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Kumarkhali Upazila: a key habitat for the breeding of birds

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Abstract

*Present status of birds as well as their breeding allow them to conserve. Kumarkhali Upazila of Bangladesh could be a suitable place to observe the abundance, distribution, and breeding biology of wild birds. At the time of surveying, direct observation, and interviews with locals and experts helped to write this paper. Out of 100 species of birds, common residents were found 41 and uncommon visitors (winter and summer) 8, with 17 orders and 50 families as well. Within the resident birds, the breeding species were 51 out of 100 species of birds. Remarkable plants were banyan (*Ficus benghalensis*), rubber (*Ficus elastica*), American mahogany (*Swietenia mahagoni*), coconut (*Cocos nucifera*), and karoi (*Albizia procera*). Gorai River and ponds supported to build their nest to successful breeding. The highest birds were found in the order Passeriformes (40 species) then the Pelecaniformes (8 species) due to sufficient bushes and water resources in this area. Due to rapid urbanization, most of the birds are decreasing but recently, bank myna (*Acridotheres ginginianus*), feral pigeon (*Columba livia*), white-rumped munia (*Lonchura striata*), and yellow-footed green pigeon (*Treron phoenicopterus*) were seen abundant with their nests. Without grey-headed fish-eagle other enlisted species were found least concern.*

Keywords: Kumarkhali Upazila, Kushtia District, birds, habitat, breeding, Bangladesh

Introduction

Kumarkhali Upazila is bounded by Pabna Sadar Upazila and the Padma River on the north; Shailkupa Upazila on the south; Khoksa Upazila on the east; and Kushtia Sadar Upazila on the west (Fig 1). Kumarkhali Thana was turned into an upazila in the year 1983. Besides, Kumarkhali Municipality formed in 1869, is one of the

earliest municipalities of the undivided Bengal. This upazila has an area of 258.18 square kilometres (Tipu, 2012). The average highest temperature is 37.8 °C and the lowest 10.4 °C. Annual rainfall averages 1,467 millimetres and humidity 77%. It is consisted of 11 union parishads—Bagulat, Chandpur, Chapra, Jadu Boyra,

Jagannathpur, Kaya, Nandalalpur, Panti, Sadaki, Sadipur, and Shelaidaha. The union parishads are subdivided into 187 mouzas and 201 villages (Tipu, 2012). Enormous urbanization is a common scenario in this area, and is alarming to sustain avian species. This urbanization surely effects on the animal population (Gregory *et al.* 2004). Railway station and their surrounding areas play a significant role for many birds. Kumarkhali town has a

significant ecopark, mango garden of Kumarkhali M. N. Pilot High School and its adjacent palm trees and banyan trees are suitable for palm swifts and yellow-footed green pigeons, and Gorai River is remarkable for aquatic birds. Parks and botanical gardens are always significant for foraging birds (Golley, 2004). The objective of this study is to understand the present status of birds in Kumarkhali Upazila for their conservation.

