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Research Paper

Avifaunal diversity of Govind Sagar dam in Lalitpur, Uttar Pradesh

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Abstract

Wetlands play key role in life on Earth. 'Wetland' is a general term for water bodies of various types, and include diverse hydrological bodies, namely, lakes, marshes, swamps, bogs, mangroves, estuaries, tidal flats, river flood plains, shallow ponds, water reservoirs *etc*. Dams are known to alter the natural flow of water through a landscape. They can be constructed in sustainable ways to reduce the impact on ecosystems. Govind Sagar Dam is constructed on Shahzad River in Lalitpur district lying in southern Uttar Pradesh. It is located at North latitude 24°40'27"N and east longitude 78°25'25"E. It is a key driver of local economies, given their importance to agriculture, recreation and fishing. Along with being an aesthetic entity, it provides social, economic and environmental remunerations. The avifauna of Govind Sagar Dam was studied from January 2014 to January 2016. The survey was carried out at suitable time (i.e. morning: 06:00 to 10:00 hr and from evening: 16:30 to 18:30 hr in summers while from 7:00 to 11:00 am in morning and 3:00-5:30 pm in evening during the winters) of the day. Observations were carried out with the aid of 10x50 binoculars and supported with photography using 7D Canon SLR Camera. Govind Sagar Dam supports 74 species of water birds belonging to 18 families out of which 34 are migratory species and 40 are residential bird species. Beside the water birds, 94 terrestrial bird species were observed in close proximity of Govind Sagsr Dam. Since Lalitpur lies in Bundelkand Region that is prone to drought for more than a decade now, it is of utmost importance to evolve appropriate conservation strategies and develop the potential of water resources such as Govind Sagar Dam so as to uphold the diversity of aves that have unparallel role in the ecosystem.

Keywords: Avifauna, Govind Sagar Dam, bird species

Introduction

Dams have one of the most important roles in utilizing water resources. They are not ordinary engineering buildings. Dam projects, which are useful in meeting the demand for water in desired times and in regulating stream regimes, have undertaken an important function in the development of civilization. Dams, which contribute to the national economy from many aspects like irrigation, drinking water supply, flood control, electricity generation, fishing, tourism, are also effective in increasing the living and culture level of the region that they were constructed. Lalitpur is well known for its 7 Dams, Which are: Rajgath Dam, Matateela Dam, Govind Sagar Dam, Sehjad Dam, Sajnaam Dam, Rohini Dam, Jamin Baandh of which Govind Sagar Dam is the largest and well known one. Meanwhile, the new environment created by the dam also supports the arrival of different species to the area [1]. Rivers, watersheds, and aquatic ecosystems are the biological engines of the planet. Waterbirds are of great importance for their aesthetic, sporting and economic values. The study provides an opportunity to protect biodiversity and set an example of how wildlife can be protected and preserved close to urban areas, without hindering the development of the same. It will not only provide urban people an opportunity to experience the uniqueness of the wetland area and the species it attracts, but also make them more environmentally conscious [2]. An effective way to monitor habitat types both

qualitatively and quantitatively is study of avifaunal diversity [3].The wetland largely supports the marshy area which includes major aquatic plant species like *Alternanthera feloxeroides, Typha aungustata, Eichhornea craasipes, Ipomoea aquatica, Azolla pinnata, Marsilea quadrifolia* and *Polygonum monspeliensis*. The study area also harbours fair diversity of forest trees, shrubs, herbs, grasses and sedges like *Prosopis juliflora, Terminalia arjuna, Syzygium cumuni, Dalbergia sissoo, Phoenix sylvestris, Capparis sepiaria, Sida* sp., *Cynodon dactylon, Desmostachya bipinnata*, *Eleocharis* sp. and *Cyperus* sp. Govind Sagar Dam supports a significant avifaunal diversity that had been unexplored so far. The study was undertaken to reveal the incredible variety of birds that is being supported by the Govind Sagar Dam.

