

Diversity of Avian Fauna from Jaikwadi Reservoir at Paithan

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Abstract:

Birds have played a unique role in the growth, protection and restoration of natural environment and thus their importance and significance and in the maintenance of clean and healthy environment is of a high order. Birds are part of the natural habitat of the Indian Subcontinent, a region teeming with winged residents. India and its neighborhood countries now play host to migratory birds. The food of the birds varies and is different not only in respect of the different birds, but also in respect of different seasons. Some are vegetarians, feeding on the green parts of plants, and in these the intestine is usually long. Some are notoriously carnivorous, or feed upon fish, molluscs, insects, etc. The study is carried out to obtain some preliminary checklist of bird community in Jaikwadi reservoir at Paithan. Survey of birds conducted and checklist have been prepared (2011-2012) to ascertain the status of bird population in an area. The Jaikwadi dam is a freshwater dam with mudflats, open water, water edges, midstream rocks and islands, grass and scrubs, meadows and pastureland, woodland. Overall 64 residential and 24 nonresidential species were recorded. Most of the bird species were observed in winter due to more food availability and favorable climatic conditions for nesting and roosting. In the present study at Jaikwadi reservoir identification and monitoring the different ecological aspects of avian diversity particularly local and migratory birds has undertaken for future planning to protect.

Key words: Avian Fauna, Jaikwadi reservoir, Migratory Birds, Environment and Residential, Nonresidential, Nesting, Roosting and Insects.

Introduction:

In India, the avifaunal study was initiated by Blanford, (1889), Baker, (1922) and Whistler, (1949). While the pioneer work in the field of ornithology, has been carried out by Salim Ali (1996) in Indian Subcontinent. Birds have played a unique role in the growth, protection and restoration of natural environment and thus their importance and significance and in the maintenance of clean and healthy environment is of a high order. Ornithologically based conservation efforts the information about birds can really public opinion (Bock, 1997). Bird populations are a sensitive indicator of pollution in terrestrial as well as in aquatic ecosystems (Gaston, 1974; Bock, op.cit.). Ornithologists in particular are being asked by people to bring all that science can bring to bear on the conservation scene (Senner and Drennan, 1995).

Birds are part of the natural habitat of the Indian Subcontinent, a region teeming with winged residents. In India, there is no off-season for birds. Native birds in particular birds are more or less perennially visible. Migratory birds arrive annually for a winter vacation. There is explosion in bird population by the beginning of winter. India and its neighborhood countries now play host to migratory birds. The food of the birds varies and is different not only in respect of the different birds, but also in respect of different seasons. Some are vegetarians, feeding on the green parts of plants, and in these the intestine is usually long. Some are notoriously carnivorous, or feed upon fish, molluscs, insects, etc.

A species distribution can be expressed simply as its presence or absence, or by some measure of abundance. The sample units may be on a regular grid such as in most bird

atlas studies, or a random point within a habitat, at which data has been collected. There are essentially three types of distribution of animal species and communities: random distributions as they are distributed independently of features on ground and independently of the presence of other birds. Distribution studies can be used to identify local, regional, national and international ranges of birds, habitat determinates, bird numbers, the effects of weather, arrival times of migrants, the extent of partial migration, patterns of influx by species, conservation importance of a particular species, threats to a site and a sites value to conservation.

The drainage of marshes for land reclamation and the pollution of Dam from effluent discharges have affected the water bodies, thus deteriorating the environment still further, with the degradation of habitats have brought about changes in the distribution of quite a few species of birds, especially graminivores and insectivores. The true effect of these changes in the environment to the avifauna can only be evaluated after a careful and detailed study.

Material and Methods:

The present wetland Jaikwadi reservoir is situated 40 kms south of Aurangabad at Paithan. This town is situated on the right bank of river Godavari and is at latitude 19°39'19" north and longitude 75°26'2" east. The name itself shows Pratisthan or Capital city. Today, Paithan attains importance through the important pilgrimage of Sant Eknath Maharaj. In this river Godavari, the ashes of dead bodies are brought for spiritual performance.

Government of Maharashtra declared in November 1986 the area of Jaikwadi Reservoir as a bird sanctuary as per wildlife protection act 1972.

In the present study at Jaikwadi reservoir identification and monitoring the different ecological aspects of avian

diversity particularly local and migratory birds has undertaken for future planning to protect.

