



A STUDY ON CATCHMENT AREA OF BORGAON DAM IN SUMMER TO KNOW THE STATUS OF WATER BIRD BREEDING SITES.

Praveen Joshi

Professor, Department of Zoology, Amolakchand Mahavidyalaya, Yavatmal, Maharashtra, India.

Abstract

The study is carried out between the years 2016 to 2021 to know the breeding status in the catchment area of Borgaon Reservoir. Borgaon Dam is situated at a distance of 11 km from Yavatmal town and is situated in the north-east direction. There are seven medium projects in the district and Borgaon reservoir is one of the important birding hotspots. In the summer mainly in the west and south, the water level begins to recede and create ideal wetlands, grasslands and rocky areas and these are good breeding habitats for waterfowl. Migratory and local waterfowl breeding records on Borgaon Dam to date include Little Tern, Black Winged Stilt, Kentish Plover, Little Ring Plover, Small Pratincole, River Tern, Great Thick-knee, Red Wattled Lapwing, Yellow Wattled Lapwing. Every summer most of the area of this dam used to be crowded with eggs and chicks of waterfowl. For the past few years, during the breeding season of waterfowl, i.e. from February to May and then to June, the breeding areas are destroyed due to large scale excavation of soil, siltation, grazing of cattle, free movement of stray dogs in the same area. Eggs are destroyed, chicks are killed for no reason, and helpless bird parents have to wait a year for reproduction. Due to these persistent anthropogenic activities, the breeding rate of waterfowl here has come down drastically and the number of migratory waterfowl on their way back in summer is decreasing day by day. Local waterfowl diversity is also seen in limited form. If the administration does not immediately address all these issues, in the next few years the bird diversity at Borgaon dam will be limited and it will not be an ideal place for bird watching. The government should curb illegality and conserve ideal habitats like Borgaon Dam for bird species so that various species of migratory waterfowl and local waterfowl will visit here in thousands and the dam will once again become known as a hotspot for bird watching in the area.

Keywords : Borgaon dam, Breeding ground, Anthropogenic activities, Habitat destructions, migratory and residential waterfowl, Bird eggs and Conservation.

INTRODUCTION

The term water bird is used to refer to birds that live on or around water. Wetland Birds- Birds that are found on and around the water for food, habitat, and reproduction. Habitat- is the natural home or environment of a plant, animal, or other organism. In some definitions, the term is especially applied to birds in freshwater habitats. Water birds are well adapted to their aquatic lives. Also, some water birds are more terrestrial or aquatic than others, and their adaptations will vary depending on their environment. These adaptations include webbed feet, bills, and legs adapted to feed in the water, and the ability to dive from the surface or the air to catch prey in water. Water birds are a large and varied group of birds. Most are exclusive to fresh water sources such as rivers, lakes, dams and wetlands, however many sea and shore birds can also be regularly found in fresh water, e.g. cormorants and many migratory waders. Water birds include: ducks, geese and swans (Order Anseriformes); grebes (Order Podicipediformes); pelicans, darters and many cormorants (Order Pelecaniformes); herons, ibises, spoonbills and storks (Order Ciconiiformes); cranes, rails, moorhens and coots (Order Gruiformes); and several waders (Order Charadriiformes). According to the ENVIS center 371 migratory species visited India during winter migration. More than 150 water birds are visited to various habitats including shores and fresh water resources of Maharashtra. Approximately 75 water birds are recorded in the Vidarbha region. Around 55 species of residential waterfowl sighted

in the region. Present study focuses on wetland misuse which will directly affect roosting places and breeding on waterfowl at Borgaon dam near Yavatmal.

MATERIAL AND METHODS:

Borgaon Dam is located at a distance of 11 km towards East north direction of Yavatmal city (20.452929 N , 78.190815 E). Good number of waterfowl including migratory and residential can be recorded mainly west and south sides of the dam where the healthy wetlands are developed. During the study period from 2016 to 2021 particularly in the summer morning and evening hours were fixed for observations of wetland and this will continue up to end of summer.



Picture1 -- Google map of Borgaon Reservoir

The birds were monitored with a particular distance by the Nikon Ocular binocular with a range of 10 x 40. Observations are noted down daily and photographs were taken with the help of DSLR 7500. Very often drones were used to take pictures of the changing habitat, nest and eggs of the water birds.

