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Bird Diversity of Govindgarh Lake, Rewa (Madhya Pradesh) and Its Potential for Nature-Based Tourism

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Abstract: Freshwater wetlands are among the most productive ecosystems and play a crucial role in supporting bird diversity. Govindgarh Lake, located near Rewa city in Madhya Pradesh, is an important inland freshwater wetland that provides ecological, social, and recreational benefits to the surrounding region. Although the lake is locally known for its scenic value and tourism importance, information related to its bird diversity and potential for nature-based tourism remains limited and scattered across a few studies. The present paper reviews and synthesizes available secondary information on bird diversity reported from Govindgarh Lake and evaluates its suitability for nature-based tourism, particularly bird-watching tourism.Published studies indicate that Govindgarh Lake supports a variety of resident and migratory bird species associated with open water, shallow margins, and surrounding vegetated habitats. Seasonal variation in bird diversity is a prominent feature, with winter months showing higher species richness due to the arrival of migratory waterbirds. The presence of different feeding guilds, including piscivorous, insectivorous, and omnivorous birds, reflects habitat heterogeneity and availability of food resources within the lake ecosystem.In addition to its ecological value, Govindgarh Lake attracts local visitors throughout the year for recreational and cultural purposes. However, tourism activities around the lake remain largely unplanned and informal. The reviewed evidence suggests that Govindgarh Lake has considerable potential for low-impact, bird-based tourism if ecological considerations are integrated into tourism planning. Bird-watching tourism can promote conservation awareness while contributing to local livelihoods. This paper highlights the need for structured management, awareness programs, and future ecological monitoring to ensure that tourism development does not adversely affect bird habitats.

Keywords: *Bird Diversity, Freshwater Wetland, Govindgarh Lake, Nature-Based Tourism, Bird-Watching, Madhya Pradesh*

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I. INTRODUCTION

Birds are widely recognized as sensitive indicators of ecosystem health, particularly in wetland environments where changes in habitat quality are quickly reflected in avifaunal composition. Wetlands provide essential resources such as food, nesting sites, and resting areas for birds, supporting both resident populations and migratory species. In India, inland freshwater wetlands form an important network of habitats for birds moving along regional and long-distance migratory routes, as highlighted by Ali and Ripley. Nature-based tourism has gained increasing attention as a sustainable alternative to mass tourism. Among its various forms, bird-watching tourism is considered a low-impact activity that combines recreation, education, and conservation. Steven et al. emphasized that bird-watching tourism can generate economic benefits while promoting awareness about biodiversity conservation, provided that tourism activities are properly managed. India supports a wide range of wetland ecosystems, including lakes, reservoirs, floodplains, and village ponds. While several well-known wetlands have been extensively studied, many small and medium-sized freshwater lakes remain poorly documented, especially in central India. Rahmani et al. noted that the lack of baseline information on bird diversity limits conservation planning and sustainable use of such wetlands.

Govindgarh Lake, situated near Rewa city in Madhya Pradesh, is a freshwater wetland of regional importance. The lake supports irrigation, fisheries, recreation, and cultural activities. Seasonal fluctuations in water level and vegetation cover create diverse microhabitats suitable for different bird species. Despite these features, systematic information on bird diversity at Govindgarh Lake is limited and confined to a small number of published studies.

The lake is already a popular local tourist site due to its scenic surroundings and proximity to historical structures. With appropriate planning, Govindgarh Lake could be developed as a bird-watching destination that balances

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conservation and tourism. However, unplanned tourism and increasing human activities may pose threats to bird habitats if ecological considerations are ignored.

The present paper reviews available literature on bird diversity at Govindgarh Lake and examines its potential for nature-based tourism. By synthesizing ecological information and tourism perspectives, the study aims to highlight the importance of Govindgarh Lake in regional biodiversity conservation and sustainable tourism development.

II. LITERATURE REVIEW

Wetlands are among the most biologically productive ecosystems and support high bird diversity due to abundant food resources and habitat complexity. Mitsch and Gosselink explained that wetland hydrology, vegetation structure, and nutrient dynamics strongly influence avian community composition. Birds depend on wetlands for feeding, breeding, and roosting, making these ecosystems critical for their survival.