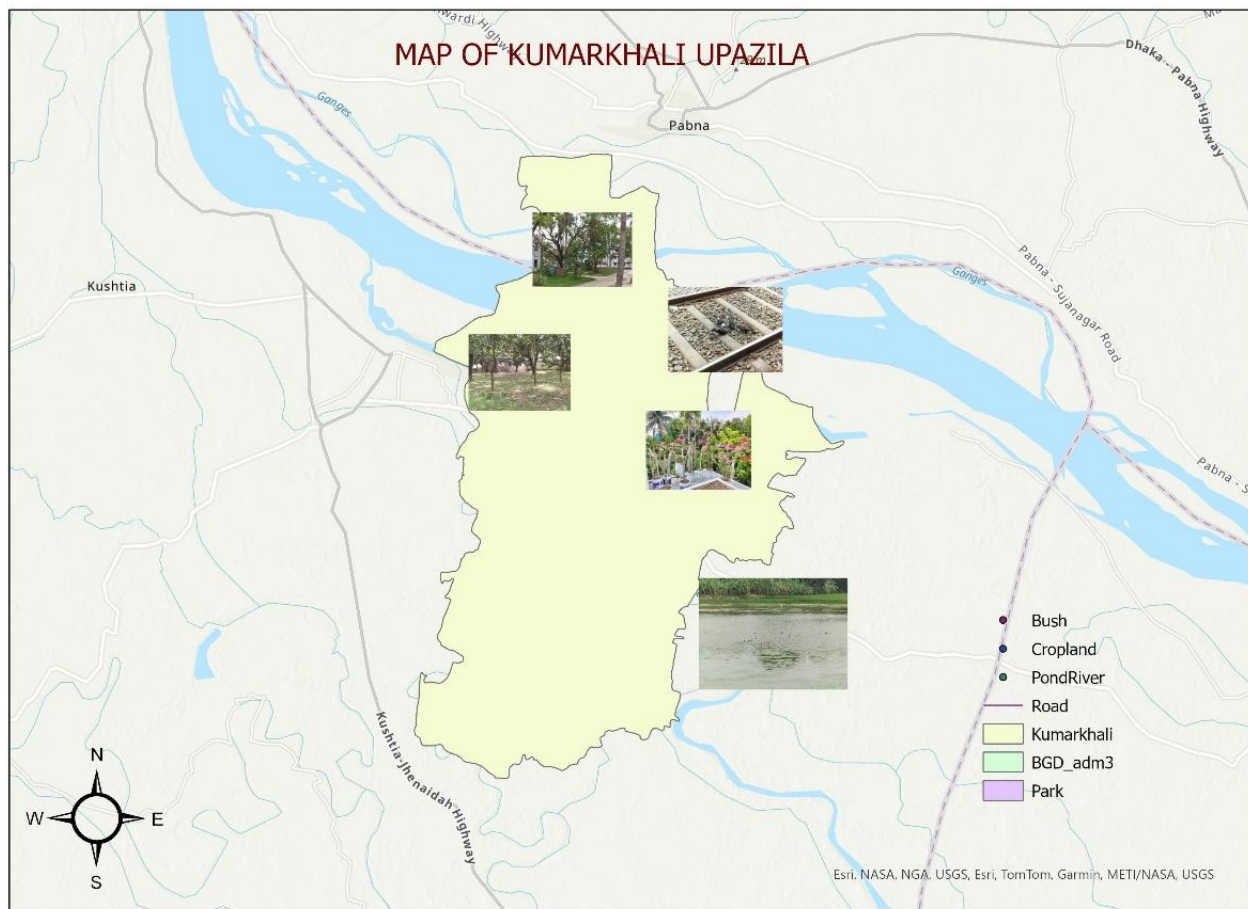


Fig 1. Remarkable avian habitats in Kumarkhali Upazila

Materials and Methods

This avian observation was performed mainly six significant places of Kumarkhali Upazila—Kumarkhali Upazila (Plate 2), Kumarkhali Railway Station (Plate 3), Sultanpur Karatkandi Beel (Plate 1), Batikamara, Durgapur, and Elongi with 23°86'21" N, 89°24'09" E; 23°86'04" N, 89°24'13" E; 23°51'15" N, 89°14'30" E; 23°85'52" N, 89°25'03" E; 23°49'55" N, 89°11'27" E; and 23°85'98" N, 89°22'78" E coordinates. Additionally, on the way of Ghaskhal village and Ghaskhal beel was significant for observing many common avian species. In Elongi area, Kumarkhali M. N. Pilot High School and its adjacent areas were surrounded by trees, ponds, and Gorai River. All birds were observed regular basis additionally some appointed manpower from 5:00 A. M. to 8:00 A. M. then 4:00 P. M. to 7:00 P. M. (total 6 hours daily). For nocturnal birds (nightjars, owls), 2-3 visits at night in a week from 8:00 P. M. to 12:00 P. M. were enough. An android mobile phone (oppo, model no. CPH2365) was perfect for taking occasional photographs and voice recordings of those birds. A pair of high-quality binoculars (10x-70x × 70mm, Comet) was helpful for this survey. A DSLR camera (Canon, EOS Rebel T3i) with 200-500mm lens is used for

necessary snaps. This study was carried out from January 2024 to March 2026.



