STATUS AND CONSERVATION OF WATERFOWL IN CHATLAM-FUSHKOORI WETLAND CONSERVATION RESERVE, PAMPORE, KASHMIR (JAMMU & KASHMIR)

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Abstract: The present study was carried out during 2012-2014 to assess the current status, distribution and conservation issues of water birds in Chatlam-Fushkoori Wetland Conservation Reserve, Pampore, Srinagar, Kashmir. The regular surveys were carried out following the point count method in the wetland in different time periods of the day in all the four seasons. The wetlands besides serving as a breeding site for Mallards, Common teal, Gadwall, Pheasant tailed jacana, Common Moorhen, common coot, Little Grebe and Grey heron attracted fourteen (14) species of migratory waterfowl during the months of winters (November – February). Besides an unusual breeding of 01 pair of Grey lag goose in the month of April-May was also recorded during the study period which needs to be ascertained further. The most dominant waterfowl families recorded during the study period in the peak winter time was Anatidae followed by Ardeidae and Rallidae. The population of waterfowl which start their arrival in mid November peaks to around more than 10,000-30,000 in the area during the last week of February and latter started declining in numbers as the temperature in the valley rises before their return migrating during early spring (late March). Overall 56 species of birds belonging to 15 families including 14 species of migratory waterfowl were identified. The wetlands is under various anthropogenic pressures owing to fishing, encroachments, poultry farms around posing disease threat to waterfowl, human disturbance to waterfowl and incessant waste disposal by locals into the wetland, although, these activities were seen least in winter months when icy period (*Chillaikalan*) hit the Kashmir valley. The wetland reserve as such warrants immediate management and protection interventions for the sustainable and long term conservation of this important wetland providing breeding ground for number of resident waterfowl including grey lag goose which needs further research to ascertain and feeding habitats for large number of winter migratory species.

Keywords: Waterfowl, migratory birds, breeding grounds, feeding habitats, Chatlam-Fushkoori Conservation Reserve, Chillaikalan, Pampore.

Introduction: Wetlands are those areas which remain water logged or submerged under water, seasonally or throughout the year. These provide habitats for various types of migratory birds in different seasons. The Chatlam-Fushkoori Wetland Conservation Reserve is a satellite wetland in Pampore town of south Kashmir of Pulwama district in Jammu and Kashmir, located about 16 Kms from summer capital Srinagar and spread across an area of nearly about 50 hectares. The Chatlam-Fushkoori Conservation Reserve associated with many other smaller satellite wetlands like Chandhara (Kranchoo) and Monibugh supports a rich diversity of migratory birds coming from different parts of world including Siberia and Central Asia during winter (Bacha 1994). The wetland reserve is surrounded by three villages namely Chatlam giving it the name Chatlam Wetland, Konibal and Meej. The plateau area adjoining this wetland is famous for its cash crop Saffron (*Kesar*). The Chatlam provides breeding grounds for many migratory birds like Mallard, Common Teal, Gadwall, and Pheasant tailed jacana besides Common Moorhen, common coot, Little Grebe and Grey heron. The dense vegetation of Phragmites *australis* and *Typha natans* rather safeguard the wetland from any sewage and other anthropogenic related hazards. It has a Government Fish Farm on the eastern side where different species of fish such as silver carp, common carp and grass carp are reared.

The wetland besides being encroached by local villagers is under various anthropogenic pressures posing serious threat to the wetland and waterfowl distribution, moment patterns, ecology and conservation. The regular movements of waterfowl towards the banks of

Fish Farm and orchids fields in the nearby villages is one amongst the several threats for the long term conservation and survival of the migratory waterfowl and breeding birds the wetland inhabits.

The Fishery departmental staff provides them a sufficient supply of rice brain, weed brain, crushed maize and husk so that carps may remain healthy. Raw sewage and nearby unwanted domestic waters from villages make their way into the wetland through various channals. On western and southern side of wetland, land is used for agricultural practices like saffron cultivation and fruit orchids. Besides, willow plantation and popular trees are grown on its banks by the local farmers. Most of the wetland is shallow on sides but has a depth of 15 ft at centre named which is supposed to be its origin and was demarcated as Zone-B for the purpose of this study. The wetland is also a source of drinking water for almost 11,805 cattle domesticated in the said villages (Parray *et al*. 2010). The wetland has been studied for many Limnological and biodiversity aspects but very little have been done on ecology and conservation of migratory birds visiting this wetland that is an important feature of wetland ecology.

