP-1). All these studies have focused on fisheries, flora, fauna and socio economic aspect of Tanguar Haor area.

In a study report of IUCN Asia on "Sustainable Livelihoods, Envir onmental Security and Conflict Mitigation" a brief on Tanguar Haor resources was given. Tanguar Haor has provided its inhabitants with nearly everything they need for their subsistence, including rice, fish, vegetables, pasture, wild fruit, building material and fuel. Fish is the most important of all the resources taken from haor waters, but area residents also harvest rice and a number of other crops and medicinal plants, both cultivated and wild, which are a major food source for the landless and destitute during the monsoon and the pre-harvest winter months. The ecosystem services provided by Tanguar Haor are yet to be fully documented. Tanguar Haor supports as many as 150 of an estimated total of 200 wetland plant species occurring in haor areas across the country. Tanguar Haor is also home to 141 varieties of fish, more than half of Bangladesh's 260 freshwater fish species. This includes 55 fish species that are threatened in Bangladesh, of which 28 are endangered. Of these 28 endangered fish species, 17 are found only in Tanguar Haor. In addition, 11 amphibians, 34 reptiles, 206 bird species and 31 mammals are found in the area (Giesen and Rashid, 1997). During the winter months, Tanguar Haor sees the arrival of more than half a million migratory water birds. Winter is also the time when the Pallas's fish eagle nests in wetland trees and the Bengal rose blooms in the fields.

According to GoB (2004), a total of 208 bird species have been recorded at Tanguar Haor which is 30% of the total species recorded in Bangladesh, 92 waterbirds, 33 are reed land/ grassland/ marsh dwelling passerine birds, 15 are birds of prey and 68 are birds of village groe and /or foothill forests. Of the total number of species 98 species are migratory and 110 are resident species. Two bird species are listed as rare under IUCN classification (*Haliaeetus leucorhyphus and Prinia burnesii*), two are indeterminate (*Pellorneum palustre, Chaetornis striatus*) and four are listed by CITES (App.1; *Haliaeetus*

leucorhyphus, Falco peregrinus; App.2: Platelea leucordia, Sarkidiornis melanotos). Tanguar Haor provides a habitat for various globally threatened wildlife species including 1 ambhibian, 3 turtles, two lizards, 4 snakes, 10 birds and 6 mammals.

A study on "The effects of the ood cycle on the diversity and composition of the phytoplankton community of a seasonally ooded Ramsar wetland in Bangladesh" has been conducted by Muzaffar and Ahmed (2006). They investigated the seasonal variation in the diversity and abundance of phytoplankton assemblages in Tanguar Haor. In another study, Muzaffar (2004) quantified diurnal time-activity budgets for Ferruginous Pochard, *Aythya nyroca* wintering in Tanguar Haor, Bangladesh.

In a presentation by Ecologically Critical Area Management Unit (ECAMU) - Coastal and Wetland Biodiversity Management Project (CWBMP) Wild bird diversity of Tanguar Haor has been described as:

- Migratory ducks like Eurasian Wigeon (*Anas penelope*), Common Coot (*Fulica atra*), Brown headed Gull (*Larus brunnicephalus*) and Ruddy Shelduck (*Tadorna ferruginea*);
- Resident waterfowls like Spot-bill Duck (*Anas poecilorhyncha*), Pheasant-tailed Jacana (*Hydrophasianus chirurgus*), Bronzed-winged Jacana (*Metopidus indicus*), Common Moorhen (*Gallinula chloropus*), Little Grebe (*Trachybaptus ruficollis*), Grey Heron (*Ardea cinerea*);and
- Raptor birds like Black Kite (*Milvus migrans*), Brahminy Kite (*Haliastur indus*) and Pallas's Fish Eagle (*Haliaeetus leucoryphus*).

During the appraisal mission of Tanguar Haor wetland biodiversity conservation project, Bevanger et al. (2001) stated findings from the Tanguar Haor management plan (THMP) in which major biodiversity threats for Tanguar Haor were:

1) No control over exploitation of fisheries resources, habitat destruction (e.g., last vestiges of swamp forest are under threat), decline of fisheries production and introduction of exotic fish species
2) Waterfowl poaching and numbers of migratory waterfowl are dropping
3) Depletion of other natural resources, such as reed lands and swamp forest
4) Gaps in knowledge about biodiversity
5) Insufficient policy frameworks and legislative provisions for biodiversity conservation and protected wetland management

A case study of Boateng (2010) explained that a formal institutional framework and management plan for Tanguar Haor wetland has been developed through the effort of local Environmental NGOs, some government agencies and with the financial support from IUCN.

A brief review of the existing laws, plans and policies related to the wetland management of Bangladesh are provided by Huq (1993), Giesen and Rashid (1997), and GoB (2002). For the management of Tanguar Haor, the most relevant of these are show in the table below :

Table 1.2: Laws, policies and legislation on sustainable haor resource management

Year	Sectoral Laws, Policies and Legislations	Specification of the Laws
1977	The Haor Development Board Ordinance	It requires the Board to prepare projects and schemes to develop the haors and other depressed low lying areas. Very short duration of the Board mainly executed a few projects related to flood control, land reclamation and extension of agriculture fisheries.
1982	Protection and Conservation of Fish (Amendment) Ordinance	Prohibits unsustainable fishing techniques, and calls for conservation of fish resources.
1985	Land Management Manual	Guidelines for leaseholders, for sustainable exploitation of fisheries resources.
1992	National Conservation Strategy	Recommendations for achieving sustainable development in all sectors. NCSIP -1 is implementation mechanism.
1992	Ramsar Convention (Ratified by Bangladesh)	Sustainable (Wise) use of wetland resources, if appropriate, with community based management.
1995	National Environmental Management Action Plan	Halt degradation: promote sustainable use, conservation of biodiversity.
1997	Environment Conservation Act (1995) and Environment Conservation Rules (1997)	Focus on EIA and protection of Ecologically Critical Areas.
1997	Tanguar Haor Management Plan	Sustainable Management (wise use) of the haor dealing with community based haor management.
1999	Notification of Ecologically Critical Areas	Enactment of the ECA clause in the Environmental Conservation Act (1995) and Rules (1997)
2000	Tanguar Haor Management Plan (revised)	Emphasis on implementation of wise use principle prescribed in Ramsar guidelines and community based haor management.

Sourece: Huq, 1993; GoB, 2002; Giesen and Rashid, 1997; Kabir and Amin (2007)

Brown headed Gull - A.B.M.Sarowar Alam

1.9. Organization of the Book

The main target of this book is to share the information on biodiversity (flora, fish, amphibians, reptiles, birds, mammals) of Tanguar Haor and its changes due to various threats, which will ultimately alert local communities to improve their knowledge in biodiversity conservation.

The book begins with the Preface followed by Acknowledgements, Introduction and Salient Geographical Features of Bangladesh, Biodiversity Assessment Method and Present Wildlife Status of Tanguar Haor. The next species profile chapter will represent the most important and popular wildlife fauna (Amphibian, Reptiles, Birds, and Mammals) in reference to Tanguar Haor. This section of the book helps community people to be enthusiastic and to identify wildlife easily.

The last chapter of this book describes Community led monitoring of wildlife and conservation practices. The reference section is followed by the appendices. In the Appendix section, census status of waterfowl and other observation data on wildlife species have been provided.

This book is the volume one for wildlife of Tanguar Haor which is focused mainly on birds. It will be followed by another two volumes which will focus on fish and flora accordingly. We hope that this initiative will create awareness not only in Tanguar Haor community but also across the whole country. This book will also contribute to policy level in Bangladesh such as the development of any future legislation and establishment of conservation priorities.

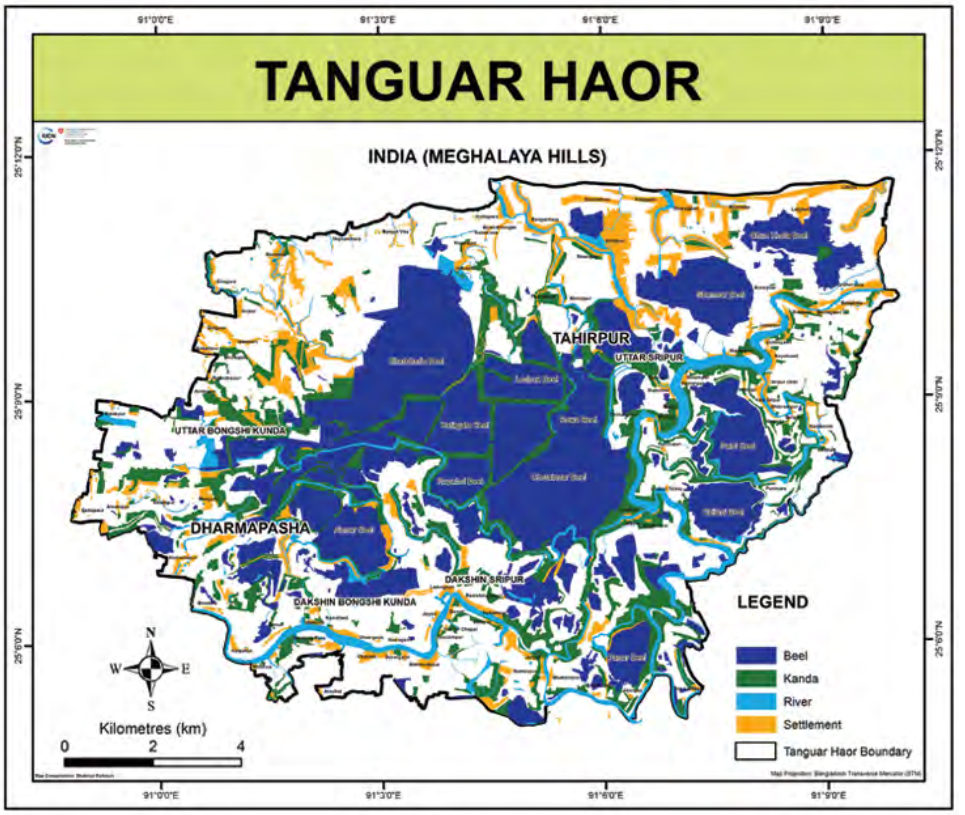
Migratory ducks - Sayam U. Chowdhury

Chapter 2

Salient Geological Features of Tanguar Haor

2.1 Geomorphology

Tanguar Haor is one of the largest wetland systems in the northeast region with relative natural state and located at 25^0 5' 25" North and 91^0 1' 91" East. Approximately one-thirds lies in Tahirpur Upazila and two-thirds lies in Dharmapasha Upazila, both of which are located in Sunamgonj District of Sylhet Division (Figure 2.1). The haor consists of 46-50 beels of various sizes (Akondo, 1989; BFD, 2012). The area of Tanguar Haor including 46 villages within the haor is about 100 square kilometres of which 2802.36 ha is wetland (Banglapedia, 2006).The haor is located at an altitude of only 2.5-5.5 meters above mean sea level.



Map: Shahriar Rahman, IUCN

Figure 2.1: Map of Tanguar Haor

The wetland is bounded on the north by the Shillong Plateau, an elevated block of Pre-Cambrian Basement rock which has been draped over by late Mesozoic and Cenozoic sediments. The south face of the plateau has been dissected by steep, V-shaped canyon that follows structurally controlled valleys. The southern escarpment of the plateau is bordered by the east-west rending Dauki Fault, which forms a distinct lineament separating the lowlands in Bangladesh from the mountains in India (NERP, 1993b)

Most of the haor area is covered by the Young Piedmont. Alluvial plain which comprises the alluvial fans of the Shillong plateau and also the adjoining basins and basin depressions. The fan soils are poorly to imperfectly drained, strongly mottled brown, loamy sands to clay loams, poorly structured to strongly to very strongly acid reaction. The very poorly drained basin deposits comprise strongly reduced heavy clay lacking any sign of profile development.

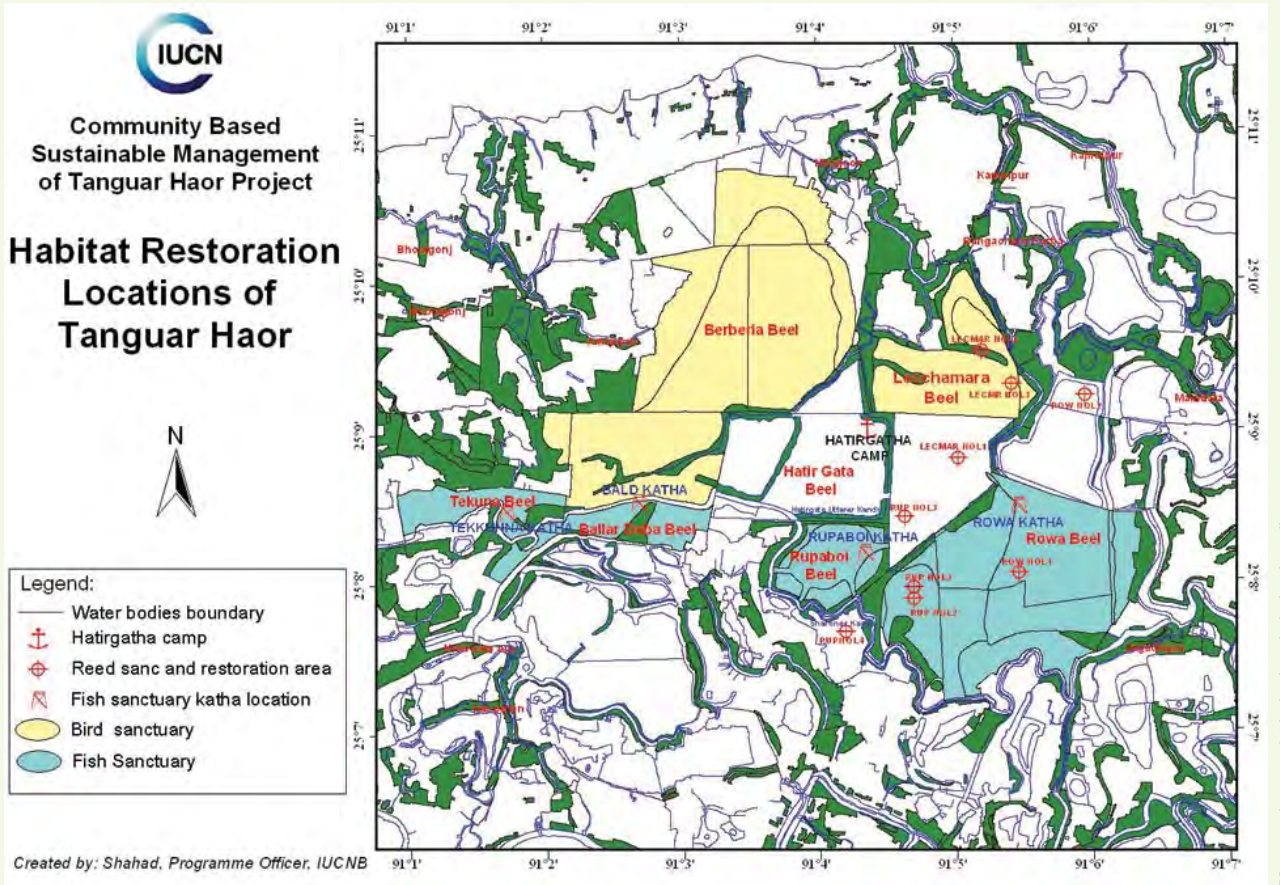
Tanguar Haor is located right at the foothills of the Meghalaya Hills. Apart from these features, location of this haor is another factor for its high biomass production. The haor system is mainly rendered with the blackflow of river waters from Baulai, Patnai and Jadukata rivers. Few hill streams flow into the haor system but the major water thrust comes from the south because of the back flow. The hill streams do bring in some sediment but considering the volume of water held in the haor and the area of the haor itself, it is insignificant. Because of the low quantity of silt plus its dissemination during flooding season this haor is still deep enough compared to the other haors where the rate of sedimentation is comparatively higher.

Due to this backflow the water is relatively clean, free from suspending materials and with less residual matter. As a result the water is transparent and sunlight can penetrate to quite a considerable depth. This increases the lotic area of the water body facilitating the photosynthesis and making it the most productive area (with high biomass) within the northeastern haor basin. It is because of these important physical features that this wetland is still capable of maintaining the ecosystem to its near-natural state resulting in high biomass production.

The area of Tanguar Haor harbours some of the last vestiges of natural swamp forest and is totally flooded in the monsoon season. The floral diversity in this haor is very rich which makes it an ideal place for the migratory birds. As a result, every winter about 200 types of migratory birds come to this haor who make their temporary habitat here and some of these birds also find this area suitable for their breeding.

Tanguar Haor is also extremely rich in terms of fisheries resources and is considered as one of the largest and most important “mother fishery” (centr e for recruitment and dispersal of fish and thus influence the fish production in adjacent floodplains) in the country for floodplain freshwater species. This haor is also a unique habitat for waterfowl.

Koroj forest - A.B.M.Sarowar Alam



Map: Mohammad Shahad Mahabub Chowdhury

Figure 2.2: Habitat Restoration Locations of Tanguar Haor

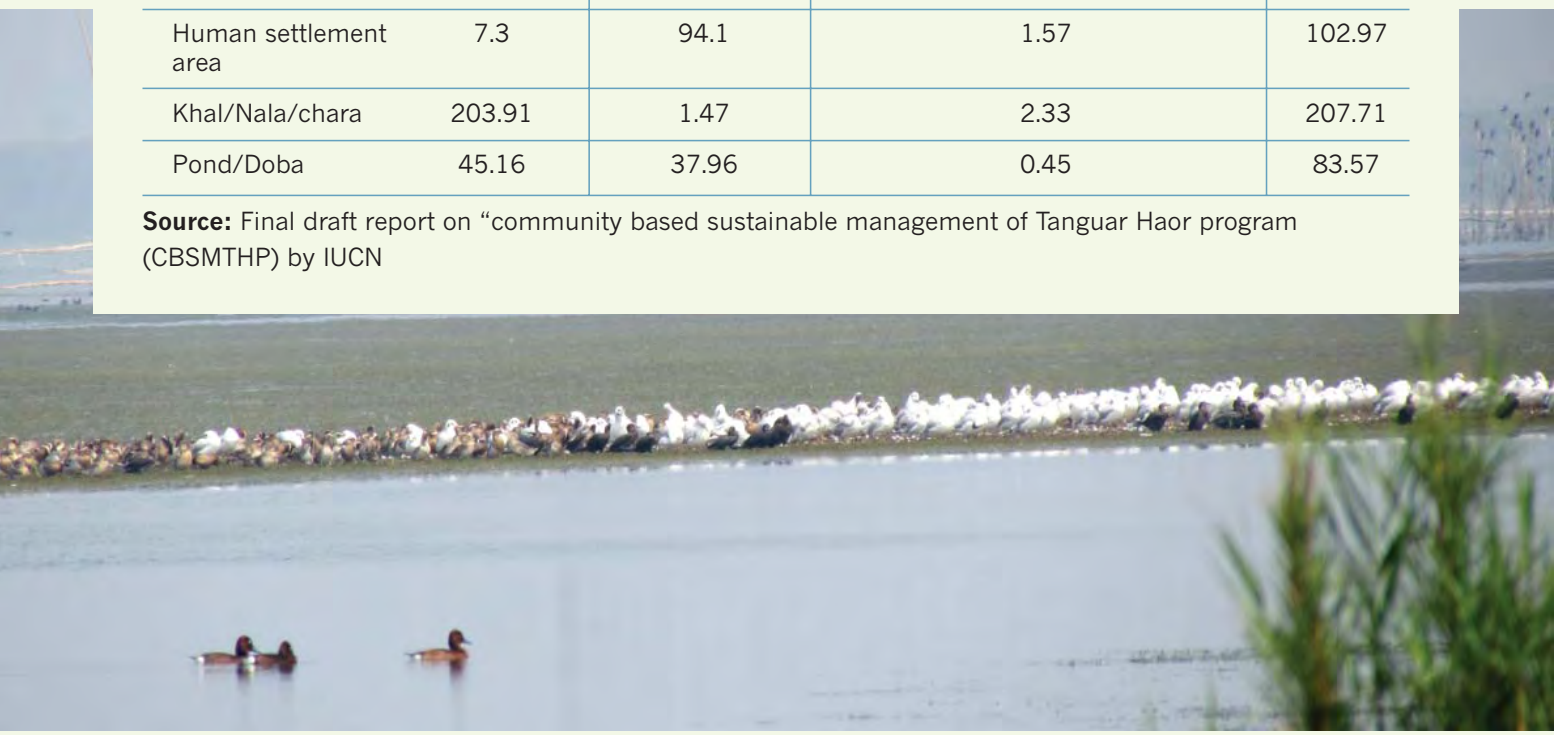
2.2 Human Habitation

Tanguar Haor is a unique habitat for wetland plants, freshwater fish and wetland associated wildlife. It is made up of about 50 small, medium and large interconnecting beels some of which are perennial and others seasonal. The higher grounds located in between beels are locally known as *kanda*. In the rainy season all the beels are united as one large lake, or haor, making Tanguar Haor the larger freshwater wetland in Bangladesh. Deeper beels are connected with rivers in some places but these beels are also interlinked with each other which make a unique character of these beel elsewhere in the country. Additional information on some important habitation statuses and the status of land ownership (Table 2.1) and a resource map of Tanguar Haor (Figure 2.2) are given below:

Table 2.1: Status of land ownership and its distribution in Tanguar Haor area

Distribution of land ownership				
Land category	Area in Hectare			
	Khash land	Private land	Distributed land from *Khash* land	Total
Beel	524.07	4.64	3123.16	3651.87
Reed	163.49	47.25	265.02	475.76
River	348.41	1.01	0	349.42
Fallow land	13.07	0.52	46.54	60.13
Seasonal fallow land	1168.23	3617.21	783.19	5568.63
Cultivated	93.47	3097.34	141.62	3332.43
Seed bed	114.07	141.47	4.76	260.3
Human settlement area	7.3	94.1	1.57	102.97
Khal/Nala/chara	203.91	1.47	2.33	207.71
Pond/Doba	45.16	37.96	0.45	83.57

Source: Final draft report on "community based sustainable management of Tanguar Haor program (CBSMTHP) by IUCN



Waterfowl - A.B.M.Sarowar Alam

2.2.1 Beel

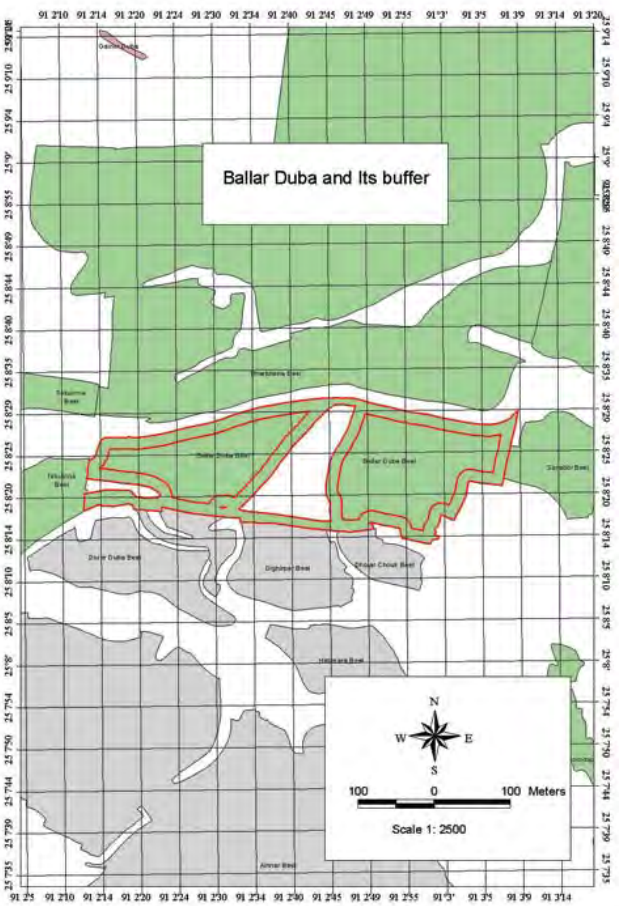
Beels of Tanguar Haor are unique because of good combinations between floral and faunal distribution. There are about 54 beels (Tanguar Haor Resource Maping, 2007, CBS & TSP, IUCN) in Tanguar Haor. Among them 16 are perennial. Total area of the beel is 3651.91 hectares. Some major beels are as follows which will represent the whole Tanguar Haor:

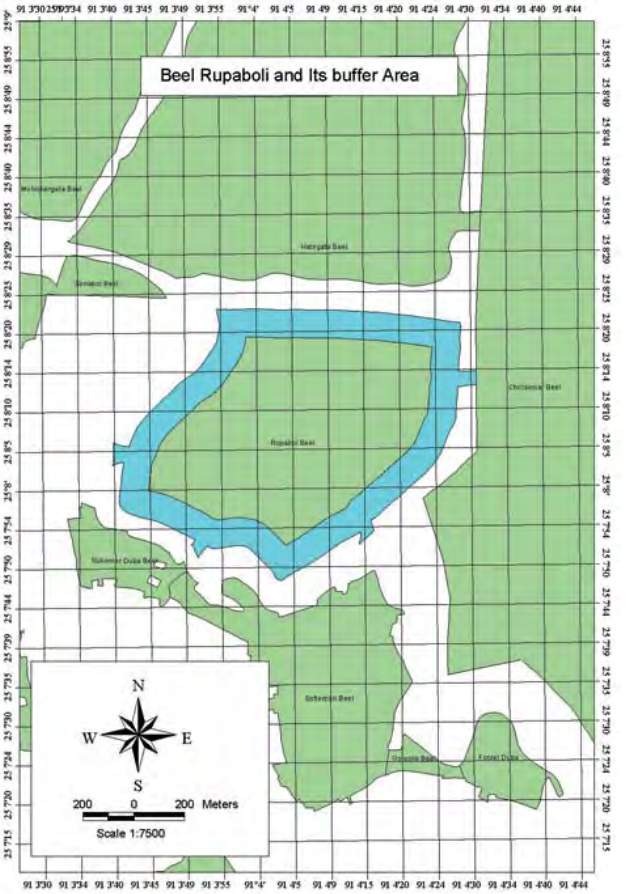
Hatirgatha Beel

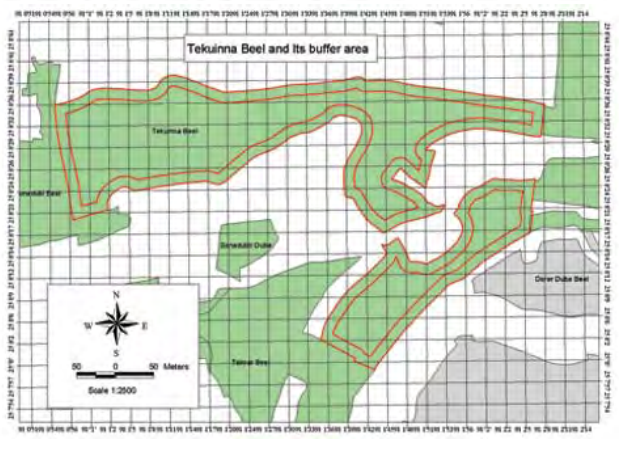
The beel is located (25^0 8' 54" N 91^0 4' 3.8" E) almost in the middle of the Tanguar Haor and north-west of Tahirpur Upazilla. The beel is now declared a micro fish sanctuary and and may also be decarled as a bird sanctuary.

Rare and globally threatened Baer's Pochard and Baikal Teal are found at this beel. Presence of these birds indicates the potentiality of this beel in terms of feeding, roosting and foraging ground. The beel is home to a few submerged, free-floating and rooted floating plants which is also a receptive feature for these wetland birds. Newly planted *Hijal* and *Karoch* in the banks (locally known as *kanda*) of the beel will be an added advantage for the birds and other aquatic wildlife. Gadwalls (51.82%) are found as dominant species of the beel and among the other duck the species presence of Tufted Duck, Garganey and Eurasian Wigeon in this beel are remarkable.

Hatirgatha *Kanda* and flock of cormorant in Hatirgatha *Beel* - A.B.M.Sarowar Alam







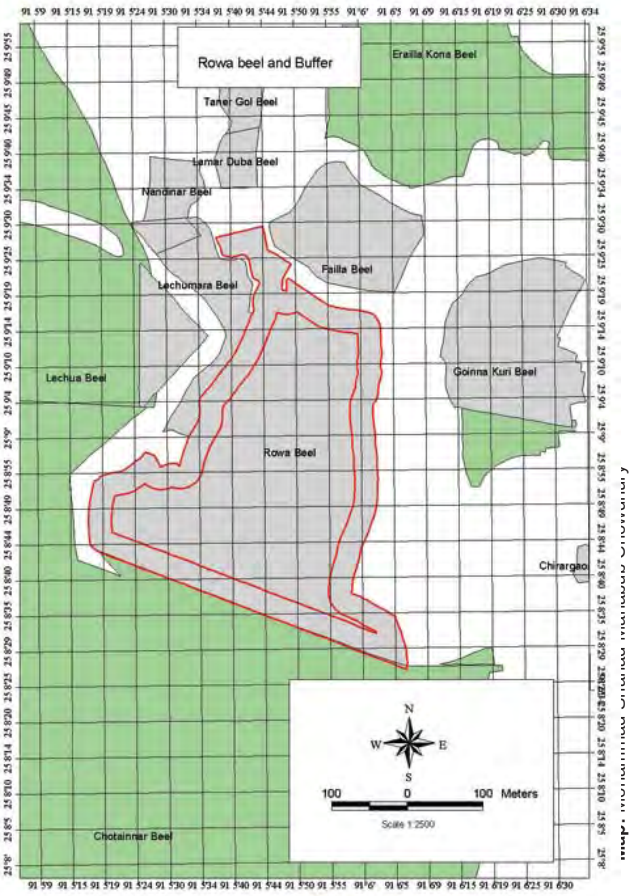


Figure 2.3: Different beels and its buffer zones

Lechuamara Beel

This beel (25^0 8$^{'}$ 33$^{''}$ N 91^0 4$^{'}$ 23$^{''}$E) is closely associated with the Hatirgatha Beel and also situated in Tahirpur Upazila. This beel is a micro fish and bird sanctuary declared by Tanguar Haor project authority. The beel is most prospective ground for water birds. Appropriate shallowness of water, presence of adequate submerged, free-floating, rooted floating, sedges and meadows, reed swamps plants along with other phyto and zooplankton etc, make this beel paradise for winter visitors as well as resident waterbirds. The beel provides breeding grounds and roosting habitat viz. *Kandas* and reed lands with particular vegetation e.g, Nal, Khagra, Hogla (*Typha elephantina*), Chailla ghash (*Hemarthria protensa*), Binnya (*Vitiveria zizanoides*) for thousands of ducks, geese and other water-loving bird and wildlife species. Among the rare birds Mallard can be seen at this beel.

Rupaboi Beel

This beel (25^0 8$^{'}$ 8.7$^{''}$ N 91^0 4$^{'}$ 17.2$^{''}$ E) is surrounded by Hatirgatha to the north, to the east by Chotainna Canal, to the south by Sotterpuri Beel and to the west by a few agricultural lands. It is also in the *Upazila* of Tahirpur. It is a micro fish sanctuary. Birds diversity and population status of this beel is not as noteworthy as Lecuamara and Hatirgatha Beel, but presence of some reed land with *Nal, Khagra*, grasslands and bushy undergrowth makes this beel a suitable habitat for water birds. Red-crested Pochard, Spotted Redshank, Great Crested Grebe and Oriental Darter are some rare birds recorded from the beel while the survey was conducted (2011).

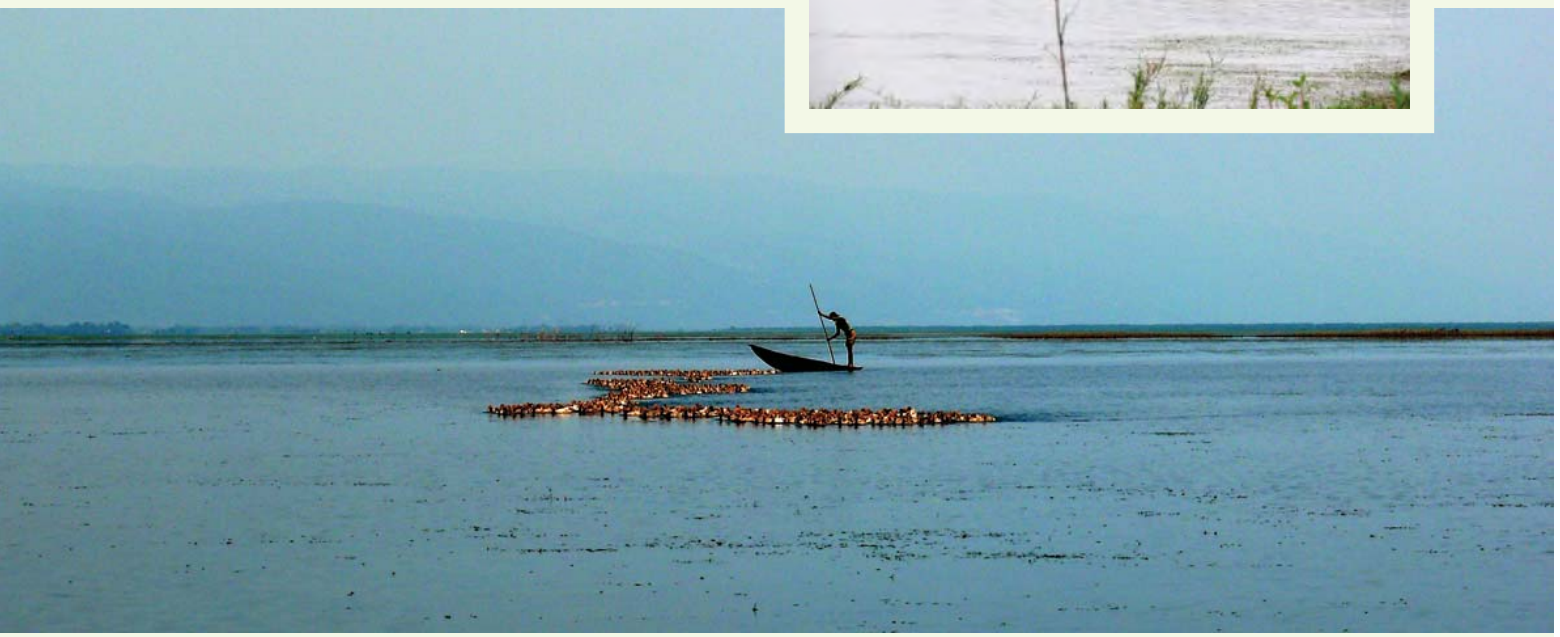
Lechuamara *Kanda, Beel* and Rupaboi *Beel, Kanda (Top to Bottom)* - A.B.M.Sarowar Alam

Rowa Beel

Although the beel (25^0 8$^{'}$ 20.2$^{''}$ N 91^0 4$^{'}$ 17$^{''}$ E) is not a designated bird sanctuary. It represents a large number of water birds. It was earliar declared as a micro fish sanctuary. As a fish sanctuary, a large area is restricted as a no fishing zone. Fishing and other anthropogenic interventions are strictly prohibited in this zone. The periphery of the beel embraces huge aquatic weeds and existence of reed lands with Nal, Khagra and other reed swamp vegetation species allows the habitat to be suitable for water birds and other wildlife. Ruff, Common Redshank, Eurasian Coot and Oriental Darter are some rare birds seen in this beel (4222 ind.).

Ballardubi Beel

The beel (25^0 8$^{'}$ 12.9$^{''}$ N 91^0 5$^{'}$ 28$^{''}$ E) is situated partly in both Tahirpur and Dharmapasha Upazila and is connected to Tekunna Beel through a channel. It is also declared as a fish sanctuary.



Rowa *Beel, Kanda* and Ballardubi *Kanda, Beel (Top to Bottom)* - A.B.M.Sarowar Alam

Tekunna Beel

This large shallow beel (25^0 8$^{'}$ 34.1$^{''}$ N 91^0 1$^{'}$ 43$^{''}$ E) is situated in Dharmapasha Upazila. It is a fish sanctuary and directly connected with Ballardubi and Sonadubi Beel. A few patches of cultivable/agriculture land exist around the beel. The *kandas* of Tekunna Beel is a suitable roosting and nesting ground for water birds. Different varieties of herbs viz. *Khagra* (*Phragmitis karka*), Binnya (*Vetiveria zizanoides*) and Chailla ghash subsisted in the *kanda* which attracted water birds to nesting inside the patch.

Annar Beel

This beel (25^0 7$^{'}$ 38$^{''}$ N 91^0 2$^{'}$ 029$^{''}$ E) is connected with Tekunna Beel through a narrow strip like canal. It is also situated in Dharmapasha *Upazila*. The beel supports few submerged, free-floating and rooted floating plants which attract ducks, egrets, herons etc. The surrounding *kandas* of this beel provide some nesting and roosting amenities for a few waders and other grassbirds.

Tekunna and Annar Beel *(Top to Bottom)*
- A.B.M.Sarowar Alam

Bagmara Beel and *Kanda*

This is situated (25^0 7' 46" N 91^0 5' 47" E) in Tahirpur Upazila. This area is very close to Golabari and Joipur village. The bird species diversity of this beel is amazing although the population density is lesser than the other beels visited during the survey. The globally threatened and rare bird Pallas's Fish Eagle was found nesting in the terrestrial area adjacent to this beel. Among the other rare birds Black Bittern and Long-toed Stint are seen in the beel. Of the migratory birds, one species is summer visitor i.e. Common Hawk-Cuckoo.

Berberia Beel

This beel (25^0 9' 15" N 91^0 3' 37" E) is a bird sanctuary declared earlier by the Tanguar Haor project authority. It is located partly at Tahirpur and Dharmapasha Upazila. Jhaji, pata sheola, kochuripana, Khudipana, Shingara, panchuli, joina, shada shapla, chandmala, ichadal etc. make this beel a unique habitat for water birds, frogs and other wildlife. The beel has the desirable depth for dabbling ducks like Eurasian Wigeon, Gadwall, Mallard and Northern Shoveler etc. This is an ideal habitat for migratory waterfowl. Among the rare sightings from this beel is the significant presence of Falcated Duck and Common Pochard. This beel is also declared as micro fish sanctuary. It is also a excellent site for fish egg spawning too. Diversity of bird species of this haor is less than the other bird sanctuary. This is because of the anthropogenic disturbance. People from the beel adjacent villages' viz. Rupnagar, Indrapur, Kanda para, Bakatola, Bangalvita previously came regularly and collected resources to meet their needs.

Bagmara Beel, Golabari Canal and Berberia Beel *(Top to Bottom)* - A.B.M.Sarowar Alam

Ulan Beel

This beel is located at the outskirts of Tanguar Haor and situated at Tahirpur *Upazila*. In dry season almost half of the beel is transformed into agriculture land. This beel is surrounded by agriculture land. More than 1200 individuals of Black-tailed Godwit are found in the paddy field adjacent to this beel. Among the rare birds Bar-tailed Godwit and Pallas's Fish Eagle were also found here during the survey.

Kalmar Beel

This beel is located at Dharmapasha *Upazila*. The periphery of this beel is filled with *Khagra* and other species of the family of Poaceae.

Ulan and Kalmar Beel *(Top to Bottom)*
- A.B.M.Sarowar Alam

2.2.2 *Kanda*

Beels of Tanguar Haor retain water throughout the year. Intermediate place between the Haor basin and homestead land are called *kanda*. There are about 180 *kandas* (IUCN) in Tanguar Haor. These *kandas* support the major plant communities during drier months. At the onset of monsoon or floods all these *kandas* go under water transforming the entire wetland into a single sheet of water changing the whole scenario. The depth of flooding during monsoon ranging from 2 to 10 meters depending on the ground elevation. Usually reed swamp plants are found in these *kanda*. *Kanda* is fairly deeply flooded during the rainy season and dry out during the dry season. There are many *kandas* in the Tanguar Haor area which are *khas* land though some agricultural practices are done but mainly works as grazing land for cows, buffalos birds and fish to breed once they started submerged.

The major *Kandas* of Tanguar Haor are Lachuamara, Rupaboi, Rowa Beel interconnected *kanda*, Ballardubi Beel *Kanda*, Tekunna and Annar Beel *kanda*, Hatirghata Beel *Kanda* and Berberia Beel *Kanda*.

Chattainna *kanda* - A.B.M.Sarowar Alam

2.2.3 River

Tanguar Haor is in North-East part of Bangladesh, adjacent to the Indian border, is part of a wetland/floodplain complex of the Meghna and Surma river basin. These two rivers are among the main tributaries of the Brahmaputra river. This site is also influenced by Dhanu Baulai and Jadukata Rivers. Meghalayan Hills are in the North from where a number of hill streams flow into the haor. Other important haors like Matian, Shanir and Thapner are very nearby and have some dependency with some degree of variation. Total river area is 359.39 hectares.

Baulai River - A.B.M.Sarowar Alam

2.2.4 Canal/Khal

About 44 narrow water canals slope down to the Tanguar Haor from Indian territory and 30% of these have constant flow throughout the year while rest only remain alive only in monsoon. These water flows (narrow canals and rivers) result in huge sediments to the beels and adjacent upland (villages).

Chattainna Canal

This canal is located (25^0 8$'$ 22$''$ N 91^0 5$'$ 12$''$ E) at Tahirpur *Upazila* and is directly connected to Rupaboi Beel. Reed swamps, *Nal, Khagra, Dholkalmi, Phutki* and other herb/shrub etc. are seen to have existed on both side of the canal which supports a number of rare birds like Ruddy-breasted Crake, Indian Spot-billed Duck and other wildlife. Presence of Rare Glossy Ibis has attracted focus on this canal. A big *Karach* forest patch was observed at the Joipur village end adjacent to this canal.

Chattainna Canal - A.B.M.Sarowar Alam

2.3 Climatic Feature

The climatic condition of Tanguar Haor is sub tropical-monsoon with three dominating seasons, summer, monsoon and winter. Average annual rainfall is about 8000 mm in the northern part of Sunamganj with 65-69 % of the total rainfall occuring in the summer. Evaporation enhances rainfall during the spring causing flash floods in Tanguar Haor. Summer starts from the month of April to June with the temperature ranging from 30.9 ~ 33.4^{0}C, monsoon from May to September and winter from October to February where the temperature ranges from 8.5 ~ 16.6^{0}C. Humidity is about 83% in wet season and 64% in dry season. Climatic data (Rainfall, Evaporation and Temperature) for the following BMD meteorological stations has been collected for this study (Table 2.2).

Table 2.2: Rainfall, evaporation and temperature stations with periods of records

Data Type	Station No. (Name)	District	Periods of Records
Rainfall	CL 121 (Mohanganj)	Netrokona	1980-2006
	CL 127 (Sunamganj)	Sunamganj	1980-2008
	CL 49 (Laurergarh)	Sunamganj	1996-2010
	CL 124 (Pagla)	Sunamganj	1980-2004
	CL 123 (Netrokona)	Netrokona	2007-2011
Evaporation	CL 127 (Sunamganj)	Sunamganj	2007-2010
	CL --- (Sreemongal)		
Temperature	Sylhet	Sylhet	1981-2010

Source: BMD & BWDB,2010

2.3.1 Rainfall

The north-eastern part of Bangladesh experiences higher rainfall than other parts of Bangladesh due to its physiographic considerations. Total number of rainy days in Sylhet (149) is more than that of Srimangal (116) with higher annual normal rainfall (4195.9 mm in Sylhet, 2354.8 mm in Srimangal). More than 80% of annual total rainfall occurs during the May to October period in both Sylhet and Srimangal area. The rainfall distributions in March to October, April to October and May to October for Sylhet and Srimangal stations show similar percentages (Table 2.3).

Table 2.3: Average normal rainfall (mm) and number of normal rainy days at Sylhet and Srimangal

Month	Sylhet		Srimangal	
	Amount of Rainfall (mm)	No. of Rainy Days	Amount of Rainfall (mm)	No. of Rainy Days
January	9.4	2	5	1
February	36.2	4	31.3	3
March	155.3	9	84.1	5
April	375.6	16	216.1	11
May	569.6	20	449.9	18
June	818.4	22	449.7	18
July	819.2	25	339.4	17
August	612.6	22	299.3	18
September	535.9	18	278.5	14
October	223.9	8	150	7
November	30.4	2	40.3	3
December	9.4	1	11.2	1
Annual Total	4195.9	% of Total	2354.8	% of Total
Mar-Oct	4110.5	97.96467981	2267	96.27144556
Apr-Oct	3955.2	94.26344765	2182.9	92.70001699
May-Oct	3579.6	85.31185205	1966.8	83.52301682

Source: BMD & BWDB, 2010

According to the rainfall analysis, highest rainfall occurs in the months from June to August occurring at Laurerghar (CL 49), Sunamganj (CL 127) and Mohanganj (CL 121) stations [Figure 2.4 (a,b,c)]. Highest average rainfall (1242.47 mm in August) was found at the Laurerghar station. The Mohanganj station shows peak during the months of June and July with a sudden rise in the months of August and September. Sunamganj station records show general trend of rainfall distribution similar to the other parts of the country.

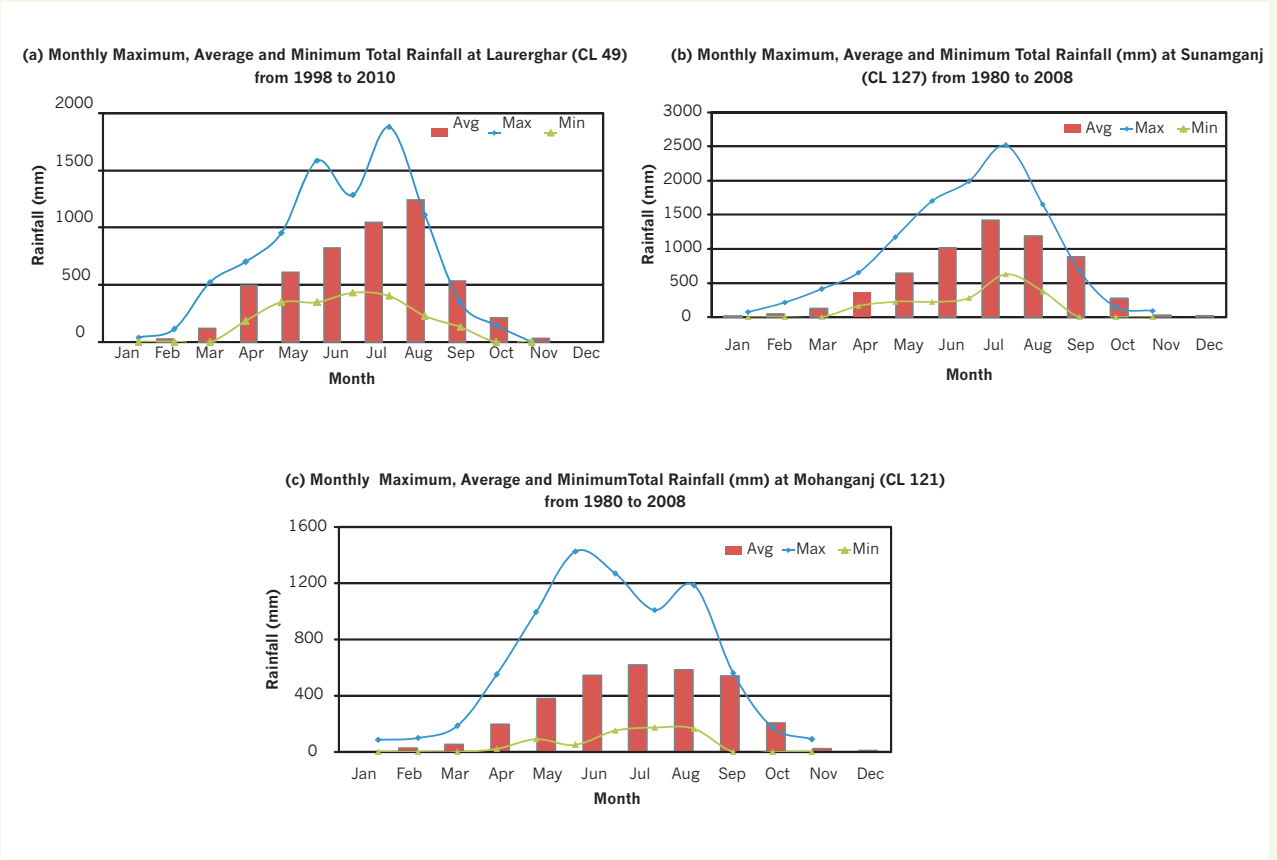


Figure 2.4 (a, b & c): Monthly, maximum and average total rainfall (mm) at Laurerghar (CL 49), Sunamganj (CL 127) and at Mohanganj (CL 121) stations from 1980 to 2008

2.3.2 Evaporation

Balance amongst rainfall, temperature and evaporation maintains the hydro-meteorological system in Tanguar Haor area. Evaporation from open water and transpiration from vegetation are functions of solar radiation, temperature, wind speed, humidity and atmospheric pressure, characteristics of the surrounding environment, and type and condition of vegetation. Monthly distributions of evaporation for Sunamganj shows average monthly evaporation of about 522.19 mm. Highest monthly evaporation at Sunamganj station has been observed during the months of March to June and lowest during the months from December to February (Figure 2.5a).

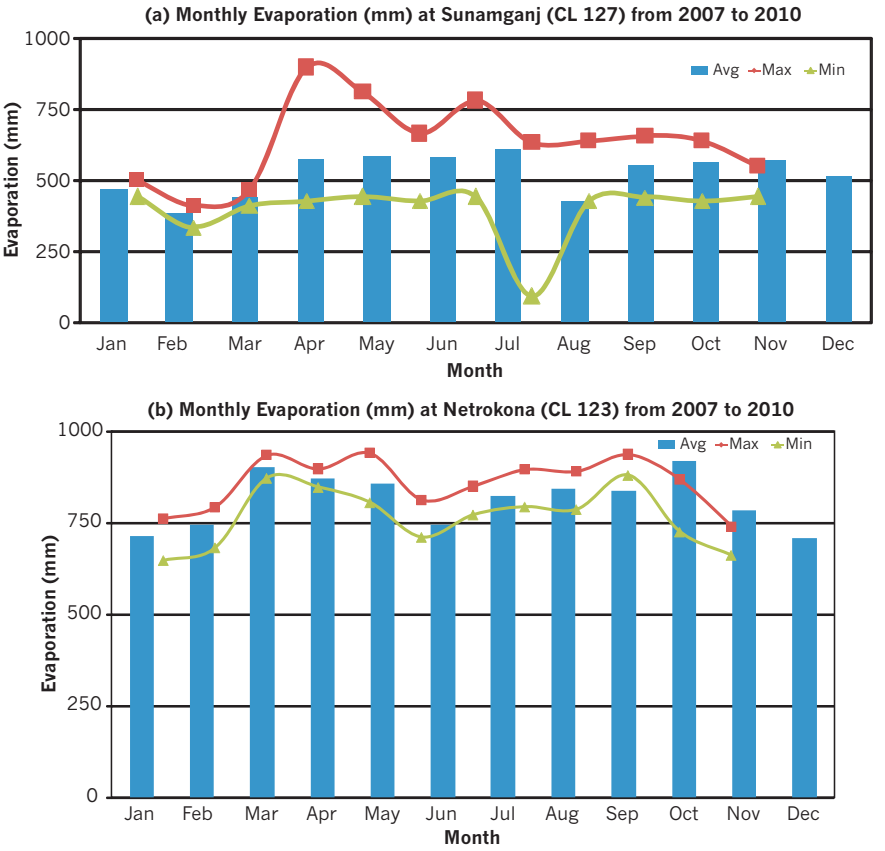


Figure 2.5(a, b): Monthly evaporation (mm) at Sunamganj (CL 127) and Netrokona (CL 123) Station from 2007 to 2010

Monthly average evaporation at Netrokona station (CL 123) shows the similar pattern as the Sunamganj station. The evaporation ranges from 647.19 ~ 940.73 mm with an average monthly evaporation of about 812.29 mm from the year 2007 to 2010 (Figure 2.5b).

