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A preliminary checklist of birds of Chauni wetland and its vicinities, Korobari, South-East Nepal

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Abstract
Nepal supports 886 bird species, 42 of them globally threatened. The present study was conducted in Chauni wetland locally known as 'Jagudaha Pokhari', which is one of the oldest wetland pond of Korobari VDC, ward no. 2 in South - East Jhapa. The information regarding bird diversity of the Chauni wetland is lacking. Therefore, the present study was conducted to access the preliminary data on checklist of birds from the study area and to suggest some conservation measures for its restoration. The primary data was collected by direct observation on the species once a week for three months from 2018 January to March 2018. In the present study, based on direct observation, a total of 39 species of birds belonging to 15 orders and 25 families have been reported from Chauni wetland and its vicinities. Among them, 30 species (76.92%) of birds were of the resident type. The maximum number of bird species found, belong to the order Passeriformes and family Passeridae. Species richness was higher in winter season than summer. However, human encroachment, lack of proper wetland management, overgrazing, excessive use of chemical fertilizers and pesticides, random cutting of grass, killing of birds by using catapult were found to be great threats to the birdlife. Conducting awareness program and fencing around the wetland area was suggested which will help to restore the wetland ecosystem to some extent.

Keywords: wetland, birds, Chauni, Jhapa, Korobari, avifauna

1. Introduction
Nepal is rich in avifaunal diversity, considering the small size of the country (Baral and Inskipp, 2005) [3]. It supports 886 bird species, 42 of them globally threatened, 35 globally near threatened, 167 species are nationally threatened and one country endemic (Birdlife Nepal, 2018) [5]. High biodiversity of flora and fauna is due to the varied physiographic zones of Nepal (Basnet *et al.*, 2006) [4]. In addition, 11 species were considered extinct in Nepal (Inskipp and Inskipp 1991) [11]. A wetland is either a distinct ecosystem that is inundated by water permanently or seasonally, where oxygen-free processes prevail. The bird species directly or indirectly dependent on wetland for feeding, breeding and nesting are called water birds or wetland birds (Kumar and Gupta, 2013) [14]. Subba (1994, 1995 and 1997) [20] made checklist of bird of Dharan, Biratnagar and Gajurmukhi VDC, Ilam respectively. Chaudhary (1999) [6] recorded the birds at Shanischare, Garuwa and Khudunabari in Jhapa district. Rai (2003) [17] studies avifauna of Tinjure Forest, Eastern Nepal. Basnet (2006) [4] did the ornithological survey of lower Mai valley, Ilam. Surana *et al.* (2007) [23] studied about avian diversity during rehabilitation stage of Chimdi Lake, Sunsari, Nepal. Kharel (2009) [23] reported some important turtle species including *Nilssonia hurum* from the Chauni pond. Chhetri (2013) [7] studied anthropogenic impacts on avian diversity in Gainde Community forest, Jhapa. The information regarding bird diversity of the Chauni wetland is lacking. The Chauni pond is one of the oldest wetland pond of South-East Jhapa but due to public encroachment and lack of conservation measures, it is going to vanish in near future. Therefore, the present study was conducted to access the preliminary data on checklist of birds from the study area and to suggest some conservation measures for its restoration.

1.1 Study area
Chauni pond, locally known as 'Jagudaha pokhari' is the study area located at Korabari village development committee (VDC), ward no. 2 in Jhapa District in the Province No. 1 of South-East Nepal (Fig. 1). It is about 5 km east from Gauriganj bazar area. Its geographical coordinates are 26 º 27' 49.6" N latitude and 87º 45'38.4" E longitude. It is located at an elevation of 63m above mean sea level. The total area of the pond is approximately 3.456 hectare. It has tropical a climate. The annual average temperature is 24.6 °C and the temperatures are highest on average in June, at around 28.6 °C and lowest on average in January at 16.9 °C. The variation in annual temperature is around 11.7 °C. The average annual precipitation is 2449 mm. The least amount of rainfall occurs in December (average of 4mm) and maximum in July (average of 723 mm). The variation in the precipitation between the driest and wettest months is 719 mm (Climate data, 2018) [8]. Rai (2016) [17] has reported macrophytes like *Eichhornia crassipes*, *Nymphaea odorata*, *Ipomoea aquatica*, *Ipomoea carnea*, and *Alternanthera philoxeroides* from the Chauni pond.

