

Avian Diversity in an Around Dhir Beel in Dhubri District of Assam



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Abstract

Studies on the avian fauna of Dhir Beel revealed 208 species of birds belonging to 43 families. Out of these, 15 species are purely aquatic birds. As the water of the wetland is clear, rich in dissolved oxygen and supports variety of aquatic weeds and fishes, it has been found to be suitable for birds and attracts many migratory birds like brahminy duck, black-necked grebe, red-necked grebe, large cormorant, white eyed pochard, Indian shagmon pochard, tufted duck, Indian moorhen, coot, great black headed gull, little gull, river tern, bar headed goose, shoveler, darter, stork etc. Hornbills are also sometimes spotted here. Out of 102 species of birds recorded at Dhir Beel, 1 species (*Neophron percnopterus*) is endangered, 4 species (*Anhinga melanogaster*, *Aythya fuligula*, *Limosa limosa*, *Mycteria leucocephala* and *Sterna acuticauda*) are near threatened, and 4 species (*Aquila haliaca*, *A. clanga*, *Haliaeetus leucoryphus* and *Rynchops albicollis*) are vulnerable. Also the beel area nearby Chakrashila wildlife sanctuary is rich in amphibians, reptiles and Primates such as snakes, crocodiles, alligators, lizards, turtles, Indian Short-tailed Mole, Indian Flying Fox, Short Nosed Fruit Bat, Indian False Vampire, Indian Pipistrelle, Rhesus Macaque, Chinese Pangolin, Asiatic Jackal, Bengal Fox, and more than forty species of butterfly in the sanctuary.

The vegetation in the wetland and the surrounding hillsides has semi deciduous forests. In any type of ecosystem, avian fauna constitutes one of the major biotic components (Dhindsa and Saini, 1994). Wetlands are extremely important for birds, as these provide excellent habitat to birds for foraging, breeding, roosting, premigratory requirements (moulting, fat deposition), migration, staging, over wintering and protection from predators. A large number of bird species are ecologically dependent on wetlands, at least at some stage of their life cycle. Waterfowl (Family Anatidae) is one group of such birds.

Keywords: Dhir Beel, Avian Fauna, Migratory Birds, Reptiles, Aquatic Birds.

Introduction

Assam is one of the "endemic bird areas" in the world. With 950 bird species the state is home to 53.5 % of the bird species found in the Indian Sub-continent and 17 species of birds are endemic to Assam. This diversity in bird species is due to the fact that the northeast and Assam in particular is due to the South-eastern Himalayan geographical location connecting Chinese plain in the North. Assam is having more than 750 Wetland areas which support a vast diversity of bird and wildlife. Wetlands are of immense use to mankind both economically and zoologically. Birds need cover, nesting in particular, need shelter from predators especially for habitats including trees, reeds, aquatic vegetation, grasses, rocks and dense forest areas, prefer areas which provide them food, space or materials for nesting. The requirements of habitat is species specific, often show a marked preference for nesting and foraging at certain heights, and in certain structures of vegetation. Cavity nesters such as woodpeckers, require trees of the age and size to support suitable holes. Terns require sandy stretches which are nearly devoid of vegetation and use their bodies to shelter their eggs and chicks. Wetland provides many such habitats where they can lay their eggs.

Review of Literature

A total of 213 bird species are known to occur in the Sanctuary and the surrounding waterbodies (Barua 1995, Lahkar 2003). Chakrashila was treated as hunting area even after it was declared as a reserve forest in 1966. The dominance of birds, mainly waterfowl is the major attraction of this wildlife sanctuary. This indiscriminate hunting led to the local extinction

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of a few species such as the Swamp Francolin *Francolinus gularis* (Lahkar 2003). The Swamp Francolin is common in the area, mainly near the Aalu vui and Satyapur village and Dhir beel till the late eighties, but due to destruction of habitat in the form of agriculture, settlements, firewood and thatch collection, felling and over hunting it has been wiped out gradually from the area (Lahkar 2003). However, some globally threatened species are still seen, namely Greater Adjutant *Leptoptilos dubius*, Lesser Adjutant *L. javanicus* and two Gyps species of vultures. Among the Near Threatened species, we have Darter *Anhinga melanogaster*, Ferruginous Duck *Aythya nyroca*, Greater Greyheaded Fish-Eagle *Ichthyophaga ichthyaeus*, Red-headed Vulture *Sarcogyps calvus*, Great Pied Hornbill *Buceros bicornis* and Pallid Harrier *Circus macrourus* (Lahkar 2003). Both wetlands, Dhir and Diplai, attract a lot migratory birds in winter including Near Threatened Ferruginous Duck and the Vulnerable Baer's Pochard *Aythya baeri*. In the year 1991 during the mid-winter Annual Waterfowl Census, 500 in the Dhir beel on January 9, 1991 and 328 on January 8, 1992 (Choudhury 2000). Based on Choudhury (2000) has listed Baer's Pochard records in Dhir beel, 26 Baer's Pochard were reported in 1989, and 55 in in 1990.

