



भारतीय वन्यजीव संस्थान
Wildlife Institute of India



Developing baseline information on the Avifaunal Diversity at the Bonal Bird Conservation Reserve

FINAL REPORT 2025



Submitted by

Sálim Ali Centre for Ornithology and Natural History

South India Centre of Wildlife Institute of India

Ministry of Environment, Forest and Climate Change, Govt. of India

Anaikatty, Coimbatore - 641 108, Tamil Nadu.

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Developing Baseline Information on the Avifaunal Diversity at the **Bonal Bird Conservation Reserve**

Submitted to
Karnataka Forest Department, Karnataka

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Foreword



The ability of birds to fly flawlessly kindles everyone's imagination, undoubtedly leaving one to wonder. Across the world, human societies value birds for economic, cultural, ethical and spiritual reasons. India comprises a mosaic of unique habitat types, forming an abode for rich biodiversity. Governments have been actively conserving many ecologically important habitats nationwide through Ramasar Networks.

Karnataka, India's sixth-largest state, is home to a rich and diverse ecosystem. Equally, the Bonal Bird Conservation Reserve in Shorapur Taluk of Yadgir district is one of the conservation reserves among 17 of the state's conservation reserves. It is the largest wetland in the Kalyan Karnataka region, and the Bonal Bird Conserve is situated along the Central Asian Flyway, becoming a pivotal point for the conservation of avian Biodiversity.

This report has compiled various aspects of the Bonal Bird Conservation Reserve, including the historical background, climate, hydrology, a detailed avifaunal and other biodiversity component work. It also highlights the coexistence between people and the lake and the efforts taken by the department. I congratulate the team in the successful completion of the work showcasing the rich diversity of Bonal Lake.


(Subhash K. Malkhede)

Shri. Virendra R. Tiwari, IFS
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Foreword

Birds are beneficial to humans and the environment in several ways, including improving the nutrient cycle in aquatic habitats, pest control and pollination of crops and plants, seed dispersal, regeneration of forest growth, recreational opportunities for ecotourism activities, including bird watching, and retreats to bird sanctuaries, which have proven to maintain human health and well-being.

Therefore, conserving birds and their habitats becomes critical. By doing so, society could quickly better protect ecological values, prevent economic impacts, and improve social significance and scientific importance.

Considering the conservation values of avifauna, the Karnataka Forest Department sanctioned a project titled “Developing baseline information on the avifaunal diversity at the Bonal Bird Conservation Reserve” to the Sálim Ali Centre for Ornithology and Natural History (WII-SACON), Coimbatore in 2024.

The Bonal Bird Conservation Reserve is one of the largest freshwater lakes in Karnataka. This report would be the first comprehensive scientific work on avifauna and other biodiversity components of Bonal Bird Conservation Reserve, including detailed information on the wetland's hydrology and the fisherfolks' livelihood. The recommendations mentioned in the report are crucial for the conservation of birds, strengthening the Ramsar network for bird conservation, and conservation of freshwater wetlands, particularly for the conservation of migratory birds. I am sure that the document would be helpful to various stakeholders, including the Forest Department, universities, research institutions, multiple NGO bird watchers, and nature lovers who want to conserve birds and their habitats in this region.



Director



Message

Birds have always been an inspiration to human beings from time immemorial. Consequently, birds, with their colourful diversity and rich abundance, have constantly been influencing the imaginations of men throughout history, reflecting equally on the arts, cultures, traditions, customs, and religions of people worldwide.

Karnataka, with over 20 % of the geographical areas covered by forest, as well as riverine and marine ecosystems; among the varied landscapes lies the Bonal Bird Conservation Reserve, the largest freshwater lake, which is shining and charming in the Kalyan Karnataka Region. This report provides comprehensive information about the history of flora and avifauna and their relations with people and showcases the conservation efforts undertaken by the forest department to safeguard its delicate freshwater ecosystem, placing more focus on bird components.

I am sure that the report will be helpful for forest managers, academic communities, birdwatchers, and policymakers in developing appropriate actions for the conservation of avian diversity, their habitats, and the landscapes of this region. I congratulate the team on the successful completion of this vital task.



DCF YADGIR

Executive Summary

Wetlands are dynamic ecosystems where land and water converge, creating habitats supporting diverse plant and animal life. These ecosystems provide essential services, including resource provision, water and climate regulation, biodiversity support, and cultural benefits. A notable feature of wetlands is their distinctive avifauna, which plays a crucial role in assessing the health of these ecosystems. Bonal Bird Conservation Reserve (BBCR hereafter), a 17th-century lake in Yadgir's Shorapura taluk, was built by the 17th-century Raja Pam Naik for agricultural purposes in the Bonal village. Originally, this area had a large water reservoir/tank with a 12-foot average depth extending to 600 acres, situated at a latitude of 16° 31' N and a longitude of 76°45' E. This area was further expanded during British rule. Captain Meadows Taylor, who took over as a British Administrator of this region, noted various details of this place in his autobiography "The Story of My Life". The reservoir was under the control of the irrigation department, Government of Karnataka, Gulbarga Division, till 1998, and later, it was handed over to the Forest Department, Government of Karnataka.

Given this background, a scientific study to collect baseline information on birds (including migratory) and lake habitats was conducted at the BBCR with the following objectives. (1) To study the distribution and status of the residents and migratory avifauna in the Bonal Bird Conservation Reserve. (2) To consolidate the past & present avifaunal and biodiversity literature of BBCR. We collected information on the hydrology and water chemistry of the wetland, detailed avifaunal study including nesting and migratory birds of this wetland, and also quantified the overall biodiversity components and collected the information of the fisherfolk, who depend on this wetland for their livelihood.



During the present study, we have recorded 157 species of birds, 18 species of mammals, 12 species of fishes, 17 species of reptiles, 6 species of amphibians, 6 species of damselfly and dragonflies (odonatan), 13 species of butterflies (Lepidoptera), 19 species of spiders (Arachnida), 13 species of Mollusca and 2 species of crustacea in BBCR.

We recorded the highest number of birds in the BBCR in the summer months of April to May, where we counted around 7000 individuals of birds. Interestingly, when the water level reaches a minimum level in April and May, large numbers of Painted Storks, around 900 individuals, use this BBCR for foraging and roosting purposes. The total number is more than 1 per cent of the global population level of the Painted Stork, which fully qualifies for criterion 6 of Ramsar.

We have identified first-order and second-order streams entering and leaving the wetland. The real-time monitoring of wetlands through a web platform has also been developed, giving clear real-time information on Bonal Lake's water spread area. Managers can access the web portal, which provides a temporal analysis of water spread from 2015 until now. In fact, the Painted Storks utilized the wetland when the water spread reached low levels. Therefore, the water level plays a crucial role that web application can easily monitor the water level and water spread at BBCR.

We have given numerous recommendations in the report after conducting a detailed yearlong scientific study, and our results will help the manager effectively manage and monitor wetlands.



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