

## A checklist of birds of Taudaha Lake of Kathmandu, Nepal

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### Abstract

The research was conducted in Taudaha Lake situated in the southern corner of the Kathmandu valley, midway to Dakshina kali. An attempt has been made to survey the existing bird species in eight months, from September 2007 to April 2008. The main objective of the study was to assess the number of migratory birds in different seasons. Direct observation method was used besides random questionnaire survey and literature review. Observations were done by using binoculars. A total of forty species of the birds were estimated in the study area out of which seventeen were residential, two were summer migrants and twenty one were winter migrants. One of the new species, Bar headed goose, *Anser indicus*, was recorded in the study area.

**Keywords:** Taudaha Lake, *Anser indicus*, questionnaire

### 1. Introduction

There are about 9,600 species of birds in the world. About 1300 species of birds representing 90 families live and breed in Indian sub-continent. In Nepal 879 species have been recorded. The number of breeding birds (permanent, residents and migrants) falls about 640 species (Shrestha 2001) [9].

The avian distribution in Nepal is unique and interesting. Nepal occupies parts of two of the world's eight biogeographical realms. These are Palearctic towards the north and Oriental towards the south. The birds of the Himalayan Zone are related to that of Europe and North Asia and those of Oriental are related to those of southern Nepal. On the basis of avian fauna, (Fleming 1971) [1] has divided the country into four zones. a) Lowland zone b) Midland zone c) Himalayan zone and d) Trans-Himalayan zone.

Wetlands are among the most productive ecosystem in the world. Wetland being an important natural base of the economic development of the country, it plays a pivotal role for subsistence population. The wetlands of Nepal are well-known for unusually rich biodiversity. They occupy approximately five percent of the total area of Nepal in the form of rivers, stream, lakes, reservoirs, village ponds, paddy fields, marsh and swamp land. It has been estimated that there are over 405 wetland areas in Nepal from the Tarai to the Himalayas. Of these, the Koshi Tappu is the most outstanding wetland designated internationally in 1987 as the first Ramsar site in Nepal. Other Ramsar sites include Bishazari Tal, Ghodaghodi Tal and Jagadishpur reservoir in Nepal. In Nepal more than 230 bird species are known to depend on wetlands (Shrestha 2000) [8].

They support many resident and migratory species of water fowls. The Wild ducks, geese and swans are tangible resources in Nepal. They are an essential component of our ecosystem, source of beauty and valuable genetic resource useful for duck breeding. The loss of diversity of the water birds reduces the

natural resource base of the country. Wetlands are one of the most threatened habitats because of their vulnerability and attractiveness for development (Hollis *et al.* 1988) [3].

The wetlands of Nepal also have faced serious environmental problems: loss of species (birds and animals which are endemic to the region), soil erosion, deforestation, draining etc. (Shrestha 2000) [8]. Consequently, the wildfowl population of Nepal is everywhere in a declining state. Therefore, conservation and management of both wetlands and waterfowl in Nepal is vital.

### 2. Materials and methods

a) Study area – Taudaha lake is supposed to be one of the fascinating site and historically famous lake of the Kathmandu valley. It is also an ecologically rich habitat for the birds, fishes and other aquatic fauna. It is situated in the Southern corner of the Kathmandu valley midway to Dakshina kali. The lake is situated about 12 Km away from the centre of the Kathmandu. It occupies an area of eighty Ropanies and fourteen anas. It is about 6.8 m in depth. The lake is partly surrounded by rice terraces with its characteristic zigzag shape. It is also said to be one of the religious place. Thus, people celebrate Nagpanchami in the name of Karkat Nag Raja and Nag Rani, once a year.

#### (b) Climate

The lake is situated at 27° 38'N latitude and 85° 17' E longitudes. It is about 1400m above the sea level and is situated on the southern edge of the Kathmandu Valley (Shah 2000) [6].

The climatic condition of Taudaha lake resemble with the Kathmandu city. The average annual temperature varies from 10 °c to 26 °c. The lake shows subtropical climate with three distinct seasons as summer, rainy and winter.