Study Area

The Lalitpur district lies in the southern Uttar Pradesh that comes in Bundelkhand region separated by the Vindhyan ranges. The area with poor soil cover and uncertain rainfall has limited agricultural development[4,5]. It comes in semi-arid climatic zone. The water sources are deficient. The forest cover of Uttar Pradesh accounts for about 5.71 per cent of the total 240,928 km^2 geographic area. Lalitpur district has 11.07 percent forest cover within its 5039 km^2 of geographic area. The undulating topography has an elevation ranging from 350 to 650 m above mean sea level [6]. The Average rainfall per year is 800-900 mm and dry months in a year may range between 3 mm to 7 mm. The highest temperature is 48°C in summers.

Figure 1: Study area

The northern and western boundaries of Lalitpur are formed by the Betwa river. The Jamni River, a tributary of the Betwa, forms the eastern boundary. The Dhasan River forms the district's southeastern boundary. The soil type is porous, yellowish to reddish, with thin soil cover ranging from 0.1 to 3.0 m. Low red hills of granitoid rock with long ridges run from south-west to north-west. The nutrient and sediment load in the watershed through surrounding hard rock is comparatively low and coarse [6]. This dam was constructed during 1947-1953 on Shahzad River. It is located at North latitude 24°40'27"N and east longitude 78°25'25"E. This is 'one the earliest Dam constructed in India using Siphon Technology'. Dams constructed using Siphon technology allows automatic release of water once the water in the reservoir reached at danger mark, which further prevent the damage of Dam and subsequently caters the need of Irrigation of multiple crop in the region and water supply

and others. This Dam has a small island in the middle which further beautify the pleasant landscape of this potent water body (Figure 1). Lalitpur District (U.P) have maximum no. of Dams in the State. Govind Sagar dam provides irrigation to 40325 h.a land through main canal of 66.43 km length and 123.57 km long distribution system. It provides 2.26 M.cum water for drinking purpose.

Materials and Methods

The avifauna of Govind Sagar Dam was studied from January 2014 to January 2016. Survey work were carried out throughout the year for 4 hrs in the morning and 2 hrs in the evening (in summers-morning: 6:00 am to 10:00 am, evening: 4:30 pm to 6:30 pm, in winters morning: 7:00 am to 11:00 am, evening: 3:00 pm to 5:00 pm). Observations were made along line transects with the aid of 10x50 binoculars and Canon 7D SLR Camera. Point Count method was also followed. Birds sighted during the study period were categorized according to their presence (month-wise) status as residents (R) or migrants (M). The abundance code and the IUCN Status of the birds recorded were also noted. Identification of birds was done with the help of key reference books [7,8,9].

Results and Discussion

A total of 166 bird species belonging to 45 families were recorded from Govind Sagar Dam (Table 1). The photographs of some of the birds listed in Table 1 are given in Table 4.The Anatidea was the dominant family in overall wetland habitat with 15 bird Species. Most of birds of Anatidae family were migratory to the area. Anatidea was followed by Scolopacidae (11), Corvidae and Musciapidae (11). Out of 166 bird species, 25.90% bird species were migratory, and 74.09% were resident (Graph 1). According to IUCN Status the bird species reported from the study area had 19 Species that are Not Assessed (NA), 137 Species are Least Concern, 7 are Near Threatened, 2 Vulnerable and 1 Endangered (Table 2). Abundance code of bird species (Table 3) show that 98 species are Common (C), 56 are Fairly Common (FC), and 12 are Uncommon (UC). The fairly common category includes several Near Threatened Species such as Painted Storks, Darter, Black necked stork and Eurasian curlew while the Uncommon includes Endangered Vultures, Sarus crane, Yellow wattled Lapwing, Black bittern. The Greater Flamingo was sighted only in winter season, 2014 in large group of about 300 birds. The results show that Govind Sagar Dam is supporting 56 Fairly common and 12 Uncommon birds besides the commonly seen bird species, thereby indicating the fondness of birds for this water reservoir. Since Lalitpur lies in Bundelkand Region that is prone to drought for more than a decade now, it is of utmost importance to evolve appropriate conservation strategies and develop the potential of water resources such as Govind Sagar Dam so as to uphold the diversity of aves that have unparallel role in the ecosystem. It is further required to know the flora that can be maintained so as to support the feeding and breeding sites for the birds in and around Govind Sagar Dam. Lalitpur District is rich in aquatic and semi-aquatic vegetation due to presence of artificial and natural lakes, nullahas and ponds, such as Matatila, Jamni, Rohini, Govind Sagar, Sajnam dam, hajariya shankerji ka mansarover, Shahpur pond, Poorakala pond, Shahjad river and dulaawan pond [10].

