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DIVERSITY AND CONSERVATION STATUS OF AVIFAUNA IN UTTAR PRADESH WITH SPECIAL REFERENCE TO PATNA BIRD SANCTUARY

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ABSTRACT

In order to determine the value of local or regional landscapes for conservation of birds, it is important to understand the structure and richness of bird communities. The purpose of this review article is to compile information on the diversity and status of avifauna in Uttar Pradesh, particularly in the Patna Bird Sanctuary, that has previously been published. In the state of Uttar Pradesh, there are about 550 different bird species. 5 critically endangered, 3 endangered, 12 vulnerable, and 21 near threatened bird species have also been documented, according to Bird Life International. This protected bird sanctuary is noted for both migratory and resident birds. So far, 180 species have been identified.

Based on previous literature and discussions with sanctuary officials, it has been clear over the past few years that anthropogenic activities are reducing avifauna population and species variety. Some important initiatives should be taken together by the forest department and NGO's to safeguard such hotspot regions in order to preserve the sanctuary's high bird variety.

Key Words: *Avifauna, Diversity, Patna Pakshi Vihar Bird Sanctuary, Conservation status*

INTRODUCTION

The avifauna of India is one of the most diversified on the planet, because to the varied climatic and physical characteristics of the landmass, which have resulted in a variety of habitat types ranging from desert to montane forests. The Subcontinent is home to around 1,300 bird species, accounting for roughly 13% of all birds on the planet. In the Subcontinent, there are approximately 193 endemic/near-endemic species (taxonomy dependant). New species are being discovered and described to science as a result of increased interest in bird studies, birdwatching, and bird photography in recent years, the most remarkable being the Bugun Liocichla Liocichla bugunorum discovered in 2006 from the Eaglenest Sanctuary in Arunachal Pradesh. Even as these discoveries are made, the Indian Subcontinent continues to lose species. For example, The Pink Headed Duck and The Himalayan Quail is now considered as vanished extinct.

Birds are the most visible, ubiquitous, and well-studied vertebrate group on the world [17]. Birds are the most appealing vertebrate group in the world, with their varied colours, melodic song, and Euphony sounds. Because birds play such an important role in ecology as pollinators and seed dispersers [5], it is critical to study the richness and structure of bird groups in order to determine the value of regional or local landscapes for avian conservation [13]. The birds are classified as feathered biped or bipedal featured animals with four chambers hearts that contain warm blooded organisms.

Birds have their own ecological significance, and they are important natural resources that contribute both to the beauty of nature and to the worrisome effects of environmental or climate change (Brusatte et al., 2015). Due to habitat loss, pollution, poaching, and other man-made activities, the bird population has been dropping due to unusual changes in the environment and subsequent climatic shifts, among other things. As a result, there is a pressing need to safeguard these magnificent creations or natural resources so that a species' wide recovery can be achieved, either by protecting the habitat before it deteriorates too far or by conserving the original species before it vanishes from the ecosystem. This isn't to argue that we shouldn't focus on conserving certain critically endangered species, but rather that we should focus on protecting endangered places before it's too late [3].

One of the most important biological indicators for appraising habitat condition is known as Avifauna Diveristy. Since the prehsitoiric time, there are very good relationship and bond developed between Birds and human. In Indian culture, several birds are worshipped with religious sentiments and people also emotionally attached with them. With the perspective of an ecosystem, Birds are very important part of it as they help to maintain trophic levels [6]. Pollination of plants is aided by them. Birds are also good at dispersing seeds. The large oriental biogeographical region includes the Indian subcontinent, which is rich in biodiversity.

The Indian subcontinent has a diverse avifauna. According to [9], the number of known extant bird species found around the world ranges from 9800 to 10050, accounting for 13 percent of the world's avian fauna [11].

Many studies on bird communities have been undertaken in India in various habitats [4] [10]. However, a few studies using Patna Bird Sanctuary as a study location have been conducted in Uttar Pradesh's fragile and threatened ecosystem. Patna Bird Sanctuary is a protected bird sanctuary located in Jalesar Town, Etah District, and it boasts a diverse biodiversity. [1] published the oldest report on the Avifuna of Patna Bird Sanctuary, reporting 180 species of birds from the sanctuary.

The rich green foliage and presence of a tiny lentic lake, which is an important wintering ground for migrating birds, contribute to the sanctuary's diverse avifauna. Furthermore, a detailed assessment of bird variety has not been done in the Patna Pakshi Vihar Region in the district Etah. The current study is offered in this content to investigate the avifauna of Patna Pakshi Vihar.

A. Patna bird sanctuary

Patna Sanctuary is 1.09 square kilometres in size and is located in the Etah district. It is mostly fed by rainwater, but the forest department manages the water regime by pumping additional water into it to ensure that the wetland does not dry up before May. The area around this sanctuary features distinctive vegetation in the form of date palm thickets flanked by agriculture areas [14]. Despite its tiny size, the sanctuary has a high bird density.