2.3.3 Temperature

Temperature is an important meteorological parameter for maintaining ecological balance in Tanguar Haor . The Sylhet area has been experiencing temperature range from 9.68 ~ 35.7^{0}C (from January to December).

Reeds - A.B.M.Sarowar Alam

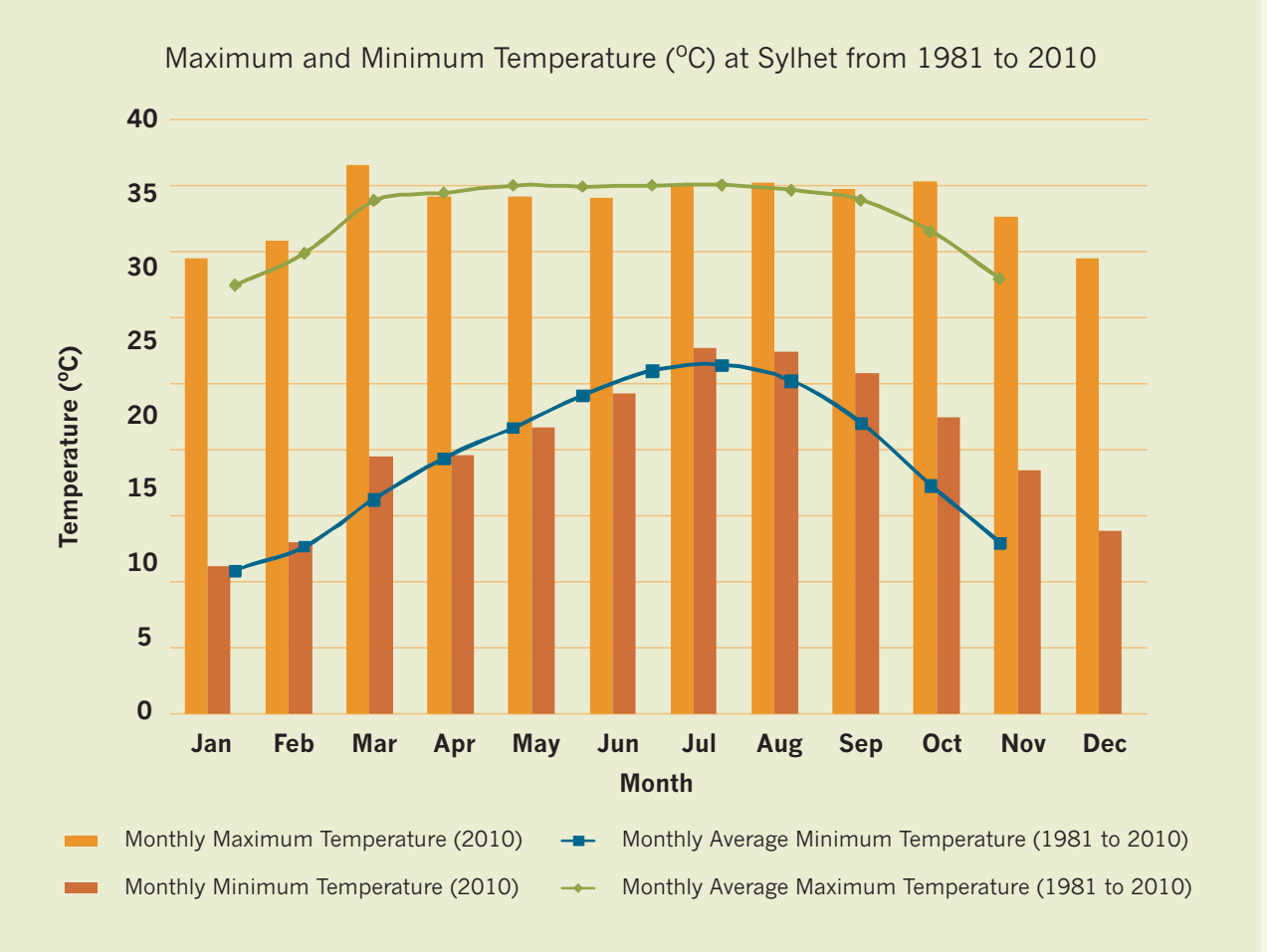


Figure 2.6: Maximum and minimum temperature (^{0}C) at Sylhet Station from 1981 to 2010

According to the historical monthly maximum and minimum temperature analysis (from 1981 to 2010), maximum temperature occurs in the month of March-April while minimum temperature occurs in December and January (Figure 2.6).

Chapter 3

Biodiversity Assessment Method

Biodiversity is a broad term and commonly defined through three different components: intraspecific genes (genetic diversity), interspecific species (species diversity) and ecosystems (ecological diversity) (UNEP, 2003). Each of these have structural, compositional, and functional attributes. Identifying, measuring and monitoring of these are complex. To overcome this problem national and international initiatives are needed to identify simplified and significant methodologies of biodiversity assessment. During the study in Tanguar Haor, with special emphasis to species diversity, three main rationales, identified for biodiversity assessment, are as follows:

- Firstly, to conduct biodiversity surveys for establishing inventories;
- Secondly, to conduct a gap analysis in our knowledge pertaining to Tanguar Haor; and
- Thirdly, to monitor biodiversity changes.

Purple heron - Sayam U. Chowdhury

A survey of biodiversity has been conducted in the major sites of Tanguar Haor. Different methodologies were undertaken to study faunal diversity (mammals, birds, reptiles, amphibians and fish diversity) and also for floral diversity. Collection of data was based on the direct observation of the faunal and floral diversity in the field. Further interviews with local people were taken to gather information regarding past records of some birds and other wildlife. With a description of study sites, the details survey methodologies are given below:

3.1 Study Sites

According to the statistics of GoB, around 50 beels occupied the haor, out of which major 12 beels were selected through a random primary assessment which involves identification of bird sanctuaries (e.g, Berberia, Lechuamara), fish sanctuaries (e.g, Rupaboi, Rowa, etc.), artificial no fishing zone, fishing zone, etc., to represent the whole haor's scenario. The selected beels are Hatirgatha, Lechuamara, Rupaboi, Rowa, Ballardubi, Tekunna, Bagmara, Chattainna, Berebiria, Annar, Ulan, Kolmar located at Tanguar Haor. The survey also includes some terrestrial grounds of Indrapur, Birendranagar, Ratanpur, Binodpur, Paniakhali, Rupnagar, Kandapara, Bakatola, Banglavita, Lamagaon, Golgolia, Noagaon, Rongchi, etc. The following map shows the study areas where the survey was conducted.

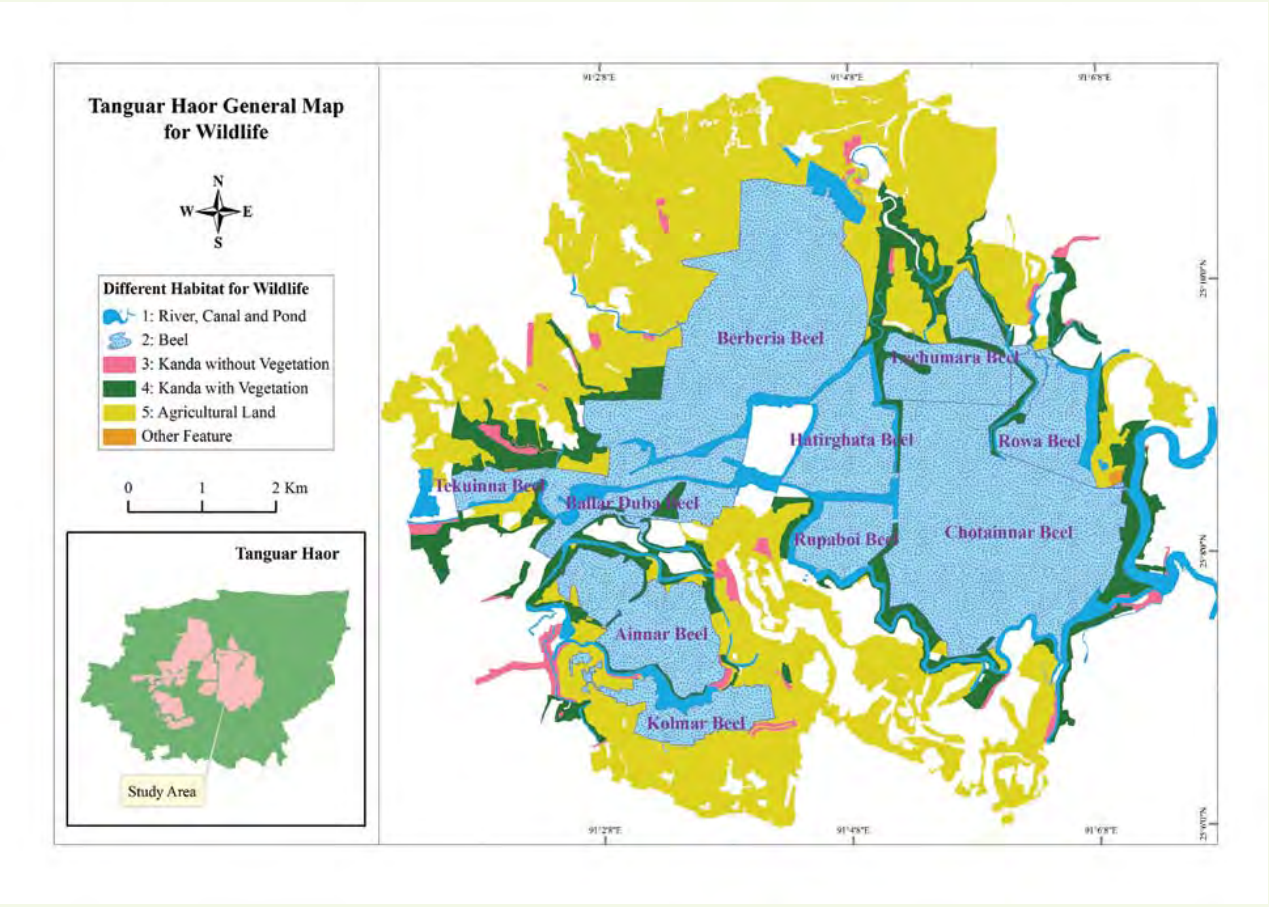


Figure 3.1: Map showing the study areas for wildlife survey in Tanguar Haor

3.2 Wildlife Survey Methodology

The survey was focused primarily on waterfowls. In addition, other species of amphibians, reptiles, birds and mammals were also surveyed during the field visits.

3.2.1 Mammal survey methods

Strip transect sampling

Transect line (1 km) has been used during the survey of mammals, as strip transect sampling (*Buckland et al. 2001*) is the most suitable to estimate the population status and relative abundance of wildlife. Observation of all individuals at the line and estimation of the proportion has been conducted.

In this method the observer(s) slowly walks on a relatively straight line through the study area and counts the objects from both sides. For Tanguar Haor boat surveys were conducted on the beels, *kandas* and some terrestrial area. The initial location of the object is always needed to be considered, as the object might move after watching the observer(s). If any object is observed beyond the pre-decided observation-range, or if the object is coming from the back (in order to avoid duplication), the observation was not recorded.

Focus Group Discussion

Focus group discussion was carried out through questionnaire surveys to collect data which was used in clarification of information obtained.

Literature review

An extensive review of literature on mammals of the Tanguar Haor was carried out to find a list of all species historically known to occur here.

Individual recorded

Individual number of mammals was recorded through direct field visits and surveys.

3.2.2. Bird survey methods

Data was collected by strip transect sampling, opportunistic survey and visual observation. The methods are briefly described below:

Strip transect sampling

Strip transect sampling has also been followed during bird survey. This survey was conducted in morning and afternoons when the birds are most active. Transects were located in areas which are suitable in terms of observation in each study site.

This method assumes that all objects in the strip are recorded, so the observer(s) is very careful in observing and recording the objects. Even then, the observer(s) may miss some of the objects in the strip, but it should not be more than 5% of the total objects, so that the error is statistically insignificant. The more areas covered in strip transects subsequently leads to a lower error in the result. Transects should be located predominately in places of the study sites where there is a probability of high biodiversity and hence a high number of objects. Even if any centre line of transect is slightly undulated, the observation-strip is maintained roughly straight by manipulating the observation distance to that particular area. The birds will be observed and identified properly and carefully, so that there is no misidentification.

Opportunistic survey

In the opportunistic survey, any important or interesting observation/information was recorded at any time while in the field. This method is suitable for recording the occurrences, relative abundance and distribution of different species of birds and other wildlife, especially for those species which are rare or uncommon.

Although the opportunistic survey is an informal way of collecting information, the outcome can be very useful. However, if this is not carried out with sufficient care, wrong information can be recorded and the results can be biased. The method gives the opportunity to record scatter but important observations and information on rare and/or threatened birds and other wildlife, which cannot be studied formally due to their rarity.

Bird survey - Shahriar Rahman & A.B.M.Sarowar Alam

Identification of birds

The birds were observed either through a pair of wide angle binoculars, telescope or by the naked eye. Notes were taken on ecological and ethological aspects of all observations. The identification was based mainly on external morphology, calling (Mitchell, 1977), flight and sitting postures and behaviours.

Birds were identified with the help of key characteristics and illustrations guide Birds of Indian Subcontinent by Grimmett, *et al.,* (1999), Birds of South Asia The Ripley Guide by Rasmussen *et al.,* (2005) etc.

Population status of birds

The status of birds was determined by direct field visit-method (Khan, 1980). The relative abundance of birds was assessed as: 'Very Common' (seen in 80-100% of visits), 'Common' (seen in 50-79% of visits), 'Uncommon' (seen in 20-49% of visits), or 'Rare' (seen in <19% of visits). For wintering migrants, abundance was assessed only during the months they were present.

The global threat status was done following the 2000 Red List of Threatened Species and National Threat Status which was done following the Encyclopedia of Flora and Fauna of Bangladesh (Asiatic Society, 2008), Volume-26. The taxonomy and scientific nomenclature of the birds were given according to Grimmett *et al.,* (1999) when checklists have been arranged following Khan (2010).

Diversity of birds

Diversity is probably one of the most misused and incorrectly calculated attributes. Perhaps the most common misconception is that species richness and diversity are synonymous. Although related, they are distinct. Species richness is the total number

of species presents in a given area or samples whereas diversity takes into account how individuals are distributed amongst those species, i.e., the species frequency distribution. In fact, it turns out that nearly all quantitative measures of diversity are some combination of the two components, species richness and evenness, where evenness describes how equally individuals are distributed amongst the species.
After collecting data by using the strip transect method to analyze bird community diversity, Shannon-Wiener's (H') and Simpson's diversity indices was used. The Shannon-Wiener index is generally used in ecological studies concerned with the number and abundance of rare species while Simpson's index considers more abundant or common species (Peet, 1974).

Shannon-Wiener's diversity index
(H') = ∑ Pi In Pi

Where,
P_i = ni/N is the Proportion of all the birds individuals to the i^{th} species.
n_i = number of individuals or amount (e.g. biomass) of each species (the ith species)
N = total number of individuals (or amount) for the site, and In = the natural log of the number. Values range from 0 to 5, usually ranging from 1.5 to 3.5.

3.2.3 Reptiles and Amphibians survey methods

The survey was conducted between May and June 2011 on the selected sites for the survey. The total study sites were divided into few categories according to the habitat required by the amphibians or reptilians. For both the amphibian and reptilians the study sites were divided into different habitat niches. The surveys were conducted almost everywhere on the study sites; paddy fields, some forested areas, edges of forest, roadsides, drainage system, under logs, human debris, holes on the ground, tree holes, burrows, leaf litter, under low lying vegetation, rain water puddles, polluted water, temporary stagnant water and from slow to fast moving streams etc. A variety of methods were employed to survey the herpetofauna:

Transect lines (1km long) were establish at 6 sites. Diurnal censuses were conducted for herpetofauna along each transect. This involved slowly walking along the transect line, pausing at regular intervals and recording the number of each species were observed. Each transact was examined five times during the following daytime intervals: early morning and late afternoon and sometimes during the evening.

Opportunistic searches were conducted for reptiles and amphibians over a wider area. The search generally comprised walking slowly through various habitats.
Nocturnal searches were conducted for frogs and reptiles. These searches were mostly targeted at, or near, aquatic environments but nocturnal searches, specifically targeting geckos, frogs and snakes were also conducted in bushy habitats and holes, hollows or burrows.

3.3 Fish Survey Methods

1. Review commercial harvest and data collection and development of framework section (including laps/gaps if any), fisheries and reeds.
2. Review non commercial harvest and data collection and development of framework

section(including laps/ gaps if any), fisheries and reeds.

3. Review illegal harvest and data collection and development of framework section fisheries and reeds.
4. Review harvest status and prescribe harvest limit of reeds (mainly based on local knowledge (part by part/ percentage/ time gap etc.) and data collection and development of framework section.
5. Field trial/ test of the community led data collection (blending comfortable and workable approach: technical and social convenience).

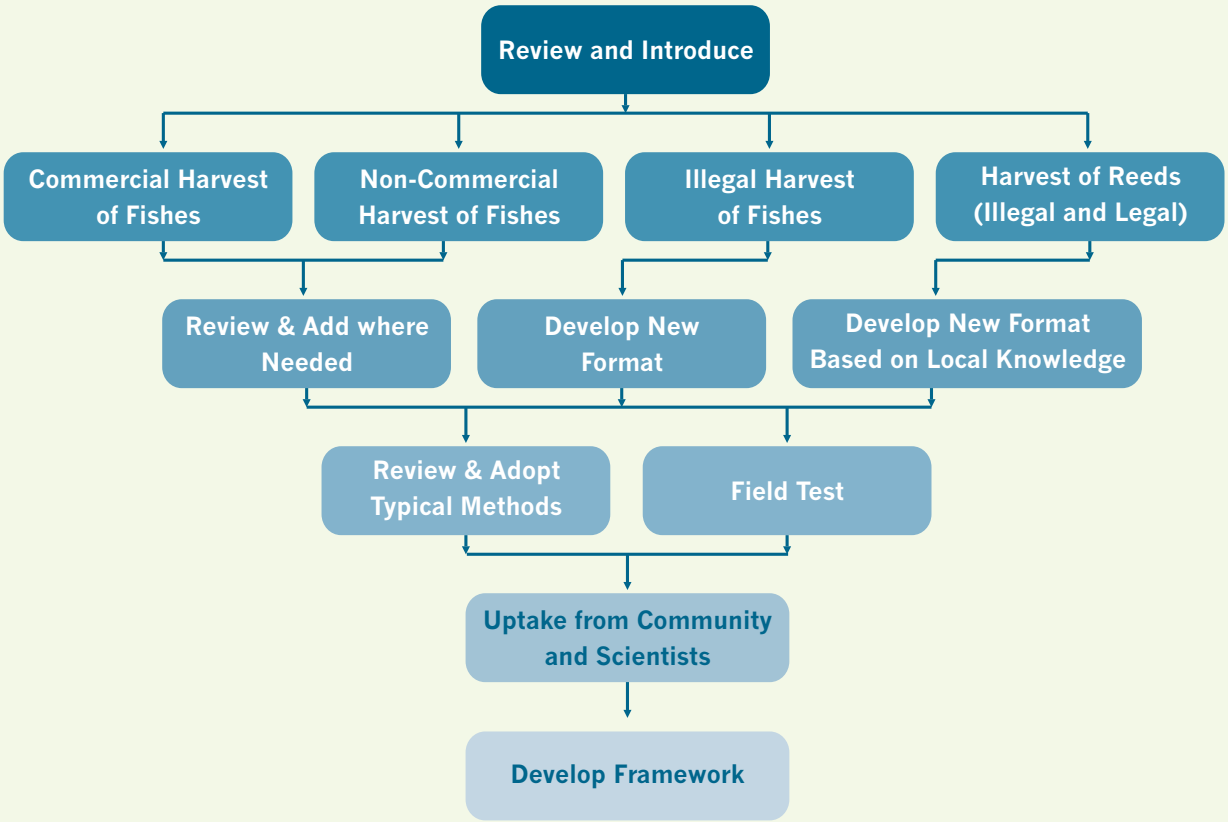
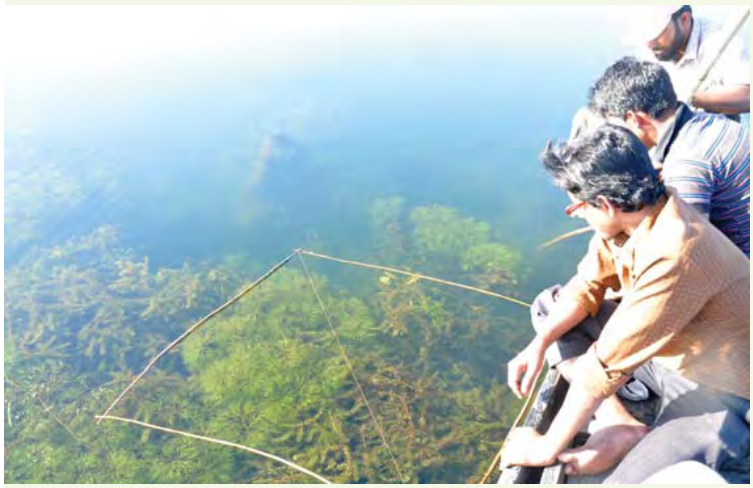


Figure 3.4: Flow chart summarizes the approach and methodologies for this assignment

Fish survey - IUCN Bangladesh country office

3. 4 Floral Survey Methods

Vegetation analysis of a particular area needs several things. First of all, observation of the floristic composition of the area is necessary. Then data should be collected for the determination of the quantitative analysis of the diversity. For the total species documentation field screening is required. Random sampling is the best for the reliable result, but it does not always work well. Total random sampling may not represent the diversity.



Floral survey - A.B.M.Sarowar Alam

3.3.1 Determination survey method:

There are two common methods which usually used for the vegetation survey. They are:

1. Quadrate method, and
2. Line transects method.

Application of the method depends of the research area. Quadrate method is the most applied method for the collection of quantitative data for vegetation analysis. We selected quadrate method for the analysis because it covered most of the species. Generally the line transects method was used for the vegetation analysis of sloppy area of hilly regions.

3.3.2 Determining size of quadrate:

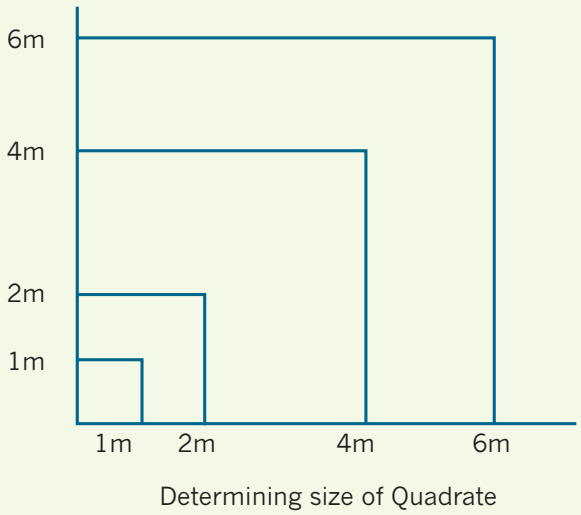


Figure 3.5: Determining size of Quadrate in flora study

The number of species obtained per quadrate is plotted against the size of the quadrate as follows. This curve is known as species-area curve. It is seen that the number of species recorded in 1x1m quadrate is same as 4x4m and also with 6x6m quadrate. The species recorded in .5x.5m quadrate is less than 1x1m. This indicates that the optimum size for the survey is 1x1m quadrate, which will be economical as well.

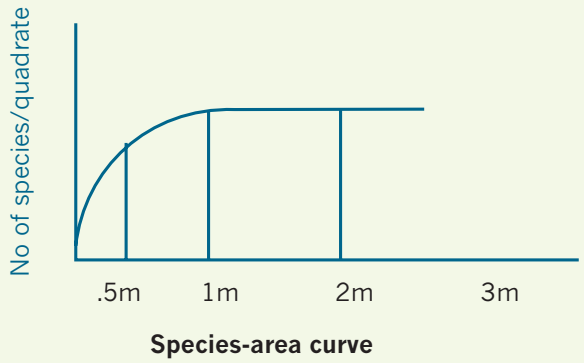


Figure 3.6: Species – area curve for study of flora

Analysis of Data

$$\text{Density} = \frac{\text{Total number of of individuals in all quadrate}}{\text{Total number of quadrate studies}}$$

$$\text{Frequency} = \frac{\text{Number of quadrate in which species occurred}}{\text{Total number of quadrate studied}} \times 100$$

$$\text{Abundance} = \frac{\text{Total number of individuals of species in all quadrate}}{\text{Total no of quadrate in which the species occurred}} \times 100$$

There are two methods for the determination of the diversity status of an area on the basis of the above data. These are:

1. Shannon-wiener index (H) = $-\sum Pi\log_n Pi$

2. Simpson Index $D = \frac{\sum n(n-1)}{N(N-1)}$

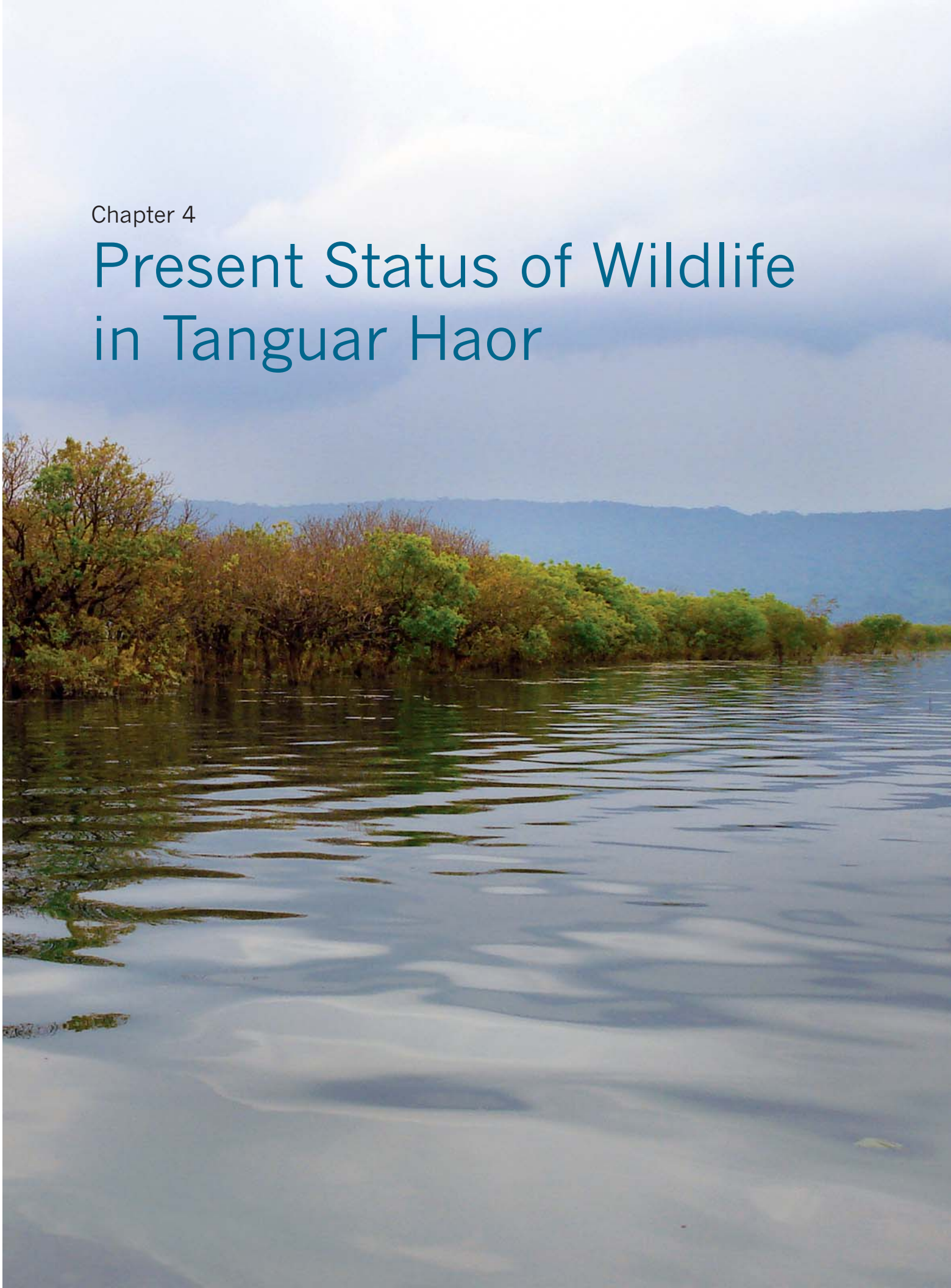
n = the total number of organisms of a particular species
N = the total number of organisms of all species

Simpson's Index of Diversity = 1 - D

The value of this index also ranges between 0 and 1, but now, the greater the value, the greater the sample diversity. This makes more sense. In this case, the index represents the probability that two individuals randomly selected from a sample will belong to different species.

Chapter 4

Present Status of Wildlife in Tanguar Haor



Survey of wildlife has been conducted in selected major beels and adjacent terrestrial areas of Tanguar Haor, and status and distribution has also been recorded accordingly. As Tanguar Haor is recognized as a unique place being home to thousands of resident and migratory water birds, survey of bird fauna has been given priority during this study. Details of observations and findings are as follows:

4.1 Mammal

Based on NERP (1993a) and DoZ (1997) the number of mammals is 34 under 15 families. Among these 17 are considered as few, 7 are fairly common, 5 are rare and 5 are occasional.

During this present survey (2011) we have recorded 19 species of mammals (Appendix-1) of which 10 were from direct field visits and 9 from focus group discussion and literature review. The seven mammal species found during field visits are Indian Flying Fox, Greater Bandicoot Rat, Lesser Bandicoot Rat, House Rat, Haouse Mouse, Fishing Cat and Small Indian Mongoose.

Jackal - Samiul Mohsanin

Tanguar Haor is a very suitable habitat for Fishing Cat. During dry season the *kandas* of the haor get visibility. The Fishing Cats hide in these *Kandas* at day times. Tekunna *Kanda*, Rupaboi, Golabari-Jaipur and Chattannai *Kanda* are very important shelters for this globally threatened species.

Plenty of bushy undergrowth in and around homestead areas supports Golden Jackal and Small Indian Mongoose. Besides this number of cultivated land, paddy fields exit in the haor adjacent areas that also provide food supplements to other lower mammals like rats, mice, etc.

4.2 Bird

Tanguar Haor is the home to thousands of resident and migratory water birds. A large number of these birds use the aquatic vegetation for shelter, food and nesting. Status and diversity of birds in different beels in this haor area ware analysed. We have also identified some rare sighting birds which are nationally and globally threatened.

Earlier Geison & Rashid (1997) estimated the number of bird species in Tanguar Haor as 219. Their record included ducks, geese, shelduck, wigeon, shoveler, pintail, teal, pochard, woodpecker, flameback, barbet, hoopoe, roller, kingfisher, bee-eater, coucal, koel, swift, swallow, pigeon, dove, crake, rail, swamphen, moorhen, coot, snipe, godwit, sandpiper, greenshank, stint, jacana, plover, lapwing, gull, grebe, cormorant, egret and herons etc. It is estimated that the influx of migratory birds has declined by about 65% since independence of this country (1971), and the primary reason for this is regarded to be indiscriminate hunting.

During this present survey (2011), a sum of 167 species (total individuals - 65,010) was identified. Among them 50.08% are aquatic and 49.10% are terrestrial. The survey team found 50.29% migratory and 49.70% resident birds. Of all the birds 12.57% were ducks, 6.58% were raptorial and 18.56% were waders. A diagram (Figure 4.1) of different groups of birds found in Tanguar Haor has been given below:

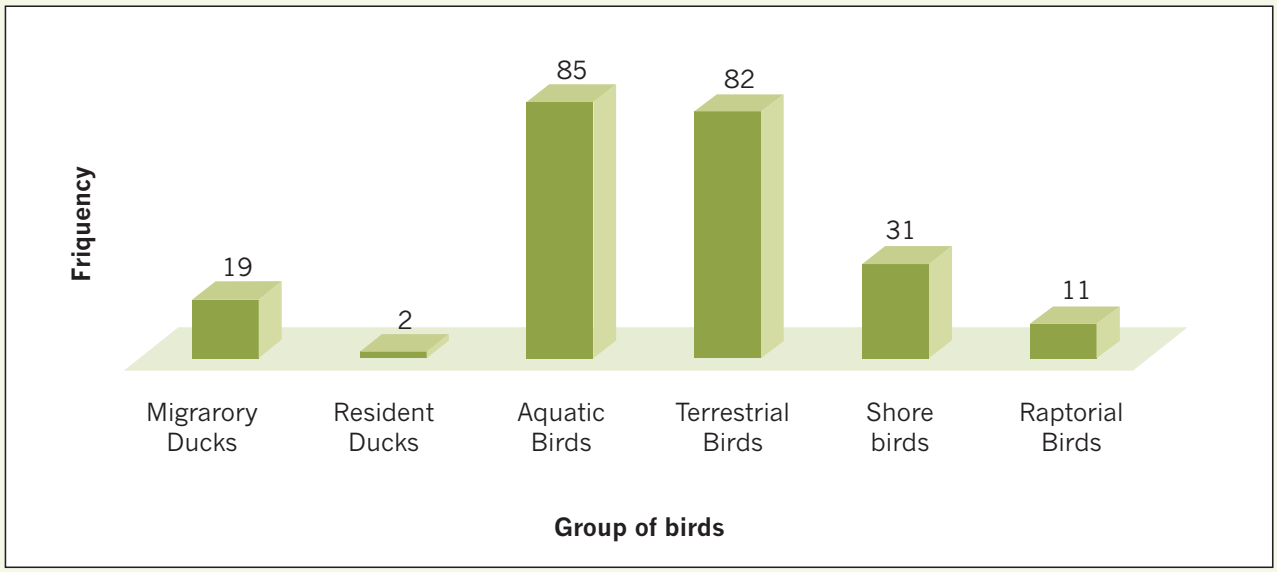


Figure 4.1: Group of birds recorded during the survey

Lechuamara, Hatirgatha, Rowa, Berberia, Rupaboi Beel and Bagmara were found as most potential habitats for waterbirds. Gadwal (20,729), Erasian Coot (10,096) and Garganey (6,612) were abundantly found in the haor. The highest population is observed in Lechuamara Beel (13,304) and the most frequent sighted bird is Gadwall. The lowest population of bird is seen in Hatirgatha Beel.

During the survey 86 (13,294 individuals) and 55 species (10,504) were recorded from Lechuamara and Berberia Beels (two bird sanctuaries) respectively. Berberia, Lechuamara and Hatirgatha possess welcome features (shallowness of water, presence of adequate phyto and zooplankton etc.) for ducks and other waterbirds. This may have happened only due to anthropogenic disturbance. Though this, Ballardubi Beel is in poor state in terns of species and population availability. Detailed observation is reflected in Figure 4.2 and 4.3 given below.

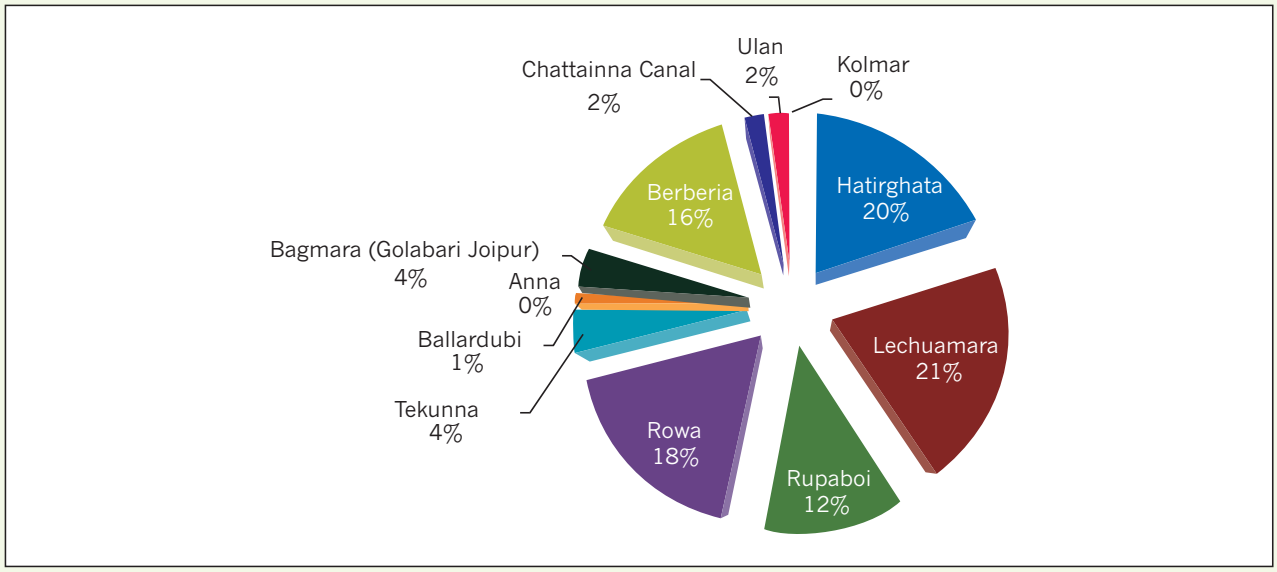


Figure 4.2: Percentage of individual number of birds occurrence in Tanguar Haor

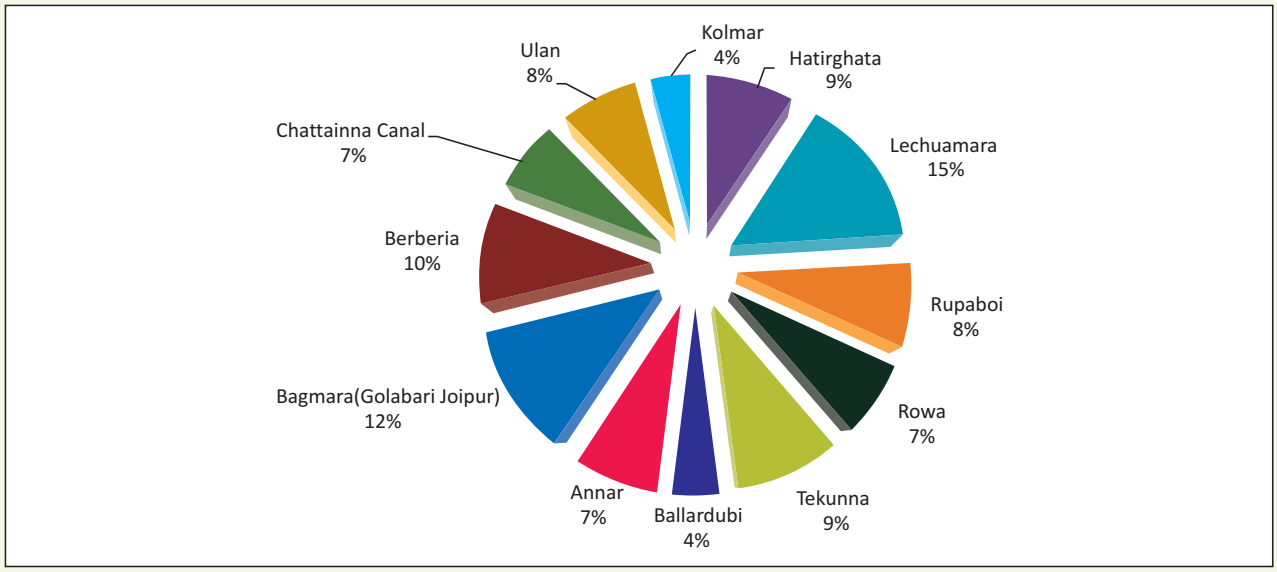


Figure 4.3: Percentage of bird species occurrence in Tanguar Haor

Migratory ducks- Sayam U. Chowdhury

4.2.1 Migratory bird

Tanguar Haor is a unique habitat for migratory birds especially ducks. The current survey team has recorded 84 migratory birds from different beels including some adjacent grounds of this haor. Among the globally threatened birds Baer's Pochard, Baikal Teal, Falcated Duck, Greylag Goose, Red-crested Pochard, Black-tailed Godwit, Bar-tailed Godwit, Long-toed Stint, Peregrine Falcon, Black Bittern and Glossy Ibis were found in the survey. Maximum (36 species) migratory birds were observed in Lechuamara Beel.

4.2.2 Resident bird

Tanguar Haor is blessed with a number of resident birds. The current survey encountered 83 resident species (including aquatic and terrestrial birds) were found in different beels together with some terrestrial habitats of this haor. Among the duck species Indian Spot-billed Duck and Cotton Pygmy-Goose were found during the survey. Large number of Little Grebes was also encountered. Purple Swamphen, White-breasted Waterhen, Ruddy-breasted Crake, Pheasant-tailed Jacana, Bronze-winged Jacana, Black Bittern are notable sightings of the survey. Grey-headed Fish Eagle and Oriental Darter are threatened resident birds found in this survey. Little Cormorant (3648) and Purple Swamphen (3419) found as dominant resident birds at Tanguar Haor during the survey. The following figure 4.3 shows the occurrence of different groups of birds recorded from Tanguar Haor during the current survey.

Purple swamphen- A common resident waterfowl found in Tanguar Haor-A.B.M.Sarowar Alam

4.2.3 Terrestrial birds

Apart from searching the aquatic habitat the survey was also carried out in terrestrial areas in and around the haors viz. Indrapur, Birendranagar, Bangalvita, Bakatola, Rupnagar, Lamagaon, Golgaon, Golabari, Joipur, Rongchi, Kandapara, Ratanpur, Binodpur, Paniakhali. Little over 49.10% birds were recorded from these terrestrial sites.

Green Bee-eater - Samiul Mohsanin

Among the raptorial birds, two globally threatened viz. Pallas's Fish Eagle and Greater Spotted Eagle were found in this survey.

4.2.4 Diversity of Bird Population

During our survey period some globally important birds were recorded from different beels in Tanguar Haor. These include Bar-tailed Godwit, Long-toed Stint, Pallas's Fish Eagle, Peregrine Falcon and Black Bittern. The present study shows that Lechuamara beel has the highest diversity index of 2.31 while Ullan Beel has the lowest 0.65. The following graph (Figure 4.4) show the diversity index of the beels surveyed at this time. Diversity status of birds found satisfactory in Lechuamara, Rowa and Ballardubi Beel among others

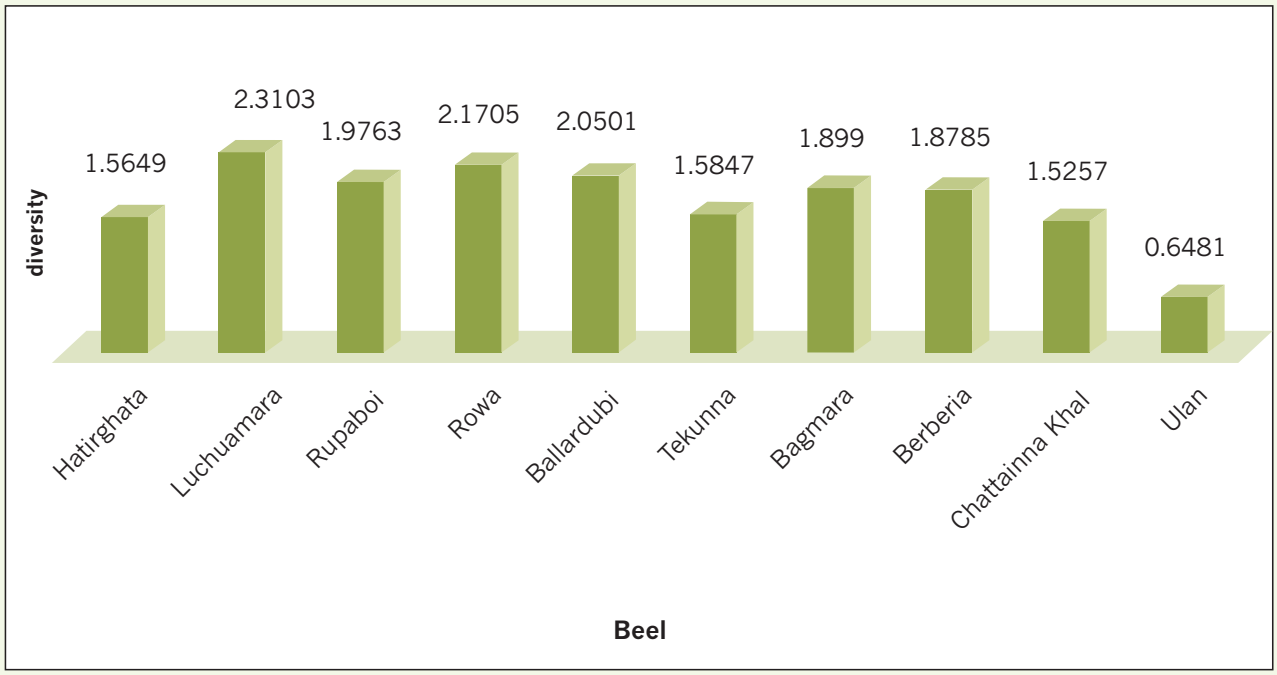


Figure 4.4: Diversity index of birds in different beels in Tanguar Haor

Pallas's fish Eagle near its nest in Golabari village - A.B.M.Sarowar Alam

4.2.5 Nesting sites of birds

Tanguar Haor is a suitable nesting habitat for various birds including Purple Swamphen, Pheasant-tailed Jacana, Cotton Pygmy Goose, Indian Spot-billed Duck and Pallas's Fish Eagle. These birds are seen nesting in Tanguar Haor at a great extent in comparison to the other nesting sites in Bangladesh.

4.2.6 Rare sightings

Baer's Pochard: Globally endangered bird, Waterbird survey 2011 by Wetland International (A team of Bangladesh Bird Club conducted the survey in Bangladesh) recorded eight of this species in Bangladesh. Among them five were recorded from Tanguar Haor. During our survey we found one individual.

Baikal Teal: Globally vulnerable bird. Only one individual recorded during our survey in Tanguar Haor. This is the only record of this bird this year in Bangladesh. It is second sighting in Bangladesh for the last 10 years. Previously the bird was seen at Dhaka National Zoo in 2003. It is a vagrant species in Bangladesh.

Falcated Duck: This is a rare migratory bird which is globally near threatened. Three individuals recorded in our survey.

Glossy Ibis: This is a vagrant species. Only three individuals recorded from Tanguar Haor during our survey period. In 2001 only one individual was seen in the coastal belt.

Ferruginous Pochard: Globally, this bird is considered as least concern. It is assumed that its world population is about one hundred thousand. During 2002 water bird survey, 92,000 individuals were recorded at Tanguar Haor. This species occurred abundantly at Tanguar Haor. During our survey we have recorded 3060 individuals of this species from Tanguar Haor.

Black-tailed Godwit: This is an important shorebird and almost a globally threatened. During our current survey (2011) 1214 individuals were recorded.

Baikal Teal - Sayam U. Chowdhury

Greylag Goose: This is an uncommon bird. It is known as least concern globally. Only one individual recorded during our survey.

Whiskered Tern: 1975 individuals were recorded from Tekunna Beel of Tanguar Haor during our current survey. Such a huge number with breeding plumage is rarely seen in our country.

Greylag goose, Brown headed Gull & Ruddy Shelduck – A.B.M.Sarowar Alam

4.2.7 Waterfowl census in Tanguar Haor (1992-2012)

As the part of Asian Waterfowl Census Programme, Bangladesh Bird Club conducts this survey in Bangladesh which is carried out in January. Waterfowl Census from 2001 to 2005, birds population status is seen higher but the trend is somewhat decreasing afterwards. From 2006 birds population is decreasing at an alarming rate. The management team of the Tanguar Haor project took some special initiative to conserve waterfowls which involves declaration of bird sanctuary, awareness campaign, etc. The current survey was conducted after a long period of the project implementation phase. The following figure (Figure 4.5) represents the status of birds recorded from Tanguar Haor in different years.