S. No.	Common Name	Zoological Name	Local name	Family	R/M	AC	IUCN Status
1.	Lesser whistling duck	*Dendrocygna javanica*	Seelhi, Seelkahi	Dendrocygnidae (1)	R	C	LC
2.	Grey-leg Goose	*Anser anser*	Raaj hans	Anatidae (15)	M	C	LC
3.	Ruddy Shelduck	*Tadorna ferruginea*	Laal surkhab		M	C	LC
4.	Comb duck	*Sarkidiornis melanotos*	Nakta		R	FC	LC
5.	Cotton Pygmy Goose	*Nettapus coromendelianus*	Girja		R	FC	LC
6.	Gadwall	*Anas strepera*	Beykhur		M	C	LC
7.	Mallard	*Anas platyrhynchos*	Nilsir		M	FC	LC
8.	Spot-billed duck	*Anas poecilorhyncha*	Gugral		R	C	LC

9.	Northern shoveller	*Anas clypeata*	Ghirah		M	C	LC
10.	Northern pintail	*Anas acuta*	Seenkh par		M	C	LC
11.	Bar –headed goose	*Anser indicus*	Hans		M	C	LC
12.	Brahminy shelduck	*Tadorna ferruginea*	Chakwa/Lal		M	C	LC
13.	Cotton teal	*Anas crecca*	Kerra		M	C	LC
14.	Red crested Pochard	*Netta rufina*	Laal sir		M	FC	LC
15.	Tufted Pochard	*Aythya fuligula*	Dubaru		M	C	LC
16.	Common Pochard	*Aythya ferina*	Burar nar		M	C	LC
17.	Common Kingfisher	*Alcedo atthis*	Chhota Kilkila	Alcedinidae (3)	R	FC	LC
18.	White breasted Kingfisher	*Halcyon smyrnensis*	Kilkila		R	C	LC
19.	Pied Kingfisher	*Ceryle rudis*	Kilkila		R	C	LC
20.	Sarus Crane	*Grus antigone*	Sarus	Gruidae (1)	R	UC	NT
21.	White-breasted Waterhen	*Amaurornis phoenicurus*	Dauk, Dawak	Rallidae (4)	R	C	LC
22.	Purple Moorhen	*Porphyrio porphyrio*	Khima		R	C	LC
23.	Common Moorhen	*Gallinule chloropus*	Jal murgi		R	C	LC
24.	Common Coot	*Fulica atra*	Thekari		M	C	LC
25.	Common snipe	*Gallinago gallinago*	Chaha	Scolopacidae (11)	M	FC	LC
26.	Eurasian curlew	*Numenius arquata*	Bada gulinda		M	FC	NT
27.	Wood Sandpiper	*Tringa glareola*	Titvari		M	C	LC
28.	Green Sandpiper	*Tringa ochropus*	Hara retal chaha		M	FC	LC
29.	Common Sandpiper	*Actitis hypoleucos*	***		M	C	LC
30.	Spotted Redshank	*Tringa erythropus*	Batan		M	C	LC
31.	Common Redshank	*Tringa totanus*	Chhota batan		M	C	LC
32.	Common Greenshank	*Tringa nebularia*	Timtima		M	C	LC
33.	Little Stint	*Calidris minuta*	Chhota panlowwa		M	C	LC
34.	Temminck's Stint	*Calidris temminckii*	Chhota panlowwa		M	C	LC
35.	Bronzed-winged Jacana	*Metopidius indicus*	Jal pipi	Jacanidae (1)	R	C	LC
36.	Black –winged Stilt	*Himantopus himantopus*	Tinghur	Charadriidae (4)	R	C	LC
37.	Yellow- wattled Lapwing	*Vanellus malabaricus*	Zirdi		R	UC	NA
38.	Red –wattled Lapwing	*Vanellus indicus*	Titeeri		R	C	LC
39.	River Lapwing	*Vanellus duvaucelii*	***		R	FC	NT
40.	Black-headed Gull	*Larus ridibundus*	Kal-siri gangachilli	Laridae (1)	M	C	LC
41.	Little Grebe	*Tachybaptus ruficollis*	Pandubi	Podicipedidae (1)	R	C	LC

