Government of the People's Republic of Bangladesh
Ministry of
Housing and Public Works Urban Development Directorate

FLORA AND FAUNA SURVEY UNDER "PREPARATION OF DEVELOPMENT PLAN FOR MEHERPUR DISTRICT

Final Report

Date: October, 2025

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Chapter-1: Introduction

1.1. Project Background

Bangladesh is not only the world's fastest-growing populous country, but also a country with immense potential in the near future. As the world's population grows, so does urbanization. Without suitable standards, it is difficult to manage the developing urban areas as a result of urbanization. Urbanization includes the expansion of houses and other infrastructure. Nobody can deny that the housing and infrastructure situation in metropolitan areas is deteriorating day by day. It must be arranged in order to be properly guided. Meanwhile, the honorable Prime Minister issued significant instructions for the country's spatial and sectoral planning at different levels. Bangladesh is one of the world's most densely populated countries, and it has had tremendous population increase over the last century, however the rate of growth has recently slowed to a reasonable level. Over the next decade, the country will see a rapid development of urbanization. According to an estimate, by 2020, nearly every other man, woman and child will live in an urban area (World Bank ed., Bangladesh 2020). Bangladesh's urban population has been growing at a yearly average rate of 6 percent since independence, at a time when the national population growth was 2.2 percent. As a result, urban population has grown six-fold, compared with a 70 percent increase in rural population (World Bank, 2007). As per recent UN data, approximately 25 percent of Bangladesh's current population currently lives in urban areas. Of this urban population, more than half lives in the four largest cities: Dhaka, Chittagong, Khulna and Rajshahi.

Urbanization refers to the increase in the number of people living in urban areas such as towns and cities. In the course of urbanization, urban expansion is unavoidable. People in Bangladesh are increasingly preferring to reside in and around cities and towns in recent years. People in our country primarily migrate from rural to cities in pursuit of a variety of opportunities. Urbanization, on the other hand, is frequently used as an indicator of development. Unplanned urbanization, on the other hand, poses a hazard to developing countries like Bangladesh. Bangladesh's urbanization has recently been complicated by a number of new issues. Such growing difficulties, as well as their impact, can be mitigated with proper planning and actions. Bangladesh would undoubtedly attain its targeted sustainable urban growth goal through planned urbanization. In 2008, humankind has crossed a socio-demographic milestone for the first time in history by having half of its population living within the urban areas (UNFPA, 2007).

In developing countries, urbanization has now become a powerful force. Cities are important drivers of growth and development, providing jobs, infrastructure, and services. With the unplanned expansion, the growing number of people, assets, and economic activities increase the exposure of cities to the impacts of disasters and climate change. However, in low and lower-middle income countries, new urban development is increasingly more likely to occur on hazard-prone land, namely in floodplains and other low-lying areas, along fault lines, and on steep slopes. In addition to settling in hazard-prone areas, much of the building construction that occurs is unregulated and unplanned, placing vulnerable populations, who settle on hazard-prone land, at increased risk. Besides, poor urban governance, declining ecosystems, and vulnerable rural livelihoods are among the main underlying risk drivers, which need to be addressed to build safer cities. Bangladesh has been experiencing a rapid increase in its urban population ever since its independence in 1971.Urban population as a percentage of total population increased from around 8.8% to nearly 23% during the 1974-2011 periods. It is estimated

that by the year 2021 nearly one-third or 33% of the population of Bangladesh will be living in urban areas. More than 60% of the national GDP is derived from non-agricultural sectors that are mainly based in urban areas. This phenomenon indicates the increasing role of urban areas being played in the national economy.

Upazila Parishad is the lowest administrative level of local government in Bangladesh. The majority of Upazila Parishads are still unable to achieve planned rural-urban development, which involves physically and socioeconomically integrating rural and urban areas. Most of the time, land is used haphazardly, resulting in a low level of living for the population. In the present government's policy for administrative reorganization, the upazila is the most important tier of administration. In light of the foregoing, a comprehensive development plan is required to handle the mandatory land use transition in both urban and rural areas, while avoiding unauthorized and unplanned development. A comprehensive development strategy at the Upazila level appears to be necessary.

Urban Development Directorate under the Ministry of Housing and Public Works, has launched a project titled "Preparation of Development Plan for Meherpur Zilla Project". This initiative aims to formulate a development plan for the next 20 years, divided into essential sectors to create a risk-sensitive and sustainable strategy. To understand the socio-economic and demographic profile of the study area is pivotal step for understanding the immediate needs and forecast the future needs for the next 20 years. Existing data and features are instrumental in providing a clear spatial understanding of the project area, accurately reflecting the potentials and problems of the existing scoria economic related conditions, and facilitating the representation within the development plan. Overall, the scope of socio-economic project signifies a comprehensive and forward-looking approach to urban development, emphasizing sustainability and thoughtful planning over the next two decades.

Existing Flora and Fauna survey is one of the important development modules of this project. In this development plan, existing Floral and Faunal information is considered as an important tool for a durable and sustainable urbanization. Land use planning is an important component for a modern urban development. But practicing urban development using a proper land use plan is not developed in Bangladesh. Prior to land use planning it is very essential to access existing Flora and Fauna conditions and the relevant information in and around the site of future urban development. Therefore, a rigorous Flora and Fauna study is needed to carry out for a resilient urban development.

1.2. Description of the Study Area

Meherpur Zilla, located in the southwestern part of Bangladesh, holds a significant place in the country's history and culture. Known for its rich heritage and pivotal role in the liberation war, Meherpur continues to thrive with its diverse economy, agricultural abundance, and growing infrastructure. This proposal aims to highlight the key aspects of Meherpur Zilla, focusing on its socio-economic landscape, cultural heritage, and potential for future development. The district comprises three Upazilas: Meherpur Sadar, Mujibnagar, and Gangni. Meherpur Sadar serves as the administrative and economic hub, with a diverse economy primarily based on agriculture and trade. Mujibnagar, formerly Bhoborpara, is renowned for its historical importance in the Liberation War, attracting many tourists to its memorial complex. Gangni Upazila is notable for its vibrant agricultural activities and emerging industrial potential. Collectively, these Upazilas contribute to the district's cultural richness, economic

diversity, and historical legacy, positioning Meherpur Zilla as a region of significant importance and development potential in Bangladesh.

Meherpur Zilla is bordered by Kushtia to the east, Chuadanga to the south, and the Indian state of West Bengal to the west and north, situated in the Khulna Division. The district's strategic location offers significant advantages for cross-border trade and cultural exchange. The district is predominantly rural, with a diverse population comprising various ethnic and religious communities. The literacy rate is gradually improving, with ongoing efforts to enhance educational facilities and opportunities.

a) Gangni Upazila

Gangni Upazila (Meherpur district) area 363.95 sq km, located in between 23°44' and 23°52' North latitudes and in between 88°34' and 88°47' East longitudes. It is bounded by Daulatpur (Kushtia) upazila on the North, Alamdanga and Meherpur Sadar upazilas on the South, Daulatpur (Kushtia), Mirpur (Kushtia) and' Alamdanga upazilas on the East, Meherpur Sadar upazila and West Bengal state of India on the West.

Population Total 299607; male 148250, female 151357; Muslim 295458, Hindu 2726, Christian 1313 and others 110. Water bodies Main rivers: Bhairab, Ichamati, Mathabhanga and Kazla; Elangi Beel, Nuner Beel and Elalgari Damash Beel are notable. Administration Gangni Thana was formed in 1923 and it was turned into an upazila on 24 February 1984.' Gangni Upazila consist of one Municipality, 9 Unions, 90 Mouzas and 137 Villages.


Mathavanga river, Bamundi Union, Gangni Upazila

b) Meherpur Sadar Upazila

Meherpur Sadar Upazila (Meherpur district) area 276.15 sq km, located in between 23°40' and 23°52' North latitudes and in between 88°34' and 88°47' East longitudes. It is bounded by Gangni upazila and West Bengal state of India on the North, Damurhuda and Mujibnagar upazilas on the South, Gangni and Alamdanga upazilas on the East, West Bengal state of India on the West.

Population Total 256642; male 127300, female 129342; Muslim 252323, Hindu 4199, Buddhist 1, Christian 114 and others 5. Water bodies Main rivers: Bhairab, Kazla; Bhatgari and Chand Beels are

notable. Administration Meherpur Thana was turned into an upazila in 1984. Meherpur Municipality was formed in 1960. Meherpur Sadar consist of one Municipality, 5 Unions, 61 Mouzas and 104 Villages.


Kutubpur beel, Kutubpur Union, Maherpur Sadar Upazila

c) Mujibnagar Upazila

Mujibnagar Upazila (Meherpur district) area 111.51 sq km, located in between 23°36' and 23°45' North latitudes and in between 88°34' and 88°43' East longitudes. It is bounded by Meherpur Sadar upazila on the North, Damurhuda and Meherpur Sadar upazilas on the East, West Bengal of India on the South and on the West.

Population Total 99143; male 49084, female 50059; Muslim 92970, Hindu 945, Buddhist 13, Christian 5200 and others 15. Water bodies Bhairab River, Sarashati Canal and Datpur Beel are notable. Administration Mujibnagar upazila was formed on 24 February 2000. Mujibnagar Upazila consist of 4 Unions, 29 Mouza and 33 Villages.

Dariapur beel, Dariapur Union, Mujibnagar Upazila

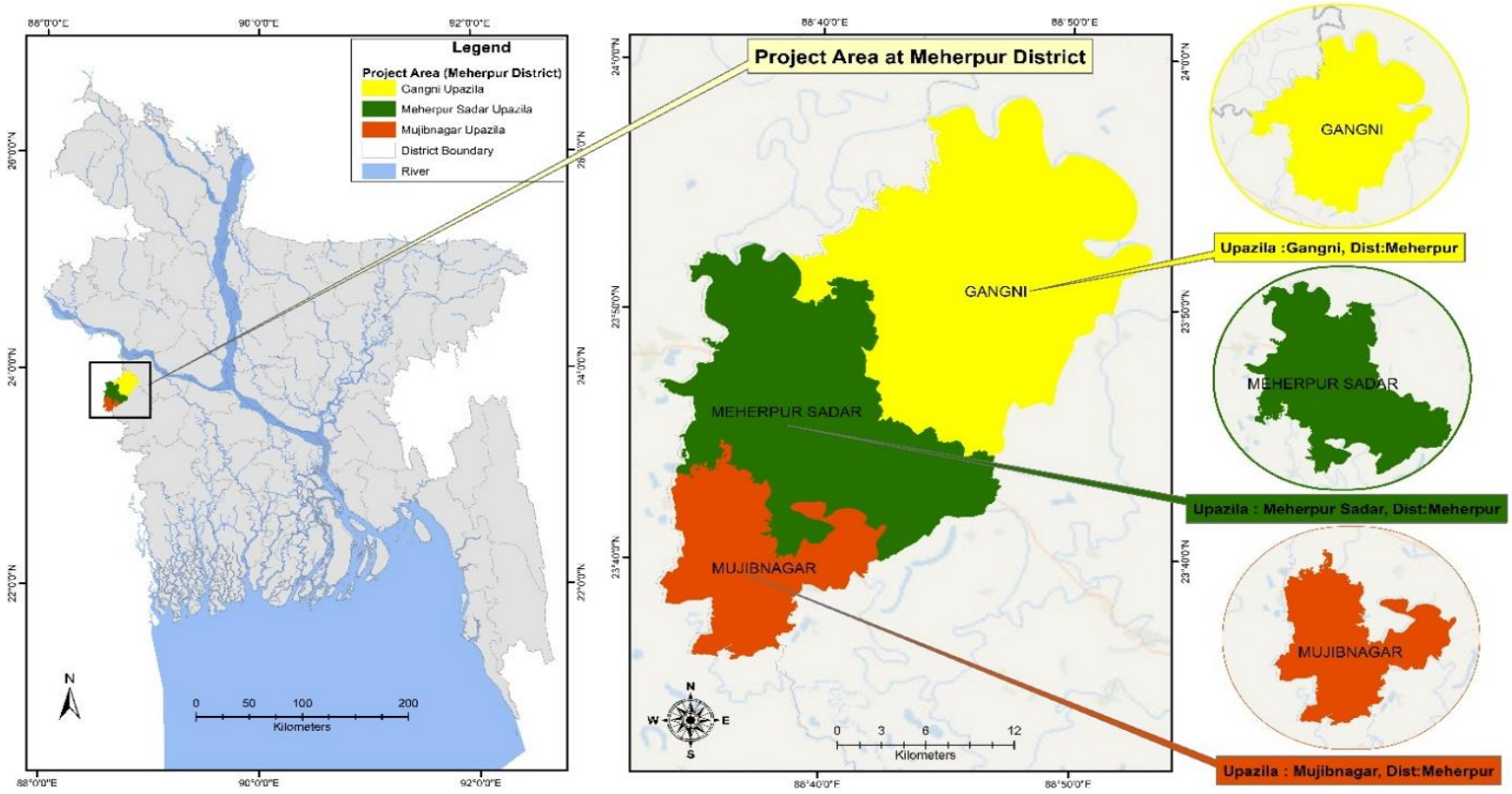


Fig 1: Location map of project area of Meherpur District.

1.3. Aims and Objectives

The baseline survey of existing flora and fauna will be conducted in project area of 3 upazilas of Meharpure district; i) Meherpur Sadar upazila, ii) Mujibnagar Upazila, and iii) Gangni Upazila.

Objectives:

Main objectives of the project:

The objective of the project is to optimize resources and activities for sustenance of marginal people. The urban and rural activities and resources are very important to the economy and life of the people of Bangladesh whose living conditions are inextricably linked to the productivity and sustainability of land use. There is no long-term Holistic Development Plan for the rural and urban area but it needs to be integrated with the mainstream of development process of the country. So, an interdisciplinary development planning approach is urgent to optimize livelihood of the project area.

Specific objectives of present study as per scope of work:

Baseline survey of existing flora and fauna in different place of the study area will be conducted to attain the following objectives:

- To develop an understanding of the existing flora and fauna based on available information, data gathering, literature searches, site visits and any baseline studies already carried out;
- To make an inventory of the species that are present on the spatial level of the survey and also the species that are frequent and also which are rare
- To identify the autecological characteristics, they possess and the communities they form
- To identify the characteristics and physical conditions of the sites that form their habitats
- To explore Historical aspects of habitats and biodiversity in the area
- To determine Underlying process of habitats dynamism — char formation, afforestation, forest clearing, settlements, growth centers, dykes, land reclamation, drainage system improvement, etc.
- To determine a threshold for selecting existing flora and fauna, based on their value, using measures;
- To identify those flora and fauna reaching the threshold value which could be affected by the project;
- To identify the spatial arrangements of habitats and the key processes that lead to the decline of endangered species (e.g. Fallowing, eutrophication, disturbance, intensification etc.)
- To determine the species including their habitat that might be threatened due to future development
- To identify the factors affecting the integrity of the existing flora and fauna in the ecosystems and the conservation status of relevant habitats and species;
- To set forth recommendations on preserving the species of the project area and ecology sensitive land use planning to keep the ecological system sustainable.
- To develop an interactive digital model for the ecological system for the project area

Chapter-2: Methodology

2.1. An Inventory of the Flora and Fauna

Literature review was conducted to know the historical aspects of spatial distribution of habitats or species and compile habitat or species inventories on various scales, and also recognize the pattern of rarity. Status of habitats will also be known. Information of the underlying process of decline or increase can be achieved by an historical landscape analysis. Maps with the historical distribution of habitats from these sources should be drawn in the same resolution as the actual distribution. In addition to the secondary sources, primary data on existing flora and fauna will be collected using appropriate methods.

2.2. The comparative assessment of plant and animal communities

The comparative assessment of animals and plants has been conducting. Dependency of animals on particular plant species will be determined. Seasonal assemblage of animals in a particular habitat based on the phenology of the plant will be determined. Survey will be conducted in different seasons; thus, seasonal assemblage of flora and fauna will also be determined. All the information will be plotted on habitat map.

2.3. Sampling Technique for Inventory

To achieve the objectives of the project various methods will be used (Table 1).

Table 1. Survey methods in brief

Name of the Methods	Objectives to be fulfilled
Survey Methods for Flora	
1. Literature Review 2. Transect survey 3. Quadrat survey 4. Point Quarter Method 5. Collection of plant parts	To understand the existing floral distribution scenario and their significances in the ecosystem of the project area based on available secondary information from any baseline studies which already been carried out previously. To prepare an inventory list of the species of the existing flora, their spatial distribution, the species that are frequent and also which are rare. To identify the ecological characteristics of every ecological unit and the communities they form. To identify the characteristics and physical conditions of the habitats. To determine underlying process of habitats dynamism-char formation, afforestation, forest clearing, settlements, growth centers, dykes, land reclamation, drainage system improvement, etc.
6. Questionnaire Survey	To explore historical aspects of habitats and biodiversity in the area.
Survey Methods for Fauna	
1. Direct Survey Methods 2. Line Transect Sampling 3. Quadrat Sampling 4. Use of different types of traps 5. Counting at colonies and bat roosts	To understand the existing faunal distribution scenario and their significances in the ecosystem of the project area based on available secondary information from any baseline studies which already been carried out previously. To prepare an inventory list of the species of the existing fauna, their spatial distribution, the species that are frequent and also which are rare.

Name of the Methods	Objectives to be fulfilled
6. Night survey 7. Camera trap survey 8. Questionnaire survey 9. FGD 10. Boat Survey through river system or lake for aquatic animals 11. Survey on fish 12. Indirect Survey Methods 13. Pellet / scat / feces count 14. Footprint / Pugmark count 15. Other indices of presence	To identify the ecological characteristics of every ecological unit and the communities they form. To identify the characteristics and physical conditions of their habitats. To determine underlying process of habitats dynamism-char formation, afforestation, forest clearing, settlements, growth centers, dykes, land reclamation, drainage system improvement, etc. To identify the flora and fauna reaching the threshold value which could be affected by the project. To identify the threats to the endangered species (e.g., Fallowing, eutrophication, disturbance, intensification). To determine the species including their habitat that might be threatened due to future development. To set forth recommendations on preserving the species of the project area and ecology sensitive land use planning to keep the ecological system sustainable. To develop an interactive digital model for the ecological system for the project area.

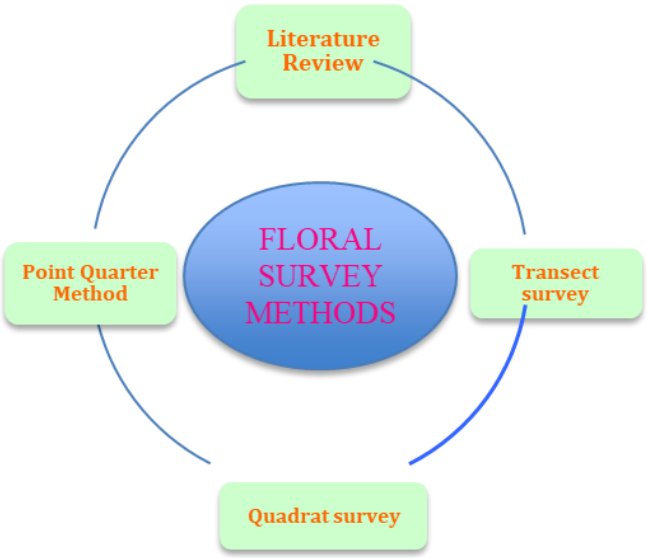
2.3.1. Detailed Survey Methods

i.Survey methods for flora

Plant community will be studied by following different methods. Parameters like frequency, density, abundance, presence, absence and dominance, diversity index will be quantified.

a. Transect survey

Transect survey will be used to explore the existing floristic composition. Sample of the plant species will be collected to prepare herbarium in order to identify the plant species wherever necessary. The floristic composition includes the occurred species of under trees, shrubs, herbs, climbers, epiphytes, parasites and ferns.



b. Quadrat survey

The quadrat survey will be used for assessing plant community structure, tree species diversity and their regeneration status. The estimate of species contents of a habitat shall be determined by observing the plant species at different sample areas.

In the quadrats, trees of ≥5cm diameter will be counted. Moreover, total height and diameter of the trees individuals of different species will also be recorded. The parameters that are commonly used to characterize the structure of the plant communities are: Density, Frequency, Abundance, Vegetation Coverage, Basal area, Dominance, Species richness index, Similarity index, Shannon-Wiener diversity index, Index of similarity etc.

ii.Survey methods for fauna

A combination of different methods will be applied for the project work. Some of the methods are as follows.

2.3.2. Direct Survey Methods

i.Line Transect Sampling

Both temporary and permanent transect lines were set randomly covering all types of habitats. Visual encounter survey was conducted on foot both in day and night. All the wild animals were recorded from the both side of transect. GPS coordinates were used to calculate the total transect area covered for survey. During river habitat survey, the river was considered as a transect line. A total of 14 transect lines including 6 transects in Meherpur Sadar, 6 transects in Gangni and Mujibnagar each were selected for the study (Fig 2, Table 2).

Table 2 List of transects used for data collection

Upazila	Transect	Habitat	Length (Km)
Meherpur Sadar	Transect 1	Riverside/Riverine	8.92
	Transect 2	Homestead	3,41
	Transect 3	Homestead	5.6
	Transect 4	Agricultural	10.4
	Transect 5	Riverside/Riverine	3.5
	Transect 6	Riverside/Riverine	8.7
Gangni	Transect 1	Riverside/Riverine	2.8
	Transect 2	Homestead	2
	Transect 3	Homestead	1.3
	Transect 4	Agricultural	2.5
Mujibnagar	Transect 1	Homestead	3.4
	Transect 2	Homestead	4.6
	Transect 3	Riverside/Riverine	5.3
	Transect 4	Agricultural	7.3

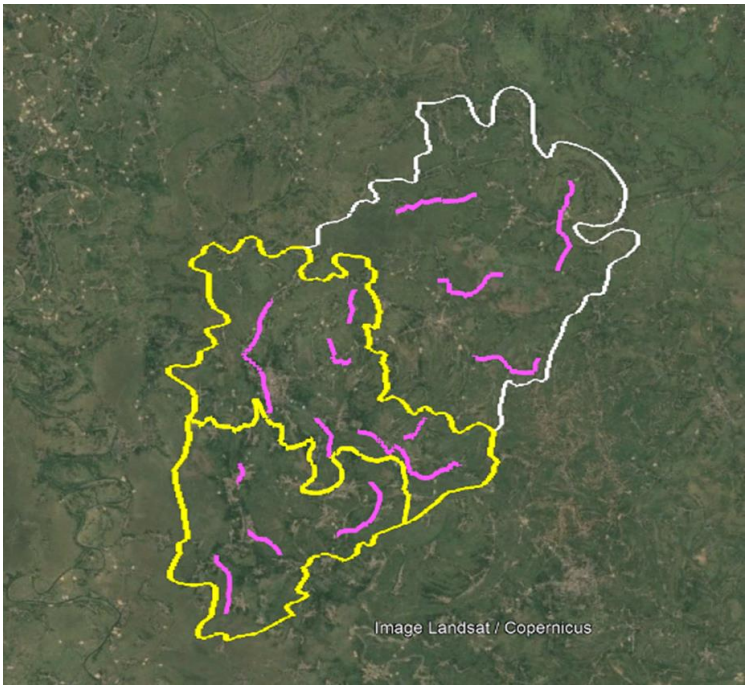


Fig 2. Line transects set up in different habitats of the study area based on field survey data).

ii. Use of different types of traps

Pit fall trap, tube trap and box trap will be used to capture cryptic species. All these traps are designed to capture live animals. Appropriate baits were used wherever necessary.

Setting up box trap for tree shrew and rodents at Amjhupi Union, Meherpur Sadar Upazila.

Setting up camera trap in a homestead garden of Meherpur sadar upazila.

iii. Camera trap

Automatic digital camera traps were used to survey nocturnal and crepuscular animals. These camera traps are operated by motion sensor. The camera were automatically activated and captured photos if anything moves in front of it.

iv. Counting at colonies and bat roosts

Bats and some of the birds are colonial and some also build nests in colonies. Bird colony and bat roosts were surveyed.

Indian Flying Fox colony at Bagoan Dakshin para, Govipur, Meherpur Sadar Upazila.

Bat colony at Meherpur Sadar police station, Meherpur Sadar Upazila.

v.Night survey

Night survey were conducted with the aid of high-power flashlight. Nocturnal wild animals were encountered during night survey.




vi.Questionnaire survey

A pre-designed questionnaire was used to know the status of wild animals and plants in the survey area based on the experience of the local people. A total of 60 questionnaire were surveyed among the local people of Meherpur district.


Questionnaire survey, Gourinagar, Mujibnagar, Meherpur

vii. River Habitat Surveys (RHS) & River Corridor Surveys (RCS) through Boat Survey for aquatic animals

Boat survey was conducted in suitable sites to encounter aquatic animals like dolphins. Images of dolphins were also be used as a questionnaire among the local fishermen to know the past status of these aquatic mammals.


Bamundi khal, Gangni Upazila, Meherpur

viii. Survey on fishes

Local fishermen were visited to see their catch and types of available fishes. Local market were also be surveyed to know the status of local fish. Both marine and freshwater fisheries will be surveyed. The team members visited fish landing areas, fisher's village and local markets to learn about beneficiary's customs and attitudes. Direct observations and participation with the fishers for gear use, on-field surveillance, homestead drying of fishes, and selling at retail market of city, were the most useful and meaningful way to confirm the abundance and marketing of fishes, and to know about beneficiary's livelihood dynamics, work practices, vulnerabilities, and their indigenous knowledge in a social setting (Hossain *et al.* 2014; Deb and Haque 2011).


Local fish market survey at Kachabazar, Meherpur sadar, Meherpur

2.3.3. Indirect Survey Methods

i.Presence of Scat, feces and pellet

Presence of scat, feces and pellet indicate the presence of certain species in the area.

ii.Footprint / Pugmark count

This method is used for identifying and counting wild animals. In addition, the data allow one to determine sex ratio and age structure of the population.

Shed skin of Naja naja (Spectacled Cobra) found at Moyamari Mango Orchard, Meherpur

2.4. Identification of critical Species

During the survey any critical habitat (also why it is critical) and its significance needs to be identified, and protection status recorded in practice, a check of each individual species against the following were required in order to be to determine its protection status:

- IUCN's threatened category (Red Data Book-both National and global threatened category);
- Species protected under Wildlife (Protection and Security) Act 2012;
- Species protected under any protocol, conventions and any other agreement;
- Species considered as flagship species, keystone species or other significant species; and
- Endemicity of the species.

2.5. Identification of critical ecosystem and wildlife habitats

Habitats with high species diversity, population density of rare or threatened species were determined from the field survey. Ecosystem services were also be determined from field observation and also by questionnaire survey and FGD. Critical ecosystem or habitats were plotted on the maps using GPS coordinates.

2.6. Mapping of the Site

As per survey findings, we prepared ecosystem based thematic map for every task of the site of the flora and fauna in ARC GIS and prepare data base which can be provided as shape file or map format in desire scale by consultation with PD.

2.7. Development of an Interactive Digital Model

From GIS based data base of the survey findings and their interpretation were integrated in a GIS module and to develop an interactive digital model of existing habitat, decline of habitat and possible areas of conservation. Historical changes of vegetation cover were evaluated from the previous 30 years image. Land use map were prepared accommodating wildlife habitat, vegetation cover, waterbodies, forests and other landmarks.