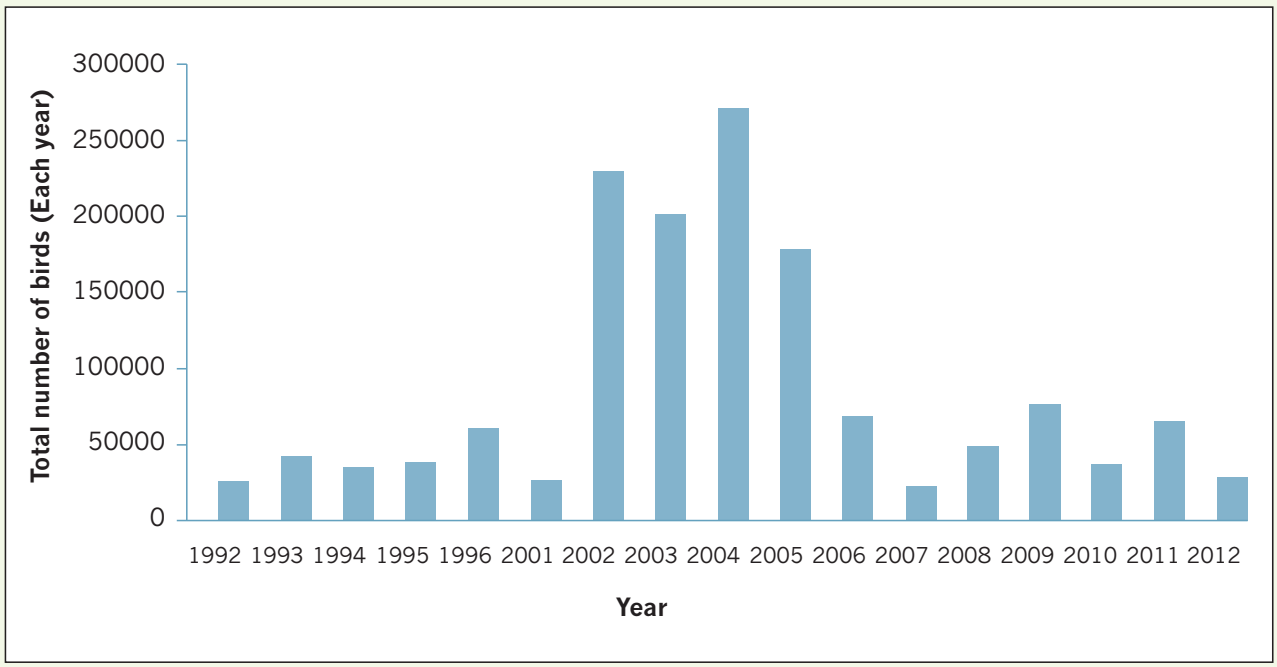


Figure 4.5: Waterfowl census in Tanguar Haor (1992-2012)

4.3 Reptile

Based on NERP (1993a) and DoZ (1997) the number of turtles species are six under two families, lizards are seven under four families, snakes are 21 under five families. According to Giesen and Rashid (1997), many species are threatened, such as, turtles, monitor lizards and Rock Python. The Rock Python is classified as Vulnerable, and the Spotted Pond Turtle and Yellow Monitor Lizard are classified as intermediate threatened species. Common Roof Turtle, Peacock Softshell, Spotted Flapshell and Bengal Lizard are listed under CITES I or II.

Several freshwater turtle breeds in Tanguar Haor. These include Common Roof Turtle, Spotted Mud Turtle, Spotted Flapshell Turtle, Bengal Eyed Turtle and the Peacock Softshell Turtle. They lay their eggs in vegetated levees.

During this present survey (2011) period we recorded 27 species of reptiles (Appendix-1) of which 17 were from direct field visits and 7 from focus group discussions and literature reviews. Our survey of 10 species revealed three Snakes, four lizards and two turtles.

Tanguar Haor is a suitable habitat for turtles. Of the two recorded turtles Peacock Soft-shell turtle is threatened globally. For turtle survey early winter season is most important because turtle used to come out for basking at this time. In late rainy season turtle hunters hunt turtle with *hajari barshi*, so for turtle survey it is necessary to conduct survey during these two seasons.

4.4 Amphibian

Based on NERP (1993a), DoZ (1997)the estimated number of amphibian species are 11 under four families. Among these Bull Frog is threatened and listed under CITES Appendix I, II.

During this present survey (2011) period we recorded 11 species of amphibians (Appendix-1) of which all species were from direct field visits. The present survey was conducted in the late summer which is why only a partial assessment of amphibian fauna was done.

Common Garden Lizard & Asian grass Frog - Samiul Mohsanin

4.5 Recommendations for Wildlife Conservation in Tanguar Haor

After analyzing the wildlife census data and diversity index (Appendix-1), it is clear that there is a need to improve the habitat (beels and adjacent *kandas*) which supports thousands of resident and migratory birds as well as other wildlife which dwell in Tanguar Haor.

To conserve migratory and inland wildlife following initiatives needs to be taken immediately:

1. For safe roosting and feeding, two or three beels e.g., Hatirgatha, Berberia, must be restricted from any kind of interventions.
2. Reed lands must be conserved for especially Purple Swamphen, Indian Spot billed Duck. Few reeds (Rupaboi, Chatainna Canal adjacent reed) must be declared as community conserve area as no access zone. Appropriate plantation programme in these sites will be an asset for these birds.
3. Existing large trees (Hijol, Koroch, Barun etc.) must be conserved and tall/healthy tree species needs to be planted for safe nesting and roosting of raptorial birds e.g., Pallas's Fish Eagle and the like.
4. Plantation in some selected *kandas* like Hatirgatha, Baillardubi, Rupaboi, Tekunna are needed for the habitat betterment of the birds and other wildlife.
5. Floating vegetation (e.g., Shingra etc.) must be conserved especially for some aquatic birds.
6. Community led monitoring must be introduced.
7. Waterfowl census should be carried out at a regular interval.
8. Existing community monitoring of hunting must be strengthen
9. For turtle basking number of floating substances must be installed in different beels.
10. Few *kandas* must be restricted for the nesting of turtle and guarding for poaching is needed during breeding season of turtle.
11. Fishermen should release turtle if trapped in their fishing gear and only government approved fishing gear would be allowed to fishing.
12. All kinds of hunting should be banned.
13. Research programmes should be conducted on various issues regarding biodiversity, socio economy etc.

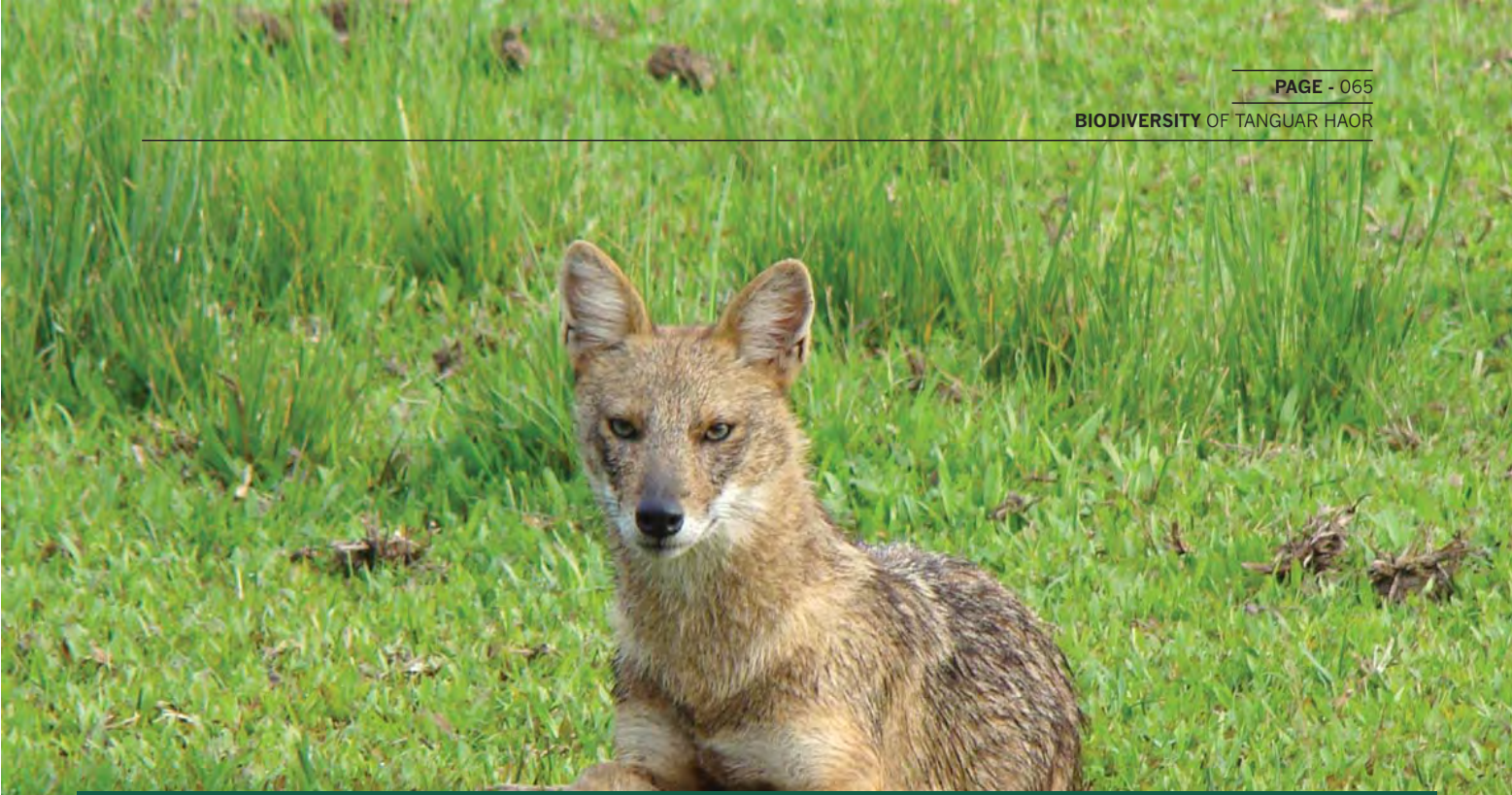
Chapter 5

Species Profile

- Mammals
- Birds
- Reptiles
- Amphibians

Mammals

Mammal population at Tanguar Haor is very few in number and a limited number of reports have been published on mammal hunting and poaching. Fishing Cat is a globally threatened species which is found in this area. There are about 126 species of mammals including marine mammals are commonly seen in Bangladesh (Khan, 2008). About nineteen (19) species have been recorded from the Tanguar Haor. Detailed description of about eight (8) important mammal species of Tanguar Haor have been provided in this book.



Golden Jackal

Golden Jackal Facts
Scientific Name: ***Canis aureus***
English Name: **Golden Jackal**
Bengali Name: **Pati Shial/Shial**
TH Status: **U**
IUCN Global Status: **LC**

- Sourav Mahmud

Golden Jackal is a widespread species in the Indian sub-continent. It is opportunistic and will venture into human habitation at night to feed on garbage. In comparison to the domestic dog, it is smaller in size and meaner in aspect. Coat is generally a mixture of yellow and red with some black on back and pale to white under parts. In Tanguar Haor it is seen while searching prey in the *kandas* adjacent to the villages at night.

Habit and Habitat

Due to their tolerance of dry habitats and their omnivorous diet, the Golden Jackal can live in a wide variety of habitats. It inhibits in grassland, marshes, bushlands, mountains and wetlands.

Feeding

It usually hunts small mammals; ground birds etc., and feeds upon carrion. It also likes to have livestock and poultry while in crisis. Insects are a good source of food too. It loves fleshy and juicy fruits like the jackfruit, water melon and other melons as well as sugarcane.

Breeding

Mating occurs in between January and February. Gestation period is about 58-65 days. A female gives birth to 3-6 young in a hollow, dug out burrow, etc.

Distribution in Bangladesh

It is one of the commonest of the mammals found all over the country.

Distribution in the World

Its global distribution includes North and East Africa, South Asia to Myanmar and Southeastern Europe.

- Sayam U. Chowdhury

Greater Bandicoot Rat

Greater Bandicoot Rat Facts
Scientific Name: ***Bandicota indica***
English Name: **Greater Bandicoot Rat**
Bengali Name: **Bora Indur/Dhari Indur**
TH Status: **C**
IUCN Global Status: **LC**

This is the largest rat found in Bangladesh. Fur of dorsum is brown-black, ventrum dark grey, not sharply demarcated guard hair developed on the back. Tail is shorter than head and body; uniformly dark with a white ring at its basis. This rat at first sight provokes revulsion in most people.

Habit and Habitat

It inhabits alongside human habitation and farms, except deserts and mountain. Usually it is found in cultivated tracts and forests and places that are associated with natural and artificial water bodies.

Feeding

It is omnivorous in diet and feeds largely on products of cultivation, such as rice, grains, sugarcane and on household refuses, vegetables, grass, roots, tubers, mollusks, crabs, insects, etc.

Breeding

It breeds throughout the year but intensity found in winter.

Distribution in Bangladesh

It is widely distributed throughout Bangladesh including all protected areas except the Sundarbans.

Distribution in the World

It has also been recorded in India, Nepal, Sri Lanka, China, Myanmar, Thailand, Laos, Vietnam, Indonesia, and Malaysia.

Sarwar Mohsan

Lesser Bandicoot Rat

Lesser Bandicoot Rat Facts
Scientific Name: ***Bandicota bengalensis***
English Name: **Lesser Bandicoot Rat**
Bengali Name: **Indur**
TH Status: **C**
IUCN Global Status: **LC**

This is slightly smaller than the Bandicota indica. It is a small-sized rat with a short tail. Its face is more rounded with a broad muzzle and pinkish round ears. This rat can be identified by its more brown than black colouration and a dark tail which is shorter than its head and body length.

Habit and Habitat

It inhabits alongside human habitation and crop field throughout the country.

Feeding

Its diet (upon stomach contents analysis) found to contain green vegetable matter belonging to different weeds (52%), grain of the crop (13%), animal remains and remaining stem (4%), leaf, root and algal contents.

Breeding

Births occur throughout the year except January, February and September; Gestation period varies from 20-23 days.

Distribution in Bangladesh

It is widely distributed throughout Bangladesh.

Distribution in the World

It has also been recorded in Pakistan, India, Nepal, Sri Lanka, Myanmar, Malaysia, Indonesia, and Saudi Arabia.

Jungle Cat

Jungle Cat Facts
Scientific Name: ***Felis chaus***
English Name: **Jungle Cat**
Bengali Name: **Ban Biral/Woab**
TH Status: **R**
IUCN Global Status: **LC**

- Saurov Mahmud

This is the common wild cat found in Bangladesh. The jungle cat is buff or grey-brown with reddish ears that have short black tufts. It has two black stripes on its lanky forelegs, and its tail, which is shorter than that of a domestic one, is black-tipped. Its coat is unmarked except for faint red stripes running across the forehead and on the outer surface of the legs.

Habit and Habitat

The animal occupies a variety of habitats e.g. grassland, scrub, dry deciduous and evergreen forests, semi-urban areas and villages.

Feeding

It feeds on small mammals, birds, and when near villages on poultry. Other opportunistic prey species includes hares, ducks, lizards, snakes, frogs, insects and fish.

Breeding

Births have been reported between January-April and in August and November.

Distribution in Bangladesh

It is widely distributed throughout Bangladesh.

Distribution in the World

It has a broad but patchy distribution in Africa, Southwest Asia, Central Asia, South Asia and Southeast Asia.

Fishing Cat

Fishing Cat Facts
Scientific Name: ***Prionailurus viverrinus***
English Name: **Fishing Cat**
Bengali Name: **Mechho Biral/Mechho Bagh**
TH Status: **R**
IUCN Global Status: **EN**

- Monirul Khan

This cat has a long, stocky body, relatively short legs, a broad head, round ears and a short tail. Its olive grey fur has black stripes and rows of black spots. This cat is seen in grass swamps and reed beds of Tanguar Haor.

Habit and Habitat

They are strongly tied to densely vegetated areas near water, in marsh, mangroves, rivers, tidal creeks and hill streams.

Feeding

The fishing cat's diet includes birds, small mammals, snakes, snails, frogs and fishes.

Breeding

Two or three young are born after a gestation of about 63 days. Young reach adult size at less than one year of age. Little is known about the details of their reproductive or social behavior in the wild.

Distribution in Bangladesh

It is widely distributed in Bangladesh in different types of habitats preferring wetland-rich areas, also found in all protected areas except Ramsagar National Park.

Distribution in the World

The fishing cat's general distribution is Southwest India, Sri Lanka, countries of the Southern Himalayas, Vietnam, Thailand, Myanmar, China and the Indonesian islands of Java and Sumatra.

Small Indian Mongoose

Small Indian Mongoose Facts
Scientific Name: ***Herpestes auropunctatus***
English Name: **Small Indian Mongoose**
Bengali Name: **Benji/Nakul**
TH Status: **U**
IUCN Global Status: **LC**

- Reza Khan & Saurov Mahmud

The body of the Small Indian Mongoose is slender with short legs. The head is elongated with appointed muzzle. The tail is robustly muscular at the base and tapers gradually throughout its length. Its fur is short and silken. It is considered a pest because it attacks chickens and native fauna.

Habit and Habitat

It inhabits in bushes, hedges, farms, human habitation but prefers village bushes and cultivation.

Feeding

These mongooses mostly eat insects but are opportunistic feeders and will eat wasps, crabs, frogs, spiders, scorpions, snakes, and birds and bird eggs.

Breeding

It breeds in April to July. Female may become pregnant at nine months and pregnancy duration is up to 49 days. Breeding seasons vary depending on environmental conditions. A litter can consist of 2-5 young.

Distribution in Bangladesh

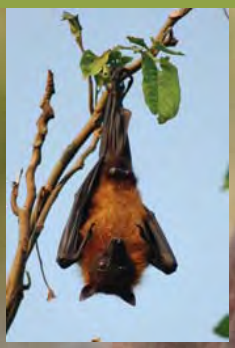
Although the Small Indian Mongoose has been persecuted by many, it is still widespread and abundant in Bangladesh except the interior of Sundarbans.

Distribution in the World

It also occurs in India, Pakistan, Afghanistan and Malay Peninsula.

Indian Flying Fox

Indian Flying Fox Facts
Scientific Name: ***Pteropus giganteus***
English Name: **Indian Flying Fox**
Bengali Name: **Badur/ Champa Badur**
TH Status: **U**
IUCN Global Status: **LC**



- Samiul Mohsanin

This is the largest bat seen flying in the sky of the Indian Subcontinent. It's pelage seems moderately long and coarse over head, upper shoulders and ventral aspects. Snout is long and hairy throughout. The physical appearance of this species is similar to that of megachiropterans in general, with large eyes, simple ears, and no facial ornamentation.

Habit and Habitat

These animals can be found in forests and swamps. Large groups of individuals roost in trees such as banyan, fig, and tamarind. Roosting trees are usually in the vicinity of a body of water.

Feeding

Diet is primarily flowers and fruits. This species has been reported to eat different species of fruits, including guava, mango, banana, litchi, and figs. They love some blossoms of seasons flowers and nectar of showy flowers as well as juice extracted from Khejur tree. As a result of this latter action this bat sometimes spread a deadly disease called Nipah virus (NiV) that has killed over a dozen people in the country during the last few years.

Breeding

The species is polygynandrous, with no pair bonds occurring between males and females. They breed yearly, with mating occurring from July to October and births noticed from February to May.

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

It also occurs in tropical regions of South Central Asia, from Pakistan to China, and as far south as the Maldives.

Birds

With the worldwide recognition as Ramsar site Tanguar Haor supports Thousands of birds. Numbers of bird surveys have been conducted earlier and 219 species have been recorded so far. The current survey (March-April, 2011) team have been identified about 167 species. Among the identified species 75 bird species (duck, Woodpecker, barbet, hoopoe, kingfisher, cuckoo, parrot, swift, owl, nightjar, dove, rail, gallinule, coot, snipe, sandpiper, jacana, plover, lapwing, gull, kite, eagle, grebe, darter, cormorant, heron, ibis, crow, drongo, myna, swallow, warbler, wagtail, pipit) described in this book which are most fascinating to national and international bird specialist, researcher, community people, tourists and are also found in different beels of Tanguar Haor.

Gadwall

- A.B.M.Sarowar Alam & Sayam U. Chowdhury

Size and weight
Length 41-46 cm,
wing 24 cm, **bill** 5.1 cm,
tail 9 cm and **weight** 760 g.

Gadwall facts
Scientific Name: ***Anas strepera***
English name: **Gadwall**
Bangla name: **Piong Hash, Peeing Hans**
TH Status: **V**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

The non-breeding male has grey upper-parts, brilliant white speculum, black bill and black stern. Female, called as duck and male, as drake, is mostly brown with dark scaly mark. Bill shape similar in both is similar but black and yellow in duck.

Habit and Habitat

Gadwall will use reservoirs, beaver ponds, farm ponds, coastal fresh and brackish marshes. Gadwalls are primarily found in lakes and inland marshes (wetlands)with lot's of leafy aquatic vegetation. They can also be found on rivers and in scrub-shrub habitat.

Feeding

It feeds on aquatic plants, shoots, seeds, tubers, insects, worms, mollusks and others aquatic animals.

Breeding

It breeds in Europe, Central Asia and Southern Siberia from May-August.

Distribution in world

North America, Europe and Asia, including the entire subcontinent accept the Maldives.

Distribution in Bangladesh

Tanguar Haor, Hakaluki Haor, Baikka Beel, Pasuar Haor, Padma and Jamuna River, Coastal area as well as in Dhaka Zoo.

Gadwall in Tanguar Haor

During the last survey in 2011 (March/April) 20,729 were recorded in Tanguar Haor. Largest concentration was 6820 at Hatirghata Beel. No

record from Balladubi, chattainna khal and Ulan Beel. In the Tanguar Haor this species is the most dominant bird. Every year thousands of birds have been found here. Among all the species of migratory ducks, Gadwall duck is the last of the migratory species.

Census Status

11,980 (2008), 14,532 (2009) 1571 (2010), 13,302 (2011 January), 20,729 (2011 March-April)

Eurasian Wigeon

- A.B.M. Sarowar Alam & & SR Rahul

Size and weight
Length 47-51 cm, **weight** 670 g,
wing 25.5 cm, **bill** 3.3 cm and **tail** 10 cm.

Eurasian Wigeon facts
Scientific Name: ***Anas penelope***
English Name: **Eurasian Wigeon**
Bangla name: **Lalshir Hansh, Eurasio shitihansh**
TH Status: **V**

IUCN National Status: -
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Male has yellow forehead and brick red head. Females are mostly brown with scaly marks. The non breeding male resembles the female but has black vermiculations on the body and whitish upper-parts.

Habit and Habitat

Found mostly in the coastal zone but can be seen in shallow lakes, marshes, large rivers, tidal flats and freshwater wetlands.

Feeding

Feeds mainly on wet grasses and aquatic plants; primarily on pondweeds, eelgrass, other aquatic plants, and grass; forages in shallow water, fields and meadows.

Breeding

Its breeds from Iceland, British Isles, and Scandinavia to Eastern Siberia and Kamchatka, and South to Northern Europe, Central Russia, and Northern China in June-September.

Distribution in the world

Its global range extends through Europe, Northern Africa and Asia.

Distribution in Bangladesh

Coast of Meghna, Padma and Jamuna River, Hakaluki Haor, Tanguar Haor and Baikka Beel etc.

Eurasian Wigeon in Tanguar Haor

In the last survey 2157 were recorded during March/April (2011) in Tanguar Hoar. Largest number (510) was recorded from Roa Beel. This species is a very common migratory duck in Hatirgatha, Lechuamara, Rupaboi and Rowa Beel of Tanguar Haor.

Census Status

33(1992), 800(1993), 2157(2011)
1365(2008), 4810(2009), 2060(2010),
10859(2011)

Common Teal

Common Teal is the smallest dabbling duck. Non breeding male looks like the female except for his blackish crown and nape. Male face pattern is always distinctive than the female.

Habit and Habitat

It inhibits inland water bodies but also found in coastal wetland and mudflat. It is fast flyer bird.

Feeding

It feeds on aquatic vegetables including shoots, tubers, seeds etc.

Breeding

It breeds in April-August in Siberia. Female lays 8-11 eggs. Incubation period is 21-23 days.

Distribution in world

Northern Iran, South Korea, continental East and Southeast Asia

Distribution in Bangladesh:

Coast of Bangladesh, Padma and Jamuna River, haor area of Sylhet division

Common Teal in Tanguar Haor:

Only one individual was recorded during the March/April(2011) survey at Berberia Beel of Tanguar Haor. This is an early winter bird in Tanguar Haor and found in its highest numbers during December/January.

Census status

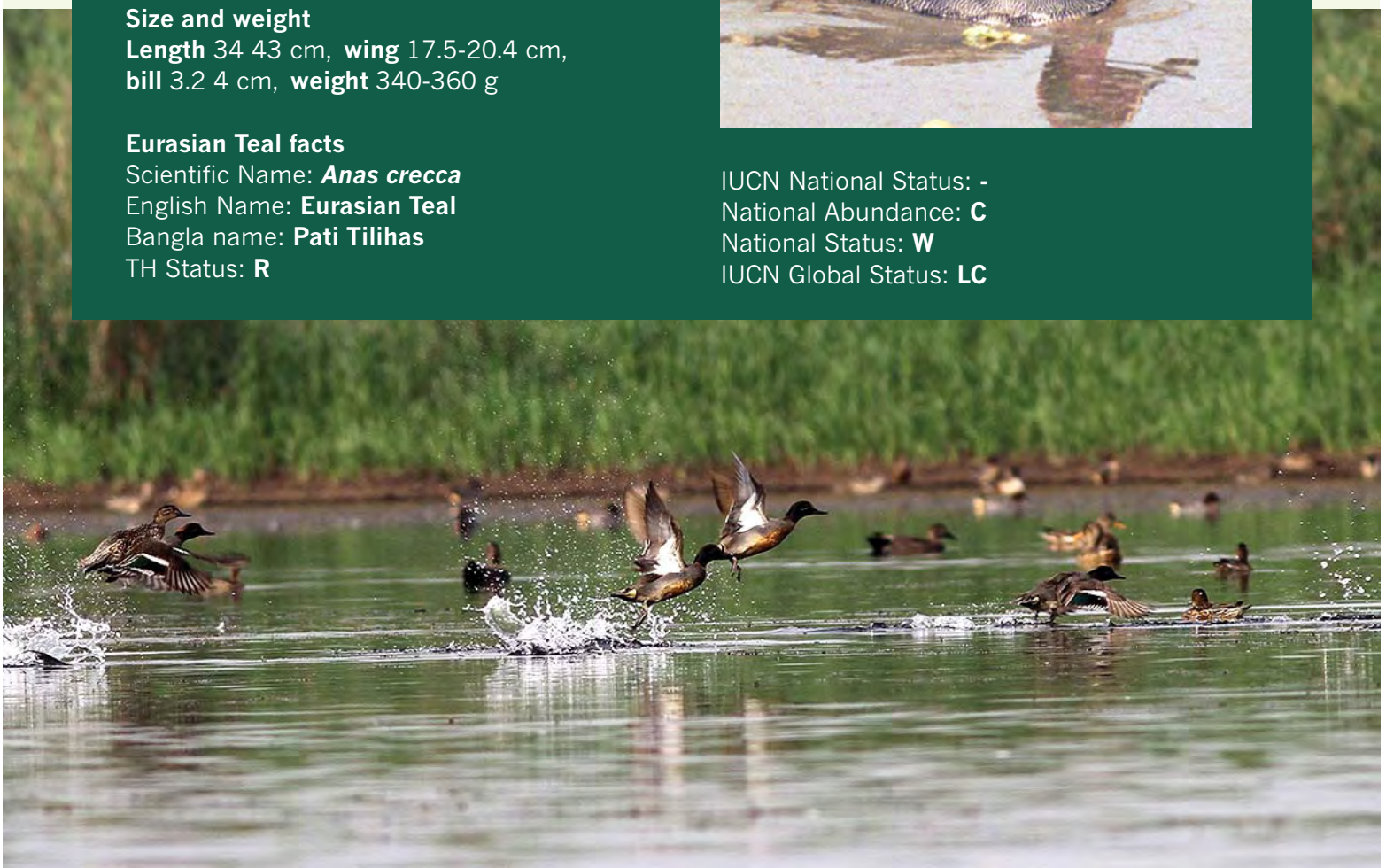
7,906(2006), 1 (2011), 6(1992), 31(1993), 49(2011, January), 3326(2010), 865(2009)

- Sayam U. Chowdhury & Enam Ul Haque

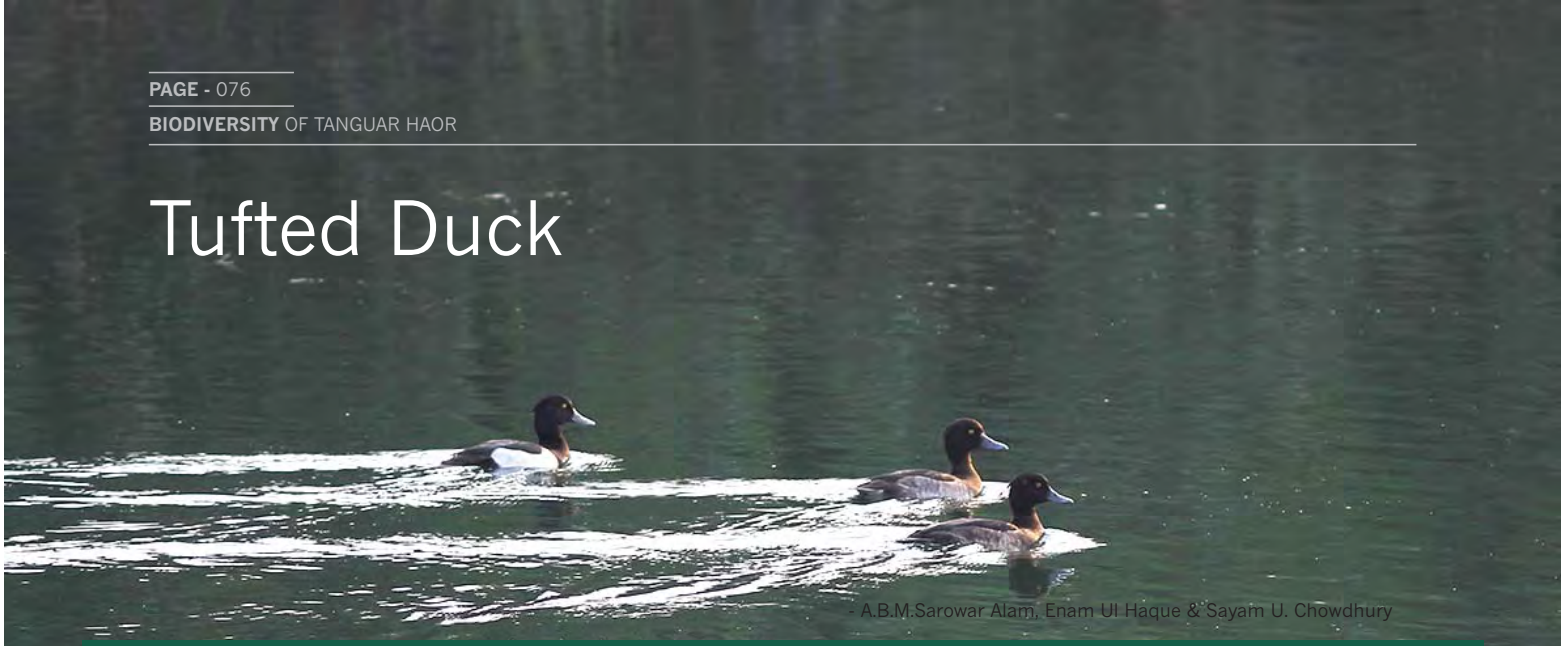
Size and weight
Length 34 43 cm, **wing** 17.5-20.4 cm, **bill** 3.2 4 cm, **weight** 340-360 g

Eurasian Teal facts
Scientific Name: ***Anas crecca***
English Name: **Eurasian Teal**
Bangla name: **Pati Tilihas**
TH Status: **R**

IUCN National Status: **-**
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**



Tufted Duck



- A.B.M.Sarowar Alam, Enam Ul Haque & Sayam U. Chowdhury

Size and weight
Length 44 cm, **wing** 20 cm, **bill** 4 cm, **tail** 5.5 cm, **weight** 760 gm.

Tufted Duck Facts
Scientific Name: ***Aythya fuligula***
English Name: **Tufted Duck**
Bangla name: **Kali/bamunia Has/Tiki Has**
TH Status: **V**
IUCN National Status: -
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Tufted Duck is a medium sized duck with dark yellow eyes and the prominent tuft on nape. The juvenile is more similar to the Baer's pochard. Its tail, breast and vent are black but wings have white bands or spots.

Habit and Habitat

It inhabits the lakes, reservoirs and open deep waters. It is a gregarious bird and is usually seen in large flocks in winter. It often joins mixed feeding parties of cormorants and ducks.

Feeding

It feeds mainly aquatic plants and animals and prefers corms, leaves, shoots and seeds, insects, larvae, worms, crustaceans, molluscs, frogs and small fish. It forages by diving to nibble on aquatic vegetation.

Breeding

It breeds in May from Europe right across Siberia. Females lay at least 8-11 eggs in a clutch.

Distribution in world

Europe, Northern Africa and Asia, including all the countries of the subcontinent

Distribution in Bangladesh

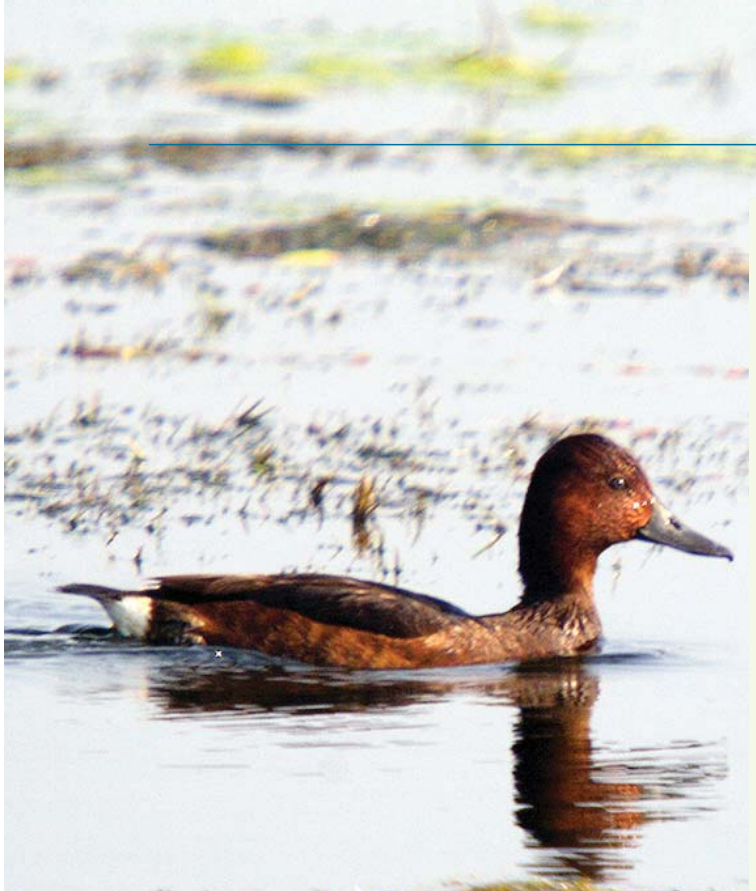
It occurs mainly in the freshwater wetlands of all Divisions. Tanguar Haor, Hakaluki Haor, Kaptai Lake, Padma and Jamuna River are suitable habitat for the species.

Tufted Duck in Tanguar Haor

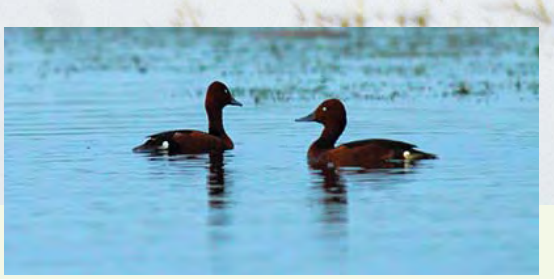
3878 were recorded during the March/April (2011) survey period in Tanguar Haor. The largest concentration was 1849 at Lechuamara Beel.

Census status

3878(2011), 7000(1992), 212(1993), 205(2009), 489(2010), 1330(2011, January)



Ferruginous Pochard



- SR Rahul & Quazi Ahamed

Size and weight
Length 40-42 cm, **wing** 18.5 cm, **bill** 3.9 cm, **tail** 5.5 cm, **weight** 600 gm.

Ferruginous Pochard facts
Scientific Name: ***Aythya nyroca***
English Name: **Ferruginous Duck (Ferruginous Pochard, White-eyed Pochard)**
Bangla name: **Morcherong Bhutihash/ Bhuti has**
TH Status: **C**
IUCN National Status: **-**
National Abundance: **C**
National Status: **W**
IUCN Global Status: **NT**

This Duck is a Chestnut-brown plumage with a chestnut head, breast and flanks. Males have prominent bright eyes. Both sexes have a prominent white wing-bar and striking white belly.

Habit and Habitat

It inhibits haor and fresh water river basins. The ducks forage by diving with mixed feeding flock.

Feeding

It feeds on aquatic plants and animals such as shoots, corms, leaves, worms, insects and their larvae, crustaceans, molluscs, small fishes and frogs.

Breeding

It breeds in Central Europe and Central Asia in May-July. It nests in reed-beds at the edge of the water. Incubation takes 25-30 days.

Distribution in world

Its global range extends through Africa, Europe and Asia, including Turkey, Russia, Iran, Arabia, Afghanistan, China, Pakistan, India, Nepal, Bhutan and the Maldives.

Distribution in Bangladesh

It occurs in the haors and beels of Barisal, Chittagong, Dhaka and Sylhet Divisions.

Ferruginous Pochard in Tanguar Haor

3060 were recorded during March/April (2011) period in Tanguar Haor. The largest number 1420 were recorded from Berberia beel. Tanguar Haor is one of the best places in the world for this species where they are recorded largest in number in every year.

Census Status

90,900(2002), 3060(2011), 4434(1992), 2764(1993), 5938(2008), 4438(2009), 537(2010), 6580(2011)

- A.B.M.Sarowar Alam & Saurov Mahmud

Common Pochard

Size and weight
Length 45-46 cm, **wing** 21cm, **bill** 4.6 cm, **tail** 3.7 cm, **weight** 820 gm.

The duck has brown plumage with a large dome-shaped chestnut head. It has yellow irises and deep red eyes on the males.

Habit and Habitat

It is most active diver in freshwater wetland and river. It is usually found in medium to large flocks.

Feeding

It feeds mainly on vegetable and sometimes feeds on aquatic plant matter such as buds, rhizomes, shoots, and seeds worms, crustaceans, molluscs, aquatic insects and their larvae.

Breeding

It breeds in Europe, Central Asia and southern Siberia in the spring. It nests on the ground among rushes and tall reeds.

Distribution in world

Its global range extends through Africa, Europe and Asia, including Pakistan, India, Nepal, Bhutan, China and the Philippines.

Common Poachard Facts
Scientific Name: ***Aythya farina***
English Name: **Common Pochard**
Bangla name: **Pati Bhutihash**
TH Status: **C**
IUCN National Status: **-**
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Distribution in Bangladesh

It occurs mainly in the haors and beels of Chittagong, Dhaka, Rajshahi and Sylhet Divisions.

Common Pochard in Tanguar Haor

This is an early winter species in Tanguar Haor. Only 14 individuals were recorded during the last survey period. Hatirghatha, Luchuamara and Berberia Beels have been found suitable for this species.

Census Status

14(2011), 8000(2001), 136(1993), 875(193) 694(2008), 10917(2009), 4057(2010), 721(2011 in January)

Ruddy Shelduck

- Samiul Mohsanin & M. Ahsanul Haq

Size and weight
Length 60-65 cm, **wing** 36cm, **bill** 4.3cm, **tail** 14 cm, **leg** 6 cm, **weight** 1.5 kg.

Ruddy Shelduck Facts
Scientific Name: ***Tadorna ferruginea***
English Name: **Ruddy Shelduck**
Bangla name: **Khoira Chokachok/ Chaka-chaki /Choka**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Reddish colour body with green speculum on wing covert. Male has black ring on neck but female without neck collar. Both sexes have black bill and legs.

Habit and Habitat

It usually occurs in pairs and small flocks. It prefers large fresh water river.

Feeding

It is omnivorous and usually eats grains, shoots, tubers, crustaceans, molluscs, aquatic insects, reptiles, etc.

Breeding

It breeds in Central Asia and Tibet in May-June. It nests around high-altitude lakes and swamps.

Distribution in world

Its global range extends over northern Africa and Asia, including Turkey, China, Korea, Japan and the entire subcontinent except the Maldives.

Distribution in Bangladesh

It occurs mainly in the rivers Padma, Jamuna, haor basin of Sylhet Divisions and rivers of Barishal

Ruddy Shelduck in Tanguar Haor

Only 16 individuals were recorded during March/April (2011) in Tanguar Haor. It is commonly seen in Lechuamara Beel.

Census Status

16(2011), 11(1992), 6(1993), 7(2009)

Common Shelduck

- Quazi Ahamed

Size and weight
Length 60 cm, **weight** 1 kg, **wing** 11.5 cm, **bill** 3.2 cm **tail** 11 cm.

Common Shelduck Facts
Scientific Name: ***Tadorna tadorna***
English Name: **Common Shelduck**
Bangla name: **Pati Chokachoki, Shah Chakha**
TH Status: **R**
IUCN National Status: -
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Common Shelduck shows beautiful colour combination, distinctive pattern of greenish black, maroon red and white. Male has bright red bill with knob.

Habit and Habitat

It mainly inhabits the coastal mudflats and newly emerging islands. It is a gregarious bird and congregates in large numbers on large lakes, estuaries, bays etc.

Feeding

It is omnivorous and feeds generally on molluscs, crustaceans, insects, worms, algae, seeds, leaves and tubers.

Breeding

It breeds in Central Asia in May-June. It nests in a natural crevice or a hollow in a cliff or burrows in a bank. The nest is lined with down feathers. The female lays 6-10 ivory-white eggs.

Distribution in world

Its global range extends over North Africa, Europe and Asia, including Pakistan, India, Nepal, Bhutan, Iran, Mongolia, China, Tibet, Iraq, Myanmar and Japan.

Distribution in Bangladesh

It occurs mainly along the coast and the rivers of Barisal, Chittagong, Noakhali, Padma and Jamuna river and sometimes found in Haors of Sylhet Divisions.

Common Shelduck in Tanguar Haor

Only three individuals were recorded during the March/April survey period in 2011 in Hatirgatha and Lechuamara Beel of Tanguar Haor. This species is rarely seen in Tanguar Haor.

Census status

3(2011), 6 (1993)

Garganey

Size and weight
Length 39 cm, **wing** 18.5 cm, **bill** 3.7 cm, **tail** 6.5 cm, **weight** 350 gm.

Garganey facts
Scientific Name: ***Anas querquedula***
English Name: **Garganey**
Bangla name: **Giria Hash**
TH Status: **V**
IUCN National Status: -
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

The Garganey is a small duck with a striped head. The male differs from the female. The breeding male has a big white supercilium on a brown head and grey flanks contrasting with the black-speckled brown breast and stern. Its silvery-blue forewing is conspicuous in flight. Both sexes have dark brown irises, brownish-black bill with paler to reddish gape, black nail and dark grey legs and feet. Most important winter feature of the female is its big white lore spot.

Habit and habitat

It inhabits the lakes, lagoons, swamps and flooded fields with abundant emergent vegetation and soggy grass. It is seen more often in mixed flocks of ducks. It forages by walking around, dabbling or upending.

Feeding

It feeds mainly on seeds, leaves, shoots and blades of grass. It occasionally takes insects, larvae, worms and molluscs.

Breeding

It breeds in Europe and southern Siberia in April-May. It makes nests on the ground in meadow or grass. The nest is lined with grass and down feathers. The female generally lays 11-12 creamy eggs.

Distribution in World

Its global range extends over Europe, Africa and Asia, including all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in all types of wetlands of all Divisions.

Garganey in Tanguar Haor

During the last survey 2011, 6612 were recorded. Largest numbers were recorded from Berberia Beel. Status of this bird is more satisfactory in Tanguar Haor than in other areas in Bangladesh because of suitable habitat and food availability.

Census Status

6612(2011), 6627(1992), 2445(1993), 103(2008), 4459(2009), 600(2010), 1057 (2011, January).

Northern Shoveler

Medium-sized duck, very long and speculate bill, wider at tip than at base. Its male is visibly different from its female. The male has an iridescent green head, white chest, and rusty sides while the female is Greyish-brown overall. It has a mottled dark brown body, greyish-blue shoulder patches and light green speculum. Bill olive-green with yellowish base.

Habit and Habitat

It inhabits the shallow freshwater lakes, tanks, rivers as well as coastal lagoons and marshlands. It is a sociable duck and is generally seen in mixed groups with other ducks.

Feeding

Feeds on tiny crustaceans, mollusks, insects, seeds, fish, and aquatic vegetation; forages by dabbling in shallow water.

Breeding

It breeds in Siberia in May-September. It nests on the ground in meadows or scrub.

Distribution in World

Its global range extends through North America, Africa and Asia, including all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It is occurred in all division in Bangladesh, Coastal area, Tanguar Haor, Hakaluki Haor, Padma and Jamuna River.

Northern Shoveler Tanguar Haor

During last survey period, 2335 were recorded. Highest number individuals was recorded from Lechuamara Beel. Beside this, this bird is also found in Hatirgatha and Rowa Beel.

Census status

2335(2011), 10(1993), 9,379(1992), 401(2008), 992(2009), 12(2010), 667(2011, January)

Size and weight
Length 48-50 cm, **wing** 23.9cm, **bill** 6.3cm, **tail** 7.9 cm, **weight** 640 gm.

Northern Shoveler Facts
Scientific Name: ***Anas clypeata***
English Name: **Northern Shoveler**
Bangla name: **Utturey Khuntehash, Khunte Hans, Pantamukhi**
TH Status: **V**
IUCN National Status: -
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

- A.B.M.Sarowar Alam & Sayam U. Chowdhury

Red crested Pochard

Size and weight
Length 50-52cm, **wing** 26 cm, **bill** 5cm, **tail** 6.7 cm, **weight** 980 gm.

Red crested Pochard facts
Scientific Name: ***Netta rufina***
English Name: **Red-crested Pochard**
Bangla name: **Laljhuti Bhutihash**
TH Status: **C**
IUCN National Status: -
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

The Red-crested Pochard is a medium-sized duck. The male has an orange-brown head with a red beak and pale flanks. Females are brown with pale cheeks. In the breeding season, the male has a large round rusty-orange head, black neck, white-patched shoulder and white flanks. Most of the males seen in Tanguar Haor still retain the orrangish hue.

Habit and Habitat

The duck prefers fresh water wetland (large lakes, rivers, estuaries) and usually seen in small group or large flocks. It forages by dipping head or diving.

Feeding

It feeds mainly on vegetable matter like buds, shoots, rhizomes and seeds of aquatic grasses and weeds. It also takes aquatic insects, tiny molluscs and tadpoles.

Breeding

It breeds in Central Asia (South West Afghanistan) in the summer. They generally nest in late spring and the female lays 7-15 eggs.

Distribution in world

Its global range extends from Europe to Asia, including India, Nepal, Bhutan, Myanmar, China, Thailand and Indochina.

Distribution in Bangladesh

It occurs mainly in the haors of Sylhet Division.

Red-crested Pochard in Tanguar Haor

Only 35 were recorded during March/April (2011) survey period. But 2012 (January) waterfowl census period 1330 individual were recorded. So, this is an early winter migratory bird with high numbers found in Tanguar Haor each year. Status of this bird is found satisfactory in Lechuamara, Tekunna and Hatirgatha Beel.

Census Status

35(2011), 43, 680(2005), 211(1992), 875(1993), 242(2008), 6724(2009),

- A.B.M.Sarowar Alam & Sayam U. Chowdhury

- Ronald Halder

Size and weight
Length 42cm, **wing** 22cm, **bill** 5cm, **tail** 7 cm.

Baer's Pochard facts
Scientific Name:
Aythya baeri
English Name:
Baer's Pochard
Bangla name:
Baerer Bhutihansh
TH Status: **R**
IUCN National Status: -
National Abundance: **R**
National Status: **W**
IUCN Global Status: **EN**

Baer's Pochard

The Baer's Pochard juvenile is very similar to the tufted duck juvenile. The adult duck has a black bill, glossy greenish head and dark-brown back and characteristic white eye. It has grey legs and feet, but the joints and webs are darker. The non-breeding or male in eclipse is similar to female and has a duller head but retains white iris. Whilst in flight the wing pattern is like a Ferruginous Duck.

Habit and Habitat

Prefers freshwater wetlands and especially inhabits the haors, marshes, and lake waters. It is a gregarious bird and is usually seen with other diving ducks in its wintering grounds. It forages in shallow water mostly by diving.

Feeding

It feeds both on plant and animal matter.

Breeding

It breeds in North-East China and South-East Siberia in isolated pairs or in small, loose groups in spring. The female lays 6-10 eggs. Incubation takes 27 days.

Distribution in World

Eastern South Asia, Southeast Asia, Siberia, China and Japan, North Korea, South Korea, Hong Kong, Taiwan and Nepal.

Distribution in Bangladesh

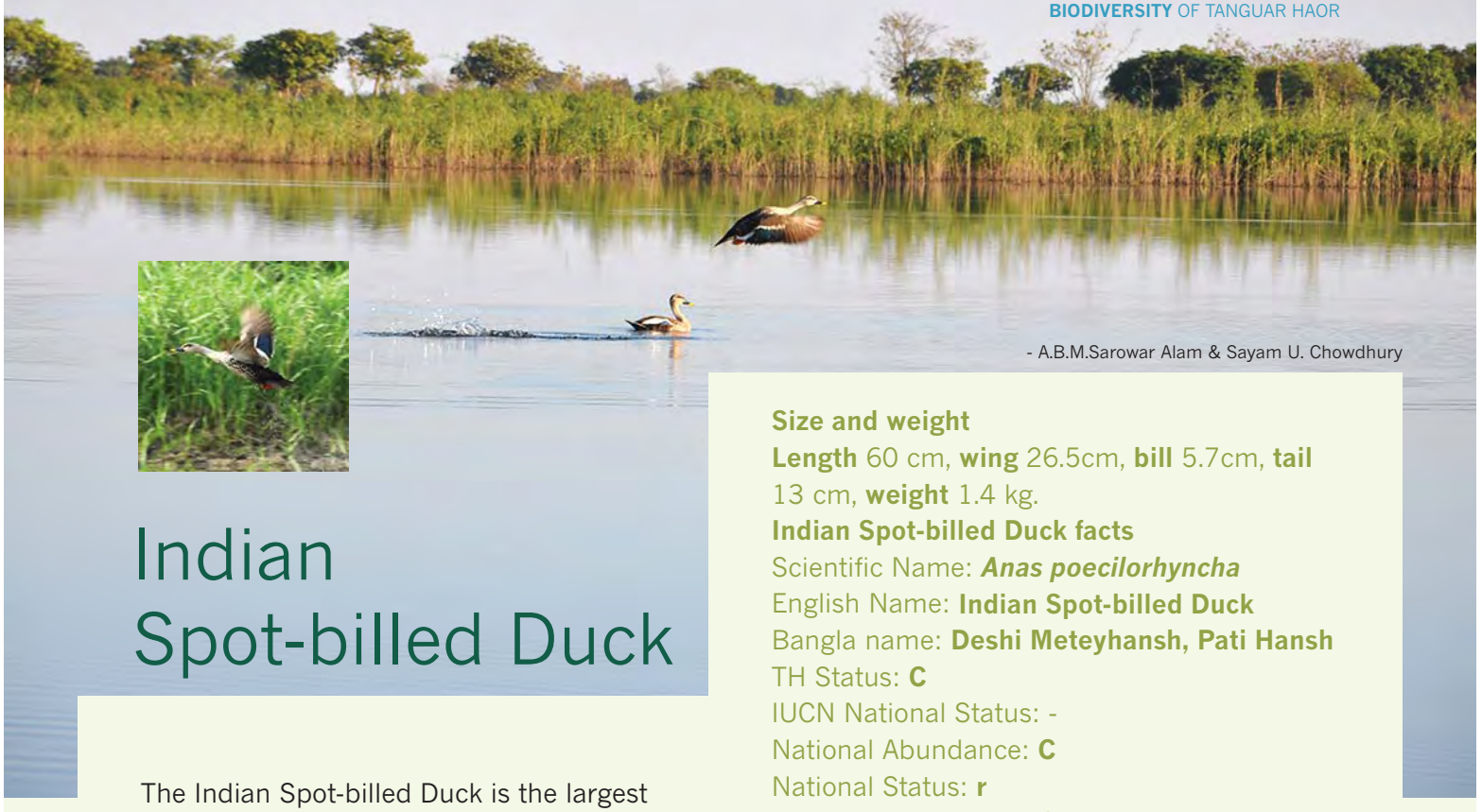
It is a rare winter visitor to Bangladesh. It occurs mainly in the haors of Sylhet Division, with isolated records from Dhaka and Rajshahi Divisions.