In light of the given background the present study was initiated to assess the status, distribution of resident, breeding waterfowl and water birds and the migratory waterfowl visiting the said wetland and to understand the anthropogenic and other issues of concern for the long term sustenance and conservation of the wetland and the waterfowl.

Materials and Methods: The Chatlam-Fushkoori Wetland Conservation Reserve is a satellite wetland in Pampore town of south Kashmir of Pulwama district in Jammu and Kashmir, located about 16 kms from summer capital Srinagar between 34˚.01' N and 74˚.56' E at an elevation of 1593 m (amsl.) covering a vast area of above 50 Ha and is spread over on 2.2 km². The adjoining area is renowned for its cash crop Saffron (*Kesar*) production and presence of many other associated satellite wetlands like Chandhara (Kranchoo) and Monibugh. Chatlam-Fushkoori Conservation Reserve supports a rich diversity of migratory birds coming from different parts of the world including Siberia and Central Asia during winter (Bacha 1994). The wetland is surrounded from Western side by Saffron hills that gives it a charming look in the months of October-November, when saffron flowers are blooming on all Pampore fields. From eastern side, a Government Fish Farm is used to rear local carps and then sold to different classes of local contractors.

The present intensive study was carried out in the Chatlam- Fushkoori wetland reserve from January 2012-December 2014; following point count and scan sampling along the fixed transect surveys made through boats inside the five fixed wetland blocks on regular basis in all seasons Spring (Mar-May), Summer (June-Aug), Autumn (Sep-Nov) and Winter (Dec-Feb). The wetland was stratified into five zones/blocks based on the liminological and vegetational and physic-chemical composition, habitats, water depth and disturbance factors. Observations were recorded with the help of 12×50 5.5˚ Nikon binocular and photography was done with Sony Cyber Shot DSC-H×1. Identification of birds was done using avifauna field guides of Richard Grimmett & Inskipp, Salim Ali, and M-Zafarul Islam & Tim Inskipp.

Results and Discussion: During 2012- 2014, 56 species belonging to 12 families with 14 species of migratory waterfowl were recorded in Chatlam-Fushkoori Conservation Reserve (CR). Different species of migratory waterfowl from nearby linkage wetlands like Fushkoori and Monibugh from west and Panzpora and Kranchoo via Chandhara in the east (Bacha 1996) visited the wetland at different times and dates of winter starting with the first week of October every year, when day and night temperatures differences reach to around 16-18˚c. Water birds of the families Anatidae, Ardeidae and Rallidae formed the bulk of the Avifauna in the wetland with species like Common Moorhen, Common Coot, Common Teal, Mallards, Northern Shoveler, Northern Pintail, Little Grebe witnessed in large numbers. Highest bird diversity at Chatlam-fushkoori CR was observed during the peak winter months of December, January and February when the human disturbances owing to activities like catching of Fishes by local Fishermen, cattle grazing in the adjoining crop fields and traffic on roads were least or hampered due to the chilling day and freezing night hours. These migratory birds start

leaving this wetland by end of March or by early April depending on duration of snowfall.

The wetland provides variety of habitats and food for the water birds which are being occupied by migratory species as per their niche preferences. The basic requirement of the migratory water birds at their wintering sites is adequate food supply and safety (Lakshmi 2006) and the same seems to have been a driving factor for the visit of the waterfowl to this wetland site from the adjoining major wetland reserves of the valley. The wetland offered the deep water habitats in Zone-B for diving and deep water preferring ducks like common pochard, tufted pochard, Pintail besides common coot and little grebe and habitats with submerged vegetation for use by the species like Mallard, common teal, grey lag geese in the Zone-C where vegetation is submerged. Both these zones provided mixed habitats in between which enabled the water birds to transect from one zone to other. The wetland supports a rich vegetation diversity dominated mainly by species like *Phragmites australis* (*Nurr*), *Typha angustifola* (*Petch*), *Nymphoided pettatum* (*Khur*), *Myriophyllum aquatirum* (*Heill*) and Potomagtun lucens (*Gurr Heill*) which provide food and habitats and attraction for these migratory ducks. Besides *Salvinia natans* has also been observed growing in huge quantities on the sides of wetland during autumn.

