



A Review on Diversity of Endemic Birds in India

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Abstract

India, one of the world's megadiverse countries, supports an exceptional variety of bird species, many of which are endemic to specific regions such as the Western Ghats, Eastern Himalayas, and Andaman–Nicobar Islands. Endemic birds are vital components of ecological balance, acting as pollinators, seed dispersers, and bioindicators of environmental health. This review summarizes the diversity, distribution, ecological significance, and conservation status of India's endemic avifauna. It highlights major threats including habitat destruction, climate change, and invasive species, while emphasizing the importance of conservation initiatives under India's Wildlife Protection Act and community-based approaches. Strengthening research, habitat connectivity, and local participation is crucial to ensure the survival of these unique and irreplaceable bird species.

Keywords: Endemic birds, India, biodiversity, Western Ghats, conservation, ecology, avifauna diversity, habitat loss, threatened species, megadiversity

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Introduction

India is one of the world's 17 megadiverse countries, supporting nearly 1,300 species of birds, of which about 70–90 are endemic (BirdLife International, 2022). Endemism in Indian birds primarily results from the country's varied topography, including the Western Ghats, Eastern Himalayas, and Andaman–Nicobar Islands. These areas provide isolated ecological niches that promote speciation (Praveen *et al.*, 2016). India's unique geographical position and climatic variation have given rise to an extraordinary range of habitats from the Himalayas to the tropical rainforests of the Western Ghats. Out of over 1,300 recorded bird species, around 70–90 are endemic to India (BirdLife International, 2022). These species are primarily concentrated in biodiversity hotspots such as the Western Ghats, Eastern Himalayas, and Andaman–Nicobar Islands. Endemism in birds results from geographic isolation, evolutionary adaptation, and ecological specialization (Praveen *et al.*, 2016). Endemic birds not only enhance biodiversity but also play key ecological roles in seed dispersal, pollination, and pest regulation. However, anthropogenic pressures have pushed several endemic species to the brink of extinction. Understanding their diversity and conservation needs is essential to maintain ecosystem stability and ecological resilience.

Patterns of Endemism and Distribution

The Western Ghats stand out as a global biodiversity hotspot, hosting more than 20 endemic bird species, including the Malabar Grey Hornbill (*Ocyceros griseus*) and Nilgiri Flycatcher (*Eumyias albicaudatus*) (Rahmani, 2012). The Andaman and Nicobar Islands contribute another set of endemics such as the Andaman Woodpecker (*Dryocopus hodgei*) and Nicobar Megapode (*Megapodius nicobariensis*) (BirdLife International, 2021). The Himalayan region, though less isolated, contains species like the Himalayan Quail (*Ophrysia superciliosa*) possibly extinct but of high conservation interest (Grimmett *et al.*, 2011). The Western Ghats, a UNESCO World Heritage Site, is home to more than 20 endemic bird species, including the Nilgiri Flycatcher (*Eumyias albicaudatus*), White-bellied Blue Robin (*Sholicola albiventris*), and Malabar Grey Hornbill (*Ocyceros griseus*) (Rahmani, 2012). The Andaman–Nicobar Islands host distinct endemics like the Andaman Woodpecker (*Dryocopus hodgei*) and Nicobar Megapode (*Megapodius nicobariensis*) (BirdLife International, 2021). The Eastern Himalayas, though better connected to other biogeographic regions, support species such as the Bugun Liocichla (*Liocichla bugunorum*) and Himalayan Quail (*Ophrysia superciliosa*) the latter possibly extinct (Grimmett *et al.*, 2011). These restricted-range species are vital indicators of local environmental conditions and long-term ecosystem health.

Ecological Roles and Significance

Endemic birds play crucial roles in seed dispersal, pollination, and pest control, helping maintain ecosystem stability (Daniels, 2007). Their restricted ranges make them sensitive indicators of environmental changes, such as habitat degradation and climate shifts. Endemic birds serve as essential ecological components. Frugivorous species like hornbills and bulbuls contribute to forest regeneration through seed dispersal (Daniels, 2007).

India hosts over 70 endemic bird species, primarily concentrated in:

Western Ghats (biodiversity hotspot)

Andaman & Nicobar Islands

Eastern Himalayas & North-East India

Deccan Plateau (dry forests & scrublands)

These species play crucial roles in conservation priority programs such as ICBP, IUCN Red List assessments, and India's Wildlife Protection Act schedules.

Endemic Birds of India (Major Recognized Species)

