Wildlife Diversity of Madhupur National Park, Bangladesh

Monirujjaman* and M. Monirul H. Khan
Department of Zoology, Jahangirnagar University, Savar, Dhaka 1342, Bangladesh

Abstract
The study was conducted to know the wildlife diversity of Madhupur National Park of Bangladesh from June 2014 to March 2015. A total of 151 species of wildlife (amphibians to mammals) belonging to 23 orders and 62 families were recorded which covers 16.41% of total wildlife species in our country. Among them 10 (7%) were amphibians, 15 (10%) reptiles, 111 (73%) birds and 15 (10%) mammals while 65 (43.05%) were very common, 41 (27.16%) common, 25 (16.55%) uncommon and 20 (13.24%) were rare. Among the 20 species of migratory birds, 15 (75%) were winter visitors and 5 (25%) summer visitors. The forests and other wildlife habitats in and around Madhupur National Park are decreasing rapidly due to illegal logging, land conversion for agriculture and human settlements.

Key words: Diversity, wildlife, amphibian, reptile, bird, mammal, Madhupur National Park.

INTRODUCTION
In Bangladesh the diversity at the species level is commonly referred, because the species level can be sampled easily. This study was conducted to sample the wildlife diversity of Madhupur National Park in central Bangladesh and to compare the status across the different groups. Literally wildlife means the life forms living in the wild i.e., the life forms living independently of humans. Official definition of wildlife differs from country to country, but typically focuses on wild vertebrates except fish, i.e. mammals, birds, reptiles and amphibians. As many as 31 species of wildlife have been identified as Regionally Extinct (RE) by IUCN-Bangladesh (IUCN, 2015). Among them 11 species were mammals (Striped Hyena, Grey Wolf, Swamp Deer, Sloth Deer, Blackbuck, Nilgai, Banteng, Wild Water Buffalo, Sumatran Rhinoceros, Javan Rhinoceros, and Indian Rhinoceros), 19 birds (Rufous-throated Partridge, Indian Peafowl, Green Peafowl, Grey Francolin, Swamp Francolin, White-winged Duck, Pink-headed Duck, Sarus Crane, Bengal Florican, Lesser Florican, Greater Adjutant, White-bellied Heron, Spot-billed Pelican, Red-headed Vulture, Rusty-fronted Barwing, Black-breasted Parrotbill, Spot-breasted Parrotbill, Rufous-headed Parrotbill, and Bar-tailed Treecreeper), and 1 reptile (Marsh Crocodile). Some relevant works have been done on the birds of Madhupur forest or Tangail district (Islam 1983, Khan & Islam 2000, Haque 1975, Khan & Ahsan 2011).

Study Area: Madhupur National Park is the largest deciduous forest of Bangladesh, located in the Madhupur Garh, comprises an area of 8436 ha (DoE, 2015 & IUCN, 2015). The Park is situated in the northeastern part of Tangail Forest Division along the

* Corresponding author. E-mail: monirujjamankhan912@gmail.com
boundary with Mymensingh district (it also extends slightly into the district) and 125 km away from Dhaka. It is located from 24°36’ to 24°42’ North latitudes and 90°00’ to 90°06’ East longitudes (Figure 1). The altitude of the park is about 20 m above the mean sea level (Khan & Ahsan, 2011). Madhupur National Park began as Madhupur Shal (Shorea robusta) Forest, but was finally declared as National Park on 24 February 1982 (Bangladesh Forest Department 2015), although justify for national park status began as early as 1962 (Bangladesh Forest Department 2015).

Fig. 1. Map of Madhupur Upazila showing the Madhupur National Park

MATERIALS AND METHODS
Study on wildlife diversity of Madhupur National Park was done from June 2014 to March 2015. The observation was made for four or five days per month. A total of 47 days (spending 510 hours) were spent to collect data. The observations started early in the
morning, immediate after sunrise and continued after sunset till 8.00 pm, with midday break. Wildlife species were identified by using Encyclopedia of Flora and Fauna Bangladesh, 2009, references books and publications (Grimmett 2011, Halder 2010, Hasan 2014, Khan 2008). The methods that were followed are plot counting, line transect sampling and interviews of local people.

**Direct Observation:** Materials and Methods used by the authors, Daniel (1963), Husain & Rahman (1978), Rahman (1985), Sarker & Sarker (1985), Khan (1998) were used in the direct field observation -

**Line-transect Sampling:** Data regarding the different species available in the study areas were recorded by line-transect sampling. Counting was conducted along the roads in the villages and cultivated lands.

**Plot Counting:** To observe the amphibian fauna, plot counting methods were used.

**Calls and Songs:** Some bird species which were normally not but seen, but recorded by hearing songs and calls.

The observation and data collection methods used for different groups of wildlife are described below -

**Amphibians:** Plot counting method was applied for collecting data about amphibian species. Each of 300 m × 300 m of plots were selected in the study area and they were further divided into few mini transect lines.