Fig 1: A gateway to Taudaha lake

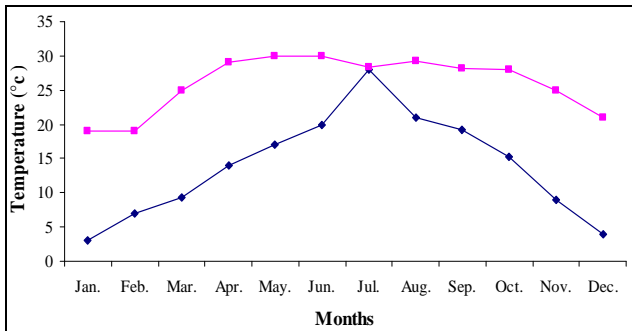


Fig 2: Temperature in Kathmandu from January 2007 to December 2007

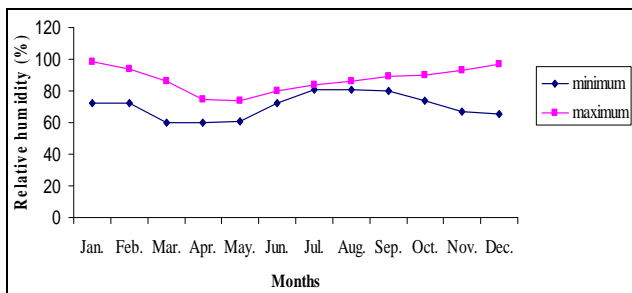


Fig 3: Relative Humidity in Kathmandu from Jan 2007 to Dec 2007

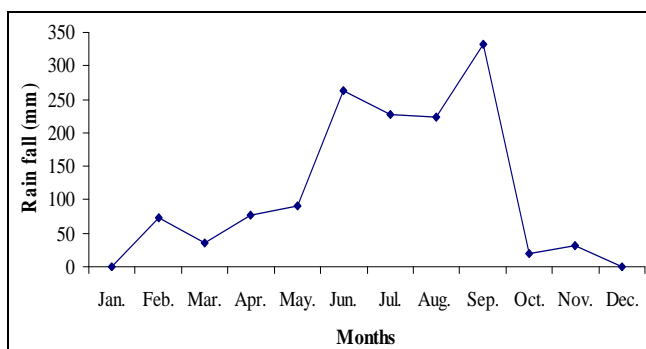


Fig 4: Rainfall in Kathmandu from Jan 2007 to Dec 2007

**c) Direct Observation**

The field study was carried out for eight months from September 2007 to April 2008. During this period, the study site was visited once a week that is every Saturday. Direct observations were made for three hours that is from 8 am to 11 am, mostly focussing upon the migratory birds. The birds were observed and identified with the help of Olympus Binocular (10x25 RC II R, weather proof field 5°). The field guide book

of (Grimmet *et al.* 2003) [2] and (Inskipp and Inskipp 1985) [5] were referred for the identification of birds. Birds were censused by applying direct count method. Such a method has widely been used for enumerating aquatic birds especially ducks (Roux 1973). Counts were performed in the same time 8 am to 11am through out the study period. Three permanent vantage points were taken around the lake and repeated one after another per week. In each month, four data sets were filled up from which the maximum numbers of birds were taken as the real or total population. The photos of the birds, which were distinct were taken by the help of two digital camera of (300 mm Nikon D 40x) and (4.5 mega pixel) respectively.

Both primary and secondary data and questionnaire were used but the main parts of the study depend on primary data. The primary data were collected by direct observation. While secondary data were collected by reviewing literatures such as journals, articles, proceedings and books.