Western Ghats Endemics	Andaman & Nicobar Endemics	Himalayan & North-East Endemics
Malabar Grey Hornbill (<i>Ocyceros griseus</i>)	Andaman Woodpecker (<i>Dryocopus hodgei</i>)	Himalayan Monal (<i>Lophophorus impejanus</i>)
Malabar Pankeet (<i>Psticciula columboides</i>)	Andaman Crake (<i>Rallina eurizonoides</i>)	— endemic to Indian & Nepali Himalayas
Malabar Barbet (<i>Ptilopogon malabaricus</i>)	Andaman Teal (<i>Anas albogularis</i>)	Bugun Liocichla (<i>Liocichla bugunorum</i>) – India-only
Nilgiri Wood Pigeon (<i>Columba elphinstonii</i>)	Andaman Serpent Eagle (<i>Spilornis elgini</i>)	Chestnut-breasted Partridge (<i>Arborophila mandalii</i>)
White-bellied Blue Robin (<i>Sholicola albiventris</i>)	Andaman Treepie (<i>Dendrocitta bayleii</i>)	Mishmi Wren-Babbler (<i>Spelaeornis baderigularis</i>)
White-bellied Treepie (<i>Dendrocitta leucogastra</i>)	Nicobar Megapode (<i>Megapodius nicobariensis</i>)	Rusty-throated Wren-Babbler (<i>Spelaeornis baderigularis</i>)
Rufous Babler (<i>Argya subrufa</i>)	Nicobar Sparrowhawk (<i>Accipiter butleri</i>)	Tawny-breasted Wren-Babbler (<i>Spelaeornis longicaudatus</i>)
Wynaad Laughingthrush (<i>Pterorhinus delesserti</i>)	Andaman Cuckoo-Dove (<i>Macropygia rufipennis</i>)	
Nilgiri Laughingthrush (<i>Montecinclia cinnamomea</i>)	Andaman Scops Owl (<i>Otus balli</i>)	
Palani Laughingthrush (<i>Montecinclia fairbanki</i>)	Andaman Wood Pigeon (<i>Columba palumboides</i>)	
Ashambu Laughingthrush (<i>Montecinclia meridionalis</i>)		
Nilgiri Flycatcher (<i>Eumyias albicaudatus</i>)		
Black-and-Orange Flycatcher (<i>Ficedula narcissifrons</i>)		
Nilgiri Blue Robin (<i>Sholicola major</i>)		
Broad-tailed Grassbird (<i>Schoenicola platyurus</i>)		
Sri Lanka Frogmouth – Indian subspecies (Western Ghats population often treated as endemic race)		
Deccan Plateau & Central India Endemics	Grassland & Desert Endemics	Other Notable Indian Endemics
Jerdon's Courser (<i>Rhinoptilus bitorquatus</i>) – critically endangered	Indian Bustard (<i>Ardeotis nigriceps</i>) – critically endangered	Grey Junglefowl (<i>Gallus sonneratii</i>)
Forest Owlet (<i>Athene brama</i>) – rediscovered after 113 years	Lesser Florican (<i>Sypheotides indicus</i>)	Sri Lanka Indian Junglefowl complex – Indian forms locally endemic
Rock Bush Quail (<i>Perdix argoondah</i>)	Indian Courser (<i>Cursorius coromandicus</i>)	Andaman Bulbul (<i>Pycnonotus fuscoflavescens</i>)
		Nicobar Bulbul (<i>Hypsipetes nicobariensis</i>)
		Nicobar Parakeet (<i>Psittacula caniceps</i>)

Insectivorous endemics regulate pest populations, while nectar-feeding species assist in pollination of flowering plants. Their presence reflects ecosystem integrity, and their decline signals environmental degradation. Because of their narrow distribution and specialized habitat requirements, endemic birds are particularly vulnerable to environmental disturbances.

Threats to Endemic Birds

The primary threats include:

1. Habitat loss and fragmentation due to agriculture and urbanization.
2. Climate change, altering breeding and migration patterns.
3. Invasive species, especially in islands like the Andamans.
4. Hunting and trapping, still prevalent in some rural areas (BirdLife International, 2022).

Species such as the White-bellied Blue Robin (*Sholicola albiventris*) and Broad-tailed Grassbird (*Schoenicola platyurus*) are highly sensitive to forest clearance (Praveen & Nameer, 2020)

Despite their importance, India's endemic birds face escalating threats:

Habitat Loss and Fragmentation:

Rapid deforestation for agriculture, plantations, and infrastructure has severely reduced forest cover in the Western Ghats and Andaman Islands. Many endemics like the Broad-tailed Grassbird (*Schoenicola platyurus*) now survive only in isolated patches (Praveen & Nameer, 2020).

Climate Change:

Altered rainfall patterns and temperature shifts disrupt breeding cycles and food availability, particularly in montane ecosystems.

Invasive Species:

Predatory animals such as rats and cats on islands pose major threats to ground-nesting birds like the Nicobar Megapode (BirdLife International, 2022).

Hunting and Illegal Trade:

In rural and island regions, hunting for food or ornamental use continues to threaten several species.

Lack of Awareness:

Limited local awareness and inadequate research funding restrict long-term conservation efforts.

Conservation Efforts

India's Wildlife Protection Act (1972) provides a legal framework for safeguarding threatened species. Several endemic birds are listed under Schedule I, ensuring the highest level of protection. Over 550 protected areas, including national parks, wildlife sanctuaries, and biosphere reserves, play vital roles in conserving habitats.

Organizations such as the Bombay Natural History Society (BNHS), Salim Ali Centre for Ornithology and Natural History (SACON), and BirdLife International have conducted long-term monitoring and identified Important Bird and Biodiversity Areas (IBAs) across India (Rahmani, 2012).

Citizen science initiatives like eBird have revolutionized data collection, allowing birdwatchers to contribute valuable sighting information (Sullivan et al., 2014). These records aid in mapping distribution and detecting population declines.

Future Directions

Sustaining endemic bird diversity requires integrated conservation planning, combining scientific research, policy action, and community engagement. Ecological corridors connecting fragmented habitats should be established to promote gene flow. Restoration of degraded forests, particularly in the Western Ghats, can enhance habitat quality. Furthermore, climate-resilient strategies such as habitat buffer zones and adaptive management should be implemented. Encouraging ecotourism and local stewardship can align economic development with biodiversity conservation. Education programs in rural areas can help reduce hunting and foster a sense of coexistence with wildlife.

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