The reservoir is rich in bird fauna associated with it that includes some migratory species and ecologically is an important landmark. The study on bird habits, habitat, number and seasonality were studied by regular field visits to the Jaikwadi reservoir in the morning timings between 6.30 to 9.30 a.m. The birds were also observed sometimes in the evening hour by using the binoculars of magnification 8x30. Special features of residential and non-residential birds and their habit and habitat along with their seasonal dominance were studied. The identification and checklist of identified birds were made in winter, summer and monsoon according to (Salim Ali, 1996) and photographed. Birds visiting the Jaikwadi reservoir as a visitor in winter, summer and monsoon. Effect of seasonal changes in diversitic parameters of the Jaikwadi Dam, which are the major regulatory force in determining the population density of birds, were also studied.

Results and Discussion:

The study is carried out to obtain some preliminary checklist of bird community in Jaikwadi reservoir at Paithan (2011-2012). Survey of birds conducted and checklist have been prepared to ascertain the status of bird population in an area. The data obtained were classified and represented in the form of checklist as residential and nonresidential birds (Table 1&2).

The birds migration has been categorized into winter migrants, summer migrants, and passage migrants. Birds visiting the reservoir between November to February are the winter visitors. Some residential and migratory birds breed or remain in the reservoir in summer and are called summer visitors. Some pass through Jaikwadi reservoir in November and they are called passage migrants. Due to the huge congregation of aquatic birds in this area, special emphasis was

given to collect data from the reservoir. The Study gives preliminary account of the status, composition, distribution, food and feeding, activities and migration pattern of the aquatic birds in the Jaikwadi reservoir to know the ecological interrelationship between physico-chemical properties of water silt deposit, floral and faunal composition and above all, the 'socio-economic' problems to preserve its rich biodiversity (Kar and Sahu, 1993).

Indian Subcontinent represents 2094 forms belonging to 1200 species of avifauna (Ali and Ripley, 1983; Ripley, 1982). This abundance and diversity of avian community obviously indicate the high ecological diversity of the country. The diverse aquatic ecosystems of India represent 417 forms (19.9%) belonging to 318 species (26.5%) and 146 genera (36.5%) of the avifauna of the sub-continent (Vijayan, 1986).

The density and diversity of water birds are influenced by rainfall, temperature, humidity and cloudiness (Briggs and Holmes, 1988; Custer and Osborne, 1977; Goss-custard, 1985; Teylor and Tullock, 1985). Rainfall has great influence on the bird population (Baylis, 1989). Water depth is reported to influence the population of migratory water birds (Poysa, 1989; Sayre, 1984 and Vijayan, 1990). In the present study, availability of suitable nesting sites, dispersal pattern of the young, differential rate of fledgling survival and changes in the environmental conditions may also influence the species as observed by Santharam and Menno, (1991). Observations on the cormorants indicated that they are the good breeders here as they are observed throughout the study period.

The Jaikwadi dam is a freshwater dam with mudflats, open water, water edges, midstream rocks and islands, grass and scrubs, meadows and pastureland, woodland. Overall 64 residential and 24 nonresidential species were recorded. Most of the bird species were observed in winter due to more food availability and favorable climatic conditions for nesting and roosting.

The information on the occurrence of birds in every month was obtained from the census used for seasonality analysis. The habitat of the birds in the reservoir was observed as under, Shore water covered with weed (Pheasant tailed jacana, Egrets, Herons, Purple Moorhen), Shallow Clear water (Pintail, Gadwall, Shoveller, Brahminy Duck, Spotbill Duck), Deep Water (Coot, Common Pochard, Tufted Pochard, Redcrested Pochard), Rocky lands (Cormorants, Raptor birds). Purple moorhen and Coot are the common residential bird observed in the reservoir. The nonresidential birds like the Lesser Whistling Teal, Spoonbill, Ruddy Shelduck, Pintail, Gargany, Shoveller, Red Crested Pochard, Brahminy Kite, Little Stint, Wagtails, etc are observed in winter in the reservoir. Among non-residential birds Pintail is essentially a freshwater duck and it feeds on young shoots of water plants, its head below water and long tail elevated, thus affording easy means of identification. It is usually seen in small flocks. The species like White stork, Black Ibis and Spoonbill widely noticed in the reservoir are threatened (Sridhar and Srinivasa, 1992).

The Shikra, Sparrow hawk, Marsh harrier and Brahminy kite are the prey birds observed in the reservoir. Birds of prey are defined as Raptors distinguished by their hooked bills, distinctively keen eyes and powerful grapping claws. They are more often referred to as hawks or eagles and kites. Most raptors are very selective in determining both, the type of tree and the location that nests are built. For example, Brahminy Kites and Sparrow hawk builds a large stick nest in a tall tree usually in an exposed position close to suitable feeding habitat (rivers, lakes). The availability and protection of trees that meet the specific requirements of individual birds for nest locations is a major factor in successful breeding and rising of young. Both these species and many other raptors and water birds also require the protection of surrounding trees for nest protection, roosting and perching of adult birds and fledglings

and collection of nesting materials (Stephen Debus, 1998).

