

An avifaunal inventory of the Kazinag National Park and adjoining areas: Conservation implications

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Abstract The present study was undertaken in Kazinag National Park – an important protected area in the Northwestern Himalayan region of India – from March 2023 to February 2024, to compile a comprehensive avifaunal inventory of the park. Field surveys were systematically carried out during early morning and late afternoon hours, coinciding with peak bird activity. Birds were identified following standard field guides, expert consultations, and online sources. A total of 127 bird species, distributed across 10 orders and 35 families were documented, many of which are of conservation concern. The family Muscicapidae exhibited the highest representation of 19 species, followed by Corvidae with 11 species. The high avian diversity observed in the park can be attributed to its diverse habitat types, ranging from mixed forests, coniferous forests to riverine areas and alpine meadows. Of the 127 species recorded, four are listed as ‘Threatened’ by the IUCN (Western Tragopan *Tragopan melanocephalus*, Cheer Pheasant *Catreus wallichii*, Mountain Hawk-Eagle *Nisaetus nipalensis* and Bearded Vulture *Gypaetus barbatus*). Increasing urbanisation and human encroachment into the park pose significant threats to the survival of key avian species. Illegal hunting, particularly of pheasants, warrants urgent conservation attention.

Keywords: birds, species richness, Kazinag National Park, Kashmir, Northwestern Himalaya

Összefoglalás A vizsgálatot India északnyugat-himalájai régiójának egyik jelentős védett területén, a Kazinag Nemzeti Parkban végezték 2023 márciusa és 2024 februárja között azzal a céllal, hogy átfogó madárfaj-felmérést végezzenek össze a park területéről. A terepi felmérések rendszeresen zajlottak a kora reggeli és késő délutáni órákban, amikor a madarak aktivitása a legintenzívebb. A madárfajok meghatározása terepi határozók, ornitológus szakértőkkel való konzultáció, valamint online források alapján történt. Az eredmények alapján összesen 127, 10 rendből és 35 családból származó madárfajt dokumentáltak, amelyek közül több természetvédelmi szempontból is jelentős. A legtöbb fajt a légykapófélék (Muscicapidae) családja képviselte 19 fajjal, ezt követték a varjúfélék (Corvidae) 11 fajjal. A nemzeti parkban tapasztalt magas fajgazdagság elsősorban az élőhelyek változatosságának tudható be, melyek a vegyes lombú és tűlevelű erdőtől a folyó menti élőhelyeken át a hegyi rétegekig terjednek. A felmért 127 faj közül négy szerepel a Természetvédelmi Világszövetség (IUCN) veszélyeztetettségi listáján: nyugati tragopán (*Tragopan melanocephalus*), bőbitás fácán (*Catreus wallichii*), hegyi héjasas (*Nisaetus nipalensis*), szakállas saskeselyű (*Gypaetus barbatus*). A nemzeti parkot érintő fokozódó urbanizáció és emberi zavarás komoly fenyegetést jelent több kulcsfontosságú madárfaj fennmaradására nézve. A fácánfajok illegális vadászata különösen sürgős beavatkozást igényel.

Kulcsszavak: madarak, fajgazdagság, Kazinag Nemzeti Park, Kasmír, Himalája

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Introduction

Birds represent a well-known class of vertebrates that occur globally in nearly all habitat types (Sekercioglu 2006, Whelan *et al.* 2008). They are one of the most widely distributed and extensively studied taxa, owing to their ecological importance and sensitivity to environmental changes (Browder *et al.* 2002, Perrow & Davy 2002). Birds inhabit a vast array of environments, and occupy diverse ecological niches (Kahl *et al.* 2021), playing a significant role in biodiversity conservation and environmental monitoring (Chettri *et al.* 2001, Byju *et al.* 2024). As vital ecological indicators, their presence or absence often reflects the habitat quality and the overall health of an ecosystem (Piersma & Lindström 2004, Mahmood *et al.* 2021). Birds contribute immensely to ecosystem functioning by providing a multitude of essential ecosystem services. They function as long-range pollinators, scavengers, ecosystem engineers, and also as bio-control agents for a plethora of crop pests (Klein *et al.* 2007, Wenny *et al.* 2011, Malik & Sheikh 2020). Fluctuations in bird populations are closely linked to the ecological condition of an area, making them valuable bio-indicators for assessing the impacts of climate change (Loreau *et al.* 2001, Pearce *et al.* 2014).