**Reptiles:** For the lizards and snakes plot counting method and line-transect method as well as information through questionnaire were used. The questionnaire based information could only provide the presence and abundance of the species.

**Birds:** Only line-transect method was applied for collecting data on birds. The length and width of each transect line were 500 m and 30 m, respectively.

**Mammals:** For the information about the mammalian species line-transect method, plot counting method and information through questionnaire were used. Plot counting method was preferably applied for counting rats, mice, monkeys, shrews, and so on.

Four categories were used to express the status of different species (Khan, 2008): Very Common (VC) - a species seen during 76-100% of the visits; Common (C) - a species seen during 51-75% of the visits; Uncommon (UC) - a species seen during 26-50% of the visits; and Rare (R) - a species seen single or in small number of occasions, i.e. up to 25% of the visits when it is most active.

**RESULTS AND DISCUSSION**

Overall 151 species of wildlife (amphibians to mammals) belonging to 23 orders and 62 families were recorded in the Madhupur National Park (Table 1-4), which is (16.41%) of
the total wildlife 920 species (IUCN, 2015) in Bangladesh. Among these 10 (7%) were amphibians, 15 (10%) reptiles, 111 (73%) birds, and 15 (10%) mammals. Out of 151 species, 65 (43.05%) were very common, 25 (16.55%) uncommon, 20 (13.24%) rare and 41 (27.16%) common (Figure 2). Birds were relatively very common than others and are easily noticeable than other species of wildlife.

Ninety six species of wildlife were recorded in the starting month (June 2014) of this study and 151 species at the end of (March 2015). The monthly cumulative frequency of total number of wildlife species (Figure 3) indicates near to saturation, though might be changed by long-term study.
Wildlife Diversity, Madhupur National Park, Bangladesh

**Amphibians:** Ten species of anuran amphibians under 5 families (Bufonidae, Dicroglossidae, Ranidae, Microhylidae and Rhacophoridae) were recorded (Table 1). The Madhupur National Park supports (20.4%) amphibians considering 49 species from Bangladesh (IUCN, 2015). Of the recorded species 1 (10%) was toad and 9 (90%) were frogs; among them 3 (30%) were very common, 4 (40%) common, 1 (10%) uncommon, 2 (20%) rare species.

Table 1. Amphibians observed in the Madhupur National Park during June 2014 to March 2015

| Sl No. | Common name                  | Scientific name                                      | Family              | Status |
|-------|------------------------------|------------------------------------------------------|---------------------|--------|
| 01    | Common Asian Toad            | *Duttaphrynus melanostictus* (Schneider, 1799)       | Bufonida            | VC     |
| 02    | Skipper Frog                 | *Euphlyctis cyanophlyctis* (Schneider, 1799)         | Dicroglossida       | VC     |
| 03    | Green Pond Frog              | *Euphlyctis hexadactylus* (Lesson, 1834)             | Dicroglossida       | R      |
| 04    | Terai Cricket Frog           | *Fejervarya teraiensis* (Dubois, 1984)               | Dicroglossida       | C      |
| 05    | Jerdon’s Bull Frog           | *Hoplobatrachus crassus* (Jerdon, 1853)              | Dicroglossida       | R      |
| 06    | Indian Bull Frog             | *Hoplobatrachus tigerinus* (Daudin, 1803)            | Dicroglossida       | VC     |
| 07    | Cope’s Frog                  | *Hylarana leptoglossa* (Cope, 1868)                  | Ranidae             | C      |
| 08    | Mymensingh Microhylid Frog   | *Microhyla mymensinghensis* (Hasan, 2014)            | Microhylidae        | C      |
| 09    | Indian Balloon Frog          | *Uperodon globulosus* (Gunther, 1864)                | Microhylidae        | C      |
| 10    | Indian Tree Frog             | *Polypedates maculatus* (J.E.Gray, 1830)             | Rhacophoridae       | UC     |

[VC= very common, UC= uncommon, C= common, and R= rare]

**Reptiles:** Fifteen species of reptiles under 2 orders (Squamata and Serpentes) and 7 families (Agamidae, Varranidae, Elapidae, Typhlopidae, Scinidae, Colubridae, and Gekkonidae) were recorded (Table 2). The Madhupur National Park supports (8.98%) reptiles considering 168 species from Bangladesh (IUCN, 2015). Of the recorded species 1 (7%) was monitor, 5 (33%) were lizards, 3 (20%) skinks and 6 (40%) snakes; among them 9 (60%) were very common, 4 (26.66%) common, 1 (6.67%) uncommon, 1 (6.67%) rare species. Turtle is rare in the study area, no turtle was observed during the study period. Many reptiles, particularly snakes and lizards, play an important role in biological pest control by consumingly insects and rodents that are harmful for crops.
Table 2. Reptiles observed in the Madhupur National Park during June 2014 to March 2015