Plate 1. Karatkandi beel

Results

Out of 100 species of birds, 41 species were common residents whereas 8 were uncommon with winter and summer visitors. Breeding birds were noticed in 51 species. Based on the taxonomy of birds, identified orders and families were 17 and 50. The passerine birds were the highest (40 species) due to sufficient bushes and water bodies in above areas. Grey-headed fish-eagle was seen near threatened (NT) both nationally and globally, others were in least concern (LC) (Tables 1-2; Fig 2).



Table 1. Avian species in Kumarkhali Upazila

Sl.	Classification with names	Family	National status	Global status	Availability and local status
Columbiformes (5 species) (Family 2)					
1	*Feral pigeon, <i>Columba livia</i> , Gmelin 1789	Columbidae	LC	LC	Very common; resident
2	*Eurasian collared-dove, <i>Streptopelia decaocto</i> (Frisch 1838)	Columbidae	LC	LC	Common; resident
3	Red collared-dove, <i>Streptopelia tranquebarica</i> (Hermann 1804)	Columbidae	LC	LC	Rare; resident
4	*Spotted-dove, <i>Spilopelia chinensis</i> (Scopoli 1786)	Columbidae	LC	LC	Very common; resident
5	*Yellow-footed green-pigeon, <i>Treron phoenicopterus</i> (Latham 1790)	Treronidae	LC	LC	Few; resident
Psittaciformes (2 species) (Family 1)					
6	*Rose-ringed parakeet, <i>Psittacula krameri</i> (Scopoli 1769)	Psittacidae	LC	LC	Common; resident
7	Plum-headed parakeet, <i>Psittacula cyanocephala</i> (Linnaeus 1766)	Psittacidae	LC	LC	Uncommon; resident
Anseriformes (2 species) (Family 1)					
8	Lesser whistling duck, <i>Dendrocygna javanica</i> (Horsfield 1821)	Anatidae	LC	LC	Very common; resident
9	Cotton pygmy-goose, <i>Nettapus coromandelianus</i> (Gmelin 1789)	Anatidae	LC	LC	Common; resident
Accipitriformes (5 species) (Family 1)					
10	Black kite, <i>Milvus migrans</i> (Boddaert 1783)	Accipitridae	LC	LC	Very common; resident
11	Brahminy kite, <i>Haliastur indus</i> (Boddaert 1783)	Accipitridae	LC	LC	Few; resident
12	Black-shouldered kite, <i>Elanus caeruleus</i> (Desfontains 1789)	Accipitridae	LC	LC	Common; resident
13	Grey-headed fish-eagle, <i>Ichthyophaga ichthyaetus</i> (Horsfield 1821)	Accipitridae	NT	NT	Rare; resident
14	Shikra, <i>Accipiter badius</i> (Gmelin, 1788)	Accipitridae	LC	LC	Common; resident
Falconiformes (1 species) (Family 1)					
15	Peregrine falcon, <i>Falco peregrinus</i> , Tunstall 1771	Falconidae	LC	LC	Uncommon; winter visitor
Strigiformes (3 species) (Family 2)					
16	*Spotted owl, <i>Athene brama</i> (Temminck 1821)	Strigidae	LC	LC	Very common; resident
17	Collared scops owl, <i>Otus bakkamoena</i> , Pennant 1769	Strigidae	LC	LC	Common; resident
18	*Barn owl, <i>Tyto alba</i> (Scopoli 1769)	Tytonidae	LC	LC	Common; resident