Baer's Pochard in Tanguar Haor

This is highly declining species in the world. Only 5000 mature individual exist in the whole world. Only 1 individual was recorded from Tanguar Haor during March/April survey period.

Census Status

1(2011), 2500(2001), 533(1992), 275(1993) 7(2008)



- A.B.M.Sarowar Alam & Sayam U. Chowdhury

Indian Spot-billed Duck

Size and weight
Length 60 cm, **wing** 26.5cm, **bill** 5.7cm, **tail** 13 cm, **weight** 1.4 kg.
Indian Spot-billed Duck facts
Scientific Name: ***Anas poecilorhyncha***
English Name: **Indian Spot-billed Duck**
Bangla name: **Deshi Meteyhansh, Pati Hansh**
TH Status: **C**
IUCN National Status: -
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

The Indian Spot-billed Duck is the largest common and resident duck with yellow tipped black bill and a red point at the base of bill. It has dark brown plumage with a black crown, coral-red legs and feet, and black claws. The male and the female look alike.

Habit and Habitat

It inhabits the lakes, irrigation tanks, riverbanks and other freshwater wetlands with reeds, weeds, etc. It is usually seen in family pairs or small groups.

Feeding

It feeds mostly on emergent vegetation and vegetation growing on the bank. While feeding in mixed flocks it generally keeps to its own corner of the wetland. It is a strong flyer and quick in taking off. To escape danger, it can dive well and remain submerged with its bill sticking above water.

Breeding

It breeds in July-October. It nests in the herbage on the ground near water. The nest is made of grass, weeds and down feathers. The female lays 7-9 greenish-white eggs.

Distribution in World

Its global range is restricted to Asia, including Siberia, China, Japan, Tibet, Myanmar and all the countries of the Indian subcontinent except the Maldives.

Distribution in Bangladesh

It occurs in all types of wetlands of all divisions. Tangura Hoar, Hakaluki Haor, Baikka Beel, Alatuli *char* of Padma River are the main habitat of spot-billed duck.

Indian Spot-billed Duck in Tanguar Haor

This is found very commonly in the Tanguar Haor. This haor is one of most important breeding places of the species. This species are seen large in number in Rowa, Rupaboi and Lechuamara Beel. During March/April (2011) survey 81 were recorded.

Census status

1600(2001), 393(1992), 96(1993), 138(2008), 192(2009), 99(2010), 184(2011, January)

Falcated Duck

The Falcated Duck is a medium sized duck with a square head. Male's head is glossy green and radish purple with maned crest. The duck has a unique look for his falcated secondary feather. The females are overall brown.

Habit and Habitat

They prefer inland water and wetlands; usually found in pairs and small group in rivers, lowland lakes and marshes.

Feeding

It feeds on aquatic vegetation and plankton; occasionally it feeds on aquatic animals.

Breeding

It breeds in North-East China and Eastern Siberia in May-October. It usually nests on the ground near water. The female lays 6-10 creamy-white eggs. Incubation takes 24-25 days.

Distribution in World

Endemic to East Asia and far East Russia; winter visitor in South Asia.

Distribution in Bangladesh

It is a rare winter visitor to Bangladesh. It occurs in the freshwater wetlands of Barisal, Chittagong, Dhaka and Sylhet Divisions. Recent records from Tangura Haor, Padma River, Hakaluki Haor, Muhuri Dam and Baikka Beel.

Falcated Duck in Tanguar Haor

Rarely seen in Tanguar Haor. Only 3 were recorded during the March/April survey period (2011).

Census Status

9(1992), 39(1993), 3(2011), 1 (2009), 2(2011, January),

- Sayam U. Chowdhury & Samiul Mohsanin

Size and weight
Length 51 cm, **wing** 23.5 cm, **bill** 4 cm, **tail** 8.5 cm, **weight** 650 gm.

Falcated Duck facts
Scientific Name: ***Anas falcata***
English Name: **Falcated Duck**
Bangla name: **Phuluri Hash**
TH Status: **R**
IUCN National Status: -
National Abundance: **R**
National Status: **W**
IUCN Global Status: **NT**

Cotton Pygmy Goose

Smallest duck on earth; its male is visibly different from its female. The male has a blackish-brown crown and back; with white head, neck, and under-parts. Its irises are reddish-brown and bill is black. The female is duller and browner with off-white under-parts.

Habit and Habitat

Found on all still freshwater and vegetation-covered lakes, rain-filled ditches large ponds, shallow lagoons, haors etc.

Feeding

It feeds on aquatic vegetation, particularly hydrilla and pondweed. Foraging is undertaken by dabbling and picking at the water surface or by stripping seeds and flowers from aquatic plants.

Breeding

It breeds in June-September. Its nest is a natural hollow in a tree-trunk standing in or near water, sometimes lined with grass, 2-5 m above the water level. The female lays 6-14 pearly-white eggs.

Distribution in World

This species is abundant in Asia except Bhutan, and breeds in Pakistan, India, Bangladesh, Southeast Asia and south to Northern Australia. The slightly larger Australian race appears to be declining in numbers.

Distribution in Bangladesh

Bali Hansh is largely resident and found in waterbodies of Chittagong, Dhaka, Khulna, Rajshahi and Sylhet. It used to be once present all over the country.

Cotton Pygmy Goose in Tanguar Haor

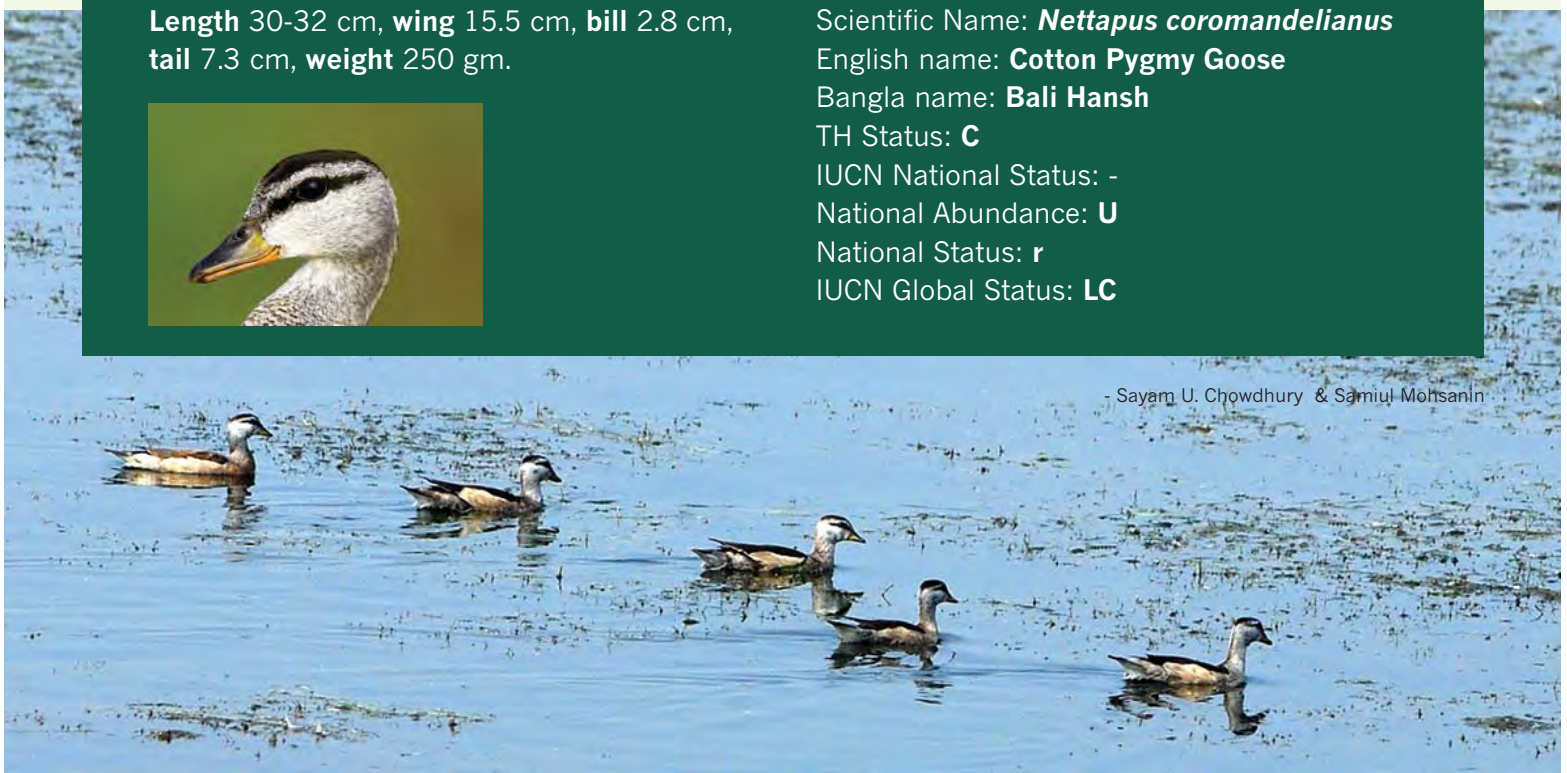
Most common resident duck in all beels of Tanguar Haor. This haor is a good breeding place of the species. Only 422 were recorded during March/April survey period(2011).

Census Status

422(2011), 58 (1992), 800(1993), 640(2008), 153(2009), 512(2010)

Size and Weight
Length 30-32 cm, **wing** 15.5 cm, **bill** 2.8 cm, **tail** 7.3 cm, **weight** 250 gm.

Cotton Pygmy Goose facts
Scientific Name: ***Nettapus coromandelianus***
English name: **Cotton Pygmy Goose**
Bangla name: **Bali Hansh**
TH Status: **C**
IUCN National Status: -
National Abundance: **U**
National Status: **r**
IUCN Global Status: **LC**

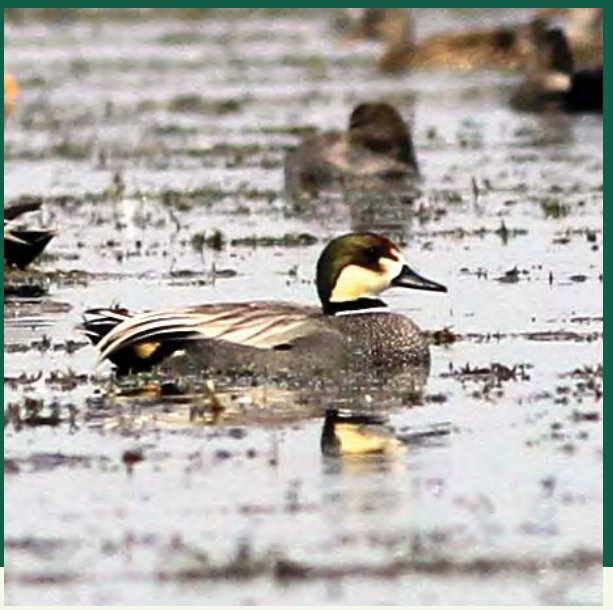


- Sayam U. Chowdhury & Samiul Mohsanin

Baikal Teal

Size and weight
Length 39 cm, **wing** 21.5 cm, **bill** 3.5 cm, **tail** 9 cm, **weight** 200 gm.

Baikal Teal facts
Scientific Name: ***Anas formosa***
English name: **Baikal Teal**
Bangla name: **Baikal Tili Hash**
TH Status: **R**
IUCN National Status: -
National Abundance: **V**
National Status: **W**
IUCN Global Status: **LC**



- Sayam U. Chowdhury

The Baikal Teal is a colourful duck; male is visibly different from the female. This duck is slightly larger and longer-tailed than the Common Teal. The breeding male is unmistakable. It has a distinctively patterned head, and its crown, nape, hind-neck and throat are black. The female has a brown body, dark crown and white patch at the base of the bill.

Habit and Habitat

It is found in freshwater lakes, rivers, reservoirs, and farmlands, often roosting on water during the day and feeding in fields at night.

Feeding

It feeds on seeds, aquatic snails, algae, and leaves and roots of aquatic plants.

Breeding

Six to ten white eggs, often yellow-tinted, are laid in a ground nest made of dried grass and plants lined with feathers and down. Incubation ranges from 21 to 25 days and is carried out by the female.

Distribution in World

Baikal Teal is only known to breed in Eastern Russia, and it occurs on migration in the Russian Far East, Mongolia, Japan, North Korea, South Korea and Northern China. Large wintering concentrations were recorded in the past in Japan, South Korea and mainland China, with smaller numbers (or vagrants) recorded in Hong Kong, Taiwan, Pakistan, India, Nepal, Bangladesh, Myanmar and Thailand.

Distribution in Bangladesh

It is only seen in the watershed areas of Sylhet.

Baikal Teal in Tanguar Haor

Nationally Vagrant birds but rarely seen in the Tanguar Haor. Only one individual was recorded at Hatighata Beel of Tanguar Haor.

Census Status

1(2011)

Greylag Goose

The Greylag is the largest water bird with pinkish bill and legs. It has a rotund, bulky body, a thick and long neck and a large head and bill. The male and the female look alike.

Feeding

Grass, roots, leaves, stems, seed-heads, and sprouts of different plants, in winter complemented with agricultural crops.

Habitat

The species inhabits wetlands surrounded by fringing vegetation in open grassland, sedge or heather moorland, arctic tundra, steppe or semi-desert from sea-level up to 2,300 m.

Breeding

It starts breeding in April in marshes in Central Asia and southern Siberia. It nests among reeds and bushes or at the base of trees. The female lays 4-6 creamy-white eggs.

Distribution in World

It is found in many countries of Asia and Europe.

Distribution in Bangladesh

In Bangladesh, it is found in coastal areas of Barishal and Chittagong and also in the large wetland areas in Sylhet.

Graylag goose in Tanguar Haor:

This is rarely seen in Tanguar Haor. Only one individual was recorded in Hatirghata Beel of Tanguar Haor. The bird is irregular in Tanguar Haor.

Census Status

2 (2011, March- April Survey)

Size and weight
Length 82 cm, **weight** 3 kg, **wing** 45 cm, **bill** 6.2 cm, **tail** 13.5 cm.

Graylag goose Facts
Scientific Name: ***Anser anser***
English name: **Greylag Goose**
Bangla name: **Mete Raj hash**
TH Status: **R**
IUCN National Status: -
National Abundance: **R**
National Status: **W**
IUCN Global Status: **LC**

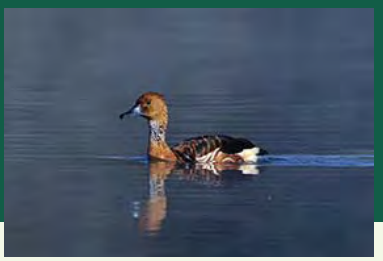
- A.B.M. Sarowar Alam

Fulvous Whistling Duck

Size and weight
Length 51 cm, **weight** 700 g, **wing** 22 cm, **bill** 4.7 cm, **tail** 5.5 cm.

Fulvous Whistling Duck facts
Scientific Name: ***Dendrocygna bicolor***
English name: **Fulvous Whistling Duck**
Bangla name: **Boro shoraly**
TH Status: **R**
IUCN National Status: -
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

- Enam Ul Haque



One of the two long legged and long-necked rufous-brown ducks of our region. Fulvous Whistling Duck has a long grey bill, long head and longish legs, buff head. Its long head is rufous-orange with a dark rufous-brown crown, light to dark brown irises and black claws. It has brownish-black upper-parts and chestnut to cinnamon under-parts. The male and the female look alike. Tail and wing patches are chestnut, and there is a white crescent on the upper tail which is visible in flight. All plumages are similar, except that juveniles have less contrasted flank and tail colouration.

Habit and Habitat

This duck mainly feeds at night on seeds and can be found in freshwater lakes, seasonal freshwater pools, slow-flowing streams, marshy areas, paddy fields or reservoirs with plentiful vegetation.

Feeding

Vegetarian duck, feeding on aquatic seeds and fruits, bulbs, leaf shoots, buds and the structural parts of aquatic plants such as grasses and rushes.

Breeding

It breeds in June-October. It nests on a stick platform in reeds, laying 8 12 eggs, but hollow trees or old bird nests are occasionally used for nesting.

Distribution in World

Widely distributed worldwide and occurs in tropical South America, Southern North America, Africa, Madagascar and South Asia.

Distribution in Bangladesh

It is widely distributed throughout Bangladesh.

Fulvous Whistling Duck in Tanguar Haor

Common winter visitor birds in Bangladesh but rarely seen in Tanguar Haor. Only 10 were recorded from Tanguar Haor during the March/April survey period (2011).

Census status

120(2008), 0(2009), 60(2010), 0(2011)

Lesser Whistling Duck

Lesser Whistling Duck is one of the two long legged and long-necked rufous-brown ducks of our region. The size of the bird is comparable as that of the domestic duck even though it is slightly smaller. Lesser Whistling Ducks are different from other ducks in having longer legs, head and an erect goose-like posture when alert but very similar to the Fulvous Whistling Duck. Their wings are also round and broad.

Habit and Habitat

It inhabits the freshwater wetlands like ponds, reservoirs, marshes, etc. It is a social bird and is usually seen in flocks.

Feeding

It feeds on aquatic weeds, shoots and grains. It occasionally eats small fish, insects and aquatic invertebrates.

Breeding

It nests in tree holes, old nests of other birds, or on a stick platform near the ground, and lays 6-12 eggs.

Distribution in World

It is distributed throughout Asia including the Indian Sub-continent.

Size and weight:
Length 40-42 cm, **weight** 500 g, **wing** 18.7cm, **bill** 4cm, **tail** 5.5cm.

Lesser Whistling-duck facts
Scientific Name: ***Dendrocygna javanica***
English name: **Lesser Whistling Duck**
Bangla name: **Choto shoraly**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **V**
National Status: **r**
IUCN Global Status: **LC**

Distribution in Bangladesh

It is almost seen in every watershed areas throughout Bangladesh. Thousands visit lakes and large ponds in Jahangir Nagar University campus and Dhaka Cantonment as well as the national airport during winter.

Lesser Whistling Duck in Tanguar Haor

The beels of Tanguar Haor are safe shelter for this bird because of availability of food. Every year a significant number are observed in this haor. During last survey period 40 birds were recorded in Tanguar Haor.

Census Status

40 (2011 March- April)

- SR Rahul

Common Kingfisher

- Samiul Mohsanin

One of the smallest kingfishers in the Bangladesh, similar to the Blue-eared Kingfisher Common Kingfisher has greenish blue upper-parts and orange under-parts. Male and female look alike but have slight differences in the bill. Male has mostly black and female has reddish mandible. The legs and feet are reddish in color.

Habit and habitat

This is a fast moving kingfisher and active mostly during the day. It occurs solitarily or in pairs. This aquatic bird inhabits all types of water bodies such as streams, rivers, canals, ponds, ditches, beels, mangrove swamps and seashores in Bangladesh.

Feeding

Common Kingfishers feed upon fish, aquatic invertebrates, small amphibians and insects.

Breeding

Common Kingfishers begin to form pairs in February and dug out a nesting tunnel in a sandy bank usually by a water source.

Size and weight
Length 18 cm, **wing** 7.2 cm, **bill** 4.4 cm, **tail** 3.3 cm, **weight** 25 gm

Common Kingfisher Facts
Scientific Name: ***Alcedo atthis***
English name: **Common Kingfisher**
Bangla name: **Pati Machranga, Chhoto Maachranga**
TH Status: **C**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Distribution in World

It occurs in all countries in Indian Sub-continent as well as in Europe and Africa.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in whole Bangladseh.

Common Kingfisher in Tanguar Haor

Common Kingfisher is found more or less everywhere in Tanguar Haor.

Census status

It is very common and is seen in most watershed areas. During the last survey 19 were seen in Tanguar Haor.


- Samiul Mohsanin

- Saurov Mahmud

White-throated Kingfisher

White throat and breast; upper-parts, wings and tail are bluish. Chocolate brown head and shoulders, flanks and lower belly are chestnut. The bright red bill is large in size. The male and the female look alike.

Habit and Habitat

It inhabits the forest edges, cultivated lands, gardens, dry deciduous forests, streams, rivers, canals, pools, village tanks, ditches, coasts and mangroves. It is usually seen alone or in separated pairs.

Feeding

It mainly hunts on fish but they also feed on insects like grasshoppers, crickets, beetles, ants, winged termites, dragonflies small reptiles, amphibians, crabs, small rodents and even birds.

Breeding

It breeds in March-June. It excavates a nest-hole in a vertical bank. The female lays 4-7 white spherical oval eggs.

Distribution in world

Its global range extends from Turkey and the Middle East through Pakistan, India, Nepal, Bhutan, Sri Lanka to Myanmar, China, Malaysia, Indonesia and the Philippines.

Size and Weight

Length 28 cm, **weight** 252 g, **wing** 11.8 cm, **bill** 6 cm, **tail** 7.5 cm.

White-throated Kingfisher Facts

Scientific Name: ***Halcyon smyrnensis***
English name: **White-throated Kingfisher**
Bangla name: **Dholagola, Machranga**
TH Status: **U**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in all waterbodies and the countryside of all divisions.

White-throated Kingfisher in Tanguar Haor

It is common bird and seen in almost in all watershed areas. During the last survey, 8 were seen in Tanguar Haor.

Census status

8 (2011 March-April)

Size and Weight:
Length 30 cm, **weight** 250 g, **wing** 13.7 cm, **bill** 6.8 cm, **tail** 7 cm.

Pied Kingfisher Facts
Scientific Name: ***Ceryle rudis***
English name: **Pied Kingfisher**
Bangla name: **Pakra Machranga**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Pied Kingfisher

Its crown and crest are black, streaked with white. It has a distinct white suppercilium and broad black eye-stripes. It has black-and-white patterns on the wing and tail. The underparts are white apart from the breast. The male has two black bands on the breast, but the female has a single broken breast-band.

Habit and Habitat

It inhabits the fresh waters including streams, canals, rivers, ponds, reservoirs, flooded ditches, tidal creeks and inter-tidal pools. It is usually seen in pairs. It forages from a perch or by hovering over water before plunging vertically into the water to grab its prey with its bill.

Feeding

It feeds on fish, tadpoles and aquatic insects.

Breeding

It breeds throughout the year. It excavates its nest-hole in earth-banks of rivers and streams. The female lays 5-6 white eggs.

Distribution in The World

This bird found in the Africa Asia and Indian Sub-continent except Maldives.

Distribution in Bangladesh

Common resident of Bangladesh. It inhibits rivers, wetlands, beels of all division.

Pied Kingfisher in Tanguar Haor

During the last survey (2011) only 5 were seen in Tanguar Haor.

- SR Rahul & Paul Thompson

Purple Swamphen

Size and weight
Length 45 cm, **weight** 650 g, **length** 44 cm, **wing** 26.5 cm, **bill** 4.5 cm, **tail** 10 cm, **weight** 660 gm.

Purple Swamphen Facts
Scientific Name: ***Porphyrio porphyrio***
English name: **Purple Swamphen**
Bangla name: **Beguni Kalem/ Kalem**
TH Status: **V**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

- A.B.M. Sarowar Alam & Sayam U. Chowdhury

The Purple Swamphen is a large swamp bird with purple blue plumage. It has pale breast and prominent white under tail-coverts. Both sexes have stout red legs and feet, thick red bill and blood red irises.

Habit and Habitat

The Purple Swamphen is found around freshwater swamps, streams and marshes.

Feeding

Diet includes the soft shoots of reeds and rushes and small animals, such as frogs and snails. It is a reputed egg stealer and will also eat ducklings where possible.

Breeding

The Purple Swamphens are generally seasonal breeders, but the season varies across their large range, correlating with peak rainfall in many places, or summer in more temperate climates. They breed in warm reed beds.

Distribution in world

They are found in the Mediterranean region, Africa, Asia, Australasia, Indonesia and the Philippines.

Distribution in Bangladesh

It is widely distributed.

Purple Swamphen in Tanguar Haor

During the last survey (2011) 3419 were seen in Tanguar Haor. Highest number is found in Bagmara-Chattanna *Khal*, Rupaboi *Kanda* and Chattanna Canal.

Census status

419 (2008), 80 (2009), 913 (2010), 193 (2011 January), 3419 (2011 March-April)

Sayem U. Chowdhury

Common Moorhen

Size and weight
Length 32 cm, **wing** 16 cm, **bill** 4 cm, **tail** 6 cm.

The Common Moorhen is an overall dark-grey bird with a red and yellow bill and long toes. The head, neck and under-parts are slatey grey with white undertail coverts. The male and the female look alike.

Habit and Habitat

It inhabits well-vegetated marshes, ponds, canals, haors and other wetlands. It is seen in pairs or small flocks. It forages by swimming on the water or walking on aquatic plants.

Feeding

It feeds on fruits, seeds, and shoots of aquatic plants, insects, larvae, molluscs, frogs and small fish while walking or swimming.

Breeding

The nest is a basket built on the ground in dense vegetation, reeds or trees overhanging water. The nest is a large mass of leaves. The female lays 5-12 yellowish eggs.

Common Moorhen Facts
Scientific Name: ***Gallinula chloropus***
English name: **Common Moorhen**
Bangla name: **Pati panmurgi**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Distribution in World

Its global range extends through the America, Europe, Africa and Asia, including all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It is common resident of Bangladesh. It occurs in the beels, haors belts, small fresh water rivers of Chittagong, Dhaka, Khulna , Rajshahi and Sylhet Divisions.

Common Moorhen In Tanguar Haor

During the last survey 449 were found in Tanguar Haor. The highest number is observed in Bagmara-Chattanna Canal, Rupaboi Kanda.

Census Status

44 (2008), 11(2009), 16 (2010), 449 (2011 March- April)

Eurasian Coot

- A.B.M. Sarowar Alam

Eurasian Coot Facts
Scientific Name: ***Fulica atra***
English name: **Eurasian Coot**
Bangla name:, **Jolo Kukkut,Pati Koot**
TH Status: **V**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Size and Weight
Length 43 cm, **wing** 21 cm, **bill** 3.5 cm, **tail** 6 cm, **weight** 600 gm.

Eurasian Coot has black body with a prominent white bill and shield. The iris is red-brown and tibia is orange. The coot has got strong legs with long toes. The male and female are alike.

Habit and Habitat

It prefers large lakes, rivers, reservoirs, haors and flood plains with floating vegetation. It is usually seen in small or large flocks. It forages by swimming on open water and diving to get at the submerged vegetation.

Feeding

The Coot is an omnivore. It feeds mainly on seeds and shoots of aquatic plants. It also takes eggs of other water birds, insects, worms, molluscs and sometimes small fish.

Breeding

This species builds a nest of dead reeds or grasses and floating aquatic vegetation very near the water. It breeds in southern Siberia in May-December. The female lays 5-12 yellowish eggs.

Distribution in World

It occurs and breeds in Europe, Australia, and Northern Africa and Asia including Russia, Japan, China, the Philippines, Southeast Asia, and all countries of the Indian Subcontinent.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. Largest flock found in Tanguar Haor, Hakaluki Haor and Baikka Beel. It also occurs in large ponds, small fresh water river, lakes of Barisal, Chittagong, Dhaka, Rajshahi and Sylhet Divisions.

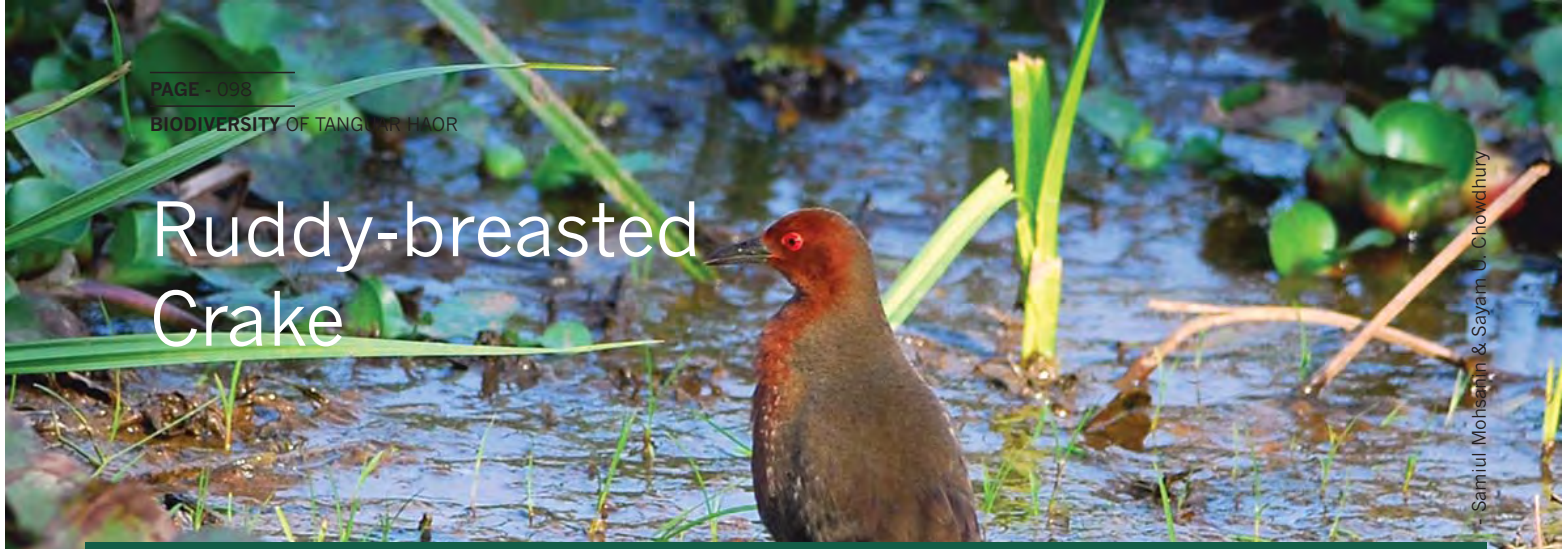
Eurasian Coot in Tanguar Haor

During the last survey 10,096 birds have been noted in Tanguar Haor. It is found mostly in Hatirgatha, Rowa, Rupaboi, and Lechuamara Beel. It is not found in Ulan and Kalmar Beel

Census Status

2914 (2008), 3570 (2009), 7140 (2010), 7570 (2011), 10096 (2011 March- April)

Ruddy-breasted Crake



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Size and Weight
Length 22 cm,
wing 10.5 cm,
bill 2.3 cm.

Ruddy-breasted Crake Facts
Scientific Name: ***Porzana fusca***
English name: **Ruddy-breasted Crake**
Bangla name: **Lalbook Gurguri, Ranga Crake**
TH Status: **R**
IUCN National Status:
National Abundance: **U**
National Status: **W**
IUCN Global Status: **LC**

Ruddy breasted Crake is unmistakable with a ruddy brown forehead, face and breast. It's a solitary bird with a black bill, red irish, dull chestnut under-part and dark-brown upper-part It has a brick- red legs and feet with long toes and a short tail.The male and the female look alike.

Habit and Habitat

Ruddy-breasted Crakes are territorial, but are quite secretive, found always near the water body, hiding amongst aquatic grassy shrubs and bushes when disturbed. They prefer marshes, edges of flooded paddy-fields, ponds, and water-bodies with floating vegetation. It is usually seen alone or in pairs. It forages by walking or running on the paddy fields or floating in vegetation.

Feeding

It feeds on insects and their larvae, molluscs and worms. It also takes seeds and shoots of aquatic plants.

Breeding

It breeds in June-October. It nests 2-3 m above the ground in thick bushes, grasses, dense undergrowths or thorny bamboo clumps near the edge of water. The nest is a shallow cup of twigs, creepers and bulrushes. The female lays 6-7 pinkish-white eggs.

Distribution in world

Its global range is India and Sri Lanka to the Philippines and from Japan to Indochina and all the countries of the Indian Subcontinent except the Maldives.

Distribution in Bangladesh

It occurs in the aquatic area of Chittagong, Khulna and Sylhet Divisions.

Ruddy-breasted Crake in Tanguar Haor

Every year around 20 are seen in this haor. The *khal* runs between Chattainna and Joypur is an ideal place for this bird for feeding and breeding.

Census status

2(2008), 0 (2009), 6 (2011 March/April)

- A.B.M. Sarowar Alam

Common Snipe

Size and weight
Length 26 cm, **wing** 13.5 cm, **bill** 6.5 cm, **tail** 5.5 cm, **weight** 85 gm.

Common Snipe Facts
Scientific Name: ***Gallinago gallinago***
English name: **Common Snipe**
Bangla name: **Pati chaga**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

This has a larger bill than other snipe species found in this area. The Common Snipe is a very similar to Swinhoe's and Pintail Snipe and are often difficult to separate from each other. The body is brown with spotting all over the body, a dark clear stripe through the eye, with light stripes above and below it. Tail is larger than the other snipes. Its legs and feet are dull olive-green. The male and the female look alike. Most important feature is that its wing-tips are much shorter than the tail tip when Pintail has almost equal tips to the both.

Habit and habitat

This is a camouflaged bird and usually always hides in the ground vegetation and grassland. It inhabits the marshes, paddy fields, and muddy edges to wetlands. It is usually seen alone or in small groups. It has a zigzag flying pattern. It forages by probing the soft mud with its bill.

Feeding

It feeds on worms, larvae of insects, spiders, leeches, crustaceans, gastropods, small vertebrates and some seeds. It is more active at dawn and dusk and on moonlit nights.

Breeding

It breeds in Siberia and Eastern Asia in April-August. It nests in grass or other vegetation on the ground. The nest is sparsely lined with grasses and twigs. The female lays 2-5 eggs.

Distribution in the World

It global range extends through North America, Europe, Africa and Asia, including all countries of the Indian Subcontinent.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in all the waters of all divisions.

Common Snipe in Tanguar Haor

During the last survey in March- April in 2011, only 10 were seen in Ballardubi and Tekunna Beel in Tanguar Haor.

Census Status

No record is found. Only 10 in 2011(March-April survey)

- A.B.M.Sarowar Alam & Sayam U. Chowdhury

Black-tailed Godwit

It is very similar species to Bar-tailed Godwit. But it easily separated from it by its black tail and broad white-wing bar. It has large bill with red base and black tip. Its belly and flanks are white. It has brown irises and blackish legs.

Habit and Habitat

It inhabits inter-tidal mudflats, rivers, lakes, estuaries and saltpans and paddy field of the Haor region. It is usually seen in flocks in the winter. It forages by probing in mud.

Feeding

It feeds mainly on invertebrates, plant materials, prey includes include beetles, flies, grasshoppers, dragonflies, mayflies, caterpillars, annelid worms and mollusks. Occasionally it eats fish eggs, frogspawn and tadpoles.

Breeding

It breeds in northeast China, Eastern and Western Siberia during July-February. It usually nests semi-colonially on the ground in wet meadows with dense grasses. The nest is lined with a thick mat of aquatic vegetation. The female lays 3-6 eggs.

Distribution in the World

It is found in Europe, Africa, Australia, Taiwan, the Philippines, Indonesia, and Papua New Guinea. It's also found in all the countries of the Indian Subcontinent during winter.

Distribution in Bangladesh

It occurs mainly along the coast and in the haors of Barisal, Chittagong, Khulna and Sylhet Divisions. Occupationally found in the Padma River of Rajshahi Division.

Black tail Godwit in Tanguar Haor

During the last survey 1214 birds were seen in Ulan Beel of Tanguar Haor. During the winter period these birds are found foraging in the paddy field in the Kandas. Higher numbers of these birds are found r in Ulan and Kalmar *kanda* Beels.

Census status

1214 (2011 March-April survey)

Size and Weight
Length 39 cm, **wing** 20 cm, **bill** 10 cm, **tail** 8 cm, **weight** 222 gm.

Black tail Godwit facts
Scientific Name: ***Limosa limosa***
English name: **Black-tailed Godwit**
Bangla name: **Kalalej Jourali**
TH Status: **C**
IUCN National Status:
National Abundance: **R**
National Status: **W**
IUCN Global Status: **LC**

Spotted Redshank

- Paul Thomson

Size and Weight
Length 30 cm, **wing** 17 cm, **bill** 5.7 cm, **tail** 6.5 cm, **weight** 150 gm.

Spotted Redshank facts
Scientific Name: ***Tringa erythropus***
English name: **Spotted Redshank**
Bangla name: **Tila Lalpa, Chittrito Pi-oo**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

It has long slender bill (red restricted only the base) and red legs and is larger than the Common Redshank. It has greenish colour in upper-parts with clear spotting and whitish in under-parts. In flight it shows a white oval on the back. The male and the female look alike in all seasons.

Habit and Habitat

It inhabits mainly freshwater marshes, coastal island, beels, haors, estuaries, shrimp farms, mangrove forests and paddy fields. It is usually seen alone or in small flocks and it forages by wading in open water or probing in the mud.

Feeding

It feeds on crustaceans, grasshopper, worms, molluscs, aquatic insects, larvae and small fish.

Breeding

It breeds in Northern Scandinavia and in northern Asia during May-August. It nests on open boggy taiga, laying four eggs in a ground scrape.

Distribution in the World

Its global range extends from Europe and Russia to Africa, the Middle East and Asia, including Pakistan, India, Nepal and Sri Lanka.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in the wetlands of Barisal, Chittagong, Dhaka and Sylhet Divisions.

Spotted Redshank in Tanguar Haor

During the last survey (2011) only 17 were found in Lechuamara and Rupaboi Beel in Tanguar Haor.

Census status

17 (2011 March-April)

Wood Sandpiper

- A.B.M.Sarowar Alam & Sayam U. Chowdhury

Wood Sandpiper has a grey-brown upper-part with heavily clear white spots. It has comparatively shorter straight bill than other birds, with pale-green colour. It has brownish irish, whit prominent supercilium and yellowish leg. In flight darker feather and white rumped clearly found. The male and the female look alike.

Habit and habitat

It inhabits all types of water bodies in Bangladesh such as haors, baors, beels, lakes, mud flats, tidal creeks, wet paddy fields and roadside canals etc. Usually it is seen in alone or in small groups. It forages by sweeping the water surface and probing the mud.

Feeding

It feeds on aquatic insects, small fish, frogs and seeds; and at its breeding ground it feeds chiefly on aquatic insects and their larvae.

Size and weight
Length 20 cm, **wing** 12.5 cm, **bill** 2.8 cm
tail 4.8 cm, **weight** 52 gm.

Wood Sandpiper facts
Scientific Name: ***Tringa glareola***
English name: **Wood Sandpiper**
Bangla name: **Bon Batan, Balu Batan**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Breeding

The Wood Sandpiper breeds in subarctic wetlands from the Scottish Highlands across Europe and Asia in May-July. It nests on marshy ground or floating aquatic plants covered with dense vegetation. The female lays 4 brown eggs.

Distribution in World

Its global range includes Europe, Africa, Australia and Asia, including all the countries of the subcontinent.

Distribution in Bangladesh

It occurs in water bodies in all Divisions in Bangladesh.

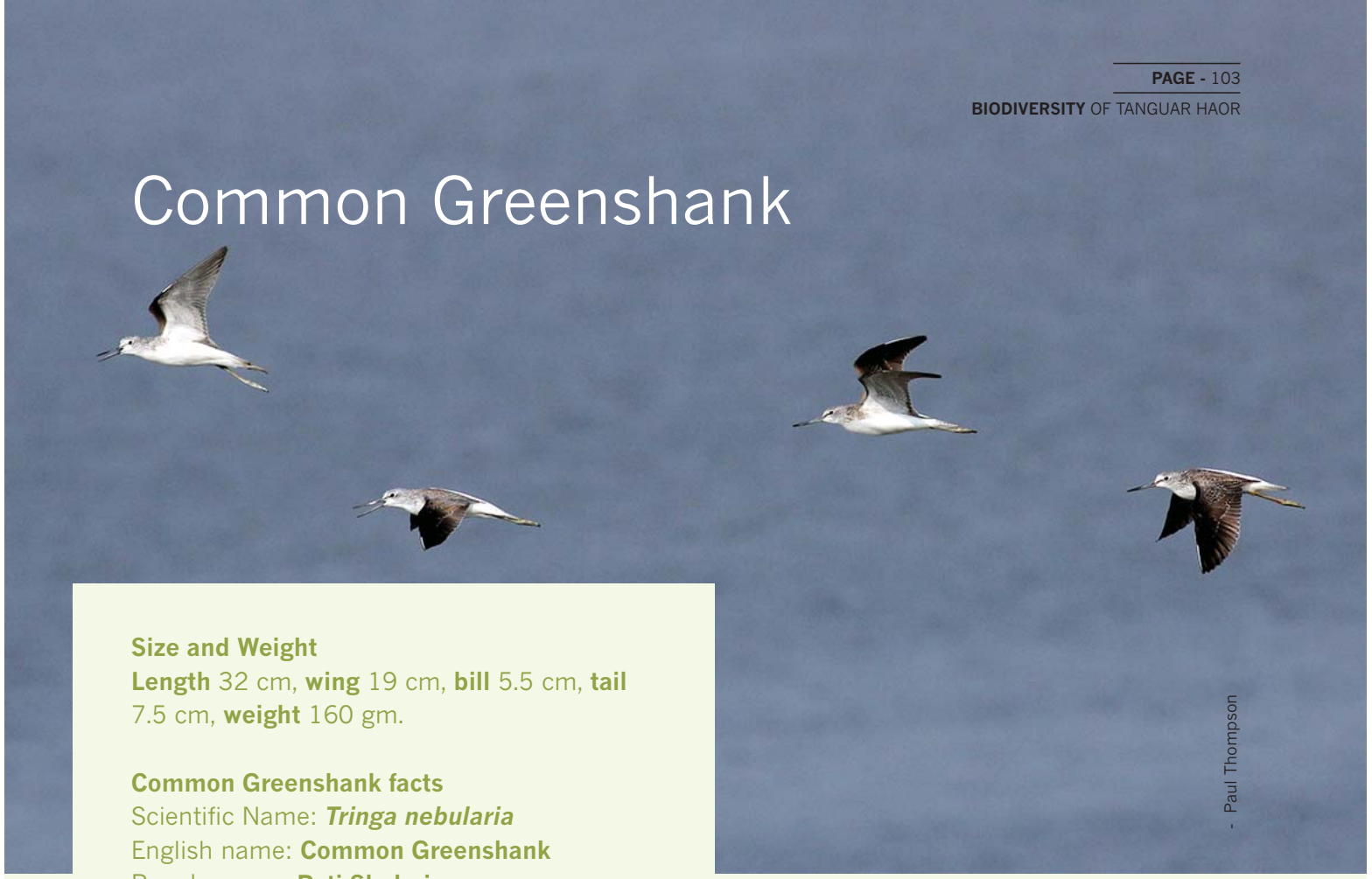
Wood Sandpiper in Tanguar Haor

During the last survey (2011) only 12 were seen in Hatirgatha, Lechuamara, Rowa, Tekunna and Bagmara Beels of Tanguar Haor.

Census status

12 (2011 March- April)

Common Greenshank



- Paul Thompson

Size and Weight
Length 32 cm, **wing** 19 cm, **bill** 5.5 cm, **tail** 7.5 cm, **weight** 160 gm.

Common Greenshank facts
Scientific Name: ***Tringa nebularia***
English name: **Common Greenshank**
Bangla name: **Pati Shobujpa**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

A medium sized shorebird with long, olive green legs; it has a long, slightly upturned grey based bill longer than the related species. Overall dark brownish upper-parts and white fore neck and under-parts. The male and the female look alike.

Habit and habitat

It inhabits the riverbanks, mudflats, margins of pools, tidal creeks and saltpans. It is usually seen alone or in small parties. It forages by wading, pecking or probing in shallow water.

Feeding

It feeds on insects and their larvae, especially beetles, crustaceans, annelids, molluscs, small fish and amphibians.

Breeding

Breeding occurs from Northern Scotland eastwards across Northern Europe and Asia in April-June. It nests on dry ground near marshy areas, laying about four eggs in a ground scrape.

Distribution in the World

Its global range extends over Europe, Africa, Australia and Asia, including all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in all the waters of all divisions.

Common Greenshank in Tanguar Haor

During the last survey (2011) only 3 were seen in Lechuamara, Ballardubi, Annar Beel in Tanguar Haor.

Census status

3 (2011 March- April)

Green Sandpiper

- Robin Newlin

Size and Weight
Length 23 cm, **wing** 14.5 cm,
bill 3.4 cm, **tail** 5.5 cm, **weight** 75 gm.

Green Sandpiper Facts
Scientific Name: ***Tringa ochropus***
English name: **Green Sandpiper**
Bangla name: **Shobuj Batan**
TH Status: **R**
IUCN National Status:
National Abundance: **U**
National Status: **W**
IUCN Global Status: **LC**

Grey brown with white speckles upper-parts and has a white with gray mottled breast. Legs are yellow-green to green when bills are half yellow-green and half black, the features that separate it from the similar looking but slightly larger Wood Sandpiper. Eye pattern is dark brown to black with a white ring around. Rounded tail with black band or bar and dagger shaped bill. The male and the female look alike.

Habit and Habitat

It prefers freshwater habitats such as marshes, riverbanks, sewage farms, small ponds, pools, narrow ditches and hill streams. It is usually seen alone or in pairs. It rarely mixes with other waders. It forages by wading in shallow water and probing in soft mud.

Feeding

It feeds on small insects and invertebrates from surface water and vegetation; molluscs, crustaceans, worms and other aquatic invertebrates etc.

Breeding

Nests in trees and uses old nests left by other birds; lays four light grey eggs with small red brown spots. Both parents incubate for 20 to 23 days.

Distribution in the World

Its global range extends through Europe, Africa, Australia and Asia, including all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It occurs mainly in the rivers and wetlands of all divisions.

Green Sandpiper in Tanguar Haor

Only two were seen in Rupaboi and Berberia Beel.

Census status

2 (2011 March-April)

Marsh Sandpiper

- Reza Khan

Size and weight
24 cm, **wing** 13.5 cm, **bill** 4 cm, **tail** 5.5 cm, **weight** 42 gm.

Marsh Sandpiper Facts
Scientific Name: ***Tringa stagnatilis***
English name: **Marsh Sandpiper**
Bangla name: **Bil Batan**
TH Status: **U**
IUCN National Status:
National Abundance: **U**
National Status: **W**
IUCN Global Status: **LC**

A long fine black bill and very long dark-yellowish legs; dark brown or pale green upper-part and whitish under-parts. It's a very similar species to Common Greenshank. Its head and neck are heavily streaked with black, with dark arrow shapes on the flanks. The male and the female look alike. Possibly the palest among the sandpipers we have in the country.

Habit and habitat

It inhabits intertidal mudflats, rivers, estuaries, lagoons, haors, paddy fields, coastal areas and haor basins. It is usually seen alone or in small groups. It forages in shallow water by sweeping the surface of the water or probing the soft mud.

Feeding

Marsh Sandpipers eat aquatic insects, larvae, molluscs and crustaceans.

Breeding

Breeding occurs from east Europe to East Siberia. It nests on the grassy and muddy shores of freshwater or brackish water with vegetation. The nest is a pad of grasses. The female lays 3-5 eggs.

Distribution in the World

Its global range extends as a migrant to Europe, Africa, Australia and southern Asia, including all the countries of the Indian Subcontinent except Bhutan.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs mainly in the rivers, marshes, wetland and coasts of all divisions.

Marsh Sandpiper in Tanguar Haor

Only 3 were seen in Tekunna and Bagmara Beel of Tanguar Haor.

Census status

2 (2008), 3 (2011 March-April)

- Zahangir Alom

Size and Weight
Length 20 cm, **wing** 11 cm,
bill 2.4 cm, **tail** 5.3 cm, **weight** 45 gm.

Common Sandpiper Facts
Scientific Name: ***Actitis hypoleucos***
English name: **Common Sandpiper**
Bangla name: **Pati Batan, Chapakhi**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Common Sandpiper

The Common Sandpiper has a pale brown upper breast with fine bars; the head, neck and upper-parts are brownish with a white belly. It has a prominent white patch between its wing and breast band separates it from the similar looking birds. It has pointed-wings and yellow-grey short legs. The male and the female look alike. It keeps its tail almost continuously bobbing when foraging.

Habit and habitat

Prefers all types of water bodies especially wet fields, mangroves, coastal islands, estuaries, haors, fresh water rivers, large ponds, rice fields and grassy lawns etc. It is usually seen alone or in pairs. It forages at the water's edge by running, probing and picking its prey from the mud.

Feeding

Common Sandpiper eats small invertebrates, such as crabs, worms, insects, spiders and centipedes.

Breeding

It breeds across Europe and Asia in May-June. It nests on the ground near freshwater.

Distribution in the World

Its global range extends over Europe, Africa, Australia and Asia, including all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in the waters of all divisions.

Common Sandpiper in Tanguar Haor

During last survey total seven were seen in Lechuamara, Rupaboi, Rowa, Tekunna, Bagmara Beel and Chattainna *Khal* in Tanguar Haor.

Census status

7 (2011 March-April)

Temminck's Stint

Size and Weight
Length 15 cm, **wing** 9.5 cm, **bill** 1.8 cm, **tail** 4.5 cm, **weight** 20 gm.

Temminck's Stint Facts
Scientific Name: ***Calidris temminckii***
English name: **Temminck's Stint**
Bangla name: **Teminker Chaha**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

- Samiul Mohsanin

It is the second smallest waders in the country, the fist being the related Little Stint that is just 13 cm in length. It is a very small wader with yellowish legs; brownish grey upper-parts and a dark grey breast. It has white side to the tail and white belly to vent. The male and the female look alike. Its yellow legs separate it from the black legged Little Stint. Also its bills are much finer than the latter's.

Habit and habitat

It inhabits inland fresh water wetlands, mudflats, marshes, riverbanks, saltpan and haor areas. It forages on soft mud by probing among the vegetation. Found in small groups.

Feeding

It feeds on Insects and larvae, worms, crustaceans and mollusks.

