

Vertebrate-faunal diversity profile of Sisauli Wetland, Belbari, Morang

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Abstract

The research work on Sisauli Wetland area of Belbari Municipality, Morang was conducted from first week of April to last week of August, 2018. A total of 12 species of mammals, 19 species of Aves, 13 species of reptiles, 8 species of amphibian and 19 species of Pisces were documented from Sisauli Wetland area.

Key words: Amphibia, Aves, Betana Wetland, Mammalia, Pisces, Reptilia.

Introduction

The wetland includes marshes, lakes, rivers, floodbasins, estuarine deltas, ponds, rice fields, and marine water areas where the depth of the low tide does not exceed 6 m. They are considered as productive lands for agriculture and rich from the point of view of biological diversity. The wetlands are also taken as the biological supermarket. The wetland provides habitat for several species in Nepal: 32 species of mammals, 461 species of birds, 9 species of turtle, 20 species of snake and 28 species of fish in terai (Shrestha, 1997). Wetland belongs to a great economic, cultural, recreational and hydrological value. It is also important for income generating opportunities.

Sisauli Wetland is situated at Lat. 26°39' N and Long. 87°26'E. It is located at the elevation of 125 m msl, covering an area of 292.4 ha including whole Sisauli community forestry in Belbari Municipality ward no. 1, Morang district province no 1. It is present at a distance of 600 m north from east west high way and 26 km from Biratnagar. It is a small piece of Char-Koshe-Jhadi. Dense sal forest and small shrubs surround the water filled region.

Water depth ranges from shallow zone to 1.5 m. Water covers about 50 ha areas. During dry season the water confines only in narrow area and in rainy season water extends in big area. The Sisauli Wetland was made by making dam in Sisauli River. When the water level lowered in Betana Wetland, Sisauli was diverted to Betana. Consequently, the water body's size increased. There is a small village on the north of this wetland and on the south and east there is a dense sal forest. There are some ground water springs as permanent source of water. This wetland is important in respect of culture also. There are some temples and holy place of Dimal people (Maharaj Than). Every year on the date of Jestha 5th Siruwa Mela is celebrated.

The geology and soil of Sisauli Wetland characterized as the flood-plains consist of series of ascending alluvial terraces composed of gravels, sand and silts. Soil types found are sandstone, conglomerate, quartzite, shales and micaceous sandstone. The wetland situated on Laterite soil (i.e., soil type rich in iron and aluminum).

Regarding with hydrology and water, main source of water throughout the year is ground spring in the Sisauli pond and springs on the upper part of the community forest. Overall catchment area of the wetland helps in ground water recharge. The meteorological records are: average annual rainfall 1312 mm, average annual minimum and maximum temperatures 14.2°C and 30.6°C, respectively (Department of Meteorology, Koshi Basin field office, Biratnagar).

The study area has a sub tropical climate with three major seasons: summer, monsoon and winter season. Summer season is a hot and dry period of the year that lasts from February to mid June. Monsoon season lasts from mid-June to late September characterized by torrential downpour with hot and humid climate. Winter is generally cold that lasts from late October to late February.



Figure 1. Sisauli Wetland, Belbari, Morang

Materials and Methods

This research was conducted from first week of April and completed in last week of August, 2018. Ocular survey was applied for the notification of mammals in different spots, in the morning and evening. Photographs were taken.

Visual Encounter Survey (VES) was conducted to count the species of Herpetofaunas. The habitat favorable to them was systematically sampled. Some amphibian and reptilian species were collected and preserved in 5% formalin solution for the identification. Birds were recorded using point transect sampling. There were 3 transects and each transect consisted of 6 points. Bird watching was done in the morning, day and evening in regular cycle, point wise by altering the week.

For Pisces recording, the sites were randomly selected according to accessibility and focusing on representation of even distribution of sample sites. GPS co-ordinates with altitude were recorded in all sampling areas to provide distribution of species present in the wetland. Sampling was done by mobilizing local ethnic people too.

Key Informant Survey was also applied with local people by making. For the identification of vertebrates following literature has been used *viz*; Shrestha (1997) for mammals, Shrestha (2001) for birds, Kastle *et al.* (2013) for reptiles and mammals and shrestha (1981) for Pisces. And, also the support of experts was taken to identify the species.

Results and Discussion

A total 12 species of mammals, 19 species of aves, 13 species of reptiles, 8 species of amphibians and 19 species of Pisces have been reported Sisauli Wetland area (Table 1).

Table 1. List of vertebrate fauna reported from Sisauli Wetland area.