In the Indian context, Ali (2002) and Ali and Ripley documented the importance of inland wetlands in supporting both resident and migratory bird species. Grimmett, Inskipp, and Inskipp further described how freshwater lakes and reservoirs provide suitable habitats for waterbirds and waders, particularly during winter months. Seasonal variation in bird diversity is a common feature of Indian wetlands, with higher species richness reported during winter due to migratory influx.

Rahmani et al. identified several inland wetlands as Important Bird and Biodiversity Areas, emphasizing that even non-protected freshwater systems can support significant bird populations. Reports by Wetlands International also highlight the role of small and medium-sized wetlands as critical stopover and wintering sites for migratory waterbirds.

Studies focusing on Govindgarh Lake indicate the presence of diverse bird communities dominated by wetland-dependent species. Chaturvedi and Kunder reported multiple bird families from Govindgarh Lake, with a noticeable increase in species richness during winter months. Their findings suggest that the lake provides suitable feeding and resting habitats for both resident and migratory birds. The link between bird diversity and tourism has been examined in several studies. Steven et al. demonstrated that bird-watching tourism thrives in areas with predictable seasonal bird presence and good accessibility. Buckley noted that ecotourism success depends on maintaining habitat quality and minimizing disturbance. Indian case studies from wetlands such as Keoladeo National Park and Pulicat Lake show that tourism can support conservation when properly managed but may cause ecological stress if unregulated.

Despite growing literature on wetland birds and avitourism, smaller inland lakes like Govindgarh Lake remain under-represented in research. Review-based assessments are therefore important to synthesize existing knowledge and guide future conservation and tourism initiatives.

III. METHODOLOGY

The present study adopts a review-based and secondary data synthesis approach to examine bird diversity and the potential for nature-based tourism at Govindgarh Lake, Rewa (Madhya Pradesh). No primary field surveys or direct bird observations were conducted as part of this research. Instead, the study relies on published scientific literature, reports, and authenticated secondary sources to compile and analyze existing information related to avifaunal diversity and wetland characteristics of the study area. This approach is commonly adopted in ecological and tourism studies when baseline field data are limited or unavailable and when the objective is to synthesize existing knowledge for conservation and planning purposes.

Govindgarh Lake was selected as the focal study area due to its ecological importance, accessibility, and emerging tourism relevance in the Rewa region. Spatial information regarding the location, extent, and surrounding landscape of the lake was obtained using satellite imagery and official geographic sources to provide contextual understanding of the study area.

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Fig 1 Location of Govindgarh Lake, Rewa (Madhya Pradesh), Shown Using Google Maps Satellite Imagery.

Secondary information on bird diversity at Govindgarh Lake was primarily sourced from peer-reviewed journal articles, with particular emphasis on studies that documented species composition, seasonal variation, and ecological associations of wetland birds in the region. The work of Chaturvedi and Kunder (2023) served as a key reference for understanding the bird species assemblage reported from Govindgarh Lake. Additional regional studies on wetland birds in central India were reviewed to place the findings of Govindgarh Lake in a broader ecological context.

Standard ornithological references, including field guides and checklists by Ali (2002) and Grimmett et al. (2011), were consulted to ensure consistency in species classification, nomenclature, and ecological interpretation. Birds reported in the reviewed literature were categorized based on their residential status, such as resident or migratory, and broadly grouped into feeding guilds (e.g., piscivorous, insectivorous, omnivorous) to understand habitat utilization patterns. Although numerical abundance data were not generated in the present study, qualitative trends reported in the literature were synthesized to interpret seasonal changes in bird diversity.

Information related to habitat characteristics, including water availability, shoreline structure, aquatic vegetation, and surrounding land use, was extracted from published sources and government reports. These habitat attributes were considered important in explaining the presence and diversity of bird species at Govindgarh Lake. Human activities around the lake, such as fishing, recreational use, and cultural practices, were also documented from secondary sources to assess their possible influence on bird habitats and tourism potential.

