



SUSTAINABLE BIODIVERSITY OF BIRDS IN RELATION TO FOOD AND FEEDING HABITS OF WAGHUR RESEVOIR NEAR JALGAON (M.S.)

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Communicated : 09.08.2023

Revision : 26.08.2023 & 13.09.2023

Published : 30.10.2023

Accepted : 22.09.2023

ABSTRACT:

The present study focus on sustainable biodiversity of birds in relation to food and feeding habits of Waghur reservoir near Jalgaon. The Waghur reservoir and its surrounding area contain rich source of flora and fauna. It is a nutrient rich reservoir having various types of birds including migratory birds. The study was carried out relating to the food and feeding habits of birds in Waghur reservoir and its peripheral area through field observations during year 2022-23. The food of birds comprise aquatic insects, small fishes, crabs, larvae, worms, crustaceans, molluscs, water beetles, aquatic weeds and plants from the Waghur reservoir and numerous foods and grains from surrounding area. During this study 47 species of birds were detected and studied with reference to food and feeding habit. Out of 47 species detected, 01 species was herbivorous, 14 species were carnivorous, 10 species were omnivorous, 12 species were insectivorous, 02 species were piscivorous, 03 species were granivorous, 04 species were frugivorous, and 01 species were nectar feeder. During the tenure various types of local and migratory birds studied in relation to their food and their feeding habits have been discussed.

Keywords:- Birds, sustainable biodiversity, food and feeding, Waghur reservoir.

INTRODUCTION :

The present study was carried out on Waghur reservoir. Waghur Reservoir is located 27km. away from Jalgaon in east side in North Maharashtra having coordinates of 20.9265685°N longitude and 75.709767°E latitude. The reservoir is filled to its maximum capacity in the monsoon season. The fauna of lake include fishes, amphibians, reptiles, worms, insects, crustaceans, water beetles, and different of birds. The reservoir is having aquatic weeds like, Hydrilla, Typha, Vallesneria, Nymphaea, Chara, Cyperus, Scirpus, Ottelia, etc. The Waghur reservoir periphery is covered with bushes, herbs, shrubs, grasses and trees which provide suitable environment and habitat for various birds. Present work has been undertaken to study the bird's sustainable biodiversity in relation to food and feeding habit of Waghur reservoir and its surrounding area.

Materials and methods:

Waghur reservoir and its surrounding area was visited and surveyed weekly during study period 2022-2023. The birds were observed from safe distance by using a field binocular (7 x 21, Olympus make) and Digital camera (SONY Cyber Shot DSC-HX400V/CIN5, 20.4 MP, 50 Optical Zoom, 540x Digital Zoom, Black). Feeding habit of birds were observed during different day times. The birds were observed continuously to understand its mode of food and feeding habit. An endeavor has been made to find out the variety of food substances available around Waghur resevoir and accordingly the birds were classified as herbivorous, carnivorous, omnivorous, piscivorous, insectivorous ,frugivorous, granivorous, nectar feeder etc. Identification of species was done with the help of field guides given by Salim Ali and S. D. Ripley (1995), Salim Ali (1996) and Grimet, Richerd and Inskipp (1999).



RESULTS AND DISCUSSION :

During the present study, 47 bird species including aquatic and non-aquatic were recorded. Out of 47 species detected 01(2.12%) species was herbivorous, 14(29.78%) species were carnivorous, 10(21.27%) species were omnivorous, 12(25.53%) species were insectivorous, 02(4.25%) species were piscivorous, 03(6.38%) species were granivorous, 04(8.51%) species were frugivorous, and 01(2.12%) species were nectar feeder. During the tenure various types of local and migratory birds studied in relation to their food and their feeding habits have been discussed. During study it was observed that the maximum bird species were recorded during early monsoon, onset of winter, and late winter, while comparatively less number of species were observed during late summer. Similar observations were noted by Kedar and Patil (2005).

Spot bill duck was found to be the only strictly herbivorous species feeding on shoots of aquatic weeds. Aquatic Carnivorous species of birds had been recorded Large Egret, Little Egret, White necked Stork, Black necked Stork, Painted Stork, Black winged stilt, Purple Heron and Pond Heron. It is observed that these species were feed upon aquatic insects and their larvae, molluscs, crustaceans, fishes, tadpoles and frogs. Non aquatic carnivorous species include Crow, Sparrow, Cattle Egret, Black shouldered Kite, Pariah Kite, Shikra, Bay backed Shrike, and Rufous backed Shrike. They were recorded to feed upon locust, cricket, wing termites, caterpillars, grasshoppers, earthworms, snails, crabs, frogs, snakes, young and disabled birds and rodents. An aquatic omnivorous species like Purple Moorhen and Pheasant Tailed Jacana were recorded and their food comprised fruits, grains, shoots as well as small invertebrates. Non aquatic birds like Koel, Red vented Bulbul, Large Grey Babbler, Black headed Myna,

Common Myna, and Indian Treepie. It had been observed that aquatic omnivorous birds feeding upon shoots of grasses, cereal crops and mostly vegetable matter, aquatic weeds, roots of aquatic plants, insects, molluscs, worms and grains.