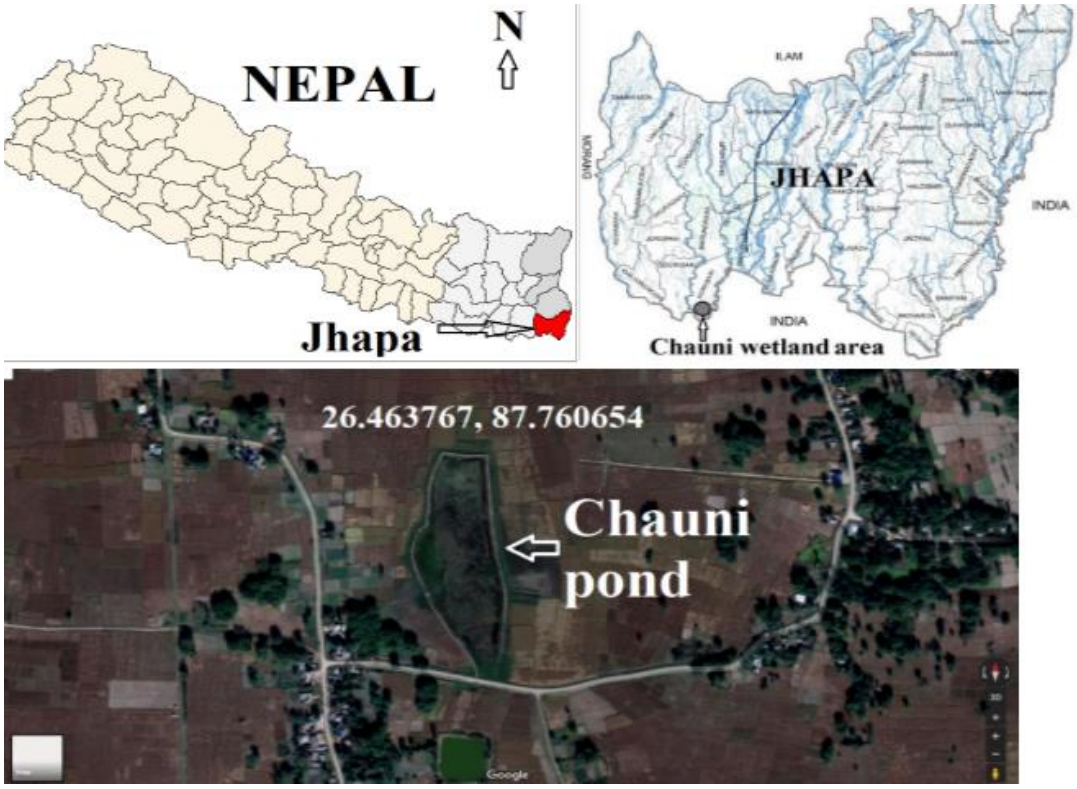

Fig 1: Map of study area.

2. Materials and Methods

The study of birds of Chauni pond carried out for three months from 2018 January to March 2018. During this period, the study site was visited once a week that is every Saturday. Direct observations were made by walking along the periphery of the pond and nearby bamboo forest area in the morning from 0700 hrs to 1000 hrs and from 1600 hrs to 1800 hrs in the evening. The bird species were observed with the help of Bushnell H2O Waterproof/Fogproof Prism Binocular 10x42 mm and identified with the help of the field guide book of Inskipp and Inskipp (1991) [11], Ali, and Ripley (1986) [1], Flemming *et al.* (2000), Shrestha (2000) [19], Grimmet *et al.* (2016) [2] and Pradhan (2017) [16]. The photographs of some birds (which are difficult to identify were captured by using Canon Powershot SX520 HS 42x24-1008mm 16 MP optical zoom digital camera. The geographical coordinates were taken by using Garmin eTrex10 Worldwide Handheld GPS navigator. The primary data were collected by direct observation on the species. During each visit, all birds seen or heard within the radius of 50m at each point were recorded in the data sheet. While secondary data were collected by making questionnaires and reviewing concerned literatures. Photographs of unidentified species were brought to the subject experts at department of biology, Central campus of technology, Dharan for the identification. Birds sighted during the survey were categorized based on their migratory nature including resident (R), passage migrant (PM), altitudinal migrant (AM), winter visitor (WV) and summer visitor (SV), following Inskipp *et al.* (2016) [11]. The nomenclature, taxonomic listing and conservation status of the avifauna was determined based on the IUCN Red List of Threatened species (2018) [12].