	Bucerotiformes (1 species) (Family 1)				
19	Eurasian hoopoe, <i>Upupa epops</i> , Linnaeus 1758	Upupidae	LC	LC	Uncommon; winter visitor
	Coraciiformes (6 species) (Family 3)				
20	*Common kingfisher, <i>Alcedo atthis</i> (Linnaeus 1758)	Alcedinidae	LC	LC	Very common; resident
21	*White-breasted kingfisher, <i>Halcyon smyrnensis</i> (Linnaeus 1758)	Alcedinidae	LC	LC	Very common; resident
22	*Stork-billed kingfisher, <i>Pelargopsis capensis</i> (Linnaeus 1766)	Alcedinidae	LC	LC	Common; resident
23	*Pied kingfisher, <i>Ceryle rudis</i> (Linnaeus 1758)	Alcedinidae	LC	LC	Common; resident
24	Asian green bee-eater, <i>Merops orientalis</i> , Latham 1801	Meropidae	LC	LC	Very common; resident
25	Indian roller, <i>Coracias benghalensis</i> (Linnaeus 1758)	Coraciidae	LC	LC	Very common; resident
	Cuculiformes (6 species) (Family 2)				
26	Pied cuckoo, <i>Clamator jacobinus</i> (Boddaert 1783)	Cuculidae	LC	LC	Uncommon; summer visitor
27	*Asian koel, <i>Eudynamis scolopaceus</i> (Linnaeus 1758)	Cuculidae	LC	LC	Very common; resident
28	Plaintive cuckoo, <i>Cacomantis merulinus</i> (Scopoli 1786)	Cuculidae	LC	LC	Common; resident
29	Common hawk-cuckoo, <i>Hierococcyx varius</i> (Vahl 1797)	Cuculidae	LC	LC	Common; resident
30	Indian cuckoo, <i>Cuculus micropterus</i> , Gould 1838	Cuculidae	LC	LC	Uncommon; summer visitor
31	Greater coucal, <i>Centropus sinensis</i> (Stephens 1815)	Centropodidae	LC	LC	Common; resident
	Caprimulgiformes (3 species) (Family 2)				
32	*House swift, <i>Apus nipalensis</i> (Hodgson 1837)	Apodidae	LC	LC	Very common; resident
33	*Asian palm swift, <i>Cypsiurus balasiensis</i> (Gray 1829)	Apodidae	LC	LC	Common; resident
34	Long-tailed nightjar, <i>Caprimulgus macrurus</i> (Horsfield 1821)	Caprimulgidae	LC	LC	Common; resident
	Gruiformes (2 species) (Family 1)				
35	*White-breasted waterhen, <i>Amauornis phoenicurus</i> (Pennant 1769)	Rallidae	LC	LC	Very common; resident
36	Common moorhen, <i>Gallinula chloropus</i> (Linnaeus 1758)	Rallidae	LC	LC	Common; resident
	Charadriiformes (7 species) (Family 4)				
37	Grey-headed lapwing, <i>Venellus cinereus</i> (Blyth 1842)	Charadriidae	LC	LC	Uncommon; winter visitor
38	Red-wattled lapwing, <i>Vanellus indicus</i> (Boddaert 1783)	Charadriidae	LC	LC	Common; resident
39	Little ringed-plover, <i>Charadrius dubius</i> (Scopoli 1786)	Charadriidae	LC	LC	Very common; resident
40	*Pheasant-tailed jacana, <i>Hydrophasianus chirurgus</i> (Scopoli 1786)	Jacanidae	LC	LC	Common; resident
41	*Bronze-winged jacana, <i>Metopidius indicus</i> (Latham 1790)	Jacanidae	LC	LC	Very common; resident
42	Greater painted-snipe, <i>Rostratula benghalensis</i> (Linnaeus 1758)	Rostratulidae	LC	LC	Few; resident