A



B



C

Fig 1: a) Researcher conducting questionnaire survey in Tauaha b) Researcher in discussion with Maheshor Karki, a committee member of Taudaha and c) Researcher observing birds through binoculars

### 3. Results and discussion

From the present research I found forty species of birds out of which twenty one were winter migrants, two were summer migrants and seventeen were residents. Black crowned night heron (*Nycticorax nycticorax*) previously reported as summer migrant by (Shah, 2000) [6], is found to be a winter migrant in the present study. (Shah 2000) [6] Reported twenty two winter migrants and eleven summer migrants. Some new winter migrants like Great cormorant (*Phalacrocorax carbo*), Ruddy

shelduck (*Tadorna ferruginea*), Northern shoveler (*Anas clypeata*), Bar headed goose (*Anser indicus*), Northern pintail (*Anas acuta*), Common pochard (*Aythya ferina*), Grey heron (*Ardea cinerea*), Tufted duck (*Aythya feligula*) and Olive backed pipit (*Anthus hodgsoni*) have been recorded which were not recorded previously by (Shah, 2000) [6]. (Rissen 2007) reported all these species recorded in the study area except Bar headed goose (*Anser indicus*) which has been reported as a new species in the present study.

**Table 1:** Checklist of the Birds at Taudaha Lake

S.N.	Order	Family	Common name	Scientific name	Local name	Status
1.	Anseriformes	Anatidae	Mallard	<i>Anas platyrhynchos</i>	Hariyo tauke	W
2.	Anseriformes	Anatidae	Furruginous pochard.	<i>Aythya nyroca</i>	Malak hans	W
3.	Podicipedi formes	Podicipedidae	Little grebe	<i>Tachybaptus ruficollis</i>	Dubulki chara	W
4.	Grulformes	Rallidae	Common coot	<i>Fulica atra</i>	Marul/Sikhha	W
5.	Anseriformes	Anatidae	Gadwall	<i>Anas strepera</i>	Khakhade hans	W
6.	Pelecaniformes	Phalacrocoracide	Great cormorant	<i>Phalacrocorax carbo</i>	Jeleva	W
7.	Anseriformes	Anatidae	Eurasian Wigeon	<i>Anas penelope</i>	Sindure hans	W
8.	Anseriformes	Anatidae	Ruddy Shelduck	<i>Tadorna ferruginea</i>	Chakhewa Chakhewi	W
9.	Anseriformes	Anatidae	Northern shoveler	<i>Anas clypeata</i>	Belcha	W
10.	Anseriformes	Anatidae	Bar headed goose	<i>Anser indicus</i>	Khoya hans	W
11.	Anseriformes	Anatidae	Red crested pochard	<i>Rhodonessa rufina</i>	-	W
12.	Anseriformes	Anatidae	Northern Pintail	<i>Anas acuta</i>	Suriopuchhre	W
13.	Asneriformes	Anatidae	Spot billed duck	<i>Anas poecilorhyncha</i>	Naadun hans	W
14.	Anseriformes	Anatidae	Common teal	<i>Anas crecca</i>	Wijul gairi	W
15.	Anseriformes	Anatidae	Common pochard	<i>Aythya ferina</i>	Kailo tauke hans	W
16.	Passeriformes	Passeridae	Pied wagtail	<i>Motacilla alba</i>	Khole dhobi	W
17.	Passeriformes	Musciapidae	Stone chat	<i>Saxicola torquata</i>	Jhyapjhyape	W
18.	Passeriformes	Motacillidae	Olive backed pipit	<i>Anthus hodgsoni</i>	Rukh chuiya	W
19.	Anseriformes	Anatidae	Tufted duck	<i>Aythya fuligula</i>	Kali jure hans	W
20.	Ciconiformes	Ardeidae	Black Crowned night heron	<i>Nycticorax nycticorax</i>	Baake bakula	W
21.	Passeriformes	Hirundinidae	Barn Swallow	<i>Hirundo rustica</i>	Ghar gauthali	S
22.	Ciconiformes	Ardeidae	Grey heron	<i>Ardea cinerea</i>	Phusro bakula	W
23.	Passeriformes	Corvidae	Black drongo	<i>Dicrurus macrocercus</i>	Kalo chibe	R
24.	Passeriformes	Sturnidae	Common mynah	<i>Acridotheres tristis</i>	Dangre rupi	R
25.	Ciconiformes	Ardeidae	Cattle egret	<i>Bulbulcus ibis</i>	Bastu bakula	R
26.	Charadriformes	Accipitridae	Black kite	<i>Milvus migrans</i>	Cheel	R
27.	Passeriformes	Passeridae	House sparrow	<i>Passer domestica</i>	Bhangera	R
28.	Passeriformes	Corvidae	House Crow	<i>Corvus splendens</i>	Kag	R
29.	Passeriformes	Corvidae	Jungle crow	<i>Corvus macrorhynchos</i>	Kag	R
30.	Passeriformes	Sturnidae	Jungle mynah	<i>Acridotheres fuscus</i>	Wan rupi	R
31.	Passeriformes	Muscicapidae	Oriental magpie robin	<i>Copsychus saulari</i>	Dhobini chara	R
32.	Columbiformes	Columbidae	Rock pigeon	<i>Columba livia</i>	Malewa	R
33.	Psittaciformes.	Psittacidae	Rose ringed parakeet	<i>Psittacula krameri</i>	Kanthe suga	R
34.	Passeriformes	Pycnonotidae	Red vented bulbul	<i>Pycnonotus</i>	Jureli	R
35.	Coraciiformes	Daceloniidae	White throated kingfisher	<i>Halcyon smyrnensis</i>	Seto kanthe mati kore	R
36.	Columbiformes	Columbidae	Soptted dove	<i>Streptopelia chinensis</i>	Kurle dhukur	R
37.	Ciconiformes	Ardeidae	Indian Pond heron	<i>Ardeola grayii</i>	Aaskote	R
38.	Gruiiformes	Rallidae	White breasted water hen	<i>Amaurionis phoenicurus</i>	-	R
39.	Cuculiformes	Cuculidae	Indian cuckoo	<i>Cuculus canorus</i>	Kuku	S
40.	Ciconiformes	Ardeidae	Intermediate egret	<i>Mesophoyx intermedia</i>	Majhauaseto bakula	R

