

Avifaunal diversity of umra (Shamsudin) reservoir, Washim District Maharashtra

SD Rathod

P.G. and Research Department of Zoology, R. A. Arts, Shri M. K. Commerce and Shri S.R. Rathi Science College, Washim, Maharashtra, India

Abstract

The avifaunal diversity of Umra (Shamsudin) Reservoir, Washim Dist, Maharashtra. Was studied for a period of six months from July. 2016 To Dec. 2016. Umra (Shamsudin) Reservoir, harbors several local and migratory bird species. Siltation, pollution, and reduction in water retention in this reservoir in summer are the major threats to the avifauna. More than 36 species of migratory birds were observed, out of which 15 species were found to be migratory birds in true sense and remaining 21 species were also from the category of migratory birds. Umra (Shamsudin) Reservoir is a man-made reservoir located at Umra (Shamsudin) village, District –Washim. This project comes under watershed area of Pus project, which is in Godavari Valley on 20° -05' -28'' and 77° -16' -34''. This reservoir meets the need of drinking water, irrigation and aquaculture and it is the source of capture fishery in this region. The capacity of the Reservoir is 2.3164 million cubic meters and 413 Hq. lands can be irrigated. The water body sustains heavy Birds diversity throughout the period of research.

Keywords: avifauna, water birds, checklist, umra (shamsudin) reservoir

1. Introduction

During recent years there has been increasingly greater concern for inland fresh water resources, which are affected in different ways by all kinds of human activities. It is the man-made lakes and one such example of water resources, which form a part of a still larger system, the watersheds. Any human activity in the whole of the watershed is bound to influence the water in the reservoir and downstream. Deforestation, grazing and otherwise removal of vegetal in the watershed generally results in accelerated silting of the reservoir. The agricultural practices in the catchments area not only help increased silting but also responsible for addition of large quantities of nutrients, pesticides and organic matter, brought to the reservoir by the runoff through the stream. Not only the water quality in the reservoir is affected but its impact can also be left in the change in the biota, soil properties and physico-chemical status. In India, the water resources are under great stress from a plethora of human activities. Though the need for increased agricultural production, increased resource utilization, very little is known about the quality of water resources and impact of these activities thereupon. In the recent years environmental monitoring through regular assessment of water quality has become a crucial factor in the exploitation or conservation of aquatic resources. Zooplankton is abundant in the shallow areas of water body. The zooplanktons unlike phytoplankton are particularly distributed horizontally and vertically in an ecosystem. The zooplanktons forms an important group as it

occupies an intermediate position in the food web, many of them feeding on algae and bacteria and in turn being eaten up on by fishes, and it is eaten up by birds. Water from Umra (Shamsudin) reservoir is being used for drinking purpose and fishery activities. On the other hand, due to increasing human and animal activities in it, the water is becoming polluted. Hence, the basic information and data on the aquatic ecosystem thought to be worked out in order to evolve effective and appropriate strategies for the management of the reservoir. The study of the reservoir in respect to Avifaunal availability is not worked out earlier. Similarly, no studies are carried out on the water quality of the lake and therefore, it was thought to study Avifauna in different parts of the reservoir, so that it would help in future planning for the reclamation of such reservoir and its utilization for intensive fish culture. India has a large number of seasonal and perennial fresh water bodies located in rural as well as urban areas of different part of country. These places are the suitable area for the migratory birds for the specific period, season of the year. The migratory birds of India and abroad have created much interest in the minds of several workers to study their ecological niche. Although, many workers have studied the phenomenon of migration of birds ^[1], a little attention has been given to understand the ecological niche in relation to the migratory birds from India as well as abroad is visiting to the Umra (Shamsudin) reservoir of district Washim (Maharashtra). Present research work is basically proposed with the aim to scientific utilization of this reservoir, for agricultural and fisheries apart from this, the water in this region will be studied for the first time from limnological point of view. Migratory birds visiting the Umra (Shamsudin) Reservoir were carefully observed during the period of this research project. The identifications of migratory birds were done by using the standard keys & monographs ^[1]. Umra (Shamsudin) Reservoir Washim., is oligotrophic in nature having rich floral as well as faunal diversity. The reservoir is having aquatic plants like *Hydrilla*, *Vallisneria*, *Cyperus*, *Najas*, *Potamogeton*, *Ceratophyllum* etc. and many microphytes. The fauna of the reservoir include worms, insects, larvae, Mollusks, Zooplanktons, fishes, amphibians, reptiles, etc.