2.8. Submission of Report

The final report includes clearly, information on existing flora and fauna necessary for decision making Key aspects which include:

- Description of baseline and trends of existing flora and fauna, if the project were not to go ahead;
- Explanation of the criteria used to evaluate existing flora and fauna, and assess the' significance of impacts of the project;
- Statement of methodology used:
- Presentation of analytical techniques used and the analysis itself; and interpretation from the analyses
- Identification of likely impacts on existing flora and fauna; and an explanation of their significance and the level of certainty with which this can. be stated; and
- Description of legal and policy consequences.

Chapter-3: FINDINGS of Flora and Fauna

3.1. Flora of Meherpur District

A total of 415 species of plants were recorded from three selected upazilas of Meherpur (Fig. XX). Herb constitutes the highest species diversity (48.67%) followed by trees (20.72%), shrubs (16.39%), climbers (6%), other plants including climbers, ferns and orchids 9.64% and aquatic plants (4.58%) (Fig. 3).

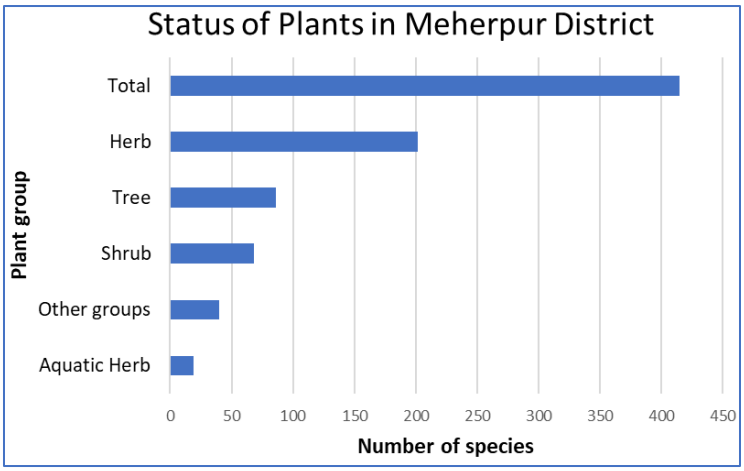


Fig. 3 Overall floral status in Meherpur district

Trees: A total of 86 tree species were recorded from different habitats of the selected study area. About 43% tree were rare, followed by 38% common, and 19% very common trees (Appendix 1, Fig. 4).

Herb: A total of 202 species of herbs were recorded, of which 96 (47%) species were common, 92 species (46%) were very common, and 14 species (7%) were rare in different habitats of the study area (Fig. 5, Appendix 2).

Shrub: A total of 68 shrubs were recorded, of which 51 % (n=35) were very common, 34% (n=23) were common, and 15% (n=10) were rare (Fig. 6, Appendix 3).

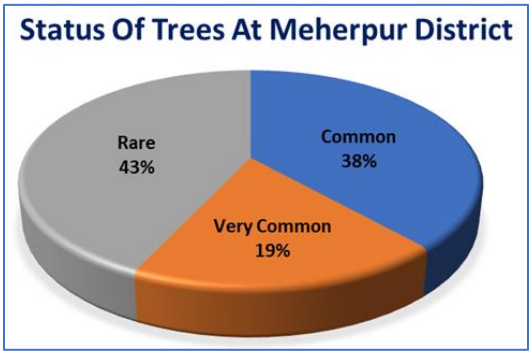


Fig 4. Local status of Trees in Meherpur district.

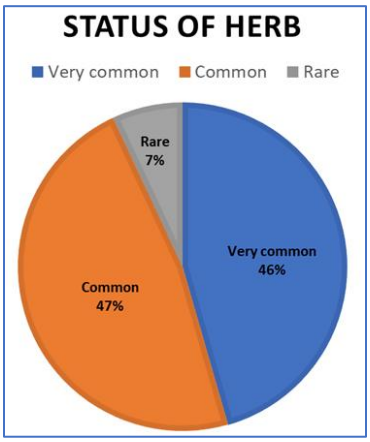


Fig. 5 Local status of herb species found in Meherpur District.

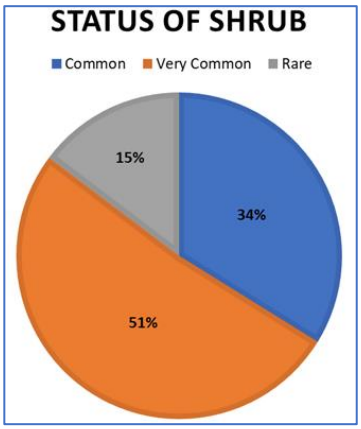


Fig. 6 Local status of shrub species found in Meherpur District.

Aquatic plants: 19 species of aquatic plants were recorded from the study sites, of which 14 species were common, four species were very common, and one species was rare to find.

Others plants: Fern, Epiphyte, Orchid, Climber, Vine: A total of 40 other floral species, including 23 climbers, 8 ferns, 5 palms, 2 orchids, and one species each of parasite and woody climber were found. One terrestrial ground orchid Zeuxine strateumatica was recorded from Mujibnagar complex area (Appendix-5).

Zeuxine strateumatica, a species of terrestrial orchid from Mujibnagar, Meherpur.

Mango orchard at Mujibnagar upazila of Meherpur.

3.1.1. Floral Diversity in Meherpur Sadar Upazila

Meherpur Sadar Upazila is also rich in floral diversity. A total of 68 species of trees, 202 species of herbs, 68 species of shrubs, 19 aquatic plants, and 39 other plant species, including liana, vine, and orchids, were recorded (Appendix 1 to Appendix 5). Among these recorded plants, 13% tree species were very common, 35% common and 52% rare while 60% herbs were common, 28% very common and 12% were rare in Meherpur Sadar Upazila (Fig. 7). About 45% shrubs were common, 37% very common and 18% rare while 68% aquatic plants were common, 21% very common and only 11% rare in Meherpur Sadar Upazila (Fig. 8).

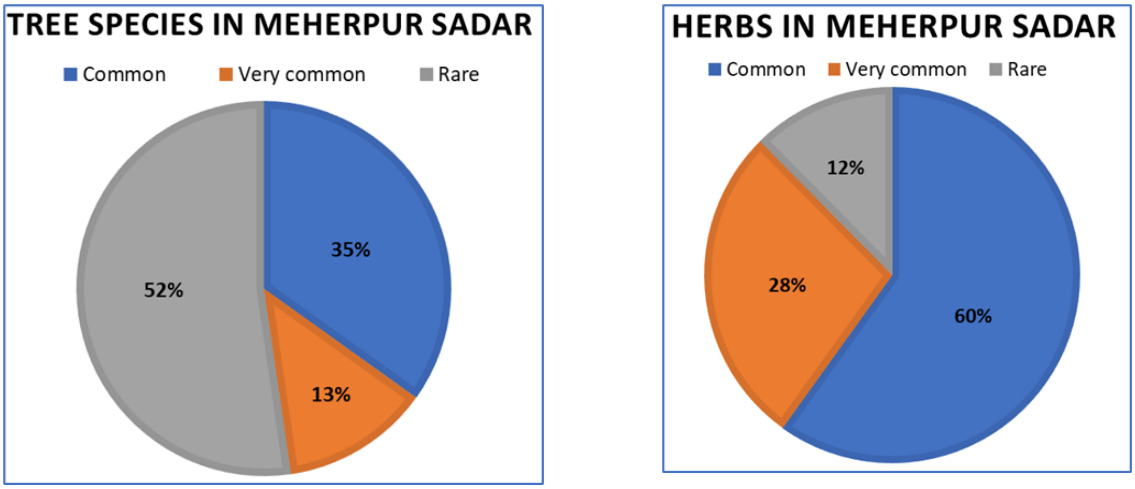


Fig. 7 Status of tree and herb species in Meherpur Sadar Upazila.

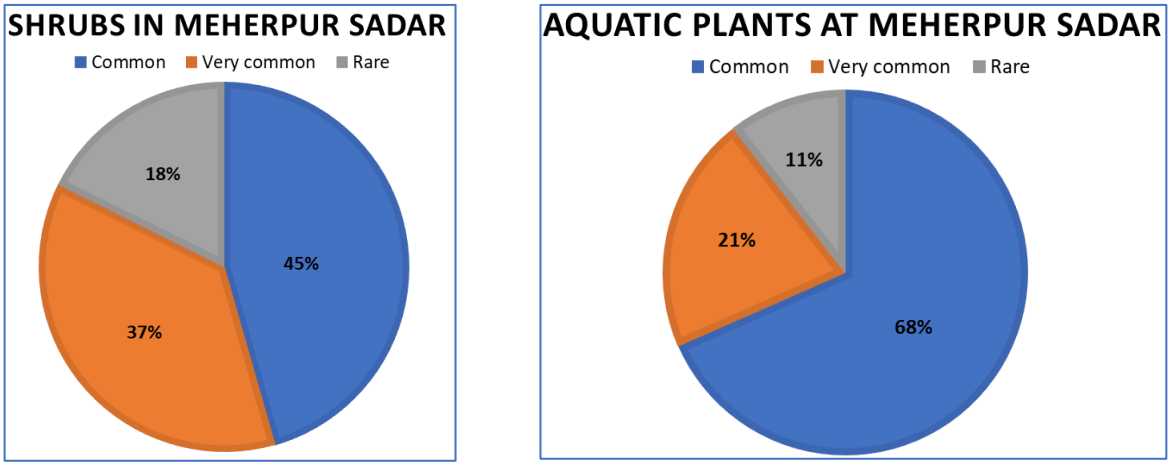


Fig. 8 Status of shrubs and aquatic plant species in Meherpur Sadar Upazila.

3.1.2. Floral Diversity in Gangni Upazila

Gangni Upazila supports similar floral diversity as Meherpur Sadar Upazila. A total of 68 species of trees, 202 species of herbs, 68 species of shrubs, 19 aquatic plants, and 39 other plant species, including liana, vine, and orchids, were recorded (Appendix 1 to Appendix 5). Among these recorded plants, 40% tree species were common, 15% very common and 45% rare while 58% herbs were common, 29% very common and 13% were rare in Gangni Upazila (Fig. 9). About 44% shrubs were common, 38% very common and 18% rare while 79% aquatic plants were common, 10% very common and about 11% rare in Gangni Upazila (Fig. 10).

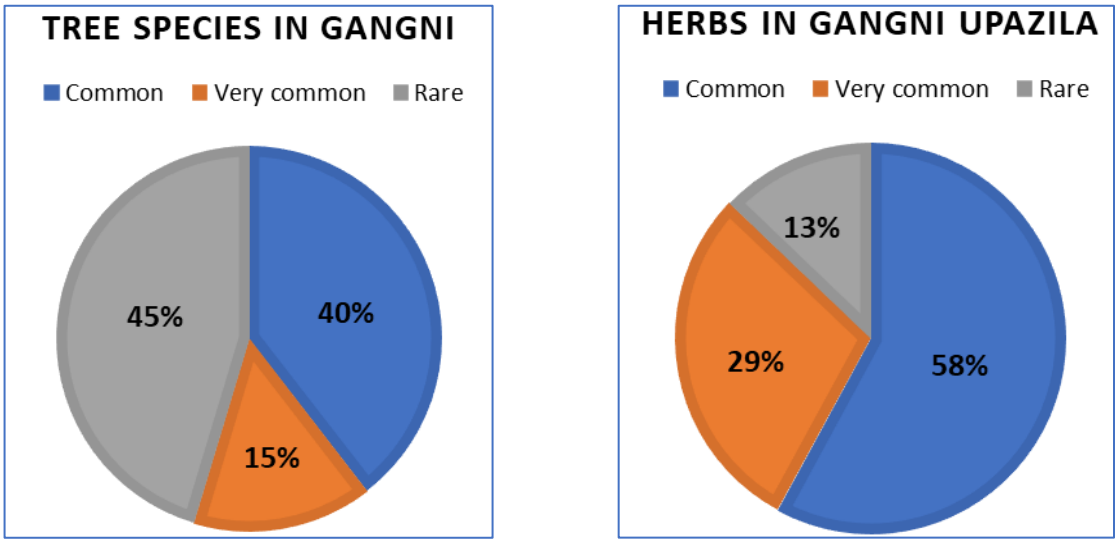


Fig. 9 Status of tree and herb species in Gangni Upazila.

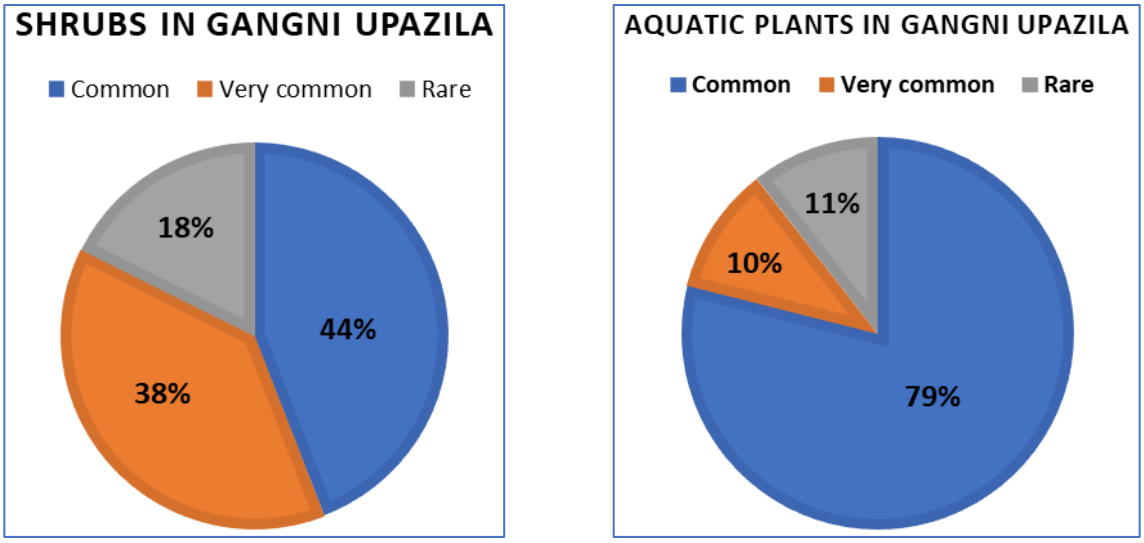


Fig. 10 Status of shrubs and aquatic plant species in Gangni Upazila.

3.1.3. Floral Diversity in Mujibnagar Upazila

Mujibnagar Upazila is enriched with floral diversity. A total of 68 species of trees, 202 species of herbs, 68 species of shrubs, 19 aquatic plants, and 40 other plant species, including liana, vine, and orchids, were recorded (Appendix 1 to Appendix 5). Among these recorded plants, 35% tree species were common, 14% very common and 51% rare while 59% herbs were common, 28% very common and 13% were rare in Mujibnagar Upazila (Fig. 11). About 40% shrubs were very common, 40% common and 20% rare while 63% aquatic plants were common, 26% very common and about 11% rare in Mujibnagar Upazila (Fig. 12).

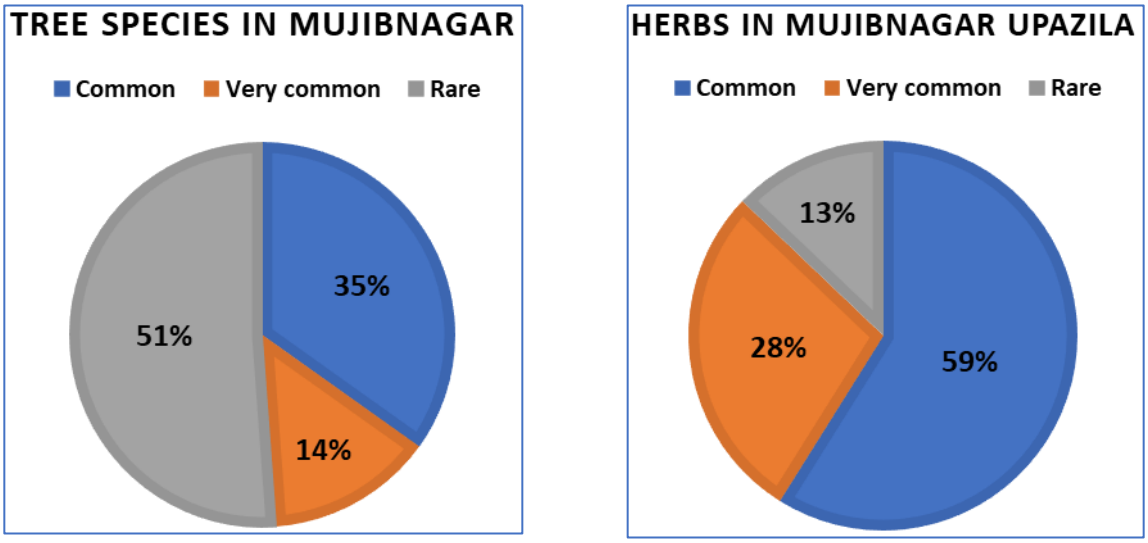


Fig. 11 Status of tree and herb species in Mujibnagar Upazila.

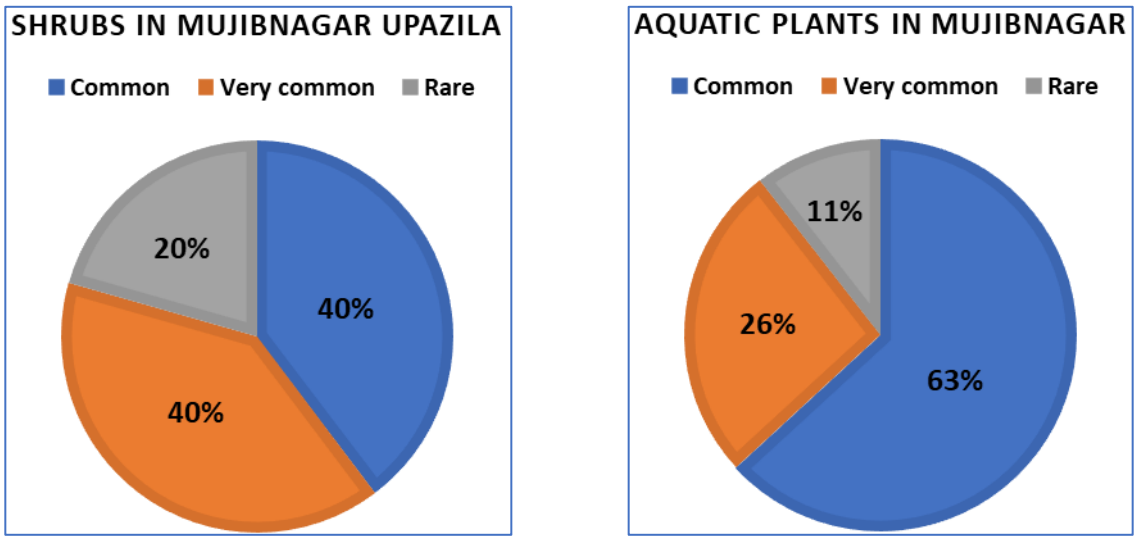


Fig. 12 Status of shrubs and aquatic plant species in Mujibnagar Upazila.

Pontederia hastata L. =

Xanthium strumarium

Solanum nigrum L.

Croton bonplandianus Baill.

Calotropis procera (Ait.) R.Br. in Ait.f.

Cleome viscosa L.

Lippia alba (Mill.) N.E.Br.

*Coccinia grandis (*L.) Voigt

Jatropha gossypiifolia

Clerodendrum viscosum

Zea mays

Nymphaea nouchali

Cuscuta reflexa

Acmella paniculata

3.2. Faunal Diversity of Meherpur District

3.2.1. Faunal Diversity of Meherpur Sadar Upazila

3.2.1.1. Fish Diversity in Meherpur Sadar Upazila

A total of 68 fish and 2 prawn species under 14 orders and 24 families were found to be available in the markets of Meherpur district (Appendix 6). All the fish species were found in the markets of three upazilas of Meherpur but their relative abundance was varied. Among these 68 species, 56 species were recorded from the fish markets, fish landing stations and from the field sites and another 12 species of fish were recorded from the questionnaire survey with the fishermen and secondary sources (Tikadar et al. 2021) (Appendix 6). Cypriniformes order contributed highest (29.5%, 20 species) in which Cyprinidae family along contributed 28% (20 species) out of 24 families (Fig. 13).

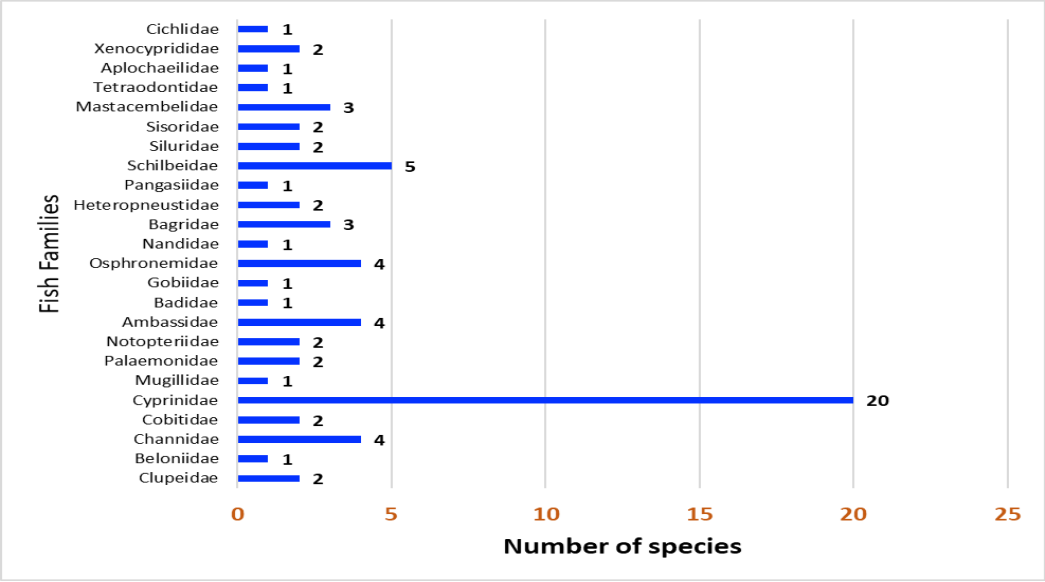
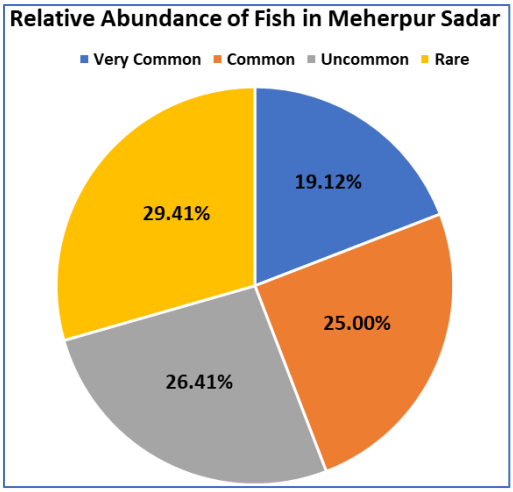


Fig.13 Number of fishes in different fish families recorded from Meherpur district.



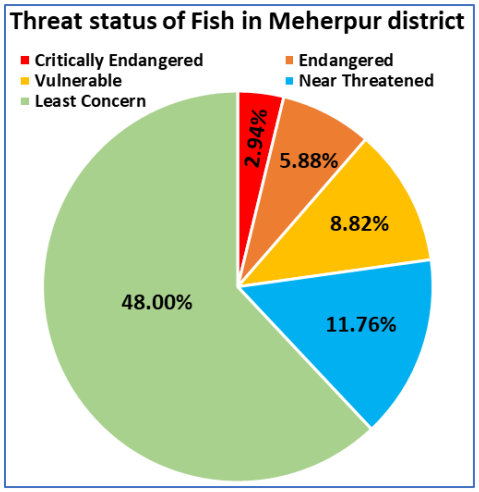


Fig. 14. Relative abundance of fish in Meherpur Sadar Upazila.

Fig. 15 Conservation status of fishes found in Meherpur district.

About 44% (n=40) of the recorded fishes were commonly found in all study areas. The rest were very common (35%) and rare (21%) (Fig. 14). Though, Meherpur district is a drought prone area and most of the ponds and shallow waterbodies dry up during winter months, but the rivers and large sized waterbodies (beels) hold water throughout the year and many native fish species are being surviving here.

The waterbodies of Meherpur district supports a good number of threatened species of fishes listed in Table 8. A total of 12 species of threatened fishes were recorded from this river of which two species were Critically Endangered (3%), four species (10%) were Endangered and six species Vulnerable (Fig. 15).

Mixed species of fishes

Mixed species of fishes

Mixed species of fishes

Piali (*Cabdio morar*)

Different species of fishes recorded from the markets of Meherpur district.

3.2.1.2. Amphibians of Meherpur Sadar Upazila

During the study period a total of 18 species of amphibians were recorded from three upazilas of Meherpur district. Among the amphibians recorded from Meherpur Sadar Upazila, two species was toad and rest of all were frogs. The family Dicroglossidae comprised of highest number of species (9 species), followed by Microhylidae (3 species), Ranidae and Rhacophoridae 2 species each (Fig. 16, Appendix 7). Among the recorded species, 38.89% was uncommon, 33.33% common and 27.78% very common (Fig. 17). None of the threatened species of amphibians were found in any upazilas of Meherpur district.

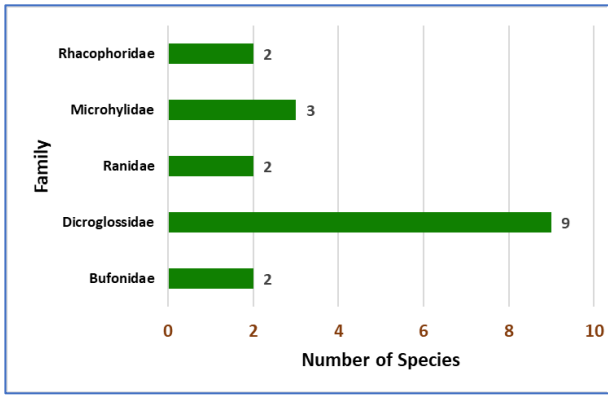


Fig. 16 Number of species in different families of amphibians in Meherpur district.

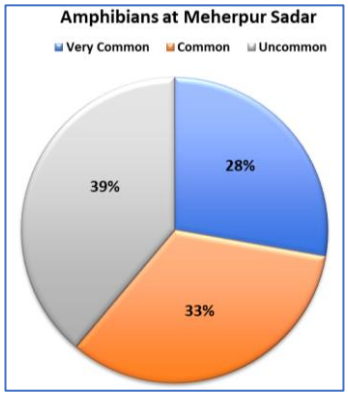


Fig. 17 Local status of amphibians in Meherpur Sadar Upazila.