Breeding

It breeds in the tundra of Scandinavia and Siberia in May-July. It makes more than one nest on the ground beside lakes, bogs and marshes. The female lays 2-5 eggs in each nest.

Distribution in the World

Its global range extends through Europe, Africa and Asia, including all countries of the Subcontinent.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in the wetlands of Barisal, Chittagong, Dhaka, Rajshahi and Sylhet Divisions.

Temminck's Stint in Tanguar Haor

Only one was seen in Bagmara (Rowa) of Tanguar Haor.

Census status

1(2011 March-April)

Ruff

Size and Weight
Length 26 cm, **wing** 13 cm, **bill** 2 cm, **tail** 5.7 cm, **weight** 125 gm.

Ruff Facts
Scientific Name: ***Philomachus pugnax***
English name: **Ruff**
Bangla name: **Geoala Batan**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

- Thouhudur Rahman & Munir Ahamed

It is grey to brown with variable buff, red, and black upper-parts. Dark marking on breast and slightly curved short pointed bill. Both sexes have brown irises and a dark brown bill, pointed tail and yellow-orange legs. When on wings oval white patches on either side become visible that separates it from all other waders. Direct flight with rapid wing beats. The female is smaller than the male. Also sizes of males vary a lot.

Habit and Habitat

It inhabits the tidal mudflats, estuaries, large wetlands, chars, haors, and grassy areas in the winter. It is usually seen in mixed flocks of waders. It forages by walking, probing and picking in mud-banks, crop fields and grasslands.

Feeding

It feeds on grass-seeds, worms, molluscs, insects, frogs and small fish. It is active both in the day and night.

Breeding

It breeds in May-June in Europe and Asia from Scandinavia and Great Britain almost to the Pacific. It nests on the ground concealed in grass or meadow. The female lays 3-4 eggs.

Distribution in the World

Its global range extends over Europe, Africa and Asia, including the entire Subcontinent except Bhutan.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in the haors and coasts of Barisal, Chittagong and Sylhet Divisions.

Ruff in Tanguar Haor

During the last survey five were found only in Rowa Beel of Tanguar Haor.

Census status

160 (2010), 5 (2011 March-April)

- Sayam U. Chowdhury & SR Rahul

Pheasant-tailed Jacana

Size and weight
Length 31 cm, **wing** 21 cm, **bill** 2.7 cm, **tail** 23.5 cm, **weight** 145 gm.

Pheasant-tailed Jacana Facts
Scientific Name: ***Hydrophasianus chirurgus***
English name: **Pheasant-tailed Jacana**
Bangla name: **Neu Pipi, Dal Kukra**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

The Pheasant-tailed Jacana is an unmistakable bird with a long tail. They are around 31 cm long, but during breeding session the 8 cm long tail is added to the total length. The male is larger than the female. In the breeding season its head and fore neck are white, hind neck is orange yellow, upper-parts brown black and under-parts whitish with dark breast band in non breeding season.

Habit and Habitat

It inhabits the freshwater wetlands, haors, marshes, small rivers and large ponds. It's usually found in pairs or small groups. It forages by walking on floating leaves or swimming in shallow water and nibbling on floating vegetation.

Feeding

The main sources of food of the species are seeds, shoots of aquatic plants, insects and other aquatic invertebrates.

Breeding

These jacanas breed on floating vegetation from March to July. They are polyandrous and a female may lay up to 10 clutches. Male incubate alone and guards the chicks.

Distribution in the World

Its global range extends through South, Southeast and East Asia, including Pakistan, India, Nepal, Sri Lanka to China, the Philippines and Indonesia.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in the haors and beels of all divisions.

Pheasant-tailed Jacana in Tanguar Haor

Due to loss of habitat and food, breeding places of this bird is decreasing day to day. However in Tanguar Haor, the numbers of this bird are increasing every year due to the availability of food and proper breeding places. Every year around 1200-1500 birds are seen in Tanguar Haor. During the last survey in March 1161 birds were seen. The numbers were found higher in Rupaboi Beel *kanda* and its surrounding places.

Census Status

7 (2008), 190 (2009), 484 (2010), 31(2011 January)

Little Ringed Plover

Size and Weight
Length 17 cm, **wing** 11 cm, **bill** 1.6 cm, **tail** 5.8 cm, **weight** 28 gm.

Little Ringed Plover Facts
Scientific Name: ***Charadrius dubius***
English name: **Little Ringed Plover**
Bangla name: **Soto Nothjiria, Jiria**
TH Status: **U**
IUCN National Status:**-**
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

This bird has a brownish upper-part and whitish under-parts. Its yellow eye- ring and black neck is a distinctive morphometric characteristic. It has a black bill with yellow base. The white under-tail is a pointed shape and forehead is black with white stripe. The male and the female look alike.

Habit and Habitat

It inhabits coastal, intertidal mudflats, beaches, large riverbanks, saltpans, flood pools and haor basins. It is usually seen in pairs and scattered flocks. It forages by stealthily walking at the margin of water body. Direct flight; rapid wing beats, low over ground.

Feeding

It feeds on insects, spiders, and crustaceans.

Breeding

It breeds in March-August. It nests on stone-laden banks of rivers, lakes or pools. The nest is a scrape lined with pebbles and twigs. The female lays four grey eggs. It may raise 1-3 broods in a season. Incubation takes 22 days. The chicks leave the nest after hatching. Hatchlings fledge in 30 days.

Distribution in the World

It global range extends through Europe, Africa, Australia and Asia, including all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It is an uncommon resident and a common winter visitor to Bangladesh. It occurs in all the waters of all divisions.

Little Ringed Plover in Tanguar Haor

During the last survey (2011) only 24 were found in Tanguar Haor. These were seen in Lechuamara, Ballardubi, Tekunna, Annar, Bagmara, Ulan Beel and Chattana Khal of Tanguar Haor.

Census status

11 (2010), 24 (2011 March-April)

- A.B.M.Sarowar Alam & Sayam U. Chowdhury

Black-winged Stilt

Size and Weight
Length 25 cm, **wing** 24.5 cm, **bill** 6.1 cm, **tail** 8.5 cm, **weight** 177 gm.

Black-winged Stilt Facts
Scientific Name: ***Himantopus himantopus***
English name: **Black-winged Stilt**
Bangla name: **Kalapakh Thengi, Lal Gon/Lal thengi, Lam Gora**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

It has blackish upper-parts and whitish under-parts; long reddish leg; long slender black bill; black pointed tail. The female is slightly smaller than the male. Compared to size of its body this stilt has the longest legs of all waders.

Habit and Habitat

It inhabits a variety of wetlands, including marshlands, coastal lagoons, lakes and saltpans. It is seen usually in flocks of 10-100. It also joins mixed feeding parties of waders. It forages by walking and wading slowly in mud and water, probing and picking food from the soft soil.

Feeding

It feeds chiefly on insects, crustaceans and other aquatic invertebrates. It flies with its long legs trailing behind its body. In flight its usual call is a series of short notes: kip, kip. When garrulous its call is a repetition of an aggressive note: chek-chek-chek-chek.

Breeding

It breeds in April-August. It nests colonially on dry grounds at the edge of water. The nest is a pad of grasses, leaves, scraps, etc. The female lays 3-4 olive dark speckled eggs.

Distribution in the World

Its global range extends over North and South America, Europe, Australia, Africa and Asia, including the entire subcontinent and Taiwan.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs mainly along the coasts of Chittagong and Khulna Divisions and in the haors and rivers of Chittagong, Dhaka, Khulna and Sylhet Divisions.

Black-winged Stilt in Tanguar Haor

During last survey 31 were found only in Bagmara (Rowa) and Ulan Beel in Tanguar Haor.

Census status

31(2011 March-April)

Grey-headed Lapwing

Size and weight
Length 37 cm, **wing** 24 cm, **bill** 3.7 cm, **tail** 10 cm, **weight** 284 gm.

Grey-headed Lapwing Facts
Scientific Name: ***Vanellus cinereus***
English name: **Grey-headed Lapwing**
Bangla name: **Metematha Titi, Dushor Ti-ti**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

This bird has a brownish grey head, breast and neck, a yellow bill with black tip as well as a black breasted band and white under-part breast. Overall it has a brownish upper-part, bright yellow legs and feet with black claws. The male and the female look alike.

Habit and Habitat

It inhabits in all water bodies such as rice fields, haors, small rivers, beels, etc. It is usually seen in small groups. It forages by walking and picking its prey from grasslands, cropfields and wetlands.

Feeding

It feeds on insects, worms and molluscs. It flies with slow wing-beats. Its occasional call is a repetition of a plaintive note: chee-it, chee-it. While taking off under duress it calls with a louder note.

Breeding

It breeds in May-June. It nests on the ground in pastures, river flats and rice fields. The nest is a shallow depression, lined with twigs. The female lays four olive-brown and well

- A.B.M.Sarowar Alam & SR Rahul

speckled eggs. Incubation takes 28-29 days. Hatchlings fledge in 30 days. The fledglings join the parents flock.

Distribution in the World

Its global range extends through Asia, including India, Nepal, Myanmar, Cambodia, China, Indonesia, Japan, Mongolia, Nepal, Korea, the Philippines, Russia, Singapore, Taiwan, Thailand and Vietnam.

Distribution in Bangladesh

It is an uncommon winter visitor to Bangladesh. It occurs mainly in the haors and beels of all divisions.

Grey headed Lapwing in Tanguar Haor

During the last survey (2011) 35 were found in Tanguar Haor. These are seen in Lechuamara, Rupoboi, Rowa, Ballardubi, Tekunna, Bagmara and Ulan Beel.

Census status

4 (2010), 7 (2011), 35 (2011 March-April)

Brown-headed Gull

- A.B.M.Sarowar Alam

Size and Weight
Length 46 cm, **wing** 35 cm, **bill** 4 cm, **tail** 14 cm.

Brown-headed Gull Facts
Scientific Name: ***Larus brunnicephalus***
English name: **Brown-headed Gull**
Bangla name: **Khoiramatha Gangchil, Gonga Koitar**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

The adult has a dark brown head, lighter than that of Black-headed, a pale grey body, and red bill and legs. Adult non breeding has a white head and a black spot behind the eye. Usually two outermost black primaries have white spots when Black-headed has the whole 2-3 outer primaries white forming a slash.

Habit and Habitat

It inhabits the coastal area, haors, rivers, lakes and large beels. It is usually seen in pairs, alone or in flocks. It forages by flying low over water, following fishing-boats.

Feeding

Diets mainly on fish, but they also feed on earthworms, insects, shrimps, winged termites and shoots of crops.

Breeding

It breeds in Tibet and central Asia in June-July. It breeds in colonies in large reed beds or marshes, or on islands in lakes, nesting on the ground. The female lays 2-3 eggs.

Distribution in the World

Its global range extends through the coasts of the Persian Gulf, South and Southeast Asia, including the entire subcontinent, to China and Malaysia.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in all the waters of all divisions.

Brown-headed Gull in Tanguar Haor

During last survey (2011) 879 were seen in Tanguar Haor. Highest number was seen in Roa Beel.

Census Status

6 (2011), 879(2011 March- April)

- A.B.M.Sarowar Alam

Whiskered Tern

Size and Weight
Length 25 cm, **wing** 21cm, **bill** 3.5cm and **tail** 7.9cm.

Whiskered Tern Facts
Scientific Name: ***Chlidonias hybridus***
English name: **Whiskered Tern**
Bangla name: **Pangchil**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

The Whiskered Tern is a small tern with a slightly forked tail. The breeding adult has a reddish bill, black cap and under-part blackish. The non-breeding plumage is whitish in under-parts and has a black bill and red legs.

Habit and habitat

It inhabits the rivers, flooded paddy fields, coastal lagoons, mudflats and tidal creeks. It is a gregarious bird, diurnal and is usually seen in flocks. It forages by flying over the water surface hawking its prey and plunging into the water.

Feeding

It mainly feeds on insects like dragonflies, larvae, grasshoppers and water beetles. It also eats tadpoles, crabs and fish. It rests on rocks or mud-banks on one leg. Its usual call is a repetition of a sharp note: kerk k erk.

Breeding

It breeds in Assam and north-eastern China in May-August. It nests on the floating vegetation in freshwaters. The nest is a small untidy pad of stems. The female lays 2-3 eggs.

Distribution in world

Its global range extends through Europe, Africa, Australia and Asia, including Pakistan, India, Nepal, Sri Lanka, China, Malaysia and Indonesia.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in all the waters of all Divisions.

Whiskered Tern in Tanguar Haor:

During last survey 1975 were found in Tanguar Haor at Hatirgatha, Lechuamara, Tekunna and Bagmara Beel. Number of this bird is seen highest in Tekunna Beel.

Census status

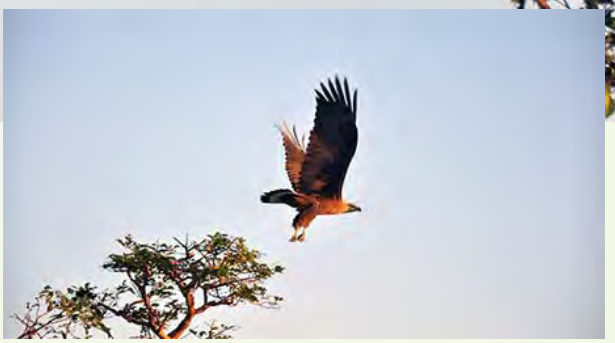
1975 (2011 March-April survey)

Pallas's Fish Eagle

Size and Weight
Length 80 cm, **wing** 57 cm, **bill** 5.8 cm, **tail** 27 cm.

Pallas's Fish Eagle Facts
Scientific Name: ***Haliaeetus leucoryphus***
English name: **Pallas's Fish Eagle (Pallas's Fishing Eagle, Pallas's Sea-Eagle)**
Bangla name: **Palasi Kura-eegol, Kura, Kura/Bo-wol/Koral**
TH Status: **C**
IUCN National Status:
National Abundance: **U**
National Status: **r**
IUCN Global Status: **LC**

- A.B.M.Sarowar Alam



Largest breeding migrant eagle of the country. It has a prominent white sub-terminal band on black tail, dark brown upper-parts with a small pale head. The male is slightly smaller than the female. The under-parts are rufous brown and have yellow irises, and dull yellow legs and feet.

Habit and Habitat

It inhabits the haors, riverbanks, lakes, tidal creeks, marshes and mangroves. It is usually seen in pairs or alone. It forages by scanning the water or the bank from its perch or quartering flights and hunting its prey with the talons.

Feeding

Its diet consists primarily of large freshwater fish. It also consumes water birds, snakes, frogs, turtles and carrion.

Breeding

It breeds in October-February. It nests on the top of tall trees near the water. The female lays 2-4 white eggs.

Distribution in the World

It global range extends through Central, South and Southeast Asia, including Pakistan, India, Nepal, Bhutan, Southern Siberia, Mongolia, China and Myanmar.

Distribution in Bangladesh

It occurs mainly in the haors basin of Sylhet Divisions. Occasionally it is found in Dhaka, Rajshahi, Khulna and Chittagong Divisions.

Pallas's Fish Eagle in Tanguar Haor

During the last survey (2011) five were seen in Lechuamara, Annar, Ulan Beel of Tanguar Haor.

Census status

1 (2008), 4 (2009), 5 (2011 March- April Survey)

Little Grebe

Size and Weight
Length 23 cm, **wing** 10 cm,
bill 2 cm, **tail** 2.8 cm.

Little Grebe Facts
Scientific Name: ***Tachybaptus ruficollis***
English name: **Little Grebe**
Bangla name: **Soto Duburi, Dubdubi/Pandubi/ Duburi, Duburi, Dubalu**
TH Status: **C**
IUCN National Status:
National Abundance: **U**
National Status: **r**
IUCN Global Status: **LC**


- A.B.M.Sarowar Alam & Paul Thompson

Little Grebe is the only hundred per cent aquatic resident bird of the country and almost without a tail but the fluffed-up rear-end feathers increase the beauty of the stubby tail. It is a stubby little water bird with a longish neck and webbed feet. It has a pointed black bill with white tip, brownish upperparts and buff under-parts. It has rufous cheek, throat and sides of the neck. The gape is yellow. Greenish-black legs and feet as eyes are reddish that turn yellowish during non-breeding season. Outside the breeding season grebes appear duller and lacks chestnut.

Habit and Habitat

It inhabits the ponds, reservoirs, haors, ditches and slow-moving rivers. It is seen in pairs or small parties. Dives rapidly in search of aquatic plants and animals.

Feeding

It feeds on fish, frogs, tadpoles, insects, roots and small crustaceans.

Breeding

It breeds in April-October. It nests on floating vegetation at the edge of the water. The nest is a pad of weeds or rushes with a central depression. The female lays 4-6 white eggs.

Distribution in the world

Its global range extends over Europe, Africa, Australia and Asia except the Maldives.

Distribution in Bangladesh

Once common throughout Bangladesh it is now restricted in freshwater reservoirs in Sylhet, Dhaka and Rajshahi Division.

Little Grebe in Tanguar Haor

During the last survey in March/April in 2011 287 birds were seen in this haor. The highest concentration of this bird is observed in Rowa Beel. It is also found in Hatirgatha, Lechuamara, Rupoboi, Balladubi, Annar and Barberia Beel.

Census Status

31 (2008), 596 (2009), 56 (2010), 137 (2011)

Great Crested Grebe

Size and Weight
Length 50 cm, **wing** 20 cm, **bill** 4.3 cm

Great Crested Grebe Facts
Scientific Name: ***Podiceps cristatus***
English name: **Great Crested Grebe**
Bangla name: **Boro Khopaduburi, Khopa Duburi**
TH Status: **C**
IUCN National Status:
National Abundance: **U**
National Status: **r**
IUCN Global Status: **LC**

- SR Rahul

This is the largest of the grebes and got its common english name from the backwardly directed, erectile, black crest that often looks divided into two. It has dark brown upperparts and whitish under-parts. Its legs and feet are olive-green, web is yellowish and nails are bluish .It has rufous-orange flanks. White face, red eyes and black lore are distinctive. In winter it looks greyish-white.

Habit and Habitat

It inhabits the rivers, haors, lakes, heels, estuaries and coastal waters. It is usually seen in pairs or small parties. It is an excellent swimmer and diver and pursues its fish prey underwater.

Feeding

The Crested Grebe feeds mainly on fish, but also little crustaceans, tadpoles, aquatic plants, insects and small frogs.

Breeding

It breeds in June-August. The nest is made with aquatic vegetation near the water. The female lays 3-5 green eggs.

Distribution in Bangladesh

It occurs during winter mainly in the haors and rivers in Chittagong, Dhaka, Rajshahi and Sylhet Divisions.

Distribution in the World

Its global range extends through Africa, Europe, Australia and Asia except the Maldives.

Great Crested Grebe in Tanguar Haor

During the last survey (2011) only four birds were seen at Rupoboi Beel in Tanguar Haor.

Census status

15 (2008), 3 (2009), 2 (2010), 2(2011)

Little Cormorant

- Enam Ul Haque & Saurov

Size and Weight
Length 51 cm, **weight** 430 gm, **wing** 19 cm, **bill** 3.2 cm **tail** 14 cm.

Little Cormorant Facts
Scientific Name: ***Phalacrocorax niger***
English name: **Little Cormorant**
Bangla name: **Choto Pankouri, Pan Kawuri**
TH Status: **V**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

The Little Cormorant is a very common water bird with blackish plumage. It has a short greyish bill with a hooked tip. The legs and webbed feet are black. The sexes are similar, but non-breeding adults and juveniles are browner and lack the head plumes.

Habit and Habitat:

It inhabits the all types of water bodies such as rivers, ponds, lakes, marshes, estuaries and coastal wetlands. It is usually seen alone, in pairs or small parties. It forages by swimming, diving and seeking prey under water.

Feeding:

It feeds on fish, frogs and crustaceans.

Breeding:

It breeds in July-May. It nests in large colonies on trees near the water. The nest is a shapeless platform of sticks and leafy branches. The female lays 3-5 eggs.

Distribution in the World:

Its global range extends through Asia, including, China, Malaysia, Indonesia, Afghanistan and the entire subcontinent except the Maldives.

Distribution in Bangladesh:

It is a common resident of Bangladesh. It occurs in all the waters of all divisions.

Little Cormorant in Tanguar Haor:

During last survey total 2370 birds were seen in this haor. Highest number has been observed in Rowa (1505). Bagmara and Rupoboi Beel also showed good presence of this bird.

Census Status

445(2008), 212(2009), 760(2010), 222(2011)

- Quazi Ahamed

Great Cormorant

Size and Weight
Length 80 cm, **wing** 34 cm, **bill** 6.5 cm, **tail** 15 cm.

Great Cormorant Facts
Scientific Name: ***Phalacrocorax carbo***
English name: **Great Cormorant**
Bangla name: **Boro Pankouri, Paan-kowri/Jol-Kak**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

This large size cormorant has blackish plumage with a white throat. It has a longish tail and yellow throat-patch. Its legs and feet are black, Grayish bill with a hooked tip, rounded wings and tail. Its flight is Strong direct with steady wing beats.

Habit and Habitat

It inhabits large inland water bodies such as rivers, lakes and coastal areas. It is usually seen alone, in pairs or in small flock. It forages by swimming and diving in water.

Feeding

It feeds mainly fish and crustaceans.

Breeding

It breeds in September-February. It usually nests in partially submerged trees. The nest is a massive platform of twigs, lined with water-weeds. The female lays 3-5 blue-green eggs.

Distribution in World

Its global range extends over Europe, America, Australia and Asia, including China, Indonesia and Japan.

Distribution in Bangladesh

It occurs mainly in the haors and rivers of Chittagong, Dhaka, Khulna, Rajshahi and Sylhet Divisions.

Great Cormorant in Tanguar Haor

During last survey only 10 birds were seen at Hatirgatha, Rupoboi, Rowa, Ballardubi, Berbaria Beel in Tanguar Haor.

Census Status

1 (2009), 10 (2010), 66 (2011)

- A.B.M.Sarowar Alam

Oriental Darter

Size and Weight
Length 90 cm, **wing** 34 cm, **bill** 8.2 cm **tail** 22 cm, **weight** 1.5 kg.

Darter Facts
Scientific Name: ***Anhinga melanogaster***
English name: **Darter**
Bangla name: **Udoi Goyar, Sap-phaki/Goyer**
TH Status: **U**
IUCN National Status:
National Abundance: **U**
National Status: **r**
IUCN Global Status: **LC**

This bird has a snake like neck with a large pointed bill. Bill and leg colours are greyish yellow. It has black plumage with silver-grey on the back and wings. The male and the female look alike.

Habit and Habitat

It inhabits the freshwater such as rivers, beels, haors, lakes, ponds and lagoons. It is seen alone or small group. It forages by diving in shallow water and hunting its prey under water.

Feeding

It feeds mainly on small fish. It often swims partly submerged leaving only its head above water when it can be mistaken for a snake.

Breeding

It breeds in June-December. It nests in colonies on trees near water. The nest is a platform of large twigs. The female lays 3-6 greenish-blue eggs.

Distribution in the World

Pakistan, India Nepal, Sri Lanka, Myanmar, Thailand, Laos, Vietnam, Cambodia, Malaysia, Singapore, Brunei, Indonesia

Distribution in Bangladesh

It occurs mainly in the water bodies of Chittagong, Dhaka, Khulna, Rajshahi and Sylhet Divisions.

Darter in Tanguar Haor

During the last survey (2011) only seven were found in Rupoboi and Rowa Beel.

Census Status

1(2009)

Indian Pond Heron

- Saurov Mahmud

Size and Weight
Length 46 cm, **wing** 21.5 cm, **bill** 6.3 cm, **tail** 7.8 cm, **weight** 215 gm.

Whitish under-parts, wings and tail. Brownish upper-parts look camouflage when sitting. Breeding adults is more colourful with yellow-buff head and neck. Its bill is yellowish with a dark tip and legs and feet are dull yellowish-green. The male and the female look alike.

Habit and Habitat

It inhabits all types of fresh water bodies and sometimes saltwater wetlands. It is usually seen alone or in small group and forages by standing still or walking slowly.

Feeding

It feeds mainly on fish. It also takes insects, crustaceans, amphibians and some vegetables.

Breeding

It breeds in January-August. It nests in large mixed colonies on large trees or bamboo groves. The nest is a rough pad of sticks, animal hairs and feathers, lined with fine twigs. The female lays 3-5 green eggs.

Indian Pond Heron Facts
Scientific Name: ***Ardeola grayii***
English name: **Indian Pond Heron**
Bangla name: **Deshi Kanibok, Kani Bok/Kana Bok/Korchey Bok**
TH Status: **V**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Distribution in the World

Its global range extends through Asia, including Pakistan, India, Nepal, Bhutan, the Maldives, Myanmar, Iran and Kuwait.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in all the waters of all divisions.

Indian Pond Heron in Tanguar Haor

It is very common. During last survey (2011) a total of 193 birds were seen at all beel in Tanguar Haor. Highest number has been seen in Rowa.

Census Status

9(2008), 65(2009), 45(2010), 24(2011)

Grey Heron

© A.B.M Sarowar Alam & SR Rahul

Size and Weight
Length 98 cm, **wing** 44.5 cm, **bill** 12.2 cm, **tail** 17 cm, **weight** 2 kg.

Grey Heron Facts
Scientific Name: ***Ardea cinerea***
English name: **Grey Heron**
Bangla name: **Dhupni Bok, Sada Kank/Kank/Anjan, Dhusur Bok**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Grey Heron is a large bird with greyish upper-parts and off-white under-part. Black band of crown and neck, it has an orange-yellow bill, and bright yellow legs and feet. It has golden-yellow irises, dark horny-brown bill, greenish-brown legs and feet with yellowish mark on the joints and back of the tarsus out of the breeding season. The female is look similar. Confusable with Little Egret that always has black, slender bill, black legs with yellow feet, and partial to water bodies.

Habit and Habitat

It inhabits the fields, marshes, freshwater wetlands, pastures, livestock pens, swamps and mangroves. It is usually seen in small flocks. It forages by walking or sprinting on damp grassy ground and margins of wetlands, often following cattle and buffalo herds.

Feeding

It feeds on fish, amphibians, small mammals, reptiles, crustaceans, molluscs, insects, worms, birds and plant materials.

Breeding

It breeds in July-October. It nests on a tree usually near water bodies. The nest is made of twigs and leaves/grasses. The female lays 2-7 greenish-blue eggs.

Distribution in the World

Its global range extends over Africa and Asia and the entire Indian Subcontinent.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in all the waters of all divisions.

Grey Heron in Tanguar Haor

During the last survey (2011) a total of 178 species were seen in Tanguar Haor. Highest number was seen in Chattainna *Khal*.

Census Status

27(2009), 1(2010)

Saurov Mahmud

Cattle Egret

Size and weight
Length 51 cm, **wing** 25 cm, **bill** 5.8 cm, **tail** 9 cm, **weight** 460 gm.

Cattle Egret Facts
Scientific Name: ***Bubulcus ibis***
English name: **Cattle Egret**
Bangla name: **Go Boga, Go Bok/Gai Bak, Go-bok**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

The non-breeding adult has mainly white plumage, a yellow bill and greyish-yellow legs. The breeding adult has orange-buff patches on head, neck and breast. Legs and feet are black with yellow or greenish-yellow upper-parts of the tibia. The male and the female look alike. Confusable with Little Egret that always has black, slender bill, black legs with yellow feet, and partial to water bodies.

Habit and Habitat

It inhabits fields, marshes, freshwater wetlands, pastures, livestock pens, swamps and mangroves. It is usually seen in small flocks. It forages by walking or sprinting on damp grassy ground and margins of wetlands,

Feeding

It feeds on insects, fish and amphibians. It follows grazing cattle to feed on the flushed insects.

Breeding

It breeds in June-August. It nests colonially with herons and egrets in large trees and bamboo groves. The nest is a small platform of sticks. The female lays 3-5 green eggs

Distribution in World

Its global range extends through North and South America, Europe, Africa, Australia and Asia, including all the countries of the Indian subcontinent.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in all the waters in all Divisions.

Cattle Egret in Tanguar Haor

During the last survey 161 birds were seen in Tanguar Haor. Highest number was seen in Ulan Beel.

Census Status

36 (2009), 8(2010)

- Paul Thompson & Enam Ul Haque

Little Egret

Size and weight
Length 63 cm, **wing** 28 cm, **bill** 8.5 cm, **tail** 10 cm, and **weight** 390gm.

Little Egret Facts
Scientific Name: ***Egretta garzetta***
English name: **Little Egret**
Bangla name: **Choto Boga, Chhota Korche Bak, Choto Bok**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Little Egret has white plumage with distinctive black legs and yellow pointed feet. Develop long plumage on nape in breeding season. The male and the female look alike. Only white egret that develops breeding plumages on crest, breast and back of the body that separates it from the similar looking Cattle Egret and white form of Reef Heron.

Habit and Habitat

Prefers all types of freshwater water bodies such as; lakes, rivers, marshlands, seasonally flooded wetlands, flooded paddy-fields, irrigated areas, saltpans, estuaries, tidal creeks and mangroves. It is usually seen in small parties to large group.

Feeding

It feeds on small fish, amphibians, insects, crustaceans, worms, lizards, small mammals and even snakes.

Breeding

It breeds in June-September. It nests in a tree or grove. The nest is a platform of sticks and reeds. The female lays 3-5 grey-blue eggs.

Distribution in the World

Its global range extends over Europe, Africa and Asia, including the Indian Subcontinent, Indonesia and the Philippines.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in almost all the waters bodies of all divisions.

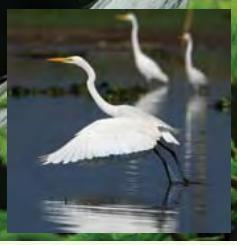
Little Egret in Tanguar Haor

A total of 193 birds were seen during the last survey (2011) in Tanguar Haor. Highest number was observed in Berberia Beel and lowest in Annar and Rowa Beel.

Census Status

1(2008), 143(2009), 2(2011)

Yellow-billed Egret



- Samiul Mohsanin

Size and weight
Length 45 cm, **wing** 32 cm, **bill** 8.5 cm, **tail** 12.5 cm, **weight** 900 gm.

Yellow-billed Egret Facts
Scientific Name: ***Egretta intermedia***
English name: **Yellow-billed Egret**
Bangla name: **Majhla Boga, Korche Bok , Maijla Bok/Korche Bok**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

This is also called an Intermediate Egret. It has black legs and feet with a yellow bill. The male is a little larger than the female. It looks white overall. The male and the female look alike. It is very similar to Little and Great Egrets but unlike others it has only breast and back breeding plumages. This is larger than the little but smaller than the Great and hence the other common name is Intermediate Egret. From the larger species with which it has more similarity than the Little as its bluish-greenish gape-line skin generally does not extend beyond the eye-line.

Habit and habitat

They prefer freshwater water bodies such as marshes, cultivated fields but are also found in mangroves, mudflats, estuaries, farmlands, seasonally flooded wetlands, rivers, lakes, ponds. They are usually seen in small groups or alone in association with other water birds or individual group.

Feeding

Intermediate Egrets eat small fish, frogs, frogs, molluscs and insect.

Breeding

It usually breeds in November to May. Courtship display includes greetings, fluffing of feathers, plumes and scapulars. Colonial nesting birds; the nest is a collection of sticks and reeds. The female lays 3-5 pale green eggs.

Distribution in the World

Its global range extends over Africa, Australia and Asia, including the entire subcontinent.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in all the waters of all divisions.

Yellow billed Egret

During the last survey (2011) 224 birds were seen in Tanguar Haor. Highest number was seen in Hatirgatha Beel and lowest in Kolmar Beel.

Census status

11(2008), 37(2009), 47 (2011)

Glossy Ibis

- Thouhudur Rahman & CM Reza

Size and weight
Length 52 cm, **wing** 27.5 cm, **bill** 12 cm, **tail** 10 cm, **weight** 750 gm.

Glossy Ibis Facts
Scientific Name: ***Plegadis falcinellus***
English name: **Glossy Ibis**
Bangla name: **Khoira Kastechora, Kachia Tora, Duchora**
TH Status: **R**
IUCN National Status:
National Abundance: **v**
National Status: **W**
IUCN Global Status: **LC**

Glossy Ibis is red-brown with green and purple gloss upper-part, a red-brown under-part, and pointed-wings and rounded tail. The non-breeding adult looks blackish-brown from above and dark brown from below with chestnut mottling. The male and the female are similar in appearance. Facial skin typically bordered above and below by prominent bluish or bluish-greyish lines.

Habit and Habitat

The Glossy Ibis can be found in a variety of wetlands including marshes, estuaries, coastal bays, flooded fields and swamps.

Feeding

It feeds on crayfish, invertebrates, as well as frogs, fish, and plants; eats crabs on the coast. It forages by probing mud with its long bill.

Breeding

It breeds in Northern India in May-July. It nests on tree clumps near water. The female lays 2-5 eggs.

Distribution in the World

Its global range extends through eastern North America, Africa, Eurasia, the Middle East, Australia and South and Southeast Asia, including the entire Indian subcontinent except Bhutan.

Distribution in Bangladesh

It is a vagrant to Bangladesh. There is one recent record from Sylhet Division.

Glossy Ibis in Tanguar Haor

Only 3 birds were seen at Chattainna *khal* in Tanguar Haor.

Census status

3 (2011)

Barn Swallow

Size and weight
Length 18 cm, **wing** 11 cm, **bill** 1.2 cm, **tail** 7.6 cm, **central** 3.4 cm

Barn Swallow Facts
Scientific Name: ***Hirundo rustica***
English name: **Barn Swallow**
Bangla name: **Metho Ababil, Ababil**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

This bird has a dark blue upper-part with chestnut forehead and red buffy under-part. It has white spots on the under tail, dark brown irises, stubby bill, legs and feet are black. Tail is deeply forked when wing is pointed. The male and the female look alike. It has prominent forehead and cinnamon coloured chin contrasting with the rest of the colour regime of the back and underside.

Habit and Habitat

It is a gregarious bird and seen in flocks. It forages by continuously flying over crops or water hawking for flying insects. Swift flight with deep wing beats.

Feeding

Diet includes insects such as grasshoppers, crickets, dragonflies, beetles and moths.

Breeding

It breeds in the Himalayas and Siberia in March-July. It makes their nests by clay or mud, dried stems, grasses, and straw with thick lining of horsehair, down, and feathers. The female lays 3-4 eggs.

Distribution in the World

Its global range extends over North and South America, Europe, Africa and the whole of Asia, as far as northern Australia.

Distribution in Bangladesh

It is a common winter visitor and uncommon to rare passage migrant to Bangladesh. It occurs mainly in the villages, wetlands and open country of all divisions.

Barn Swallow in Tanguar Haor

During the last survey (2011) 26 were found in Tanguar Haor. These were seen in Lechuamara, Rupaboi, Rowa, Kolmar beel.

Census status

26 (2011 March- April)

- SR Rahul & Thouhudur Rahman

- Saurov Mahmud

White Wagtail

Size and weight
Length 18 cm, **wing** 9 cm, **bill** 1.7 cm, **tail** 9.3 cm, **weight** 23.5 gm,

White Wagtail Facts
Scientific Name: ***Motacilla alba***
English name: **White Wagtail**
Bangla name: **Dhola Khonjon, Khanjana**
TH Status: **U**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

It is a small bird with a long tail, has a white under-part and forehead. The upper-part, throat, nape and crown are blackish. Its wings are gradually tapered towards the tips when tail is fan-shaped. It has brownish-black legs, feet and claws. The male and the female look alike. It shows a great deal of variations in its head and breast plumages during winter when we see most of them in the country.

Habit and habitat

It inhabits wetlands, hills, streams, riverbanks, marshes, lakes, farmlands and around human habitations. It is usually seen alone, in pairs or in small groups.

Feeding

It feeds on insects, ants, beetles, bugs, small caterpillars and tiny molluscs.

Breeding

It breeds in the Himalayas and Siberia in April-August. The nest is a cup of dry grass, leaves and roots. The female lays 4-6 eggs.

Distribution in the World

Its global range extends through Europe, Africa, the whole of Asia including all of South Asia except the Maldives, as far as western Alaska and Greenland.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs almost everywhere in the country if there is water available nearby be that a ploughed field or drain in the capital city and wetlands of all divisions. Hundreds roost at night in the reed beds in most of the haors.

White Wagtail in Tanguar Haor

During the last survey (2011) 10 were observed in Tanguar Haor. These are seen in Lechuamara, Ballardubi, Annar, Bagmara, Kalma, Chattainna *Khal.*

Census status

10 (2011 March-April)

Yellow Wagtail

- SR Rahul

Size and Weight
Length 17 cm, **wing** 7.8 cm, **bill** 1.6 cm, **tail** 7.2 cm, **weight** 15.4 gm,

Yellow Wagtail Facts
Scientific Name: ***Motacilla flava***
English name: **Yellow Wagtail**
Bangla name: **Holdey khonjon**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

Yellow Wagtail is slightly smaller than the White Wagtail is. It usually has greener or browner backs and yellow under-part. The male looks different from the female. Its bill is horn-brown, the irises are brown and legs, feet and claws are blackish-brown.

Habit and Habitat

It prefers lowland meadows and wetlands edges. It is usually seen in alone or small loose flocks. It forages by walking on the ground and picking its prey from wet vegetation and mud.

Feeding

It feeds on insects including flies, bugs, beetles, caterpillars and weevils.

Breeding

It breeds in Siberia in June-July and the nest is a cup of grass and rootlets. The female lays four eggs.

Distribution in the World

Europe, Africa and Asia including Pakistan, India, Nepal, Sri Lanka, Bhutan, Maldives, China, Mongolia, Siberia, Iraq, Iran, Turkey, Afghanistan, Southeast Asia and northern Australia.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs in the wetlands and grasslands of all Divisions.

Yellow Wagtail in Tanguar Haor

During the last survey (2011) 12 were seen in Tanguar Haor. These were found in Hatirgatha, Lechuamara, Ballardubi, Tekunna, Bagmara, Chattainna *khal* and Kalma.

Census status

12 (2011 March- April)

Common Hoopoe

Size and Weight
Length 32cm, **wing** 14.3 cm, **bill** 4.7 cm, **tail** 10 cm, **weight** 65 gm

Common Hoopoe Facts
Scientific Name: ***Upupa epops***
English name: **Common Hoopoe**
Bangla name: **Pati Hoodhood**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **U**
National Status: **r**
IUCN Global Status: **LC**

Common Hoopoe is a colourful bird with rufous-orange plumage. It has a distinctive crest with black spots, chestnut head, neck breast and a long blackish curved bill. Its tail and upper-parts are patterned black-and-white. The male and the female look alike.

Habit and Habitat

It inhabits the lightly wooded areas, open country, parks, cultivated lands and villages. It is usually seen alone or in pairs. During migration flight it forms loose parties of 10-20.

Feeding

Common diet items include crickets, locusts, beetles, earwigs, cicadas, ant lions, bugs, ants, grasshoppers, grubs and surface caterpillars.

Breeding

It breeds in April-July. The nest is makeup of leaf, grass, wool, feather and rubbish. The female lays 5-7 pale blue eggs. The female alone incubates.

Distribution in the World

Its global range extends through Europe, Africa, South and Southeast Asia.

Distribution in Bangladesh

It occurs in the whole of Bangladesh mainly as winter migrant when few are also found through the country in spring and autumn passage migrations.

Common Hoopoe in Tanguar Haor

During the last survey (2011) 7 were found at the *kanda* of Lechuamara, Berberia, Chattainna *khal,* Ulan Beel in Tanguar Haor.

Census status

7 (2011 March-April)

- SR Rahul

Black-rumped Flameback

Size and weight
Length 30 cm, **wing** 14 cm, **bill** 3.6 cm, **tail** 9 cm, **weight** 100 gm.

Black-rumped Flameback Facts
Scientific Name: ***Dinopium benghalense***
English name: **Black-rumped Flameback**
Bangla name: **Bangla Kaththokra**
TH Status: **U**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

This is the most common woodpecker in Bangladesh. Its rump, flight feathers and tail are black, the chin is black striped, throat and sides of the neck are white with black marks and its breast has bold black scales. Its legs and feet are grey-green, and its bill is horn-black.

Habit and Habitat

It inhabits gardens, light forests, mango groves and trees beside roads, villages and farms. It is usually seen alone, in pairs or family parties.

Feeding

It feeds on ants, larvae, beetles, caterpillars, weevils, centipedes, spiders, fruits and nectar.

Breeding

It breeds in February-July. It drills a nest-hole in trees. The female lays three white eggs. The male and the female share all household chores.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in the village groves and deciduous and other forests of all divisions.

Distribution in the World

Its global range extends through South Asia, including Pakistan, India and Sri Lanka.

Black-rumped Flameback in Tanguar Haor

During last survey (2011) only 5 were seen at the kanda and terrestrial zone of Lechuamara, Berberia, Chattainna Khal, Ulan in Tanguar Haor.

Census status

5 (2011 March- April)

- Monirul khan

Size and weight
Length 17 cm, **wing** 8 cm, **bill** 1.8 cm, **tail** 3.5 cm, **weight** 40 gm.

Coppersmith Barbet Facts
Scientific Name: ***Megalaima haemacephala***
English name: **Copper smith Barbet**
Bangla name: **Shekra Boshonto, Chhoto Basanta Bauri**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Copper smith Barbet

Copper smith Barbet is a small plump bird with dark green upper-parts and pale green under parts; crimson forehead and throat; blackish heavy and short bill and radish leg and a stumpy tail.

Habit and Habitat

It inhabits all forested areas, wooded areas, roadside trees, village groves, wetland forest and urban gardens. It is diurnal, usually seen alone, in pairs or sometimes in mixed feeding parties. It forages in trees with soft and fleshy fruits. Its species-specific call is very loud. So, it is more often heard than seen because of its cryptic plumages.

Feeding

Mainly fruit eater birds; prefers Banyan, Peepul, and other wild figs, various drupes and berries, and occasional insect caught in aerial sallies.

Breeding

It breeds in November-July. It excavates nest holes in decaying softwood branches.

Distribution in the World

Its global range extends through South and Southeast Asia, including Pakistan, India, Sri Lanka, Nepal, Bhutan to Indonesia, the Philippines and Malaysia.

Distribution in Bangladesh

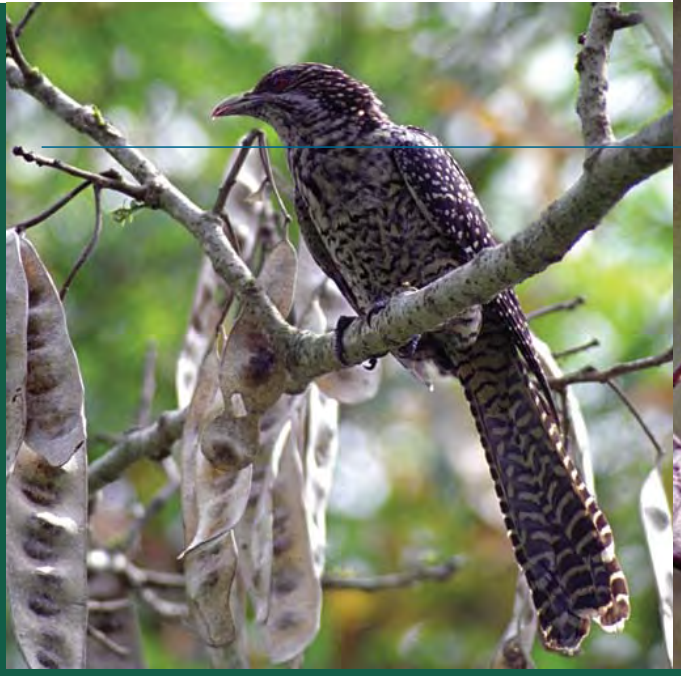
It is a common resident of Bangladesh. It occurs in the open woodlands and village groves of all divisions as well as bustling cities like Dhaka.

Coppersmith Barbet in Tanguar Haor:

During last survey only 4 was seen at Bagmara and Lechuamara in Tanguar Haor small forested zone.

Census status:

4 (2011 March- April)



- Enam Ul Haque

Asian Koel

Size and weight
Length 43 cm, **wing** 22 cm, **bill** 3.3 cm, **tail** 20 cm, **weight** 170 gm.

Asian Koel facts
Scientific Name: ***Eudynamys scolopaceus***
English name: : **Asian Koel**
Bangla name: **Eshio Kokil, Kokil**
TH Status: **U**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

The male looks very different from the female. The male of the nominate race is glossy bluish-black, with a pale greenish grey bill, the iris is crimson, and it has grey legs and feet. The female of the nominate race is brownish on the crown and has rufous streaks on the head. The back, rump and wing coverts are dark brown with white and buff spots. The underparts are whitish but heavily striped.

Habit and Habitat

It inhabits the forests, woods, cultivated fields, villages, towns, gardens, wetland, forested and roadside trees. It is usually seen alone or pairs. It forages in fruiting trees for figs and other soft fruits.

Feeding

Asian Koel is omnivorous, they consume mainly fruit (ficus fruit) but immature birds prefer insects, caterpillars, eggs and small vertebrates.

Breeding

It breeds in March-July. It does not make a nest, incubate eggs or rear chicks. The female lays a single egg in the nest of a crow or other birds.

Distribution in the World

Its global range extends through Myanmar, Thailand, Malaysia, Indonesia, the Philippines, New Guinea, Australia and all the countries of the Indian Subcontinent.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in the villages and countryside of all divisions.

Asian Koel in Tanguar Haor

Only 4 were seen during the last survey at *Kanda,* terrestrial zone of Lechuamara, Bagmara, Ulan in Tanguar Haor.

Census status

4 (2011 March-April)

Rose-ringed Parakeet

Size and weight
Length 42 cm, **wing** 18 cm,
bill 2.6 cm, **tail** 25 cm, **weight** 130 gm.

Rose-ringed Parakeet facts
Scientific Name: ***Psittacula krameri***
English name: **Rose-ringed Parakeet**
Bangla name: **Shobuj Tia, Tiya Tota**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

- Quazi Ahmed

The mail is bright green and female is yellowish green colour. The adult male sports a red neck-ring and black chine strip. The female is emerald-green around the neck that means no red on its body barring the bills. The bill is red and leg is greyish.

Habit and Habitat

It inhabits all types of natural and artificial forests, cultivated lands, gardens and human habitations, city area and wetland forests. It is usually seen in small to large groups. It forages in flowering or fruiting trees, orchards and crop fields.

Feeding

It is a fruit eating bird, feeds on different types of fruits, vegetables, seeds and nectar.

Breeding

It breeds in January-July. It nests in natural hollows in tree-trunks or whole, old nests of barbets or woodpeckers and crevices in old buildings. The female lays 3-6 white eggs.

Distribution in the World

Its global range extends through sub-shaharan Africa, Afghanistan, the entire Indian subcontinent, southeast China and Myanmar.

Distribution in Bangladesh

It is a very common resident of Bangladesh. It occurs in the villages and cities in all divisions.

Rose-ringed Parakeet in Tanguar Haor

During last survey eight were seen at Lechuamara and Bagmara Beel in Tanguar Haor.

Census status

8 (2011 March-April)

House Swift

This is a small bird, its all black with a prominent white rump, white throat, long wings, slender, scimitar- shaped, squared-tail tail not deeply forked and appears rounded when fanned. Genders look alike.

Habit and Habitat

House Swifts build their nests in hole in buildings or sometimes on cliffs.

Feeding

House Swifts feed on flying insects: mainly flying ants and termites, bees and wasp and beetles. They also go for other tidbits that they can snatch on the wing (spiders).

Breeding

The breeding period is late January and again in May- June; eggs are laid in January and February and again in June to September.

Distribution in the World

South Europe through Africa to the Philippines. Swifts are not found in Australia, New Zealand and southernmost South America.

Size and weight
Length 16 cm, **wing** 13.5 cm, **bill** 0.6 cm, **tail** 4.5 cm, **weight** 20 gm.

House Swift facts
Scientific Name: ***Apus affinis***
English name: **House Swift**
Bangla name: **Ghor Batashi, Ababil**
TH Status: **U**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Distribution in Bangladesh

It is widely distributed in Bangladesh.

House Swift in Tanguar Haor

During the last survey 59 were found in Tanguar Haor. These were seen in Rupoboi, Rowa, Ballardubi, Bagmara, Berberia, Chattainna *khal* and Ulan Beel.

Census status

59 (2011 March-April)

Brown Fish Owl

Size and weight
Length 56 cm, **wing** 41 cm, **bill** 5.3 cm, **tail** 20 cm, **weight** 1.1 kg.

Brown Fish Owl facts
Scientific Name: ***Ketupa zeylonensis***
English name: **Brown Fish Owl**
Bangla name: **Khoira Mechopecha, Bhutum pecha**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

- Monirul Khan & Roushon Ali

The upper-parts are reddish brown and heavily streaked with black or dark brown. The under-parts are buff to whitish with dark streaks and finer brown barring. The throat is white and can be conspicuously puffed, while the facial disk is indistinct. Feet a duller yellow and the bill is dark. Sexes do not differ in appearance except for size as male is much smaller than the female. It differs from similar sized and looking Eagle Owl by not having the tarsus feathered.

Habit and Habitat

Open wooded area, lowland forest, mangroves and plantations always near water.

Feeding

Fish, frogs and crabs also mammals, birds and reptiles and occasionally carrion.

Breeding

They breed in November-March; female lays 1-2 eggs, nest often in old stick nest of other birds also rocky ledges or clefts in banks.

Distribution in the World

Found in all Indian sub-continent and other Asian countries including Iran, Pakistan, Sri Lanka.

Distribution in Bangladesh

Widely distributed; this species found in all divisions of Bangladesh.

Brown Fish Owl in Tanguar Haor

Only one was seen in Ronchi village very close to Tekunna in Tanguar Haor during the last survey.

Census status

1 (2011 March-April)

Large-tailed Nightjar

- Samiul Mohsanin

Size and weight
Length 33 cm, **wing** 22 cm, **bill** 2.2 cm, **tail** 16 cm.

Large tailed Nightjar facts

Scientific Name: ***Caprimulgus macrurus***
English name: **Large-tailed Nightjar**
Bangla name: **Langa Ratchora**
TH Status: **R**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Large-tailed Nightjar has grayish brown plumage; throat patch white; under-parts buffy with blackish bars. Wingtips fall at mid-tail at rest. The male has distinct white patches on outer primaries and broad white tips to outer tail feathers. The female has a smaller wing patch, darker than the male; tail patches narrow and buffy.

Habit and Habitat

Its natural habitats are subtropical or tropical moist lowland forests, subtropical or tropical mangrove forests, and subtropical or tropical moist habitat.

Feeding

Large-tailed Nightjars feed on moths and other night-flying insects. They are particularly fond of flying termite swarms.