| Sl No. | Common name                     | Scientific name                           | Family       | Status |
|--------|---------------------------------|-------------------------------------------|--------------|--------|
|        |                                 |                                           | Order: Squamata |        |
| 01     | Common Garden Lizard            | *Calotes versicolor* (Daudin, 1802)       | Agamidae | VC     |
| 02     | Tokay Gecko                     | *Gekko gecko* (Linnaeus, 1758)           | Gekkonidae  | C      |
| 03     | Common House Gecko              | *Hemidactylus frenatus* (Schlegel, 1836) | Gekkonidae  | VC     |
| 04     | Flat-tailed House Gecko         | *Hemidactylus platyrurus* (Schneider, 1792) | Gekkonidae  | UC     |
| 05     | Brook’s House Gecko             | *Hemidactylus brookii* (Gray, 1845)      | Gekkonidae  | R      |
| 06     | Keeled Grass Skink              | *Mabuya carinata* (Schneider, 1801)      | Scincidae   | VC     |
| 07     | Bronze Grass Skink              | *Mabuya macularia* (Blyth, 1853)         | Scincidae   | C      |
| 08     | Bowring’s Supple Skink          | *Lygosoma bowringii* (Cogger, 1994)      | Scincidae   | C      |
| 09     | Bengal Monitor                  | *Varanus bengalensis* (Daudin, 1802)     | Varanidae   | VC     |
|        |                                 |                                           | Order: Serpentes |        |
| 10     | Diard’s Blind Snake             | *Typhlops diardi* (Schlegel, 1839)       | Typhlopidae | VC     |
| 11     | Jerdon’s Blind Snake            | *Typhlops jerdoni* (Boulenger, 1890)     | Typhlopidae | C      |
| 12     | Common Vine Snake               | *Ahaetulla nasuta* (Lacépède, 1789)     | Colubridae  | VC     |
| 13     | Checkered Keelback              | *Xenochrophis piscator* (Schneider, 1799) | Colubridae  | VC     |
| 14     | Common Smooth Water Snake       | *Enhydris enhydris* (Schneider, 1799)    | Colubridae  | VC     |
| 15     | Spectacled Cobra                | *Naja naja* (Linnaeus, 1758)             | Elapidae    | VC     |

[VC= very common, UC= uncommon, C= common, and R= rare]

**Birds:** One hundred and eleven species of birds under 13 orders (Galliformes, Anseriformes, Piciformes, Upupiformes, Coraciiformes, Cuculiformes, Psittaciformes, Apodiformes, Strigiformes, Columbiformes, Gruiformes, Ciconiiformes, and Passeriformes) and 38 families were recorded (Table 3). Among these 59 (53.15%) were non-passerines where 52 (46.85%) were passerines. The Madhupur National Park supports (19.61%) birds considering 566 species from Bangladesh (IUCN, 2015). Of the recorded species 94 (84.69%) were resident and 17 (15.31%) migratory birds. Among migratory birds, 13 (76.47%) were winter visitors and 4 (23.53%) summer visitors. The number of very common birds were 44 (39.64%), whereas 30 (27.03%) common, 21 (18.91%) uncommon, and 16 (14.42%) rare species.
Wildlife Diversity, Madhupur National Park, Bangladesh

Table 3. Birds observed in the Madhupur National Park during June 2014 to March 2015