3. Results

In the present study, based on direct observation, a total of 39 species of birds belonging to 15 orders and 25 families have been reported from Chauni wetland and its vicinities (Table 1). Among them, 30 species (76.92%) of birds were of the resident type, five species (12.82%) were winter visitor and four species (10.25%) were summer visitors (Fig 3). Of them, 38.46% species (n= 15) were fairly common, 28.20 % species (n=11) of birds were common, 17.94% (n=7) species were occasional and 15.38 % (n=6) species were uncommon (Fig 4).

Table 1: Birds of Chauni wetland and its vicinities.

SN	Common Name	Scientific Name	Local Name	Family	SS	AB	IUCN
ORDERS: Accipitriformes							
1	Crested Serpent Eagle	*Spilornis cheela*	Kakakul	Accipitridae	R	+	LC
2	Osprey	*Pandion haliaetus*	Malaha cheel	Pandionidae	W	+	LC
Anseriformes							
3	CommonTeal	*Anas crecca*	Vijula Gairi	Anatidae	W	+ + +	LC
Bucerotiformes							
4	Common Hoopoe	*Upupa epops*	Fafre chara	Upupidae	R	+ + + +	LC
Charadriiformes							
5	Bronze-winged Jacana	*Metopidius indicus*	Lama aunle	Jacanidae	R	+ + + +	LC
6	Red- wattled Lapwig	*Vanellus indicus*	Huttityaun	Charadriidae	R	+ + +	LC