Common Toad

Different species of amphibians recorded from the markets of

Marbled Toad

Common Tree Frog

Bengal Tree Frog

3.2.1.3. Reptiles of Meherpur Sadar Upazila

A total of 22 species of reptiles under eight families were recorded from Meherpur district (Appendix 8). Among the recorded reptiles in Meherpur Sadar Upazila, one species was agamid, three geckos, four skinks, two monitor lizards and ten species of snakes. Most of the snakes were found very rare in this region. Occurrence of only two species of turtles were recorded during the field visit. Lizards and snakes constituted the highest proportion of reptiles (45.45% each) followed by turtles (9.09%) (Fig. 18, 19).

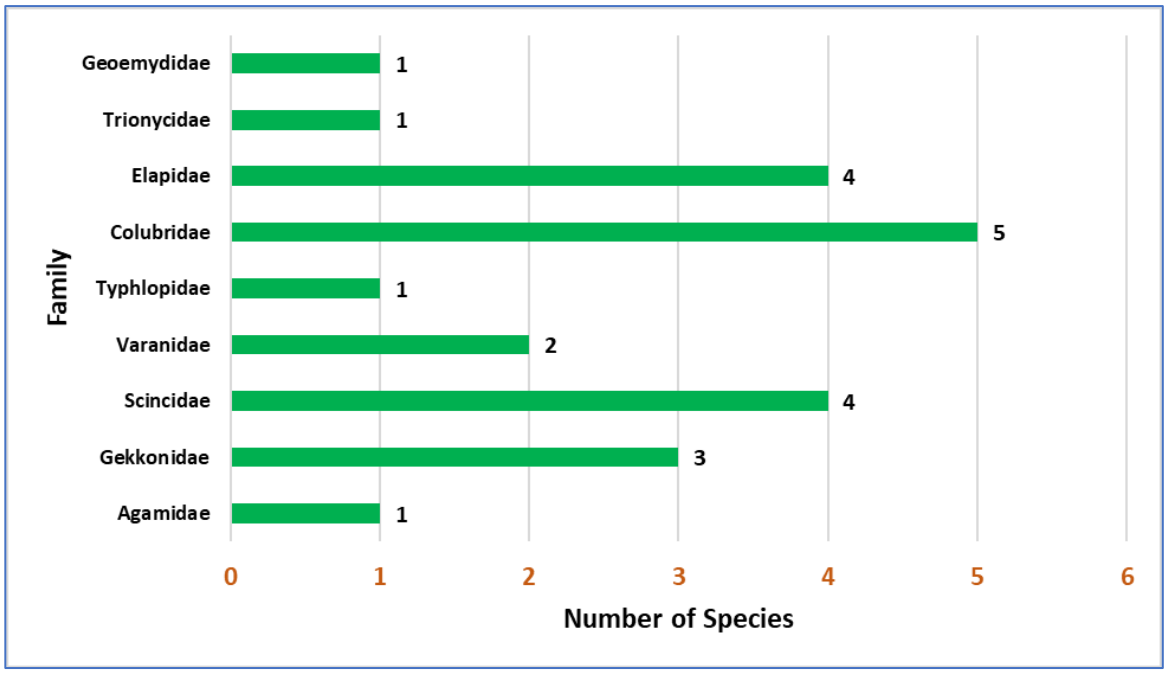


Fig. 18 Number of reptile species in different families recorded from Meherpur district.

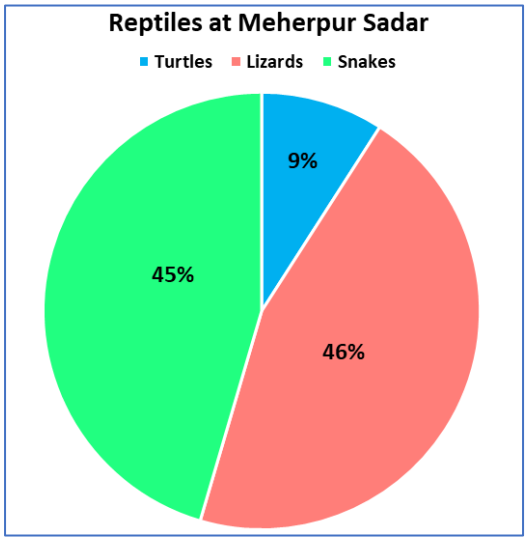


Fig. 19 Proportion of different groups of reptiles found in Meherpur Sadar Upazila.

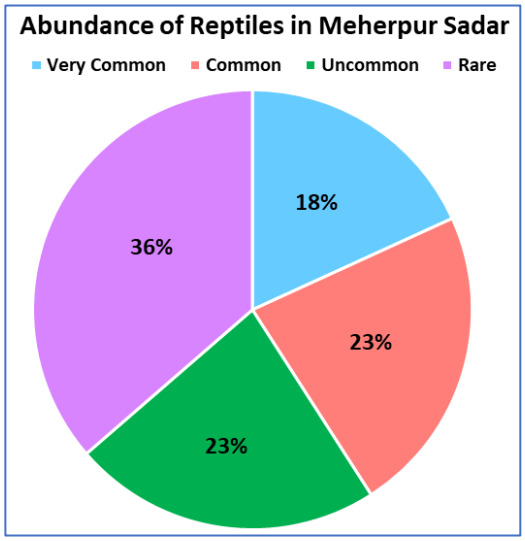


Fig. 20 Local abundance of reptiles in Meherpur Sadar Upazila.

Most of the recorded reptiles 36.36% were rare while 18.18% was very common, 22.73% each were common and uncommon (Fig. 20). Occurrence of turtles were only confirmed with the interview of fishermen.

Common Garden Lizard (Gangni)

Checkered Keelback (Meherpur Sadar)

Yellow-green House Gecko

3.2.1.4. Bird Diversity in Meherpur Sadar Upazila

A total of 199 species of birds were found in the study area as an outcome of the direct field survey and based on secondary literature (Published scientific articles, citizen science apps, and newspaper articles). The listed avifauna comprised a total of 58 families, of which Anatidae and Accipitridae had the highest number of species (n=14), followed by Ardeidae (n=10) and Scolopacidae (n=10).

Habitat categorization of birds: Bird habitats were broadly categorized into four habitats: agricultural land, grasslands and open habitats, homestead vegetation, and wetland. Of all habitats, wetland habitats support the highest species of birds (n=76), followed by homestead vegetations (n=49), agricultural land (n=45), and grasslands and open habitats (n=29) (Fig. 21).

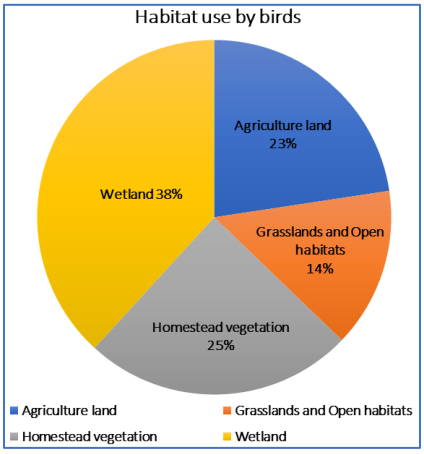


Fig. 21 Bird diversity in the study area based on their habitat preferences.

Threatened Status of Birds: About 94% (n=188) of birds fell under the least concern species category, seven species were near threatened, two species were vulnerable (Black headed ibis and Imperial eagle), and Data Deficient (Indochinese Roller, Common quail). Fig 22 shows the national threatened species of birds in terms of the IUCN National Assessment.

In the case of the global scenario, one globally Endangered bird species (Brown Fish-Owl), three vulnerable species (Common Pochard, River Tern, Imperial Eagle), 4 Near Threatened, and 191 least concern birds were categorized from the study area (Fig 23).

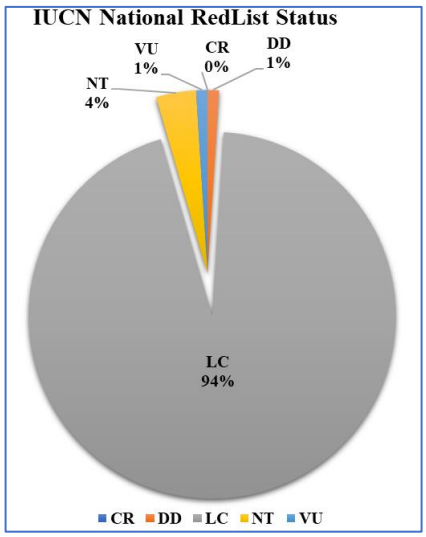


Fig 22. Threatened status of Birds from the study area based on the IUCN National assessment

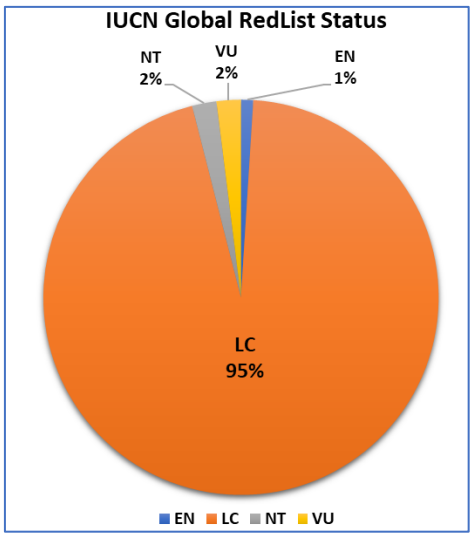


Fig 23. Threatened status of Birds from the study area based on IUCN Global assessment.

A total of 196 species of birds were recorded from Meherpur Sadar Upazila, of which 55% (n=108) were very common, 23% (n=45) were common, 18% (n=36) were rare, and 7 species of birds were rare in occurrence (Fig 24).

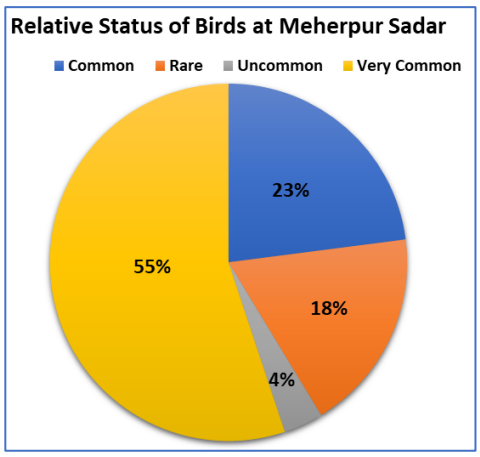


Fig 24. Relative status of birds at Meherpur Sadar Upazila

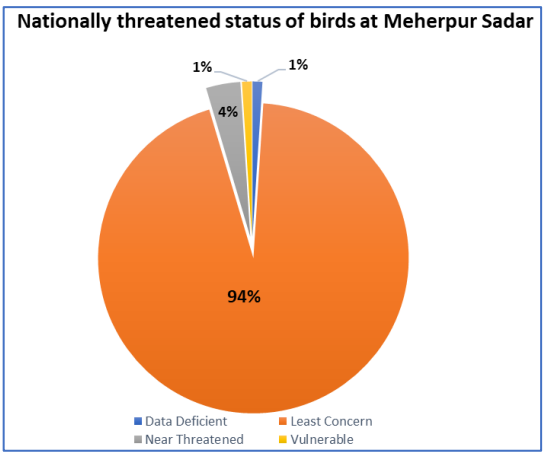
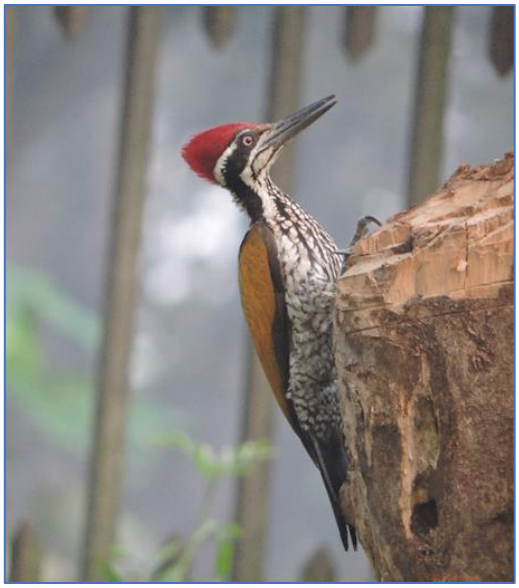


Fig. 25. Nationally threatened status of birds at Meherpur Sadar Upazila

According to the IUCN national Redlist status, 94% (n=185) of birds are of least concern in Meherpur Sadar Upazila, 4% (n=7) are Near Threatened, and two birds each are vulnerable and data deficient (Fig. 25).



Grater flame back

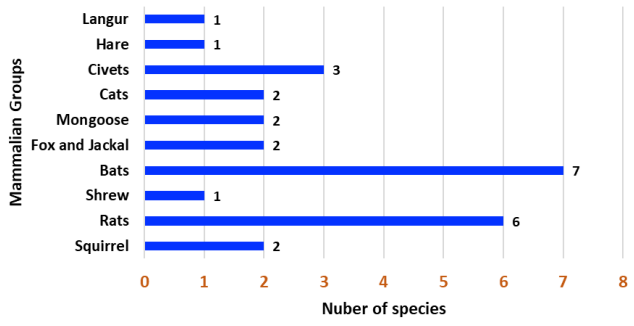
Black winged kite

Black crowned night heron

Gray-headed Lapwing in the paddy field

3.2.1.5. Mammals in Meherpur Sadar Upazila

A total of 27 species of mammals under 11 families were recorded from Meherpur district (Appendix 11). Bats constituted the highest number of species (7 species) followed by rats (6 species) (Fig. 26). Among the recorded mammalian species in Meherpur sadar upazila, 29.63% was very common, 22.22% was common, 14.81% uncommon and 33.33% rare (Fig. 27). Mammalian family Muridae constituted the highest number of species (6 species) followed by Vespertilionidae (5 species) and Viverridae (3 species).



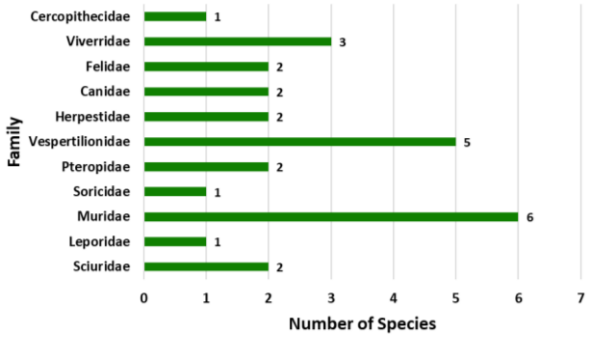


Fig. 26 Number of species in different groups of mammals recorded from Meherpur district.

Fig. 27 Number of mammal species in different families recorded from Meherpur district.

Rufous-tailed Hare (Meherpur Sadar)

Five-striped Palm Squirrel (Gangni)

Northern Grey Langur (Mujibnagar)

Greater False Vampire Bat (Meherpur Sadar)

Northern Grey Langur (Semnopithecus entellus) was found to forage in three upazilas of Meherpur district.

3.2.2. Faunal Diversity of Gangni Upazila

3.2.2.1. Fish Diversity in Gangni Upazila

A total of 68 species of fish were recorded from Gangni Upazila (Appendix 6). Cultured carps and Cat fishes were the dominant types of species. Most of the fish species in Gangni were rare (36.76%) and uncommon (20.59%) while 23.53% common and 19.12% very common (Fig. 28).

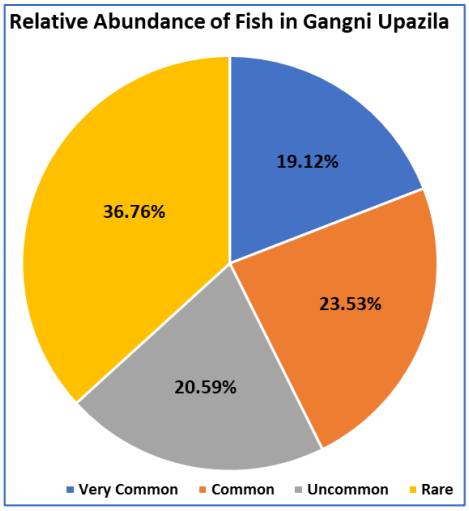


Fig. 28 Local status of fish in Gangni upazila.

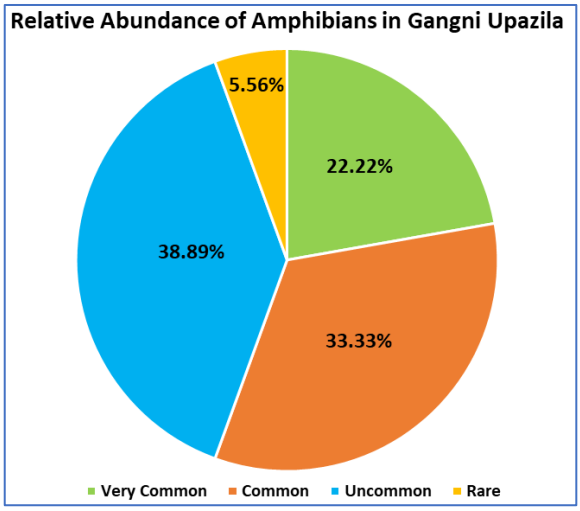


Fig. 29 Local status of amphibians in Gangni upazila.

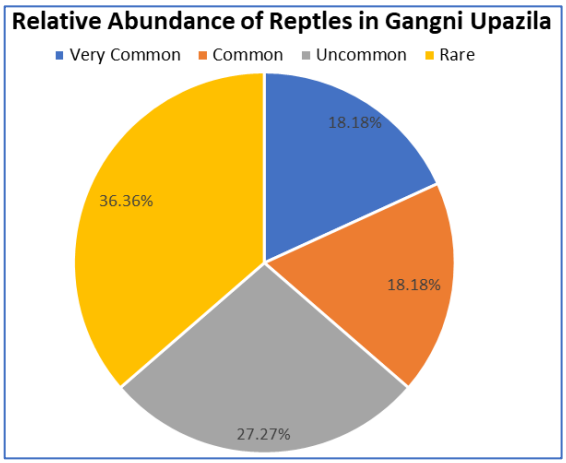


Fig. 30 Local status of Reptiles in Gangni upazila.

3.2.2.2. Amphibian Diversity in Gangni Upazila

Though Gangni upazila is comparatively drier than other two upazilas of Meherpur district, but some of the wetlands and agricultural fields serve as the breeding habitats for many species of frogs. During the survey period a total of 18 species of frogs and toads were recorded from this upazila (Appendix 7). Among these recorded amphibians 22.22% were very common, 33.33% common, 38.89% were uncommon and 5.56% were rare in the habitats of Gangni upazila (Fig. 29).

3.2.2.3. Reptiles Diversity in Gangni Upazila

All the 22 species of reptiles were also recorded from Gangni Upazila. Most of the reptiles of Gangni upazila was rare (36.36%) while 27.27% was uncommon, 18.18% was very common and common each. (Fig. 30).

3.2.2.4. Status of Birds in Gangni Upazila

A total of 190 species of birds were found in the different habitats of Gangni Upazila. Among all birds found 50% (n=96) were very common, 25% (n=47) were common, and 22% (n=42) were rare in occurrence (Fig.31).

In terms of national threat status, 96% (n=183) of birds are least concerned, 3% (n=5) of birds are near threatened, and one species each is vulnerable and data deficient (Fig. 32).

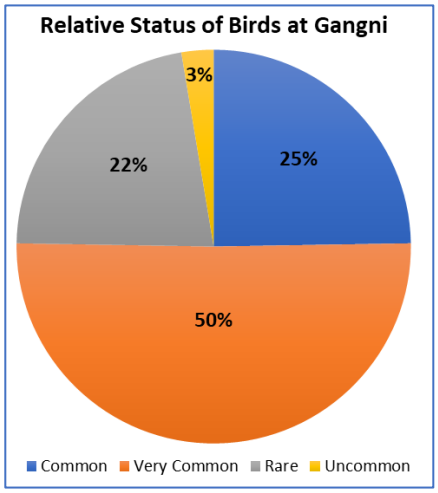


Fig 31. Relative status of birds found in Gangni upazila under Meherpur district.

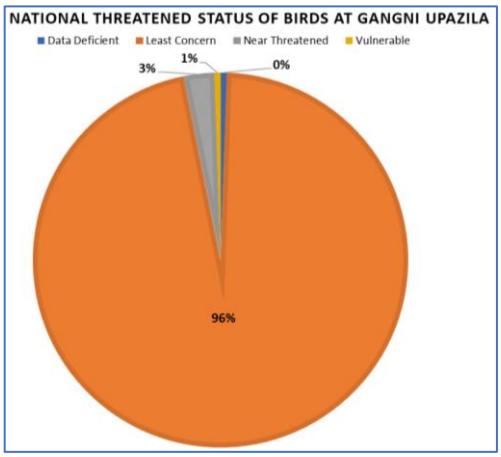


Fig.32. National threat status of birds at Gangni Upazila

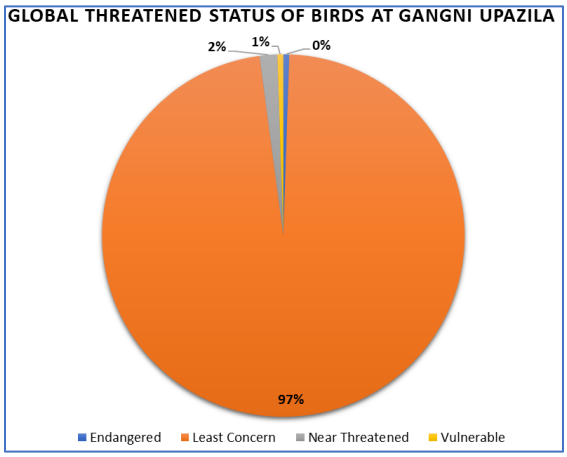


Fig.33. Global threat status of birds at Gangni Upazila

In global scenario, 97% (n=185) birds are Least concern, 2% (n=3) birds are near threatened and one species each of birds are in Endangered and vulnerable (Fig.33).

3.2.2.5. Mammalian Diversity in Gangni Upazila

All the 27 species of mammals were also found in Gangni upazila. About 33.33% mammals in this upazila was rare, 22.22% uncommon, 18.52% common and 29.63% very (Fig. 34). Common Langur (*Semnopithecus entellus*) was frequently found to visit Gangni upazila.

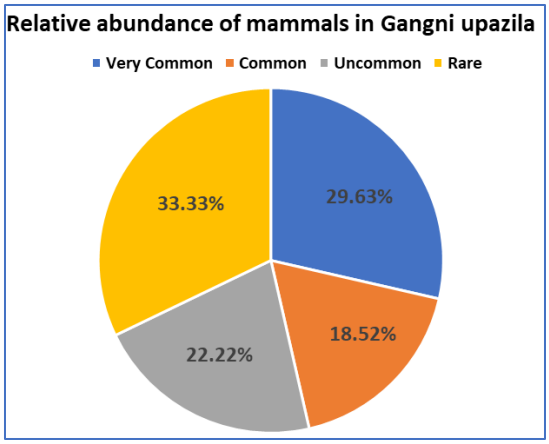


Fig. 34 Local status of mammals in Gangni upazila.

3.2.3. Faunal Diversity of Mujibnagar Upazila

3.2.3.1. Fish Diversity in Mujibnagar Upazila

A total of 68 species of fish were found to be available in Mujibnagar Upazila (Appendix 6). Cultured Carps, Tilapia and Catfishes were dominant fish in the markets of Mujibnagar. About 29.41% of the recorded fishes were very rare and 23.53% uncommon, 29.41% common and 17.65% very common in Mujibnagar Upazila (Fig. 35).

3.2.3.2. Amphibian Diversity in Mujibnagar Upazila

Mujibnagar upazila also supports the same number of amphibian species (18 species) (Appendix 7). Among these recorded amphibians 50.00% were uncommon, 22.22% were very common and common each, 5.56% were rare in Mujibnagar upazila (Fig. 36).

3.2.3.3. Reptilian Diversity in Mujibnagar Upazila

Same number of reptile species were also found in Mujibnagar upazila (22 species). Most of the reptiles of Mujibnagar upazila was also rare (40.91%) while 22.73% was uncommon, 13.64% was common and 22.73% very common. (Fig. 37).

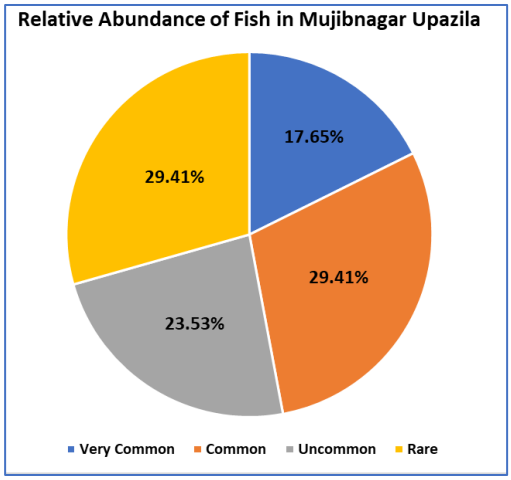


Fig. 35 Local status of fish in Mujibnagar upazila.

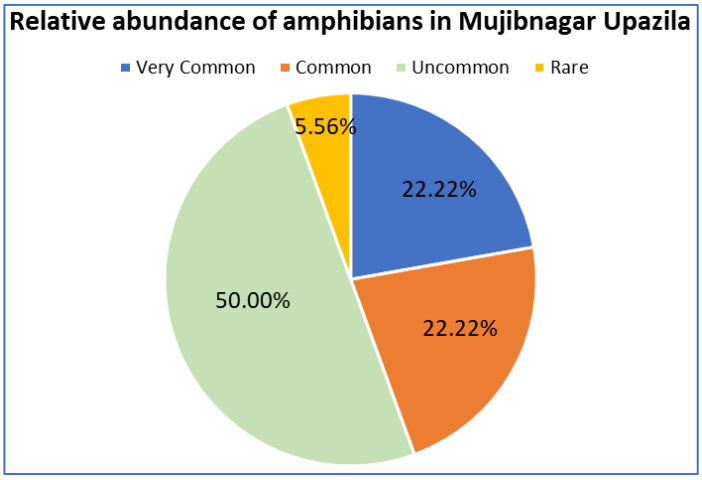


Fig. 36 Local status of amphibians in Mujibnagar upazila.

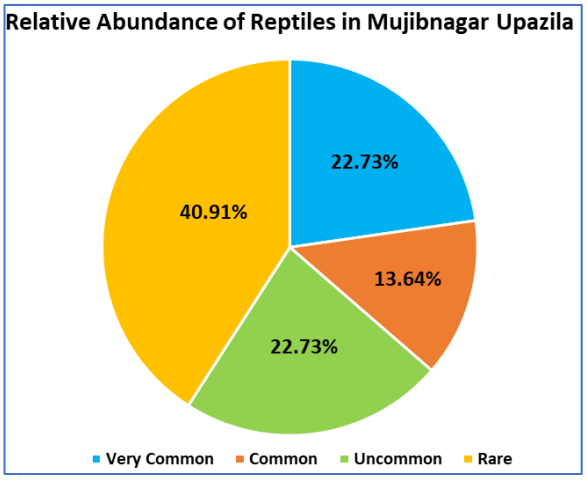


Fig. 37 Local status of reptiles in Mujibnagar upazila.