43	Common sandpiper, <i>Actitis hypoleucos</i> (Linnaeus 1758)	Scolopacidae	LC	LC	Uncommon; winter visitor
	Ciconiiformes (1 species) (Family 1)				
44	*Asian open-billed stork, <i>Anastomus oscitans</i> (Boddaert 1783)	Ciconiidae	LC	LC	Common; resident
	Suliformes (1 species) (Family 1)				
45	*Little cormorant, <i>Microcarbo niger</i> (Vieillot 1817)	Phalacrocoracidae	LC	LC	Very common; resident
	Pelecaniformes (8 species) (Family 1)				
46	*Indian pond-heron, <i>Ardeola grayii</i> (Sykes 1832)	Ardeidae	LC	LC	Very common; resident
47	Great egret, <i>Ardea alba</i> , Linnaeus 1758	Ardeidae	LC	LC	Common; resident
48	*Little egret, <i>Egretta garzetta</i> (Linnaeus 1766)	Ardeidae	LC	LC	Very common; resident
49	*Eastern cattle-egret, <i>Bubulcus coromandus</i> (Boddaert 1783)	Ardeidae	LC	LC	Very common; resident
50	Striated heron, <i>Butorides striata</i> (Linnaeus 1758)	Ardeidae	LC	LC	Common; resident
51	Cinnamon bittern, <i>Ixobrychus cinnamomeus</i> (Gmelin 1789)	Ardeidae	LC	LC	Common; resident
52	Yellow bittern, <i>Ixobrychus sinensis</i> (Gmelin 1789)	Ardeidae	LC	LC	Common; resident
53	*Black-crowned night-heron, <i>Nycticorax nycticorax</i> (Linnaeus 1758)	Ardeidae	LC	LC	Very common; resident
	Piciformes (7 species) (Family 2)				
54	*Coppersmith barbet, <i>Psilopogon haemacephalus</i> (Muller 1776)	Megalaimidae	LC	LC	Very common; resident
55	Lineated barbet, <i>Psilopogon lineatus</i> (Vieillot 1816)	Megalaimidae	LC	LC	Few; resident
56	*Blue-throated barbet, <i>Psilopogon asiaticus</i> (Latham 1790)	Megalaimidae	LC	LC	Very common; resident
57	Fulvous-breasted woodpecker, <i>Dendrocopos macei</i> (Vieillot 1818)	Picidae	LC	LC	Common; resident
58	*Black-rumped flameback woodpecker, <i>Dinopium benghalense</i> (Linnaeus 1758)	Picidae	LC	LC	Very common; resident
59	Streak-throated woodpecker, <i>Picus xanthopygaeus</i> (Gray and Gray 1847)	Picidae	LC	LC	Common; resident
60	Eurasian wryneck, <i>Jynx torquilla</i> , Linnaeus 1758	Picidae	LC	LC	Rare; winter visitor
	Passeriformes (40 species) (Family 24)				
61	*Bank myna, <i>Acridotheres ginginianus</i> (Latham 1790)	Sturnidae	LC	LC	Very common; resident
62	*Common myna, <i>Acridotheres tristis</i> (Linnaeus 1766)	Sturnidae	LC	LC	Very common; resident
63	*Jungle myna, <i>Acridotheres fuscus</i> (Wagler 1827)	Sturnidae	LC	LC	Very common; resident
64	*Grey-headed myna, <i>Sturnia malabarica</i> (Gmelin 1789)	Sturnidae	LC	LC	Very common; resident
65	*Indian pied myna, <i>Gracupica contra</i> (Linnaeus 1758)	Sturnidae	LC	LC	Very common; resident
66	Small minivet, <i>Pericrocotus cinnamomeus</i> (Linnaeus 1766)	Campephagidae	LC	LC	Common; resident
67	Black-headed cuckoo-shrike, <i>Lalage melanoptera</i> (Ruppell 1839)	Campephagidae	LC	LC	Uncommon; summer visitor
68	*Black-headed oriole, <i>Oriolus xanthornus</i> (Linnaeus)	Oriolidae	LC	LC	Very common; resident