Common, Scientific and local names are taken from (Grimmet *et al.* 2003) [2] and families and orders are taken from (Shrestha 2001) [9]

Key,

R= Residential

S= Summer

W=Winter

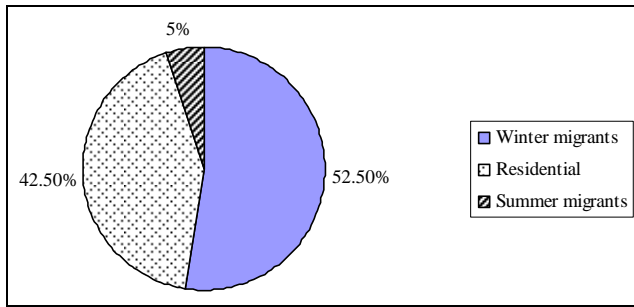


Fig 6: Pie chart showing the percentage of Winter and Summer migrants and residential birds

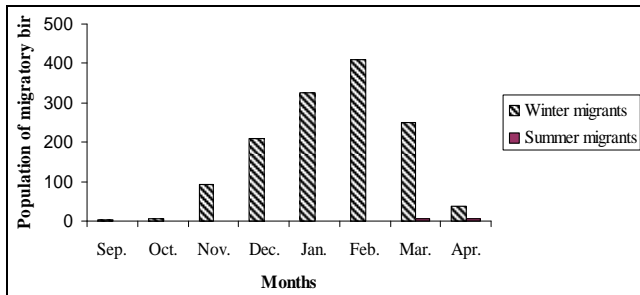


Fig 7: Multiple bar diagram showing distribution of migratory birds from September 2007 to April 2008



Bar headed goose, *Anser indicus*

**4. Acknowledgements**

I am highly beholden to Professor Khadga Basnet, Central Department of Zoology, Tribhuvan University, Nepal, for his encouragement and indispensable suggestions in my work. He has really provided me a great deal of enthusiasm to move ahead. I would like to express my heartiest thanks to Mr. J.P. Mahato, The Principal of Shree Batsala Devi Ma. Vi, sisneri, Nepal, for his financial support, field assistance and help in taking photos. I am extremely thankful to Dr. Hem Sagar Baral for his useful suggestions in the method.

Finally, I would like to express my thanks to the committee member of Taudaha, Mr. Maheshor Karki and my parents who brought me till this platform to present this work.

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