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# Indian Streams Research Journal



## STUDY OF SEASONAL FLUCTUATIONS OF BIRDS IN JAWALGAON WETLAND, TAL-BARSHI, DIST-SOLAPUR: A COSERVATIONAL APPROACH



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### ABSTRACT

Wetlands are considered as a main source of water which is used for agriculture, domestic, industrial and aquaculture. They also recharge ground water and maintain the stream flow and also protect the agriculture lands from floods. Due to increase in population growth, enhancement in industrial development, extension of commercial and residential areas lead to the pollution of the wetlands. This is mainly due to domestic, industrial, agricultural run-off along with excess pesticides and insecticides release in to the streams. Wetlands are used for sustenance of various flora and fauna. To maintain ecological balance and to enrich the biodiversity of given wetland water birds are the major components of which they are considered as good bio-indicators. Abundance of water birds itself indicates the richness of the wetlands with response to food availability and continuation of

reproductive cycle. The present investigation is an attempt to study the seasonal diversity of aquatic birds from one of the most important wetland at Jawalgaon Tal-Barshi Dist-Solapur. This dam is the source of water for diverse needs and attracts a variety of migratory birds depending upon season. The study is focused on migratory behavior of various birds during 2015-2016.



**KEYWORDS** :Season, Birds, Jawalgaon, Conservation.

### INTRODUCTION :

Birds are commonly considered as indicator species of ecosystem and inhabited areas (Blair, 1999). Wetland is most productive and fragile ecosystem. There are number of anthropogenic activities affecting the abundance of water-birds with respect to habitat utilization (Sharma and Saini Minakshi, 2012). Water birds are most prominent group which attracts people to wetland because they are good bio-indicators and representation for studying various environmental problems. Jawalgaon

water reservoir is situated on Nagzira River in Barshi taluka. Birds play very important role in our environment and are found throughout the world. They are natural pest controllers, pollinators and ecological indicators (Buckton, 2007). Diversity of avifauna is one of the most important biological indications of quality habitats. Change in climatic conditions, anthropogenic disturbances and habitat loss affecting bird's population. There is a random destruction of the natural habitats due to cutting of nesting trees of forest and low rainfall. Thus, so many birds' species changing their breeding sites to various areas. Out of which wetland habitat is an important productive area for fishing, irrigation etc. but due to over exploitation of resources like water harvesting and fishing hunting declining the wetland bird population (Ntongani and Andrew, 2013). The present survey was conducted in wetland habitat to study avian population with respect to seasonal migratory pattern.

## METHODOLOGY

### STUDY AREA

Jawalgaon water reservoir is situated at 18°0'47"N and 75°55'24"E on Nagzira River. The water body was established in 2005 with catchment area 223Sq.Km. and feeding from Krishna river basin (Pirgonde, 2013).

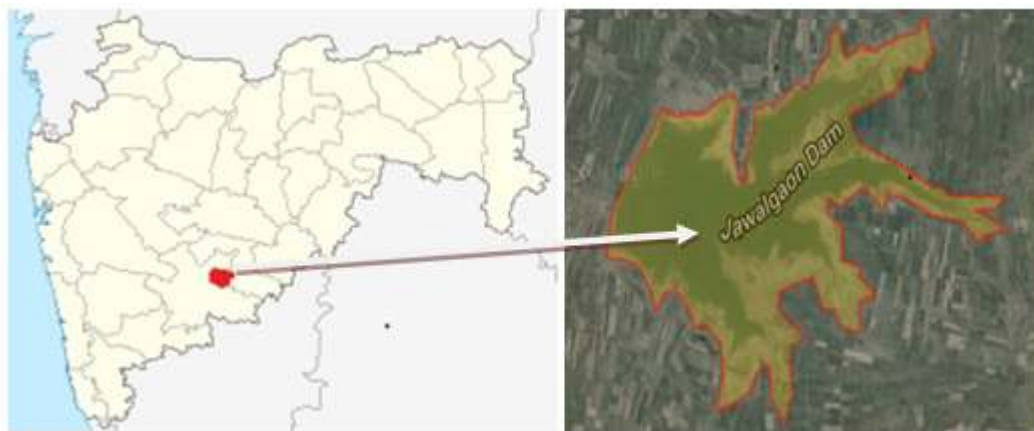


Plate: 1- Jawalgaon Dam in Solapur District (Google maps)