| Sl. No | Common name              | Scientific name                           | Family              | Status |
|--------|--------------------------|-------------------------------------------|---------------------|--------|
| 01     | Red Junglefowl           | *Gallus gallus* (Linnaeus, 1758)          | Phasianidae         | C, L   |
| **Order: Galliformes** |                          |                                            |                     |        |
| 02     | Fulvous Whistling-duck   | *Dendrocygna bicolor* (Vieillot, 1816)    | Dendrocygnidae      | R, L   |
| 03     | Northern Pintail         | *Anas acuta* (Linnaeus, 1758)             | Anatidae            | R, Mw  |
| 04     | Spot-billed Duck         | *Anas poecilorhyncha* (Forster, 1781)     | Anatidae            | R, L   |
| 05     | Cotton Pygmy-goose       | *Nettapus coromandelianus* (Gmelin, 1789) | Anatidae            | R, L   |
| **Order: Anseriformes** |                          |                                            |                     |        |
| 06     | Rufous Woodpecker        | *Celeus brachyurus* (Vieillot, 1818)      | Picidae             | VC, L  |
| 07     | Greater Flameback        | *Chrysocolaptes guttacristatus* (Tickell, 1833) | Picidae             | C, L   |
| 08     | Grey-capped Pygmy Woodpecker | *Dendrocopos canicollis* (Blyth, 1845) | Picidae             | VC, L  |
| 09     | Fulvous-breasted Woodpecker | *Dendrocopos macei* (Vieillot, 1818)     | Picidae             | VC, L  |
| 10     | Black-rumped Flamback    | *Dinopium benghalense* (Linnaeus, 1758)   | Picidae             | C, L   |
| 11     | Streak-throated Woodpecker | *Picus xanthopygaeus* (Gray & Gray, 1847) | Picidae             | R, L   |
| 12     | Blue-throated Barbet     | *Psilopogon asiaticus* (Latham, 1790)     | Megalaimidae        | VC, L  |
| 13     | Coppersmith Barbet       | *Psilopogon haemacephalus* (Status Muller, 1776) | Megalaimidae        | VC, L  |
| **Order: Piciformes** |                          |                                            |                     |        |
| 14     | Common Hoopoe            | *Upupa epops* (Linnaeus, 1758)            | Upupidae            | C, L   |
| **Order: Upupiformes** |                          |                                            |                     |        |
| 15     | Indian Roller            | *Coracias benghalensis* (Linnaeus, 1758)  | Coracidida          | VC, L  |
| 16     | Common Kingfisher        | *Alcedo atthis* (Linnaeus, 1758)          | Alcedinidae         | VC, L  |
| 17     | White-throated Kingfisher | *Halcyon smyrnensis* (Linnaeus, 1758)    | Halcyonidae         | C, L   |
| 18     | Stork-billed Kingfisher  | *Pelargopsis capensis* (Linnaeus, 1758)   | Halcyonidae         | C, L   |
| 19     | Chestnut-headed Bee-eater| *Merops leschenaulti* (Vieillot, 1817)    | Meropidae           | C, L   |
| 20     | Green Bee-eater          | *Merops orientalis* (Latham, 1801)        | Meropidae           | C, L   |
| 21     | Blue-tailed Bee-eater    | *Merops philippinus* (Linnaeus, 1766)     | Meropidae           | C, Ms  |
| **Order: Cuculiformes** |                          |                                            |                     |        |
| 22     | Jacobin Cuckoo           | *Clamator jacobinus* (Boddaert, 1783)    | Cuculidae           | C, Ms  |
| No. | Common Name                                      | Scientific Name                           | Family         | Order          |
|-----|--------------------------------------------------|-------------------------------------------|----------------|----------------|
| 23  | Indian Cuckoo                                    | *Cuculus micropterus* (Gould, 1837)       | Cuculidae      | C, Ms          |
| 24  | Asian Koel                                       | *Endymamyx scolopaceus* (Linnaeus, 1758)  | Cuculidae      | VC, L          |
| 25  | Lesser Coucal                                    | *Centropus bengalensis* (Gmelin, 1788)    | Centropodidae  | C, L           |
| 26  | Greater Coucal                                   | *Centropus sinensis* (Stephens, 1815)     | Centropodidae  | C, L           |
|     | **Order: Psittaciformes**                        |                                           |                |                |
| 27  | Red-breasted Parakeet                            | *Psittacula alexandri* (Linnaeus, 1758)   | Psittacidae    | VC, L          |
| 28  | Rose-ringed Parakeet                             | *Psittacula krameri* (Scopoli, 1769)      | Psittacidae    | VC, L          |
|     | **Order: Apodiformes**                           |                                           |                |                |
| 29  | Asian Palm Swift                                 | *Cypsiurus balasiensis* (J.E. Gray, 1829) | Apodidae       | C, L           |
|     | **Order: Strigiformes**                          |                                           |                |                |
| 30  | Barn Owl                                         | *Tyto alba* (Scopoli, 1769)               | Tytonidae      | VC, L          |
| 31  | Spotted Owlet                                    | *Athene brama* (Temminck, 1821)           | Strigidae      | R, Mw          |
| 32  | Dusky Eagle Owl                                  | *Bubo coromandus* (Latham, 1790)          | Strigidae      | R, L           |
| 33  | Brown Fish Owl                                   | *Ketupa zeylonensis* (Gmelin, 1788)       | Strigidae      | UC, L          |
| 34  | Brown Hawk Owl                                   | *Ninox scutulata* (Raffles, 1822)         | Strigidae      | UC, L          |
|     | **Order: Columbiformes**                         |                                           |                |                |
| 35  | Emerald Dove                                     | *Chalcophaps indica* (Linnaeus, 1758)     | Columbidae     | UC, L          |
| 36  | Rock Pigeon                                      | *Columba livia* (Gmelin, 1789)            | Columbidae     | VC, L          |
| 37  | Spotted Dove                                     | *Streptopelia chinensis* (Scopoli, 1768)  | Columbidae     | VC, L          |
| 38  | Eurasian Collared Dove                           | *Streptopelia decaocto* (Frivaldszky, 1838) | Columbidae     | UC, L          |
| 39  | Red Collared Dove                                | *Streptopelia tranquaebarica* (Hermann, 1804) | Columbidae     | UC, L          |
| 40  | Orange-breasted Green Pigeon                     | *Treron bicincta* (Jerdon, 1840)         | Columbidae     | R, L           |
| 41  | Yellow-footed Green Pigeon                       | *Treron phoenicoptera* (Latham, 1790)     | Columbidae     | VC, L          |
|     | **Order: Gruiformes**                            |                                           |                |                |
| 42  | White-breasted Waterhen                          | *Anasettea phoenicuera* (Pennant, 1769)   | Rallidae       | UC, L          |
| 43  | Common Coot                                      | *Fulica atra* (Linnaeus, 1758)            | Rallidae       | UC, L          |
| 44  | Purple Swamphen                                  | *Porphyrio porphyrio* (Linnaeus, 1758)    | Rallidae       | R, Mw          |
|     | **Order: Ciconiiformes**                         |                                           |                |                |
| 45  | Bronze-winged                                   | *Metopidius indicus* (Latham, 1790)       | Jacanidae      | UC, L          |
| No. | Species Name                      | Scientific Name                                    | Order                      |
|-----|----------------------------------|--------------------------------------------------|----------------------------|
| 46  | Jacana                           | *Vanellus indicus* (Boddaert, 1783)                | Charadriidae               |
| 47  | Red-wattled Lapwing              | *Vanellus indicus* (Boddaert, 1783)                | Charadriidae               |
| 48  | Brahminy Kite                    | *Haliastur indus* (Boddaert, 1783)                | Accipitridae               |
| 49  | Black Kite                       | *Milvus migrans* (Boddaert, 1783)                 | Accipitridae               |
| 50  | Great Cormorant                  | *Phalacrocorax carbo* (Linnaeus, 1758)             | Phalacrocoracidae          |
| 51  | Little Cormorant                 | *Phalacrocorax niger* (Vieillot, 1817)             | Phalacrocoracidae          |
| 52  | Gray Heron                       | *Ardea cinerea* (Linnaeus, 1758)                   | Ardeidae                   |
| 53  | Indian Pond Heron                | *Ardea cinerea* (Linnaeus, 1758)                   | Ardeidae                   |
| 54  | Cattle Egret                     | *Bubulcus ibis* (Linnaeus, 1758)                   | Ardeidae                   |
| 55  | Little Heron                     | *Bubulcus ibis* (Linnaeus, 1758)                   | Ardeidae                   |
| 56  | Great Egret                      | *Ardea alba* (Linnaeus, 1758)                      | Ardeidae                   |
| 57  | Little Egret                     | *Ardea alba* (Linnaeus, 1758)                      | Ardeidae                   |
| 58  | Black-crowned Night Heron        | *Ardea alba* (Linnaeus, 1758)                      | Ardeidae                   |
| 59  | Asian Openbill                   | *Ardea alba* (Linnaeus, 1758)                      | Ardeidae                   |
| 60  | Lesser Adjutant                  | *Leptoptilos javanicus* (Horsfield, 1821)          | Ciconiidae                 |
| 61  | Indian Pitta                     | *Pitta brachyura* (Linnaeus, 1758)                 | Pittidae                   |
| 62  | Golden-fronted Leafbird          | *Chloropsis aurifrons* (Temminck, 1829)            | Irenidae                   |
| 63  | Brown Shrike                     | *Lanius cristatus* (Linnaeus, 1758)                | Laniidae                   |
| 64  | Long-tailed Shrike               | *Lanius schach* (Linnaeus, 1758)                   | Laniidae                   |
| 65  | Gray-backed Shrike               | *Lanius schach* (Linnaeus, 1758)                   | Laniidae                   |
| 66  | Common Iora                      | *Aegithina tiphia* (Linnaeus, 1758)                | Laniidae                   |
| 67  | Large-billed Crow                | *Corvus macrorhynchos* (Wagler, 1827)              | Laniidae                   |
| 68  | House Crow                       | *Corvus splendens* (Vieillot, 1817)                | Laniidae                   |
| 69  | Rufous Treepie                   | *Dendrocitta vagabunda* (Latham, 1790)             | Laniidae                   |
| 70  | Bronzed Drongo                   | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |
| 71  | Spangled Drongo                  | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |
| 72  | Ashy Drongo                      | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |
| 73  | Black Drongo                     | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |