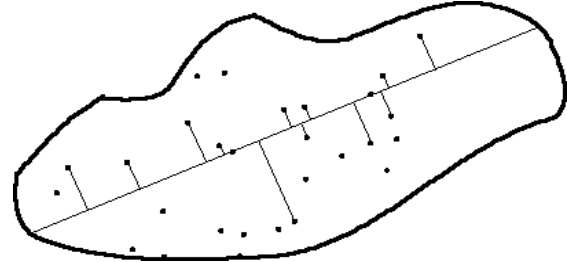
According to Lopez and Mundkur (1997), 19,828 birds of 43 species were counted in 1994 in Dhir beel during Annual Waterfowl Count. In 1995, the population increased to 26,433 but the number of species remained same. The population declined in 1996 to only 7,102 but the number of species seen was 41. A total of 2,409 birds of 20 species were counted. Lahkar (2003) observed three immatures along with two adults of the Jerdon's Baza *Aviceda jerdoni* in the Sanctuary. This suggests the possibility of breeding of this species inside the Sanctuary. The site falls in the Assam Plains Endemic Bird Area (Stattersfield et al. 1998) but the terrain of the Sanctuary is hilly, while the surrounding areas are plain, having a mixture of beels and grasslands. Three species have been listed in this EBA: Manipur Bush-Quail *Perdica manipurensis*, Marsh Babbler *Pellorneum palustre* and Black-breasted Parrotbill *Paradoxornis flavirostris*. Only Marsh Babbler is likely to occur here as some good patches of a grassland are still found.

Materials and Methods

The present study has been aimed to investigate the diversity of bird and other wildlife in an around the beel has been selected. Thus, the methodology used to investigate the diversity is a regular survey has been conducted from July to December 2015.

i) **Primary Source:-** The observations were carried out with the aid of 8 x 40 binoculars and field characteristics were noted down during the study. Birds sighted during the study period were categorized according to their status as residents (R), local migrants (LM) and winter migrants (WM). Winter visitors from central Asian countries are included in Winter migrant and the visitors from other part of the

Indian sub-continent is included in local migrant and those breed in the site as resident. The identification of the birds' species was made as per Ali & Ripley and Grimmett et al. The sampling was carried out once every week. Every week early morning from 6:00 AM to 9:00 AM and Evening 3:00 PM to 5:00 PM has been chosen for bird sighting. During survey the line transect method was followed.



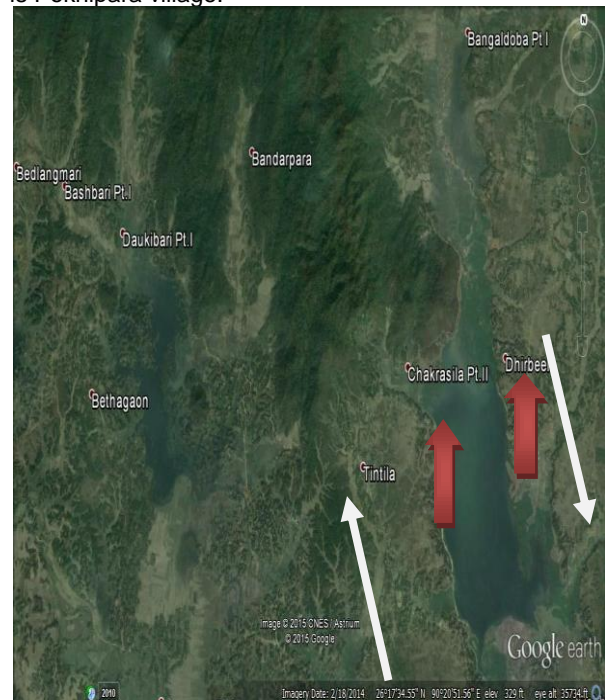
Length – 200 meter and perpendicular distance range from 2 Metre, 5 Metre, 10 Metre, 15 Metre.