Breeding

The breeding period is during March to June. It uses dry leaves as its nest on the ground. The female lays 2 salmon-buff eggs.

Distribution in the World

From South Asia, to throughout Asia up to Papua New Guinea and Australia.

Distribution in Bangladesh

Widely distributed in Bangladesh.

Large-tailed Nightjar in Tanguar Haor

Only one was found at Berberia Beel in Tanguar Haor during the last survey.

Census status

1 (2011 March-April)

Size and weight
Length 30 cm, **weight** 120 g, **wing** 14 cm, **bill** 2 cm, **tail** 12.5 cm,
weight 120 gm.

Spotted Dove Facts
Scientific Name: ***Streptopelia chinensis***
English name: **Spotted Dove**
Bangla name: **Tila ghughu**
TH Status: **U**
IUCN National Status: **-**
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

- Samiul Mohsanin

Spotted Dove

A typical dove with a black patch with white spots on the back of the neck; upper parts brown, broadly streaked with black; head and breast pinkish grey to white on belly; bill black; feet red.

Habit and Habitat

It is a widespread species in open woodland, farmland and human habitations.

Feeding

Spotted Doves eat grass seeds, grains and bits of vegetation as well as some fleshy fruits.

Breeding

Spotted Doves appear to breed year round and a monogamous species. It builds a flimsy twig nest housed in the fork or bow of a small branch or amongst foliage of low trees and raised split bamboo platforms built for the cultivation of cucurbitans in the villages. Female lays 2 glossy white eggs when incubation lasts for just two weeks. The chicks are fed with seeds and grains soaked in a special secretion from the crop of the mother called “crop milk” or 'pigeon's milk' that is very rich in protein.

Distribution in the World

It is found in India through Southeast Asia, and introduced to the US, Northern Indonesia, Australia and New Zealand.

Distribution in Bangladesh

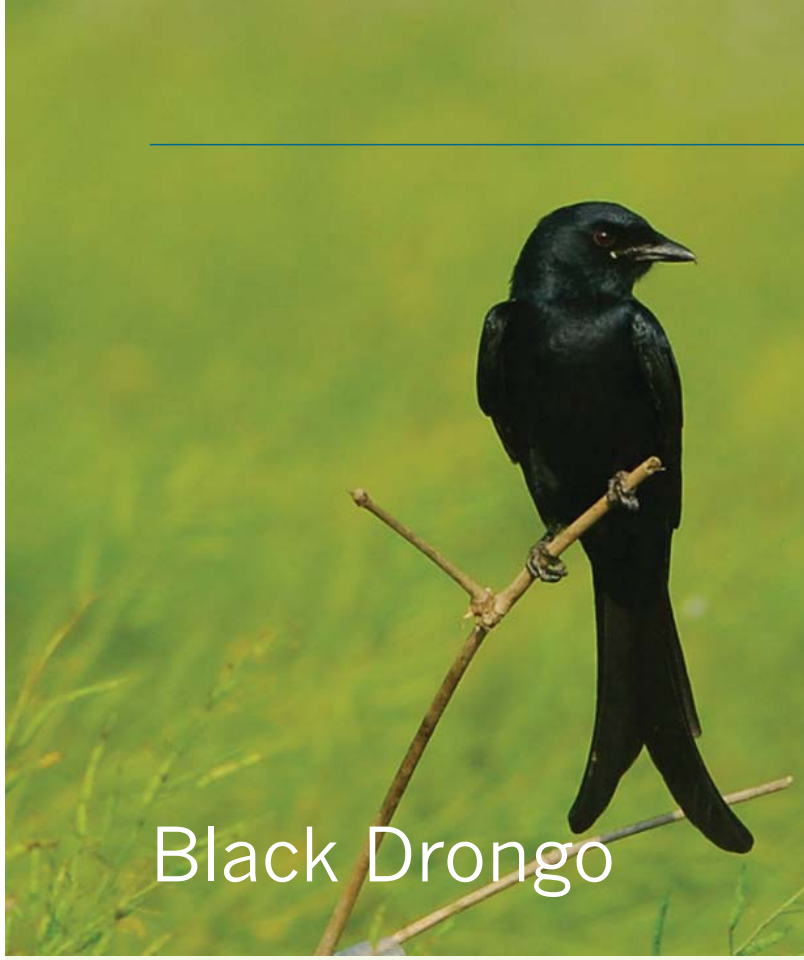
Widely distributed, it occurs mainly in the villages, forested areas and wetlands forest in all divisions of Bangladesh.

Spotted Dove in Tanguar Haor

During the last survey eight were found in Tanguar Haor at Tekunna, Ulan, and Kalmar Beel.

Census status

8 ((2011 March-April)

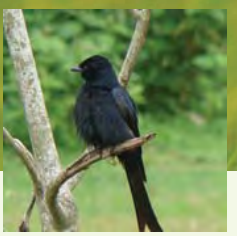


- Samiul Mohsanin, Paul Thompsonl & Saurov Mahmud

Black Drongo

Size and Weight
Length 31 cm, **wing** 14 cm, **bill** 2.5 cm, **tarsus** 2 cm, **tail** 9.5 cm, **weight** 45 gm

Black Drongo Facts
Scientific Name: ***Dicrurus macrocercus***
English name: **Black Drongo**
Bangla name: **Kala fingey**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**



The adult Black Drongo is mainly glossy blue-black, a long tail deeply forked and short legs. Young birds are dull dark brown. It has blood-red irises, black bill, legs and feet. The male and the female look alike. It is confusable with Ashy and Crow-billed Drongos in the field.

Habit and Habitat

It inhabits secondary forests, marshes, fields and human habitations. It is usually seen alone, in pairs or in small parties. It is possibly the most common bird in the country as its range extends from Dhaka city to the edges of mixed-evergreen and mangrove forests.

Feeding

It eats flying insects like crickets, grasshoppers, bugs and flying termites. It continues hunting at night by street light.

Breeding

It breeds in February-August. 3-4 pinkish eggs are laid in a neat cup like nest placed in a fork often on the bare outer branches of trees.

Distribution in the World

Its global range extends over South, East, and Southeast Asia and the Middle-east, including Pakistan, India, Sri Lanka, Nepal, Bhutan, the Maldives, China, Taiwan, Afghanistan, Iran, Myanmar, Thailand, Laos, Vietnam, Malaysia and Indonesia.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs mainly in the villages and towns of all divisions.

Black Drongo in Tanguar Haor

During the last survey 45 were found. Highest number is seen in Lechuamara Beel.

Census status

45 (2011 March- April)

Asian Pied Starling

- Paul Thompson & Saurov Mahmud

Size and weight
Length 21 cm, **wing** 10 cm, **bill** 2.2 cm, **tarsus, tail** 6 cm, **weight** 40 gm

Asian Pied Starling facts
Scientific Name: ***Gracupica contra***
English name: **Asian Pied Starling**
Bangla name: **Go-Shalik**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Asian Pied Starling is strikingly marked in black and white and has a yellowish bill with a reddish bill base. The bare skin around the eye is reddish. The upper body, throat and breast are black while the cheek, lores, wing coverts and rump are contrastingly white. The sexes are similar in plumage but young birds have dark brown in place of black.

Habit and Habitat

The species is found mainly in the plains but in the foothills up to about above sea level. They are found mainly in areas with access to open water.

Feeding

The Chestnut-tailed Starling is fairly omnivorous, eating fruit, nectar and insects.

Breeding

The breeding season is spread from March to September. For the size of the bird it possibly builds most flimsy and the largest nests often found on roadside electric or telephone line posts.

Distribution in the World

They are found mainly along the gangetic plains extending south into Andhra Pradesh (India) and east to Bangladesh.

Distribution in Bangladesh

It is very common and possibly the commonest of the mynas and starlings found in the country and widely distributed.

Asian Pied starling in Tanguar Haor

During the last survey 76 were seen in Tanguar Haor. Highest was seen in Lechuamara beel.

Census status

76 (2011 March-April)

- Quazi Ahmed & Thouhudur Rahman

Common Myna

Size and weight
Length 24 cm, **wing** 14.4 cm, **bill** 2.7 cm, **tail** 8.5 cm, **weight** 110 g

Common Myna Facts
Scientific Name: ***Acridotheres tristis***
English name: **Common Myna**
Bangla name: **Bhat Shalik**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Common Myna is brown with a black head. It has a yellow bill, legs and bare eye skin. In flight it shows large white wing patches.

Habit and Habitat

It is typically found in open woodland, cultivation and around human habitation, however the Myna has adapted extremely well to urban environments.

Feeding

Common Mynas are accomplished scavengers, feeding on almost anything, including insects, fruits and vegetables, scraps, pet food and even fledgling sparrows.

Breeding

Common Mynas are believed to pair for life. They breed through much of the year depending on the location, building their nest in a hole in a tree or wall.

Distribution in the World

East and Southeast Asia, all Indian Subcontinent including Pakistan, India, Nepal, Sri Lanka, Bhutan, Maldives, China, and Indochina

Distribution in Bangladesh

It occurs mainly in the villages and farm lands of all divisions.

Common Myna in Tanguar Haor

24 were seen during the last survey. Highest was observed in Lechuamara Beel.

Census Status

24 (2011 March- April)

- A.B.M.Sarowar Alam & Saurov Mahmud

Striated Grassbird

Size and weight
Length 25 cm, **wing** 11.8 cm, **bill** 2 cm, **tail** 12.4 cm, **weight** 34 gm

Striated Grassbird Facts
Scientific Name: ***Megalurus palustris***
English name: **Striated Grassbird**
Bangla name: **Dagi Ghashpakhi**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Striated Grassbird is very noisy bird in the haor basin area. The male is larger than the female. It is fulvous-brown above with bold black streaks on the wings and back. The long graduated tail is fulvous brown. The under-parts are white with fine brown streaks on the breast and buff on the flanks and vent. It has dark brown upper mandible and long blackish bill.

Habit and Habitat

It inhabits tall grasses and reeds near water including the edges of adjacent cultivated lands and wetland grassland.

Feeding

It feeds chiefly on insects and spiders. Its call is an explosive pwit, its song is a loud rambling warble.

Breeding

It breeds in April-June. It nests in clumps of grass and reeds in marshes. The nest is a rough ball of grass lined with shredded grass. The female lays four pinkish eggs.

Distribution in the World

Widely distributed bird found in Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Pakistan, the Philippines, Thailand and Vietnam.

Distribution in Bangladesh

It occurs in all the larger wetlands of Chittagong, Dhaka, Rajshahi and Sylhet Divisions.

Striated Grassbird in Tanguar Haor

41 were observed Tanguar Haor during the last survey.

Census status

41(2011 March- April)

© A.B.M. Sarowar Alam & Paul Thompson

House Crow

Size and Weight
Length 40 cm, **wing** 27 cm, **bill** 5 cm, **tail** 16.6 cm, **weight** 300 gm.

House Crow Facts
Scientific Name: ***Corvus splendens***
English name: **House crow**
Bangla name: **Pati Kak, Kauua**
TH Status: **C**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

It looks entirely black from a distance. But at a close range its nape, neck, upper back and upper breast appear greyish, forming a grey collar and contrasting with a black cap, face and throat. It has a black bill, brownish-slatey mouth and black feet and claws. The male and the female look alike.

Habit and Habitat

It inhabits all types of habitat such as villages, towns, gardens, cultivable lands and human habitations. It is a gregarious bird and is seen always in noisy parties.

Feeding

It feeds on small reptiles and other animals such as insects and other small invertebrates, eggs, nestlings, grain, fish, kitchen scraps and fruit.

Breeding

It breeds in January-July. It nests in forked branches, ledges or other man-made objects. The nest is an untidy platform of sticks, twigs, wires and other stick-like objects. The female lays 4-5 blue-green eggs.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs mainly in the towns and villages in all divisions.

Distribution in the World

It has a widespread distribution in southern Asia, being native to Nepal, Bangladesh, India, Pakistan, Sri Lanka, Maldives and Laccadive Islands, South West Thailand and coastal southern Iran.

Houser crow in Tanguar Haor

44 were seen during the last survey in Tanguar Haor. Highest was seen in Lechuamara Beel. Very common in villages and around the haor belt.

Census status

44 (2011 March- April)

Dusky Warbler

Size and weight
Length 10 cm, **wing** 6 cm, **bill** 1.3 cm, **tail** 5 cm, **weight:** 10.2 gm.

Dusky Warbler Facts
Scientific Name; ***Phylloscopus fuscatus***
Synonym: **Phyllopneuste fuscata**
English name: **Dusky Warbler**
Bangla name: **Kalchey Futki**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

The upper-parts are plain brown lacking any wing bar. It has a prominent white or pale buffish supercilium that stands out against its dark eye-stripes, and can show a narrow white eye ring. The under-parts are whitish or greyish-white. Its legs are brownish small black bill. The male and the female have a similar appearance.

Habit and Habitat

It inhabits bushes, reeds, tall grasses around pools, wetland vegetation and forested areas. It is a solitary diurnal passerine. In the winter it feeds singly in dense cover near the ground and rarely in the lower branches of the forest edge.

Feeding

It feeds chiefly on insects and larvae and sometimes vegetable materials.

Breeding

It breeds in the summer in north-eastern Asia. The nest is a ball of dry grasses and fibres on or near to the ground in a thicket. The female lays 4-6 eggs.

Distribution in the World

Its global range extends through South, East and Southeast Asia, including India, Nepal, Bhutan, China, Tibet, Siberia, Mongolia, Myanmar, Thailand and Indochina.

Distribution in Bangladesh

It is a common winter visitor to Bangladesh. It occurs mainly in the bushes and wetlands of all divisions.

Dusky Warbler in Tanguar Haor

It is the most common smallish warbler in emergent aquatic vegetation and forests.

Census status:

3 (2011 March- April)

Size and weight
Length 15 cm, **wing** 7.4 cm, **bill** 1.8 cm, **tail** 4.8 cm, **weight** 28 gm.

Baya Weaver Facts
Scientific Name: **Ploceus philippinus**
English name: **Baya Weaver**
Bangla name: **Deshi Babui**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

- A.B.M.Sarowar Alam

Baya Weaver

Dark brown streaked fulvous buff above and whitish fulvous below. Breeding males have a bright yellow crown, dark brown mask, blackish brown bill; upper parts are dark brown streaked with yellow, with a yellow breast and cream buff below. Non-breeding males and females look alike.

Habit and Habitat

It inhabits open country near cultivated land, grassland, scrub with scattered trees and mangroves. It is usually seen in flocks throughout the year, foraging by gleaning in grassland, fallow land and fields.

Feeding

It feeds on grass seeds, cereals, and insects.

Breeding

It breeds in May-August and nests in colonies of 10-200 in palm trees. Both males and females are polygamous. Males build many partial nests and begin courting females. The male finishes the nest to completion only after finding a mate. The female lays about 2 to 4 white eggs and incubates them for about 14–17 days.

Distribution in the World

Its global range extends through South and Southeast Asia, including Pakistan, India, Sri Lanka, Myanmar, Thailand, Vietnam and Indonesia.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs mainly in the villages and open country of all divisions.

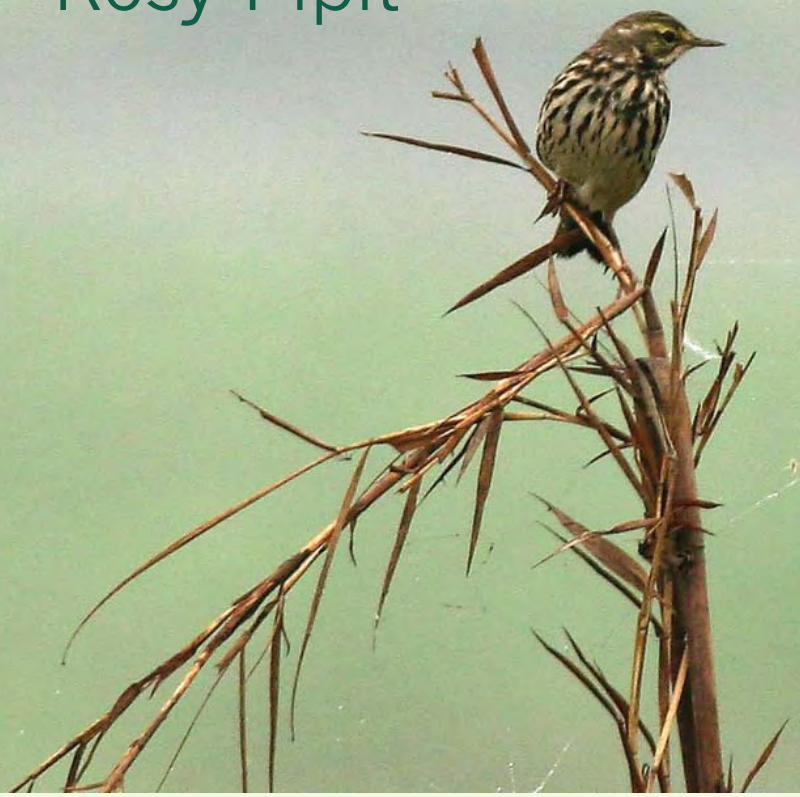
Baya Weaver in Tanguar Haor

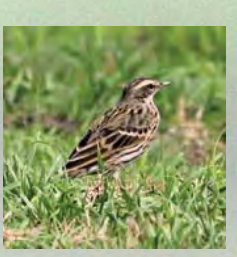
During the last survey, 70 were seen at Lechuamara and Berberia in Tanguar Haor.

Census status

70 (2011 March- April)

Rosy Pipit





Size and weight
Wings length 15 cm, **weight** 20gm, **wing** 8.7 cm, **bill** 1.6 cm, **tail** 6 cm.

Rosy Pipit Facts
Scientific Name: ***Anthus roseatus***
English name: **Rosy Pipit**
Bangla name: **Golapi Tulika**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **W**
IUCN Global Status: **LC**

- SR Rahul & Sayam U. Chowdhury

Heavily streaked upper-part and boldly streaked under-part. It has a prominent pinkish supercilium, broad dark eye-stripe and moustachial stripe, and white eye-ring. Its bill is blackish, the irises are brown and legs and feet are brownish-flesh.

Habit and Habitat

It inhabits grassy slopes during summer and marshy areas over the tree line, and in winter grassland and wetlands. It is usually seen in pairs or small loose flocks, foraging by running through grass, and picking up insects, seeds, and berries from the ground or vegetation.

Breeding

It breeds in the Himalayas in May-September and nests among rocks or tufts of grass. The nest is a cup of grass, lined with finer grass and hair. The female lays 3-4 grey eggs.

Distribution in the World

Found in the Himalayas from Afghanistan over Pakistan, India, Nepal and Bhutan to Tibet. Spends winter in south-east Asia

Distribution in Bangladesh

It is an uncommon winter visitor to Bangladesh. It occurs mainly in the haors of Sylhet Division and rarely in wetlands of Chittagong and Dhaka Divisions.

Rosy Pipit in Tanguar Haor

During the last survey only 1 was seen at Ulan Beel in Tanguar Haor.

Census status

1 (2011 March- April)

- Saurov Mahmud

Size and weight
Length 10 cm, **wing** 5.6 cm, **bill** 1.3 cm, **tail** 3.8 cm, **weight** 13.6 gm.

Scaly-breasted Munia Facts
Scientific Name: ***Lonchura punctulata***
English name: **Scaly-breasted Munia**
Bangla name: **Butibook Munia, Tiley Munia**
TH Status: **R**
IUCN National Status:
National Abundance: **C**
National Status: **r**
IUCN Global Status: **LC**

Scaly-breasted Munia

Scaly-breasted Munia has whitish belly, radish brown upper-parts and chestnut hood. The under-parts are white with black scale markings. It has thick black bill, slatey legs and feet.

Habit and Habitat

They are found even in urban areas as well as cultivated lands, grasslands, scrub, secondary growth. It is usually seen in flocks, sometimes of 100 or more foraging on the ground and on the stems of grass or rice.

Feeding

It feeds on rice, grass seeds and lantana berries. It can be seen roosting colonially in large flocks with other munias and weavers in sugarcane fields and lantana thickets.

Breeding

Scaly-breasted Munias build well hidden nests 4-5m high in thorny bushes, trees and creepers.

It breeds in May-September. The female lays 4-10 white eggs.

Distribution in the World

Its global range extends through South, East and Southeast Asia, including Pakistan, India, Sri Lanka, Nepal, Bhutan, China, Indonesia and the Philippines.

Distribution in Bangladesh

It is a common resident of Bangladesh. It occurs in the villages and farmland of Chittagong, Dhaka, Khulna and Sylhet Divisions.

Scaly Breasted Munia in Tanguar Haor

During the last survey only one was seen at Berberia in Tanguar Haor.

Census status

1 (2011 March- April)

Reptiles

- **Freshwater Turtles**
- **Lizards**
- **Snakes**

About 27 species have been identified from Tanguar Haor. There are about 158 reptile species expected to occur including marine reptiles in Bangladesh. Turtles are widely hunted and consumed by both the tribal and Hindu communities at Tanguar Haor which led their survival at risk. Among 27 species, four (4) species of turtle, six (6) species of lizards and ten (10) species of snakes in this book.

- Reza Khan

Spotted Flapshell Turtle

Spotted Flapshell Turtle Facts
Scientific Name: ***Lissemys punctata***
English Name: **Spotted Flapshell Turtle**
Bengali Name: **Shundhi Kasim**
TH Status: **C**
IUCN Global Status: **LC**

Spotted Flapshell Turtle is a small and easily identified by its soft body with pronounced flaps, the large yellow spots on the head and the olive brown to dark brown carapace of the body. It differs from other members of this family in having a series of peripheral bones along the posterior rim. Plastron is whitish or cream. Shell is oval and dome shaped.

Habit and Habitat

It inhabits a wide range of habitat like rivers, ponds, lakes, streams, water-logged paddy field, canals and even drains.

Feeding

Diet includes frogs, tadpoles, fishes, mollusks, aquatic plants and also dead animals.

Breeding

Courtship and mating take place from April to July when male swims above and around the female. Nesting occurs from September to November. Females may lay 2-16 eggs per clutch. Incubation period is very long (9 months).

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

It also occurs in India, Nepal, Pakistan, Sri Lanka, Myanmar and Thailand.

- A.B.M.Sarowar Alam

Peacock Softshell Turtle

Peacock Softshell Turtle Facts
Scientific Name: ***Nilssonia hurum***
English Name: **Peacock Softshell Turtle**
Bengali Name: **Dhum Kasim**
TH Status: **C**
IUCN Global Status: **EN**

The rounded juvenile carapace is olive with usually four, but up to six dark-centered, yellow-bordered ocelli, and numerous yellowish spots forming a border about the rim of the shell. In adults the carapace is more oval and becomes darker green with black; the ocelli and yellow spots fade with age, and some older individuals in Bangladesh are melanistic. Several longitudinal rows of tubercles occur on the juvenile carapace and some of these persist in adults.

Habit and Habitat

The species inhabits in rivers, lakes, ponds and ditches with mud or sand bottoms.

Feeding

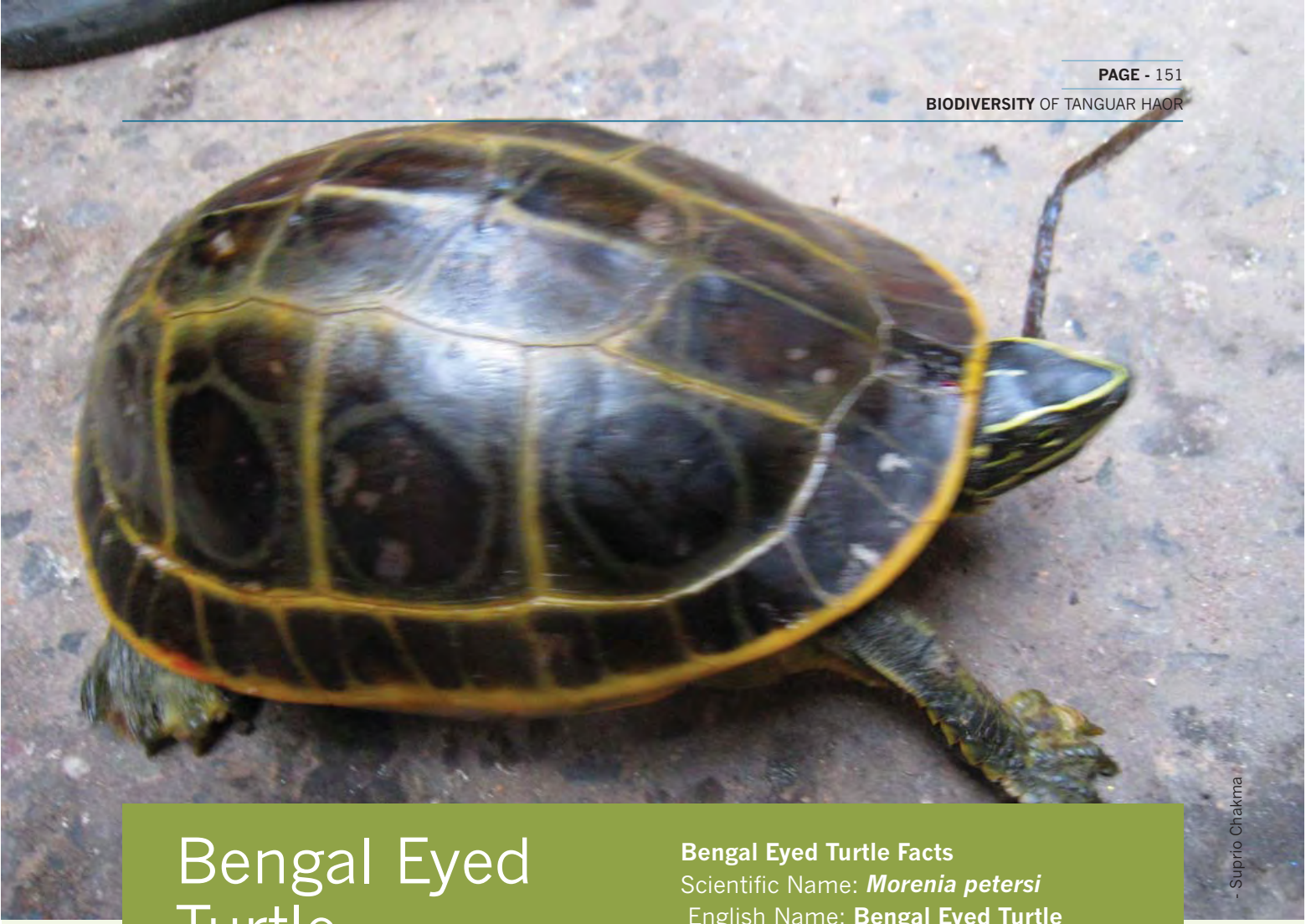
The diet includes snails, fish and mosquito larvae.

Breeding

Breeding activities take place in water. During courtship males call (vocalize) and also bite females. It digs nest in winter months.

Distribution in the World

Peacock Softshell Turtle is found in the Brahmaputra and Ganges rivers of Bangladesh, India and Nepal.



- Suprio Chakma

Bengal Eyed Turtle

Bengal Eyed Turtle Facts
Scientific Name: ***Morenia petersi***
English Name: **Bengal Eyed Turtle**
Bengali Name: **Haldey Kaitta**
TH Status: **R**
IUCN Global Status: **VU**

Dome-shaped carapace; Morphologically very close to Morenia ocellata. The snout is much more pointed and relatively longer. The carapace is black, each vertebral has a narrow yellowish mesial line. All costals have an ocellus placed rather low and formed by a narrow yellowish line, above which are some irregular looped lines of similar colour. Head Small and covered with enlarged scales. Vertebral and costals with a green and yellow border. Males can achieve a shell length of up to 5 (about 12 cm) inches, females can achieve a shell length of up to 8 (about 20 cm) inches.

Habit and Habitat

Bengal eyed turtle prefers stagnant water, rivers, wetlands, ponds, *haors* and lake areas. It basks on sandbars or Kandas of haors.

Feeding

Feeds on plants and animals, but prefers small fish, prawn and insects.

Breeding

M. petersi breeds in winter session.

Distribution

Widely distributed in Bangladesh. This species occurred in the Ganges River basin and Hoar area of Bangladesh.

- Reza Khan

Indian Roofed Turtle

Indian Roofed Turtle Facts
Scientific Name: ***Pangshura tecta***
English Name: **Bengal Eyed Turtle**
Bengali Name: **Kori Kaitta**
TH Status: **R**
IUCN Global Status: **LC**

Very small turtle, measuring about 20 cm in length. Carapace elevated, tectiform, the keel ;ending in a nodosity on the third vertebral shield; posterior margin not or but very slightly serrated; nuchal shield small, square or trapezoidal. Male slightly smaller than female. Snout pointed; Moderate head with prominent red eyes. Head blackish; jaws and sides of crown orange; neck with numerous yellow lines on a blackish ground; limbs dark olive, spotted with yellow. Length of shell up to nearly 9 inches.

Habit and Habitat

This species inhibits freshwater bodies with plenty of aquatic vegetations. It is a quiet-water turtle, occurring in quiet streams, canals, oxbows, ponds, *haors*, and man-made water tanks. It also occurs in brackish coastal waters. It prefers basking in the early morning sun.

Feeding

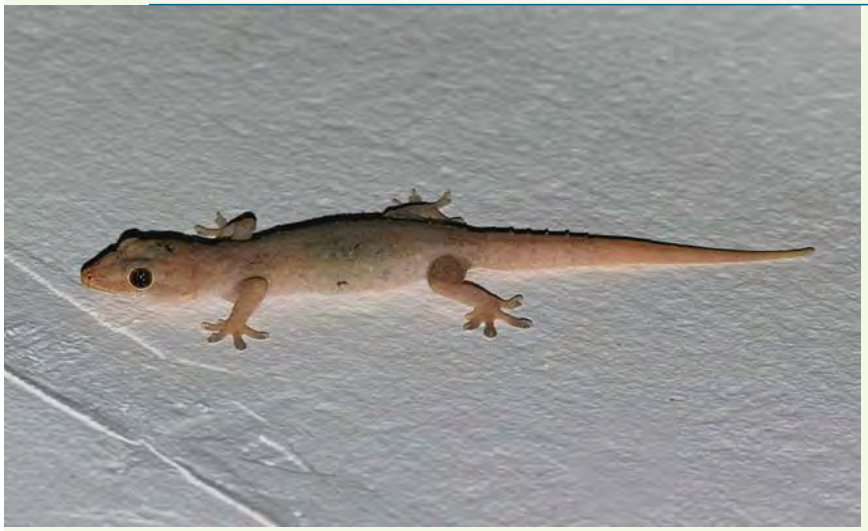
Highly herbivorous species; feed on aquatic vegetation.

Breeding

No well information about breeding session; but found to lay 9 fully developed eggs in dry session.

Distribution

Found in Ganges and Brahmaputra River basin.



- Petr Myska

Common House Gecko

It is restricted to the human habitations though frequently seen in Tanguar Haor climbing walls of houses and other buildings in search of insects attracted to porch lights, hence their name. In this species, the snout is longer than the distance between the eye and the ear-opening, and is 1.3 to 1.5 times the diameter of the orbit. The forehead is concave and the ear-opening is small and roundish. The body and limbs are moderately sized. The digits are moderately dilated and free; the inner one has a sessile claw. The upper surfaces of the body are covered with small granules.

Habit and Habitat

The species covers a variety of habitats like trees, stones, wooden logs, in both urban and rural areas, or in forests but prefers to live in bark of palm trees like coconut, betel nut etc.

Feeding

Feeds mainly on insects and occasionally take small animals.

Common House Gecko Facts
Scientific Name: ***Hemidactylus frenatus***
English Name: **Common House Gecko**
Bengali Name: **Dakchara Tiktiki/ Mosrin Tiktiki**
TH Status: **C**
IUCN Global Status: **LC**

Breeding

It breeds in the hot weather. Female lays 2 eggs between April and May and hatch after 6 weeks.

Distribution in Bangladesh

It occurs throughout Bangladesh.

Distribution in the World

This lizard also occurs in India, China, Hong Kong, Australia, and East Africa to St. Helena.

Brook's House Gecko

Brook's House Gecko Facts
Scientific Name: ***Hemidactylus brookii***
English Name: **Brook's House Gecko**
Bengali Name: **Khoshkhoshey Tiktiki**
TH Status: **R**
IUCN Global Status: **LC**

- Net

Snout of this species is somewhat longer than the distance between the eye and the ear-opening, nearly twice the diameter of the orbit; forehead concave; ear-opening small, oval, vertical, about one third the diameter of the eye; on the occipit there are very small round tubercles. Dorsal surface light grey to dark brown with a series of black spots and covered with small granular scales, conical tubercles arranged in 16-20 longitudinal rows. In Tanguar haor it is seen everywhere in haor adjacent village areas.

Habit and Habitat

It inhabits in close association with human beings and the structures build by them. It is also seen in trees, under stones, and wooden logs in both urban and rural areas or in dense forests.

Feeding

Insectivorous, mainly feeds on mosquitoes, cockroaches, beetles, grasshoppers, termites, spiders, etc.

Breeding

Breeding is from April to October. Two spherical white eggs are laid in a single clutch in sheltered spot. Incubation takes about 39 days .

Distribution in Bangladesh

It is the most widely distributed reptiles found in Bangladesh.

Distribution in the World

It is widely distributed from tropical Africa to Southeast Asia and South America.

Keeled Indian Mabuya or Common Skink

Keeled Indian Mabuya Facts
Scientific Name: ***Eutropis carinata***
English Name: **Keeled Indian Mabuya**
Bengali Name: **Anjoni/Anjon/Anchil**
TH Status: **C**
IUCN Global Status: **LC**

- Reza Khan & Roushon

The species got somewhat stout and dorso-ventrally flattened body having a standard length of about 12.5 cm. Body is olive-brown or shining bronze dorsally, but anterio-dorsal part of the tail is dark-brown with few black spots. Belly yellowish-white; in the breeding season flanks of the male turn scarlet on the sides while the belly remains yellow.

Habit and Habitat

It inhabits in semi-urban areas and the forest of both plains and low hills. It is frequently sighted while passing thorough low shrubs, leaf litter and in search of prey in homestead vegetation and grassland.

Feeding

Feeds mainly on insects and occasionally take small animals.

Breeding

Female lays 2 to 8 eggs in between August and September. Hatchlings are seen in May to June.

Distribution in Bangladesh

It is one of the most widely distributed and more or less common lizards found in Bangladesh.

Distribution in the World

Global distribution includes Bangladesh, India (except in the North-West), Nepal, Maldives, and Sri Lanka.

- Saurov Mahmud

Bronze Grass Skink Facts
Scientific Name: ***Eutropis macularia***
English Name: **Bronze Grass Skink**
Bengali Name: **Tamatey Anjon**
TH Status: **R**
IUCN Global Status: **LC**

Bronze Grass Skink

This species is often sighted while walking through the cultivated lands, kandas, and village gardens in Tanguar Haor. It is about 7 cm in length from snout to vent; tail is about two times longer than the head and body length together. Its body looks slender with obtusely pointed snout. Dorsum is brown or bronzy, with longitudinally arranged black spots.

Habit and Habitat

It inhabits in plains as well as the wet grassland and the edge of cultivated fields, also seen in parks, and home gardens.

Feeding

Mainly feeds on insects. It is more visible while searching for food on ground and in bushes.

Breeding

In breeding season males have bright red lips and flanks. Females with 3-4 eggs have been collected in June. More than one clutch is laid annually.

Distribution in Bangladesh

It is the widely distributed reptiles found in Bangladesh.

Distribution in the World

Its global distribution includes India, Pakistan, Sri Lanka, Thailand, Myanmar, Cambodia, and Malay Peninsula.

- Reza Khan

Oriental or Changeable Garden Lizard

Changeable Garden Lizard Facts
Scientific Name: ***Calotes versicolor***
English Name: **Changeable Garden Lizard**
Bengali Name: **Roktochusha**
TH Status: **C**
IUCN Global Status: **LC**

The species is identified by the short crest above the neck, the presence of small spines above the tympanum and by the lack of a shoulder fold. The male has swollen cheeks. In Tanguar Haor this species is found abundantly and a frequently sighted one. However, it is restricted to the terrestrial regions of the haor.

Habit and Habitat

Inhibits in bushes, small forest, open field, Garden, wetland, etc.

Feeding

Mainly insectivorous, occasionally eat small crustaceans, arthropod eggs and small animals.

Breeding

Male with red and black throat denotes the breeding times of this species. Breeding takes place from April to September. Female lays 6-25 eggs between June and September. Incubation period takes about 6 weeks depending on temperature .

Distribution in Bangladesh

It is one of the most frequent and widely distributed lizards found in Bangladesh.

Distribution in the World

Almost all Asian countries support this species.

Bengal Monitor Lizard

Bengal Monitor Lizard Facts
Scientific Name: ***Varanus bengalensis***
English Name: **Bengal Monitor Lizard**
Bengali Name: **Guishap**
TH Status: **C**
IUCN Global Status: **LC**

- Reza Khan & Saurov Mahmud

This lizard is rarely being seen in Tanguar Haor. It mainly occupies y the villages close to Tanguar Haor. Young are more colourful than adults. Young have a series of dark crossbars on the neck, throat and back. The belly is white, banded with dark crossbars and are spotted with grey or yellow (particularly in the eastern part of the range). Bengal Monitors have external nostril openings (nares) that are slit-like and oriented near horizontal, and positions between the eye and the tip of the snout. The nares can be closed at will, especially to keep away debris or water. The scales of the skin are rougher in patches and on the sides; they have minute pits, especially well distributed in males.

Habit and Habitat

Bengal Monitors are usually solitary and usually found on the ground, although the young are often seen on trees. They are diurnal, shelter in burrows they dig or crevices in rocks and buildings.

Feeding

Their normal prey consists of beetles, grubs, orthopterans, scorpions, snails, ants and other invertebrates as well as small vertebrates, especially small chicken and ducklings in the villages.

Breeding

When the male starts confining or maintaining their territory it means their breeding season is approaching which is from June to September. Female can lay eggs up to 3 times over a period of one year in holes and heaps of mud.

Distribution in Bangladesh

It is one of the most widely distributed and more or less common lizards found in Bangladesh.

Distribution in the World

Global distribution includes Pakistan, Iran, Afghanistan, Nepal, India, Sri Lanka, Vietnam, Myanmar, Malaysia, Sumatra, Java, China, Thailand, Laos and Cambodia.

Checkered Keelback

Checkered Keelback Facts
Scientific Name: ***Xenochrophis piscator***
English Name: **Checkered Keelback**
Bengali Name: **Dhora Shap**
TH Status: **V**
IUCN Global Status: **LC**

Checkered Keelback or Asiatic Water Snake is possibly the most common species of non-venomous snake found in Bangladesh. Size varies from 4 to 5 feet in length; adult 60cm, 12.5cm when born and female grows up to 1.7m. This medium-sized snake has relatively large eyes and is easily identified by its five rows of black spots which form a 'checkered' pattern all over the body. It is one of the most frequently found species in Tanguar haor.

Habit and Habitat

It inhabits all types of freshwater bodies including lakes ponds, rivers, streams, submerged rice fields, and marshy areas.

Feeding

It feeds on small snakes, frogs, water insects, fish and some times even water birds and their eggs.

Breeding

Copulation has been noticed from October and females with eggs have been obtained from November to May. Clutch size varies form 8-100 eggs and lay eggs in holes, crevices of rocks, wells or in mounds. The young ones hatch out in about 37-90 days.

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

It also occurs in India, eastern Afghanistan, Pakistan, Sri Lanka, Southern China and Thailand.

- A.B.M.Sarowar Alam & Shahriar Caesar Rahman

Buff-stripped Keelback

- Shahriar Caesar Rahman

Buff-stripped Keelback Facts
Scientific Name: ***Amphiesma stolata***
English Name: **Buff-stripped Keelback**
Bengali Name: **Dhora Shap**
TH Status: **C**
IUCN Global Status: **LC**

Stripped Keelback is a small and slender snake which is also closely related to and resembles the Checkered Keelback Snake. This is generally an olive-brown to gray in colour. The body of the striped keelback is short, average length is 40 cm; at birth: 12 cm; maximum: 80 cm (female). It has a long slender tail which is almost a quarter of its length. Two yellow stripes along the length and to the sides of the spine are the distinctive feature of this snake. This keelback has irregular blackish crossbars on the body. Near the head the crossbars are prominent, whereas on the second half of the snake they become diffuse.

Habit and habitat

This is a remarkably inoffensive and gentle little snake which is essentially diurnal, when alarmed; some flatten the neck and fore body and distend themselves by deep inhalations bringing into view the beautiful blue or vermillion on the base of the scales. It is easily sighted in rice fields, beels, kandas, and pond edges of Tanguar Haor, where thick grass and bushes are favoured.

Feeding

The main diet of this snake comprises of frogs, but it also takes toads, small lizards and rodents, which they swallow alive. Insects, tadpoles, the young of toads and small-mouthed frogs are the food of this Keelback's young ones.

Breeding

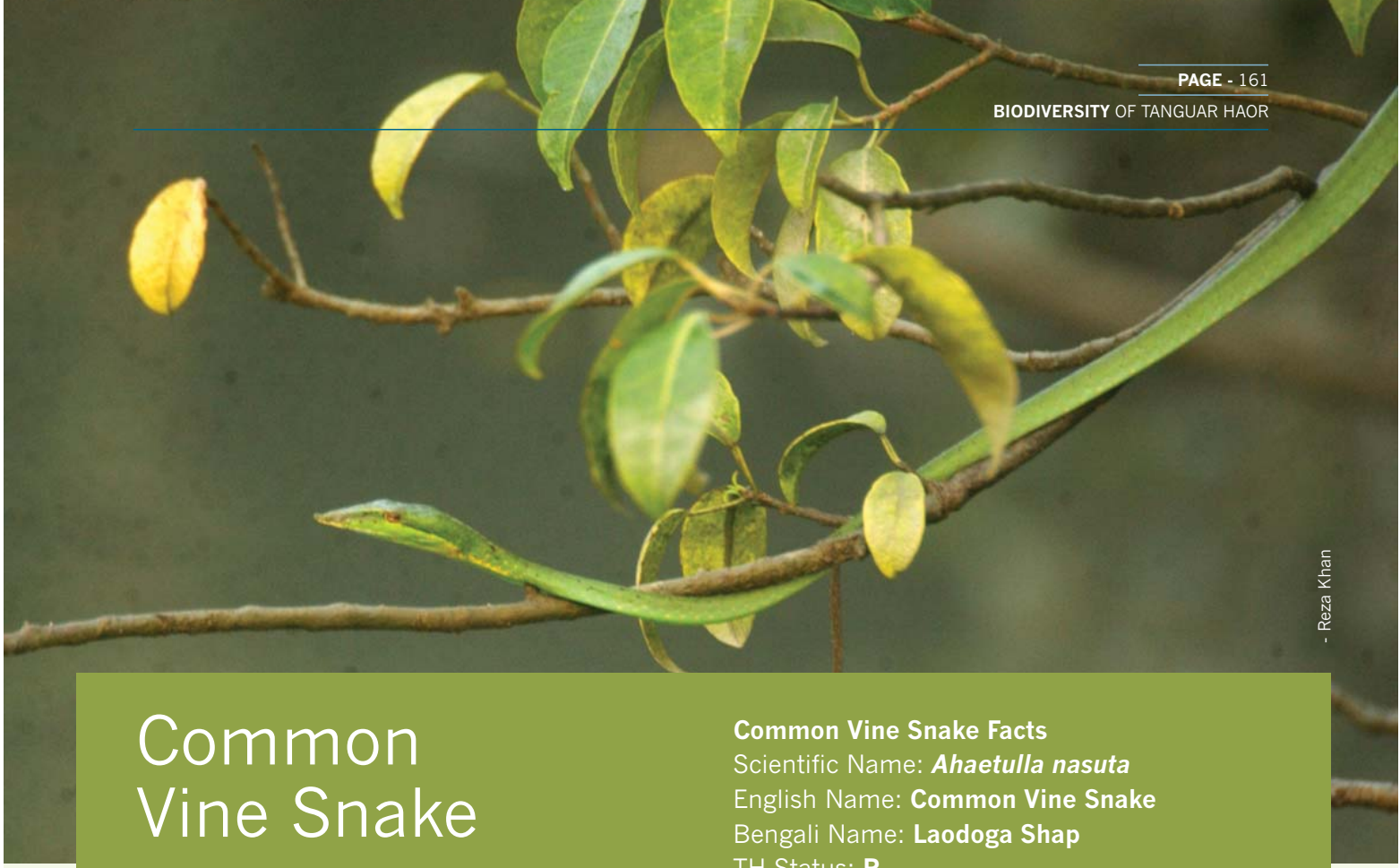
Mating apparently occurs during aestivation and gravid females have been obtained from April to August and eggs are laid from May to September, in any convenient refuge underground. Incubation is believed to vary with temperature being longer in the hills.

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

Global distribution includes South Asia, China and Southeast Asia.



- Reza Khan

Common Vine Snake

Common Vine Snake Facts
Scientific Name: ***Ahaetulla nasuta***
English Name: **Common Vine Snake**
Bengali Name: **Laodoga Shap**
TH Status: **R**
IUCN Global Status: **LC**

Ahaetulla nasuta is a long, slender, smooth-scaled snake which head is extremely pointed and has extended snout; large eye with horizontal pupil. It reaches up to 2 m. Tail length is about 40% of the total length in the male and 37% in the female respectively. Body is uniformly parrot-green (rarely yellow, brown or pink) back, often with a thin white or yellow line separating upper body scales from belly scales. Underside is usually light green or yellow (rarely grey, pink or rose-red).

Habit and Habitat

Generally quiet but can be very fierce when freshly caught. When disturbed, it rears its fore body and watches around, withdraws the head, coils the neck, open the mouth and strikes. It is diurnal and seen most frequently on low bushes and scrub in jungles/kandas and gardens on green foliage around human habitations of Tanguar Haor.

Feeding

They feed chiefly on lizards, small rodents, birds, frogs, tadpoles and occasionally other snakes.

Breeding

The snake is ovoviviparous and the young are born free from the caul or greater omentum. The appearance of the young is usually between March and December and up to 23 young are born during this period.

Distribution in Bangladesh

It is a rather common snake and widely distributed in Bangladesh.

Distribution in the World

This snake also occurs in Nepal, Sri Lanka, Myanmar, Thailand, Singapore and China.

Split Keelback or Olive Keelback Snake



- Vivek Sharma & Saurov Mahmud

Split Keelback or Olive Keelback Wart Snake Facts
Scientific Name: ***Atretium schistosum***
English Name: **Split Keelback or Olive Keelback Wart Snake**
Bengali Name: **Mete Shap/Maitta Shap**
TH Status: **R**
IUCN Global Status: **LC**

Split Keelback Snake is a species found in South Asia which is a common and harmless one amongst the water snakes. It is a small, robust snake with thin head, stout snout and slit nostrils placed rather high. The snake is olive-green and yellow to orange below. It is sometimes tinged with pink or purplish on the flanks. Usually 50 cm long but can reach up to 100 cm. The length of the tail is one third to one fourth of the total length. Sometimes two series of small black spots are seen along the back. Some have a red streak bordering the two colours.

Habit and Habitat

Usually it appears as a gentle snake that often allows itself to be captured without a struggle if cornered. If possible, it will dart out of danger with grace and agility. This is a diurnal snake; it is seen at night also. The snakes rarely bite when handled. It is known to aestivate in the summer. The species is mostly aquatic. Tanguar haor embraces both hydric and mesic habitat which is suitable for this kind of species.

Feeding

Split Keelback feeds mainly on frogs, tadpoles, fish and crabs which it catches with a side-stroke motion that is characteristic of water snakes. The snake swims past the prey and suddenly snaps its head to the side. Split Keelback is also known to eat mosquito larvae.

Breeding

Atretium schistosum is oviparous. It breeds during the rains and eggs are laid from January to April. Female lays 10-30 eggs from December through March .

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

This snake also occurs in Nepal, Sri Lanka and India.

Copper-headed Trinket

- Shahriar Caesar Rahman & Beduine

Copper-headed Trinket Facts
Scientific Name: ***Coelognathus radiatus***
English Name: **Copper-headed Trinket**
Bengali Name: **Dudraj/Arbali**
TH Status: **R**
IUCN Global Status: **LC**

It is a slender moderately large, handsome snake with distinctive marking. It has a black transverse mark on the back of the head, round nose and large eyes that distinguish the species from the others. It is greyish-brown or yellowish-brown on back with 4 black stripes on the anterior half or two-thirds of the body which commence a short distance behind the neck along the front of the body; a cream coloured stripe runs along the upper two wide stripes; the lower stripe is narrower and often broken up. Its head is copper or dull orange coloured with black line across nape and 3 black radiant lines extend from behind the eyes.

Habit and Habitat

The trinket snake is diurnal. Though terrestrial it climbs and swims well. It is an active and intrepid snake. This species is found in a wide range of rainforest habitat. In Tanguar Haor it is occasionally found in open areas like grasslands, gardens, and in village adjacent forests as well as in agricultural fields.

Feeding

It feeds on lizards, birds, small mammals, especially rats and occasionally frogs.

Breeding

It breeds throughout the year; lays 5-15 eggs at a time. It can produce up to 4 clutches in a year; hatchlings emerged within 70 to 90 days.

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

Apart from Bangladesh, it is found in India, Myanmar, Vietnam, Thailand, Laos, Cambodia, China, Malaysia and Indonesia.

Common Smooth Watresnake

Rainbow Mud Snake or Common Smooth Watresnake Facts
Scientific Name: ***Enhydris enhydris***
English Name: **Rainbow Mud Snake or Common Smooth Watresnake**
Bengali Name: **Paina Shap/Hurja**
TH Status: **C**
IUCN Global Status: **LC**

- Reza Khan & Shahriar Caesar Rahman

It is a piscivorous, freshwater snake with a distinctly small head, stout body, and a relatively long tail. Its upperparts are grey or olive with a brown stripe along each side of the back, and a cream or yellow stripe low on each side over the lowest three rows of dorsal scales, and separated from the belly by a narrow blackish line. Its underside is white or yellow with a blackish median line or row of dots. The colour pattern may be variable: some individuals have a dark, greyish, mid-dorsal stripe, when others have a red dorso-lateral stripe on each side of the mid-line. Some have a uniformly red belly when others have a blackish blotch on each ventral scale.

Habit and Habitat

It is diurnal in habit. It inhabits freshwater such as the ponds and occasionally in brackish waters. In Tanguar Haor the species also occurs in beels having slow-moving water, marshes, lakes, and wet paddy fields.

Feeding

It feeds mainly on fishes but also takes frogs, tadpoles, and sometimes lizards.

Breeding

It is ovoviviparous, mating takes place in October-November; several clutches are laid in a year between January and June. Clutch size varies from 4 to 20 young's,

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

Apart from Bangladesh, it is found in Pakistan, India, Myanmar, Nepal, Sri Lanka, Cambodia, and east to southern China and south-east Asia, French, Indo-China, China, Malay Peninsula, Indonesia, Thailand and Vietnam.