2. Materials and Methods

To study the avifaunal diversity of Umra (Shamsudin) Reservoir Washim., Complete Census Method, was used ^[7]. During survey birds were observed while walking around the reservoir, with the help of binocular (10× 50) and identified up to species level using physical features with the aid of guides and reference books ^[2, 5]. The species of the birds encountered during each visit were enlisted and details like abundance of the birds, their food and feeding habits were also recorded. The observation was made twice in a week

during July, 2016 To Dec. 2016. The observed birds were categorized as A- Abundant, C- Common, U-Uncommon, O- Occasional, Rr- Rare, The feeding activities of birds were observed and accordingly they were grouped as insectivorous, piscivorous, omnivorous, herbivorous, granivorous and carnivorous.

Status of the birds was classified as

- **Resident:** Species found in the study area throughout the year.
- **Winter Migrant:** species found in the study area only during winter.
- **Local Migrant:** Species found in the study area irregularly, but are resident of India.
- **Breeding Migrant:** Species visiting the area only for or during breeding season.
- **Passage Migrant:** Species sighted on the passage from their wintering grounds to breeding ground.
- **Vagrants:** Species that are not regular winter migrant or breeding migrant and hence stray bird sighted. The abundance and the status of species are based on the Checklist of Birds of Maharashtra ^[3].

3. Results and Discussion

During the study span, More than 36 species of migratory birds were observed, out of which 15 species were found to be migratory birds in true sense and remaining 21 species were also from the category of migratory birds but they were found to have become (Residential, winter migrant, resident migrant, passage migrant). Some are omnivorous, carnivorous, insectivorous, piscivorous, herbivorous, granivorous etc. were documented in table. Birds namely, Purple Moorhen and white breasted Moorhen were not seen during study period, however these birds are included in check list of Pohara-Malkhed Reservoir Forest ^[6]. Abundance of these birds in lake may be an indicator of decreased floating, emergent hydrophytes and decreased weed infestation. In the morning, most of the water birds swam about in small flocks, all over the pond. While they fed, there seemed to be a pattern of aggregation. Red Crested Pochard, Cotton Teal, Northern Shoveller were found to be concentrated at northern end of the reservoir, which is less disturb part of reservoir and having deep water than northern side. Congregation of water birds on this reservoir is due to abundance of food such as microphytes, macrophytes, benthic organisms, free swimming organisms, etc. and accessibility to food resources due to shallowness of reservoir as well as availability of exposed banks of roosting. Vegetation is important for water birds for producing seeds, tuber and browse providing nest sites and serving as substrate for animal food. The reservoir is under threat due to siltation, pollution and indiscriminate development of aquaculture. The combined threat of these factors has given rise to problems such as decrease in biological diversity, deterioration of water

quality, sedimentation and shrinkage in area. It has led to decrease in migratory bird population and fish faunal productivity. Umra shamsudin reservoir is fastly receding and become shallow due to heavy sedimentation ^[4]. It was also pointed out that low Sodium and Potassium content and reduction of photic zone due to high turbidity resulted in low phytoplankton in the reservoir. Thus the reservoir is Oligotrophic in nature. Intensive fishing in this reservoir exerts an unsustainable pressure on the fish population which adversely affecting the birds, which feed on them. Hunting is also a major problem to the birds of this reservoir. Birds are often trapped and consumed by local peoples. Beside these, pollution is also a major problem to the reservoir. The main pollution source is the immersion of idols and offerings after Ganesh Festival and Navaratri in to the reservoir and washing clothes and Domestic animals, during Pola festival, which is deteriorating the quality of reservoir water, making the reservoir shallower and resulting in the aesthetic loss of reservoir. The Umra (Shamsudin) reservoir was found to have a rich bird fauna including the migratory birds. The record of migratory birds was prepared from July, 2016 To Dec. 2016. More than 36 species of migratory birds were observed, out of which 15 species were found to be migratory birds in true sense and remaining 21 species were also from the category of migratory birds but they were found to have become residential. Among the 15 prominent migratory birds, 5 species were uncommon visitors, 6 species were common visitors and 4 species were happening to be the occasional migratory birds enlisted in Table. Gives the list of birds, which became secondarily residential after getting migrated here. The observed birds were from 3 categories with respect to their food habitat. (1) Water Birds- feeding on small fishes and zooplankton (2) Mud dweller- feeding on worms and larvae (3) Shore line- feeding on grasses, shrubs and on small trees on shore line of the reservoir. Similarly 14 birds were found to winter visitors and one bird was rainy season visitors. Most of the birds enlisted in Table. Were mostly found at and around the sampling stations III, IV. Of the Umbra (Shamsudin) reservoir. Very few birds were seen at and around station I, enlisted in Table. During the period of investigation Pied Crested Cuckoo were observed at the reservoir during June to September every year. The females of these birds were found to lay eggs in the nest of babbler.

4. Conclusion

The study proved that present ecological characteristics of the reservoir made the bird unable to inhabit the lake through the year. Siltation pollution and shrinkage are the major threats to the avifauna. The birds present in or near the reservoir are also affected by factors such as disturbance by human activities and lake of maintenance. Hence it is required to restore the original ecological features of this reservoir and full protection to existing habitat should be given with special attention in migratory period.