42.	Great Cormorant	*Phalacrocorax carbo*	Pan-kowwa	Phalacrocoracidae (3)	R	FC	LC
43.	Little Cormorant	*Phalacrocorax niger*	Pan-kowwa		R	C	LC
44.	Indian Cormorant	*Phalacrocorax fuscicollis*	Pan-kowwa		R	C	LC
45.	Darter	*Anhinga melanogaster*	Panwa	Anhingidae (1)	R	FC	NT
46.	Little Egret	*Egretta garzetta*	Karchia bagla	Ardeidae (9)	R	C	LC
47.	Great Egret	*Casmerodius albus*	Bada bagla		R	C	LC
48.	Intermediate Egret	*Mesophoyx intermedia*	Karchia bagla		R	C	LC
49.	Cattle Egret	*Bubulcus ibis*	Surkhia bagla		R	C	LC
50.	Grey Heron	*Ardea cinerea*	Nari		M	C	LC
51.	Purple Heron	*Ardea purpurea*	Lal anjan		R	C	LC
52.	Indian Pond Heron	*Ardeola grayii*	Andha bagla		R	C	LC
53.	Black-crowned Night Heron	*Nycticorax nycticorax*	Kokrai		R	FC	LC
54.	Black bittern	*Dupetor flavicollis*	Kala bagla		R	UC	LC
55.	Greater Flamingo	*Phoenicopterus ruber*	Bog/Raaj hans	Phoenicopteridae (1)	M	UC	LC
56.	Black Ibis	*Pseudibis papillosa*	Kala Baza	Threskiornithidae (3)	R	FC	LC
57.	White ibis	*Threskiornis melanocephalus*	Didhar		R	UC	NT
58.	Spoonbill	*Platalea leucorodia*	Chamach baza		R	C	LC
59.	Painted Stork	*Mycteria leucocephala*	Janghil/Dokh	Ciconiidae (5)	R	C	NT
60.	Asian Open bill-Stork	*Anastomus oscitans*	Ghungil		R	FC	LC
61.	White-necked Stork	*Ciconia episcopus*	Laglag		R	FC	V
62.	Black- necked Stork	*Ephippiorhynchus asiaticus*	Loha sarang		R	FC	NT
63.	Lesser adjutant	*Leptoptilos javanicus*	Chota garud		R	UC	V
64.	Plain Martin	*Riparia paludicola*	***	Hirundinidae (4)	R	C	LC
65.	Barn Swallow	*Hirundo rustica*	***		M	C	LC
66.	Wire-tailed Swallow	*Hirundo smithii*	***		R	FC	LC
67.	Streak-throated swallow	*Hirundo fluvicola*	***		R	FC	LC
68.	White Wagtail	*Motacilla alba (personata and dukhunensis)*	***	Passeridae (5)	M	C	NA
69.	White-browed Wagtail	*Motacilla maderaspatensis*	Khanjan		R	UC	NA
70.	Citrine wagtail	*Motacilla citreola*	Pani-ka-pilkya		M	C	LC
71.	Yellow Wagtail	*Motacilla flava*	Pilkya		M	C	NA
72.	Grey Wagtail	*Motacilla cinerea*	***		M	UC	LC