**Order: Passeriformes**

| No. | Species Name                      | Scientific Name                                    | Order                      |
|-----|----------------------------------|--------------------------------------------------|----------------------------|
| 60  | Indian Pitta                     | *Pitta brachyura* (Linnaeus, 1758)                 | Pittidae                   |
| 61  | Golden-fronted Leafbird          | *Chloropsis aurifrons* (Temminck, 1829)            | Irenidae                   |
| 62  | Brown Shrike                     | *Lanius cristatus* (Linnaeus, 1758)                | Laniidae                   |
| 63  | Long-tailed Shrike               | *Lanius schach* (Linnaeus, 1758)                   | Laniidae                   |
| 64  | Gray-backed Shrike               | *Lanius schach* (Linnaeus, 1758)                   | Laniidae                   |
| 65  | Common Iora                      | *Aegithina tiphia* (Linnaeus, 1758)                | Laniidae                   |
| 66  | Large-billed Crow                | *Corvus macrorhynchos* (Wagler, 1827)              | Laniidae                   |
| 67  | House Crow                       | *Corvus splendens* (Vieillot, 1817)                | Laniidae                   |
| 68  | Rufous Treepie                   | *Dendrocitta vagabunda* (Latham, 1790)             | Laniidae                   |
| 69  | Bronzed Drongo                   | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |
| 70  | Spangled Drongo                  | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |
| 71  | Ashy Drongo                      | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |
| 72  | Black Drongo                     | *Dicrurus aeneus* (Vieillot, 1817)                 | Dicruridae                 |