Secondary Source

NLBW, Books, Journals etc.

Study Area

Dhir Beel is located in Chapar Town of the Dhubri District of western Assam indicating (26.282°N, 90.380°E). It comprises an area of 689 ha and is linked by a narrow channel, intersecting NH31, to River Brahmaputra. On its north-western side is Chakrashila Wildlife Sanctuary and in Eastern part it is Pokhipara village.



Objective of the Study

The vegetation in the wetland and the surrounding hillsides has semi deciduous forests. In any type of ecosystem, avian fauna constitutes one of the major biotic components (Dhindsa and Saini, 1994). Wetlands are not wastelands. Infact, these habitats have the highest productivity on earth and are extremely rich in bird and animal life (Sioli, 1986).

Wetlands are extremely important for birds, as these provide excellent habitat to birds for foraging, breeding, roosting, premigratory requirements (moulting, fat deposition), migration, staging, overwintering and protection from predators. A large number of bird species are ecologically dependent on wetlands, at least at some stage of their life cycle. Waterfowl (Family Anatidae) is one group of such birds which is predominant in this Dhir Beel. Therefore, the present study has been aimed to investigate the diversity of avian fauna and other wildlife in an around the beel has been selected.

Results & Discussion

During the present investigations, avian fauna of Dhir Beel has been studied for last six months and it is in the preliminary stage.. List of birds of this Wetland along with their ecological and IUCN status has been given as 2013 Data. This Beel provides food, shelter and breeding places to many birds. It supports birds related to 43 families. A total of 208 species of birds have been identified. attracts many bird species every year. It includes many diverse types. This wetland not only harbour water fowls, but also many other kinds, e.g. grebes, cormorants, herons, egrets, storks, ibises, cranes, coots, rails, plovers, gulls, terns, falcons, etc. Ducks, geese, grebes, cormorants and other divers swim for foraging, while waders (herons, egrets, storks, plovers, etc.) wade through shallow waters with the help of their long walk on aquatic vegetation. Many species of Passeriformes use wetlands, specially marshy habitats, with equal success. These forage on insects and many of them nest among reed beds and other aquatic vegetation.

Some of the common birds visiting the wetland are brahminy duck, black-necked grebe, red-necked grebe, ferruginous duck, Indian moorhen, coot, great black headed gull, little gull, river tern, bar headed goose, shoveler, darter and stork, etc. (Jindal

and Singh, 2005). Out of all waterfowls occurred at this beel Baer's pochard and common coot were observed in large numbers. Greater Adjutant stork was seen on the shore of the beel. All species of birds need a proper combination of food, water, cover and space to survive and reproduce. Together, these elements make up a "habitat". Without habitat a species cannot survive. All the bird species are wonderfully diverse in their forms and life styles, their habitats vary tremendously. However, regardless of location, may be a forest, grassland, open field, water or urban neighborhood, a habitat must fulfill the four essential needs, i.e. food, water, shelter and space. Dhir beel have all these four essential needs. Therefore, thousands of birds visit every year at this wetland. Some species of birds are herbivorous, eating seeds, fruits, buds or flowers. Some are carnivorous eating insects, snails, fish, other birds etc. Many species are omnivorous, eating both plants and animal matter.

Migratory birds, during their migration spend part of their time in one habitat, and move to another to breed. In addition to wintering and breeding habitat, these birds require stopover areas along their migratory routes. These habitats may be strikingly different, depending on the seasonal needs of the birds. Among the water birds e.g. grebes, storks, ibises, coots, rails, plovers, gulls, terns, ducks, geese and other divers were seen swimming on water for foraging and hiding themselves in the near by bushes of water plants or reed covers. It has been noticed during present studies that the migratory birds start arriving at the Beel around mid October. These remain there upto last week of March. The peak time of migratory birds is last week of December and full month of January of every year.