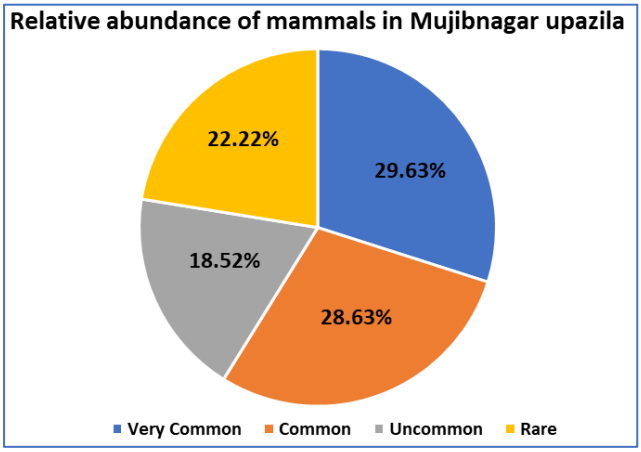


Fig. 39 Local status of mammals in Mujibnagar upazila.

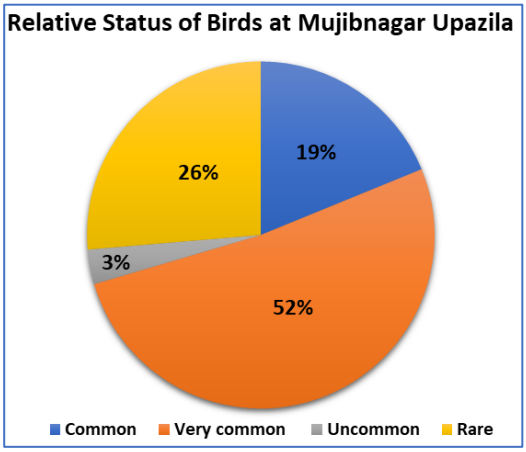


Fig 38. Relative status of birds found in Mujibnagari Upazila under Meherpur District.

3.2.3.4. Bird Diversity in Mujibnagar Upazila

A total of 186 species of birds were recorded from Mujibnagar Upazila, of which 52% (n=96) were very common, 26% (n=49) were rare, and 19% (n=35) were common in occurrence (Fig. 38).

3.2.3.5. Mammalian Diversity in Mujibnagar Upazila

Mujibnagar upazila also supports 27 species of mammals. About 22.22% mammals in this upazila was rare, 18.52% uncommon, 28.63% common and 29.63% very common (Fig. 39). A group of Northern Grey Langur (*Semnopithecus entellus*) with 32 individuals was recorded from Mujibnagar upazila. The langur group is habituated with the local people and tourists. Tourists are often found to provide food to the langurs.

Chapter-4: Threatened Wild Animals

Wildlife habitats of Meherpur district supports three species of threatened wild animals. Among these threatened animals, four species are mammals, one species of reptiles and 13 species of fish were recorded (Table 3). Fishing Cat is an Endangered species both nationally and globally. This species is also dependent on the water bodies. Also need bushy areas for the hiding during day time. As the homestead of Meherpur district supports dense vegetation, Fishing Cat gets suitable habitats. Northern Grey Langur is an Endangered species in Bangladesh. A viable population of 32 individuals was found at Mujibnagar of Meherpur district and another two groups of langurs frequently roam in Gangni and Meherpur Sadar upazila. Langurs of this area are mostly dependent on the crop fields and orchards but also get food from the tourists. Rufous-tailed hare is another Endangered species found in Meherpur district. The agricultural fields, orchards, graveyards are suitable habitats for this species. Bengal Fox, a Vulnerable species also found in this area. Homestead vegetations and agricultural fields are important habitats for nocturnal species of mammals as those get shelter during day time in these habitats. Expansion of tobacco cultivation has been increasing day by day, squeezing paddy fields and other crops. Tobaco cultivation is also harmful of the biodiversity of this area. Yellow Monitor Lizard is a globally Endangered species though it is a Near Threatened species in Bangladesh. It is a wetland and marshy area dependent species. The wetlands habitats of the country have been shrinking day by day and Meherpur is not an exception. Yellow Monitor is facing different kinds of threats to its survival. Thirteen species of threatened fish are found in the wetlands of Meherpur district.

The thirteen species of threatened freshwater fishes are mostly found in the rivers and large wetlands of Meherpur district. Some of the fishes are only found during the rainy season when the rivers become flooded. The abundance of these fishes in the markets and fish landing stations was very low. Most of the rivers and open waterbodies of the Meherpur district have been dying due to siltation and other anthropogenic activities. Due to the lack of enough water flow, water hyacinth and other aquatic plants have been covering the wetlands and ultimately accelerating the dying process of wetlands. Another threat to the wetlands is the conversion of natural waterbodies for fish cultivation. Local influential people make dam on open water bodies and prepare it for fish cultivation. Thus, natural waterbody loses its characteristics and interrupts the whole ecosystem. The fish farmers do not allow any waterbirds especially migratory waterbirds in their fish farms. Local administration should take necessary steps for the protection of natural waterbodies to conserve the threatened fishes of Meherpur district.

Table 3. List of threatened species found in Meherpur district

SL	Name	Scientific Name	Seasonal occurrence	Relative Status			IUCN Threat Status	
				Meherpur Sadar	Gangni	Mujibnagar	National	Global
Mammals								
1	Fishing Cat	*Prionailurus viverrinus*	Resident	R	R	R	EN	EN
2	Northern Grey Langur	*Semnopithecus entellus*	Resident	C	C	C	EN	LC
3	Rufous-tailed hare	*Lepus nigricollis*	Resident	R	R	R	EN	LC
4	Bengal Fox	*Vulpes bengalensis*	Resident	R	R	R	VU	LC
Reptiles								
5	Yellow Monitor	*Varanus flavescens*	Resident	R	R	R	NT	EN
Fish								
6	Giant snakehead	*Channa marulius*	Resident	R	R	R	EN	LC
7	Necktie loach	*Botia dario*		UC	UC	UC	EN	LC
8	Indian major carp	*Cirrhinus cirrhosus*		R	R	R	NT	VU
9	Fine scale razorbelly minnow	*Chela cachius*		C	C	C	VU	LC
10	Ticto barb	*Pethia ticto*		C	C	C	VU	LC
11	Clown knife fish	*Chitala chitala*		R	R	R	EN	NT
12	Bronze featherback	*Notopterus notopterus*		UC	UC	UC	VU	C
13	Long whiskered catfish	*Sperata aor*		R	R	R	NU	LC
14	Yellow tail catfish	*Pangasius pangasius*		R	R	R	EN	LC
15	Freshwater shark	*Wallago attu*		VC	VC	VC	VU	NT
16	Pabo catfish	*Ompok pabo*		UC	R	UC	CR	NT
17	Dwarf goonch	*Bagarius bagarius*		R	R	R	CR	NT
18	Mud eel	*Monopterus cuchia*		VC	VC	VC	VU	VU

Source: Field Survey

Chapter-5: Important Areas for Flora-Fauna

5.1. Wetlands

There are some wetlands of biodiversity significance have been recorded from Meherpur district. A total of 31 beels were identified those hold water throughout the year and have sensitive ecosystem. These wetlands should be conserved (Table 4) (Fig. 40, 41, 42).

Table 4 List of wetlands of biodiversity significance

Sl	Beel name	Area name		Location	
1	Garagari beel	Buripota	Meherpur sadar	23°46'49.93"N	88°34'0.24"E
2	Horirumpur beel	Buripota	Meherpur sadar	23°46'53.27"N	88°35'6.49"E
3	Jolee beel	Buripota	Meherpur sadar	23°45'29.01"N	88°35'42.56"E
4	Boro jolee beel	Buripota	Meherpur sadar	23°45'7.37"N	88°36'1.79"E
5	Chand beel	Amjhupi	Meherpur sadar	23°44'40.80"N	88°39'56.47"E
6	Katapukur beel	Baradi	Meherpur sadar	23°44'3.29"N	88°45'22.49"E
7	Harder beel	Baradi	Meherpur sadar	23°44'17.96"N	88°46'15.85"E
8	Sholmari beel	Baradi	Meherpur sadar	23°42'22.48"N	88°46'23.82"E
9	Bejon beel/ Terghoria beel	Kutubpur	Meherpur sadar	23°49'59.76"N	88°36'35.16"E
10	Nunar beel	Gangni	Meherpur sadar	23°51'26.54"N	88°48'44.71"E
11	Dubokhola beel	Kutubpur	Meherpur sadar	23°48'52.94"N	88°36'37.88"E
12	Bitkamari beel	Kutubpur	Meherpur sadar	23°48'42.86"N	88°36'27.58"E
13	Kutubpur beel	Kutubpur	Meherpur sadar	23°51'33.46"N	88°38'23.52"E
14	Duntola beel	Kutubpur	Meherpur sadar	23°50'18.12"N	88°35'40.25"E
15	Kakrajoler beel	Kutubpur	Meherpur sadar	23°50'51.01"N	88°37'18.00"E
16	Sholmari beel	Kutubpur	Meherpur sadar	23°51'50.14"N	88°35'20.63"E
17	Isamoti beel	Kathuli	Gangni	23°53'58.97"N	88°43'21.06"E
18	Dholar beel	Kathuli	Gangni	23°53'27.35"N	88°42'24.69"E
19	Shaldah beel	Roypur	Gangni	23°47'51.87"N	88°48'48.59"E
20	Dhomash beel	Kajipur	Gangni	23°56'26.44"N	88°45'43.13"E
21	Moragang river	Motmura	Gangni	23°53'14.49"N	88°49'30.16"E
22	Nougara beel	Dariapur	Mujibnagar	23°43'4.14"N	88°34'22.83"E
23	Chucho khola beel	Dariapur	Mujibnagar	23°42'8.96"N	88°34'4.45"E
24	Poddo beel	Bagoan	Mujibnagar	23°37'29.71"N	88°37'36.78"E
25	Taranagar chulkani beel	Bagoan	Mujibnagar	23°37'40.81"N	88°37'51.06"E
26	Tuplar beel	Bagoan	Mujibnagar	23°38'8.32"N	88°38'13.44"E
27	Nagar beel			23°40'57.58"N	88°34'49.31"E
28	Horirampur beel	Bagoan	Mujibnagar	23°36'49.52"N	88°39'3.24"E
29	Shib nogor bot tola beel	Bagoan	Mujibnagar	23°37'22.60"N	88°39'27.32"E
30	Mirgangi beel		Chuadanga	23°39'52.44"N	88°44'8.21"E
31	Kajla beel/ dolka beel		Chuadanga	23°40'36.95"N	88°45'4.16"E

Moragang beel at Gangni Upazila, Meherpur

Moragang beel at Gangni Upazila, Meherpur

Shaldah beel at Gangni Upazila, Meherpur

Dhomash Beel at Kajibur, Gangni, Meherpur.

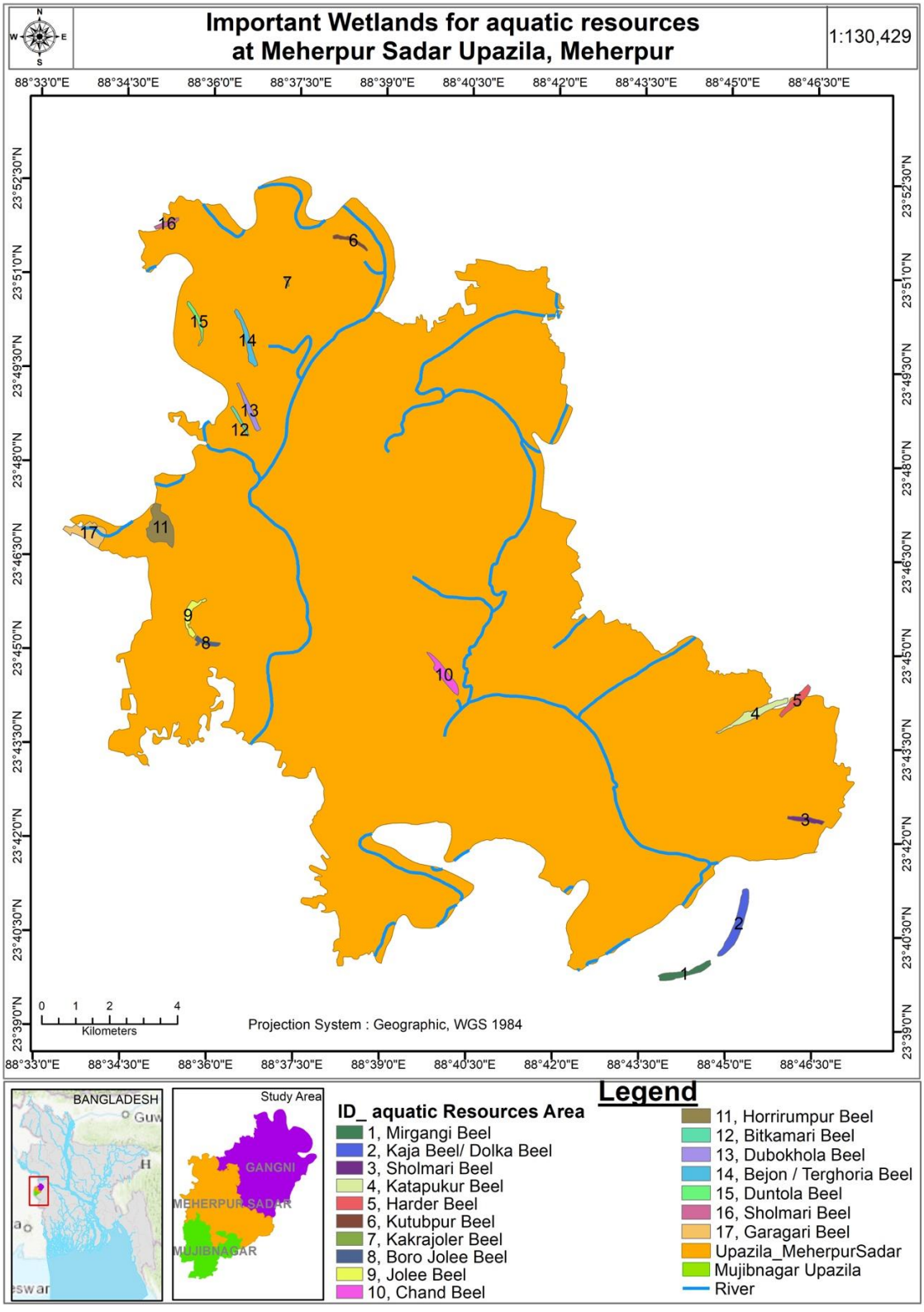


Fig. 40: Map of important wetlands and aquatic resources in Meherpur Sadar upazila.

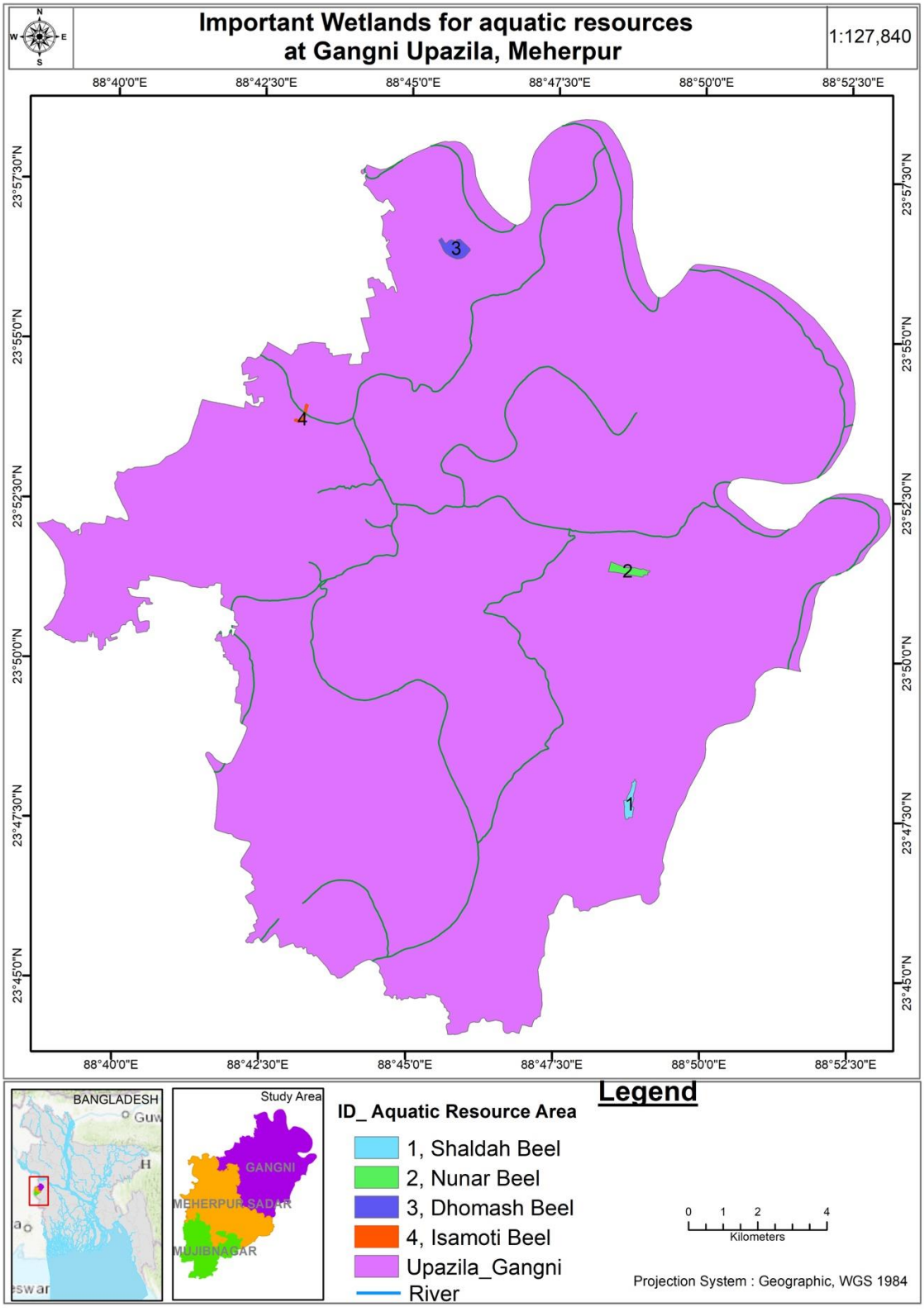


Fig. 41: Map of important wetlands and aquatic resources in Gangni upazila.

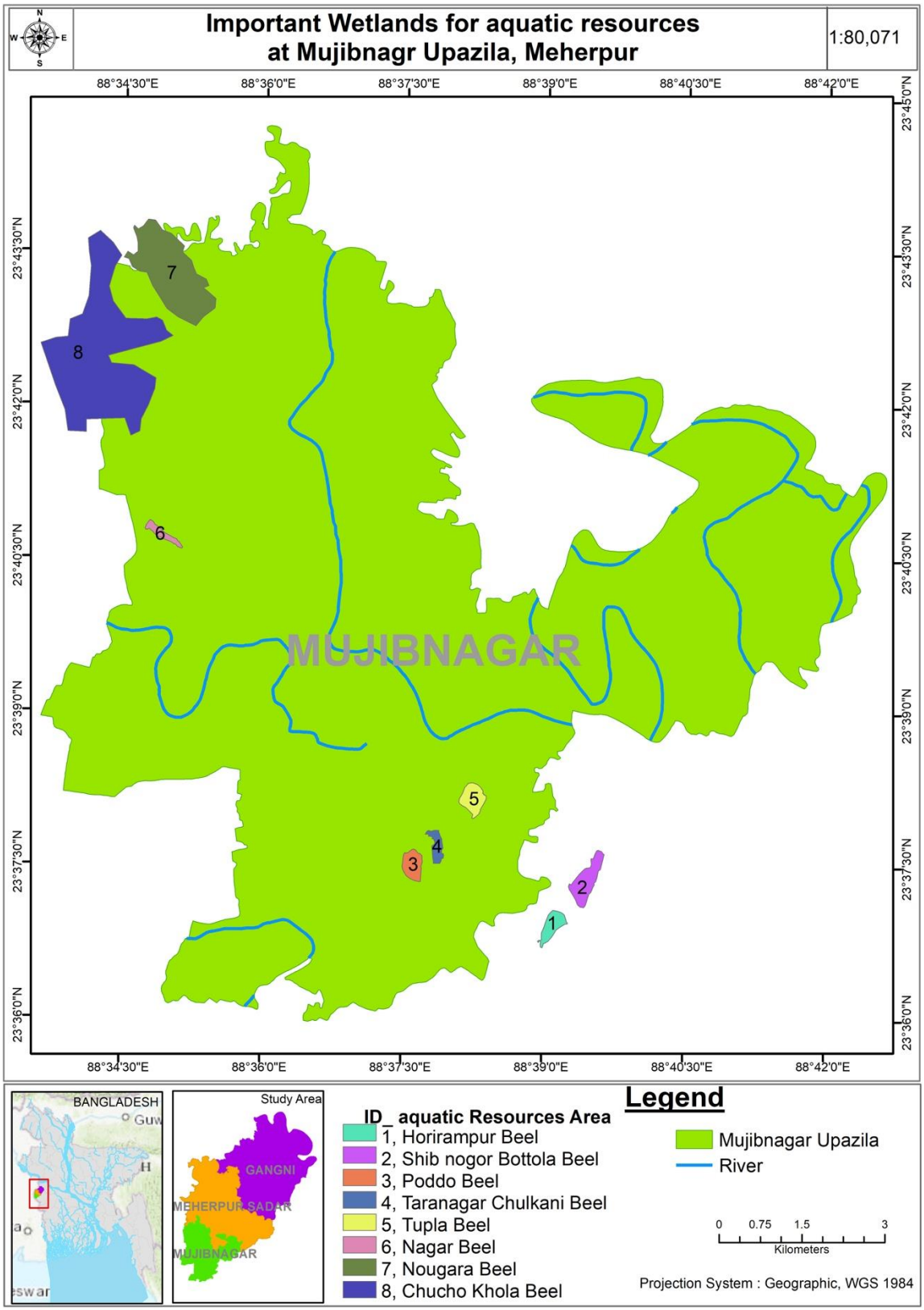


Fig. 42: Map of important wetlands and aquatic resources in Gangni upazila.

5.2. Bird Colony

Five permanent breeding colonies of birds were identified from Meherpur district of which three colonies were situated in Meherpur sadar upazila, one colony each from Gangni and Mujibnagar upazila (Fig. 43, Table 5).

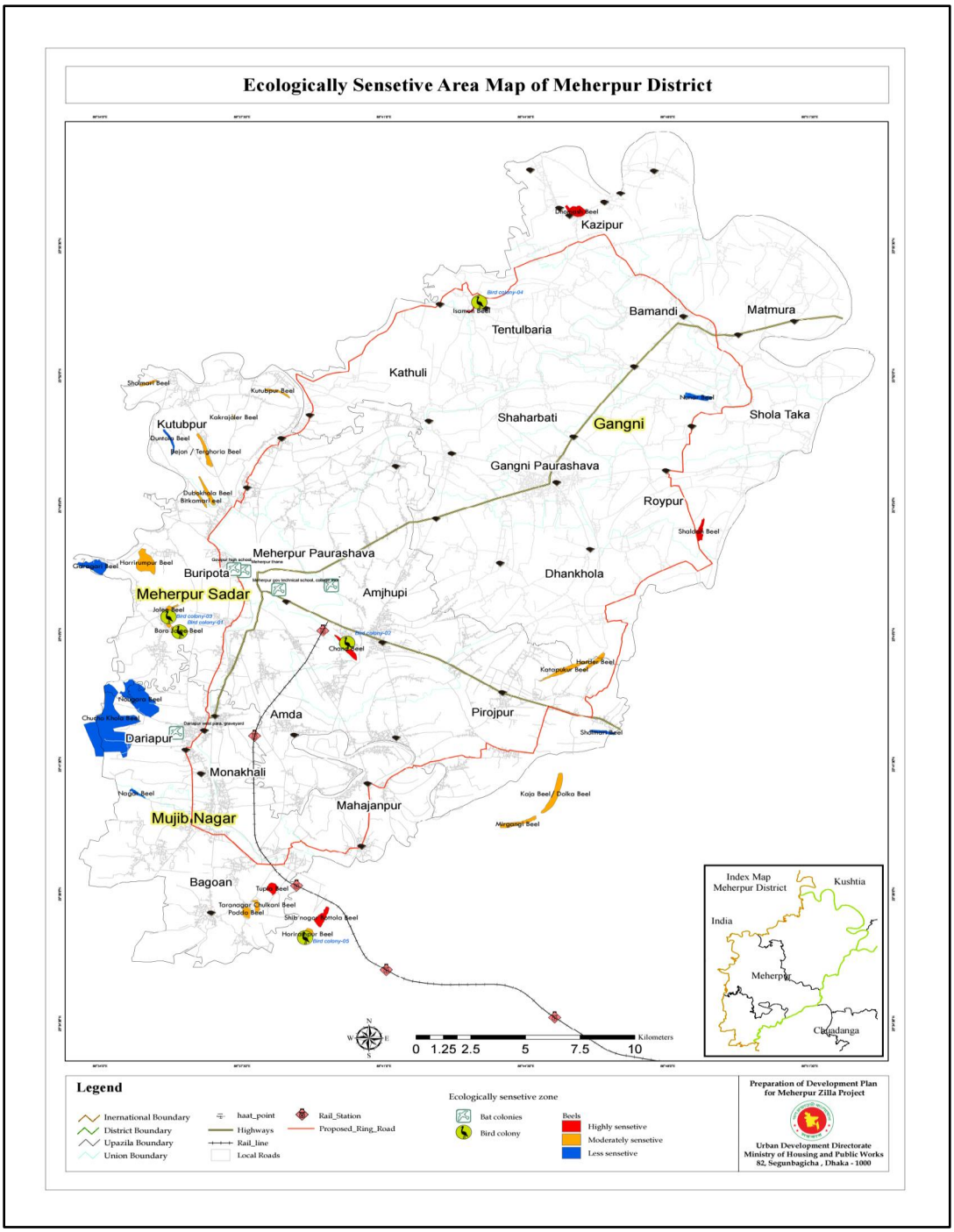


Fig. 43: Map of bird breeding colonies recorded from Meherpur district.

Table 5: Location of bird colonies recorded from Meherpur district

Sl	Bird colony	Species	Location		GPS	
			Place	Upazila	Lat	Long
1	Bird colony-01	Black crowned night heron, Gray heron, Little cormorant, Indian cormorant, Oriental darter	Boro-jolee, Buripota	Meherpur sadar	23.751254°	88.599338°
2	Bird colony-02	Black crowned night heron, Gray heron, Little cormorant, Indian cormorant, Oriental darter,	Chand beel ghat, amjhupi	Meherpur sadar	23.746266°	88.668158°
3	Bird colony-03	Little cormorant, Indian cormorant, Oriental darter, Ducks, Open bills	Buripota	Meherpur sadar	23.758060°	88.594708°
4	Bird colony-04	Indian cormorant, Oriental darter, Ducks, Open bills	Isamoti beel, Kathuli	Gangni	23.899714°	88.722517°
5	Bird colony-05	Little cormorant, Ducks, Open bills	Horirampur beel, Bagoan	Mujibnagar	23.613756°	88.650900°

5.3. Important Bat Colonies

Five roosting colonies of Flying Fox Bat (*Pteropus giganteus*) were recorded from Meherpur district of which four colonies situated in Meherpur sadar upazila and another colony was in Mujibnagar upazila (Fig. 44, Table 6).