### SURVEY METHODOLOGY

The study was carried out during year February 2015 to January 2016. For the inspection of aquatic birds, standard protocols have been adopted (Turner, 2003). Jawalgaon water reservoir attracts a number of the aquatic birds throughout the year. This water body was chosen because of its location, water level and appearance of birds during entire year. During the bird data sampling, collection of data was done by manual walking at a slow pace without disturbing the habitat along the banks of this aquatic water body. Wherever necessary after visual watching the photographs were obtained. The birds were counted at its point of notice and care was taken into account that there is no repetition occurred. In addition to this, during data collection the separate data sheets were used and samplings were noted carefully according to the schedule of the visit. Generally the bird counting done in the morning between 6:30 am to 10:00 am or during the evening 4:00 pm to 6:00 pm depending upon light condition (Namgail et al., 2009). Survey were performed twice in a month during February 2015 to January 2016. Once the data is collected the bird population was classified according to the status of migration (residential, visitors and migratory).

RESULTS AND DISCUSSION

The occurrence and status of migration of avian population from Jawalgaon water reservoir from Barshi Taluka is represented in a Photoplate1 and Table 1 (February 2015 to January 2016).

Photoplate1. Few bird representatives from Jawalgaon dam during the study.



1. Ruddy Shelduck. *Tadorna ferruginea* ... 2. Painted Stork. *Mycteria leucocephala*



3. Eurasian Spoonbill. *Platalea leucocordia* ... 4. Grey Heron. *Ardea cinerea*



5. Black-headed Ibis. *Threskiornis melanoccephala* ... 6. Woolly-necked Stork. *Ciconia episcopus*

Table.1 Avian Population from Jawalgaon Dam during February 2015 to January 2016.

Sr.No.	Common Name	Sci. Name	Status	Season
1	White Wagtail	<i>Motacilla alba</i>	M	Winter
2	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	R	ALL
3	Citrine Wagtail	<i>Motacilla citreola</i>	M	Winter
4	Yellow Wagtail	<i>Motacilla flava</i>	M	Winter
5	Grey Wagtail	<i>Motacilla cinerea</i>	M	Winter
6	Paddyfield pipit	<i>Anthus rufulus</i>	R	All
7	Black Shouldered Kite	<i>Elanus caeruleus</i>	R	All
8	Painted Stork	<i>Mycteria leucocephala</i>	V	Summer
9	Asian Openbill	<i>Anastomus oscitans</i>	V	Summer
10	Wooly-necked Stork	<i>Ciconia episcopus</i>	R	All
11	Glossy Ibis	<i>Plegadis falcinellus</i>	M	Summer
12	Black-headed Ibis	<i>Threskiornis melanocephala</i>	R	All
13	Black Ibis	<i>Pseudibis papillosa</i>	R	All
14	Eurasian Spoonbill	<i>Platalea leucocordia</i>	V	Summer
15	Greater Flamingo	<i>Phoenicopterus ruber</i>	M	Winter
16	Lesser Flamingo	<i>Phoenicopterus minor</i>	M	Winter
17	Little Egret	<i>Egretta garzetta</i>	R	All
18	Cattle Egret	<i>Bubulcus ibis</i>	R	All
19	Grey Heron	<i>Ardea cinerea</i>	M	Summer
20	Purple Heron	<i>Ardea purpurea</i>	R	All
21	Indian Pond Heron	<i>Ardeola grayii</i>	R	All
22	Little Grebe	<i>Tachybaptus ruficollis</i>	R	All
23	Little Cormorant	<i>Phalacrocorax niger</i>	R	All
24	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	R	All
25	Great Cormorant	<i>Phalacrocorax carbo</i>	R	All
26	Eurasian Marsh Harrier	<i>Circus aeruginosus</i>	M	Winter
27	Lesser Whistling Duck	<i>Dendrocygna javanica</i>	R	All
28	Bar-headed Goose	<i>Anser indicus</i>	M	Winter
29	Ruddy-shelduck	<i>Tadorna ferruginea</i>	M	Winter
30	Comb-duck	<i>Sarkidiornis melanotos</i>	V	Winter
31	Gadwall	<i>Anas streptera</i>	M	Winter
32	Eurasian Wigeon	<i>Anas Penelope</i>	M	Winter
33	Spot-billed Duck	<i>Anas poecilorhyncha</i>	R	All
34	Northern Shoveller	<i>Anas clypeata</i>	M	Winter
35	Cotton Pigmy Goose	<i>Nettapus coromandelianus</i>	V	Winter
36	Common Teal	<i>Anas crecca</i>	M	Winter
37	Garganey	<i>Anas querquedula</i>	M	Winter