RESULT AND DISCUSSION

The waterfowl observation at Borgaon Dam started from the year 2009, then on the basis of the continuous bird observation at Borgaon Dam from the year 2010 to the year 2021, it is conformed that Almost all the waterfowl recorded in Vidarbha till date have been recorded at Borgaon Dam with few exceptions. Some notable records include Common Shelduck, Terek Sandpiper, Eurasian Curlew, Whimbrel and Pied Avocet. Most importantly, a rare inland migrant Black-lagged Kittiwake was recorded at this dam in 2013, as well as many other waterfowl recorded annually, such as gulls, terns, sandpipers, plovers, ducks, geese, shanks, storks, ibis, godwits, egrets, herons, crakes, grebes, kingfishers, lapwings, and courser. With the onset of summer, usually after the month of February, there is an increase in the number of migratory and local waterfowl at Borgaon Dam. As the water level of the dam begins to recede, large-scale wetlands form on the banks. Except for the eastern and northern parts, almost the entire banks of the dam in the western and southern directions are reflected in wetlands and swampy terrain. As the water level recedes further in early March, the dam's terrain is reflected in plains where the moisture creates grasslands. This grassy area has rocky terrain at some places and the entire stretch up to the water makes it an ideal breeding ground for some migratory and many endemic waterfowl. The ideal breeding grounds for waterfowl have been destroyed in the last few years due to the fact that many works have been done in this area for the personal benefit of human beings during the breeding season. For the same reason, some migratory birds from abroad and the majority of local waterfowl are hindered in breeding. There are some reasons for this such as continuous excavation to carry dam soil in the same area(Photo-3), secondly sowing of the same area by JCB and after plowing the land for siltation with tractors(Photo-1 & 2), thirdly cattle grazing on the remaining land(Photo-4) , fourthly the regular roaming of stray dogs to find and trap the eggs (Photo-5). All these reasons lead to a very low survival rate of eggs. Further it has been observed that waterfowls lay their eggs in the open and due to all these reasons they perish.



Photo-1



Photo-2



Photo-3



Photo-4



Photo-5

Photo-1 Digging the land near the water with the help of JCB and tractor. Photo-2 A crop sown in large amounts of silt near water. Photo-3 A tractor carrying fertile soil near the dam Photo-4 Cattle grazing on the fertile green land next to the dam. Photo-5 Dogs searching for nests of water birds on wetlands.

Despite all these hurdles, some eggs survive and are incubated and hatchlings are born, but due to this constant work, they lose their lives needlessly and the parents can do nothing but watch in agony. For the same reasons, waterfowl have to wait until next year for breeding, but even then, this is happening again and slowly the birds are starting to escape from the dam. Breeding, eggs and nestlings of water birds recorded till date at Borgaon Dam include Little Tern, River Tern, Small Pratincole, Kentish Plover, Little Ringed Plover, Great Thick-knee, Red wattled Lapwing, Yellow wattled Lapwing and Black Wing Stilt. Breeding photos of some of these waterfowl including eggs and chicks are a common sight at the Borgaon dam in summer.



Photo-6 River Tern



Photo-7 Great Thick-knee



Photo-8 Black Winged Stilt



Photo-9 Little Ring Plover



Photo-10 Little Tern



Photo-11 Oriental Pratincole



Photo-12 Yellow Wattled Lapwing

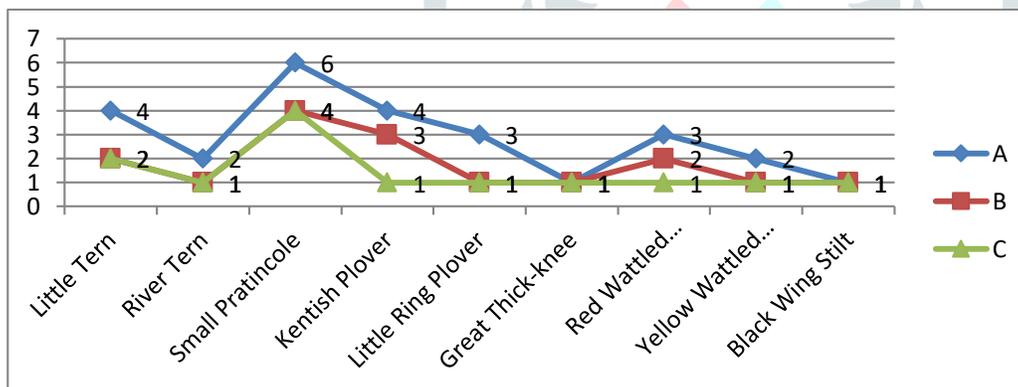
Photographs of nests with eggs of some birds

S.No.	Species	A	B	C
1	Little Tern	04	02	02
2	River Tern	02	01	01
3	Small Pratincole	06	04	04
4	Kentish Plover	04	03	01
5	Little Ring Plover	03	01	01
6	Great Thick-knee	01	01	01
7	Red Wattled Lapwing	03	02	01
8	Yellow Wattled Lapwing	02	01	01
9	Black Wing Stilt	01	01	01

Table-1 Details about breeding of waterfowl at Borgaon Dam.