Table 6: Location of bat colonies identified from Meherpur district

Sl	Bat colony	Individual	Location		GPS	
			Place	Upazila	Lat	Long
1	Bat colony-01	150+	Meherpur thana	Meherpur sadar	23.778737°	88.625740°
2	Bat colony-02	360+	Govipur high school	Meherpur sadar	23.779586°	88.621684°
3	Bat colony-03	285+	Dariapur west para, graveyard	Mujibnagar	23.705871°	88.597965°
4	Bat colony-04	80+	Meherpur gov technical school, college mor	Meherpur sadar	23.770405°	88.640089°
5	Bat colony-05	110+	-	Meherpur sadar	23.772133°	88.661750°

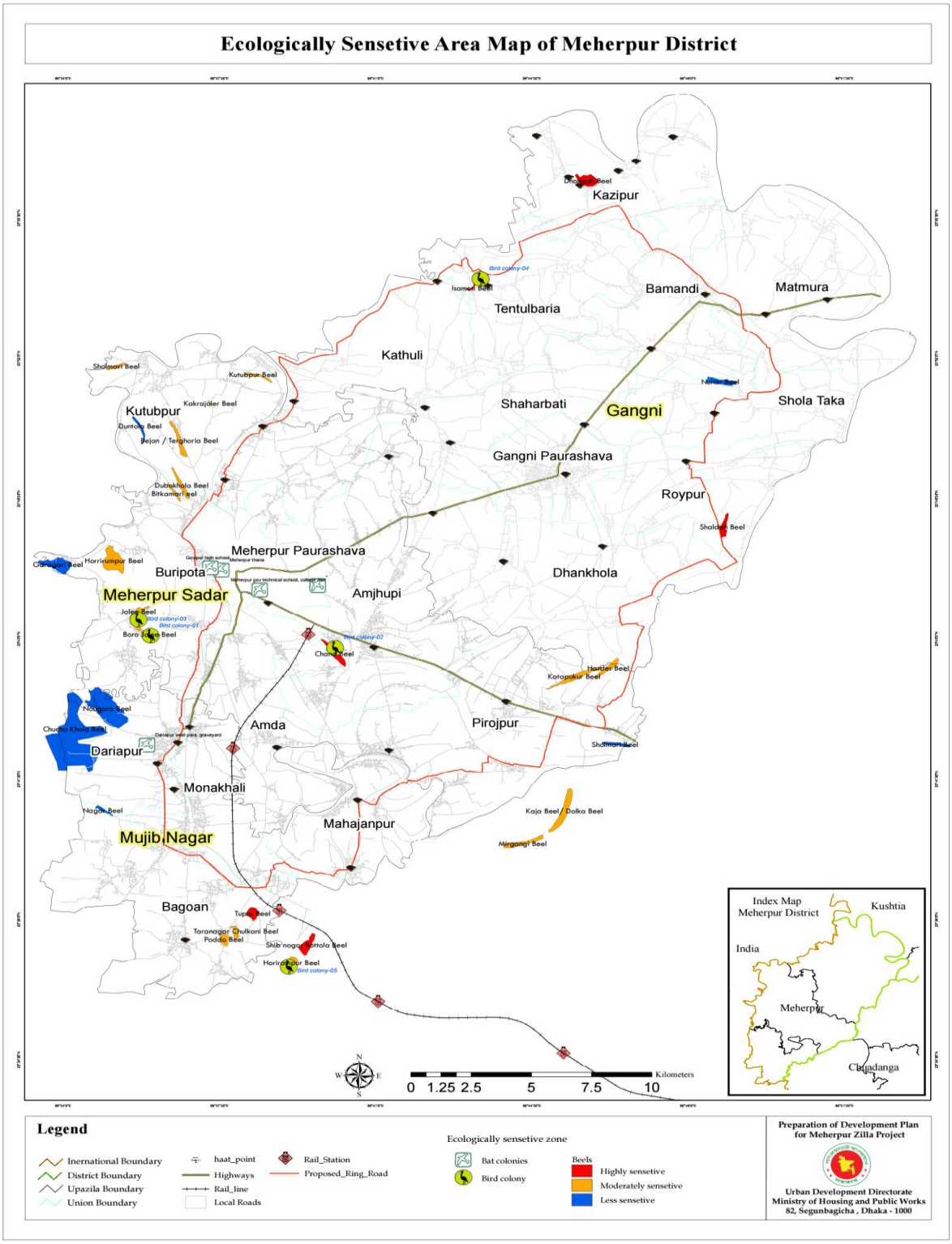


Fig. 44 Bat colonies recorded from Meherpur district.

Chapter-6: Perception of local people about the biodiversity

A total of 100 pre-designed questionnaire was surveyed among the local people of three upazilas of Meherpur district. About 64% people seasonally collect resources form the natural waterbodies. They mostly collect fish (52%) and vegetables (48%). Presence of no professional hunters, hunting birds and other wild animals were found but sometimes people catch migratory birds from the wetlands (beels). About 62% people of the study area do not go to the doctor for generalized sickness and buy medicine by their own from the medicine shop. Only 22% people consult doctor or health workers during sickness. About 9% people goes to the Kabiraj (traditional medicine practicians) and 7% people use traditional medicine (Fig.45). Local people mentioned that they usually see Jackal, Jungle Cat, Civets and Fishing Cat in their area and rarely see Rabbit. They also mentioned that Common Langur frequently visit their area. About 64% people mentioned that biodiversity of their area has been decreasing day by day while 16% has no idea about biodiversity (Fig. 46).

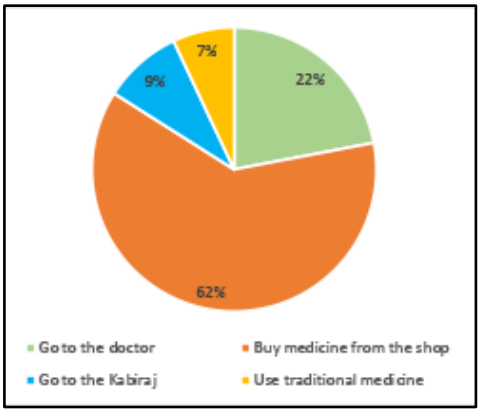


Fig. 45 Treatment status of the people in Meherpur district.

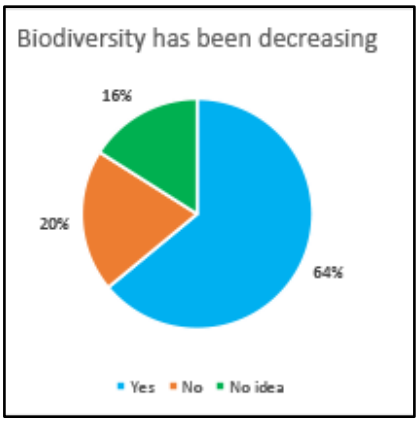


Fig. 46 Concern of local people about the biodiversity of Meherpur.

About 20% people believe that the proposed developmental activities may harm biodiversity of Meherpur while most of the people (54%) has no idea about this (Fig. 47). About 35% people suggested plantation for the conservation of biodiversity of Meherpur while another 35% people have no idea at this point (Fig. 48).

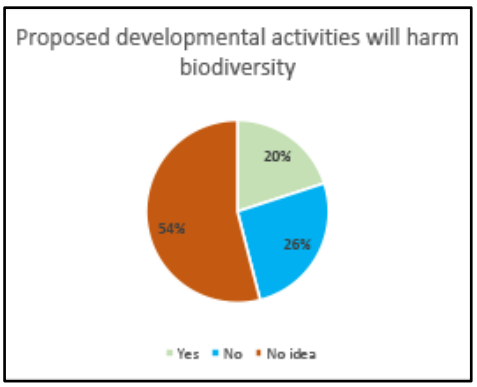


Fig. 47 Concern of local people about the proposed developmental activities in Meherpur.

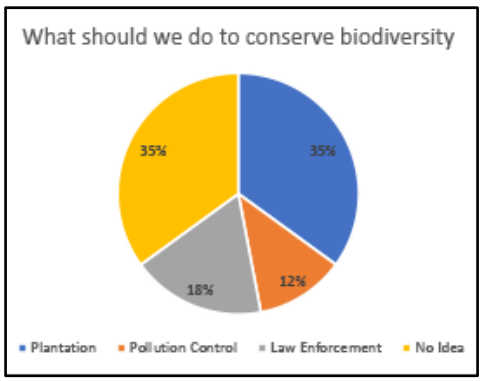


Fig. 48 Suggestions of local people about the biodiversity conservation in Meherpur.

Chapter-7: Legal Framework for Biodiversity Conservation

The policy and institutional framework in Bangladesh continue to expand laws and policies for biodiversity conservation. While Bangladesh has a strong legal and policy framework, the situation on the ground reflects a lack of capacity and coherent implementation by the government agencies (Table 7).

7.1. Government Ministries and Agencies

Ministry of Environment, Forest and Climate Change (MoEFCC)

The principal agency most involved in biodiversity conservation is the MoEFCC, with six different departments but only three of these are concerned directly with forests and biodiversity: Department of Environment (DoE), Bangladesh Forest Department (BFD), Bangladesh National Botanical Garden and Bangladesh National Herbarium (BNH). The Department of Environment (DoE) has been established with a mandate for enforcement of environmental protection laws, management strategies and policies developed by GoB. DoE is responsible for the mamagement and monitor of Ecologically Critical Areas (ECAs).

The Bangladesh Forest Department (BFD)is the primary government agency that deals with forests and forest management and monitoring. BFD manages Protected Areas (PAs), forests and most biodiversity activities in the field and operates through three management plan divisions located at the center of the three main forest types: hill forest, plains forest and mangrove forest. BFD's Wildlife Crime Control Unit (WCCU) was established in 2013 with the support of the World Bank, to combat wildlife trafficking and coordinate efforts with other agencies both national and international.

The Bangladesh National Herbarium conducts botanical surveys and identified, collects and preserves plant species in a facility within the Botanical Garden. Much of their work is conducted by students and academics, and some in collaboration with the National Botanical Garden and NGOs like IUCN. These

efforts to document existing flora and fauna have many gaps, and are critical to scientific management and conservation of forests and biodiversity in the country.

Ministry of Fisheries and Livestock (MoFL)

MoFL mainly works to secure the demand of animal protein by enhancing production of fish and livestock products and has two biodiversity related agencies, Department of Livestock (DoL) and the Department of Fisheries (DoF).

Although the Department of Livestock (DoL) is primarily concerned with managing livestock, it is also responsible for the operation of the Bangladesh National Zoo located in Mirpur, Dhaka.

The Department of Fisheries (DoF), under MoFL, is the primary agency for the management of fisheries and fish habitat, as well as the collection of revenue, enforcement of fisheries regulations and research and extension on fisheries and shrimp aquaculture. Although they collect data on the tonnage of fish catches for major species, they have no baseline or monitoring data on the size of fish caught, the range and distribution of these species and other parameters needed to scientifically manage these stocks for long-term sustainability.

Table 7: Major laws in Bangladesh pertaining to Tropical Forests and Biodiversity

Laws	Description	Relevance to Biodiversity Conservation
Forest Act (1927)	Established state ownership of forest areas, rules for use/extraction of forest resources	Legal authority for the Bangladesh Forest Department to gazette forest areas, manage timber and other forest resources
Wildlife (Conservation and Security) Act, 2012 – formerly Wildlife Protection Act, 1974	Provide conservation and safety of wildlife, forests and biodiversity by repealing the existing law relating to conservation and management of wildlife	Ensure protection of wild animals and plants
Brick Burning Control Act, 1989 (Amendment 1995) Preparation of brick and kiln establishment (control) Act, 2013	Prevention of use of wood as fuel for brick kilns and establishment of brick kilns in reserve forests, protected areas, wetlands and agricultural land	These laws were designed to control the exploitation of forests for fuelwood, and development of wetlands and croplands into brick kilns. The 2013 law made stricter regulations and increased penalties, including a provision for trial in regular courts
Environment Conservation Act, 1995 (Revised 2012)	Established legal basis for Environmental Conservation Rules (1997), gives authority to MoEF and DoE to regulate environmental protections	2012 amendment establishes rules for demarcation of wetlands and water bodies, protections for ECAs, hill slopes and mountainous regions
Environment Court Act, 2000 (Amendment 2010)	Established environmental courts, 2010 amendment established courts in each administrative division	Enforcement of protection of ECAs, environmentally important areas like wetlands
Environment Protection Act, 2000 (Amendment 2010)	Deals with environmental pollution, establishes penalties and compensation for pollution, gives	Environmental Clearance Certificates required for industrial development. 2010 amendment increased penalties up

	individuals/communities rights to file cases in environmental courts	to 10 years' imprisonment and increased fines.
Climate Change Trust Act, 2010	Enhances the capability to create climate resilience in the country	Ensure the proper use of climate change trust fund under the MoEF for research and development programme
Biological Diversity Act, 2017	Establishes safeguards for environment and biodiversity	Law has not been passed, still open for public comment

Ministry of Land (MoL)

MoL allocates land and land development rights for various purposes including agriculture, industry and infrastructure development and housing. In many cases, MoL allocates development rights without the appropriate ECC process, thus allowing land in sensitive areas like ECAs to be developed. Officials in BFD, DoF and DoE identified the lack of coordination between MoL and MoEF or other ministries as a significant obstacle to ensuring that the development of land for industry, tourism or agriculture does not harm forests or biodiversity.

7.2. Key National Laws and Policies

Bangladesh has several laws, policies and national strategies that address biodiversity conservation, several of which have been amended over the past decade in an effort to increase enforcement of environmental protections. However, environmental laws and policies are not well enforced on the ground. The main laws, policies and national strategies that have been developed to address biodiversity protections in Bangladesh are summarized in Table 7 and 8.

Table 8: Key National Policies on Tropical Forests and Biodiversity in Bangladesh

Policies	Description	Relevance to Forest and Biodiversity
Forest Policy, 1994	Establishes participatory management of forests with communities and provides opportunities for cooperation between NGOs and government agencies in social forestry	Target to increase forest cover to 20 percent of the total land area by 2015, to maintain the ecological balance and to attain self-sufficiency in forest produce
Environment Policy, 1992	Protection and improvement of environment and promoting long-term sustainable use of natural resources across 15 sectors	Emphasized the need for sustainable ecological balance on existing forests conservation, expansion and tree plantation and took measures to stop shrinkage and depletion of forest lands and resources
Wetland Policy, 1998	Establishes key principles for wetland sustainability	Maintain existing levels of biodiversity of wetlands and actively promote integration of wetland functions in natural resources management
National Fisheries Policy, 1998	Establishes framework for conservation and management of fisheries and conservation of fish populations	All the water bodies suitable for fisheries production and their fisheries resources conservation, development and management are addressed under this policy.
National Water Policy, 1999	Ensures efficient and equitable management of water resources and institutional capacity building for water resource management.	Promotes afforestation and tree planting for watershed protection
Coastal Zone Policy, 2005	Aims to ensure participatory and integrated approach for management and development of the coastal zone	Encompasses both the terrestrial and aquatic environment

The importance of biodiversity is enshrined in the Bangladesh Constitution. Article 18A safeguards environment protection and sustainable development. As Table 3 indicates, there are laws that protect environmental quality broadly, as well as specific laws for forests, wetlands, fisheries and coastal habitats in Bangladesh. Bangladesh also has a system of environmental courts, established through the Environment Court Act, 2000, but it is unclear whether these courts are able to enforce penalties or prevent environmental laws from being broken. Several national policies (Table 4) also exist to direct the work of government agencies in the management of biodiversity, but in many cases, the purposes of some policies may run counter to others, or to laws that protect forests and biodiversity. The National Agricultural Extension Policy may encourage the development of marginal forests lands for agriculture, or the National Industrial Policy may encourage industrial expansion and pollution at the cost of forests, wetlands or ecologically sensitive areas. The National Shrimp Policy is an effort to reduce the impact of shrimp farming on coastal areas and mangroves, but may not be sufficient to address unsustainable harvesting of wild shrimp for farms or the destruction of mangroves that occurs on the southeast coast.

There are also several national strategies and plans that deal with biodiversity in Bangladesh. The National Biodiversity Strategy and Action Plan (NBSAP) provides a framework for conservation, sustainable use and sharing the benefits of biodiversity, by linking biodiversity conservation with social and economic development. National Environment Management Action Plan, 1995 (NEMAP) is a 10-year environmental management plan that contains elements of forest and biodiversity conservation. To address the aim of NEMAP, MoEF launched an umbrella program under five thematic areas of environment and forest which is called the Sustainable Environment Management Programme 1998 (SEMP). SEMP developed a strategic

plan for the period 2000-2014, but from interviews it was not clear how DoE is following up to implement this plan. Several climate change action plans also contain elements of tropical forest and biodiversity protections. Bangladesh Climate Change Strategy and Action Plan (2009-2018) emphasized biodiversity under the "Research and Knowledge Management" pillar, which will monitor and research the impacts of climate change on ecosystems and biodiversity. The Bangladesh Tiger Action Plan (2018-2027) specifically addresses the conservation of tigers. While several of these plans emphasize the importance of forests and biodiversity, others like the Perspective Plan (2010-2021) prioritize economic growth, and make no mention of biodiversity in the Vision 2021. As with laws and policies, there are conflicts between different plans for economic growth and development in Bangladesh, with a lack of clarity on the status of forests and biodiversity across different government ministries and departments.

7.3. International biodiversity and climate change related conventions

Bangladesh is a party to all the major biodiversity related conventions, including the Convention on Biological Diversity, the Ramsar Convention on Wetlands of International Importance, the United Nations Framework Convention on Climate Change, the Convention on the Conservation of Migratory Species and many others. Bangladesh is up to date on the requirements of these conventions and has recently submitted a 2015 update to for the Ramsar Convention, the Fifth Report to the Convention on Biological Diversity (2015) and an update on major sections of the Red Data Book is near completion.

Chapter-8: Recommendation to mitigate potential impacts on biodiversity

The biodiversity of Meherpur district is high. A total of 18 species of threatened wild animals were identified during the survey period.

Wetlands and Aquatic Resources

Recommendations	Remarks
1. The natural wetlands should be kept in natural condition.	Beels; no development recommended.
2. Human activities like conversion of natural waterbodies to fish culture ponds, other resource collection should be controlled.	Need collaboration with other Gov. agencies
3. Control of illegal fishing gears and poison fishing.	Need active role of department of fisheries and other relevant agencies.
4. Strictly monitor not to catch fish by drying up the wetlands.	Need monitoring from the local Governments.
3. If any intervention needed, assess the critical habitat, choose less critical area and try to minimize its effects on biodiversity.	Need detailed study for the assessment of the quality of habitat and to find out possible alternate habitats.

Bird Colonies

Recommendations	Remarks
1. Bird nesting and roosting colonies should be conserved.	Need compensation policy with the collaboration with FD and local Gov.
2. Roosting trees in public places should be marked from the local Gov. for conservation.	Need collaboration with local Government.
3. Large trees in public places (Graveyard, weekly markets, khas lands) should be conserved.	Need awareness campaign and establishment of bill boards near the colonies.

Bat Colonies

Recommendations	Remarks
1. Bat colonies should be conserved.	Need awareness about the bats among local people.
2. Bat roosting trees need to be kept.	Need negotiation with the owners / authority
3. Large trees in public places (Graveyard, weekly markets, khas lands) should be conserved.	Need collaboration with local Government.

Northern Grey Langur Habitats

Recommendations	Remarks
1. Grey Langur habitats should be kept as undisturbed as possible.	Need awareness among the local people.

2. Preferred food trees should be planted in Government Khash lands and along the road sides.	Need collaboration with the local forest offices.
3. Human-Langur conflicts should be minimized through consultation with the local people.	Need mass awareness along with compensation plan from the Forest Department.
4. Langur population should be monitored	Collaboration with universities and research organizations.

Chapter-9: Conclusion

Meherpur is an important district in terms of its location at northwestern part of Bangladesh and this baseline provides a vital information on the region's floral and faunal diversity. This is the first ever comprehensive baseline study of this district which covers both dry and wet seasons. Scientifically rigorous approaches and field techniques including line transects, quadrats, camera traps, and community questionnaires were appraised to get a clear picture of the whole study area. As an outcome, the study highlights the ecological richness of this region by identifying 354 plant species and 334 animal species, including amphibians, reptiles, birds, mammals, and aquatic species (fishes and shell fishes).

The identification of eighteen nationally and globally threatened species, including the Fishing Cat, Rufous-tailed Hare, Bengal Fox, Large Indian Civet and other species emphasize the urgent need to prioritize the conservation of specific habitats. Additionally, monitoring fish and fish habitat is crucial for sustaining the health of local ecosystems and livelihoods. While no evidence of professional hunting was found, opportunistic bird hunting during winter poses additional threats for local and migratory bird populations. This emphasizes the necessity of raising awareness and involving the community in order to change local perception and attitude towards biodiversity conservation.

This type of baseline survey is critically needed for all districts, where biodiversity data is scarce, and environmental changes are accelerating due to rapid development, agricultural expansion, and climate change. This study not only produces a base for future ecological research but also offers clear information that can help local and national authorities to plan better for managing development in a more sustainable way.

Appendix- 1

FLORA AND FAUNA SURVEY UNDER "PREPARATION OF DEVELOPMENT PIAN FOR MEHERPUR DISTRICT

Questionnaire

Flora and Fauna Survey Under "Preparation of Development Plan for Meherpur District

Location: Date & Time:
Respondent Name: Address:

Age: Sex: Religion/Cast: Education:

Livelihood status

1. How long have you been staying in this village / area?
2. Do you collect any resource (like fish, shell etc.) from the project area?
3. If yes then how frequent?
4. Do you or your family member go for hunting? Y / N
5. If yes, what are the species that you usually hunt for?
6. How frequent do you go for hunting? Daily / weekly / monthly / seasonally / yearly / ……..
7. Does any one in your village destroy bird nest / disturb / catch animals? If yes what kind of animals?
8. What do you do when you/ family members got sick? Use traditional medicine / go to K*abiraj or Boidda /* Buy medicine from shop / go to doctor.
9. Do you see following animals in your village / surrounding areas (show the color plate). If yes, how often you see or when did you see last time?

   Jungle cat…… Fishing Cat …….. Civets ……..

   Jackal …… …… Hog Badger…….. Porcupine …….

   Monkey …… …. Deer …….. Others ……
10. Do you think biodiversity (forest, plants, animals) in your area decreasing? Y / N. if yes why?
11. Do you think proposed economic zone may harm biodiversity in your area? If yes how?
12. What should do to conserve biodiversity in your area?
13. Do you know about Wildlife Act / other law? Y / N.
14. Miscellaneous Information (if any):

Name and signature of the Interviewer:

Appendices-2

Appendix 1. List of tree species found in three studied upazilas of Meherpur District

Sl No.	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
1	*Lannea coromandelica (Houtt.) Merr.*	Anacardiaceae	Rare	Tree	R	C	C
2	*Mangifera indica L.*	Anacardiaceae	Common	Tree	VC	VC	VC
3	*Spondias dulcis G.Forst.*	Anacardiaceae	Rare	Tree	C	R	C
4	*Annona reticulata L.*	Annonaceae	Common	Tree	C	C	C
5	*Polyalthia longifolia (Sonn.) Benth. & Hook.f.*	Annonaceae	Common	Tree	C	C	VC
6	*Alstonia scholaris (L.) R. Br.*	Apocynaceae	Rare	Tree	R	C	R
7	*Plumeria alba L.*	Apocynaceae	Rare	Tree	R	C	R
8	*Calamus tenuis Roxb.*	Arecaceae	Common	Tree	C	C	C
9	*Bombax ceiba L.*	Bombacaceae	Rare	Tree	R	C	R
10	*Bauhinia acuminata L.*	Caesalpiniaceae	Rare	Tree	R	R	R
11	*Bauhinia purpurea L.*	Caesalpiniaceae	Rare	Tree	R	R	R
12	*Caesalpinia pulcherrima (L.) Sw.*	Caesalpiniaceae	Rare	Tree	R	R	R
13	*Cassia fistula L.*	Caesalpiniaceae	Rare	Tree	R	R	R
14	*Delonix regia (Hook.) Raf.*	Caesalpiniaceae	Rare	Tree	R	R	R
15	*Saraca asoca (Roxb.) Willd.*	Caesalpiniaceae	Rare	Tree	R	R	R
16	*Senna alata (L.) Roxb.*	Caesalpiniaceae	Very Common	Tree	VC	VC	VC
17	*Tamarindus indica L.*	Caesalpiniaceae	Very Common	Tree	VC	VC	VC
18	*Carica papaya L.*	Caricaceae	Very Common	Tree	VC	VC	VC
19	*Casuarina equisetifolia L.*	Casuarinaceae	Rare	Tree	R	R	R

Sl No.	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
20	*Terminalia arjuna (Roxb.) Wight & Arn.*	Combretaceae	Common	Tree	C	C	C
21	*Terminalia bellirica (Gaertn.) Roxb.*	Combretaceae	Common	Tree	C	C	C
22	*Terminalia catappa L.*	Combretaceae	Common	Tree	C	C	C
23	*Terminalia chebula (Gaertn.) Retz.*	Combretaceae	Common	Tree	C	C	C
24	*Platycladus orientalis (L.) Franco syn. Thuja orientalis L.*	Cupressaceae	Very Common	Tree	VC	VC	VC
25	*Dillenia indica L.*	Dilleniaceae	Common	Tree	C	C	C
26	*Diospyros discolor Willd. Syn. Diospyros blancoi A.DC.*	Ebenaceae	Rare	Tree	R	C	R
27	*Diospyros malabarica (Desr.) Kostel.*	Ebenaceae	Rare	Tree	R	R	R
28	*Elaeocarpus floribundus Blume*	Elaeocarpaceae	Rare	Tree	R	R	R
29	*Phyllanthus emblica L.*	Euphorbiaceae	Rare	Tree	R	R	R
30	*Dalbergia sissoo Roxb.*	Fabaceae	Rare	Tree	R	R	R
31	*Erythrina variegata L.*	Fabaceae	Rare	Tree	R	R	R
32	*Pongamia pinnata (L.) Pierre*	Fabaceae	Rare	Tree	R	R	R
33	*Cinnamomum tamala T.Nees & Eberm.*	Lauraceae	Rare	Tree	R	R	R
34	*Aphanamixis polystachya (Wall.) R.Parker*	Meliaceae	Rare	Tree	R	R	R
35	*Azadirachta indica A.Juss.*	Meliaceae	Common	Tree	C	VC	C
36	*Khaya anthotheca C.DC.*	Meliaceae	Rare	Tree	R	R	R
37	*Melia azedarach L.*	Meliaceae	Common	Tree	C	C	C
38	*Swietenia macrophylla King*	Meliaceae	Common	Tree	C	VC	C
39	*Swietenia mahagoni (L.) Jacq.*	Meliaceae	Common	Tree	VC	VC	VC
40	*Toona ciliata M.Roem.*	Meliaceae	Rare	Tree	R	R	R
41	*Acacia auriculiformis A.Cunn. ex. Benth.*	Mimosaceae	Common	Tree	C	C	C
42	*Acacia mangium Willd.*	Mimosaceae	Common	Tree	C	C	C
43	*Albizia lebbeck (L.) Benth.*	Mimosaceae	Rare	Tree	R	R	R