		Terrestrial birds associated with Govind Sagar Dam					
73.	Indian peafowl	*Pavo cristatus*	Mor	Phasianidae (1)	R	C	LC
74.	Brown-capped pygmy Woodpecker	*Dendrocopos nanus*	Katphora	Picidae (3)	R	FC	LC
75.	Lesser Golden-backed Woodpecker	*Dinopium benghalense*	Kathfudwa		R	C	LC
76.	Yellow-crowned woodpecker	*Dendrocopus mahrattensis*	Katphora		R	C	NA
77.	Brown-headed Barbet	*Megalaima zeylanica*	Bada basanta	Megalaimidae (2)	R	FC	NA
78.	Coppersmith Barbet	*Megalaima haemacephala*	Chota basanta		R	C	LC
79.	Indian Grey Hornbill	*Ocyceros birostris*	Dhanesh	Bucerotidae (1)	R	FC	LC
80.	Common Hoopoe	*Upupa epops*	Hudhud	Upupidae (1)	R	C	LC
81.	Indian Roller	*Coracias benghalensis*	Neelkanth	Coraciidae (1)	R	C	LC
82.	Green Bee-Eater	*Merops orientalis*	Harrial	Meropidae (2)	R	C	NA
83.	Blue-tailed Bee-eater	*Merops philippinus*	Bada patringa		R	C	LC
84.	Pied Cuckoo	*Clamator jacobinus*	Kala Papiya	Cuculidae (3)	R	FC	LC
85.	Common Hawk Cuckoo	*Hierococcyx varius*	Papiya		R	FC	LC
86.	Asian Koel	*Eudynamys scolopacea*	Koel		R	C	LC
87.	Greater Coucal	*Centropus sinensis*	Mahoka	Centropodidae (1)	R	C	LC
88.	Alexandrine Parakeet	*Psittacula eupatria*	Hiraman-tota	Psittacidae (3)	R	FC	LC
89.	Rose-ringed Parakeet	*Psittacula krameri*	Tota		R	C	LC
90.	Plum-headed Parakeet	*Psittacula cyanocephala*	Tuiya tota		R	FC	LC
91.	House Swift	*Apus affinis*	Ababeel	Apodidae (1)	R	C	LC
92.	Rock Eagle-Owl	*Bubo (bubo) bengalensis*	***	Strigidae (5)			LC
93.	Brown fish owl	*Ketupa zeylonensis*	Amrai-kaghughu, Ullu		R	UC	LC
94.	Spotted Owlet	*Athenebrama*	Chughad		R	C	LC
95.	Jungle Owlet	*Glaucidium radiatum*	Jangli Choghad		R	FC	LC
96.	Brown hawk owl	*Ninox scutulata*	Chughad basra		R	UC	LC
97.	Common Indian Nightjar	*Caprimulgus asiaticus*	Chapka	Caprimulgidae (1)	R	FC	LC
98.	Rock Pigeon	*Columba livia*	Kabutar	Columbidae (6)	R	C	LC
99.	Laughing dove	*Streptopelia senegalensis*	Chhota fakta		R	C	LC
100.	Red collared dove	*Streptopelia tranquebarica*	Lali pohu		R	FC	LC
101.	Spotted dove	*Streptopelia chinensis*	Chitroka fakhta		R	C	LC