Ciconiiformes							
7	Asian Openbill	*Anastomus oscitans*	Ghungifor garud	Ciconiidae	S	+	LC
8	Lesser Adjutant	*Leptoptilos javanicus*	Bhundifor garud	Ciconiidae	R	+ +	VU
Columbiformes							
9	Eurasian Collared Dove	*Streptopelia decaocto*	Kanthe dhukur	Columbidae	R	+ + + +	LC
10	Rock Pigeon	*Columba livia*	Parewa	Columbidae	R	+ + + +	LC
11	Spotted dove	*Streptopelia chinensis*	Kurle dhukur	Columbidae	R	+ + + +	LC
Coraciiformes							
12	Chestnut-headed Bee-eater	*Merops leschenaultia*	Katus tauke Murali chara	Meropidae	S	+	LC
13	Stork-billed Kingfisher	*Halcyon capinsis*	Thulo-matikore	Alcedinidae	R	+ +	LC
14	White-throated Kingfisher	*Halcyon smyrnensis*	Setokanthe-matikore	Alcedinidae	R	+ +	LC
Cuculiformes							
15	Greater Couckal	*Centropus sinensis*	Dhade gokul	Cuculidae	W	+ + +	LC
16	Indian Cuckoo	*Cuculus micropterus*	Kaphal pakyo	Cuculidae	S	+ +	LC
Gruiformes							
17	White-brested Waterhen	*Amaurornis phoenicurus*	Sim kukhura	Rallidae	R	+ + + +	LC
Passeriformes							
18	Asian Pied Starling	*Gracupica contra*	Dangre saraun	Sturnidae	R	+ + + +	LC
19	Black Drongo	*Dicrurus macrocercus*	Kalochibe	Dicuridae	R	+ + + +	LC
20	Black- headed Oriole	*Oriolus xanthornus*	Kalotauke sunchari	Oriolidae	R	+	LC
21	Common Myna	*Acridotheres tristis*	Dangrerupi	Sturnidae	R	+ + + +	LC
22	Crow billed Drongo	*Dicrurus annectans*	Kagthude chibe	Dicuridae	S	+ + + +	LC
23	Geater Racket-tailed Drongo	*Dicrurus paradiseus*	Bhimraj chibe	Dicuridae	R	+ + +	LC
24	Grey-headed Myna	*Sturnus malabaricus*	Khaire taauke rupi	Sturnidae	R	+ +	LC
25	House Crow	*Corvus splendens*	Gharkag	Corvidae	R	+ + + +	LC
26	House Sparrow	*Passer domesticus*	Bhagera	Passeridae	R	+ + + +	LC
27	Jungle Babbler	*Turdoides striata*	Bagale vyakur	Leiothrichidae	R	+ + +	LC
28	Large-billed Crow	*Corvus macrorhynchos*	Kalokag	Corvidae	R	+ + +	LC
29	Long-tailed Shrike	*Lanius schach*	Bhadrai	Laniidae	W	+	LC
30	Oriental Magpie Robin	*Copsychus saularis*	Dhobi chara	Muscicapidae	R	+ + + +	LC
31	Rufous Treepie	*Dendrocitta vagabunda*	Kokale	Corvidae	R	+ +	LC
Pelicaniformes							
32	Great egret	*Ardea alba*	Thulo seto bakulla	Ardeidae	R	+ + +	LC
33	Indian Pond Heron	*Ardeola grayii*	Askote bakulla	Ardeidae	R	+ + + +	LC
34	Intermediate Egret	*Ardea intermedia*	Sano bakulla	Ardeidae	R	+ + +	LC
Piciformes							
35	Blue-throated Barbet	*Megalaima asiatica*	Kuthukre	Megalaimidae	R	+ +	LC
Psittaciformes							
36	Rose-ringed Parakeet	*Psittacula krameri*	Kanthe suga	Psittacidae	R	+ + +	LC
Strigiformes							
37	Jungle Owlet	*Glaucidium radiatum*	Dundul	Strigidae	R	+ + +	LC
38	Spotted Owlet	*Athene brama*	Laatkosero	Strigidae	R	+ + +	LC
Suliformes							
39	Little Cormorant	*Phalacrocorax niger*	Saano jalewa	Phalacrocoracidae	W	+ + + +	LC

SS: Seasonal Status, AB: Abundance, R: Resident, W: Winter Visitor, S: Summer Visitor, Fairly Common: + + + +, Common: + + +, Occasional: + +, Uncommon: +, IUCN: IUCN Status of threatened species 2018.

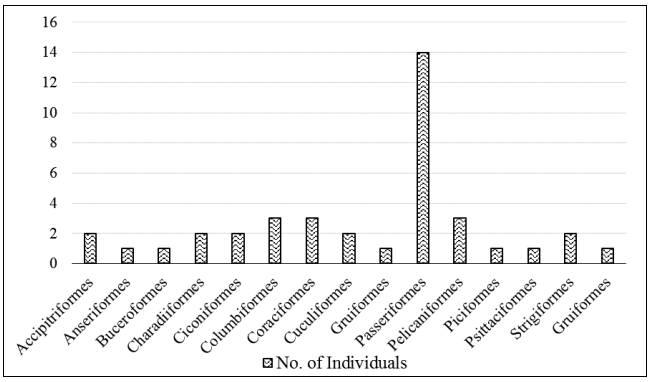

Fig 2: Order wise Composition of Birds of Chauni wetland

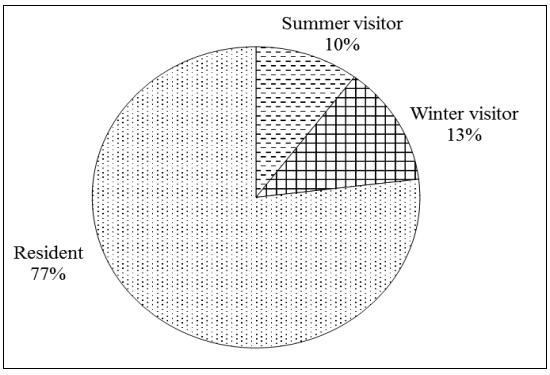

Fig 3: Season wise composition of birds of Chauni wetland.