Some of the common species found are vulnerable (IUCN-Red List, 2013) around the beel as follows

Family	No. of Species	Status
ANATIDAE -(Pochard, Teal Shoveller)	13	W
CHARADRIIDAE- (Lapwing, Plover)	7	W, R
ARDEIDAE- (Egrets, Herons)	6	R
PHALACROCORACIDAE- (Niger)	1	R
CICONIIDAE- (Stork)	2	R
JACANIDAE-	2	R
RECURVIROSTRIDAE-	1	W
PODICIPEDIDAE- (Grebe)	2	R,W
RALLIDAE-	2	R,W
ALCEDINIDAE-(Kingfishers)	4	R
MOTACILLIDAE- (Wagtail)	4	W
LARIDAE- (Gull)	2	W, R
HIRUNDINIDAE-	1	R,W
FALCONIDAE-	1	W
ACCPITRIDAE-	3	MW,R
SCOLOPACIDAE- (Sandpiper)	8	W
ROSTRATULIDAE- (snipe)	1	R

Abbreviations: R-Residential, W-Winter Migratory, M-Migrant

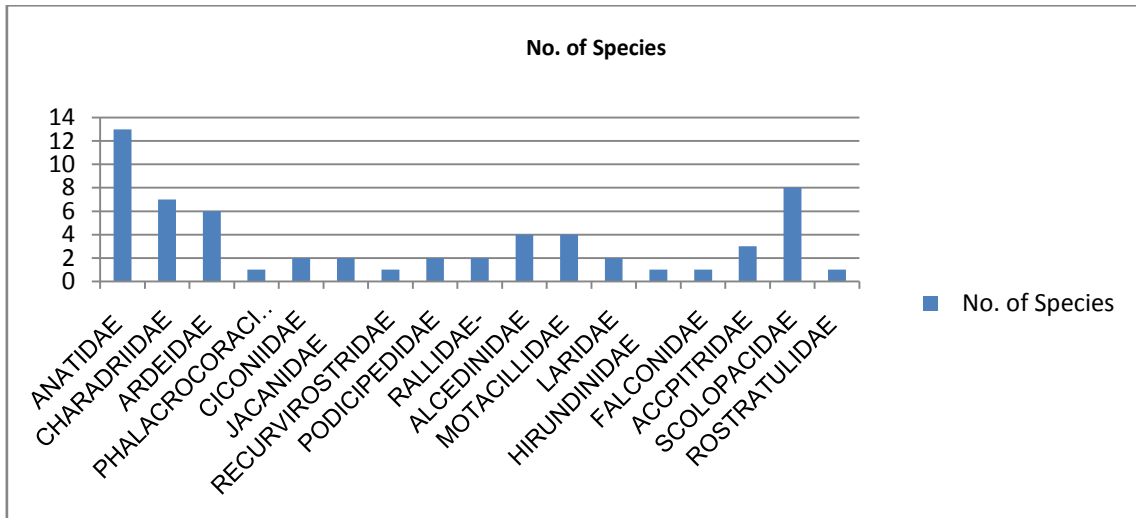


Fig-1: – Bird diversity of Dhir Beel

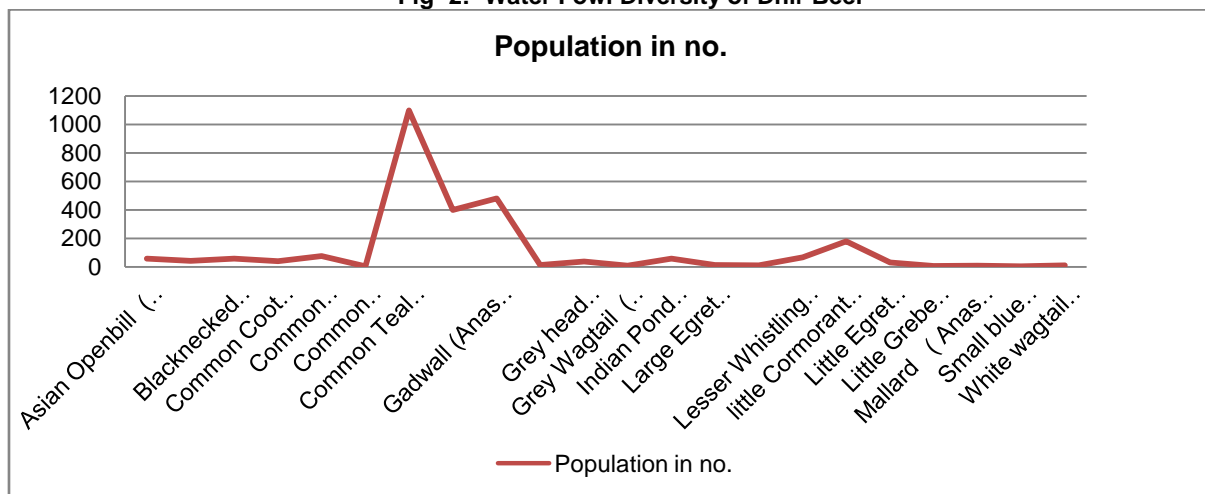
The water birds including Indian cormorants, large cormorant, darter and small cormorants used to live on the Northern side of the Dhir beel which is covered with huge trees i.e. Sal, Teak, Arjuna spp., Ficus religiosa. The wall creepers were observed creeping on the earthen rocks at the Chakrashila site of Dhir beel. Wetlands attract lot of birds from all over