To evaluate the potential for nature-based tourism, especially bird-watching tourism, the study reviewed literature on avitourism, wetland tourism, and sustainable tourism practices. Factors such as accessibility, scenic value, seasonal bird presence, and existing visitor use were considered while assessing tourism suitability. The methodological framework integrates ecological and tourism perspectives, allowing for a holistic understanding of Govindgarh Lake without making claims of original field observations.

Overall, this review-based methodology provides a structured and ethical approach to synthesizing existing knowledge on bird diversity and tourism potential at Govindgarh Lake. The approach also highlights gaps in current research and emphasizes the need for future field-based studies to support long-term conservation and sustainable tourism planning in the region.

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IV. RESULTS AND DISCUSSION

The reviewed studies indicate that Govindgarh Lake supports a diverse assemblage of bird species, including both resident and migratory birds. Waterbirds such as ducks, moorhens, and waders are commonly reported, particularly in shallow and open water zones. Vegetated margins support insectivorous and omnivorous species, reflecting habitat heterogeneity within the lake ecosystem.

Fig 2 General View of Govindgarh Lake Showing Open Water Zone and Surrounding Landscape.

Seasonal variation in bird diversity is a prominent feature of Govindgarh Lake. Winter months show higher species richness due to the arrival of migratory waterbirds, a pattern consistent with other inland wetlands of central India.