Colonial Water birds like coot, cormorant, moorhen, egrets in the reservoir are birds that are social in their behavior in that they generally forage and roost. These species are usually found near water or in swamps and wetlands but may also forage in open paddocks. Roosting and nesting usually occurs within or immediately adjacent to water. Locating suitable nest trees and building large stick nests is used during breeding. The birds are very sensitive during the breeding season to any disturbance within close proximity to the nest tree and may abandon the nest if disturbance occurs. Trees with nests utilized for frequent breeding should be preserved.

Birds are most efficient as insect controllers because their rate of metabolism is higher. Owls and birds of prey, the hawks, are highly beneficial in keeping down the population of rats and mice, most injurious to plants since they chew up roots, stems, shoots and seeds. It has been estimated a single pair of rats can multiply to 880 within a year. However, such numbers can never be reached in nature for effective bio control by such natural predators. The owls like Great Horned Owl can consume number of rats or mice during a single night hunt. Other owls that control rodent pests are the Dusky Horned Owl, the Brown Fish Owl, the Barn Owl which protects agricultural crops and the smaller sized Collared Scops Owl, Barred Jungle Owlet, and the familiar little Spotted Owlet, Shikra, Kestrel, Redheaded Merlin, Blackwinged Kite and White-eyed Buzzard also perform the invaluable service, and are specially adapted to catching animal prey on account of their natural physical characteristics such as powerful talons, hooked bills, sharp eyesight and acute hearing. All these birds of prey regularly eat locusts, grasshoppers and crickets as well, which redoubles their value as agents of pest control (Tara Gandhi, 1993). There is definite indication of serious changes in the habitat conditions and breeding behavior of the birds in the dam due to domestic pollution effect.

Conservation Strategies:

For conservation, management and protection of the avifauna Jaikwadi reservoir area should be surveyed and species composition, diversity, abundance and distribution of birds and other biota must be recorded. The reservoir and its adjoining area should be protected by fencing. The areas of regular fishing should be fixed. Encroachment of lakebed should be stopped. The aquatic weeds must be controlled. The entire area of the reservoir needs to be declared as a protected area and human exploitation should be stopped. Prevention of tree *Acacia* for fuel by local people, grazing of cattle and boating should also be avoided in the reservoir, more islands should be provided for the birds to rest and feed, planting of trees to attract roosting of birds should be encouraged and inlet of domestic sewage should be strictly prohibited.

Reservoir management is relatively new but fast emerging concept in the face of unprecedented degradation of aquatic ecosystems all over the country in general and urban centers in particular. A strategy can be adapted for protection and conservation of a water body.

Table 1. List of Residential birds (2011-2012)

Sr.No	Scientific Name	Common Local Name
1.	<i>Phalacrocorax</i>	Little Cormorant
2.	<i>Aredola grayii</i>	Pond Heron
3.	<i>Nycticorax nycticorax</i>	Night Heron
4.	<i>Babuculus ibis</i>	Cattle Egret
5.	<i>Egreta garzetta</i>	Little Egret
6.	<i>Ciconia epicopus</i>	White necked stork
7.	<i>Pseudibis papillosa</i>	Black ibis
8.	<i>Pledis rakinellus</i>	Glossy ibis
9.	<i>Elgnus caeruleus vociferous</i>	Black winged kite
10.	<i>Milvus migrans govinda</i>	Pariah kite
11.	<i>Accipiter bactiys</i>	Shikra
12.	<i>Accipiter nisus nisosimills</i>	Sparrow hawk
13.	<i>Perdicula asialicas</i>	Jungle bush quail
14.	<i>Amauornis phoenicuras</i>	Whiter breasted waterhen