There has been a considerable increase in the number and diversity of resident and migratory water birds visiting to the wetland since early nineties when few species (5-6) in very less numbers (in hundreds) have been reported visiting the wetland area (Bacha 1996). This has been possibly due to some protection provided to the wetland after its reclamation by the State Wildlife department and providing it legal protection under wetland conservation reserve. However, the incessant human disturbances prevalent in and around the wetland owing to hinting and poaching of birds by locals besides heavy use of pesticides and fertilizers in the crop fields and orchards compounded with the over fishing, encroachments of the wetland and subsequent reclamations by locals, poultry farms around posing disease threat to waterfowl, waste disposal by locals into the wetland are causes of grave concern for the long term survival and conservation of the wetland conservation reserve and the resident breeding and migratory water birds inhabiting and visiting the wetland, although, these activities were seen least in winter months when icy period (*Chillaikalan*) hit the Kashmir valley. The observing of breeding by Gray lag goose in the wetland for the first time during May-June which though needs further research to ascertain its authenticity, indicates that the wetland supports good vegetation cover, food, habitat and safe breeding grounds for the Grey lag Goose besides many other species like Mallard, Common teal, Gadwall, Pheasant tailed jacana, Common Moorhen, common Coot, Little Grebe and Grey heron and attraction for fourteen (14) species of migratory waterfowl during the months of winters (November – February). The wetland as such has a potential to act as a main breeding ground for many resident water birds besides Grey lag Goose provided measures are taken for addressing the issues concerning the long term conservation and survival of this important wetland site. The wetland reserve as such warrants immediate management intervention and extra legal protection for ensuring sustainable and long term conservation of this important wetland and the water birds. Regular studies and surveys are needed to further understand and enhance knowledge on the aspects of ecology and conservation of waterfowl and wetland ecology of this important satellite wetland and Conservation Reserve.

Table 1. Number of Birds recorded in Chatlam-Fushkoori Conservation Reserve during study period (2012-14).

S.NO	ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME	Vernacular NAME
1	Anseriformes	Anatidae	*Anas platyrynchus*	Mallard	Neuluj(M) Thuj(F)
2	Anseriformes	Anatdae	*Anas clypeata*	Northern	Hounke

				shoveler	
3	Anseriformes	Anatdae	*Anser anser*	Gray lag goose	Anz
4	Anseriformes	Anatidae	*Anas crecca*	Common teal	Kuis/put
5	_	_	*Anas acuta*	Northern pintail	Sokh pochun
6	_	_	*Anas Penelope*	Eurasian wigeon	Buden
7	_	_	*Aythya ferina*	Pochard	Khrokh
8	_	_	*Anas strepera*	Gadwall	Buden
9	_	_	*Tadorna tadorna*	Ruddy shelduck	Buden
10	_	_	*Aythya fuligula*	Tufted duck	Khrokh
11	Pelecaniformes	Ardeidae	*Ardea cinerea*	Grey heron	Safade Brag
12	Ciconiformes	Ardeidae	*Nycticorax nycticorax*	Black crowned night heron	Brag
13	Pelecaniformes	Ardeidae	*Ardea alba*	Great Egret	Bratemost
14	Pelecaniformes	Ardeidae	*Ixobrychus minutes*	Little Bittern	Gui
15	Gruiformes	Rallidae	*Galinula chloropus*	Common Moorhen	Tich
16	Gruiformes	Rallidae	*Fulica atra*	Common coot	Kolar
17	Charadriiformes	Jacanidae	*Hydrophasianus chirurgus*	Pheasant tailed jacana	Gund kaw
18	Charadriiformes	Recurvirostridae	*Himantopus himantopus*	Black winged stilt	_
19	Coraciiformes	Halycyonidae	*Halcyon smyrensis*	White throated kingfisher	KolToonch
20	Coraciiformes	Cerylidae	*Ceryle rudis*	Pied kingfisher	Safade Toonch
21	Coraciiformes	Alcedinidae	*Alcedo atthis*	Common kingfisher	KolToonch
22	Coraciiformes	Upupidae	*Upupu epops*	Hoopoe	Satut
23	Passeriformes	Motacillidae	*Motacilla alba*	Pied wagtail	Dob-bai
24	Passeriformes	Motacillidae	*Motacilla citreola*	Citrine wagtail	Dob-bai
25	Passeriformes	Timallidae	*Garrulax lineatus*	Streaked laughing thrush	Sheen pipin
26	Passeriformes	Paridae	*Parus major*	Great Tit	Rang Tser
27	Passeriformes	Corvidae	*Terpsiphone paradise*	Asian paradise Flycatchrr	Famb Tser
28	Podicipediciformes	Podicipedidae	*Tachybaptus ruficollis*	Little Grebe	Pinditch
29			*Dendrocopos auriceps*	Brown-fronted woodpecker	Kul Dadur
30	Ciconiformes	Phalacrocoracidae	*Phalocrocorax carbo*	Cormorants	_

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