Wildlife Diversity, Madhupur National Park, Bangladesh
| No. | Species Name                                  | Scientific Name and Year | Family     | Subfamily |
|-----|----------------------------------------------|---------------------------|------------|-----------|
| 73  | Greater Racket-tailed Drongo                 | *Dicrurus paradiseus* (Linnaeus, 1766) | Corvidae   | R, L      |
| 74  | Bar-winged Flycatcher-shrike                 | *Hemipus picatus* (Sykes, 1832) | Corvidae   | C, L      |
| 75  | Black-naped Oriole                           | *Oriolus chinensis* (Linnaeus, 1766) | Corvidae   | C, Mw     |
| 76  | Black-hooded Oriole                          | *Oriolus xanthornus* (Linnaeus, 1758) | Corvidae   | VC, L     |
| 77  | Small Minivet                                | *Pericrocotus cinnamomeus* (Linnaeus, 1766) | Corvidae   | C, L      |
| 78  | White-rumped Shama                           | *Copsychus malabaricus* (Scopoli, 1788) | Muscicapidae | VC, L     |
| 79  | Oriental Magpie Robin                        | *Copsychus saularis* (Linnaeus, 1758) | Muscicapidae | VC, L     |
| 80  | Gray-headed Canary Flycatcher                | *Culicicapa ceylonensis* (Swainson, 1820) | Muscicapidae | UC, Mw    |
| 81  | Common Stonechat                             | *Saxicola torquatus* (Linnaeus, 1766) | Muscicapidae | UC, Mw    |
| 82  | Orange-headed Thrush                         | *Geokichla citrine* (Latham, 1790) | Muscicapidae | C, L      |
| 83  | Jungle Myna                                  | *Acridotheres fuscus* (Wagler, 1872) | Sturnidae  | VC, L     |
| 84  | Bank Myna                                    | *Acridotheres ginginianus* (Latham, 1790) | Sturnidae  | VC, L     |
| 85  | Common Myna                                  | *Acridotheres tristis* (Linnaeus, 1766) | Sturnidae  | C, L      |
| 86  | Asian Pied Starling                          | *Gracupica contra* (Linnaeus, 1758) | Sturnidae  | VC, L     |
| 87  | Chestnut-tailed Starling                     | *Sturnus malabarica* (Gmelin, 1789) | Sturnidae  | VC, L     |
| 88  | Great Tit                                    | *Parus major* (Linnaeus, 1758) | Sittidae   | UC, L     |
| 89  | Plain Martin                                 | *Riparia paludicola* (Vieillot, 1817) | Hirundinidae | UC, L    |
| 90  | Red-vented Bulbul                            | *Pycnonotus cafer* (Linnaeus, 1766) | Pycnonotidae | VC, L     |
| 91  | Red-whiskered Bulbul                         | *Pycnonotus jocosus* (Linnaeus, 1758) | Pycnonotidae | C, L      |
| 92  | Zitting Cisticola                            | *Cisticola juncidis* (Rafinesque, 1810) | Cisticolidae | C, L      |
| 93  | Common Tailorbird                            | *Orthotomus sutorius* (Pennant, 1769) | Sylviidae  | VC, L     |
| 94  | Jungle Babbler                               | *Turdoides striata* (Dumont, 1823) | Sylviidae  | VC, L     |
| 95  | Crimson Sunbird                              | *Aethopyga siparaja* (Raffles, 1822) | Nectariniidae | C, L     |
| 96  | Ruby-cheeked Sunbird                         | *Chalcoparia singalensis* (Gmelin, 1788) | Nectariniidae | UC, L    |
| 97  | Purple Sunbird                               | *Cinnyris asiaticus* (Latham, 1790) | Nectariniidae | VC, L     |
Wildlife Diversity, Madhupur National Park, Bangladesh