Sl No.	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
44	*Albizia procera (Roxb.) Benth.*	Mimosaceae	Rare	Tree	R	C	R
45	*Albizia saman (Jacq.) Merr. Syn. Samanea saman (Jacq.) Merr.*	Mimosaceae	Rare	Tree	R	R	R
46	*Leucaena leucocephala (Lam.) de Wit*	Mimosaceae	Common	Tree	C	C	C
47	*Pithecellobium dulce (Roxb.) Benth.*	Mimosaceae	Rare	Tree	R	R	R
48	*Vachellia nilotica (L.) P.J.H.Hurter & Mabb. Syn. Acacia nilotica (L.) Delile*	Mimosaceae	Common	Tree	R	R	R
49	*Artocarpus heterophyllus Lam.*	Moraceae	Common	Tree	C	C	C
50	*Artocarpus lacucha Buch.-Ham.*	Moraceae	Common	Tree	C	C	C
51	*Ficus benghalensis L.*	Moraceae	Common	Tree	C	C	C
52	*Ficus hispida L.f.*	Moraceae	Very Common	Tree	VC	VC	VC
53	*Ficus racemosa L.*	Moraceae	Very Common	Tree	VC	VC	VC
54	*Ficus religiosa L.*	Moraceae	Very Common	Tree	VC	VC	VC
55	*Morus alba L.*	Moraceae	Rare	Tree	R	R	R
56	*Streblus asper Lour.*	Moraceae	Rare	Tree	R	R	R
57	*Moringa oleifera Lam.*	Moringaceae	Common	Tree	C	C	C
58	*Musa acuminata Colla*	Musaceae	Very Common	Tree	VC	VC	VC
59	*Musa paradisiaca L.*	Musaceae	Very Common	Tree	VC	VC	VC
60	*Eucalyptus camaldulensis Dehnh.*	Myrtaceae	Rare	Tree	R	R	R
61	*Psidium guajava L.*	Myrtaceae	Common	Tree	C	C	C
62	*Syzygium cumini (L.) Skeels*	Myrtaceae	Rare	Tree	R	R	R
63	*Syzygium fruticosum DC.*	Myrtaceae	Common	Tree	C	C	C
64	*Syzygium jambos (L.) Alston*	Myrtaceae	Rare	Tree	R	R	R
65	*Syzygium samarangense (Blume) Merr. & L.M.Perry*	Myrtaceae	Common	Tree	C	C	C
66	*Averrhoa carambola L.*	Oxalidaceae	Common	Tree	R	R	R

Sl No.	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
67	*Bambusa balcooa Roxb.*	Poaceae	Common	Tree	C	C	C
68	*Bambusa bambos (L.) Voss Syn. Bambusa arundinacea Willd.*	Poaceae	Common	Tree	C	C	C
69	*Punica granatum L.*	Punicaceae	Common	Tree	C	C	C
70	*Ziziphus jujuba Mill. Syn. Ziziphus mauritiana Lam.*	Rhamnaceae	Common	Tree	C	C	C
71	*Neolamarckia cadamba (Roxb.) Bosser*	Rubiaceae	Very Common	Tree	R	R	R
72	*Aegle marmelos (L.) Corr.*	Rutaceae	Common	Tree	R	R	R
73	*Citrus limon (L.) Osbeck Syn. Citrus limetta Risso*	Rutaceae	Very Common	Tree	C	C	C
74	*Citrus maxima (Burm.) Merr.*	Rutaceae	Very Common	Tree	C	C	C
75	*Euodia hortensis J.R.Forst. & G.Forst.*	Rutaceae	Common	Tree	C	C	C
76	*Dimocarpus longan Lour.*	Sapindaceae	Rare	Tree	R	R	R
77	*Lepisanthes rubiginosa (Roxb.) Leenh.*	Sapindaceae	Very Common	Tree	R	R	R
78	*Litchi sinensis Sonner*	Sapindaceae	Very Common	Tree	R	R	R
79	*Manilkara zapota (L.) P.Royen*	Sapotaceae	Very Common	Tree	R	R	R
80	*Mimusops elengi L.*	Sapotaceae	Common	Tree	R	R	R
81	*Abroma augusta (L.) L. f.*	Sterculiaceae	Rare	Tree	R	R	R
82	*Sterculia villosa Roxb.*	Sterculiaceae	Rare	Tree	R	R	R
83	*Trema orientale Blume*	Ulmaceae	Very Common	Tree	R	R	R
84	*Gmelina arborea Roxb.*	Verbenaceae	Rare	Tree	R	C	R
85	*Tectona grandis L.f.*	Verbenaceae	Common	Tree	C	C	C
86	*Vitex negundo L.*	Verbenaceae	Rare	Tree	R	R	R

Appendix 2. List of Herbs in Meherpur

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
1	*Asystasia gangetica (L.) T.Anderson*	Acanthaceae	Rare	Herb	R	R	R
2	*Lepidagathis incurva Buch.-Ham.*	Acanthaceae	Common	Herb	C	C	C
3	*Nelsonia canescens (Lam.) Spreng.*	Acanthaceae	Common	Herb	C	VC	C
4	*Aloe vera (L.) Burm.f.*	Aloaceae	Common	Herb	C	C	C
5	*Achyranthes aspera L.*	Amaranthaceae	Common	Herb	C	C	C
6	*Aerva lanata (L.) Juss.*	Amaranthaceae	Common	Herb	C	VC	C
7	*Alternanthera paronychioides A.St.-Hil.*	Amaranthaceae	Common	Herb	C	C	VC
8	*Alternanthera sessilis (L.) R.Br.*	Amaranthaceae	Very Common	Herb	VC	VC	VC
9	*Amaranthus spinosus L.*	Amaranthaceae	Very Common	Herb	VC	VC	VC
10	*Amaranthus tricolor L.*	Amaranthaceae	Very Common	Herb	VC	VC	VC
11	*Celosia argentea L. Syn. Celosia plumosa Barr & Sugden*	Amaranthaceae	Common	Herb	C	VC	VC
12	*Cyathula prostrata (L.) Blume*	Amaranthaceae	Very Common	Herb	VC	VC	VC
13	*Ouret sanguinolenta (L.) Kuntze Syn. Aerva sanguinolenta (L.) Blume*	Amaranthaceae	Common	Herb	VC	VC	C
14	*Centella asiatica (L.) Urb.*	Apiaceae	Very Common	Herb	VC	VC	VC
15	*Coriandrum sativum L.*	Apiaceae	Very Common	Herb	VC	VC	VC
16	*Eryngium foetidum L.*	Apiaceae	Very Common	Herb	VC	VC	VC
17	*Hydrocotyle sibthorpioides Lam.*	Apiaceae	Common	Herb	C	C	C
18	*Alocasia acuminata schott*	Araceae	Common	Herb	VC	C	C
19	*Caladium bicolor (Ait.)Vent.*	Araceae	Common	Herb	C	C	VC
20	*Colocasia esculenta (L.) Schott*	Araceae	Very Common	Herb	VC	VC	VC
21	*Colocasia fallax Schott*	Araceae	Common	Herb	C	C	C
22	*Colocasia gigantea (Blume) Hook.f.*	Araceae	Common	Herb	C	C	VC

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
23	*Acmella paniculata (Wall.) R.K.Jansen*	Asteraceae	Common	Herb	C	C	C
24	*Acmella uliginosa (Sw.) Cass.*	Asteraceae	Common	Herb	C	VC	C
25	*Ageratum conyzoides (L.) L.*	Asteraceae	Very Common	Herb	VC	VC	VC
26	*Blumea lacera (Burm.f.) DC.*	Asteraceae	Common	Herb	C	C	C
27	*Centipeda minima (L.) A.Br. & Asch.*	Asteraceae	Common	Herb	C	C	C
28	*Chromolaena odorata (L.) R.M.King & H.Rob.*	Asteraceae	Very Common	Herb	VC	VC	VC
29	*Chrysanthemum morifolium (Ramat.) Hemsl.*	Asteraceae	Common	Herb	C	C	C
30	*Cosmos sulphureus Cav.*	Asteraceae	Common	Herb	C	C	C
31	*Cotula hemisphaerica Wall.*	Asteraceae	Very Common	Herb	VC	VC	VC
32	*Cyanthillium cinereum (L.) H.Rob. Syn. Vernonia cinerea (L.) Less.*	Asteraceae	Very Common	Herb	VC	VC	VC
33	*Dahlia pinnata Cav.*	Asteraceae	Common	Herb	C	C	C
34	*Eclipta prostrata (L.) L. Syn: Eclipta alba (L.) Hassk.*	Asteraceae	Very Common	Herb	VC	VC	VC
35	*Emilia sonchifolia (L.) DC.*	Asteraceae	Very Common	Herb	VC	VC	VC
36	*Enydra fluctuans Lour.*	Asteraceae	Very Common	Herb	C	VC	C
37	*Gamochaeta pensylvanica (Willd.)*	Asteraceae	Common	Herb	C	C	C
38	*Grangea maderaspatana (L.) Poir.*	Asteraceae	Common	Herb	C	C	C
39	*Helianthus annuus L.*	Asteraceae	Very Common	Herb	VC	C	VC
40	*Parthenium hysterophorus L.*	Asteraceae	Common	Herb	C	C	C
41	*Pseudognaphalium affine (D.Don) Anderb. Syn Gnaphalium affine D.Don*	Asteraceae	Common	Herb	C	C	C
42	*Pseudognaphalium luteoalbum (L.)*	Asteraceae	Common	Herb	C	C	C
43	*Sonchus arvensis L.*	Asteraceae	Very Common	Herb	VC	VC	VC
44	*Sonchus wightianus DC.*	Asteraceae	Very Common	Herb	VC	VC	VC
45	*Sphaeranthus indicus L.*	Asteraceae	Rare	Herb	R	R	R

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
46	*Sphagneticola trilobata (L.) Pruski Syn. Wedelia trilobata A.St.-Hil.*	Asteraceae	Very Common	Herb	VC	VC	VC
47	*Synedrella nodiflora (L.) Gaertn.*	Asteraceae	Common	Herb	C	C	C
48	*Tagetes erecta L. Syn. Tagetes patula L.*	Asteraceae	Very Common	Herb	VC	VC	VC
49	*Tridax procumbens (L.) L.*	Asteraceae	Very Common	Herb	VC	VC	VC
50	*Xanthium strumarium L. Syn. Xanthium indicum DC.*	Asteraceae	Very Common	Herb	VC	VC	VC
51	*Youngia japonica (L.) DC.*	Asteraceae	Common	Herb	C	C	C
52	*Zinnia elegans Jacq.*	Asteraceae	Common	Herb	C	C	C
53	*Impatiens balsamina L.*	Balsaminaceae	Common	Herb	C	C	C
54	*Basella alba L.*	Basellaceae	Common	Herb	C	C	C
55	*Heliotropium indicum L.*	Boraginaceae	Very Common	Herb	VC	VC	VC
56	*Brassica napus L.*	Brassicaceae	Very Common	Herb	VC	VC	VC
57	*Brassica nigra (L.) K.Koch*	Brassicaceae	Very Common	Herb	VC	VC	VC
58	*Brassica oleracea L. var. botrytis L.*	Brassicaceae	Very Common	Herb	VC	VC	VC
59	*Brassica oleracea var. capitata L.*	Brassicaceae	Very Common	Herb	VC	VC	VC
60	*Cardamine flexuosa With*	Brassicaceae	Rare	Herb	R	R	R
61	*Raphanus raphanistrum subsp. sativus (L.) Domin Syn. Raphanus sativus L.*	Brassicaceae	Very Common	Herb	VC	VC	VC
62	*Rorippa indica (L.) Hiern*	Brassicaceae	Very Common	Herb	VC	VC	VC
63	*Canna indica L.*	Cannaceae	Common	Herb	C	C	C
64	*Cleome viscosa L.*	Capparaceae	Rare	Herb	R	R	R
65	*Chenopodium album L.*	Chenopodiaceae	Very Common	Herb	VC	VC	VC
66	*Spinacia oleracea L.*	Chenopodiaceae	Common	Herb	C	C	C
67	*Commelina benghalensis L.*	Commelinaceae	Common	Herb	C	C	C
68	*Commelina diffusa Burm. f.*	Commelinaceae	Very Common	Herb	VC	VC	VC

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
69	*Murdannia nudiflora (L.) Brenan Syn: Commelina nudiflora L.*	Commelinaceae	Very Common	Herb	VC	VC	VC
70	*Bryophyllum pinnatum (Lam.) Oken*	Crassulaceae	Common	Herb	C	C	C
71	*Actinoscirpus grossus (L.f.) Goetgh. & D.A.Simpson*	Cyperaceae	Very Common	Herb	VC	VC	VC
72	*Cyperus amabilis Vahl*	Cyperaceae	Common	Herb	C	C	C
73	*Cyperus brevifolius (Rottb.) Hassk. Syn Kyllinga brevifolia Rottb.*	Cyperaceae	Very Common	Herb	VC	VC	VC
74	*Cyperus compressus L.*	Cyperaceae	Very Common	Herb	VC	VC	VC
75	*Cyperus difformis L.*	Cyperaceae	Very Common	Herb	VC	VC	VC
76	*Cyperus haspan L.*	Cyperaceae	Very Common	Herb	VC	VC	VC
77	*Cyperus imbricatus Retz.*	Cyperaceae	Very Common	Herb	VC	VC	VC
78	*Cyperus iria L.*	Cyperaceae	Very Common	Herb	VC	VC	VC
79	*Cyperus pumilus L. Syn. Pycreus pumilus (L.) Nees*	Cyperaceae	Common	Herb	C	C	C
80	*Cyperus rotundus L.*	Cyperaceae	Very Common	Herb	VC	VC	VC
81	*Cyperus tenuispica Steud.*	Cyperaceae	Common	Herb	C	C	C
82	*Eleocharis congesta D.Don*	Cyperaceae	Very Common	Herb	VC	VC	VC
83	*Eleocharis dulcis (Burm.f.) Trin.*	Cyperaceae	Very Common	Herb	VC	VC	VC
84	*Fimbristylis aestivalis (Retz.) Vahl*	Cyperaceae	Very Common	Herb	VC	VC	VC
85	*Fimbristylis bisumbellata (Forssk.) Bubani*	Cyperaceae	Very Common	Herb	VC	VC	VC
86	*Fimbristylis dichotoma (L.) Vahl*	Cyperaceae	Very Common	Herb	VC	VC	VC
87	*Fimbristylis miliacea (L.) Vahl*	Cyperaceae	Very Common	Herb	VC	VC	VC
88	*Fuirena ciliaris (L.) Roxb.*	Cyperaceae	Very Common	Herb	VC	VC	VC
89	*Kyllinga nemoralis (J.R.Forst. & G.Forst.) Dandy*	Cyperaceae	Very Common	Herb	VC	VC	VC
90	*Schoenoplectiella juncoides (Roxb.) Lye Syn. Schoenoplectus juncoides (Roxb.) Palla*	Cyperaceae	Common	Herb	C	C	C
91	*Acalypha indica L.*	Euphorbiaceae	Very Common	Herb	VC	VC	VC

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
92	*Breynia retusa (Dennst.) Alston*	Euphorbiaceae	Rare	Herb	R	R	R
93	*Chrozophora rottleri (Geiseler) A.Juss.*	Euphorbiaceae	Very Common	Herb	VC	VC	VC
94	*Codiaeum variegatum (L.) A. Juss.*	Euphorbiaceae	Common	Herb	C	C	C
95	*Croton bonplandianus Baill.*	Euphorbiaceae	Very Common	Herb	VC	VC	VC
96	*Euphorbia hirta L.*	Euphorbiaceae	Common	Herb	C	C	C
97	*Euphorbia milii Des Moul.*	Euphorbiaceae	Common	Herb	C	C	C
98	*Desmodium gangeticum (L.) DC.*	Fabaceae	Common	Herb	C	C	C
99	*Desmodium laxiflorum DC.*	Fabaceae	Common	Herb	C	C	C
100	*Grona triflora (L.) H.Ohashi & K.Ohashi Syn. Desmodium triflorum (L.) DC.*	Fabaceae	Very Common	Herb	VC	VC	VC
101	*Sesbania bispinosa (Jacq.) W.Wight*	Fabaceae	Common	Herb	C	C	C
102	*Sesbania sesban (L.) Merr.*	Fabaceae	Very Common	Herb	VC	VC	VC
103	*Vigna mungo (L.) Hepper*	Fabaceae	Common	Herb	C	C	C
104	*Vigna radiata (L.) R.Wilczek*	Fabaceae	Common	Herb	C	VC	C
105	*Vigna unguiculata (L.) Walp. Syn. Vigna sinensis (L.) Savi*	Fabaceae	Common	Herb	C	C	C
106	*Heliconia rostrata Ruiz & Pavon*	Heliconiaceae	Rare	Herb	R	R	R
107	*Hydrolea zeylanica (L.) Vahl*	Hydroleaceae	Common	Herb	C	C	C
108	*Leonurus sibiricus L.*	Lamiaceae	Common	Herb	VC	C	C
109	*Leucas aspera (Roth) Spreng.*	Lamiaceae	Common	Herb	C	C	C
110	*Leucas zeylanica (L.) W.T.Aiton*	Lamiaceae	Common	Herb	C	C	C
111	*Ocimum tenuiflorum L. Syn. Ocimum sanctum L.*	Lamiaceae	Common	Herb	C	C	C
112	*Allium cepa L.*	Liliaceae	Very Common	Herb	VC	VC	VC
113	*Ammannia baccifera L.*	Lythraceae	Rare	Herb	R	R	R
114	*Glinus oppositifolius (L.) Aug.DC. Syn. Mollugo oppositifolia L.*	Molluginaceae	Common	Herb	R	R	R

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
115	*Trigastrotheca pentaphylla (L.) Thulin Syn Mollugo pentaphylla L.*	Molluginaceae	Very Common	Herb			
116	*Anagallis arvensis L.*	Myrsinaceae	Common	Herb	C	C	C
117	*Boerhavia diffusa L.*	Nyctaginaceae	Common	Herb	C	C	C
118	*Mirabilis jalapa L. syn. Nyctago jalapae (L.) DC.*	Nyctagynaceae	Common	Herb	C	C	C
119	*Oxalis corniculata L.*	Oxalidaceae	Very Common	Herb	R	R	R
120	*Argemone mexicana L.*	Papaveraceae	Very Common	Herb	R	R	R
121	*Peperomia pellucida (L.) Kunth*	Piperaceae	Common	Herb	R	R	R
122	*Piper longum L.*	Piperaceae	Common	Herb	R	R	R
123	*Piper nigrum L.*	Piperaceae	Common	Herb	R	R	R
124	*Acroceras munroanum (Balansa) Henrard*	Poaceae	Rare	Herb	R	R	R
125	*Avena fatua L.*	Poaceae	Common	Herb	C	C	C
126	*Axonopus compressus (Sw.) P. Beauv.*	Poaceae	Common	Herb	C	C	C
127	*Cenchrus ciliaris L.*	Poaceae	Common	Herb	C	C	C
128	*Cenchrus purpureus (Schumach.)*	Poaceae	Common	Herb	C	C	C
129	*Centotheca lappacea (L.) Desv.*	Poaceae	Common	Herb	C	C	C
130	*Chloris barbata Sw.*	Poaceae	Very Common	Herb	C	C	C
131	*Chrysopogon aciculatus (Retz.) Trin.*	Poaceae	Common	Herb	C	C	C
132	*Coix lacryma-jobi L.*	Poaceae	Rare	Herb	C	C	C
133	*Cynodon dactylon (L.) Pers.*	Poaceae	Very Common	Herb	C	C	C
134	*Cyrtococcum accrescens (Trin.) Stapf*	Poaceae	Very Common	Herb	C	C	C
135	*Cyrtococcum patens (L.) A. Camus*	Poaceae	Common	Herb	C	C	C
136	*Dactyloctenium aegyptium (L.) Willd.*	Poaceae	Common	Herb	C	C	C
137	*Digitaria ciliaris (Retz.) Koeler*	Poaceae	Very Common	Herb	C	C	C
138	*Digitaria sanguinalis (L.) Scop.*	Poaceae	Common	Herb	C	C	C

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
139	*Dinebra chinensis (L.) P.M.Peterson & N.Snow Syn Leptochloa chinensis Nees*	Poaceae	Common	Herb	C	C	C
140	*Echinochloa colonum (L.) Link*	Poaceae	Common	Herb	C	C	C
141	*Echinochloa crusgalli (L.) P. Beauv.*	Poaceae	Very Common	Herb	C	C	C
142	*Echinochloa polystachya (Kunth) Hitchc.*	Poaceae	Common	Herb	C	C	C
143	*Echinochloa stagnina (Retz.) P.Beauv.*	Poaceae	Very Common	Herb	C	C	C
144	*Eleusine indica (L.) Gaertn.*	Poaceae	Common	Herb	C	C	C
145	*Eragrostis ciliaris (L.) R. Br.*	Poaceae	Common	Herb	C	C	C
146	*Eragrostis tenella (L.) P.Beauv.*	Poaceae	Common	Herb	C	C	C
147	*Eragrostis unioloides (Retz.) Nees.*	Poaceae	Common	Herb	C	C	C
148	*Eriochloa procera (Retz.) C.E.Hubb.*	Poaceae	Common	Herb	C	C	C
149	*Hemarthria compressa (L. f.) R. Br.*	Poaceae	Very Common	Herb	C	C	C
150	*Hymenachne amplexicaulis (Rudge) Nees Syn. Hymenachne pseudointerrupta C. Muell.*	Poaceae	Common	Herb	C	C	C
151	*Imperata cylindrica (L.) Raeusch.*	Poaceae	Very Common	Herb	C	C	C
152	*Isachne globosa (Thunb.) Kuntze*	Poaceae	Very Common	Herb	C	C	C
153	*Leersia hexandra Sw.*	Poaceae	Common	Herb	C	C	C
154	*Oplismenus compositus (L.) P.Beauv.*	Poaceae	Very Common	Herb	C	C	C
155	*Oryza sativa L.*	Poaceae	Very Common	Herb	C	C	C
156	*Panicum brevifolium L.*	Poaceae	Very Common	Herb	C	C	C
157	*Panicum notatum Retz.*	Poaceae	Very Common	Herb	C	C	C
158	*Paspalum conjugatum P.J.Bergius*	Poaceae	Very Common	Herb	C	C	C
159	*Paspalum distichum L.*	Poaceae	Common	Herb	C	C	C
160	*Paspalum scorbiculatum L.*	Poaceae	Very Common	Herb	C	C	C
161	*Phragmites karka (Retz.) Trin.*	Poaceae	Common	Herb	C	C	C

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
162	*Polytrias indica (Houtt.) Veldkamp Syn. Ischaemum indicum (Houtt.) Merr.*	Poaceae	Common	Herb	C	C	C
163	*Saccharum officinarum L.*	Poaceae	Common	Herb	C	C	C
164	*Sacciolepis interrupta (Willd.) Stapf*	Poaceae	Very Common	Herb	C	C	C
165	*Setaria flavida (Retz.) Veldkamp Syn. Paspalidium flavidum (Retz.) A.Camus*	Poaceae	Common	Herb	C	C	C
166	*Setaria glauca (L.) P.Beauv.*	Poaceae	Very Common	Herb	C	C	C
167	*Setaria pumila (Poir.) Roem. & Schult.*	Poaceae	Common	Herb	C	C	C
168	*Sorghum bicolor (L.) Moench*	Poaceae	Very Common	Herb	C	C	C
169	*Triticum aestivum L.*	Poaceae	Very Common	Herb	C	C	C
170	*Urochloa distachyos (L.) T.Q.Nguyen Syn. Brachiaria distachyos (L.) Stapf*	Poaceae	Very Common	Herb	C	C	C
171	*Urochloa ramosa (L.) T.Q.Nguyen Syn Brachiaria ramosa (L.) Stapf*	Poaceae	Common	Herb	C	C	C
172	*Zea mays L.*	Poaceae	Very Common	Herb	C	C	C
173	*Zoysia matrella (L.) Merr.*	Poaceae	Common	Herb	C	C	C
174	*Persicaria barbata H.Hara Syn. Polygonum barbatum L.*	Polygonaceae	Common	Herb	C	C	C
175	*Persicaria hydropiper (L.) Delarbre Syn. Polygonum hydropiper L.*	Polygonaceae	Very Common	Herb	C	C	C
176	*Persicaria orientalis (L.) Spach Syn. Polygonum orientale L.*	Polygonaceae	Common	Herb	C	C	C
177	*Polygonum plebeium R.Br.*	Polygonaceae	Rare	Herb	R	R	R
178	*Rumex dentatus L.*	Polygonaceae	Rare	Herb	R	R	R
179	*Rumex maritimus L.*	Polygonaceae	Rare	Herb	R	R	R
180	*Portulaca grandiflora Hook.*	Portulacaceae	Common	Herb	C	C	C
181	*Portulaca oleracea L.*	Portulacaceae	Common	Herb	C	C	C

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
182	*Oldenlandia corymbosa L. Syn. Hedyotis corymbosa (L.) Lam.*	Rubiaceae	Common	Herb	R	R	R
183	*Richardia scabra L.*	Rubiaceae	Very Common	Herb	R	R	R
184	*Scleromitrion diffusum (Willd.) R.J.Wang Syn Oldenlandia diffusa (Willd.) Roxb.*	Rubiaceae	Very Common	Herb	R	R	R
185	*Spermacoce ocymoides Burm.f.*	Rubiceae	Common	Herb	R	R	R
186	*Bonnaya antipoda (L.) Druce Syn. Lindernia antipoda (L.) Alston*	Scrophulariaceae	Very Common	Herb	R	R	R
187	*Limnophila sessiliflora (Vahl) Blume*	Scrophulariaceae	Common	Herb	R	R	R
188	*Mazus pumilus (Burm.f.)*	Scrophulariaceae	Very Common	Herb	R	R	R
189	*Mecardonia procumbens (Mill.) Small*	Scrophulariaceae	Very Common	Herb	C	C	C
190	*Scoparia dulcis L.*	Scrophulariaceae	Very Common	Herb	C	C	C
191	*Torenia crustacea (L.)*	Scrophulariaceae	Very Common	Herb	C	C	C
192	*Veronica anagallis-aquatica L.*	Scrophulariaceae	Rare	Herb	C	C	R
193	*Petunia hybrida Vilm.*	Solanaceae	Common	Herb	C	C	C
194	*Physalis angulata L. Syn. Physalis minima L.*	Solanaceae	Very Common	Herb	C	C	C
195	*Solanum americanum Mill.*	Solanaceae	Rare	Herb	C	R	C
196	*Solanum lycopersicum L. Syn. Lycopersicon esculentum Mill.*	Solanaceae	Very Common	Herb	C	C	C
197	*Solanum melongena L.*	Solanaceae	Common	Herb	C	C	C
198	*Solanum nigrum L.*	Solanaceae	Very Common	Herb	C	C	C
199	*Solanum torvum Sw.*	Solanaceae	Common	Herb	C	C	C
200	*Pouzolzia zeylanica (L.)*	Urticaceae	Very Common	Herb	C	C	C
201	*Phyla nodiflora (L.)*	Verbenaceae	Very Common	Herb	C	C	C
202	*Curcuma longa L.*	Zingiberaceae	Very Common	Herb	R	R	R