	1758)				
69	Ashy woodswallow, <i>Artamus fuscus</i> , Vieillot 1817	Artamidae	LC	LC	Common; resident
70	*Common iora, <i>Aegithinia tiphia</i> (Linnaeus 1758)	Aegithinidae	LC	LC	Very common; resident
71	White-throated fantail-flycatcher, <i>Rhipidura albicollis</i> (Vieillot 1818)	Rhipiduridae	LC	LC	Common; resident
72	*Black drongo, <i>Dicrurus macrocercus</i> , Vieillot 1817	Dicruridae	LC	LC	Very common; resident
73	*Indian paradise-flycatcher, <i>Terpsiphone paradisi</i> (Linnaeus 1758)	Monarchidae	LC	LC	Common; resident
74	*Black-naped monarch, <i>Hypothymis azurea</i> (Boddaert 1783)	Monarchidae	LC	LC	Common; resident
75	Brown shrike, <i>Lanius cristatus</i> , Linnaeus 1758	Laniidae	LC	LC	Very common; resident
76	Long-tailed shrike, <i>Lanius schach</i> , Linnaeus 1758	Laniidae	LC	LC	Very common; resident
77	*Rufous treepie, <i>Dendrocitta vagabunda</i> (Latham 1790)	Corvidae	LC	LC	Very common; resident
78	*House crow, <i>Corvus splendens</i> , Vieillot 1817	Corvidae	LC	LC	Very common; resident
79	Large-billed crow, <i>Corvus macrorhynchos</i> , Wagler 1827	Corvidae	LC	LC	Common; resident
80	Great tit, <i>Parus major</i> , Linnaeus 1758	Paridae	LC	LC	Common; resident
81	*Common tailorbird, <i>Orthotomus sutorius</i> (Pennant 1769)	Cisticolidae	LC	LC	Very common; resident
82	Barn swallow, <i>Hirundo rustica</i> , Linnaeus 1758	Hirundinidae	LC	LC	Uncommon; winter visitor
83	Red-whiskered bulbul, <i>Pycnonotus jacosus</i> (Linnaeus 1758)	Pycnonotidae	LC	LC	Few; resident
84	*Red-vented bulbul, <i>Pycnonotus cafer</i> (Linnaeus 1766)	Pycnonotidae	LC	LC	Very common; resident
85	*Indian white-eye, <i>Zosterops palpebrosus</i> (Temminck 1824)	Zosteropidae	LC	LC	Common; resident
86	*Jungle babbler, <i>Argya striata</i> (Dumont 1823)	Leiothrichidae	LC	LC	Very common; resident
87	*Orange-headed thrush, <i>Geokichla citrina</i> (Latham 1790)	Turdidae	LC	LC	Common; resident
88	*Oriental magpie-robin, <i>Copsychus saularis</i> (Linnaeus 1758)	Muscicapidae	LC	LC	Common; resident
89	Taiga flycatcher, <i>Ficedula albicilla</i> (Pallas 1811)	Muscicapidae	LC	LC	Common; resident
90	White-tailed stonechat, <i>Saxicola leucurus</i> (Blyth 1847)	Muscicapidae	LC	LC	Common; resident
91	Pale-billed flowerpecker, <i>Dicaeum erythrorhynchos</i> (Latham 1790)	Dicaeidae	LC	LC	Very common; resident
92	*Purple sunbird, <i>Cinnyris asiaticus</i> (Latham 1790)	Nectariniidae	LC	LC	Very common; resident
93	*Purple-rumped sunbird, <i>Leptocoma zeylonica</i> (Linnaeus 1766)	Nectariniidae	LC	LC	Common; resident
94	*Baya weaver, <i>Ploceus philippinus</i> (Linnaeus 1766)	Ploceidae	LC	LC	Common; resident
95	*Indian silverbill, <i>Euodice malabarica</i> (Linnaeus 1758)	Estrildidae	LC	LC	Common; resident
96	*Scaly-breasted munia, <i>Lonchura punctulata</i> (Linnaeus 1758)	Estrildidae	LC	LC	Very common; resident
97	*White-rumped munia, <i>Lonchura striata</i> (Linnaeus 1766)	Estrildidae	LC	LC	Very common; resident

98	*House sparrow, <i>Passer domesticus</i> (Linnaeus 1758)	Passeridae	LC	LC	Very common; resident
99	White wagtail, <i>Motacilla alba</i> , Linnaeus 1758	Motacillidae	LC	LC	Uncommon; winter visitor
100	White-browed wagtail, <i>Motacilla madoraspatisensis</i> , Gmelin 1789	Motacillidae	LC	LC	Common; resident

Table 2. Status of total birds in Kumarkhali Upazila

Order (17)	Family (50)	Species (100)	Breeding (51)
Columbiformes	2	5	4
Psittaciformes	1	2	1
Anseriformes	1	2	0
Accipitriformes	1	5	0
Falconiformes	1	1	0
Strigiformes	2	3	2
Bucerotiformes	1	1	0
Coraciiformes	3	6	4
Cuculiformes	2	6	1
Caprimulgiformes	2	3	2
Gruiformes	1	2	1
Charadriiformes	4	7	2
Ciconiiformes	1	1	1
Suliformes	1	1	1
Pelecaniformes	1	8	4
Piciformes	2	7	3
Passeriformes	24	40	25