98 Purple-rumped Sunbird *Leptocoma zeylonica* (Linnaeus, 1766) Nectariniidae C, L
99 Siberian Rubythroat *Calliope calliope* (Pallas, 1776) Turdidae UC, L
100 Tawny Pipit *Anthus campestris* (Linnaeus, 1758) Passeridae R, Mw
101 Olive-backed Pipit *Anthus hodgsoni* (Richmond, 1907) Passeridae UC, Mw
102 Paddyfield Pipit *Anthus rufulus* (Vieillot, 1818) Passeridae VC, L
103 Indian Silverbill *Euodice malabarica* (Linnaeus, 1758) Passeridae R, L
104 Black-headed Munia *Lonchura atricapilla* (Vieillot, 1807) Passeridae C, L
105 Scaly-breasted Munia *Lonchura punctulata* (Linnaeus, 1758) Passeridae VC, L
106 White Wagtail *Motacilla alba* (Linnaeus, 1758) Passeridae R, Mw
107 Gray Wagtail *Motacilla cinerea* (Tunstall, 1771) Passeridae R, Mw
108 White-browed Wagtail *Motacilla maderaspatensis* (Gmelin, 1789) Passeridae UC, L
109 House Sparrow *Passer domesticus* (Linnaeus, 1758) Passeridae VC, L
110 Eurasian Tree Sparrow *Passer montanus* (Linnaeus, 1758) Passeridae R, L
111 Baya Weaver *Ploceus philippinus* (Linnaeus, 1766) Passeridae VC, L

[VC= very common, UC= uncommon, C= common, R= rare, L= local or resident, Mw= migratory winter visitor, and Ms= migratory summer visitor]

Mammals: Fifteen species of mammals under 7 orders, and 12 families were recorded (Table 4). The Madhupur National Park supports (10.87%) mammals considering 138 species from Bangladesh (IUCN, 2015). Among these 9 (60%) were very common, 3 (20%) common, 2 (13.33%) uncommon, 1 (6.67%) rare species. Barking Deer was uncommon in natural habitat, but very common in captive deer breeding centre in Lahoria, which is situated in Madhupur National Park. Eurasian Wild Boar was common in this area a few years ago, but no record was found in recent years. The reason might be illegal hunting by Garo community.

### Table 4. Mammals observed in the Madhupur National Park during June 2014 to March 2015

| Sl No | Common name            | Scientific name                                      | Family     | Status |
|------|------------------------|------------------------------------------------------|------------|--------|
|      | Order: Lagomorpha      |                                                      |            |        |
| 01   | Indian Hare            | *Lepus nigricollis* (F. Cuvier, 1823)                 | Leporidae  | UC     |
|      | Order: Rodentia        |                                                      |            |        |
| 02   | Irrawaddy Squirrel     | *Callosciurus pygerythrus* (L. Geoffroy Saint Hilaire, 1832) | Sciuridae  | VC     |
| 03   | Asiatic Long Tailed Climbing Mouse | *Vandeleuria oleracea* (Bennett, 1832) | Muridae    | VC     |
|      | Greater Bandicoot-     | *Bandicota indica* (Bechstein, 1823)                 | Muridae    | VC     |
**Order: Carnivora**

| No. | Species Name                  | Scientific Name                          | Family     | Status |
|-----|------------------------------|------------------------------------------|------------|--------|
| 05  | Large Indian Civet           | Viverra zibetha (Linnaeus, 1758)         | Viverridae | C      |
| 06  | Jangal Cat                   | Felis chaus (Schreber, 1777)             | Felidae    | VC     |
| 07  | Fishing Cat                  | Prionailurus viverrinus (Bennett, 1833)  | Felidae    | C      |
| 08  | Small Indian Mongoose        | Herpestes auropunctatus                   | Herpestidae| VC     |
| 09  | Golden Jackal                | Canis aureus (Linnaeus, 1758)            | Canidae    | VC     |

**Order: Chiroptera**

| No. | Species Name                  | Scientific Name                          | Family     | Status |
|-----|------------------------------|------------------------------------------|------------|--------|
| 10  | Indian Flying Fox            | Pteropus giganteus (Brünnich, 1782)      | Pteropodidae| VC     |
| 11  | Indian Pipistrelle           | Pipistrellus coromandra (Gray, 1838)     | Vespertilionidae| C     |

**Order: Primates**

| No. | Species Name                  | Scientific Name                          | Family     | Status |
|-----|------------------------------|------------------------------------------|------------|--------|
| 12  | Rhesus Macaque               | Macaca mulatta (Zimmermann, 1780)        | Cercopithecidae| VC     |
| 13  | Capped Langur                | Trachypithecus pileatus (Blyth, 1843)    | Cercopithecidae| VC     |

**Order: Scandentia**

| No. | Species Name                  | Scientific Name                          | Family     | Status |
|-----|------------------------------|------------------------------------------|------------|--------|
| 14  | Common Tree Shrew            | Tupaia glis (Diard & Duvaucel, 1820)     | Tupaïdæ    | R      |

**Order: Artiodactyla**

| No. | Species Name                  | Scientific Name                          | Family     | Status |
|-----|------------------------------|------------------------------------------|------------|--------|
| 15  | Barking Deer                 | Muntiacus muntjak (Zimmermann, 1780)     | Cervidae   | UC     |

[VC= very common, UC= uncommon, C= common, and R= rare]

The study area covered (14.36%) of total wildlife species. Husain and Haque (1977) reported the occurrence of 170 species (and 1 subspecies) from the Madhupur forest in Tangail and Mymensingh districts. Khan & Ahsan (2011) reported that, 115 species of birds were found in Madhupur National Park, under the 12 orders, 36 families and 87 genera. Khan (1998), studied the taxonomy and ecology of the birds of Tangail and recorded a total of 216 species of birds under 48 families has been registered which represents nearly one-third of the total bird species found in Bangladesh. Out of 216 species, 59 (27%) were migratory and 157 (73%) resident. Husain (1991) reported the occurrence of 169 species of birds from the Jamuna Multipurpose Bridge Area of Tangail and Siraiganj. There is no significant difference between the number of non-passerines, passerines, resident and migratory birds recorded in 2011 and the present study year. Although the previous research by Hssain & Haque (1977), Husain (1991) and Khan (1998) reveals that wildlife populations here decreased remarkably at present.