Appendix 3. List of Shrubs at three upazilas of Meherpur District

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
1	*Barleria cristata L.*	Acanthaceae	Common	Shrub	C	C	C
2	*Dicliptera paniculata (Forssk.) I.Darbysh*	Acanthaceae	Common	Shrub	C	C	C
3	*Hygrophila ringens (L.) R. Br.*	Acanthaceae	Very Common	Shrub	VC	VC	VC
4	*Justicia adhatoda L. Syn Adhatoda vasica Nees*	Acanthaceae	Very Common	Shrub	VC	VC	VC
5	*Ruellia simplex C.Wright Syn. Ruellia brittoniana Leonard*	Acanthaceae	Very Common	Shrub	VC	VC	VC
6	*Ruellia tuberosa L.*	Acanthaceae	Common	Shrub	C	VC	VC
7	*Rungia pectinata (L.) Nees*	Acanthaceae	Very Common	Shrub	VC	VC	VC
8	*Strobilanthes hirta (Vahl) Blume Syn Hemigraphis hirta T.Anderson*	Acanthaceae	Common	Shrub	C	C	VC
9	*Cordyline fruticosa (L.) A.Chev.*	Agavaceae	Rare	Shrub	R	C	R
10	*Dracaena spicata Roxb.*	Agavaceae	Very Common	Shrub	VC	VC	VC
11	*Allamanda cathartica L.*	Apocynaceae	Very Common	Shrub	C	C	VC
12	*Carissa carandas L.*	Apocynaceae	Common	Shrub	C	C	C
13	*Cascabela thevetia (L.) Lippold Syn. Thevetia peruviana (Pers.) K.Schum.*	Apocynaceae	Very Common	Shrub	C	C	VC
14	*Catharanthus roseus (L.) G.Don*	Apocynaceae	Very Common	Shrub	VC	VC	VC
15	*Rauvolfia serpentina (L.) Benth.*	Apocynaceae	Very Common	Shrub	VC	VC	VC
16	*Tabernaemontana divaricata (L.) R.Br.*	Apocynaceae	Very Common	Shrub	VC	VC	VC
17	*Calotropis gigantea (L.) Dryand.*	Asclepiadaceae	Common	Shrub	C	C	C
18	*Campsis radicans (L.) Bureau Syn. Tecoma radicans (L.) Duhamel*	Bignoniaceae	Rare	Shrub	C	R	R
19	*Tecoma stans (L.) Juss.*	Bignoniaceae	Very Common	Shrub	VC	C	C
20	*Senna occidentalis (L.) Link*	Caesalpiniaceae	Very Common	Shrub	VC	VC	VC

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
21	*Senna sophera (L.) Roxb.*	Caesalpiniaceae	Common	Shrub	C	C	C
22	*Senna tora (L.) Roxb.*	Caesalpiniaceae	Very Common	Shrub	VC	VC	VC
23	*Ipomoea carnea Jacq. Syn. Ipomoea fistulosa Mart.*	Convolvulaceae	Very Common	Shrub	VC	VC	VC
24	*Excoecaria cochinchinensis Lour.*	Euphorbiaceae	Rare	Shrub	R	R	R
25	*Ricinus communis L.*	Euphorbiaceae	Common	Shrub	C	C	C
26	*Cajanus cajan (L.) Huth*	Fabaceae	Common	Shrub	C	C	C
27	*Crotalaria pallida Aiton*	Fabaceae	Rare	Shrub	R	R	R
28	*Anisomeles indica (L.) Kuntze*	Lamiaceae	Rare	Shrub	R	R	R
29	*Coleus scutellarioides (L.) Benth. Syn. Plectranthus scutellarioides (L.) R.Br.*	Lamiaceae	Common	Shrub	C	C	C
30	*Hyptis brevipes Poit.*	Lamiaceae	Very Common	Shrub	VC	VC	VC
31	*Hyptis capitata Jacq.*	Lamiaceae	Common	Shrub	C	C	R
32	*Salvia splendens Sellow*	Lamiaceae	Common	Shrub	C	C	C
33	*Macrosolen cochinchinensis (Lour.) Tiegh.*	Loranthaceae	Rare	Shrub	R	R	R
34	*Cuphea hyssopifolia Kunth*	Lythraceae	Very Common	Shrub	VC	VC	VC
35	*Lawsonia inermis L.*	Lythraceae	Very Common	Shrub	VC	VC	VC
36	*Abelmoschus esculentus (L.) Moench*	Malvaceae	Common	Shrub	C	C	C
37	*Abutilon indicum (L.) Sweet*	Malvaceae	Rare	Shrub	R	R	R
38	*Gossypium hirsutum L.*	Malvaceae	Very Common	Shrub	VC	VC	VC
39	*Hibiscus rosa-sinensis L.*	Malvaceae	Common	Shrub	C	VC	C
40	*Hibiscus schizopetalus (Dyer) Hook.f.*	Malvaceae	Common	Shrub	C	C	C
41	*Malvaviscus arboreus Cav.*	Malvaceae	Very Common	Shrub	VC	VC	VC
42	*Sida acuta Burm.f.*	Malvaceae	Very Common	Shrub	VC	VC	VC
43	*Sida cordata (Burm.f.) Borss.Waalk.*	Malvaceae	Common	Shrub	C	C	C
44	*Sida rhombifolia L.*	Malvaceae	Very Common	Shrub	VC	VC	VC
45	*Urena lobata L.*	Malvaceae	Common	Shrub	VC	VC	C
46	*Ardisia elliptica Thunb.*	Myrsinaceae	Rare	Shrub	R	R	R

Sl. No	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
47	*Jasminum multiflorum (Burm.f.) Andrews*	Oleaceae	Common	Shrub	C	C	C
48	*Jasminum sambac (L.)*	Oleaceae	Common	Shrub	C	C	C
49	*Rosa chinensis Jacq.*	Rosaceae	Very Common	Shrub	VC	VC	VC
50	*Rosa indica L.*	Rosaceae	Very Common	Shrub	VC	VC	VC
51	*Gardenia jesminoides J.Ellis*	Rubiaceae	Very Common	Shrub	VC	VC	VC
52	*Ixora chinensis Lam.*	Rubiaceae	Very Common	Shrub	VC	VC	VC
53	*Ixora coccinea L.*	Rubiaceae	Very Common	Shrub	VC	VC	VC
54	*Mussaenda erythrophylla*	Rubiaceae	Rare	Shrub	R	R	R
55	*Mussaenda philippica A.Rich.*	Rubiaceae	Rare	Shrub	R	R	R
56	*Glycosmis pentaphylla (Retz.) A. DC.*	Rutaceae	Very Common	Shrub	C	C	C
57	*Murraya paniculata (L.) Jack*	Rutaceae	Very Common	Shrub	C	C	C
58	*Capsicum frutescens L.*	Solanaceae	Common	Shrub	C	C	C
59	*Cestrum nocturnum L.*	Solanaceae	Very Common	Shrub	C	C	C
60	*Datura metel L.*	Solanaceae	Common	Shrub	C	C	C
61	*Nicotiana plumbaginifolia Viv.*	Solanaceae	Very Common	Shrub	C	C	C
62	*Corchorus capsularis L.*	Tiliaceae	Common	Shrub	R	R	R
63	*Corchorus olitorius L*	Tiliaceae	Common	Shrub	R	R	R
64	*Triumfetta rhomboidea Jacq.*	Tiliaceae	Very Common	Shrub	R	R	R
65	*Clerodendrum infortunatum L*	Verbenaceae	Very Common	Shrub	C	C	C
66	*Lantana camara L.*	Verbenaceae	Very Common	Shrub	C	C	C
67	*Lippia alba (Mill.) N.E.Br.*	Verbenaceae	Very Common	Shrub	C	C	C
68	*Nyctanthes arbor-tristis L.*	Verbenaceae	Very Common	Shrub	C	C	C

Appendix 4 List of Aquatic Plants at Meherpur District

Sl	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
1	*Aquarius grandiflorus (Cham. & Schltdl.)*	Alismataceae	Common	Aquatic Herb	C	C	C
2	*Sagittaria guayanensis Kunth*	Alismataceae	Very Common	Aquatic Herb	VC	C	VC
3	*Sagittaria sagittifolia L.*	Alismataceae	Very Common	Aquatic Herb	VC	C	VC
4	*Pistia stratiotes L.*	Araceae	Common	Aquatic Herb	VC	VC	VC
5	*Ipomoea aquatica Forssk.*	Convolvulaceae	Common	Aquatic Herb	C	C	C
6	*Myriophyllum tetrandrum Roxb.*	Haloragaceae	Common	Aquatic Herb	C	C	VC
7	*Myriophyllum tuberculatum Roxb.*	Haloragaceae	Common	Aquatic Herb	C	C	C
8	*Hydrilla verticillata (L.f.) Royle*	Hydrocharitaceae	Common	Aquatic Herb	C	C	C
9	*Lemna minor L.*	Lemnaceae	Very Common	Aquatic Herb	VC	VC	VC
10	*Nelumbo nucifera Gaertn.*	Nelumbonaceae	Common	Aquatic Herb	C	C	C
11	*Nymphaea nouchali Burm.f.*	Nymphaeaceae	Common	Aquatic Herb	C	C	C
12	*Nymphaea pubescens Willd.*	Nymphaeaceae	Common	Aquatic Herb	C	C	C
13	*Ludwigia adscendens (L.) H.Hara*	Onagraceae	Common	Aquatic Herb	C	C	C
14	*Ludwigia hyssopifolia (G.Don) Exell*	Onagraceae	Common	Aquatic Herb	C	C	C
15	*Pontederia crassipes Mart. Syn. Eichhornia crassipes (Mart.) Solms*	Pontederiaceae	Very Common	Aquatic Herb	R	R	R
16	*Pontederia hastata L. Syn. Monochoria hastata (L.) Solms*	Pontederiaceae	Common	Aquatic Herb	R	R	R
17	*Pontederia vaginalis Burm.f.*	Pontederiaceae	Common	Aquatic Herb	C	C	C
18	*Azolla filiculoides Lam.*	Salviniaceae	Common	Aquatic Herb	C	C	C
19	*Salvinia natans (L.) All.*	Salviniaceae	Rare	Aquatic Herb	C	C	C

Appendix 5. Other Plant groups: climber, palm, parasite, orchid and woody climber

SL No.	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
1	*Thunbergia erecta (Benth.) T.Anderson*	Acanthaceae	Very Common	Climber	VC	VC	VC
2	*Areca catechu L.*	Arecaceae	Very Common	Palm	VC	VC	VC
3	*Borassus flabellifer L.*	Arecaceae	Rare	Palm	R	R	R
4	*Cocos nucifera L.*	Arecaceae	Common	Palm	VC	VC	VC
5	*Dypsis lutescens (H.Wendl.)*	Arecaceae	Rare	Palm	R	R	R
6	*Phoenix sylvestris (L.) Roxb.*	Arecaceae	Common	Palm	C	C	C
7	*Pergularia daemia (Forssk.) Chiov.*	Asclepiadaceae	Rare	Climber	R	R	R
8	*Mikania scandens (L.) Willd.*	Asteraceae	Common	Climber	C	C	C
9	*Diplazium esculentum (Retz.) Sw.*	Athyriaceae	Common	Fern	C	C	C
10	*Combretum indicum (L.) DeFilipps Syn. Quisqualis indica L.*	Combretaceae	Rare	Climber	R	R	R
11	*Ipomoea batatas (L.) Lam.*	Convolvulaceae	Common	Climber	C	C	C
12	*Merremia hederacea (Burm. f.) Hallier f.*	Convolvulaceae	Rare	Climber	R	R	R
13	*Merremia umbellata (L.) Hallier f.*	Convolvulaceae	Rare	Climber	R	R	R
14	*Coccinia grandis (L.) Voigt*	Cucurbitaceae	Common	Climber	C	C	C
15	*Cucumis melo L.*	Cucurbitaceae	Common	Climber	C	C	C
16	*Cucumis sativus L.*	Cucurbitaceae	Very Common	Climber	VC	VC	VC
17	*Cucurbita maxima Duch.*	Cucurbitaceae	Common	Climber	C	C	C
18	*Lagenaria siceraria (Molina) Standl.*	Cucurbitaceae	Very Common	Climber	VC	VC	VC
19	*Luffa acutangula (L.) Roxb.*	Cucurbitaceae	Very Common	Climber	VC	VC	VC
20	*Luffa aegyptiaca Mill. Syn. Luffa cylindrica (L.) M. Roemer*	Cucurbitaceae	Very Common	Climber	VC	VC	VC
21	*Momordica charantia L.*	Cucurbitaceae	Very Common	Climber	VC	VC	VC
22	*Cuscuta reflexa Roxb.*	Cuscutaceae	Very Common	Climber	VC	VC	VC

SL No.	Botanical name	Family	Overall Status	Growth Form	Relative Status		
					Meherpur Sadar	Gangni	Mujibnagar
23	*Dioscorea bulbifera L.*	Dioscoreaceae	Common	Climber	C	C	C
24	*Clitoria ternatea L.*	Fabaceae	Common	Climber	C	C	C
25	*Lablab purpureus (L.) Sweet*	Fabaceae	Very Common	Climber	VC	VC	VC
26	*Dendrophthoe pentandra (L.) Miq.*	Loranthaceae	Common	Parasite	C	C	C
27	*Lygodium flexuosum (L.) Sw.*	Lygodiaceae	Rare	Fern	R	R	R
28	*Pycnarrhena pleniflora Miers*	Menispermaceae	Very Common	Climber	VC	VC	VC
29	*Bougainvillea spectabilis Willd.*	Nyctaginaceae	Common	Climber	C	C	C
30	*Erythropalum scandens Blume*	Olacaceae	Rare	Woody climber	R	R	R
31	*Acampe praemorsa (Roxb.)*	Orchidaceae	Rare	Orchid	R	R	R
32	*Zeuxine strateumatica (L.) Schltr.*	Orchidaceae	Rare	Orchid	-	-	R
33	*Drynaria quercifolia (L.) J. Sm.*	Polypodiaceae	Very Common	Fern	R	R	R
34	*Pyrrosia lanceolata L.*	Polypodiaceae	Very Common	Fern	R	R	R
35	*Pyrrosia piloselloides (L.)*	Polypodiaceae	Very Common	Fern	R	R	R
36	*Pteris vittata L.*	Pteridaceae	Common	Fern	C	C	C
37	*Christella dentata (Forssk.)*	Thelypteridaceae	Very Common	Fern	R	R	R
38	*Thelypteris prolifera*	Thelypteridaceae	Rare	Fern	R	R	R
39	*Causonis trifolia (L.)*	Vitaceae	Rare	Climber	R	R	R
40	*Vitis vinifera L.*	Vitaceae	Rare	Climber	R	R	R

Appendix 6. List of available fish species in three upazilas of Meherpur district

Sl. No.	Family	English Name	Scientific Name	Relative Status			IUCN Threat Status	
				Meherpur Sadar	Gangni	Mujibnagar	National	Global
1	Clupeidae	Indian river shad	*Gudusia chapra*	R	R	R	VU	LC
2		Ganges river sprat	*Corica soborna*	R	R	R	LC	LC
3	Beloniidae	Freshwater gar fish	*Xenentodon cancila*	C	C	C	LC	NE
4	Channidae	Spotted snakehead	*Channa punctata*	VC	VC	VC	LC	LC
5		Asiatic snakehead	*C. orientalis*	C	C	C	LC	LC
6		Snakehead murrel	*C. striatus*	UC	R	UC	LC	LC
7		Giant snakehead	*C. marulius*	R	R	R	EN	LC
8	Cobitidae	Guntea loach	*Lepidocephalichthys guntea*	R	R	R	LC	LC
9		Necktie loach	*Botia dario*	UC	UC	UC	EN	LC
10	Cyprinidae	Indian major carp	*Labeo catla*	VC	VC	VC	LC	NE
11		Indian major carp	*Labeo rohita*	C	C	C	LC	LC
12		Indian major carp	*Cirrhinus cirrhosus*	R	R	R	NT	VU
13		Reba carp	*C. reba*	R	R	R	NT	LC
14		Carplet/Morari	*Cabdio morar*	UC	UC	R	LC	LC
15		Bata	*Labeo bata*	C	UC	C	LC	LC
16		Black Rohu	*L. calbasu*	UC	UC	UC	LC	LC
17		Fine scale razorbelly minnow*	*Chela cachius*	C	C	C	VU	LC
18		Large razorbelly minnow	*Salmostoma bacaila*	R	R	R	LC	LC
19		Silver Razorbelly Minnow	*Salmostoma acinaces*	UC	UC	UC	LC	LC
20		Fine scale razorbelly minnow	*Salmostoma phulo*	UC	R	UC	NT	LC
21		Mola Carplet	*Amblypharyngodon mola*	VC	VC	VC	LC	LC
22		Flaying barb	*Esomus danrica*	UC	UC	UC	LC	LC
23		Cotio	*Osteobrama cotio*	C	UC	UC	NT	LC
24		Ticto barb	*Pethia ticto*	C	C	C	VU	LC
25		Spot fin swamp barb	*P. sophore*	VC	VC	VC	LC	LC
26		Olive barb	*Systomus sarana*	R	R	R	NT	LC
27		Red Barb	*Pethia conchonius*	UC	R	UC	LC	LC
28		Chola Barb	*Puntius chola*	C	C	C	LC	LC
29		One Spot Barb*	*Puntius terio*	C	C	C	LC	LC

Sl. No.	Family	English Name	Scientific Name	Relative Status			IUCN Threat Status	
				Meherpur Sadar	Gangni	Mujibnagar	National	Global
30	Xenocyprididae	Silver Carp	Hypophthalmichthys molitrix	C	C	C	LC	LC
31		Bighead Carp	Hypophthalmichthys molitrix	VC	VC	VC	LC	LC
32	Mugillidae	Mullet	*Rhinomugil corsula*	R	R	R	LC	LC
33	Palaemonidae	Monsoon river prawn	*Macrobrachium malcolmsonii*	UC	R	UC	LC	NE
34		Monsoon river prawn	*M. lamarrei*	C	UC	C	LC	NE
35	Notopteriidae	Clown knife fish*	*Chitala chitala*	R	R	R	EN	NT
36		Bronze featherback	*Notopterus notopterus*	UC	UC	UC	VU	C
37	Ambassidae	Elongated glass perchlet	*Chanda nama*	C	C	C	LC	LC
38		Highfin glassy perchlet	*Parambasis lala*	UC	UC	UC	LC	NE
39		Indian glassy fish	*P. ranga*	UC	UC	UC	LC	LC
40		Climbing perch	*Anabas testudineus*	C	C	C	LC	DD
41	Badidae	Badis and Dwarf chameleon fish	*Badis badis*	C	C	C	NT	LC
42	Gobiidae	Tank goby	*Glossogobius giuris*	C	C	C	LC	LC
43	Osphronemidae	Honey gourami	*Trichogaster chuna*	C	UC	C	LC	LC
44		Dwarf gourami	*Trichogaster lalius*	VC	VC	C	LC	LC
45		Banded Gourami	*Trichogaster fasciata*	UC	UC	UC	LC	LC
46		Thick-lipped Gourami	*Trichogaster labiosus*	C	C	C	LC	LC
47	Nandidae	Mud perch	*Nandus nandus*	R	R	R	NT	LC
48	Bagridae	Tengara mystus	*M. tengara*	VC	VC	VC	LC	LC
49		Striped dwarf catfish	*M. vittatus*	VC	C	VC	LC	LC
50		Long whiskered catfish	*Sperata aor*	R	R	R	VU	LC
51	Heteropneustidae	Stinging catfish	*Heteropneustes fossilis*	VC	VC	VC	LC	LC
52		Walking catfish	*Clarias batrachus*	UC	UC	UC	LC	LC
53	Pangasiidae	Yellow tail catfish	*Pangasius pangasius*	R	R	R	EN	LC
54	Schilbeidae	Batchwa vacha	*Eutropiichthys vacha*	R	R	R	LC	LC
55		Murius vacha	*E. murius*	UC	UC	UC	LC	LC
56		Gangetic ailia	*Ailia coila*	R	C	C	LC	NT
57		Indian potasi	*Pachyterus atherinoides*	R	R	R	LC	LC
58		Silond catfish	*Silonia silondia*	R	R	R	LC	LC
59	Siluridae	Freshwater shark	*Wallago attu*	VC	VC	VC	VU	NT

Sl. No.	Family	English Name	Scientific Name	Relative Status			IUCN Threat Status	
				Meherpur Sadar	Gangni	Mujibnagar	National	Global
60		Pabo catfish	*Ompok pabo*	UC	R	UC	CR	NT
61	Sisoridae	Dwarf goonch	*Bagarius bagarius*	R	R	R	CR	NT
62		Indian gagata	*Gagata cenia*	R	R	R	LC	LC
63	Mastacembelidae	Barred spiny eel	*Macrognathus pancalus*	C	C	C	LC	LC
64		Lesser spiny eel	*M. aculeatus*	VC	C	VC	NT	NE
65		Mud eel	*Monopterus cuchia*	VC	VC	VC	VU	VU
66	Tetraodontidae	Ocellated Pufferfish	*Leiodon cutcutia*	UC	R	UC	LC	LC
67	Aplochaeilidae	Blue Panchax	*Aplocheilus panchax*	R	R	R	LC	LC
68	Cichlidae	Nile Tilapia	Oreochromis niloticus	VC	VC	C	LC	LC

Status Code: VC- Very Common, C- Common, UC-Uncommon, R-Rare

IUCN Status Code: VU- Vulnerable, NT- Near Threatened, LC-Least Concern, DD-Data Deficient, NE- Not Evaluated.

Appendix 7. List of amphibians recorded in three Upazilas of Meherpur district

Sl.	Name	Scientific Name	Relative Status			IUCN Threat Status	
			Meherpur Sadar	Gangni	Mujibnagar	National	Global
1	Common Toad	*Duttaphrynus melanostictus*	VC	VC	VC	LC	LC
2	Marbled Toad	*Firouzophrynus stomaticus*	C	C	UC	LC	LC
3	Asmat's Cricket Frog	*Fejervarya asmati*	UC	UC	UC	LC	LC
4	Terai Cricket Frog	*Fejervarya teraiensis*	VC	VC	VC	LC	LC
5	Pierre's Cricket Frog	*Fejervarya pierrei*	C	C	C	LC	LC
6	Orissa Cricket Frog	*Fejervarya orissaensis*	C	C	UC	LC	LC
7	Crab-eating Frog	*Fejervarya cancrivora*	UC	UC	UC	LC	LC
8	Syhadra Cricket Frog	*Fejervarya syhadrensis*	C	C	C	LC	LC
9	Skipper Frog	*Euphlyctis cyanophlyctis*	VC	VC	VC	LC	LC
10	Green Frog	*Euphlyctis* hexadactylus	C	UC	UC	LC	LC
11	Indian Bullfrog	*Hoplobatrachus tigerinus*	C	C	C	LC	LC
12	Six-lined Tree Frog	*Polypedates leucomystax*	UC	UC	UC	LC	LC
13	Bengal Tree Frog	*Polypedates bengalensis*	UC	R	R	NE	DD
14	Cope's Frog	*Hylarana leptoglossa*	UC	UC	UC	LC	LC
15	Two-striped Grass Frog	*Hylarana taipehensis*	UC	UC	UC	LC	LC
16	Ornate Micrhylid Frog	*Microhyla ornata*	VC	VC	VC	LC	LC
17	Mymensingh Microhylid Frog	*Microhyla mymensinghensis*	UC	UC	UC	LC	LC
18	Nilphamari Microhylid Frog	*Microhyla nilphamariensis*	VC	C	C	LC	LC

Appendix 8. List of reptiles recorded in three Upazilas of Meherpur district

Sl No.	Name	Scientific Name	Relative Status			IUCN Threat Status	
			Meherpur Sadar	Gangni	Mujibnagar	National	Global
1	Common Garden Lizard	*Calotes versicolor*	VC	VC	VC	LC	LC
2	Common House Gecko	*Hemidactylus frenatus*	VC	VC	VC	LC	LC
3	Yellow-Green House Gecko	*Hemidactylus flaviviridis*	C	C	VC	LC	LC
4	Brook's House Gecko	*Hemidactylus brookii*	C	UC	C	LC	LC
5	Bronze Grass Skink	*Eutropis macularia*	C	C	UC	LC	LC
6	Keeled Grass Skink	*Eutropis carinata*	C	UC	UC	LC	LC
7	Many-lined Grass Skink	*Eutropis multifasciata*	UC	UC	R	LC	LC
8	Bowring's Supple Skink	*Lygosoma bowringii*	R	R	R	LC	LC
9	Bengal Monitor Lizard	*Varanus bengalensis*	C	C	C	LC	LC
10	Yellow Monitor	*Varanus flavescens*	R	R	R	NT	EN
11	Common Blind Snake	*Ramphotyphlops braminus*	C	C	C	LC	LC
12	Checkered Keelback	*Xenochrophis piscator*	VC	VC	VC	LC	LC
13	Striped Keelback	*Amphiesma stolatum*	UC	UC	UC	LC	LC
14	Common Smooth Water Snake	*Enhydris enhydris*	VC	VC	VC	LC	LC
15	Common wolf Snake	*Lycodon aulicus*	C	UC	UC	LC	LC
16	Indian Rat Snake	*Ptyas mucosa*	R	R	R	LC	LC
17	Monocled Cobra	*Naja kaouthia*	R	R	R	NT	LC
18	Binocled Cobra	*Naja naja*	R	R	R	NT	LC
19	Common Krait	*Bungarus caeruleus*	R	R	R	NT	LC
20	Banded Krait	*Bungarus fasciatus*	UC	UC	UC	LC	LC
21	Spotted Flapshell Turtle	*Lissemys punctata*	R	R	R	LC	LC
22	Indian Roofed Turtle	*Pangsura tecta*	R	R	R	LC	LC