Common Wolf Snake

Common Wolf Snake Facts
Scientific Name: ***Lycodon aulicus***
English Name: **Common Wolf Snake**
Bengali Name: **Sadharan Gharginni Shap**
TH Status: **C**
IUCN Global Status: **LC**

Common Wolf Snake is a species of non-venomous snake found in South Asia and Southeast Asia. It is a small slender one with smooth shiny scales; length is about 30 cm, maximum recorded length is 80 cm. Bars may be pure white or heavily speckled with brown that sometimes become reduced to form short vertebral spots. Head is flat, somewhat pointed, eyes jet-black; a triangular whitish blotch present on each side of the occipit, often confluent with one another.

Habit and Habitat

It is nocturnal in habit. Among the snakes, the common wolf snake is the one that seems to have fondness to entering and living in the human habitations. It hides during the day in crevices in masonry or beneath boxes, stones or any other convenient hideout. Wolf Snake is an excellent climber and capable of going up almost smooth vertical surfaces.

Feeding

This snake prefers lizards of the Gecko family but takes any small animal it can overcome. It also takes mice, frogs and skinks.

Breeding

Usually the eggs are laid in February and most possibly the young hatch out in late April or early May before the onset of the monsoon. Hatchlings reach maturity after two years and females are capable of reproducing when attains about 45 cm in length.

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

This snake also occurs in Pakistan, India, Myanmar, Nepal, Sri Lanka, Maldives, China, Malaysia, Indonesia, Thailand, the Philippines, Seychelles, Mascarenes and Mauritius.

- Shahriar Caesar Rahman

Oriental Rat Snake

- Reza Khan & Samiul Mohsanin

Oriental Rat Snake Facts
Scientific Name: ***Ptyas mucosa***
English Name: **Oriental Rat Snake**
Bengali Name: **Daraj Sap**
TH Status: **C**
IUCN Global Status: **LC**

Tanguar Haor seems to be the good habitat for snake like *Ptyas mucosa*. These are non-venomous, large, fast moving snakes which grow to a length of 3 meters or more. Body is long and cylindrical with yellow, yellowish-brown, olive or greyish to black on back with light or prominent black bars especially on the posterior part of the body. Underside yellow white or greyish-white, occasionally ventrals and subcaudals edged with black. Head is broader then neck. Large eye has round pupil.

Habit and Habitat

Rat snakes are found wherever rats and frogs/toads are prevalent. So, of course, they are often found in rice fields and in human habitation. It also inhabits agricultural fields, scrublands, forests, deserts, mangroves, mountains etc.

Feeding

These snakes feed on mammals, birds and reptiles indiscriminately but seem to prefer mammals.

Breeding

Mating occurs during the cold season in December, January and February when pythons are in hibernation. Egg lying continues from March to June. It is oviparous and exhibits parental care; female lays about 100 eggs.

Distribution in Bangladesh

It is a common snake; occurs in wildlife sanctuaries in Sundarbans, Pablakhali, Kaptai, Teknaf Game reserve, Rema-Kalenga and Lawachara and other forested area and all division of Bangladesh.

Distribution in the World

This snake also occurs in Pakistan, India, Sri Lanka, southern Nepal, Bhutan and probably in the north of Myanmar.

Banded Krait

- Samir Saha & Shahriar Caesar Rahman

Banded Krait Facts
Scientific Name: ***Bungarus fasciatus***
English Name: **Banded Krait**
Bengali Name: **Shakini Shap**
TH Status: **R**
IUCN Global Status: **LC**

The Banded Krait is a large, conspicuous yellow and black banded venomous snake with a prominent backbone, blunt tail and head slightly broader and depressed than the neck and distinct from the body. The bands are faded on the underside. It is easily identified by its alternate black and yellow bands. The tail tapers to a thin point.

Habit and Habitat

It is active at night and relatively passive during the day. Though very venomous it is a shy snake, difficult to sight, mainly nocturnal in feeding habit and does not strike readily. Banded Krait may be seen in a variety of habitats ranging from forests to agricultural lands. It may inhabit termite mounds and rodent holes close to water, and often live near human settlements especially villages because rodents and water are readily available here.

Feeding

It feeds mainly on snakes and among those taken are rat snake or Daras Shap and different types of small snakes. They also eat skinks, eggs of snakes and occasionally fish.

Breeding

Mating takes place between February and March. It is oviparous. About 2 months after mating, the female lays 4 to 14 eggs around April, and stays with eggs during incubation which takes 61 days.

Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

Apart from Bangladesh, it is found in the South Asia through Myanmar, Cambodia, Thailand, Laos, Vietnam and southern China to Malaysia and the main Indonesian islands of Borneo, Java and Sumatra and Singapore.

Remarks

Highly venomous and can kill people or their domesticated animals.

Monocellate Cobra

Monocellate Cobra Facts
Scientific Name: ***Naja kaouthia***
English Name: **Banded Krait**
Bengali Name: **Gokra Shap**
TH Status: **U**
IUCN Global Status: **LC**

The cobra is one of the rare snakes found in Tanguar Haor. It can vary in colour, ranging from light beige to dark brown and grey. It is an extremely venomous snake which can be identified by the round eyelike shaped marking located behind its hood. Throat is pale, ventro-lateral throat spot on each side prominent and one or two broad black cross-bars behind it; some specimens have more than one pair throat spots or lack the spots altogether.

Habit and Habitat

The species is found almost everywhere; their preferred habitat includes dense forests or agricultural land, swamps, mangroves. It is also found in grasslands, shrub lands and human settlements, including cities.

Feeding

Their diet comprises of a wide range of animals, such as rodents, toads, lizards, birds and their eggs, sometimes even their own species.

Breeding

Female lays 8-18 eggs in January- March and generally the female stays with eggs until those are hatched. Incubation takes about 50 days.

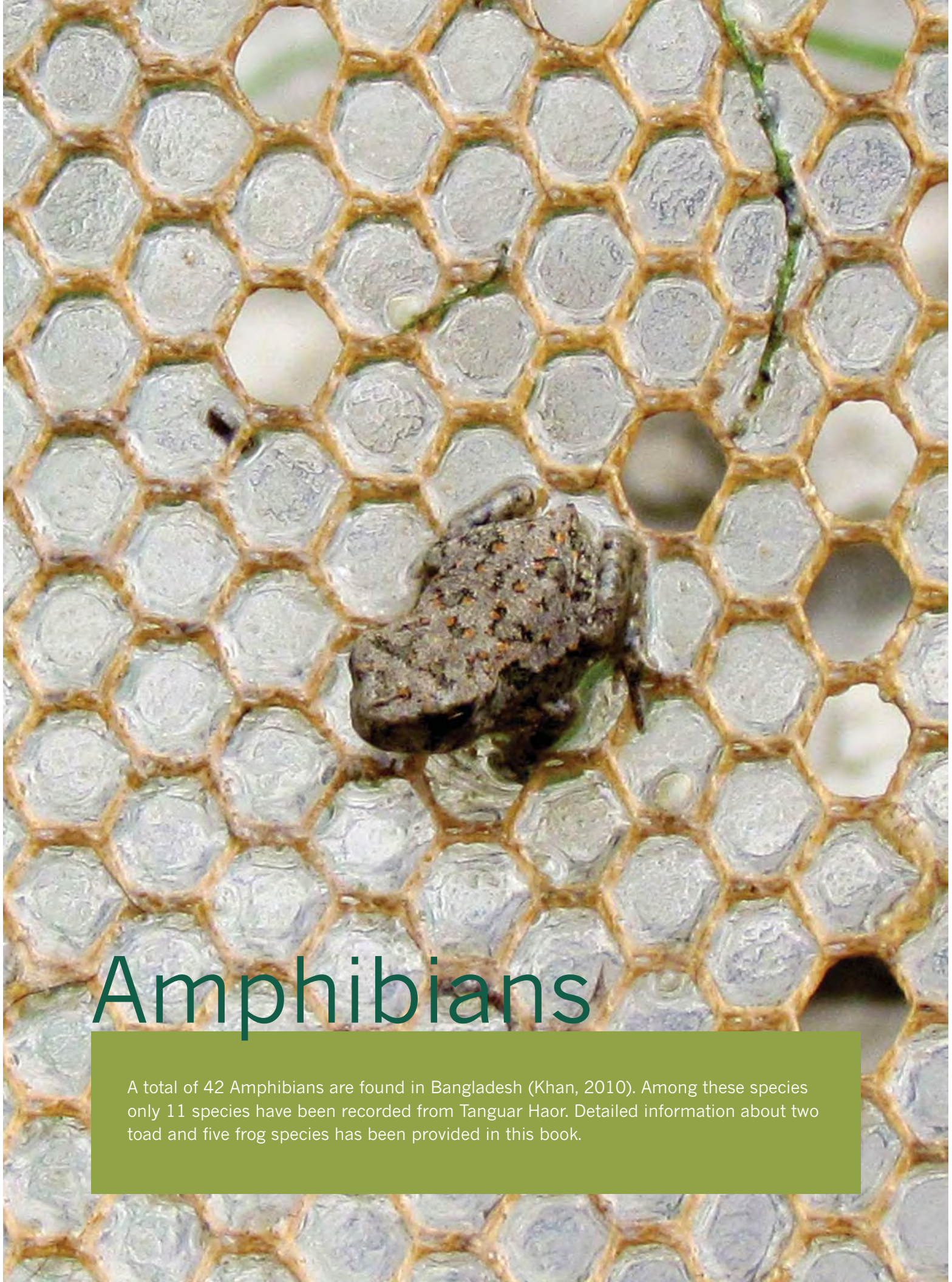
Distribution in Bangladesh

It is widely distributed in Bangladesh.

Distribution in the World

Global distribution includes Nepal, Northeast India, Myanmar, Thailand, Malaysia, China, Cambodia, Laos and Vietnam.

- Beduyian & Shahriar Caesar Rahman



Amphibians

A total of 42 Amphibians are found in Bangladesh (Khan, 2010). Among these species only 11 species have been recorded from Tanguar Haor. Detailed information about two toad and five frog species has been provided in this book.

Asian Common Toad

Asian Common Toad Facts
Scientific Name: ***Duttaphrynus melanostictus***
English name: **Common Toad**
Bangla name: **Kuno Bang**
Tanguar Haor Status: **C**
IUCN National Status: **NO**
National Abundance: **U**
IUCN Global Status: **LC**

- A.R.M.Sarowar Alam & Reza Khan

The Common Indian Toad is a widespread species in South Asia. In Tanguar haor this toad is not sighted frequently although it is widely distributed one because it is partial to the villages bordering the haor. It is a medium sized toad with warty skin and noticeable parotid glands. Dorsal colour varies from olive brown to dull red in colour, with paler underbellies and a series of boney ridges along its back. Males can grow up to about 8 -10cm whilst females are larger and can reach about 9 - 11 cm.

Habit and Habitat

Common Indian Toads are terrestrial species that usually live in groups and can be found in open grassland and woodland in moist areas near a water source.

Feeding

This toad can usually handle any prey items that are suitably sized and can fit their mouths, which is probably the reason behind their success in the wild. It also takes a variety of items, such as earthworms, locusts, crickets, cockroaches, mealworms, feeder fish, moths, beetles, woodlice, butterflies, snails and wax worms, and even blind snakes.

Breeding

Female Common Indian Toads will only breed once a year, whereas males can manage multiple breeding. In the wild, it will spawn after heavy rains and monsoons.

Distribution in Bangladesh

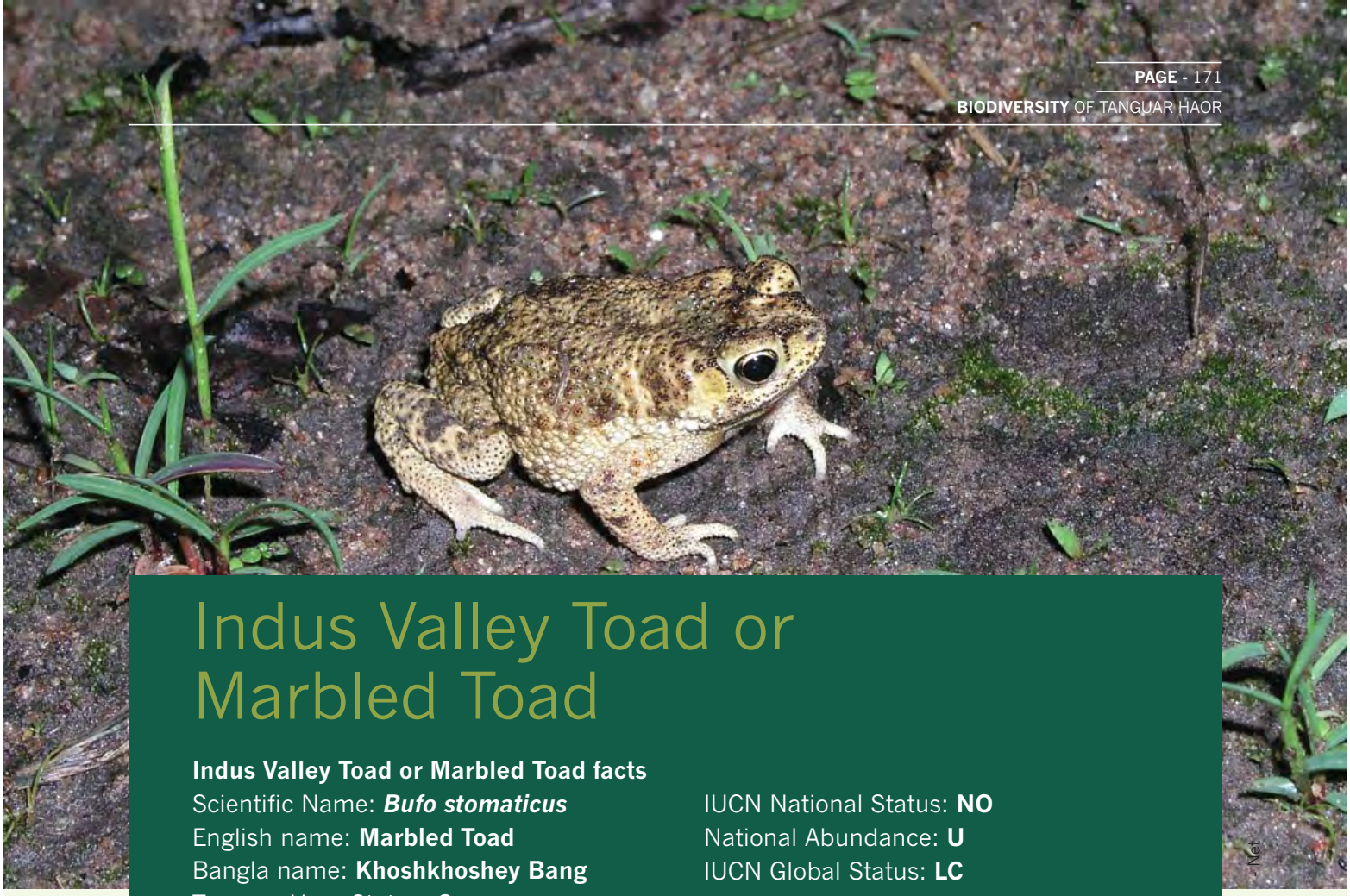
D. melanostictus is very common and widely distributed in Bangladesh.

Distribution in the world

It also occurs in India, Myanmar, Pakistan, Sri Lanka, Nepal, Thailand, Malaysia, Hong Kong, Cambodia, China, Indonesia, Singapore, Taiwan, Macau, and Viet Nam.

Census status in Tanguar Haor

Common



Indus Valley Toad or Marbled Toad

Indus Valley Toad or Marbled Toad facts

Scientific Name: ***Bufo stomaticus***
English name: **Marbled Toad**
Bangla name: **Khoshkhoshey Bang**
Tanguar Haor Status: **C**

IUCN National Status: **NO**
National Abundance: **U**
IUCN Global Status: **LC**

This is a moderately large-sized toad. Its length of the body, from the tip of snout to vent [,] is about 75 mm. The dorsal surface of the body is covered with flat tubercles and spiny warts when ventral surface coarsely granulated, but the chin and throat are smooth. Dorsal surface of the body is grey or olive and the ventral surface, including the upper lip, is whitish in colour. In Tanguar Haor this species was found frequently in different villages, kandas, and in open land.

Habit and Habitat

It inhabits in a wide variety of habitats including open plains, grasslands, scrubland, forest, suitable agricultural land, freshwater marshes, rural gardens, ponds, and urban areas and human habitations.

Feeding

B. stomaticus is mainly insectivorous. They feed on ants, termites, earwigs, spring-tails, bristle-tails, crickets, mole-crickets, grasshoppers, flies, mosquitoes, caterpillars, moths, bugs, bees, cicadas, leaf-hoppers, plant-hoppers, ground beetles, tiger-beetles, bark-beetles and click-beetles; also earthworms, spiders, centipedes and mollusks.

Breeding

The breeding season extends from June to September. Breeding occurs in permanent and seasonal pools and feebly flowing streams after sunset, during the monsoon.

Distribution in the world

It also occurs in India, Pakistan, Nepal, and Afghanistan.

Census status in Tanguar Haor

Common

Common Skittering Frog

- Saurov Mahmud & Reza Khan

Common Skittering Frog Facts
Scientific Name: ***Euphlyctis cyanophlyctis***
English name: **Common Skittering Frog**
Bangla name: **Kotkoti Bang**
Tanguar Haor Status: **V**
IUCN National Status: **NO**
National Abundance: **V**
IUCN Global Status: **LC**

The frog is about 6 cm long from snout to vent; female is larger than the male. Snout blunt; eyes are placed more towards the top. The dorsal surface of the body brownish, greyish, olive-brown to greenish brown with dark olive blotches. Belly and throat are white, sometimes olivaceous or black to bluish spots form a network. Limbs bear dark spots, which do not form a complete cross bands. Skin smooth, sometimes a few round warts may be present. Probably this is the most common frog in Tanguar haor. This wetland is like paradise for them to live on.

Habit and Habitat

E. Cyanophlyctis inhabits all kinds of fresh water bodies like ponds, tanks, paddy fields, canals, streams, stagnant rainwater pools, even brackish water close to estuary and hill streams. They are active both in day and at night.

Feeding

They feed upon floating insects, tadpoles and insect larvae.

Breeding

Breeding occurs more or less throughout the year, wherever there is sufficient water. Mating takes place in water; mounted pairs float along the edges of the water body, and the eggs are laid in a frothy mass in the water.

Distribution in the world

It also occurs in India, Pakistan, Sri Lanka, Nepal, Bhutan, Myanmar, and China.

Census status in Tanguar Haor

Very Common

Asian Grass Frog

- Reza Khan & Samiul Mohsanin

Asian Grass Frog Facts
Scientific Name: ***Fejervaria limnocharis***
English name: **Asian Grass Frog**
Bangla name: **Jhi-jhi Bang**
Tanguar Haor Status: **C**

IUCN National Status: **NO**
National Abundance: **V**
IUCN Global Status: **LC**

Several species are included under this species complex and interbreeding occurs between the morphs making their species identification a difficult one. Tanguar haor enjoys various wetland habitats e.g. stagnant; floating; rain fed etc., which are the prerequisite for the survival of these species. These are common nocturnal frog which can be identified by the long toes on their hind legs. Males grow up to 50 mm, females up to 60 mm in length. Colour greatly variable, usually rusty brown or brownish grey, warty body above with darker blotches on the back; limbs bear cross bars.

Habit and Habitat

They inhabit most open wet habitat types, including river floodplains, wet agriculture areas such as rice fields, ditches, marshes, parks, gardens, in closed-canopy forest (although these are rare in some regions) and other habitats created or disturbed by humans. The members of the species are highly adaptable to human habituations.

Feeding

They show cannibalism in feeding habit, though chiefly feeds on insect and earthworms.

Breeding

After first rain of monsoon, this frog starts breeding.

Distribution in the world

It ranges from India and Sri Lanka, through Thailand and southern China to Japan and Taiwan, and down through Peninsular Malaysia, Singapore and the major Indonesian islands.

Census status in Tanguar Haor

Common

Indian Bullfrog

- Reza Khan & Samiul Mohsanin

Indian Bullfrog Facts
Scientific Name: ***Hoplobatrachus tigerinus***
English name: **Indian Bullfrog**
Bangla name: **Kola Bang**
Tanguar Haor Status: **V**
IUCN National Status: **NO**
National Abandance: **V**
IUCN Global Status: **LC**

The booming call of the male *H. tigerinus* let us know that the monsoon has come. This frog is a well-known and probably the largest frog in this region. A mature male measures from snout to vent 65-80 mm and the gravid female 75- 121 mm. Its body colour is variable i.e., olive brown, yellowish-green or olive, marked with black spots on the back. Male is brighter than the female and turns bright yellow during breeding season. Numbers of *kandas,* stagnant water bodies, and open grasslands etc., of Tanguar haor meet the suitability of this species' habitat.

Habit and Habitat

The species is riparian in habit and frequently found in waterside bushes, banks of ditches, ponds, canals and rivers. It does not stay in water for a long time; spends most of its time hiding and feeding in surrounding vegetations.

Feeding

This frog is nocturnal and carnivorous; feeds mainly on insects; also eats crabs, rats, shrews, small snakes, skinks, etc. Young are omnivorous; feeding on insect larvae and algae.

Breeding

Breeding occurs in March-September, when grayish brown, velvety, horny nuptial pad develops in male. During the breeding season male calls loudly sitting close to the shallow water to attract the female. Female lays 3,500-12,500 eggs in water in clusters.

Distribution in Bangladesh

Widely distributed in Bangladesh.

Distribution in world

It also occurs in India, Pakistan, Sri Lanka, Nepal, Bhutan, Myanmar, Thailand, Southern China and Taiwan.

Census status in Tanguar Haor

Very Common

Common Tree Frog

- Samiul Mohsanin

Common Tree Frog Facts
Scientific Name: ***Polypedates leucomystax***
English name: **Common Tree Frog**
Bangla name: **Dorakata Gechho Bang**
Tanguar Haor Status: **C**
IUCN National Status: **NO**
National Abundance: **V**
IUCN Global Status: **LC**

This is a highly adaptable frog amongst the Rhacophorids. The male is about 4.5 cm in length female is about 8 cm. Its body is slim, head as long as broad, snout obtusely pointed, limbs are thin and long. The dorsal skin is smooth, dark brown to yellowish with 3-4 darker lines sometimes more that run from the neck to the anal region. A distinct W-shaped skull-mark on the hind neck is visible at rest. Trees, gardens and other homestead vegetation of different villages around Tanguar haor provide suitable habitat for this species.

Habit and Habitat

It inhabits leaf base of banana trees; stony creek, bush and tree holes of primary forest edges, secondary forests and parks. Nocturnal in habit, at daytime rests amongst creeks, bushes, inside bamboos with drawn up limbs under the body; active before dawn and forages by perching on bushes, tree trunks, and wall usually few centimeter to breast height level from the ground.

Feeding

Insectivorous and arboreal. It can leap from one branch to another. It seems sluggish, often sits for hours at a particular place and watches prey to come close to it.

Breeding

It breeds from April to September. Though the frog is arboreal, mounting pair may come down and often seen moving to find suitable place where the female lays eggs in a foam nest attached to terminal leaves above still water.

Distribution in Bangladesh

This tree frog is found throughout Bangladesh.

Distribution in world

It also occurs in India, Pakistan, Sri Lanka, China, Myanmar across Malaysia to Indonesia.

Census status in Tanguar Haor

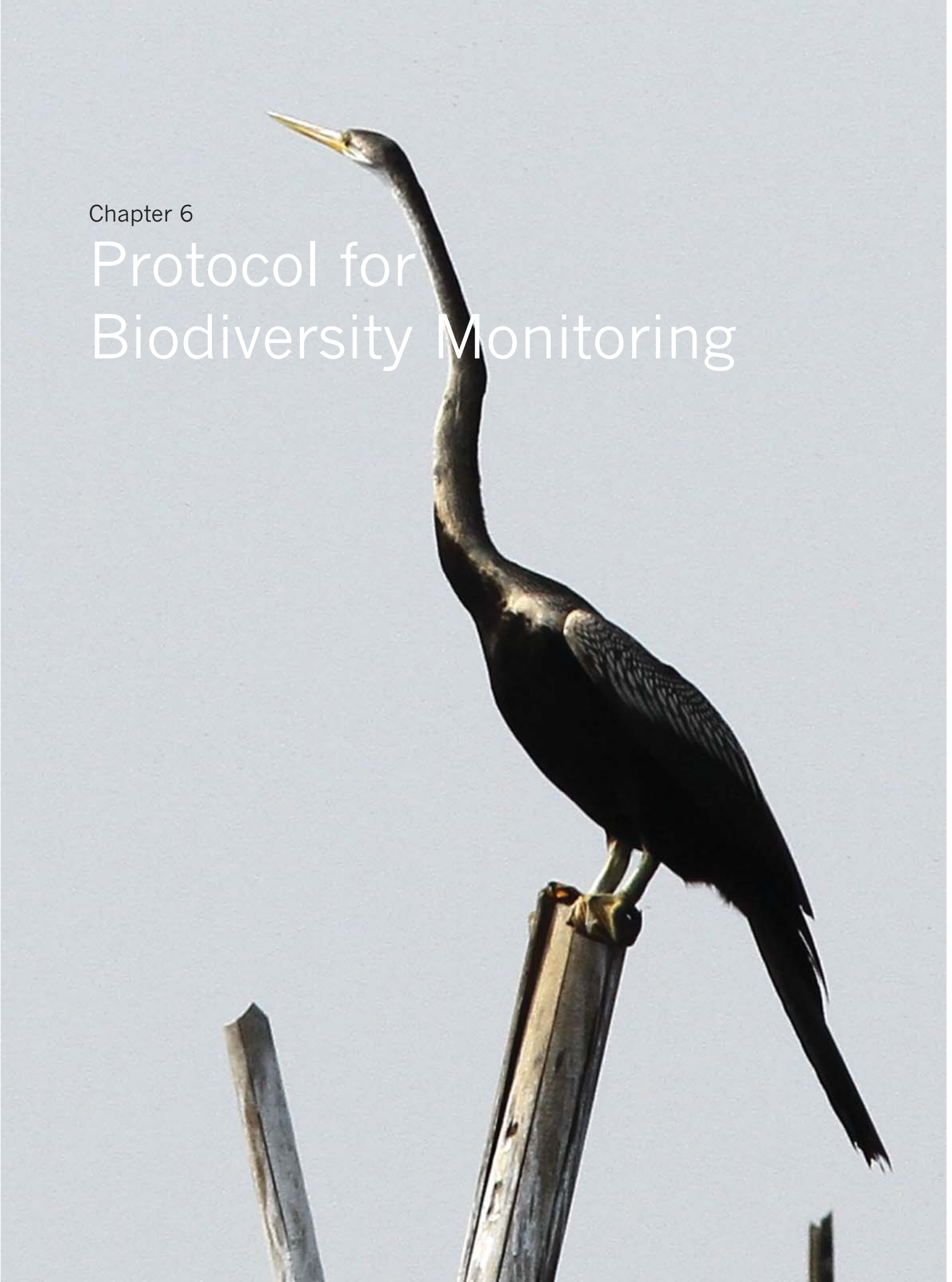
Common species.

Census status in Tanguar Haor

Common

Chapter 6

Protocol for Biodiversity Monitoring



Biodiversity monitoring systems help us contribute to the improved conservation and sustainable use of forests, freshwater and marine wetlands. If the natural resources of an area is being maintained in accordance with the existing acts and provisions and management interventions run effectively then monitoring procedure can in address the biodiversity conservation issues.

6.1 Community Based Biodiversity Monitoring

This monitoring format will be used by the groups consisting of experts, project staff and local volunteers such as committee members, school teachers or students from colleges and schools. As the monitoring format will be finalized by a comprehensive discussion with the community people there is a good possibility to incorporate them in future monitoring processes such as survey time or data analysis. Enthusiastic and potential people from local community having interest in biodiversity conservation will be selected as 'local volunteers'. Central Committee with help of management authority will select the local volunteers. A biodiversity monitoring team would be formed with above mentioned people. Four monitoring teams would be formed and they would work in four unions.

At the inaugural stage the monitoring procedure is being endorsed by the experts where the project staff and community people will be a part of the system. They would have learnt the full procedure practically from the experts. The project staff and the community people in this process can acquire the knowledge on survey procedure, data compilation, data analysis and status of the haor ecosystem. Indicator species have already been selected by the experts and community people become skilled at these species by knowing their identifying characteristics. This will assist them to learn the process to identify the indicator species, their habitats, impact on the wetland ecosystem and finally to make decisions about further intervention in respect of biodiversity conservation and its management.

6.2 Biodiversity Monitoring Indicators and Format for Tanguar Haor

Biodiversity monitoring articulates the status of species in and around the Tanguar Haor which ultimately reflect the accomplishment of the ecosystem management. Sustainability of the monitoring mechanism after completion of the study largely depends on local volunteers. They will take over the whole biodiversity monitoring procedure and undertake it continuously throughout the year. Monitoring tools are generally used to evaluate the impact of current and past activities to a certain set of activities.

6.2.1 Indicator species for biodiversity monitoring in Tanguar Haor

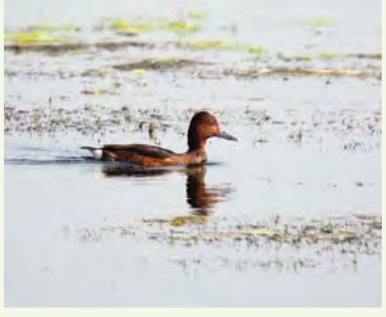
The most important event of community based biodiversity monitoring activities is setting up indicators. Indicators will be selected by consulting literature, talking to recognized experts on biodiversity conservation and management, local people and assessing relevance of the information gathered. The following biological indicators could be used in biodiversity monitoring:

- Dominant plant species (for Tanguar Haor - Hijal, Singra, Nal etc.)
- Bird species (for Tanguar Haor Purple Swamphen, Pallas's Fish Eagle, Ferruginous Pochard, Oriental Darter etc.).
- Fish (Rohu, Boal, Laacho fish)
- Freshwater mollusks (Apple Snail)
- Frogs (Marbled toad)
- Turtle (Indian peacock softshell turtle)

These species are being selected as indicators for variety of reasons. Indicator species are taken from different ecological strata which will ultimately depict a picture of a whole ecosystem. As the ecosystem is an inter and intra relationship between the living and nonliving organisms the indicators are carefully chosen to include all aspects of the haor. As an example, Purple Swamphen depends on reed land vegetation, so degradation of such vegetation would affect the population of this bird. *Tall, Hijal Karach, Barun* trees are suitable for Pallas's Fish Eagle nesting, so decline of these plant species would be alarming for the existence of this globally vulnerable species. Fishes are integral part of the wetland, as are reptiles and amphibians. In considering all these issues, the species mentioned here are preferred as indicators for biodiversity monitoring of Tanguar Haor.

Table 6.1: Identification of indicator species for biodiversity monitoring

Code: E- English name; S- Scientific name; L-Local name

Name of the indicator bird species	Food and habitat	Identification characteristics	Status	Bird's calling	Census time	Status without this species (red line)	Photo for identification
E-Pallas's Fish Eagle S- *Haliaeetus leucoryphus* L-Kura/Kurol/ Bo-wol	-Mainly come in winter for food and breeding in Tanguar haor. -Normally live on catching large fish from the upper water surface. - Need tall trees to build their nests.	-Easily identifiable. -Largest Eagle in Bangladesh.	Threatened all over the world, mostly seen in Tanguar Haor in Bangladesh	-It can be easily identified -its frequent very loud species specific calls	Winter season	-Decreasing of this species indicates reducing the number of large fish in the haor. -Decreasing the number of large trees inside and surrounding the haor.	
E- Ferruginous Pochard S- *Aythya nyroca* L- Bhuti Hans	-Come in winter for food in the haor -Lives on aqutic tender leaves of the plants -It is the representative of the migratory duck	-Easily identifiable	-Threatened all over the world -Mostly found in Tanguar Haor from all over the world	-Difficult to identify by their calling	Winter season	-Decreasing of this species indicates reducing the aquatic herbs and shrubs which are essential not only for birds but also for the survival of the fish.	

- A.B.M.Sarowar Alam

Name of the indicator bird species	Food and habitat	Identification characteristics	Status	Bird's calling	Census time	Status without this species (red line)	Photo for identification
E- Oriental Darter S-*Anhinga melanogaster* L-Goyar/Shapa-pakhi	-Resident bird of Bangladesh -Feed on hunting small fish by diving under water like a cormorant -They need large trees to build their nests.	-Easily identifiable	-Threatened all over the world, mostly found in Tanguar Haor, Bangladesh	-Difficult to identify by their calling. As it is virtually silent.	-All around the year	-Decreasing of this species indicates reducing the small fish of the haor which are essential for the wolfish such as Striped Snakehead, Freshwater Shark, Giant Snakehead, etc. - The number of large trees inside and surrounding the haor is decreasing. -Water pollution is increasing.	
E-Purple Swamphen S-*Porphyrio porphyrio* L-Kalim/Kayem	-Resident bird of Bangladesh -Largely feed on aquatic vegetation insects, small fishes and larvae -Builds nests inside the reed of elevated land of the haor	-Easily identifiable	-Once it was widely found in most of the wetlands of Bangladesh. -Hard to be seen anywhere except in the haor	-Can be easily identified by its calling	-All around the year	-Decreasing of this species indicates reducing the reeds of the haor -Not only Purple swamphen but also other birds, small mammals, frog, turtle/tortoise and fish will be reduced in numbers as it is suitable for their breeding	

- A.B.M.Sarowar Alam

Name of the indicator bird species	Food and habitat	Identification characteristics	Status	Bird's calling	Census time	Status without this species (red line)	Photo for identification
E-Peacock Soft-shelled Turtle S-*Nilssonia hurum* L-Dhum Kasim	-Both aquatic and terrestrial area are important for their survival. -Feed on aquatic plants and small fish -Keep the water clean by eating aquatic waste materials	-Easily identifiable	-Threatened in Bangladesh but can be easily seen in Tanguar Haor.		-Winter and rainy season	-Decreasing of this species indicates reducing the aquatic plants and small fish. -Increase of water pollution. - Hunting increasing	
E-Marbled Toad S-*Bufo stomaticus* L-Khoshkhoshey Bang	-Important food item for birds and snakes.	-Easily identifiable		Can be easily identified by its calling	-Rainy season	-Decrease the number of birds and snakes -This species is an important indicator of climate change.	

- A.B.M.Sarowar Alam

Name of the indicator bird species	Food and habitat	Identification characteristics	Status	Bird's calling	Census time	Status without this species (red line)	Photo for identification
E- Barringtonia, Indian Oak S-*Barringtonia acutangula* L- Hijol	-Capable to survive under swampy conditions -Most valuable tree in haor basin -Many kinds of bird species build their nests. -Suitable for tortoise habitat in the winter -Favourable for the breeding of fish and frogs			-Various types of aquatic species will be under threat due to loss of their habitats. -Breeding habitats is about to be destroyed.			
E- Common reed S-*Phragmites karka* L- Khagra	-Capable to survive under swampy conditions -Many indigenous water birds like Purple Swamphen, Indian Spot billed Duck, Cotton pygmy Goose, etc -Favourable for fish breeding.			-Various types of aquatic animal species become threatened by losing their habitats. -Breeding habitats is about to be destroyed.			
L-Shingara E- Water Chestnut S-*Trapa bispinosa*	-It is mostly seen in the haor amongst aquatic plants. -People take its fruits as food. -Some birds like Bronze- winged Jacana build their nests here.			-Various types of aquatic animal species become threatened by losing their habitats. -People will be deprived of its fruit			

- A.B.M.Sarowar Alam

Name of the indicator bird species	Food and habitat	Identification characteristics	Status	Bird's calling	Census time	Status without this species (red line)	Photo for identification
Others							
Fish							
E- Rohi or Rohu S-*Labeo rohita* L-Rou	-Natural breeding ground. -Rapidly growing -Survival of this fish is interlinked with the depth of water -Thousands of fishermen sustain their livelihoods by Rohu fishing.		-If this fish decreases in the Tanguar Haor area, Bangaldesh's most prosperous breeding centre, the whole biodiversity of this area would be affected. - Living standards of the fishermen will decline - Protein crisis might occur				
E-Freshwater Shark L-Boal S -*Wallago attu*	-It's a predatory fish - Maintains and equilibrium among the fish species by eating some small fishes - Survivability of this fish is interlinked with the depth of water -Thousands of fishermen live on fishing		- Biodiversity of such prosperous breeding ground of Bangladesh would be affected. - Living standards of the fishermen will decline - Protein crisis might be noticed				
E- Reba carp S-*Cirrhinus reba* L-Laacho	- This fish of the haor is unique. - In fact thousands of fishermen live on catching this fish.		- Biodiversity of such prosperous breeding ground of Bangladesh would be affected. - Living standards of the fishermen will decline - Protein crisis might be felt -Lost one of the important native species.				

- IUCN Bangladesh Country office

6.2.2 Biodiversity monitoring format for Tanguar Haor (proposed)

A monitoring format (Table 6.2) after being designed by the researchers will be sent to the field level for analyzing. At this level a species monitoring format is to be broadly discussed with the local people and then field work will be started following the finalization of the format.

Who will monitor?

Separate teams comprising of three people interested in birds/nature conservation from villages/union committees, will have to be formed for the monitoring task. Local school teachers or the students of schools and colleges could be considered as alternatives.

Who will scrutinize the monitoring format?

After receiving field information researchers will examine the data of the baseline survey and will submit a comparative report to the authority and accordingly they will take the necessary steps.

Table 6.2: Monitoring format for indicator bird, turtle species, hunting, hunter and other indicators.

Bird's name	Number	Obtained marks
Pallas's Fish Eagle	**Census data:**	**Marks:……..**
Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5		
Formula of result calculation:10*100/20=50%= if 10 birds seen in one census, Marks=3		
Pallas's Fish Eagle=20 seen=100%=No management is required in case of scored more than 80% (5) marks		
If scored 4 management is going well If scored 3 management is required If scored 2 management is going down In case of not seen Red Line's causes are clear		

Bird's name	Number	Obtained marks
Nest of Pallas's Fish Eagle	**Census data:**	**Marks:……..**
Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5		
Formula of result calculation:10*100/20=50%=if 5 nests seen in one census, Marks=3		
Pallas's Fish Eagle Nesting =10 =100%= No management is required in case of scored more than 80% (5) marks		
If scored 4 management is going well If scored 3 management is required If scored 2 management is going down In case of not seen Red Line's causes are clear		

Bird's name	Number	Obtained marks
Ferruginous Pochard	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation:7500*100/15000=50%= if 7500 birds seen in one census, Marks=3

Ferruginous Pochard= if 15,000 individuals are seen=100%= No management is required in case of scored more than 80% (5) marks

If scored 4 management is going well
If scored 3 management is required
If scored 2 management is going down
In case of not seen Red Line's causes are clear

Bird's name	Number	Obtained marks
Oriental Darter	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation:40*100/60=66.66%=if 40 birds seen in one census, Marks=4

Oriental Darter=60 seen=100%= No management is required in case of scored more than 80% (5) marks

If scored 4 management is going well
If scored 3 management is required
If scored 2 management is going down
In case of not seen Red Line's causes are clear

Bird's name	Number	Obtained marks
Purple Swamphen	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation:7000*100/10,000=70%=if 7,000 birds seen in one census, Marks=4

Purple Swamphen= If 10,000 individuals are seen=100%= No management is required in case of scored more than 80% (5) marks

If scored 4 management is going well
If scored 3 management is required
If scored 2 management is going down
In case of not seen Red Line's causes are clear

Bird's name	Number	Obtained marks
Purple Swamphen (Nesting)	**Census data:**	**Marks:……..**

Marking guidelines: 0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation: 60*100/100=60%=if 60 birds seen in one census, Marks=3

Purple Swamphen (Nesting)=100=100%= No management is required in case of scored more than 80% (5) marks

If scored 4 management is going well
If scored 3 management is required
If scored 2 management is going down
In case of not seen Red Line's causes are clear

Hunting	Number	Obtained marks
Bird's Hunted	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation:40*100/100=40%=if 40 birds seen in one census, Marks=2

If Hunting 100 individuals =100% =Management is required if the number is over 20% (2)

Score 3 indicates to regular hunting
Score 4 indicate that hunters are desperate or there is no monitoring from the authority
Score 5 indicates very poor management

Hunting	Number	Obtained marks
Bird hunter	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation:20*100/50=40%=if 20 birds seen in one season, Marks 2

Bird Hunter=If 50 Bird hunters are seen=100%= Management is required if the number is over 20% (2)

Score 3 indicates to regular hunting
Score 4 indicates that hunters are desperate or there is no monitoring from the authority
Score 5 indicates very poor management

Turtle	Number	Obtained marks
Peacock Soft-shelled Turtle	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation:30*100/50=60%=if 40 Turtles seen in one season, Marks=3

Turtle=50=100%= No management is required in case of scored more than 80% (5) marks

If scored 4 management is going well
If scored 3 management is required
If scored 2 management is going down
In case of not seen Red Line's causes are clear

Hunting	Number	Obtained marks
Turtles hunted	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2, 41-60%=3, 61-79%=4, 80>=5

Formula of result calculation:10*100/20=50%=if 10 Turtles seen in one season, Marks=3

Turtle hunting=If 20 individuals are hunted=100%= Management is required if the number is over 20% (2)

Score 3 indicates to regular hunting
Score 4 indicate that hunters are desperate or there is no monitoring from the authority
Score 5 indicates very poor management

Hunter	Number	Obtained marks
Turtle hunter	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-40%=2,41-60%=3,61-79%=4,80>=5

Formula of result calculation:5*100/10=50%=if 5 Turtle hunters found in one season, Marks=3

Turtle hunting=10 turtle hunters found=100%= Management is required if the number is over 20% (2)

Score 3 indicates to regular hunting
Score 4 indicate that hunters are desperate or there is no monitoring from the authority
Score 5 indicates very poor management

Census	Number	Obtained marks
Waterfowl Census	**Census data:**	**Marks:……..**

Marking guidelines:0%=1, 1-50%=3, 100 >=5

Formula of result calculation: 50%=1 time census, Marks=3

Scientifically bird census=2 times every year=100%=If score 5, research works are going on regularly

Score 3 indicates that research is going on but not regular
Score 1 indicates no research is going on

Festival	Number	Obtained marks
Bird festival	**Census data:**	**Marks:……..**

Marks guidelines: 0%=1, 99%=5

Formula of result calculation: If biodiversity conservation festival organize once in a =100%=
Marks 5

Festival on bird conservation=once in every year=5 marks, Awareness works is going on

Score 1 indicates that there is no mass awareness on biodiversity conservation

Committee	Number	Obtained marks
Biodiversity conservation committee	**Census data:**	**Marks:……..**

Marks guidelines: 0%=1, 1-50%=2, 51>=5

Formula of result calculation: committee in 4 villages=100%=Marks=5, committee in two villages=50%= 3 marks

Biodiversity conservation Committee= committee in four villages every year=100%=
Marks 5, Biodiversity conservation committee is working well

Biodiversity conservation committee=2 committees in 2 villages per year=50%=Marks 2, biodiversity conservation committee is working slowly

6.3 How Community Benefit from Sustainable Resource Management?

The natural resources of Tanguar Haor are immensely important to the local community as the people are extremely dependent on haor resources. The sustainable management of the wetlands flora and fauna needs detailed understanding of specie composition, distribution patterns, estimates of productivity and direct and indirect values.
Sustainable forest (swamp forest and reed beds) management will help local people to continue collecting their variety of products and services and also assist in fish breeding. These are both of considerable benefit to the community.

Conservation of fish in the haor would increase fish production in the floodplains of Bangladesh and subsequently directly boost up the economy of haor community as a vast proportion of the population in Tanguar Haor are connected to fishery.

In Tanguar Haor, local people are mainly engaged in agriculture. Conservation of fauna will help increase fertility of agricultural land, e.g., wetland waterfowls, turtle and tortoises and indirectly help increase the fertility of agricultural land through their faecal deposition.

A thorough combination of biodiversity and sustainable management will represent a healthy ecosystem in Tanguar Haor and therefore will help to protect the biodiversity of this haor for future benefits. Accordingly, it will directly or indirectly help the economy and livelihood of the Tanguar Haor local community.