The Union Territory (UT) of Jammu and Kashmir, nestled in the Northwestern Himalaya, hosts a remarkable bird diversity driven by its unique physiographic features and climatic conditions. Positioned at the junction of two bio-geographic realms (Oriental realm and Palearctic realm), the Jammu and Kashmir boasts a diverse and unique assemblage of bird species (Roberts 1991). The region lies within the West Himalayan Endemic Bird Area (EBA 128, Rahmani *et al.* 2012) and is home to 11 restricted range species (Stattersfield *et al.* 1998). Furthermore, it serves as an important migratory corridor for birds traveling from Central Asia and Eastern Europe into the Indian subcontinent, passing through Iran, Afghanistan, and Pakistan (Ali & Ripley 1983). Known for its rich bird diversity, the UT of Jammu and Kashmir contains 28 Important Bird and Biodiversity Areas (IBAs) (Islam & Rahmani 2004, Rahmani *et al.* 2012, Sohil & Sharma 2019).

The recent IUCN assessment has placed 32 bird species of Jammu and Kashmir under different threat categories (Suhail *et al.* 2020). Additionally, 25 more species have been Red Listed as Near Threatened (Kichloo *et al.* 2024). Seven species documented from Jammu and Kashmir – Cheer Pheasant (*Catreus wallichii*), Western Tragopan (*Tragopan melanocephalus*), White-throated Tit (*Aegithalos niveogularis*), Kashmir Nuthatch (*Sitta cashmirensis*), White-cheeked Nuthatch (*Sitta leucopsis*), Orange Bullfinch (*Pyrrhula aurantiaca*) and Spectacled Finch (*Callacanthus burtoni*) – are endemic to the Western Himalayas (Praveen & Jayapal 2024).

The Indian avifaunal checklist currently recognizes 1,348 bird species, accounting for approximately 12% of the world's avian diversity (Praveen *et al.* 2019, Praveen & Jayapal 2022). Of these, nearly 80% of the Indian bird species are found in the Himalayas (Naithani & Bhat 2010). Birds inhabiting mountainous regions display distinct distribution patterns, with some species inhabiting lower altitudes and others adapted to higher elevation zones (Price *et al.* 2011). Their spatial distribution within an area is predominantly shaped by the availability and quality of food resources, and also by the presence of suitable roosting and

breeding sites (MacArthur & MacArthur 1961, Malik *et al.* 2023). Additionally, climatic factors such as temperature, humidity, and oxygen availability significantly influence species diversity and density, with mountain areas often showing higher species turnover and diversity at certain elevations (Graham *et al.* 2014).

Establishing baseline data is a fundamental prerequisite for understanding the impacts of habitat degradation and climate change on species and ecosystems, and for formulating effective conservation strategies (Llanos *et al.* 2011). Bird surveys play a crucial role in generating ecological insights, identifying priority conservation areas (Daniels *et al.* 1991, Peterson *et al.* 2000), evaluating ecosystem health, and informing management interventions (McComb *et al.* 2010, Fitzpatrick & Rodewald 2016). Biodiversity inventories and species checklists serve as essential repositories for documenting species distributions and conservation statuses. The Kazinag National Park (hereafter KNP), situated in the Northwestern Himalayan region of India, is celebrated for its rich biodiversity wealth, including a diverse assemblage of avian species. Despite its ecological significance, systematic information on the bird fauna of the park remains sparse. This study aims to address this knowledge gap by presenting a comprehensive avifaunal inventory of the KNP, intended to serve as a template for future ornithological research and conservation planning.

Materials and Methods

Study area

The KNP (34°10' N and 74°2' E), located in Baramulla district of Jammu and Kashmir, falls within the Northwestern Himalayan region of India. It has been designed by demarcating upper adjoining parts of three protected areas – Limber Wildlife Sanctuary, Lachipora Wildlife Sanctuary, and Naganari Conservation Reserve (*Figure 1*). Covering an area of 89 km², the elevation of the park ranges from 2,500–4,500 m a.s.l (Lone *et al.* 2025). The park features a typical temperate climatic condition and the vegetation is primarily coniferous. Deodar cedar (*Cedrus deodara*) and Himalayan pine (*Pinus wallichiana*) dominate the lower reaches of the park whereas pindrow fir (*Abies pindrow*) and morinda spruce (*Picea smithiana*) are prevalent at middle elevations. The higher reaches are characterized by *Betula*, *Juniper*, and *Acer* species. Alpine regions are dominated by meadows. The various habitat types found in the KNP include mixed forests, coniferous forests, broadleaved deciduous forests, riverine areas, alpine scrub, and alpine meadows.