Plate 3. Feral pigeons

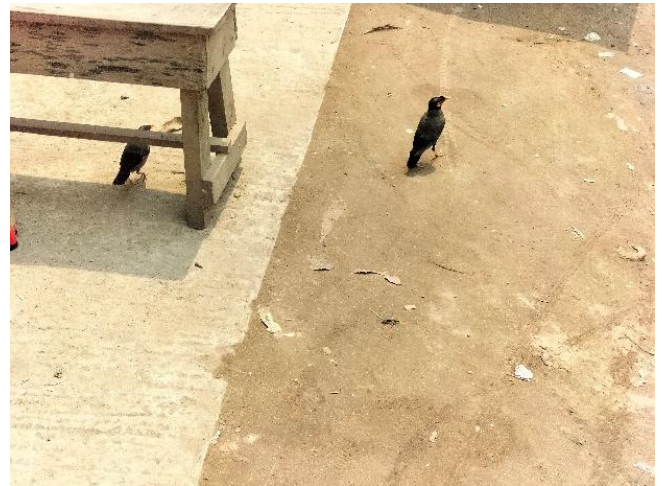


Plate 4. Bank mynas

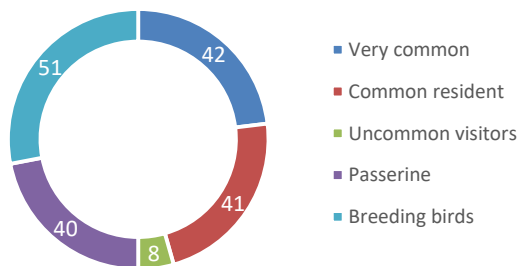


Fig 2. Present status of birds in Kumarkhali Upazila

Discussion

Kumarkhali city is renowned by its Gorai River, so many fish species are available here and migratory birds are visited every year. Many educational institutes of Kushtia organize events for the protection of migratory birds (Jibon, 2022; EAAFP, 2023). Kumarkhali Government College has flowering plants with a big pond and Kumarkhali Ecopark possesses many trees for birds sheltering, so many small birds come here for the nectar of flowers. Parks and botanical gardens are always significant for watching birds (Golley, 2004). In Kumarkhali city, there is enormously increasing urbanization, and because of this deforestation, the shelter of birds is becoming limited. Of course, urbanization has a negative impact on wildlife population (Gregory *et al.* 2004). There were noticed 106 species of birds in Kushtia District (Kabir, 2024b), Bheramara 48 species (Kabir, 2025), and 61 species in Nakol village under Magura District 61 (Kabir *et al.*, 2025). These results are comparable with the number of birds in Kumarkhali Upazila. The weaver birds with their nests were available Kathaldanga village of this upazila. Kabir (2018) reported the breeding biology on this weaver bird in Mohammadpur village

under Rajshahi Division of Bangladesh. Among 100 birds of Kumarkhali, the spotted-dove was everywhere either on busy roads or road-side jungles. This dove is found throughout Bangladesh with their successful breeding status (Kabir, 2024a). Banyan trees were always good for sheltering and nesting herons and egrets (Kabir *et al.* 2019). Rooftop gardening (Kabir, 2019) is increasing in Kumarkhali town, so many birds are becoming attracted to those flowering and fruit trees on the roof. The highway from Kushtia to Kumarkhali played a significant role to observe birds for remarkable number of bushes, ponds, parks, cultivated lands, and leftover foods.

Conclusions

This upazila is famous in many aspects, especially its Gorai River, other aquatic resources, and some patchy bushy areas. The authority of Kushtia Bird Club could help for the conservation of birds in Kumarkhali Upazila. Urbanization, deforestation, limiting water bodies, and sometimes hunting pressure are the root causes of reducing birds in this place. Such responsibilities of concerned authorities and their motivation could enhance the avian diversity in this renowned city of Bangladesh.

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