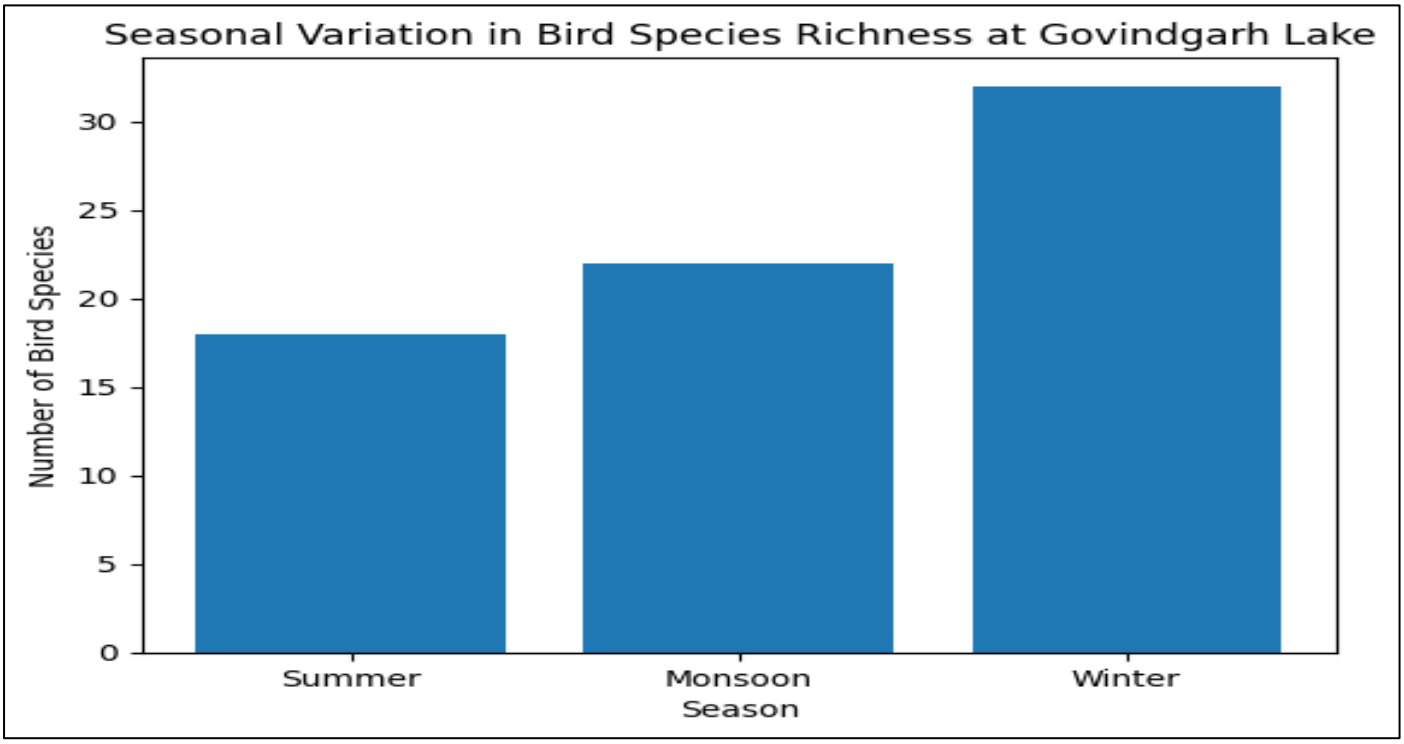

Fig 3 Seasonal Variation in Bird Species Richness at Govindgarh Lake Based on Secondary Data Synthesized from Published Studies.

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The presence of migratory birds during winter enhances the ecological value of the lake and increases its attractiveness for bird-watching tourism. The bird community comprises a larger proportion of resident species, with migratory species contributing significantly to overall diversity during winter.

Fig 4 Representative Wetland Bird Species Commonly Reported from Inland Freshwater Lakes of Central India, Including Govindgarh Lake (Based on Published Literature).