The KNP is the only surviving place of the famous mountain goat – Markhor (*Capra falconeri*) in India. Besides Markhor, the notable fauna of the park includes Himalayan Goral (*Naemorhedus goral*), Kashmir Musk Deer (*Moschus cupreus*), Brown Bear (*Ursus arctos*), Himalayan Black Bear (*Ursus thibetanus*), Yellow-throated Marten (*Martes flavigula*). The prominent avifaunal species include Himalayan Monal (*Lophophorus impejanus*), Western Tragopan (*Tragopan melanocephalus*), Himalayan Snowcock (*Tetraogallus himalayensis*), Cheer Pheasant (*Catreus wallichii*), Himalayan Griffon (*Gyps himalayensis*), Bearded

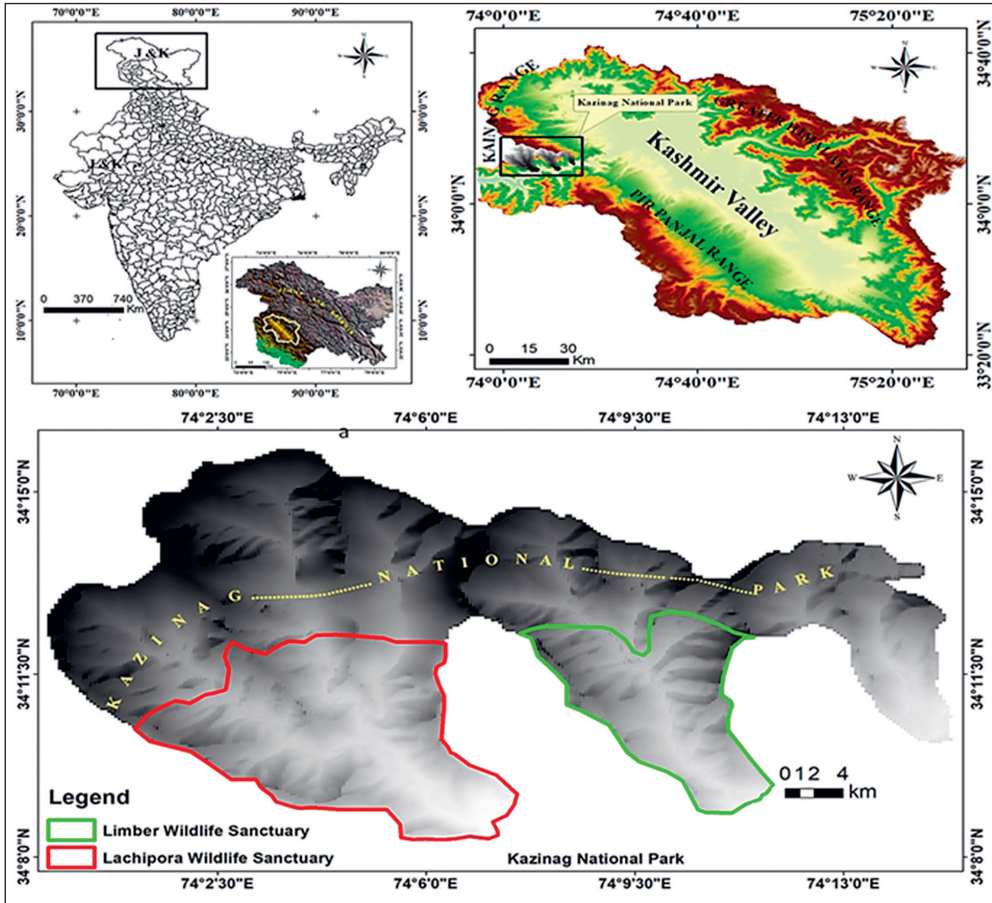


Figure 1. Map of the study area and adjoining areas

1. ábra A kutatási terület és a szomszédos területek térképe

Vulture (*Gypaetus barbatus*), and White-crested Kalij Pheasant (*Lophura leucomelanos hamiltoni*). The latter has been declared as the Union Territory (UT) bird of Jammu and Kashmir (Lone *et al.* 2024).

Data collection

The present study was undertaken in KNP from March 2023 to February 2024, for a period of one year. To develop a comprehensive checklist of the bird species, systematic field surveys were conducted in the early morning (7:00) and late afternoon (17:00) aligning with the birds' most active periods to maximise sightings (Thakur 2010). Fieldwork involved walking the transects and point counts. Additional data was collected from local birdwatchers to prepare the checklist. Field binoculars (Nikon 10 × 50) and digital camera (Nikon D-850 24 MP with 200–500 mm lens) were respectively employed for observing birds and taking photographs.