38	Northern Pintail	<i>Anas acuta</i>	M	Winter
39	Red-crested Pochard	<i>Rhedonessa rufina</i>	M	Winter
40	Common Pochard	<i>Aythya ferina</i>	M	Winter
41	Ferruginous Pochard	<i>Aythya nyroca</i>	M	Winter
42	Pied Kingfisher	<i>Ceryle rudis</i>	R	All
43	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	R	All
44	Purple Swamphe	<i>Porphyrio porphyrio</i>	R	All
45	Common Moorhen	<i>Gallinula chloropus</i>	R	All
46	Common Coot	<i>Fulica atra</i>	R	All
47	Greater Painted Snipe	<i>Rostratula benghalensis</i>	R	All
48	Spotted Redshank	<i>Tringa erythropus</i>	M	Winter
49	Common Greenshank	<i>Tringa nebularia</i>	M	Winter
50	Green Sandpiper	<i>Tringa ochropus</i>	M	Winter
51	Wood Sandpiper	<i>Tringa glareola</i>	M	Winter
52	Common Sandpiper	<i>Actitis hypoleucos</i>	M	Winter
53	Little Ringed Plover	<i>Charadrius dubius</i>	R	All
54	Kentish Plover	<i>Charadrius alexandrinus</i>	R	All
55	Yellow Wattled Lapwing	<i>Vanellus malabaricus</i>	R	All
56	Red Wattled Lapwing	<i>Vanellus indicus</i>	R	All
57	Pheasant Tailed Jacana	<i>Hydrophasianus chirurgus</i>	R	All
58	Great Thick-knee	<i>Esacus recurvirostris</i>	R	All
59	Black Winged Stilt	<i>Himantopus himantopus</i>	R	All
60	Small Pratincole	<i>Glareola Lactea</i>	R	All
61	Brown-headed Gull	<i>Larus brunnicephalus</i>	M	Winter
62	River Tern	<i>Sterna aurantia</i>	R	All
		<b>Total number of Species : 62</b>	<b>R=31 V=5 M=26</b>	

Residential Status: R= residential, V= visitors M= migratory

From our study, depending upon ecological status and food abundance in different seasons, different species of aquatic birds were recorded from this wetland which is considered as a lifeline for inhabitants of in and around Barshi -Taluka, Dist-Solapur. This water reservoir is a source of water supply to the agricultural, horticultural, domestic, industrial etc. The bird diversity from a given aquatic resource is considered as a biological indicator which shows richness of biodiversity in a given ecosystem. More number of bird species indicates rich nutrient value of flora and fauna which is the main food of water birds. From our study a total number of 62 various species of birds identified out of them 31 species were found to be residential, 26 species were found to be migratory and 5 species were found to be visitors. Out of total 62 species 50% of the birds were found to be residential, whereas 41% of the bird species found to be migratory and 9% of the bird population was found to be visitors. This data itself indicates that the Jawalgaon wetland has richness in floral and faunal diversity because 50% of the avian population is residential in nature i.e. found in all three seasons. Whereas, forty one percent of birds were migratory i.e. they come during early winter and stay up to mid-summer while,

nine percent of birds were occasional visitors. It also indicates that during the entire year sufficient food supply is available to fulfill the requirement of the avian population for the sustenance. There is an additional burden of migratory birds which were seasonal in nature also withstand and continue their reproductive life at Jawalgaon water reservoir. Therefore, it is necessary to conserve and preserve this aquatic body.

Rajshekhara and Venkatesha (2011) studied the aquatic bird community in and around Bangalore with special reference to water birds during 2008-2009. They have noticed 35 species of aquatic birds during their study. Out of them *Bublcus ibis* showed 100% frequency in their appearance. Sharma and Saini Minakshi (2012) studied water birds from Gharana wetland reservoir from Jammu and Kashmir during March 2008 to Feb 2009. They have identified a total of 21 species of water birds from different sites. They concluded that the abundance of water birds was mainly depending upon anthropogenic stress under the influence of severe human interventions. Kumar and Gupta (2010) studied diversity and abundance of water birds from Kurukshetra they have noticed a total of 54 species and they concluded that wetlands are under the severe pressure due to human activities. Kafle and Cotton (2008) studied the status and threats to water birds from Rupa Lake of Pokhara valley. They recorded a total of 36 species of water birds which represents about 19 percent of the total 193 wetland dependent birds from Nepal.

From our study it can be stated that wetlands are very important for aquatic birds. The water quality, food resources, security from predators and leisure activities of human beings, play a significant role in the distribution and abundance of these aquatic birds; however seasonality has main role to play in protecting the richness, abundance and diversity of bird population. Further, studies are required to know the interdependency of various animal representatives from Jawalgaon wetland.

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