IUCN Bangladesh Country office

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APPENDICES

APPENDIX 1: Checklist of Wildlife in Tanguar Haor

Status Code: NO-Not Threatened, LC- List Concern, C-Common, V-Very Common, R-Rare, U-Uncommon W-Winter Visitor, r-Resident, s-Summer Visitor, Vu-Vulnerable, EN-Endangered and NT-Near Threatened

Name Code: markhan- Dr. Reza Khan, PR- Philip Round, EN- Enam Ul Haque, SUW- Sayam U. Chowdhury, SD- Shimanto Dipu, SMAR- SMA Rashid

Mammals							
Serial No.	English Name	Scientific Name	Family Name	Bangla Name	National Abundance Status	IUCN Threatened Status	
						National	Global
Mammals (Bangladesh has 124 species, Tanguar Haor has 19 Species)							
1	Asian House Shrew	*Suncus murinus*	Soricidae	Chika/ Chhucha	C	NO	LC
2	Flying Fox	*Pteropus giganteus*	Pteropodidae	Badur/ Champ	C	NO	LC
3	Indian Pipistrelle	*Pipistrellus coromandra*	Vespertilionidae	Chamchika	Giesen *et al*.,1997		
4	Indian Pangolin	*Manis crassicaudata*	Manidae	Banrui/Pipilika bhuk	Giesen *et al*.,1997		
5	Golden Jackal	*Canis aureus*	Canidae	Pati Shial/Shial	C	VU	LC
6	Bengal Fox	*Vulpes bengalensis*	Canidae	Khek Shial	Giesen *et al*.,1997		
7	Jungle Cat/ Swamp Cat	*Felis chaus*	Felidae	Ban Biral/Woab	Giesen *et al*.,1997		
8	Fishing Cat	*Prionailurus viverrinus*	Felidae	Mechho Biral/ Mechho Bagh	C	EN	VU

Fishing Cat

Asian House Shrew

Jungle Cat/ Swamp Cat

Serial No.	English Name	Scientific Name	Family Name	Bangla Name	National Abundance Status	IUCN Threatened Status	
						National	Global
9	Small Indian Mongoose	*Herpestes javanicus*	Herpestidae	Benji/Nakul	C	NO	NO
10	Smooth Coated Otter	*Lutrogale perspicillata*	Mustelidae	Mosrin Ud/Ud Biral/ Bhodar	Giesen *et al*.,1997		
11	Wild Boar	*Sus scrofa*	Suidae	Buno Shukar/ Shuar	R	NO	—
12	Small Indian Civet	*Viverricula indica*	Viverridae	Khatash/Kolkut	Giesen *et al*.,1997		
13	Three-striped Palm Squirrel	*Funambulus palmarum*	Sciuridae	Teen-Dora Kathbirali	Giesen *et al*.,1997		
14	Lesser Bandicoot Rat	*Bandicota bengalensis*	Muridae	Indur	C	NO	—
15	Greater Bandicoot Rat	*Bandicota indica*	Muridae	Bora Indur/Dhari Indur	R	NO	—
16	House Mouse	*Mus musculus*	Muridae	Nengti Indur	C	NO	—
17	Common House Rat	*Rattus rattus*	Muridae	Ghorer Indur	R	NO	—
18	Brown Rat/ Tree Rat	*Rattus norvigicus*	Muridae	Gechho Indur	Giesen *et al*.,1997		
19	Indian Porcupine	*Hystrix indica*	Hystricidae	Shojaru	Giesen *et al*.,1997		

Indian Porcupine

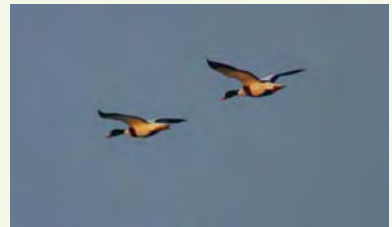
Smooth Coated Otter

Small Indian Mongoose

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
Whistling-ducks (Family **DENDROCYGNIDAE**, Bangladesh has 2 species, Tanguar Haor Has 2 Species)								
1	Fulvous Whistling Duck	*Dendrocygna bicolour*	Raj Sorali	W	C	15.4	R	LC
2	Lesser Whistling Duck	*Dendrocygna javanica*	Sorali, Pati Sorali	r	C	15.4	R	LC
Ducks, Geese (Family **ANATIDAE**: Bangladesh has 29 species, Tanguar Haor has 23 species)								
3	Greylag Goose	*Anser anser*	Mete Rajhas, Dhushor Rajhans	W	R	11.5	R	LC
4	Bar-headed Goose	*Anser indicus*	Rajhans, Dagi Rajhas	W	R	10.5	R	LC
5	Ruddy Shelduck	*Tadorna ferruginea*	Chokachoki, Khaira Chokachoki	W	C	15.4	R	LC
6	Common Shelduck	*Tadorna tadorna*	Pati chokachoki, Shah Chokha	W	C	7.69	R	LC
7	Knob-billed Duck	*Sarkidiornis melanotos*	Nakta Has	Giesen *et al.*,1997				
8	Cotton Pygmy-goose	*Nettapus coromande-lianus*	Dhola Bali Has, Bali Hans	r	U	65.4	C	LC
9	Gadwall	*Anas strepera*	Piong Hans	W	C	88.5	V	LC
10	Falcated Duck	*Anas falcata*	Shikhajukto Hans, Falcate Has	W	R	3.85	R	NT
11	Eurasian Wigeon	*Anas penelope*	Lalshir, Eurasio Shitihas	W	C	80.8	V	LC
12	Mallard	*Anas platyrhynchos*	Nilshir, Nilmatha Has	W	R	3.85	R	LC

Knob-billed Duck

Common Shelduck



Bar-headed Goose

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
13	Spot-billed Duck	*Anas poecilorhyncha*	Pati Hans, Deshi mete has	r	C	69.2	C	LC
14	Baikal Teal	*Anas formosa*	Baikal Tili Has, Boikal Hans	W	V	3.85	R	LC
15	Common Teal	*Anas crecca*	Patari Hans, Pati Tilihas	W	C	3.85	R	LC
16	Garganey	*Anas querquedula*	Giria Hans	W	C	84.6	V	LC
17	Northern Pintail	*Anas acuta*	Lenja Hans, Utture Lanja has	W	C	23.1	U	LC
18	Northern Shoveler	*Anas clypeata*	Pantamukhi, Utture Khunte Has	W	C	80.8	V	LC
19	Red-crested Pochard	*Netta rufina*	Rangamuri, Laljhuti Bhuti Has	W	C	15.4	C	LC
20	Common Pochard	*Aythya ferina*	Bamunia Hans, Pati Bhutihas	W	C	7.69	R	LC
21	Ferruginous Duck	*Aythya nyroca*	Bhuti Hans, Morcherong Bhuti Has	W	C	69.2	C	NT
22	Baer's Pochard	*Aythya baeri*	Baerer Vuti Has, Bora Bhuti Hans	W	R	3.85	R	EN
23	Tufted Duck	*Aythya fuligula*	Tiki Has, Kalo Hans	W	C	73.1	C	LC
Woodpeckers (Family **PICIDAE**, Bangladesh has 19 species, Tanguar Haor has 5 species)								
24	Eurasian Wryneck	*Jynx torquilla*	Eureshio Gharbetha, Metho Kaththokra	W	U	3.85	R	LC

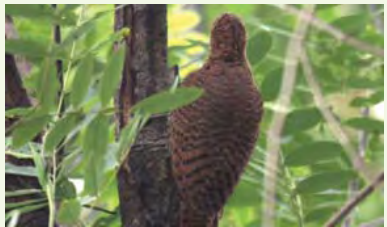
Red-crested Pochard

Spot-billed Duck

Eurasian Wryneck

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
25	Rufous Woodpecker	*Celeus brachyurus*	Khaira Katkurali	Giesen *et al*.,1997				
26	Fulvous-breasted Woodpecker	*Dendrocopos macei*	Badabi Katkurali	r	C	19.2	R	LC
27	Black-rumped Flameback	*Dinopium benghalense*	Bangla Katthokra	r	C	23.1	U	LC
Barbets (Family **CAPITONIDAE**, Bangladesh has 5 species, Tanguar Haor has 2 species)								
28	Lineated Barbet	*Megalaima lineata*	Gurkhood, Dagi Boshonto	r	C	7.69	R	LC
29	Coppersmith Barbet	*Megalaima haemacephala*	Shekra Boshonto, Chhoto Basanta Bauri	r	C	7.69	R	LC
Hoopoe (Family **UPUPIDAE**, Bangladesh has 1 species, Tangaur Haor Has 1 Species)								
30	Eurasian Hoopoe	*Upupa epops*	Hudhud, Pati Hoodhood	r	U	11.5	R	LC
Rollers (Family **CORACIIDAE**, Bangladesh has 2 species, Tanguar Haor has 1 species)								
31	Indian Roller	*Coracias benghalensis*	Bangla Nilkanto, Nilkanta	r	C	3.85	R	LC
Kingfishers (Family **ALCEDINIDAE, DALCELONIDAE & CERYLIDAE**, Bangaldesh has 12 species, Tanguar Haor has 4 species)								
32	Common Kingfisher	*Alcedo atthis*	Pati Machranga, Choto Machranga	r	C	46.2	U	LC
33	Stork-billed Kingfisher	*Pelargopsis capensis*	Meghhao	r	U	11.5	R	LC
34	White-throated Kingfisher	*Halcyon smyrnensis*	Dholagola Machrang	r	C	38.5	U	LC

Rufous Woodpecker



Indian Roller

Stork-billed Kingfisher

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
35	Pied Kingfisher	*Ceryle rudis*	Pakra Machhranga	r	C	30.8	U	LC
Bee-eaters (Family **MEROPIDAE**, Bangladesh has 4 species, Tanguar Haor has 2 species)								
36	Green Bee-eater	*Merops orientalis*	Shobuj Shuichora	r	C	7.69	R	LC
37	Chestnut-headed Bee-eater	*Merops leschenaulti*	Khoiramatha Shuichora, Patkileymatha Shuichora	Giesen *et al*.,1997				
Cuckoos (Family **CUCULIDAE**; Bangladesh has 18 species, Tanguar Haor has 4 Species)								
38	Common Hawk-Cuckoo	*Hierococcyx varius*	Chokh Gelo Pakhi, Pati chokh gelo	S	C	3.85	R	LC
39	Indian Cuckoo	*Cuculus micropterus*	Bou-kotha-kau Pakhi	S	C	3.85	R	LC
40	Plaintive Cuckoo	*Cacomantis merulinus*	Papiya	S	C	4.1	R	LC
41	Asian Koel	*Eudynamys scolopacea*	Asio Kokil, Kokil	r	C	26.9	U	LC
Coucals (Family **CENTROPODIDAE**, Bangladesh has 2 species, Tanguar Haor has 1 Species								
42	Greater Coucal	*Centropus sinensis*	Kanakuka, Boro Kubo	r	C	7.69	R	LC
Parrots (Family **PSITTACIDAE** Bangladesh has 7 species, Tanguar Haor has 2 Species)								
43	Rose-ringed Parakeet	*Psittacula krameri*	Shobuj Tia, Tiya	r	C	19.2	R	LC
44	Red-breasted Parakeet	*Psittacula alexandri*	Modna Tia	Giesen *et al*.,1997				
Swifts (Family **APODIDAE**, Bangladesh has 7 species, Tanguar Haor has 2 Species)								
45	Little Swift	*Apus affinis*	Khudey Ababil, Mete Abail	r	C	34.6	U	LC

Plaintive Cuckoo

Greater Coucal

Green Bee-eater

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
46	Asian Palm Swift	*Cypsiurus balasiensis*	Nakkati, Ashio Talbatashi	r	C	15.4	R	LC
Owls (Family **TYTONIDAE & STRIGIDAE** Bangladesh has 15, Tanguar Haor has 5 Species)								
47	Barn Owl	*Tyto alba*	Lokkhi Pecha	r	C	3.85	R	LC
48	Oriental Scops Owl	*Otus sunia*	Udoi Nimpecha	r	C	7.69	R	LC
49	Brown Fish Owl	*Ketupa zeylonensis*	Mecho Pecha, Bhutum Pencha	r	U	3.85	R	LC
50	Brown Hawk Owl	*Ninox scutulata*	Kupokh	r	C	3.85	R	LC
51	Spotted Owlet	*Athene brama*	Khuruley Pencha	r	C	3.85	R	LC
Nightjars (Family **CAPRIMULGIDAE**, Bangladesh has 4 species and Tanguar Haor has 1 species)								
52	Large-tailed Nightjar	*Caprimulgus macrurus*	Lenja Ratchora, Ratchara	r	C	3.85	R	LC
Pigeons and **Doves** (Family **COLUMBIDAE**, Bangladesh has 17 species, Tanguar Haor 4 species)								
53	Rock Pigeon	*Columba livia*	Jalali Kobutarev	r	C	11.5	R	LC
54	Spotted Dove	*Streptopelia chinensis*	Tila Ghughu	r	C	42.3	U	LC
55	Eurasian Collared Dove	*Streptopelia decaocto*	Eurashio Konthighughu	r	C	11.5	R	LC
56	Yellow Footed Green Pigeon	*Treron phoenicopterus*	Botkol/ Haludpa Horial	r	C	3.85	R	LC
Cranes (Family **GRUIDAE**, Bangladesh has 3 Species, Tanguar Haor has 1 Species)								
57	Demoiselle Crane	*Anthropoides virgo*	Demojil Sharosh	Siddiqui *et al.* (eds.), 2008.				
Rails, Gallinules and **Coots** (Family **RALLIDAE**; Bangladesh has 11 species, Tanguar Haor Has 8 species)								

Spotted Owlet

Barn Owl

Rock Pigeon

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
58	Water Rail	*Rallus aquaticus*	Panta Jhilli	IUCN Bangladesh, 2009.				
59	White-breasted Waterhen	*Amaurornis phoenicurus*	Dholabook Dahuk	r	U	7.69	R	LC
60	Baillon's Crake	*Porzana pusilla*	Bailoner Gurguri	IUCN Bangladesh, 2009.				
61	Ruddy-breasted Crake	*Porzana fusca*	Lalbook Gurguri	W	U	15.4	R	LC
62	Watercock	*Gallicrex cinerea*	Kura	IUCN Bangladesh, 2009.				
63	Purple Swamphen	*Porphyrio porphyrio*	Beguni Kalem, Kaim	r	C	84.6	V	LC
64	Common Moorhen	*Gallinula chloropus*	Pati Panmurgi, Dakab Paira	r	C	42.3	U	LC
65	Eurasian Coot	*Fulica atra*	Pati Koot, Jal Kutkut	W	C	92.3	V	LC
Snipes, Sandpipers and **allies** (Family **SCOLOPACIDAE, ROSTRATULIDAE**, Bangladesh has 36 species, Tanguar Haor 17 Species)								
66	Pin-tailed Snipe	*Gallinago stenura*	Lenja Chega, Kadakhuncha	W	C	3.85	R	LC
67	Common Snipe	*Gallinago gallinago*	Pati Chega, Kadakhocha	W	C	26.9	U	LC
68	Black-tailed Godwit	*Limosa limosa*	Kalalej Jourali	W	R	3.85	R	LC
69	Bar-tailed Godwit	*Limosa lapponica*	Dagilej Jourali	W	C	15.4	R	LC
70	Spotted Redshank	*Tringa erythropus*	Tila Lalpa, Chitto Pi-oo	W	U	3.85	R	LC
71	Common Redshank	*Tringa tetanus*	Pati Lalpa	W	C	3.85	R	LC

White-breasted Waterhen

Ruddy-breasted Crake

Pin-tailed Snipe

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
72	Marsh Sandpiper	*Tringa stagnatilis*	Bil Batan	W	U	30.8	U	LC
73	Common Greenshank	*Tringa nebularia*	Pati Shobujpa	W	C	26.9	U	LC
74	Green Sandpiper	*Tringa ochropus*	Shobuj Batan	W	U	15.4	R	LC
75	Wood Sandpiper	*Tringa glareola*	Bon Batan, Balu Batan	W	C	42.3	U	LC
76	Common Sandpiper	*Actitis hypoleucos*	Pati Batan, Chapakhi	W	C	30.8	U	LC
77	Little Stint	*Calidris minuta*	Choto Chaha pakhi	W	C	3.85	R	LC
78	Temminck's Stint	*Calidris temminckii*	Teminker Chaha Pakhi	W	C	3.85	R	LC
79	Long-toed Stint	*Calidris subminuta*	Lombangul Chaha pakhi	W	R	3.85	R	LC
80	Curlew Sandpiper	*Calidris ferruginea*	Gulinda Batan	W	C	3.85	R	LC
81	Ruff	*Philomachus pugnax*	Geoala Batan	W	C	7.69	R	LC
82	Greater Painted Snipe	*Rostratula benghalensis*	Bangla Rangachega, Rangila Chega	Giesen *et al*.,1997				
Jacanas (Family **JACANIDAE**, Bangladesh has 2 species, Tanguar Haor has 2 species)								
83	Pheasant-tailed Jacana	*Hydrophasianus chirurgus*	Neu Pipi, Dal Kukra	r	C	7.69	C	LC
84	Bronze-winged Jacana	*Metopidius indicus*	Dol Pipi,Jalpipi	r	U	7.69	R	LC
Plovers and **Lapwings** (Family **CHARADRIIDAE**, Bangladesh has 16 species, Tanguar Haor has 5 species)								
85	Black-winged Stilt	*Himantopus himantopus*	Kalapakh Thengi, Lal Gon/Lal thengi	W	C	26.9	U	LC

Bar-tailed Godwit

Bronze-winged Jacana

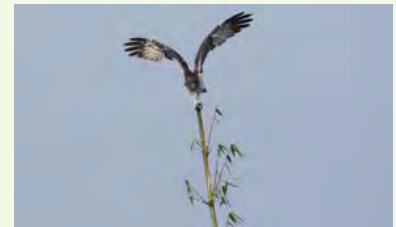
Ruff

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
86	Pacific Golden Plover	*Pluvialis fulva*	Proshanto Shonajiria, Sona Batan	W	C	7.69	R	LC
87	Little Ringed Plover	*Charadrius dubius*	Soto Nothjiria, Jiria , Chhoto Jiria	r	C	30.8	U	LC
88	Grey-headed Lapwing	*Vanellus cinereus*	Metematha Titi, Dushor Ti-ti	W	C	30.8	U	LC
89	Red-wattled Lapwing	*Vanellus indicus*	Hot Titi , Lal-lotika Hot-ti-ti	R	C	11.5	R	LC
Gulls (Family **LARIDAE**, Bangladesh has 20 species, Tanguar Haor has 6 species)								
90	Heuglin's gull	*Larus heuglini*	Heugliner Gangchil	W	R	7.65	R	LC
91	Pallas's Gull	*Larus ichthyaetus*	Palasi Gangchil	Giesen *et al*.,1997				
92	Brown-headed Gull	*Larus brunnicephalus*	Khoiramatha Gangchil, Gonga Koitar	W	C	53.8	C	LC
93	Black-headed Gull	*Larus ridibundus*	Kalamatha Ganchil	W	C	42.3	U	LC
94	River Tern	*Sterna aurntia*	Nodia Panchil	r	C	40.2	U	LC
95	Common Tern	*Sterna hirundo*	Pati Panchil	W	U	3.85	R	LC
96	Whiskered Tern	*Chlidonias hybridus*	Julfi Panchil	W	C	30.8	U	LC
Hawks, Kites and Eagles (Family **ACCIPITRIDAE**, Bangladesh has 43 species, Tanguar Haor has 14 Species)								
97	Osprey	*Pandion haliaetus*	Machmural	W	R	3.85	R	LC
98	Black-winged Kite	*Elanus caeruleus*	Sada Chil Katua Chil	r	U	7.69	R	LC
99	Black Kite	*Milvus migrans*	Bhubon Chil	r	C	15.4	R	LC

Red-wattled Lapwing

River Tern

Osprey



Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
100	Brahminy Kite	*Haliastur indus*	Shonko Chil	r	C	42.3	U	LC
101	Pallas's Fish Eagle	*Haliaeetus leucoryphus*	Palasi Kura-eegol, Koral	W	C	46.2	U	VU
102	Grey-headed Fish Eagle	*Ichthyophaga ichthyaetus*	Metematha Kura-eegol, Machhmoral	R	R	15.4	R	LR
103	Crested Serpent Eagle	*Spilornis cheela*	Tila Nag-eegol, Sapchur, Shapkheko Baj	Giesen *et al*.,1997				
104	Eastern Marsh Harrier	*Circus spilonotus*	Puber Pankapashi	W	U	7.69	R	LC
105	Pied Harrier	*Circus melanoleucos*	Pakra kapasi	W	C	3.50	R	LC
106	Shikra	*Accipiter badius*	Pati shikre, Toorki Baj	r	C	3.85	R	LC
107	Common Buzzard	*Buteo buteo*	Pati Tishabaj, Baj Pakhi,Jolar Chil	W	R	3.85	R	LC
108	Lesser Spotted Eagle	*Aquila pomarina*	Choto Guti Eagle	W	R	3.67	R	LC
109	Greater Spotted Eagle	*Aquila clanga*	Boro Guti Eagle	W	R	19.2	R	VU
110	Asian Imperial Eagle	*Aquila heliaca*	Asio Shahi Eagle	Giesen *et al*.,1997				
Falcons (Family **FALCONIDAE**, Bangladesh has 9 species , Tanguar Haor has 3 Species)								
111	Common Kestrel	*Falco tinnunculus*	Pati Kestrel, Chhoto Baj	Giesen *et al*.,1997				
112	Peregrine Falcon	*Falco peregrinus*	Peregrine shahin, Shahin	W	R	3.85	R	LC

Pallas's Fish Eagle

Brahminy Kite

Crested Serpent Eagle

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
113	Red-necked Falcon	*Falco chicquera*	Turmuti	Giesen *et al.*,1997				
Grebes (Family **PODICIPEDIDAE**, Bangladesh has 4 species, Tanguar Haor has 3 species)								
114	Little Grebe	*Tachybaptus ruficollis*	Soto Duburi, Dubdubi, Pandubi	r	U	50	C	LC
115	Great Crested Grebe	*Podiceps cristatus*	Boro Khopaduburi, Khopa Duburi	W	U	26.9	U	LC
116	Black-necked Grebe	*Podiceps nigricollis*	Kalaghar Duburi	Siddiqui *et al.* (eds.), 2008.				
Darters (Family **ANHINGIDAE**, Bangladesh has 1 species, Tanguar Haor has 1 Species)								
117	Darter	*Anhinga melanogaster*	Udoi Goyar, Sap-phaki/Goyer	r	U	26.9	U	NT
Cormorants (Family **PHALACROCORACIDAE**, Bangladesh has 3 species, Tanguar Haor has 3 species)								
118	Little Cormorant	*Phalacrocorax niger*	Choto Pankouri, Pan Kawuri	r	C	92.3	V	LC
119	Indian Cormorant	*Phalacrocorax fuscicollis*	Deshi Pankouri, Pankowri	V	V	7.69	R	LC
120	Great Cormorant	*Phalacrocorax carbo*	Boro Pankouri, Paan-kowri	W	C	50	C	LC
Herons and Bitterns (Family **ARDEIDAE**, Bangladesh has 18 species, Tanguar Haor has 12 species)								
121	Little Egret	*Egretta garzetta*	Choto Boga, Chhota Korche Bak	r	C	38.5	U	LC
122	Great Egret	*Casmerodius albus*	Boro Boga, Dhar Bak,Bada Bak, Sada Bok, Jathua	r	C	34.6	U	LC

Little Egret

Little Grebe

Great Crested Grebe

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
123	Yellow-billed Egret	*Egretta intermedia*	Majhla Boga, Korche Bok	r	C	38.5	U	LC
124	Cattle Egret	*Bubulcus ibis*	Go Boga, Go Bok,Gai Bak , Go-bok	r	C	38.5	U	LC
125	Indian Pond Heron	*Ardeola grayii*	Kani Bog, Kana Bog	r	C	92.3	V	LC
126	Grey Heron	*Ardea cinerea*	Dhupni Bok, Sada Kank,Kank, Anjan	r	C	69.2	C	LC
127	Purple Heron	*Ardea purpurea*	Lalche Bok, Lal Kank , Beguni Bok	r	U	19.2	R	LC
128	Striated Heron(Little Heron)	*Butorides striata*	Khude Bok, Kana Bak,Kura Bak, Sabuj Bok	r	U	19.1	R	LC
129	Black-crowned Night Heron	*Nycticorax nycticorax*	Kalamatha Nishibok, Waak/Nishi Bok, Bachka	r	U	19.2	R	LC
130	Yellow Bittern	*Ixobrychus sinensis*	Holdey Bogla, Kath Bak	r	U	18.2	R	LC
131	Cinnamon Bittern	*Ixobrychus cinnamomeus*	Khoira Bogla, Khyri Bak/Lal Bak, Lal Bok	Giesen *et al*.,1997				
132	Black Bittern	*Dupetor flavicollis*	Kala Bogla, Kalo Bak	r	R	3.85	R	LC
Ibises (Family **THRESKIORNITHIDAE**, Bangladesh has 3 species, Tanguar Haor has 1 species)								
133	Glossy Ibis	*Plegadis falcinellus*	Khoira Kastechora, Kachia Tora , Duchora	W	V	7.69	R	LC

Grey Heron

Purple Heron

Yellow Bittern

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
Storks (Family **CICONIIDAE**, Bangladesh has 8 species Tanguar Haor has 1 Species)								
134	Asian Openbill	*Anastomus oscitans*	Eshio Shamkhol, Samukh-khol/ Shamukh Bhanga	W	U	3.85	R	LC
Shrikes (Family **LANIIDAE**, Bangladesh has 6 species, Tanguar Haor has 3 Species)								
135	Brown Shrike	*Lanius cristatus*	Khoira Latora, Karkata , Badami Koshai Pakhi	W	C	19.2	R	LC
136	Long-tailed Shrike	*Lanius schach*	Lenja Latora, Latora	r	C	19.2	R	LC
137	Grey-backed Shrike	*Lanius tephronotus*	Metepith Latora, Bagha Tiki	W	U	3.85	R	LC
Crows, Drongos and allies (Family **CORVIDAE**, Bangladesh has 36 species,Tanguar Haor has 12 specie)								
138	Rufous Treepie	*Dendrocitta vagabunda*	Khoira Harichacha, Harichacha	r	C	11.5	R	LC
139	House Crow	*Corvus splendens*	Pati Kak,Kak	r	C	46.2	U	LC
140	Large-billed Crow	*Corvus macrorhynchos*	Dar Kak,Kak	r	C	26.9	U	LC
141	Ashy Woodswallow	*Artamus fuscus*	Mete Ababil, Ababil, Latora/ Mura Sing	r	C	15.4	R	LC
142	Slender-billed Oriole	*Oriolus tenuirostris*	Banka-thont Beney Bou	r	U	4.1	R	LC
143	Black-Hooded Oriole	*Oriolus xanthornus*	Kalaghar Banebou, Holdey Pakhi	r	C	11.5	R	LC
144	Black Drongo	*Dicrurus macrocercus*	Fingey, Kalipencha, Pakhir Raja, Dhechcha	r	C	53.8	C	LC

Asian Openbill

Grey-backed Shrike

Rufous Treepie

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
145	Ashy Drongo	*Dicrurus leucophaeus*	Dhushoravo Fingey,Nilav Fingey	Giesen *et al.*,1997				
146	Bronzed Drongo	*Dicrurus aeneus*	Chhoto Fingey,Chhoto Bhujanga	Giesen *et al.*,1997				
147	Black-naped Monarch	*Hypothymis azurea*	Kalaghar Rajon	Note from markhan				
148	Common Iora	*Aegithina tiphia*	Towfik, Fotikjal	r	C	11.5	R	LC
149	Common Woodshrike	*Tephrodornis pondicerianus*	Shudhuka,Dukka	r	C	3.85	R	LC
Flycatchers, Chats, Redstarts, Robins, (Family **MUSCICAPIDAE**, Bangladesh has 62 species, Tanguar Haor has 17 species)								
150	Rufous-gorgeted Flycatcher	*Ficedula strophiata*	Lalmala Chutki	Siddiqui *et al.* (eds.), 2008.				
151	Slaty-blue Flycatcher	*Ficedula tricolor*	Kalcheneel Chutki	Siddiqui *et al.* (eds.), 2008.				
152	Red-throated Flycatcher	*Ficedula albicilla*	Lalgola Chotok	Siddiqui *et al.* (eds.), 2008.				
153	Verditer Flycatcher	*Eumyias thalassina*	Neel Chutki, Puthir Chitta/Nil-katkatia	W	C	7.69	R	LC
154	Grey-headed Canary-Flycatcher	*Culicicapa ceylonensis*	Metematha Kanarichutki, Zard-phutki	W	C	3.85	R	LC
155	Siberian Rubythroat	*Luscinia calliope*	Saiberio Chunikonthi, Gunpigora	W	R	3.85	R	LC
156	White-tailed Rubythroat	*Luscinia pectoralis*	Dhola-lej Chunikonthi	Siddiqui *et al.* (eds.), 2008.				
157	Bluethroat	*Luscinia svecica*	Neelgola Fidda	W	C	3.85	R	LC

Bluethroat

White-tailed Rubythroat

Common Iora

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
158	Oriental Magpie Robin	*Copsychus saularis*	Udoi Doel, Dhaiyal, Doel	r	C	3.85	R	LC
159	Black Redstart	*Phoenicurus ochruros*	Kala Girdi	W	R	3.85	R	LC
160	Common Stonechat	*Saxicola torquatus*	Lal Fidda/Lal Chat	W	C	11.5	R	LC
161	White-tailed Stone Chat	*Saxicola leucurus*	Dholalej Shilafidda	W	V	3.85	R	LC
Starlings and Mynas (Family **STURNIDAE**, Bangladesh has 12 species, Tanguar Haor has 4 species)								
162	Chestnut-tailed Starling	*Sturnus malabaricus*	Khoiralej Kathshalik, Desi Pawei , Kath Salik	r	C	15.4	R	LC
163	Pied Myna	*Sturnus contra*	Pakrashalik, Gobrey Shalik/Gu Shalik	r	C	53.8	C	LC
164	Common Myna	*Acridotheres tristis*	Bhat Shalik , Salik/Bhat Salik	r	C	50	C	LC
165	Jungle Myna	*Acridotheres fuscus*	Jhuti Shalik , Jhont Salik/Jungli Salik	r	C	30.8	C	LC
Tits (Family **PARIDAE**, Bangladesh has 2 species, Tanguar Haor has 1 species)								
166	Great Tit	*Parus major*	Boro Tit, Ram-gang , Tit Pankhi	r	C	15.4	R	LC
Martins and Swallows (Family **HIRUNDINIDAE**, Bangladesh has 10 species, Tanguar Haor has 5 species)								
167	Sand Martin	*Riparia riparia*	Bali Nakuti, Nakkati	W	R	3.85	R	LC
168	Barn Swallow	*Hirundo rustica*	Metho Ababil, Ababil	W	C	46.2	C	LC
169	Striated Swallow	*Hirundo striolata*	Dagi Ababil	Note from markhan				

Common Stonechat

Great Tit

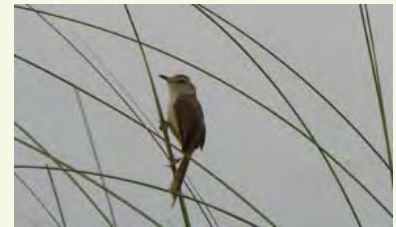
Chestnut-tailed Starling

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
170	Brown-throated Martin	*Riparia paludicola*	Nirol Nakuti, Nakuti	W	C	3.85	R	LC
171	Asian House Martin	*Delichon dasypus*	Eshio Ghornakuti	W	V	3.85	R	LC
Bulbuls (Family **PYCNONOTIDAE**, Bangladesh has 9 species, Tanguar Haor has 2 Species)								
172	Red-whiskered Bulbul	*Pycnonotus jocosus*	Sipahi Bulbul, Sipahi Bulbuli	r	C	3.85	R	LC
173	Red-vented Bulbul	*Pycnonotus cafer*	Bangla Bulbul, Kala Bulbul	r	C	30.8	U	LC
Cisticola and Prinia (Family **CISTICOLIDAE**, Bangladesh has 9 species, Tanguar Haor has 3 species)								
174	Grey-breasted Prinia	*Prinia hodgsonii*	Metebook Prina, Buno Tuni	r	C	3.85	R	LC
175	Plain Prinia	*Prinia inornata*	Nirol Prina, Sadharan Buno Tuni	r	C	3.85	R	LC
176	Zitting Cisticola	*Cisticola juncidis*	Bhomra Soton, Dagjukta Lej-tula Tuni	r	C	3.85	R	LC
Warblers and allies (Family **SYLVIIDAE**, Bangladesh has 77 species, Tanguar Haor has 16 species)								
177	Spotted Bush Warbler	*Bradypterus thoracicus*	Chitrito Jhuper Tuni, Dagi Jharfutki	Giesen *et al*.,1997				
178	Blyth's Reed Warbler	*Acrocephalus dumetorum*	Tikra, Blaither Nolfutki	W	C	3.85	R	LC
179	Brown Bush Warbler	*Bradypterus luteoventris*	Badami Jhuper Tuni	Giesen *et al*.,1997				

Blyth's Reed Warbler

Grey-breasted Prinia

Zitting Cisticola



Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
180	Common Grasshopper Warbler	*Locustella naevia*	Ghashboner Tikra	Giesen *et al*.,1997				
181	Paddy field Warbler	*Acrocephalus agricola*	Dhankheter Tikra, Dhani Futki	W	C	11.5	R	LC
182	Clamorous Reed Warbler	*Acrocephalus stentoreus*	Penchali Tikra, Bachal Nolfutki	W	C	7.69	R	LC
183	Thick-billed Warbler	*Acrocephalus aedon*	Thunt-moota Tikra	Giesen *et al*.,1997				
184	Striated Grassbird	*Megalurus palustris*	Dagi Ghashpakhi	r	C	57.7	C	LC
185	Common Tailorbird	*Orthotomus sutorius*	Tuntuni/Tuni	r	C	26.9	U	LC
186	Dusky Warbler	*Phylloscopus fuscatus*	Garobadami Pata Futki	W	C	15.4	R	LC
187	Yellow-browed Warbler	*Phylloscopus inornatus*	Sabujavhalud Pata Futki	W	C	3.85	R	LC
188	Blyth's Leaf Warbler	*Phylloscopus reguloides*	Blyther Pata Futki, Blaither Patafutki	W	C	3.85	R	LC
189	Greenish Warbler	*Phylloscopus trochiloides*	Shobje Futki	W	C	3.85	R	LC
190	Green-crowned Warbler	*Seicercus burkii*	Shobujchandi Futki	W	C	3.85	R	LC
191	Rufous-rumped Grassbird	*Graminicola bengalensis*	Bangla Ghashpakhi	Giesen *et al*.,1997				
192	Jungle Babbler	*Turdoides striatus*	Bon Satarey, Satbhai/Satbhaila	r	C	7.69	R	LC

Paddy field Warbler

Striated Grassbird

Clamorous Reed Warbler

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
Larks (Family **ALAUDIDAE**, Bangladesh has 7 species, Tanguar Haor has 2 species)								
193	Bengal Bush Lark	*Mirafra assamica*	Bangla Jharbhorot, Bhiriri	r	C	7.69	R	LC
194	Oriental Skylark	*Alauda gulgula*	Udoi Ovrobhorot, Jhunti Bharat	r	C	3.85	R	LC
Sunbirds (Family **NECTARINIIDAE**, Bangladesh has 19 species, Tanguar Haor has 2 Species)								
195	Purple-rumped Sunbird	*Leptocoma zeylonica*	Begunikomor Moutushi, Man Choongi	r	C	11.5	R	LC
196	Purple Sunbird	*Cinnyris asiaticus*	Beguni Moutushi	r	C	11.2	R	LC
Sparrows, Wagtails, Pipits and allies (Family **PASSERIDAE**, Bangladesh has 25 species, Tanguar Haor has 14 species)								
197	House Sparrow	*Passer domesticus*	Pati Chorui, Choti Charai, Chorui	r	C	38.5	U	LC
198	White Wagtail	*Motacilla alba*	Sada Khonjan	W	C	23.1	U	LC
199	Citrine Wagtail	*Motacilla citreola*	Holdeymatha Khonjan, Sitrin Khonjon	W	C	3.85	R	LC
200	Western Yellow Wagtail	*Motacilla flava*	Poshchina Holdeykhonjon, Halud Khonjan	W	C	19.2	R	LC
201	Grey Wagtail	*Motacilla cinerea*	Metey Khonjon, Dhushar Khonjan	W	U	11.5	R	LC
202	Paddyfield Pipit	*Anthus rufulus*	Dhani Tulika, Khetkhamarer Math Chorai	r	C	3.85	R	LC

Citrine Wagtail

Bengal Bush Lark

House Sparrow

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
203	Olive-backed Pipit	*Anthus hodgsoni*	Jolpaipith Tulika, Muchassi	W	C	3.85	R	LC
204	Red-throated Pipit	*Anthus cervinus*	Lalgola Tulika, Lalcheygola Math-chorai	Giesen *et al*.,1997				
205	Rosy Pipit	*Anthus roseatus*	Golapi Tulika	W	C	3.85	R	LC
206	Richard's Pipit	*Anthus richardi*	Richarder Tulika, Varikkichal Math-chorai	Giesen *et al*.,1997				
207	Baya Weaver	*Ploceus philippinus*	Babui/Baoi	r	C	15.4	R	LC
208	Red Avadavat	*Amandava amandava*		Note From SUW,2010				
209	Scaly-breasted Munia	*Lonchura punctulata*	Tila Munia	r	C	15.4	R	LC
210	Black-headed Munia	*Lonchura malacca*	Kalomatha Munia	r	C	15.4	R	LC
Rosefinches and Buntings (Family **FRINGILIDAE**, Bangladesh has 5 species, Tanguar Haor has 1 Species)								
211	Black-faced Bunting	*Emberiza spodocephala*	Bagheri, Kalamukh Chotok	IUCN Bangladesh, 2009.				
Others Bird								
212	Northern Lapwing	*Vanellus vanellus*	Kaloshirjukta Hot-ti-ti	Note From PR,EN,SD,SUW				
213	Lesser Coucal	*Centropus bengalensis*	Kukka					
214	Taiga Flycatcher	*Ficedula albicilla*	Taiga Chutki					
215	Firethroat	*Luscinia pectardens*	Lalgola Fidda					

Rosy Pipit

Scaly-breasted Munia

Baya Weaver

Birds								
Serial No.	English Name	Scientific Name	Local Name	National Occurence	National Abundance	%local Abundance	Local Appearance Status (%)	IUCN Global Status
216	Grey-sided bush Warbler	*Cettia brunnifrons*	Mete mtha Chutki					
217	Black-browed Reed Warbler	*Acrocephalus bistrigiceps*	Kala Vru Chutki					
218	Large-billed Leaf Warbler	*Phylloscopus magnirostris*	Borothot Futki					
219	Common Chiffchaff	*Phylloscopus collybita*	Pati chifcaf					

Northern Lapwing

Firethroat

Grey-sided bush warbler

Reptiles							
Serial No.	English Name	Scientific Name	Bangla Name	Family Name	Local Abundanc	IUCN Threatened Status	
						National	Global
Turtle and Tortoise (Family-**Testudinidae, Geoemydidae, Trionychidae**, Bangladesh has 23 species, Tanguar Haor has 5 species)							
1	Peacock-marked Soft Shell Turtle	*Nilssonia hurum*	Dhum Kasim	Trionychidae	C	EN	VU
2	Spotted Flap Shell Turtle	*Lissemys punctata*	Shundhi Kasim	Trionychidae	C	VU	LC
3	Indian Roofed Turtle	*Pangshura tecta*	Kori Kaitta	Geoemydidae	R	—	LC
4	Spotted Pond Turtle	*Geoclemys hamiltonii*	Kalo Kasim/ Mogom	Geoemydidae	R	EN	VU
5	Yellow Turtle	*Morenia petersi*	Haldey Kaitta	Emydidae	Note from SMAR		
Lizards, Skink Monitors (Family-**Agamidae, Gekkonidae, Scincidae, Varanidae**, Bangladesh has 31 species and Tanguar Haor has 5 species)							
6	Common Garden Lizard	*Calotes versicolor*	Roktochusha	Agamidae	C	NO	—
7	Tokay Gecko	*Gekko gecko*	Tokkhak/Tokh ha Shap/Toit-tang in Ctg, CHT	Gekkonidae	R	NO	—
8	Common House Gecko	*Hemidactylus frenatus*	Dakchara Tiktiki	Gekkonidae	C	NO	LC
9	Keeled Indian Mabuya	*Eutropis carinata*	Anjoni/Anjon/ Anchil	Scincidae	R	NO	LC
10	Bengal Monitor	*Varanus bengalensis*	Gui/Guishap	Varanidae	C	NO	LC
Snakes (Family- **Colubridae, Elapidae**, Bangladesh has 67 Species ,Tanguar Haor has 14 Species)							
11	Common Vine Snake	*Ahaetulla nasuta*	Laodoga Shap	Colubridae	R	NO	—
12	Short-nosed Vine Snake	*Ahaetulla prasina*	Bhotanak Laodoga Shap	Colubridae	R	NO	—
13	Striped Keelback	*Amphiesma stolatum*	Dora Shap	Colubridae	C	NO	—

Tokay Gecko

Short-nosed Vine Snake

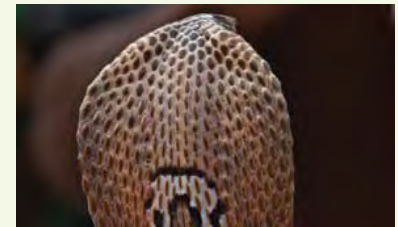
Indian Roofed Turtle

Reptiles							
Serial No.	English Name	Scientific Name	Bangla Name	Family Name	Local Abundanc	IUCN Threatened Status	
						National	Global
14	Olive Keelback	*Atretium schistosum*	Mete Shap / Maitta Shap	Colubridae	Giesen *et al*.,1997		
15	Common Smooth Water Snake	*Enhydris enhydris*	Paina Shap/Huria	Colubridae	C	NO	LC
16	Common Wolf Snake	*Lycodon aulicus*	Sadharan Gharginni Shap	Colubridae	Giesen *et al*.,1997		
17	Rat Snake	*Ptyas mucosa*	Daraj/ Dhaman	Colubridae	C	NO	—
18	Checkered Keelback	*Xenochrophis piscator*	Dhora Shap	Colubridae	V	NO	—
19	Copper Head Trinket Snake	*Coelognathus radiata*	Dudhraj/ Arbali	Colubridae	Giesen *et al*.,1997		
20	Green Keelback Snake	*Macropisthodon plumbicolor*	Sabuj Dhora	Colubridae	Giesen *et al*.,1997		
21	Monocellate Cobra	*Naja kaouthia*	Gokhra Shap	Elapidae	U	NO	LC
22	Binocellate Cobra	*Naja naja*	Khoia Gokhra	Elapidae	U	NO	LC
23	Common Krait	*Bungarus caeruleus*	Kal Keotey	Elapidae	Giesen *et al*.,1997		
24	Banded Krait	*Bungarus fasciatus*	Shakini Shap	Elapidae	U	—	—
25	Indian Python	*Python molurus*	—	Pythonridae	R	—	NT
26	Painted Keelback	*Xenochrophis cerasogaster*	Ajoggar Shap	Colubridae	R	—	LC
Other Turtle							
27	Crowned river turtle	*Hardella thurjii*	—	Geoemydidae	Note from SMAR		

Binocellate Cobra

Copper Head Trinket Snake

Monocellate Cobra



Amphibians							
Serial No.	English Name	Scientific Name	Bangla Name	Family Name	Local Abundanc	IUCN Threatened Status	
						National	Global
1	Marbled Toad	*Bufo stomaticus*	Khoshkhoshey Bang	Bufonidae	C	NO	LC
2	Asian Common Toad	*Duttaphrynus melanostictus*	Kuno Bang	Bufonidae	C	NO	LC
3	Skipper Frog	*Euphlyctis cyanophlyctis*	Kotkoti Bang	Dicroglossidae	V	NO	LC
4	Indian Cricket Frog	*Fejervarya limnocharis*	Jhi-jhi Bang	Dicroglossidae	C	NO	LC
5	Indian Bull Frog	*Hoplobatrachus tigerinus*	Kola Bang	Dicroglossidae	V	NO	LC
6	Common Tree Frog	*Polypedates leucomystax*	Dorakata Gechho Bang	Rhacophoridae	C	NO	LC
7	Ornate Microhylid	*Microhyla ornata*	Cheena Bang	Microhylidae	R	VU	LC
8	Pegu Rice Frog	*Microhyla berdmorei*	Berdmorer Cheena Bang	Microhylidae	R	—	LC
9	Indian Ballon Frog	*Uperodon globulosus*	—	Microhylidae	R	NO	LC
10	Asian painted frog	*Kaloula Pulchra*	—	Microhylidae	R	—	LC
11	Leaping frog	*Hylarana tytlari*	—	Ranidae	U	—	LC

[Note: National Occurence, National Abundance, Local Name, IUCN National Status taken from- Khan 2008, Khan 2010, IUCN 2000 & Siddiqui 2008]

Pegu Rice Frog

Skipper Frog

Indian Bull Frog

APPENDIX 2: Census status of Birds (2008-2012) in Tahguar Haor

Species Name	2008 January	2009 January	2010 January	2011 January	2011 March	2012 January	Total	Avarage
Grebes								
Little Grebe *Tachybaptus ruficollis*	31	596	56	137	287	65	1172	334.8571429
Great Crested Grebe *Podiceps cristatus*	15	3	2	2	4	0	26	7.428571429
Cormorant & Darters	0	0	0	0	0	0	0	0
Great Cormorant *Phalacrocorax carbo*	0	1	10	66	10	29	116	33.14285714
Indian Cormorant *Phalacrocorax fuscicollis*	0	0	0	0	2	0	2	0.571428571
Little Cormorant *Phalacrocorax niger*	445	212	760	222	2372	369	4380	1251.428571
Darter *Anhinga melanogaster*	0	1	0	0	7	0	8	2.285714286
Heron & Egrets	0	0	0	0	0	0	0	0
Little Egret *Egretta garzetta*	1	143	0	2	193	92	431	123.1428571
Yellow-billed Egret *Egretta intermedia*	11	37	0	47	224	39	358	102.2857143
Grey Heron *Ardea cinerea*	0	27	1	0	178	14	220	62.85714286

Species Name	2008 January	2009 January	2010 January	2011 January	2011 March	2012 January	Total	Avarage
Goliath Heron *Ardea goliath*	0	0	0	3	0	0	3	0.857142857
Purple Heron *Ardea purpurea*	1	4	15	0	10	3	33	9.428571429
Great Egret *Casmerodius albus*	29	230	3001	10	9	14	3293	940.8571429
Cattle Egret *Bubulcus ibis*	0	36	8	0	161	101	306	87.42857143
Indian Pond Heron *Ardeola grayii*	9	65	45	24	193	51	387	110.5714286
Striated Heron *Butorides striata*	0	0	1	1		1	2	0.833333333
Black-crowned Night Heron *Nycticorax nycticorax*	165	1	10	0	0	1	177	50.57142857
Yellow bittern *Ixobrychus sinensis*	0	0	0	0	0	1	1	0.285714286
Black Bittern *Dupetor flavicollis*	0	0	1	0	1	0	2	0.571428571
Storks	0	0	0	0		0	0	0
Asian Openbill *Anastomus oscitans*	0	0	0	0	3	0	3	0.857142857
Ibises & Spoonbills	0	0	0	0		0	0	0
Glossy Ibis *Plegadis falcinellus*	0	0	0	1	3	0	4	1.142857143
Geese & Ducks	0	0	0	0		0	0	0
Lesser whistling Duck	0	0	0	0	40	0	40	10
Fulvous whisting Duck *Dendrocygna bicolor*	120	0	60	0	10	0	190	54.28571429
Greater White-fronted Goose *Anser albifrons*	0	0	5	0	0	0	5	1.428571429
Greylag Goose *Anser anser*	0	0	0	0	2	0	2	0.571428571

Species Name	2008 January	2009 January	2010 January	2011 January	2011 March	2012 January	Total	Avarage
Ruddy Shelduck *Tadorna ferruginea*	0	7	0	0	16	0	23	6.571428571
Common Shelduck *Tadorna tadorna*	0	0	0	0	2	0	2	0.571428571
Cotton Pygmy-goose *Nettapus coromandelianus*	640	153	512	0	422	60	1787	510.5714286
Northern Pintail *Anas acuta*	10720	11722	8522	9542	92	74	40672	11620.57143
Northern Shoveler *Anas clypeata*	401	992	12	667	2335	1306	5713	1632.285714
Eurasian Teal *Anas crecca*	3574	865	3326	49	1	2	7817	2233.428571
Falcated Duck *Anas falcate*	0	1	0	2	3	1	7	2
Baikal Teal *Anas Formosa*	0	0	0	0	1	0	1	0.285714286
Eurasian Wigeon *Anas Penelope*	1365	4810	2060	10859	2157	636	21887	6253.428571
Mallard *Anas platyrhynchos*	49	6	10	0	4	10	79	22.57142857
Indian Spot-billed Duck *Anas platyrhynchos*	138	192	99	184	81	268	962	274.8571429
Garganey *Anas poecilorhyncha*	103	4459	600	1057	6612	418	13249	3785.428571
Gadwall *Anas querquedula*	11980	14532	1571	13302	20729	2560	64674	18478.28571
Red-crested Pochard *Netta rufina*	242	6724	1772	537	35	1330	10640	3040
Baer's Pochard *Aythya baeri*	7	0	0	4	1	0	12	3.428571429
Common Pochard *Aythya ferina*	6526	10917	4057	721	14	1388	23623	6749.428571

Species Name	2008 January	2009 January	2010 January	2011 January	2011 March	2012 January	Total	Avarage
Tufted Duck *Aythya fuligula*	694	205	489	1330	3878	931	7527	2150.571429
Ferruginous Duck *Aythya nyroca*	5938	4438	537	6580	3060	4815	25368	7248
Unidentified ducks	1850	10500	0	1500	1400	6,000	21250	6071.428571
Rails, Gallinules & Coots	0	0	0	0		0	0	0
White-breasted Waterhen *Amaurornis phoenicurus*	0	0	0	0	1	0	1	0.285714286
Ruddy-breasted Crake *Porzana fusca*	2	0	0	0	6	0	8	2.285714286
Purple Swamphen *Porphyrio porphyrio*	419	80	913	139	3419	1120	6090	1740
Common Moorhen *Gallinula chloropus*	44	11	16	0	449	4	524	149.7142857
Eurasian Coot *Fulica atra*	2914	3570	7140	7570	10096	6879	38169	10905.42857
Finfoots & Jacanas	0	0	0	0		0	0	0
Pheasant-tailed Jacana *Hydrophasianus chirurgus*	7	190	484	31	1161	7	1880	537.1428571
Bronze-winged Jacana *Metopidius indicus*	0	0	0	0	2	0	2	0.571428571
Shorebirds-Waders	0	0	0	0		0	0	0
Common Snipe *Gallinago gallinago*	0	0	0	0	10	0	10	2.857142857
Pin-tailed Snipe *Gallinago stenura*	0	9	0	3	1	0	13	3.714285714
Bar-tailed Godwit *Limosa lapponica*	0	0	0	0	8	0	8	2.285714286
Black-tailed Godwit *Limosa limosa*	0	0	0	0	1214	0	1214	346.8571429
Spotted Redshank *Tringa erythropus*	0	0	0	0	17	0	17	4.857142857

Species Name	2008 January	2009 January	2010 January	2011 January	2011 March	2012 January	Total	Avarage
Wood Sandpiper *Tringa glareola*	0	0	0	0	12	0	12	3.428571429
Common Greenshank *Tringa nebularia*	0	0	0	0	3	0	3	0.857142857
Green Sandpiper *Tringa ochropus*	0	0	0	0	2	0	2	0.571428571
Marsh Sandpiper *Tringa stagnatilis*	2	0	0	0	3	0	5	1.428571429
Common Redshank *Tringa tetanus*	400	34	0	28	5	0	467	133.4285714
Common Sandpiper *Actitis hypoleucos*	0	0	0	0	7	0	7	2
Curlew Sandpiper *Calidris ferruginea*	0	0	0	0	2	0	2	0.571428571
Little Stint *Calidris minuta*	0	0	0	0	3	0	3	0.857142857
Long-toed Stint *Calidris subminuta*	0	0	0	0	1	0	1	0.285714286
Temminck's Stint *Calidris temminckii*	0	0	0	0	1	0	1	0.285714286
Ruff *Philomachus pugnax*	0	0	160	0	5	0	165	47.14285714
Black-winged Stilt *Himantopus himantopus*	0	0	0	0	31	0	31	8.857142857
Pacific Golden Plover *Pluvialis fulva*	0	0	0	0	2	0	2	0.571428571
Little Ringed Plover *Charadrius dubius*	0	0	11	0	24		35	11.66666667
Grey-headed Lapwing *Vanellus cinereus*	0	0	4	7	35	0	46	13.14285714
Red-wattled Lapwing *Vanellus indicus*	0	0	0	0	7	0	7	2
Brown-headed Gull *Larus brunnicephalus*	0	0	0	6	879	40	925	264.2857143

Species Name	2008 January	2009 January	2010 January	2011 January	2011 March	2012 January	Total	Avarage
Heuglin's gull *Larus heuglini*	0	2	0	0		0	2	0.666666667
Great Black-headed Gull *Larus ichthyaetus*	0	5	0	8	2	0	15	4.285714286
Common Black-headed Gull *Larus ridibundus*	14	0	502	0	17	0	533	152.2857143
Unidentified Gull	0	2	0	1	25	0	28	8
Common Tern *Sterna hirundo*	0	0	0	0	45	0	45	12.85714286
Whiskered Tern *Chlidonias hybridus*	0	0	0	0	1975	16	1991	568.8571429
Unidentified tern	0	0	0	7	0	0	7	2
Unidenfied shorebird	0	0	101	0	0	0	101	28.85714286
Greater spotted Eagle	0	1	2	0	2	1	6	1.714285714
Pied Harrier	0	0	1	0	0	1	2	0.571428571
Eastern Marsh Harrier	0	0	1	0	0	0	1	0.285714286
Western Marsh Harrier	2	1	2	0	0	2	7	2
Pallas's fish Eagle	1	4	0	0	5	9	19	5.428571429
White-throated kingfisher	0	0	0	0	0	2	2	0.571428571
Common Kingfisher	0	0	0	0	0	9	9	2.571428571
Pied kingfisher	3	0	0	0	5	2	10	2.857142857
Sand Martain	0	0	0	0	0	4	4	1.142857143
Brn Swallow	0	0	0	0	0	200	200	57.14285714
Total	**48868**	**75788**	**36879**	**54645**	**64034**	**28875**	**216180**	**75038.42857**

APPENDIX 3: Bird Ringing Program at Tanguar Haor

Date: 19-26 february, 2012

Total number of captured- 440 and total number of species- 35

SL	Species	19	20	21	22	23	24	25	26	Total
1	Common Kingfisher		1	3						4
2	Plaintive Cuckoo		1							1
3	Lesser Coucal							1		1
4	White-breasted Waterhen					1				1
5	Painted Snipe	5	6	2		2				15
6	House Crow								1	1
7	Black hooded Oriole	1			1					2
8	Black Drongo				1					1
9	Taiga Flycatcher							1	1	2
10	Slaty-blue Flycatcher							1		1
11	Siberian Rubythroat			1						1
12	White -tail Rubithroat			1				2		3
13	Bluethroat		3	2	3	3	4			15
14	Firethroat		1				1			2
15	Stonechat			1			1			2
16	Asian pied Starling	5	4	4	1	4				19
17	Grey-sided bush Warbler						1			1
18	Spotted bush Warbler							2	1	3
19	Baikal bush Warbler	1	1					1		3
20	Pallas's Grasshopper Warbler		1	2	2		1			6
21	Black-brown Reed Warbler		2	5	2	1	11	1		22
22	Paddy field Warbler		13	16	8	9	36	5		87
23	Blyth's reed Warbler	1	5	7	12	9	14	19	6	73
24	Large- billed reed Warbler							1		1
25	Oriental reed Warbler		2	2	3	1		1	1	10
26	Clamorous reed Warbler		1	3	4	2	7	5		22
27	Striated Grassbird	1	6	4	6	3	2		1	23
28	Common Chiffchaff		1	1	5		2	1		10
29	Dusky Warbler	4	6	16	4	9	9	27	4	79
30	Tickell's leaf Warbler	1			1		2	2	2	8
31	Richard's Pipit				1					1
32	Olive-backed Pipit				3	2				5
33	Rosy Pipit					1				1
34	Baya Weaver				7	2				9
35	Black-faced Bunting		1	1	1		1	1		5
	Total									**440**

▲ *Grey-sided bush Warbler (First record from Bangladesh)*

Bird Ringing Technic - A.B.M.Sarowar Alam





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