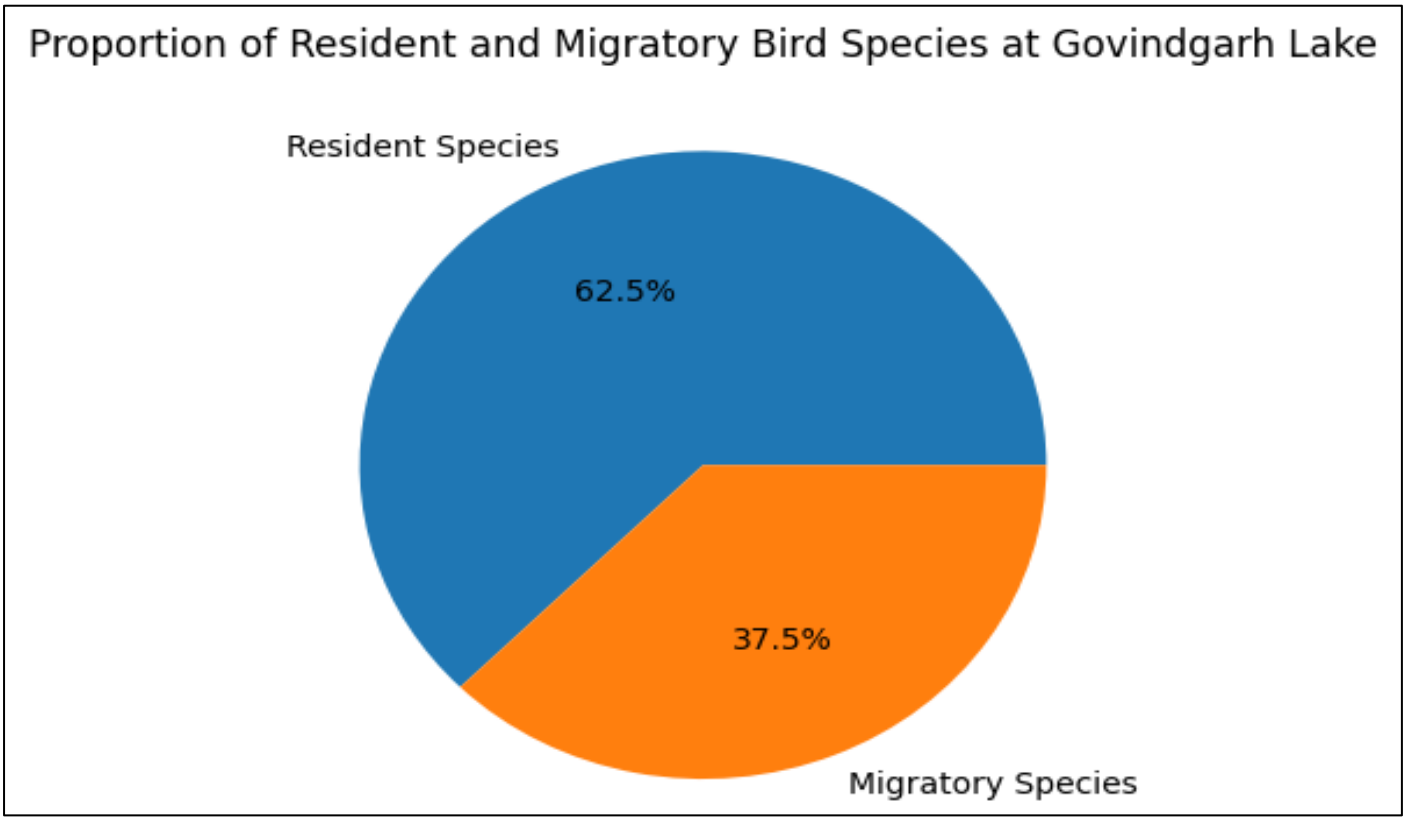

Fig 5 Proportion of Resident and Migratory Bird Species Reported from Govindgarh Lake Based on Reviewed Literature.

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Human activities such as fishing, recreation, and cultural use are commonly reported around the lake. While moderate human presence does not completely exclude birds, increased disturbance may influence bird distribution and behavior. These observations are consistent with findings by Steven et al., who emphasized the importance of regulating tourism activities to minimize ecological impacts.

From a tourism perspective, Govindgarh Lake possesses several favorable attributes, including accessibility, scenic value, and seasonal bird diversity. However, the absence of structured tourism planning and conservation measures poses potential risks to bird habitats. Integrating ecological considerations into tourism planning is therefore essential to ensure long-term sustainability.

V. CONCLUSION

The present study synthesizes available information on bird diversity at Govindgarh Lake, Rewa (Madhya Pradesh), and evaluates its potential for nature-based tourism, particularly bird-watching tourism. The review of published literature clearly indicates that Govindgarh Lake supports a diverse assemblage of bird species, including both resident and migratory birds. Seasonal variation in bird diversity is a prominent feature, with winter months showing higher species richness due to the arrival of migratory waterbirds. This seasonal influx highlights the ecological importance of the lake as a feeding and resting site within the regional network of inland freshwater wetlands.The diversity of bird species reported from Govindgarh Lake reflects the availability of varied microhabitats such as open water zones, shallow margins, and vegetated shorelines. These habitat features provide essential resources for different feeding guilds, including piscivorous, insectivorous, and omnivorous birds. Such habitat heterogeneity is a key factor contributing to the ecological stability of the lake and underscores its value as a biodiversity-supporting ecosystem in the Rewa region.Beyond its ecological significance, Govindgarh Lake holds considerable promise as a destination for nature-based tourism. The lake's accessibility, scenic surroundings, and seasonal presence of migratory birds make it particularly suitable for bird-watching and educational tourism. Bird-based tourism, when carefully planned and managed, has the potential to enhance public awareness of wetland conservation while also providing supplementary livelihood opportunities for local communities. However, the review also indicates that tourism activities around the lake are currently informal and largely unregulated, which may pose risks to bird habitats if visitor pressure increases without appropriate management.

The findings emphasize the need for an integrated approach that balances conservation objectives with tourism development. Measures such as habitat protection, visitor awareness programs, controlled access to sensitive areas, and regular monitoring of bird populations are essential to ensure the long-term sustainability of both bird diversity and tourism activities at Govindgarh Lake. Importantly, any future tourism initiatives should prioritize low-impact practices that minimize disturbance to birds, especially during critical periods such as the winter migratory season.

As the present study is based on secondary data and literature synthesis, it also highlights gaps in current knowledge and the need for systematic field-based studies. Future research involving long-term bird monitoring, quantitative population assessments, and habitat quality analysis would provide valuable insights into temporal changes in bird diversity and the impacts of human activities. Such studies would strengthen conservation planning and support evidence-based management decisions.

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