The insectivorous birds such as Common lora, White Wagtail, Large Pied Wagtail, Streaked Fantail Warbler, Magpie Robin, Indian Robin, White bellied Drongo, Yellow Wagtail, Pied Crested Cuckoo, Indian Roller, Hoopoe, Yellow fronted Pied Woodpecker were recorded. These species were prefer food like water skaters, beetles, water beetles, winged termites, ants, midges, locusts, flies, crickets, grasshoppers, dragonflies and moths. The waghur reservoir is dominated by the ichthyo-fauna like Channa species, major carps like Labeo rohita, Catla catla and Cirrhina mrigala which are consumed by the piscivorous bird species Pied Kingfisher and Small Blue Kingfisher. Some birds belongs to granivorous like Blue Rock Pigeon, Spotted Dove and Spotted Munia were recorded. They feed upon grass seed, weed seed and grains. Under the category of frugivorous, the bird's species like Common Green Pigeon or Hariyal, Rose ringed Parakeet, Blossom headed Parakeet, and Crimson breasted Barbet were recorded. These species found to be feeding on fruit varieties like drupes, berries, wild figs and fruit buds. The nectar feeder species were recorded Purple Sunbird was found to be feeding upon pollen grains from several of flowers.

Different researchers were studied and recorded similar findings in there study areas. Birds that feed on harmful insects and other pests from the agro-ecosystem are beneficial to agriculturists (Dhindsa and Toor, 1986), The Indian barbets are largely frugivorous, but consume considerable amount of insects especially during breeding season. Some of them sip nectar too. Food competition between coexisting species is not severe as normally they collect food from different feeding zones (Yahya, 1988), the major

dietary component of the Brahminy Myna nestlings of animal origin with 81.57% relative frequency, whereas the same of the plant matter was only 17.25%. The indices of importance of animal and plant matters were 76.21 and 23.08% respectively (Patel et. al.1992). The post-bum period in summer, the new flush of green grasses which increases insect biomass, creates more feeding space by clearing dense stand of grasses and provides perch to insectivore bird species. This makes these sites more attractive to insectivores and granivores. More feeding on fallen seeds by Munia species (Salim Javed, 1996). Highest number of birds was recorded in the month of January and the lowest was observed in June. Little Egret, Cattle Egret, Little Cormorant, Pond Heron, Median Egret and Whiskered Tern were the most abundant resident and local migrant species found in the Kole wetlands. (Sivaperuman and Jayson, 2000).

Indian Hoopoe, Red-vented Bulbul, Wagtails, Rufous Wood Pecker, Common Hawk Cuckool, Collared Scops Owl, Barred Jungle Owlet, Indian Robin and Yellow-cheeked Tit were recorded feeding upon insects. These birds were also found to feed upon larvae of insects of different crops. Some birds like Blue Rock Pigeon and Doves were granivorous and they were observed to damage the seeds of sesamum and sorghum. Rose- ringed Parakeet and other frugivorous birds were observed feeding on the fruits of chilly and maize crops. Mallard, Gadwall, Wigeon, Spot bill Duck, Comb Duck were herbivorous feeding on vegetable matter, shoots and roots of water plants and shoots of wild and cultivated rice. Spotted-billed Pelican, Little Cormorant, Egrets, Storks, Shoveller, Tawny Eagle, Vulture and Owls were carnivorous feeding on fishes, frogs, lizards and animal matter. Some birds like Black Ibis, Tufted Duck, Brahminy Duck, Fowls, Common Coot, Purple Moorhen, Sarus Crane, Pheasant-

tailed Jacana, Green Munia and Indian Myna were omnivorous, feeding upon crustaceans, molluscs, termites, small insects and also grain, water weeds, seeds and vegetable shoots (Rathore and Sharma,2000). In winter season maximum bird diversity was observed this study area provides feeding and breeding ground for many birds. (A. D. Shelke, 2019).

CONCLUSION :

The present study focus on sustainable biodiversity of birds in relation to food and feeding habits of Waghur reservoir near Jalgaon. The Waghur reservoir and its surrounding area contain rich source of flora and fauna. It is a nutrient rich reservoir having various types of birds including aquatic, non-aquatic and migratory birds. The food of birds comprise aquatic insects, small fishes, crabs, larvae, worms, crustaceans, molluscs, water beetles, aquatic weeds and plants from the Waghur reservoir and numerous foods and grains from surrounding area. During this study 47 species of birds were detected and studied with reference to food and feeding habit. Out of 47 species detected, 01 species was herbivorous, 14 species were carnivorous, 10 species were omnivorous, 12 species were insectivorous, 02 species were piscivorous, 03 species were granivorous, 04 species were frugivorous, and 01 species were nectar feeder. During the tenure various types of local and migratory birds studied in relation to their food and their feeding habits have been discussed. The birds identified in this study are all diurnals and are most active during the early morning hours. The birds are considered to be the specialist architect of any ecosystem. They act as pollinators, helping in the blooming of millions of flowers and dispersal of seeds of various fruit-bearing plants which when grow-up form ecological hotspot for diverse species of fauna. They perform a very significant role in the food chains and food webs to maintain consistency of ecosystem. Thus, the

birds are so important components of an ecosystem need to be conserved them and their habitats protected for maintaining ecological balance and revival of lost forests and nature.