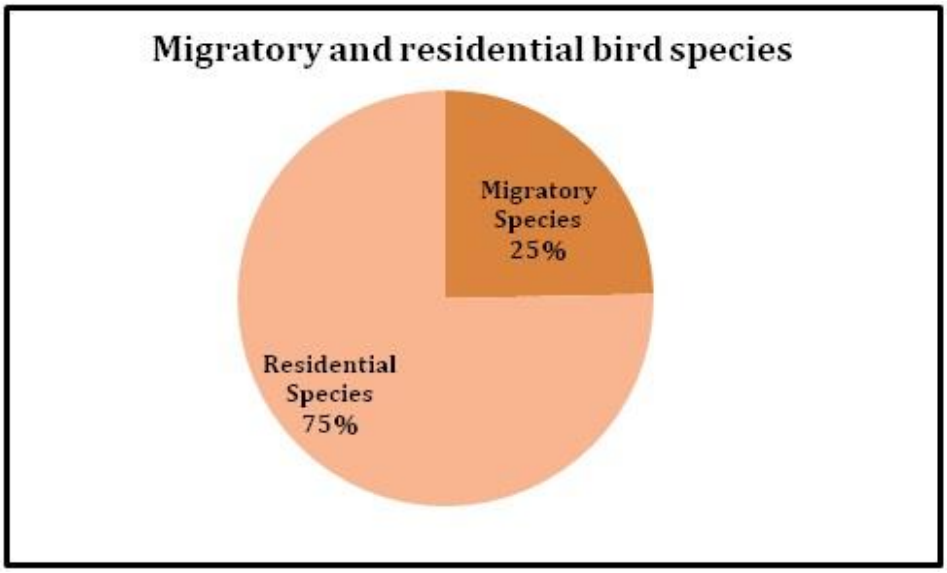
102.	Eurasian collared dove	*Streptopelia decaocto*	Panduk		R	C	LC
103.	Yellow- footed Green- Pigeon	*Treron phoenicoptera*	Harilal		R	C	LC
104.	Black-shouldered kite	*Elanus caeruleus*	Kapassi	Accipitridae (8)	R	FC	LC
105.	Black Kite	*Milvus migrans*	Cheel		R	C	LC
106.	Brahminy Kite	*Haliastur indus*	Brahmani cheel		R	C	LC
107.	Egyptian Vulture	*Neophron percnopterus*	Gobar giddh		R	UC	LC
108.	Crested Serpent Eagle	*Spilornis cheela*	Dogra cheel		R	FC	LC
109.	Eurasian Marsh Harrier	*Circus aeruginosus*	Safed Sira		M	C	LC
110.	Shikra	*Accipiter badius*	Chipka		R	C	LC
111.	Common Kestrel	*Falco tinnunculus*	Karontia		M	FC	LC
112.	Rufous – backed Shrike	*Lanius schach*	Kajala latora	Laniidae (2)	R	C	LC
113.	Bay-backed Shrike	*Lanius vittatus*	***		R	FC	LC
114.	Indian Treepie	*Dendrocitta vagabunda*	Mahalat	Corvidae (11)	R	C	LC
115.	Eurasian Golden Oriole	*Oriolus oriolus*	Peelak		R	C	LC
116.	Black- headed Oriole	*Oriolus xanthornus*	***		R	FC	LC
117.	House Crow	Corvus splendens	Kowwa		R	C	LC
118.	Jungle Crow	*Corvus macrorhynchos*	Kala kowwa		R	C	LC
119.	Small minivet	*Pericrocotus cinnamomeus*	Saheli		R	FC	LC
120.	White- browed fantail	*Rhipidura aureola*	***		R	FC	LC
121.	Black drongo	*Dicrurus macrocerus*	Bhujanga		R	C	LC
122.	Ashy Drongo	*Dicrurus leucophaeus*	Bhujanga		M	FC	LC
123.	Common Iora	*Aegithina tiphia*	Shaubeegi		R	FC	LC
124.	Common Woodshrike	*Tephrodornis pondicerianus*	Keroula		R	FC	LC
125.	Blue Rock Thrush	*Monticola solitarius*	Pala tiriv	Musciapidae (11)	M	UC	LC
126.	Grey-headed Canary Flycatcher	*Culicicapa ceylonensis*	Zard-phutki		M	FC	LC
127.	Verditer Flycatcher	*Eumyias thalassina*	Nil-katkatia		M	FC	LC
128.	Tickell's Blue Flycatcher	*Cyornis tickelliae*	Adharanga		R	FC	LC
129.	Blue throat	*Luscinia svecica*	Nil kanthi		M	FC	LC
130.	Oriental Magpie-Robin	*Copsychus saularis*	Dhaiyar		R	C	LC
131.	Indian Robin	*Saxicoloides fulicata*	Kalchuri		R	C	LC
132.	Black Redstart	*Phoenicurus ochruros*	Thirthira		M	FC	LC