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15.	<i>Gallinula chloropus</i>	Moorhen
16.	<i>Porophyrrio porophyrrio</i>	Purple Moor hen
17.	<i>Fulica atro</i>	Coot
18.	<i>Hydrophsianus</i>	Pheasant tailed jacana
19.	<i>Vanellus idicus</i>	Red wattled lapwing
20.	<i>Vanellus malabaricus</i>	Yellow wattled lapwing
21.	<i>Treron phoenicoptera</i>	Green pigeon
22.	<i>Columba livia</i>	Blue rock pigeon
23.	<i>Sterptopelia decaocta</i>	Spotted dove
24.	<i>Streptopelia senegalensis</i>	Little brown dove
25.	<i>Psittacide eapatria</i>	Alexandrine parakeet
26.	<i>Psittacula krameri</i>	Roseringed parakeet
27.	<i>Eudynamys scopacea</i>	Koel
28.	<i>Tyto alba</i>	Barn owl
29.	<i>Apus offinis</i>	House swift
30.	<i>Ceryle rudis</i>	Lesser pied kingfisher
31.	<i>Alcedo atthis</i>	Small blue kingfisher
32.	<i>Halcyon smyrnesls</i>	White breasted kingfisher
33.	<i>Merops orientalis</i>	Green bee-eater
34.	<i>Vpupa epops</i>	Hoope
35.	<i>Megalaima haemacephala</i>	Crimson breasted barbet
36.	<i>Picoides mahattensis</i>	Marath wood pecker
37.	<i>Erem opterix grisea</i>	Black billed finch-lark
38.	<i>Hirundo concolor</i>	Dusky crag martin
39.	<i>Lanius excabitor</i>	Grey shrike
40.	<i>Lanius vittatus</i>	Baybacked shrike
41.	<i>Oriolus oriolus</i>	Golden oriole
42.	<i>Dicrurus adsimilis</i>	Black drango
43.	<i>Dicrurus caerutescens</i>	Whitebellied drango
44.	<i>Sturnus pagodarum</i>	Brahminy myna
45.	<i>Acridotheres tristis</i>	Common myna
46.	<i>Corvus splendens</i>	House crow
47.	<i>Pericrocotus cinnamomeus</i>	Scarlet minivet
48.	<i>Aegithina tiphia</i>	Iora
49.	<i>Pycnonotus cafer</i>	Red vented bulbul
50.	<i>Turdoides caudatus</i>	Common babbler
51.	<i>Rhipidura cureola</i>	White browned fantail flycatcher
52.	<i>Terpsiphone paractisi</i>	Paradise flycatcher
53.	<i>Prinia socialis</i>	Ashy wren wrabbler
54.	<i>Orthotomus</i>	Tailor bird
55.	<i>Saxicola caprata</i>	Pied bush chat
56.	<i>Saxicoloides fulicata</i>	Indian robin
57.	<i>Parus major</i>	Grey tit
58.	<i>Zosterops palpebrosa</i>	White eye
59.	<i>Passer domesticus</i>	Hose sparrow
60.	<i>Petronia xanthocollis</i>	Yellow throated sparrow
61.	<i>Ploceus philippinus</i>	Baya weaver bird

62.	<i>Estrilda amandava</i>	Red munia
63.	<i>Melophus lathami</i>	Crested butings
64.	<i>Nectarinia asiatica</i>	Purple sunbird

Table 2. List of Non-residential birds (2011-2012).

Sr.No	Scientific Name	Common Local Name
1.	<i>Platalea leucoroidea</i>	Spoonbill
2.	<i>Dendrocygna javanica</i>	Lesser whistling Teal
3.	<i>Tadorna ferruginea</i>	Ruddy shelduck
4.	<i>Anas acuta</i>	Pintail
5.	<i>Anas poecilorhyncha</i>	Spotbill or Grey duck
6.	<i>Anas auerquedula</i>	Gargany or Bluewinged teal
7.	<i>Anas crecca</i>	Common Teal
8.	<i>Anas clypeata</i>	Shoveller
9.	<i>Netta rufina</i>	Redcreasted Pochard
10.	<i>Aythya ferina</i>	Common Pochard
11.	<i>Aythya nyroca</i>	White-eyed Pochard
12.	<i>Aythya fuligula</i>	Tufted pochard
13.	<i>Charadrius dubius</i>	Little ringed plover
14.	<i>Tringa tetanus</i>	Common red shank
15.	<i>Calidris minuta</i>	Little stint
16.	<i>Himantopus himantopus</i>	Black winged stilt
17.	<i>Clamator jacobinus</i>	Pied crested cuckoo
18.	<i>Picoides nanus</i>	Pigmy wood peckers
19.	<i>Motacilla citreola</i>	Yellow headed wagtail
20.	<i>Motacilla flava</i>	Yellow wagtail
21.	<i>Motacilla cinerea</i>	Grey wagtail
22.	<i>Motacilla maderaspatensis</i>	Large pied wagtail
23.	<i>Halistur Indus</i>	Brahminy Kite
24.	<i>Sterna aurantia</i>	River Tern

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