Appendix 9. List of birds recorded in three Upazilas of Meherpur district

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
1	Anatidae	Fulvous Whistling-Duck	*Dendrocygna bicolor*	Wetland	R	R	R	LC	LC
2	Anatidae	Lesser Whistling-Duck	*Dendrocygna javanica*	Wetland	VC	VC	C	LC	LC
3	Anatidae	Ruddy Shelduck	*Tadorna ferruginea*	Wetland	UC	R	R	LC	LC
4	Anatidae	Common Shelduck	*Tadorna tadorna*	Wetland	R	R	R	LC	LC
5	Anatidae	Cotton Pygmy-Goose	*Nettapus coromandelianus*	Wetland	R	R	R	LC	LC
6	Anatidae	Garganey	*Spatula querquedula*	Wetland	R	R	R	LC	LC
7	Anatidae	Gadwall	*Mareca strepera*	Wetland	UC	R	R	LC	LC
8	Anatidae	Indian Spot-billed Duck	*Anas poecilorhyncha*	Wetland	R	R	-	LC	LC
9	Anatidae	Mallard	*Anas platyrhynchos*	Wetland	C	R	R	LC	LC
10	Anatidae	Northern Pintail	*Anas acuta*	Wetland	C	C	C	LC	LC
11	Anatidae	Green-winged Teal	*Anas crecca*	Wetland	C	R	R	LC	LC
12	Anatidae	Red-crested Pochard	*Netta rufina*	Wetland	R	R	-	LC	LC
13	Anatidae	Common Pochard	*Aythya ferina*	Wetland	R	R	R	LC	VU
14	Columbidae	Rock Pigeon	*Columba livia*	Agriculture land	VC	VC	VC	LC	LC
15	Columbidae	Eurasian Collared-Dove	*Streptopelia decaocto*	Agriculture land	VC	C	VC	LC	LC
16	Columbidae	Red Collared-Dove	*Streptopelia tranquebarica*	Agriculture land	VC	VC	C	LC	LC
17	Columbidae	Spotted Dove	*Spilopelia chinensis*	Homestead vegetation	VC	VC	VC	LC	LC
18	Columbidae	Yellow-footed Green-Pigeon	*Treron phoenicopterus*	Homestead vegetation	VC	C	C	LC	LC
19	Cuculidae	Greater Coucal	*Centropus sinensis*	Homestead vegetation	VC	VC	VC	LC	LC
20	Cuculidae	Chestnut-winged Cuckoo	*Clamator coromandus*	Homestead vegetation	UC	R	UC	LC	LC
21	Cuculidae	Pied Cuckoo	*Clamator jacobinus*	Homestead vegetation	C	C	UC	LC	LC
22	Cuculidae	Asian Koel	*Eudynamys scolopaceus*	Homestead vegetation	VC	VC	VC	LC	LC
23	Cuculidae	Plaintive Cuckoo	*Cacomantis merulinus*	Homestead vegetation	VC	C	R	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
24	Cuculidae	Large Hawk-Cuckoo	*Hierococcyx sparverioides*	Homestead vegetation	R	R	R	LC	LC
25	Cuculidae	Common Hawk-Cuckoo	*Hierococcyx varius*	Homestead vegetation	VC	C	VC	LC	LC
26	Cuculidae	Indian Cuckoo	*Cuculus micropterus*	Homestead vegetation	VC	VC	C	LC	LC
27	Caprimulgidae	Large-tailed Nightjar	*Caprimulgus macrurus*	Homestead vegetation	VC	VC	VC	LC	LC
28	Podargidae	House Swift	*Apus nipalensis*	Homestead vegetation	VC	VC	VC	LC	LC
29	Podargidae	Asian Palm Swift	*Cypsiurus balasiensis*	Homestead vegetation	VC	VC	VC	LC	LC
30	Rallidae	Eurasian Moorhen	*Gallinula chloropus*	Wetland	VC	VC	VC	LC	LC
31	Rallidae	Eurasian Coot	*Fulica atra*	Wetland	C	C	R	LC	LC
32	Rallidae	Watercock	*Gallicrex cinerea*	Wetland	R	R	R	LC	LC
33	Rallidae	White-breasted Waterhen	*Amaurornis phoenicurus*	Wetland	VC	VC	VC	LC	LC
34	Recurvirostridae	Black-winged Stilt	*Himantopus himantopus*	Wetland	R	UC	R	LC	LC
35	Recurvirostridae	Pied Avocet	*Recurvirostra avosetta*	Wetland	R	R	R	LC	LC
36	Charadriidae	Pacific Golden-Plover	*Pluvialis fulva*	Wetland	C	R	R	LC	LC
37	Charadriidae	Little Ringed Plover	*Thinornis dubius*	Wetland	C	C	C	LC	LC
38	Charadriidae	Northern Lapwing	*Vanellus vanellus*	Wetland	R	R	R	NT	NT
39	Charadriidae	River Lapwing	*Vanellus duvaucelii*	Wetland	UC	R	R	NT	NT
40	Charadriidae	Yellow-wattled Lapwing	*Vanellus malabaricus*	Wetland	C	R	R	NT	LC
41	Charadriidae	Gray-headed Lapwing	*Vanellus cinereus*	Wetland	VC	C	R	LC	LC
42	Charadriidae	Red-wattled Lapwing	*Vanellus indicus*	Wetland	VC	VC	VC	LC	LC
43	Charadriidae	Greater Sand-Plover	*Anarhynchus leschenaultii*	Wetland	R	R	R	LC	LC
44	Charadriidae	Kentish Plover	*Anarhynchus alexandrinus*	Wetland	R	UC	R	LC	LC
45	Jacanidae	Pheasant-tailed Jacana	*Hydrophasianus chirurgus*	Wetland	C	C	C	LC	LC
46	Jacanidae	Bronze-winged Jacana	*Metopidius indicus*	Wetland	VC	VC	VC	LC	LC
47	Scolopacidae	Common Snipe	*Gallinago gallinago*	Wetland	C	R	R	LC	LC
48	Scolopacidae	Common Sandpiper	*Actitis hypoleucos*	Wetland	VC	VC	-	LC	LC
49	Scolopacidae	Green Sandpiper	*Tringa ochropus*	Wetland	VC	VC	C	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
50	Scolopacidae	Marsh Sandpiper	*Tringa stagnatilis*	Wetland	C	C	R	LC	LC
51	Scolopacidae	Wood Sandpiper	*Tringa glareola*	Wetland	C	C	C	LC	LC
52	Scolopacidae	Common Redshank	*Tringa totanus*	Wetland	C	C	C	LC	LC
53	Scolopacidae	Common Greenshank	*Tringa nebularia*	Wetland	C	R	R	LC	LC
54	Scolopacidae	Temminck's Stint	*Calidris temminckii*	Wetland	VC	VC	VC	LC	LC
55	Scolopacidae	Red-necked Stint	*Calidris ruficollis*	Wetland	R	-	R	NT	NT
56	Scolopacidae	Little Stint	*Calidris minuta*	Wetland	C	C	C	LC	LC
57	Glareolidae	Oriental Pratincole	*Glareola maldivarum*	Wetland	R	R	R	LC	LC
58	Laridae	Black-headed Gull	*Chroicocephalus ridibundus*	Wetland	R	R	R	LC	LC
59	Laridae	Brown-headed Gull	*Chroicocephalus brunnicephalus*	Wetland	R	R	R	LC	LC
60	Laridae	Pallas's Gull	*Ichthyaetus ichthyaetus*	Wetland	R	-	-	LC	LC
61	Laridae	Little Tern	*Sternula albifrons*	Wetland	VC	R	R	LC	LC
62	Laridae	River Tern	*Sterna aurantia*	Wetland	C	-	-	NT	VU
63	Laridae	Common Tern	*Sterna hirundo*	Wetland	C	C	C	LC	LC
64	Podicipedidae	Little Grebe	*Tachybaptus ruficollis*	Wetland	C	C	C	LC	LC
65	Podicipedidae	Great Crested Grebe	*Podiceps cristatus*	Wetland	C	-	-	LC	LC
66	Ciconiidae	Asian Openbill	*Anastomus oscitans*	Wetland	VC	VC	VC	LC	LC
67	Anhingidae	Oriental Darter	*Anhinga melanogaster*	Wetland	VC	C	R	NT	LC
68	Phalacrocoracidae	Little Cormorant	*Microcarbo niger*	Wetland	VC	VC	VC	LC	LC
69	Phalacrocoracidae	Great Cormorant	*Phalacrocorax carbo*	Wetland	R	R	-	LC	LC
70	Phalacrocoracidae	Indian Cormorant	*Phalacrocorax fuscicollis*	Wetland	R	R	R	LC	LC
71	Threskiornithidae	Black-headed Ibis	*Threskiornis melanocephalus*	Wetland	C	C	C	VU	LC
72	Ardeidae	Cinnamon Bittern	*Botaurus cinnamomeus*	Wetland	R	R	-	LC	LC
73	Ardeidae	Yellow Bittern	*Botaurus sinensis*	Wetland	C	-	C	LC	LC
74	Ardeidae	Black-crowned Night Heron	*Nycticorax nycticorax*	Wetland	VC	VC	VC	LC	LC
75	Ardeidae	Little Egret	*Egretta garzetta*	Wetland	VC	VC	VC	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
76	Ardeidae	Striated Heron	*Butorides striata*	Wetland	VC	VC	VC	LC	LC
77	Ardeidae	Indian Pond-Heron	*Ardeola grayii*	Wetland	VC	VC	VC	LC	LC
78	Ardeidae	Eastern Cattle-Egret	*Ardea coromanda*	Wetland	VC	VC	VC	LC	LC
79	Ardeidae	Great Egret	*Ardea alba*	Wetland	VC	VC	VC	LC	LC
80	Ardeidae	Medium Egret	*Ardea intermedia*	Wetland	VC	C	R	LC	LC
81	Ardeidae	Gray Heron	*Ardea cinerea*	Wetland	VC	VC	VC	LC	LC
82	Accipitridae	Black-winged Kite	*Elanus caeruleus*	Agriculture land	VC	VC	VC	LC	LC
83	Accipitridae	Oriental Honey-buzzard	*Pernis ptilorhynchus*	Agriculture land	C	C	C	LC	LC
84	Accipitridae	Changeable Hawk-Eagle	*Nisaetus cirrhatus*	Agriculture land	C	C	C	LC	LC
85	Accipitridae	Shikra	*Tachyspiza badia*	Agriculture land	C	C	C	LC	LC
86	Accipitridae	Western Marsh Harrier	*Circus aeruginosus*	Agriculture land	R	R	-	LC	LC
87	Accipitridae	Eastern Marsh Harrier	*Circus spilonotus*	Agriculture land	R	R	R	LC	LC
88	Accipitridae	Pied Harrier	*Circus melanoleucos*	Agriculture land	C	C	C	LC	LC
89	Accipitridae	Black Kite	*Milvus migrans*	Agriculture land	VC	VC	VC	LC	LC
90	Accipitridae	Brahminy Kite	*Haliastur indus*	Agriculture land	VC	VC	VC	LC	LC
91	Accipitridae	Gray-headed Fish-Eagle	*Icthyophaga ichthyaetus*	Wetland	VC	VC	VC	NT	NT
92	Accipitridae	Imperial Eagle	*Aquila heliaca*	Grasslands and Open habitats	R	-	-	VU	VU
93	Accipitridae	White-eyed Buzzard	*Butastur teesa*	Agriculture land	R		R	LC	LC
94	Accipitridae	Common Buzzard	*Buteo buteo*	Agriculture land	R	R	R	LC	LC
95	Accipitridae	Long-legged Buzzard	*Buteo rufinus*	Agriculture land	-	R	R	LC	LC
96	Strigidae	Collared Scops-Owl	*Otus lettia*	Homestead vegetation	VC	VC	VC	LC	LC
97	Strigidae	Brown Fish-Owl	*Ketupa zeylonensis*	Homestead vegetation	VC	VC	VC	LC	EN
98	Strigidae	Spotted Owlet	*Athene brama*	Homestead vegetation	VC	VC	VC	LC	LC
99	Strigidae	Brown Boobook	*Ninox scutulata*	Homestead vegetation	VC	VC	VC	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
100	Upupidae	Eurasian Hoopoe	*Upupa epops*	Grasslands and Open habitats	VC	VC	VC	LC	LC
101	Meropidae	Asian Green Bee-eater	*Merops orientalis*	Grasslands and Open habitats	VC	VC	VC	LC	LC
102	Meropidae	Chestnut-headed Bee-eater	*Merops leschenaulti*	Grasslands and Open habitats	VC	VC	VC	LC	LC
103	Alcedinidae	Common Kingfisher	*Alcedo atthis*	Wetland	VC	VC	VC	LC	LC
104	Alcedinidae	Stork-billed Kingfisher	*Pelargopsis capensis*	Wetland	VC	VC	VC	LC	LC
105	Alcedinidae	White-throated Kingfisher	*Halcyon smyrnensis*	Wetland	VC	VC	VC	LC	LC
106	Alcedinidae	Pied Kingfisher	*Ceryle rudis*	Wetland	VC	VC	VC	LC	LC
107	Coraciidae	Indian Roller	*Coracias benghalensis*	Homestead vegetation	VC	VC	VC	LC	LC
108	Coraciidae	Indochinese Roller	*Coracias affinis*	Homestead vegetation	VC	VC	VC	DD	LC
109	Megalaimidae	Coppersmith Barbet	*Psilopogon haemacephalus*	Homestead vegetation	VC	VC	VC	LC	LC
110	Megalaimidae	Lineated Barbet	*Psilopogon lineatus*	Homestead vegetation	VC	VC	VC	LC	LC
111	Megalaimidae	Blue-throated Barbet	*Psilopogon asiaticus*	Homestead vegetation	VC	VC	VC	LC	LC
112	Picidae	Eurasian Wryneck	*Jynx torquilla*	Grasslands and Open habitats	C	C	-	LC	LC
113	Picidae	Fulvous-breasted Woodpecker	*Dendrocopos macei*	Homestead vegetation	VC	VC	VC	LC	LC
114	Picidae	Greater Flameback	*Chrysocolaptes guttacristatus*	Homestead vegetation	VC	C	R	LC	LC
115	Picidae	Rufous Woodpecker	*Micropternus brachyurus*	Homestead vegetation	VC	VC	VC	LC	LC
116	Picidae	Black-rumped Flameback	*Dinopium benghalense*	Homestead vegetation	VC	VC	VC	LC	LC
117	Picidae	Streak-throated Woodpecker	*Picus xanthopygaeus*	Homestead vegetation	VC	VC	VC	LC	LC
118	Falconidae	Eurasian Kestrel	*Falco tinnunculus*	Agriculture land	C	R	C	LC	LC
119	Falconidae	Red-necked Falcon	*Falco chicquera*	Agriculture land	R	R	R	LC	LC
120	Psittaculidae	Rose-ringed Parakeet	*Psittacula krameri*	Homestead vegetation	VC	VC	VC	LC	LC
121	Campephagidae	Small Minivet	*Pericrocotus cinnamomeus*	Homestead vegetation	VC	VC	VC	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
122	Campephagidae	Black-headed Cuckooshrike	*Lalage melanoptera*	Homestead vegetation	VC	VC	VC	LC	LC
123	Oriolidae	Black-naped Oriole	*Oriolus chinensis*	Homestead vegetation	R	R	-	LC	LC
124	Oriolidae	Black-hooded Oriole	*Oriolus xanthornus*	Homestead vegetation	VC	VC	VC	LC	LC
125	Artamidae	Ashy Woodswallow	*Artamus fuscus*	Homestead vegetation	C	C	C	LC	LC
126	Vangidae	Large Woodshrike	*Tephrodornis virgatus*	Homestead vegetation	VC	VC	VC	LC	LC
127	Vangidae	Common Woodshrike	*Tephrodornis pondicerianus*	Homestead vegetation	VC	VC	VC	LC	LC
128	Aegithinidae	Common Iora	*Aegithina tiphia*	Homestead vegetation	VC	VC	VC	LC	LC
129	Rhipiduridae	White-throated Fantail	*Rhipidura albicollis*	Agriculture land	VC	VC	VC	LC	LC
130	Dicruridae	Black Drongo	*Dicrurus macrocercus*	Homestead vegetation	VC	VC	VC	LC	LC
131	Dicruridae	Ashy Drongo	*Dicrurus leucophaeus*	Homestead vegetation	VC	VC	VC	LC	LC
132	Dicruridae	Bronzed Drongo	*Dicrurus aeneus*	Homestead vegetation	VC	VC	VC	LC	LC
133	Monarchidae	Black-naped Monarch	*Hypothymis azurea*	Agriculture land	C	C	C	LC	LC
134	Monarchidae	Indian Paradise-Flycatcher	*Terpsiphone paradisi*	Agriculture land	C	C	C	LC	LC
135	Laniidae	Brown Shrike	*Lanius cristatus*	Agriculture land	VC	VC	VC	LC	LC
136	Laniidae	Long-tailed Shrike	*Lanius schach*	Agriculture land	VC	VC	VC	LC	LC
137	Laniidae	Gray-backed Shrike	*Lanius tephronotus*	Agriculture land	C	C	C	LC	LC
138	Corvidae	Rufous Treepie	*Dendrocitta vagabunda*	Homestead vegetation	VC	VC	VC	LC	LC
139	Corvidae	House Crow	*Corvus splendens*	Agriculture land	VC	VC	VC	LC	LC
140	Corvidae	Large-billed Crow	*Corvus macrorhynchos*	Agriculture land	VC	VC	VC	LC	LC
141	Alaudidae	Ashy-crowned Sparrow-Lark	*Eremopterix griseus*	Grasslands and Open habitats	-	R	R	LC	LC
142	Alaudidae	Bengal Bushlark	*Plocealauda assamica*	Grasslands and Open habitats	C	C	UC	LC	LC
143	Alaudidae	Oriental Skylark	*Alauda gulgula*	Grasslands and Open habitats	R	C	R	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
144	Alaudidae	Sand Lark	*Alaudala raytal*	Grasslands and Open habitats	C	C	C	LC	LC
145	Cisticolidae	Common Tailorbird	*Orthotomus sutorius*	Agriculture land	VC	VC	VC	LC	LC
146	Cisticolidae	Rufescent Prinia	*Prinia rufescens*	Grasslands and Open habitats	VC	VC	VC	LC	LC
147	Cisticolidae	Gray-breasted Prinia	*Prinia hodgsonii*	Grasslands and Open habitats	VC	C	R	LC	LC
148	Cisticolidae	Plain Prinia	*Prinia inornata*	Grasslands and Open habitats	VC	VC	VC	LC	LC
149	Cisticolidae	Zitting Cisticola	*Cisticola juncidis*	Grasslands and Open habitats	VC	C	VC	LC	LC
150	Acrocephalidae	Thick-billed Warbler	*Arundinax aedon*	Grasslands and Open habitats	VC	VC	C	LC	LC
151	Acrocephalidae	Paddyfield Warbler	*Acrocephalus agricola*	Grasslands and Open habitats	C	C	VC	LC	LC
152	Acrocephalidae	Blyth's Reed Warbler	*Acrocephalus dumetorum*	Grasslands and Open habitats	C	C	VC	LC	LC
153	Acrocephalidae	Clamorous Reed Warbler	*Acrocephalus stentoreus*	Grasslands and Open habitats	VC	VC	VC	LC	LC
154	Locustellidae	Striated Grassbird	*Megalurus palustris*	Grasslands and Open habitats	C	C	C	LC	LC
155	Hirundinidae	Barn Swallow	*Hirundo rustica*	Agriculture land	VC	VC	VC	LC	LC
156	Pycnonotidae	Red-vented Bulbul	*Pycnonotus cafer*	Homestead vegetation	VC	VC	VC	LC	LC
157	Pycnonotidae	Red-whiskered Bulbul	*Pycnonotus jocosus*	Homestead vegetation	R	R	R	LC	LC
158	Phylloscopidae	Dusky Warbler	*Phylloscopus fuscatus*	Agriculture land	UC	UC	UC	LC	LC
159	Phylloscopidae	Greenish Warbler	*Phylloscopus trochiloides*	Agriculture land	UC	UC	UC	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
160	Phylloscopidae	Blyth's Leaf Warbler	*Phylloscopus reguloides*	Agriculture land	C	C	C	LC	LC
161	Zosteropidae	Indian White-eye	*Zosterops palpebrosus*	Homestead vegetation	VC	VC	VC	LC	LC
162	Leiothrichidae	Jungle Babbler	*Argya striata*	Agriculture land	VC	VC	VC	LC	LC
163	Leiothrichidae	Striated Babbler	*Argya earlei*	Agriculture land	C	C	C	LC	LC
164	Sturnidae	Indian Pied Starling	*Gracupica contra*	Agriculture land	VC	VC	VC	LC	LC
165	Sturnidae	Chestnut-tailed Starling	*Sturnia malabarica*	Agriculture land	VC	VC	VC	LC	LC
166	Sturnidae	Common Myna	*Acridotheres tristis*	Agriculture land	VC	VC	VC	LC	LC
167	Sturnidae	Bank Myna	*Acridotheres ginginianus*	Agriculture land	VC	VC	VC	LC	LC
168	Sturnidae	Jungle Myna	*Acridotheres fuscus*	Agriculture land	VC	VC	VC	LC	LC
169	Turdidae	Orange-headed Thrush	*Geokichla citrina*	Agriculture land	VC	VC	VC	LC	LC
170	Muscicapidae	Oriental Magpie-Robin	*Copsychus saularis*	Agriculture land	VC	VC	VC	LC	LC
171	Muscicapidae	Siberian Rubythroat	*Calliope calliope*	Grasslands and Open habitats	-	R	R	LC	LC
172	Muscicapidae	Taiga Flycatcher	*Ficedula albicilla*	Agriculture land	VC	VC	VC	LC	LC
173	Muscicapidae	Red-breasted Flycatcher	*Ficedula parva*	Agriculture land	VC	VC	VC	LC	LC
174	Muscicapidae	White-tailed Stonechat	*Saxicola leucurus*	Agriculture land	R	R	R	LC	LC
175	Dicaeidae	Pale-billed Flowerpecker	*Dicaeum erythrorhynchos*	Homestead vegetation	C	C	R	LC	LC
176	Dicaeidae	Scarlet-backed Flowerpecker	*Dicaeum cruentatum*	Homestead vegetation	C	C	C	LC	LC
177	Nectariniidae	Purple-rumped Sunbird	*Leptocoma zeylonica*	Homestead vegetation	VC	VC	VC	LC	LC
178	Nectariniidae	Purple Sunbird	*Cinnyris asiaticus*	Homestead vegetation	VC	VC	VC	LC	LC
179	Nectariniidae	Crimson Sunbird	*Aethopyga siparaja*	Homestead vegetation	C	C	VC	LC	LC
180	Nectariniidae	Little Spiderhunter	*Arachnothera longirostra*	Homestead vegetation	R	R	R	LC	LC
181	Ploceidae	Streaked Weaver	*Ploceus manyar*	Grasslands and Open habitats	UC	UC	UC	LC	LC
182	Ploceidae	Baya Weaver	*Ploceus philippinus*	Grasslands and Open habitats	VC	VC	VC	LC	LC

SL	Family	English Name	Scientific Name	Habitat	Relative Status			IUCN Threat Status	
					Meherpur Sadar	Gangni	Mujibnagar	National	Global
183	Ploceidae	Black-breasted Weaver	*Ploceus benghalensis*	Grasslands and Open habitats	R	R	R	LC	LC
184	Estrildidae	Indian Silverbill	*Euodice malabarica*	Grasslands and Open habitats	VC	VC	VC	LC	LC
185	Estrildidae	Scaly-breasted Munia	*Lonchura punctulata*	Grasslands and Open habitats	VC	VC	VC	LC	LC
186	Estrildidae	White-rumped Munia	*Lonchura striata*	Grasslands and Open habitats	VC	VC	VC	LC	LC
187	Estrildidae	Tricolored Munia	*Lonchura malacca*	Grasslands and Open habitats	VC	C	C	LC	LC
188	Estrildidae	Chestnut Munia	*Lonchura atricapilla*	Grasslands and Open habitats	C	VC	VC	LC	LC
189	Passeridae	House Sparrow	*Passer domesticus*	Agriculture land	VC	VC	VC	LC	LC
190	Motacillidae	Western Yellow Wagtail	*Motacilla flava*	Wetland	VC	C	C	LC	LC
191	Motacillidae	Eastern Yellow Wagtail	*Motacilla tschutschensis*	Wetland	C	C	C	LC	LC
192	Motacillidae	Citrine Wagtail	*Motacilla citreola*	Wetland	VC	VC	VC	LC	LC
193	Motacillidae	White-browed Wagtail	*Motacilla maderaspatensis*	Wetland	VC	VC	VC	LC	LC
194	Motacillidae	White Wagtail	*Motacilla alba*	Wetland	VC	VC	VC	LC	LC
195	Motacillidae	Richard's Pipit	*Anthus richardi*	Grasslands and Open habitats	C	C	C	LC	LC
196	Motacillidae	Rosy Pipit	*Anthus roseatus*	Agriculture land	C	C	C	LC	LC
197	Motacillidae	Olive-backed Pipit	*Anthus hodgsoni*	Agriculture land	VC	VC	VC	LC	LC
198	Phasianidae	Common Quail	*Coturnix coturnix*	Grasslands and Open habitats	R	-	-	DD	LC
199	Rallidae	Slaty-breasted Rail	*Lewinia striata*	Wetland	R		R	LC	LC

Appendix 10. List of mammals recorded in three Upazilas of Meherpur district

Sl.	Name	Scientific Name	Relative Status			IUCN Threat Status	
			Meherpur Sadar	Gangni	Mujib nagar	National	Global
1	Hoary-bellied Squirrel	*Callosciurus pygerythrus*	VC	VC	VC	LC	LC
2	Five-striped Palm Squirrel	Funambulus pennantii	C	C	C	LC	LC
3	Lesser Bandicoot Rat	*Bandicota bengalensis*	VC	VC	VC	LC	LC
4	Greater Bandicote Rat	*Bandicota indica*	VC	VC	VC	LC	LC
5	Eastern House Mouse	*Mus musculus*	VC	VC	VC	LC	LC
6	Fileld Mouse	Mus booduga	UC	UC	UC	LC	LC
7	House Rat	*Rattus rattus*	VC	VC	VC	LC	LC
8	Long-tailed Climbing Mouse	*Vandeleuria oleracea*	C	C	C	LC	LC
9	Asian House Shrew	*Suncus murinus*	VC	VC	VC	LC	LC
10	Indian Flying Fox	*Pteropus giganteus*	VC	VC	VC	LC	LC
11	Greater Short-nosed Fruit Bat	*Cynopterus sphinx*	C	C	UC	LC	LC
12	Lesser Asiatic Yellow Bat	*Scotophilus kuhlii*	R	R	C	LC	LC
13	Indian Pipistrelle	*Pipistrellus coromandra*	UC	UC	C	LC	LC
14	Least Pipistrelle	*Pipistrellus tenuis*	R	R	R	LC	LC
15	Intermediate Roundleaf Bat	*Hipposideros larvatus*	R	R	UC	LC	LC
16	Greater False Vampire Bat	*Lyroderma lyra*	UC	UC	UC	LC	LC
17	Small Indian Mongoose	*Herpestes auropunctatus*	C	UC	C	LC	LC
18	Grey Mongoose	*Herpestes edwardsi*	C	C	C	LC	LC
19	Golden Jackal	*Canis aureus*	VC	VC	VC	LC	LC
20	Bengal Fox	*Vulpes bengalensis*	R	R	R	VU	LC
21	Jungle Cat	*Felis chaus*	R	R	R	NT	LC
22	Fishing Cat	*Prionailurus viverrinus*	R	R	R	EN	EN
23	Large Indian Civet	*Viverra zibetha*	R	UC	R	NT	LC
24	Small Indian Civet	*Viverricula indica*	R	R	UC	NT	NT
25	Common Palm Civet	*Paradoxurus hermaphroditus*	UC	UC	C	LC	LC
26	Rufous-tailed hare	*Lepus nigricollis*	R	R	R	EN	LC
27	Northern Grey Langur	*Semnopithecus entellus*	C	C	C	EN	LC