133.	Common Stonechat	*Saxicola torquata*	***		M	C	LC
134.	Pied Bushchat	*Saxicola caprata*	***		R	C	LC
135.	Indian Chat	*Cercomela fusca*	Dauma		R	FC	LC
136.	Brahminy Starling	*Sturnus pagodarum*	Brahmini myna	Sturnidae (5)	R	C	LC
137.	Rosy Starling	*Sturnus roseus*	Gulabi myna		M	FC	LC
138.	Asian Pied Starling	*Sturnus contra*	Ablak myna		R	C	LC
139.	Common Myna	*Acridotheres tristis*	Desi myna		R	C	NA
140.	Bank myna	*Acridotheres ginginianus*	Ganga myna		R	C	LC
141.	Great Tit	*Parus major*	Ramgangra	Paridae(1)	R	FC	LC
142.	Red-vented Bulbul	*Pycnonotus cafer*	Bulbul	Pycnonotidae (1)	R	C	LC
143.	Ashy Prinia	*Prinia socialis*	Kali phutki	Cisticolidae (4)	R	C	LC
144.	Jungle Prinia	*Prinia sylvatica*	Tot-rungi		R	FC	LC
145.	Plain Prinia	*Prinia inornata*	Phutki		R	C	LC
146.	Zitting cisticola	*Cisticola juncidis*	Ghas-ki-pitpiti		R	FC	LC
147.	Oriental White-eye	*Zosterops palpebrosos*	Baboona	Zosteropidae (1)	R	C	LC
148.	Common Tailorbird	*Orthotomus sutorius*	Darzee	Sylviindae (6)	R	C	LC
149.	Common Chiffchaff/Brown Leaf Warbler	*Phylloscopus collybita*	***		M	C	LC
150.	Yellow- eyed Babbler	*Chrysomma sinense*	Gulab-chasm		R	C	LC
151.	Common Babbler	*Turdoides caudatus*	Genga/dumri		R	FC	LC
152.	Jungle Babbler	*Turdoides striatus*	Sat bhaina		R	C	LC
153.	Large Grey Babbler	*Turdoides malcolmi*	Sat bhaina		R	C	LC
154.	Ashy-crowned Sparrow Lark	*Eremopterix grisea*	Deoli	Alaudidae (3)	R	FC	LC
155.	Oriental Skylark	*Alauda gulgula*	Bharat		R	C	LC
156.	Indian bushlark	*Mirafra erythroptera*	Aggiya		R	FC	LC
157.	Purple Sunbird	*Nectarinia asiatica*	Phul soohgni	Nectariniidae (1)	R	C	LC
158.	House Sparrow	*Passer domesticus*	Gauriya	Passerinae (9)	R	C	LC
159.	Chestnut-shouldered Petronia	*Petronia xanthocollis*	Jangli chiria		R	FC	LC
160.	Paddyfield Pipit	*Anthus rufulus*	Charchari		R	C	LC
161.	Tawny Pipit	*Anthus Pipit*	***		M	FC	NA
162.	Indian Silver bill	*Lonchura malabarica*	Pidda		R	C	LC
163.	Spotted Munia	*Lonchura punctulata*	Seenabaz		R	FC	LC