SN	Scientific name	Common name
Mammals		
1.	<i>Macacamulatta</i>	Rhesus monkey
2.	<i>Semnopithecus entellus</i>	Hanuman Langur
3.	<i>Axis axis</i>	Spotted Dear
4.	<i>Caprolagus hispidus</i>	Hispid Hare
5.	<i>Hystrix</i> sp.	Porcupine
6.	<i>Herpestes</i> sp.	Mongoose
7.	<i>Panthera</i> sp.	Leopard
8.	<i>Canisaureus</i> sp.	Golden Jackle
9.	<i>Funambulus</i> sp.	Lokharke
10.	<i>Sus scrofa</i>	Wild boar
11.	<i>Mus</i> sp.	Mouse
12.	<i>Elephas maximus</i>	The Elephant
Birds		
1.	<i>Phalacrocoracorax carbo</i>	Large Cormorant
2.	<i>Phalacrocorax niger</i>	Little Cormorant
3.	<i>Anhinga rufa</i>	Darter
4.	<i>Leptoptilos javanicus</i>	Lesser adjutant Stork
5.	<i>Anatomus oscitans</i>	Open billed stork
6.	<i>Metopidius indicus</i>	Bronze Winged Jacana
7.	<i>Tringa ocropus</i>	Green Sandpiper
8.	<i>Vanellus malabrica</i>	Red wattled lapwing
9.	<i>Nettapus coromandelianus</i>	Cotton teal
10.	<i>Egretta garzetta</i>	Little egret
11.	<i>Egretta intermedia</i>	Intermediate Egret
12.	<i>Ardeola grayii</i>	Pond Heron
13.	<i>Amourornis phoenicurus</i>	White Breasted Waterhen
14.	<i>Threskiornis melanocephala</i>	White Ibis
15.	<i>Pseudibis papillosa</i>	Black Ibis
16.	<i>Halcyon smyrnensis</i>	White brested Kingfisher
17.	<i>Alcedo atthis</i>	Eurasian kingfisher
18.	<i>Centropus sinensis</i>	Large Coucal
19.	<i>Pycnonotus jocosus</i>	Red- Whiskered Bulbul
Reptiles		
1.	<i>Lissemys punctata</i>	Indian flap-shelled turtle
2.	<i>Aspideretes hurum</i>	Indian peacock
3.	<i>Indotestudo elongata</i>	Soft shelled turtle Tortoise
4.	<i>Calotes versicololar</i>	Garden lizard

5.	<i>Varanus bengalensis</i>	Bengal Monitor Lizard
6.	<i>Varanus flavescens</i>	Yellow Monitor Lizard
7.	<i>Mabuya carinata</i>	Common Indian skink
8.	<i>Python molurus</i>	Indian Python
9.	<i>Ptyas mucosa mucosa</i>	Common Rat snake
10.	<i>Amphiesma stolatum</i>	Buff-striped Keelback
11.	<i>Xenocrophis piscator</i>	Checkered Keelback,
12.	<i>Naja naja</i>	Spectacled Cobra
13.	<i>Bungarus fasciatus</i>	Banded Krait
Amphibia		
1.	<i>Hoplobatrachus tigerinus</i>	Indian bull frog
2.	<i>Hoplobatrachus crassus</i>	Jerdon's bull frog
3.	<i>Euphlyctis cyanophlyctis</i>	Skittering frog
4.	<i>Polypedataeniatus</i>	Terai tree frog
5.	<i>Limnonectes teraiensis</i>	Terai cricket frog
6.	<i>Bufo melanostictus</i>	Common Asian Toad
7.	<i>Bufo stomaticus</i>	Marbled toad
8.	<i>Sphaerotheca breviceps</i>	Indian burrowing frog
Pisces		
1.	<i>Heteropneustes fossilis</i>	Singhi
2.	<i>Labeo rohita</i>	Rohu
3.	<i>Clarias Batrachus</i>	Mungri (African catfish)
4.	<i>Anabas testudineus</i>	Kabai (Climbing perch)
5.	<i>Channa marulius</i>	Saur
6.	<i>Channa punctatus</i>	Garai(Murrel)
7.	<i>Channa stewartii</i>	Hile
8.	<i>Amphipnous cuchia</i>	Andha bam
9.	<i>Chana gachuwa</i>	Hile
10.	<i>Puntius spp</i>	Pothi (Barb)
11.	<i>Glosogobius giuris</i>	Bulla
12.	<i>Mystus spp</i>	Tengra
13.	<i>Wallago attu</i>	Bohari
14.	<i>Esomus dandricus</i>	Darai(River barb)
15.	<i>Oreochthys cosuatis</i>	Patharchatti
16.	<i>Chagunius chagunio</i>	Rewa (Minor carp)
17.	<i>Amblypharyngdon mola</i>	Mada
18.	<i>Tetraodon cutcutia</i>	Phokcha (Globefish)
19.	<i>Nandus nandus</i>	Dhala Dedhwa(Rasbora)

A total 15 species of mammals have been reported from Betana Wetland and its adjoining area (Thapa & Subba, 2005). Similarly, Adhikari and Acharya (2017) have also reported 14 species of mammals in Betana Wetland area nearby Sisauli. In present work, two species were less recorded than the previous works from the same place.

Regarding the birds, Shrestha (2001) mentioned 873 species of birds from Nepal. Pandey (2003) studied the birds of Itahari and made a checklist of 104 species.

Four species of turtles have been reported from Betana Wetland and its adjoining area (Thapa & Subba, 2005; Adhikari & Acharya, 2017). One species of turtle is less reported

now. It has been recommended that Betana and adjoining area of wetland is very suitable habitat of turtle and other amphibian and reptilian species.

A total 34 species of amphibian have been reported from Nepal (Kastle *et al.*, 2013). Adhikari and Acharya (2017) have been reported 8 species of amphibians from Betana Wetland and adjoining area.

Fish diversity of Betana has been studied by Thapa and Subba (2005) reporting a total 10 species of pisces. In the present work, 9 more species of pisces have been reported.

Conclusion

Sisauli Wetland located on the base of Char Koshe Jhadi is a good habitat for vertebrates. A total of 12 species of mammalian, 19 species of birds, 13 reptilian species and 8 amphibian species were found. Similarly, 19 species of Pisces were also documented in Sisauli Wetland area.

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