A- Number of Nest having eggs. B-Eggs successfully incubated and hatched. C- Number of young ones survive

Though there are so many obstacles in the breeding of water birds which are created due to anthropogenic activities from the starting like selection of site for the nest, laying of eggs, incubating the eggs, hatching of eggs and lots of efforts for feeding and lastly successfully they will grow up this is a complete journey. In table no. 1 data indicates that during study period the birds like Little Tern, River Tern, Small Pratincole, Kentish Plover, Little Ringed Plover, Greater Thicknee, Red-wattled Lapwing, Yellow wattled Lapwing and Black-Wing stilt breeds around the reservoir and their success rates are given. (Photo-6 to Photo-12) It was found that nobody had successfully completed their breeding journey. Some cases the ratio is fifty percent but most of the time it was less.



Graph 1- Details of number of eggs lay, incubate, hatch and grown

From 2009 to 2016, during the summer when the water in the dam was very low, excavation of fertile soil in certain areas, silting in limited areas, and cattle grazing where there was grassland were limited. The situation changed after the summer of 2017. From the month of February, as soon as the water level started to decrease, until the beginning of June, continuous excavation and carrying of soil continued in all areas of the dam. Here too siltation is carried out gradually up to the dam water from February to June. Cattle grazing is done on a large scale in the rest of the area. Day by day the number of migratory and local water birds observed at Borgaon Dam is decreasing. In the coming days, if these things are added more and more for human-centric development, sighting of birds, let alone breeding, will become rare. Excavation of fertile soil of the dam, siltation and grazing by cattle are not new but in the last few years its scale has increased tremendously due to non-compliance of norms, the water bodies have to face a serious situation. If the government takes the initiative and asks the relevant authorities to put some restrictions on this, then the water bodies will be left with marshy areas for catching prey, green fields for breeding and restricted areas for mining of fertile soil. It is necessary to explain how important it is to save this habitat through public participation at the local level. It is very important to convince the reasons for the importance of waterfowl in nature and the need for its conservation, only through government and people's participation will the habitat be saved and the number of waterfowl will increase and successful breeding will also be possible.

ACKNOWLEDGEMENT :

I would like to express my heartfelt thanks to all those who helped me during this study, the staff of the college, the officers of the forest department and Mr. Rajesh Sharma for the drone photos.

REFERENCES

- Arunkumar, J.P. Sati & P.C. Tak (2003). Check list of Indian Waterbirds; Envis News letter: Avian Ecology & Inland wetlands. *Buceros* 8(1): 1–29.
- Ali, S. (1996). *The Book of Indian Birds*. Oxford university press, New Delhi, 466pp.
- Bibby C.J., N.D. Burgess & D.A. Hill (1992). *Bird Census Techniques*. Academic Press, London, 67–84 pp.
- Furness, R.W. & J. Greenwood (1993). *Birds as Monitors of Environmental Change*. Chapman and Hall, London, 356pp.
- Grimmett, R., C. Inskipp & T. Inskipp, (2013). *Birds of the Indian Subcontinent*. Oxford University Press, New Delhi, 528pp.
- IUCN (2015). BirdLife International. *Ciconia ciconia*. 2015, IUCN Red List of Threatened Species. Downloaded on 06 May 2016.
- Joshi P. (2021). Records Of Migratory Water Birds On The Reservoirs Of Yavatmal District, Maharashtra, Central India. *International Journal Of Recent Scientific Research*,40925-40928pp
- Joshi P. (2020). Winter Migratory Birds Diversity on Bembla Spillway and Reservoir, Yavatmal District, Maharashtra, India . *International Journal of Innovative Research in Science, Engineering and Technology*,13276-13285pp
- Kazmierczak, K. (2000). *A Field Guide to the Birds of the Indian Subcontinent*. A & C Black Publishers Ltd., Pica press, 352pp.
- Kumar, A., J.P. Sati, P.C. Tak & J.R.B. Alfred (2005). *Handbook on Indian Wetland Birds and their Conservation*. Zoological Survey of India, 218pp.