164.	Black headed munia	*Lonchura malacca*	Pora munia	R	FC	LC
165.	Red Avadvat	*Amandava amandava*	Lal munia	R	FC	LC
166.	Baya Weaver	*Ploceus philippinus*	Baya/son chiri	R	C	LC

***Not Available, R-Residential, M-Migratory, AC-Abundance Code, C-Common, FC-Fairly Common, UC-Uncommon, R:Rare, NA-Not Assessed, LC-Least Concern, NT-Near Threatened, V-Vulnerable, E-Endangered, CE-Critically Endangered

Being in an urban landscape, it can be developed as an important birding site. Bird census workshop and natural trails can be organized for the students of Lalitpur who are ignorant about the amazing world of the feathered bipeds. Various anthropogenic activities such as littering, over fishing, poaching, over grazing by cattle near the area need to be monitored so as to conserve the avifauna around Govind Sagar Dam. The Bundelkhand region that had been facing severe drought conditions in most of the district might lose the diversity of water birds if conservation measures are delayed. When most of the water bodies have lost the water, the dams in the region serve as a paradise for the birds. Regular scientific monitoring will help in conservation. It is also suggested to further study the flora, and other faunal diversity of Govind Sagar Dam for better understanding of nature that can be conserved in future.



Graph 1: Migratory and Residential Bird Species

Table 2: Abundance code of Bird Species

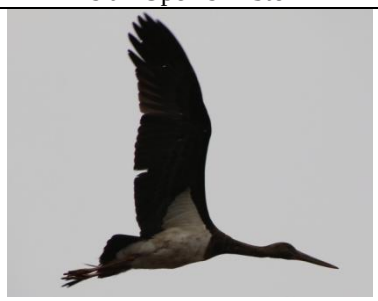
Common	Fairly Common	Uncommon	Total
98	56	12	166

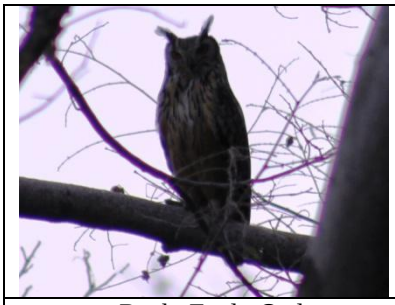
Table 3: IUCN Status of the Birds reported

Not Assessed (NA)	Least Concern (LC)	Near Threatened (NT)	Vulnerable (V)	Endangered (E)	Total
19	137	7	2	1	166

Table 4: Photographs of Some the birds listed in Table 1

		
Lesser whistling duck	Cotton teal	Spot-billed duck
		
Comb duck	Red crested Pochard	Northern shoveller
		
Yellow- wattled Lapwing	Black –winged Stilt	Common Redshank
		
Wood Sandpiper	Eurasian curlew	Common Coot
		
Purple Moorhen	Common Moorhen	River Lapwing

		
Grey Heron	Darter	Little Cormorant
		
Great Cormorant	Black-headed Gull	Black bittern
		
Asian Open bill-Stork	White ibis	Black Ibis
		
Black- necked Stork	Black- necked Stork	Greater Flamingo
		
Common Indian Nightjar	Indian peafowl	Yellow- footed Green- Pigeon

		
Rock Eagle-Owl	Crested Serpent Eagle	Egyptian Vulture
		
Bay-backed Shrike	White Wagtail	Baya Weaver

Conclusion

The observational study on avifauna of Govind Sagar Dam is a preliminary and basic effort to bring out the incredible bird fauna in an area which has suffered severe droughts and deforestation. The purpose is to know and improve the avian diversity around us by sustainable development. The maintenance and improvement of flora of the dam will also support the residing birds. Water birds have ecological, aesthetic, and economic values. A further study on the various behavioural aspects of residential and migratory birds will enrich the fauna.

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