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Table: Shows Birds biodiversity, food habit and feeding habitat of Waghur reservoir.

Sr. No.	Common Name	Zoological Name	Food Habit	Feeding Habitat
1	Spot bill Duck	<i>Anas poecilorhyncha</i>	Herbivorous	Aquatic
2	Large Egret	<i>Ardea alba</i>	Carnivorous	Aquatic
3	Little Egret	<i>Egretta garzetta</i>	Carnivorous	Aquatic
4	White necked Stork	<i>Ciconia episcopus</i>	Carnivorous	Aquatic
5	Black necked Stork	<i>Ephippiorhynchus asiaticus</i>	Carnivorous	Aquatic
6	Painted Stork	<i>Mycteria leucocephala</i>	Carnivorous	Aquatic
7	Black winged stilt	<i>Himantopus himantopus</i>	Carnivorous	Aquatic
8	Purple Heron	<i>Ardea purpurea</i>	Carnivorous	Aquatic
9	Pond Heron	<i>Ardeola grayii</i>	Carnivorous	Aquatic
10	Cattle Egret	<i>Bubulcus ibis</i>	Carnivorous	Non-Aquatic
11	Crow	<i>Corvus splendens</i>	Carnivorous	Non-Aquatic
12	Sparrow	<i>Passer domesticus</i>	Carnivorous	Non-Aquatic
13	Black shouldered Kite	<i>Elanus caeruleus</i>	Carnivorous	Non-Aquatic
14	Pariah Kite	<i>Milvus migrans</i>	Carnivorous	Non-Aquatic
15	Shikra	<i>Accipiter badius</i>	Carnivorous	Non-Aquatic
16	Bay backed Shrike	<i>Lanius vittatus</i>	Carnivorous	Non-Aquatic
17	Rufous backed Shrike	<i>Lanius schach</i>	Carnivorous	Non-Aquatic
18	Purple Moorhen	<i>Porphyria porphyria</i>	Omnivorous	Aquatic
19	Pheasant Tailed Jacana	<i>Hydrophasianus chirurgus</i>	Omnivorous	Aquatic
20	Koel	<i>Eudynamis scolopacea</i>	Omnivorous	Non-Aquatic
21	Red vented Bulbul	<i>Pycnonotus cafer</i>	Omnivorous	Non-Aquatic
22	Large Grey Babbler	<i>Turdoides malcolmi</i>	Omnivorous	Non-Aquatic
23	Black headed Myna	<i>Sturnus pagodarum</i>	Omnivorous	Non-Aquatic
24	Common Myna	<i>Acridotheres tristis</i>	Omnivorous	Non-Aquatic
25	Indian Treepie	<i>Dendrocitta vagabunda</i>	Omnivorous	Non-Aquatic
26	Common lora	<i>Motacilla alba</i>	Insectivorous	Both
27	White Wagtail	<i>Motacilla maderaspatensis</i>	Insectivorous	Both
28	Large Pied Wagtail	<i>Terpsiphone paradise</i>	Insectivorous	Both
29	Streaked Fantail Warbler	<i>Copsychus saularis</i>	Insectivorous	Both
30	Magpie Robin	<i>Saxicoloides fulicata</i>	Insectivorous	Both
31	Indian Robin	<i>Dicrurus adsimilis</i>	Insectivorous	Both
32	White bellied Drongo	<i>Motacilla flava</i>	Insectivorous	Both
33	Yellow Wagtail	<i>Prinia socialis</i>	Insectivorous	Both
34	Pied Crested Cuckoo	<i>Clamator jacobinus</i>	Insectivorous	Both
35	Indian Roller	<i>Coracias benghalensis</i>	Insectivorous	Both
36	Hoopoe	<i>Upupa epops</i>	Insectivorous	Both
37	Yellow fro. Woodpecker	<i>Picoides mahrattensis</i>	Insectivorous	Both
38	Pied Kingfisher	<i>Ceryle rudis</i>	Piscivorous	Both
39	Small Blue Kingfisher	<i>Alcedo atthis</i>	Piscivorous	Both
40	Blue Rock Pigeon	<i>Columba livia</i>	Granivorous	Non-Aquatic
41	Spotted Dove	<i>Streptopelia chinensis</i>	Granivorous	Non-Aquatic
42	Spotted Munia	<i>Lonchura punctulata</i>	Granivorous	Non-Aquatic
43	Green Pigeon/ Hariyal	<i>Treron phoenicoptera</i>	Frugivorous	Non-Aquatic
44	Rose ringed Parakeet	<i>Psittacula krameri</i>	Frugivorous	Non-Aquatic
45	Blossom head Parakeet	<i>Psittacula cyanocephala</i>	Frugivorous	Non-Aquatic
46	Crimson bre. Barbet	<i>Megalaima haemacephala</i>	Frugivorous	Non-Aquatic
47	Purple Sunbird	<i>Nectarinia asiatica</i>	Nectar Feeder	Non-Aquatic