Table 1: Migratory Avian Fauna Recorded from Umra (Shamsudin) Reservoir

Sr. No.	Zoological Name	Common Name	C / U / O	W / S / R / M	A / B / C
1.	<i>Coracina, malanoptera</i>	Black headed cuckoo	o	w, m	a / Sl
2.	<i>Coracina, novacholland</i>	Large cuckoo shrike	u	w, m	a / Sl
3.	<i>Strunus roseus</i>	Rosy pastor	u	w, m	a
4.	<i>Apus pacificus</i>	Large white rumpeds	u	w, m	a
5.	<i>Curulus varius</i>	Common hawk	u	w, m	a
6.	<i>Sterna bergii</i>	Large crested tern	o	w, m	a / b
7.	<i>Platalea leucorodia</i>	Spoon bill	o	w, m	a
8.	<i>Limosa limosa</i>	Black tailed godwit	o	w, m	a
9.	<i>Anas querquedula</i>	Garganey	u	w, m	a
10.	<i>Clamator jacobious</i>	Pied crested cuckoo	c	r, m	c
11.	<i>Bubuleus ibis</i>	Cattle egret	c	w, m	c
12.	<i>Egretta garzetta</i>	Little egret	c	w, m	a
13.	<i>Podiceps ruficollis</i>	Little grebe	c	w, m	a
14.	<i>Netta ruffina</i>	Red crested pochard	c	w, m	a
15.	<i>Amaurornis phoenicurus</i>	White breasted water	c	w, m	a

C - Common visitor, U - Uncommon, O - Occasional, W - Winter, S - Summer, R - Rainy Season, M - Winter Migrant, A - Aquatic, B - Mud dweller, SL - Shoreline.

Table 2: Residential Avian Fauna Recorded From Umra (Shamsudin) Reservoir

Sr. No.	Zoological Name	Common Name	Habitat
1.	<i>Ardea cinerea</i>	Grey heron	a / b
2.	<i>Ardeola grayii</i>	Pond heron	a / c
3.	<i>Anas crecca</i>	Common teal	a
4.	<i>Anthus trivialis</i>	Tree pipit	a
5.	<i>Aythya Ferina</i>	Common pochard	a
6.	<i>Anthus hodgsoni</i>	Indian pipit	a / b
7.	<i>Ceryle rudis</i>	Pied kingfisher	a / c
8.	<i>Egretta alba</i>	Large egret	a / b
9.	<i>Gallinula chloropus</i>	Indian morhen	a
10.	<i>Halcyon smymerosis</i>	Whiter breasted kingfisher	a / c
11.	<i>Hirundo rustica</i>	Common swallow	c
12.	<i>Motacilla caspica</i>	Grey wagtail	c
13.	<i>Motacilla alba</i>	White wagtail	c
14.	<i>Motacilla maderaspatensis</i>	Large pied wagtail	c
15.	<i>Pseudibis papillosa</i>	Black ibis	a
16.	<i>Sarkidiornis melanotos</i>	Nakta or comb duck	a
17.	<i>Strunus contra</i>	Pied myna	c
18.	<i>Sterna hirundo</i>	Common tern	a / b
19.	<i>Threskiornis aethiopicus</i>	White ibis	a
20.	<i>Tadorna ferruginea</i>	Brahminy duck	a
21.	<i>Tringa hypoleucos</i>	Common sand piper	a

A - Aquatic, B - Mud dweller, C - Marshy land.

5. References

1. Ali S. Compact hand book of birds India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka. 2nd Edition. Oxford University press, Oxford New York, Toronto, 1987: 369.
2. Ali S. The Book of Indian Birds. 13th Edition. Bombay Natural History Society, Mumbai, 1996.
3. Abdulali H. Checklist of Birds of Maharashtra, Bombay Natural History Society, Mumbai, 1972.
4. Chaudhari US, Johari S, Chaudhari PR. Tropic status of Chatri Lake in vicinity of Amravati city. Indian J. Environ. Health. 2001; 43(3):135.
5. Grimmett R, Inskipp C, Tim Inskipp T. Pocket Guide to the Birds of Indian Subcontinent. Oxford university press, 2000; 384.
6. Wadatkar JS, Kasambe R. Birds of birds Pohara-Malkhed Reserve Forest, district Amravati Maharashtra-An updated annotated checklist, Zoos' Print Journal. 2002; 22(7):2768-2770.
7. Darrell W, Newman S, Mundkur T, Harris. Wild birds and Avian Influenza, an Introduction to applied field research and disease sampling techniques. Food and Agriculture Organization of the United Nation. Rome, 2007: 85-87.