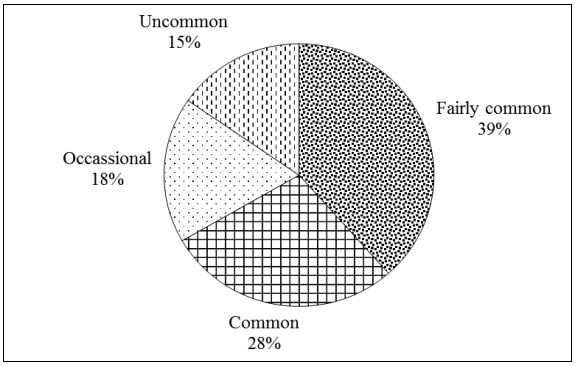

Fig 4: Species abundance of birds of Chauni wetland.

Some photographs captured during field visits

Chauni wetland (heavy eutrophication)

Cattle egret (Bubulcus ibis)

Shikra (Accipter badius)

Author at study area

Red-wattled lapwing (Vanellus indicus)

Indian Pond Heron (Ardeola grayii)

4. Discussion

Basnet and Sapkota (2006) [4] reported 152 bird species were recorded from the lower Mai Valley area. Among them 129 species were residents, 18 species were winter visitors and five were summer visitors. Kharel (2009) [13] reported some of the notable turtle species including *Nilssonia hurum*, *Lissemys punctata* from the Chauni wetland. Chhetri (2013) [7] reported 116 species of birds belonging to 39 families including one Critically endangered (*Gypus begalensis*), two endangered species *(Haliaeetus leucoryphus* and *Leptoptilus javanicus*) from Gainde Community forest, Jhapa. Pokharel (2015) [15] reported 55 species of birds belonging to 10 orders and 26 families from the Betana wetland. Belbari. Out of 55 species, 44 species were resident, five species were winter visitor and six species were summer visitor. In the present study, the maximum number of bird species found, belong to the order Passeriformes and family Passeridae. Maximum species of birds were found resident

type and were common in the study area. The Chauni wetland area has managed by the local village development committee. However, due to lack of public awareness about importance of wetland resources, the area has been found misused by the local villagers. Lack of proper wetland management and overgrazing are the major problems. During field visit, the local villagers were found letting their cattle to graze randomly and cutting grass in the wetland area. During the first survey many dead trees were not cut down but villagers were cutting down some large sized. If same trend remains continued, the wetland area will be converted to dryland soon. Local kids were also found killing the birds by the use of catapult. Besides, the excessive use of chemical fertilizers and pesticides in agricultural field widely observed at the vicinities of Chauni wetland. Birds are susceptible to insecticide damage (Baral, 2000) [2]. Ingesting pesticides directly or indirectly by eating pesticide-contaminated grains, fruits, worms and insects may adversely affect them.

5. Conclusions

Species richness was higher in winter season than summer. Easy availability of food, suitable climate, and temperature and migration of species might be the reason for high species richness in winter season. Human encroachment of Chauni pond area was found to be a great threat to the birdlife. Local people bring their cattle for grazing. Recently government of Nepal has allocated one million rupees for the restoration of Chauni wetland. The construction of dam along the perimeter of weltland was in progress. This will certainly help to retain water and to restore the avifaunal diversity of the wetland area. Based on my study some suggestions are as follows:

- A frequent research should be encouraged to access the biodiversity and anthropogenic impacts on the wetland ecosystem.
- Fencing around the wetland area has to be done to minimize overgrazing.
- Awareness program should be launched (such as Catalpults collection from local people) should be launched.
- Establishment of nature clubs should conduct bird watching program.
- Local people should be encouraged to minimize the use of chemical fertilizers and pesticides.

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