the world during winter season. These provide a variety of resources such as food, fodder, fibre, fuel etc. (Jindal et al., 1994; Gopal, 1995). Natural wetlands are deteriorating day by day due to encroachments and pollution. Man made wetlands in the form of barrages, wetland, tanks etc. serve as an alternative habitat Avian fauna of Dhir Beel.

Species Sighted in an Around Dhir Beel During the Survey As Follows

Sl. No.	Water fowls	Population in no.	Status
1	Asian Openbill (<i>Anastomus oscitans</i>)	56	Resident
2	Baer's Pochard (<i>Aythya baeri</i>)	42	Vulnerable
3	Blacknecked grebe (<i>Podiceps nigricollis</i>)	58	Resident
4	Common Coot (<i>Fulica atra</i>)	38	Resident
5	Common Pochard (<i>Aythya ferina</i>)	76	Resident
6	Common Sandpiper (<i>Actitis hypoleucos</i>)	4	Resident
7	Common Teal (<i>Anas crecca</i>)	1100	Resident
8	Ferruginous Duck (<i>Aythya nyroca</i>)	400	Near Threatened
9	Gadwall (<i>Anas strepera</i>)	480	Migratory
10	Greater Adjutant (<i>Leptoptilos dubius</i>)	12	Vulnerable
11	Grey head lapwing (<i>Vanellus cinereus</i>)	36	Migratory
12	Grey Wagtail (<i>Motacilla cinerea</i>)	8	Resident
13	Indian Pond Heron (<i>Ardeola greyii</i>)	56	Resident
14	Large Egret (<i>Casmerodius albus</i>)	12	Migratory
15	Lesser Adjutant (<i>Leptoptilos javanicus</i>)	10	Vulnerable
16	Lesser Whistling Duck (<i>Dendrocygna javanica</i>)	66	Resident
17	little Cormorant (<i>Phalacrocorax niger</i>)	178	Resident
18	Little Egret (<i>Egretta garzetta</i>)	30	Resident
19	Little Grebe (<i>Tachybaptus ruficollis</i>)	5	Resident
20	Mallard (<i>Anas platyrhynchos</i>)	8	Migratory
21	Small blue Kingfisher (<i>Alcedo atthis</i>)	3	Migratory
22	White wagtail (<i>Motacilla alba</i>)	9	Resident

Fig -2:- Water Fowl Diversity of Dhir Beel



Conclusion

Our study reveals that Dhir *beel* has a high avifaunal diversity. It attracts many migratory birds in winter, including two globally threatened species: Ferruginous Duck *Aythya nyroca*, and Baer's Pochard *A. baeri*. During the study, we encountered 28 Ferruginous Ducks in October 2015, and 26 in December 2015, and a flock of four Baer's Pochards in December 2015. There are increase in numbers of Ferruginous Ducks upto 400 in October Population trend of water birds in these winter seasons (October-December 2015) in terms of number of individuals of birds. As per previous report during the Annual Asian Waterbird Census in 1994, 19,828 birds belonging to 43 species were counted at Dhir *beel*. This number increased to 26,433 in 1995; but the total number of species remained the same. During winters, Anatidae represented the greatest number of species. It is pertinent to mention here that during surveys from January 1985 through January 1993, Saikia & Bhattacharjee (1993) recorded Anatidae as the second largest wetland bird family among the 122 species belonging to 19 families in the Brahmaputra Valley. There were very few investigations were recorded till 2010. Since, the area is threatened by the growing brick industry and encroachment. These records may fluctuate as far as our study concerned. So now it is now a matter of concern for the diversity of birds in an around Dhir *beel*. It is the high time to declare it as a Ramsar site as to save the precious gift of Nature.

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