Once Eurasian Wild Boar, Tiger, Leopard, Sambar Deer, Wild Water Buffalo, Red Jungle Fowl, Peacock, Turtle, Green Frog and many other animals were very common, but now because of continuous hunting by the Garo community, these species are becoming rare in this forest (Zaman, 2015). Habitat loss, illegal hunting, trapping and collecting of wild species, random use of agrochemicals, and lack of awareness were identified as threats to wildlife species in Madhupur National Park. Human encroachment, illegal hunting or
trapping of wild animal should be controlled by creating public awareness to conserve wildlife of Madhupur National Park.

REFERENCES

Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., Khondker, M., Rahman, M.M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Hoque, E.U. 2007-2009. Encyclopedia of Flora and Fauna of Bangladesh. Vols 1-28. Asiatic Society of Bangladesh. Dhaka.

Bangladesh Forest Department 2015. Bangladesh Wildlife Conservation Master Plan 2015-2035. Bangladesh Forest Department, Dhaka, Bangladesh.

Daniel, J.C. 1963. A Field Guide of the Amphibians of Western India Part-1. Journal of Bombay Natural Historical Society. 60(2): 415-438.

Department of Environment. 2015. Fifth National Report to the Convention on Biological Diversity. Department of Environment, Ministry of Environment and Forests, Government of the People’s Republic Bangladesh, Dhaka. pp. 162.

Grimmett, R., Inskipp, C. and Inskipp, T. 2011. Birds of Indian Subcontinent. Christopher Helm, London, UK.

Halder, R.R. 2010. A Photographic Guide to Birds of Bangladesh. Baikal Teal Production, Dhaka, Bangladesh.

Haque, M.N. 1975. The avifauna of Madhupur Forest (With notes on ecology, status, distribution and food). Diss. M. Sc. thesis (unpublished), Dhaka University, Dhaka.

Hasan, M.K., Khan, M.M.H. and Feeroz, M.M. 2014. Amphibians and Reptiles of Bangladesh- A field Guide. Arannayk Foundation, Dhaka, Bangladesh.

Husain, K.Z. and Haque, M.N. 1977. The avifauna of the Madhupur forest. Proceedings First Bangladesh National Conference on Forestry, Dhaka. pp. 381-392.

Husain, K.Z. and Rahman, M.M. 1978. The Amphibian Fauna of Bangladesh. Bangladesh Journal of Zoology. 6(2): 157-158.

Husain, K.Z., Rahman, M.K. and Haque, M.N. 1991. Wildlife diversity of the Jamuna Multipurpose Bridge area (a folder). Wildlife Society of Bangladesh, C/O. Department of Zoology, University of Dhaka, Dhaka.

IUCN- Bangladesh. 2015. Red List of Bangladesh. Vol. 1: Summary. IUCN- Bangladesh, Dhaka, Bangladesh.

Islam, M.A. 1983. On some birds of Tangail district (with notes on taxonomy and ecology). M.Sc. Thesis (unpublished). Dhaka University, Dhaka.

Khan, M.M.H. 1998. Taxonomy and Ecology of Birds of Tangail. M.Sc. Dissertation (Unpublished), Jahangirnagar University, Savar.

Khan, M.M.H. 2008. Protected Areas of Bangladesh- A Guide to Wildlife. Nishorgo Program, Bangladesh Forest Department. pp. 10-29.

Khan, M.M.H. 2014. Introduction to the Wildlife of Bangladesh. Jahangirnagar University and Bangladesh Forest Department. pp. 5-29.

Khan, M.M.H. and Islam, M.A. 2000. Status and habitats of the birds of Tangail, Bangladesh. Bangladesh J. Zool. 28(1): 75-88.

Khan, S.I. and Ahsan, M.F. 2011. Birds of the Madhupur National Park, Bangladesh. Bangladesh J. Zool. 39(1): 49-63.

Sarker, S.U and Sarker, N.J. 1985. Wildlife of Bangladesh. A Systematic list. The Rico Pricers.

Zaman, M. 2015. Wildlife diversity and indigenous knowledge of the Garo community in and around Madhupur National Park of Bangladesh. M.Sc. Dissertation (Unpublished), Jahangirnagar University, Savar. pp. 15-66.