METHODS

In order to compile a comprehensive list of the birds that have been reported to occur in Patna Pakshi Vihar, we gathered all published and grey literature about the Avifauna of Patna Pakshi Vihar and carefully reviewed them. For the purpose of gathering the literature, online databases, web portals, websites, and sites like Google Scholar, Research Gate, Biodiversity Heritage library, Shodhganga, GBIF and IUCN red list were consulted. Additionally, through in-person communication, technical reports and unpublished literature were gathered from the authors. Reports of the birds seen in the sanctuary that were on the IUCN red list were also put together to show how important the area is for bird conservation.

DIVERSITY OF AVIFAUNA IN UP ESPECIALLY IN PATNA BIRD SANCTUARY

India is a privileged country in terms of bird diversity, with over 1300 bird species, accounting for almost 13% of all bird species on the planet [12]. Uttar Pradesh is one of the states with a diverse and abundant avifauna. More than 550 species have been discovered in the state. (Uttar Pradesh State Biodiversity Board, 2014, Biodiversity Living Treasures of Uttar Pradesh.) 5 critically endangered, 3 endangered, 12 vulnerable, and 21 near threatened bird species have been identified, according to [6]. In terms of the Patna Bird Sanctuary, it is a haven for migratory and resident birds, and it sustains a sizable avifauna population. The sanctuary has been home to around 180 species [1].

18 species of the Anatidae family have been reported from the sanctuary, out of the 42 species found on the Indian subcontinent [2]. The resident species include the comb duck (Sarkidiornis melanotos), cotton teal, Lesser whistling

Duck, and Spot billed Duck. The Anatidae family is the most numerous of all the families identified. The Northern Pintail Anas Acuta is the most populous, with roughly 52000 individuals during peak season [1].

DESCRIPTION OF STUDY AREA

Patna Pakshi Vihar Bird Sanctuary is a protected sanctuary in Uttar Pradesh's Etah district's Jalesar sub division. It is a 108-hectare wildlife sanctuary that was established in 1991 under the Wildlife (Protection) Act of 1972. [15] The refuge is home to around 200,000 birds from 300 distinct species. Pied mynas, herons, cormorants, and many types of ducks and geese use the sanctuary. Because most birds leave in March, Patna Sanctuary is best visited during the winter months. It has a lentic lake, which is an important wintering area for migrating birds.

Patna city is also known as Bell city or Ghungroo Nagri. It is mainly close to the famous town Jalesar. This lentic lake is basically used as a resting point for more than 106 species of permanent birds and migratory birds. At the time of winter, a dense growth of macrophytic vegetation of water avifauna mainly covers the whole lake surrounding region. There are some most important birds of lake are such as Comb Duck, Ruddy Shelduck, Gadwall, Eurasian Wigeon, Lesser Whistling Duck, Northern Pintail and Northern Shoveler.

STATUS OF VEGETATION IN PATNA BIRD SANCTUARY.

Patna Bird Sanctuary is located at a latitude of 27.63 0 N and a longitude of 78.67 0 E in Jalesar, Etah district. It has a Lentic lake, which serves as a significant wintering site for migratory birds. Ziziplus ssp, and Hydrilla Verticillata, Salvinia, Azolla, and Potamogeton crispus are among the sanctuary's woody plant species.

CONSERVATION STATUS

Patna Bird Sanctuary is a home for migratory and resident species, and it sustains a large number of bird species, according to previous research and published records. The sanctuary has been home to around 180 species. The Anatidae family is the most numerous of all the families known, with Northern Pintail Anas acuta being the most frequent. The existence of a marsh and a varied vegetation pattern contribute to the area's high bird diversity and richness. This demonstrates that the sanctuary serves as both a refuge and a stopover for winter migrating birds. It has been observed that the population of bird species has been dropping for the past 15 years. Taking this into account, required conservation measures for species should be taken.

CONCLUSION

After reviewing the past scenario and speaking with sanctuary administrators, it can be concluded that Patna Bird Sanctuary is a key avian biodiversity hotspot that supports a diverse range of bird species. So yet, only a few research projects have been carried out in Patna Bird Sanctuary. In addition, further field work and scientific bird studies are required in order to draught a sustainable conservation plan for the area. The most favourable setting for

the bird is the sanctuary's wetland and forest habitat, however urbanisation and anthropogenic activities within the sanctuary have depleted the sanctuary's forest habitat and wetland, resulting in a drop in bird population.

To improve the diversity of bird species composition within the study site, strict execution of regulations, forest resources, and rehabilitation of degraded forest habitat is necessary. The current study was conducted for a fairly short time, but future in-depth research will undoubtedly add to our understanding of the region's avifaunal richness. A comprehensive long-term monitoring of bird diversity in the basin might aid in determining how the river environment is changing.

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