Identification of birds was done using standard field guides such as Ali and Ripley (1983) and Grimmett *et al.* (2016). Furthermore, avian experts, verified birding groups and clubs were also consulted for species validation (Sharma *et al.* 2018). The conservation status of the birds is provided according to the recent IUCN Red List (2024) and the categorisation of birds into 'Abundant' (A – sighted >30 times), 'Common' (C – sighted ≥ 15 times), 'Occasional' (O – sighted <10 times), and 'Rare' (R – sighted <5 times) was carried out following Quyoom *et al.* (2024).

Results

The present avifaunal survey of the KNP recorded a total of 127 bird species, belonging to 10 orders and 35 different families (*Table 1*). Family Muscicapidae exhibited the highest number of species diversity comprising of 19 species, followed by Corvidae with 11 species. Accipitridae and Fringillidae each had nine species. Phasianidae was represented by eight species, while Paridae and Picidae had six species each. Four species – Western Tragopan, Cheer Pheasant, Mountain Hawk-Eagle (*Nisaetus nipalensis*) and Bearded Vulture – are Red Listed as 'Threatened' by the International Union for Conservation of Nature (IUCN). The study also revealed variations in species abundance, with some species being recorded frequently, while others were observed sporadically. Of the 127 species, 30 were abundant, 44 common, 42 occasional and 11 rare.

Discussion

The present avifaunal survey of the KNP recorded 127 bird species, distributed across 10 orders and 35 families, underscoring the park's significance as a key biodiversity hotspot in the Northwestern Himalaya. Such a good number is likely associated with the diverse habitat types present in the park, ranging from riverine ecosystems, coniferous forests, and broadleaved forests to alpine meadows. This habitat heterogeneity acts as the primary driver of rich avifaunal diversity, catering to the ecological requirements of a gamut of avian species (Price *et al.* 2011). The dominance of the Muscicapidae family, comprising 19 species, aligns with the previous findings in montane ecosystems where insectivorous passerines flourish due to diverse microhabitats and abundant prey availability (Singh *et al.* 1990, Price 2003, Quyoom *et al.* 2024). Additionally, the relatively high representation of Corvidae, Fringillidae, Accipitridae, and Phasianidae highlights the varied ecological niches present within the park, supporting both resident and migratory species.

Of the 592 bird species known from the Jammu and Kashmir (Kichloo *et al.* 2024), 127 birds – representing 21.45% – were reported from the KNP in our study. This number is much higher compared with other protected areas of the Kashmir Himalaya reflecting the park's immense potential for supporting bird species. For instance, Price *et al.* (2003) prepared a checklist of the Overa-Aru Sanctuary, and reported 70 species of birds from the sanctuary. Our findings closely match with the recent study carried by Quyoom *et al.* (2024)

Table 1. Comprehensive avifaunal checklist (IOC World Bird List) of the Kazinag National Park and adjoining areas

1. táblázat A Kazinagi Nemzeti Park és a szomszédos területek fajlistája

S. No.	Common name	Scientific name	IUCN Status	Abundance	Habitat
Order: Galliformes					
Family: Phasianidae					
1.	Western Tragopan	<i>Tragopan melanocephalus</i> (J. E. Gray, 1829)	VU	R	AS, BD
2.	Himalayan Monal	<i>Lophophorus impejanus</i> (Latham, 1790)	LC	C	BD, CF, AS
3.	Koklass Pheasant	<i>Pucrasia macrolopha</i> (R. P. Lesson, 1829)	LC	O	BD, CF,
4.	Cheer Pheasant	<i>Catreus wallichii</i> (Hardwicke, 1827)	VU	O	AS, RC, CF
5.	White-crested Kalij Pheasant	<i>Lophura leucomelanos hamiltoni</i> (J. E. Gray, 1829)	LC	O	CF, AL
6.	Himalayan Snowcock	<i>Tetraogallus himalayensis</i> (G. R. Gray, 1843)	LC	R	RC, AM, AS
7.	Chukar Partridge	<i>Alectoris chukar</i> (J. E. Gray, 1830)	LC	O	RC, AS
8.	Snow Partridge	<i>Lerwa lerwa</i> (Hodgson, 1833)	LC	R	AS
Order: Cuculiformes					
Family: Cuculidae					
9.	Jacobin Cuckoo	<i>Clamator jacobinus</i> (Boddaert, 1783)	LC	R	BD, CF
10.	Asian Koel	<i>Eudynamis scolopacea</i> (Linnaeus, 1758)	LC	O	CF, AL
11.	Common Cuckoo	<i>Cuculus canorus</i> (Linnaeus, 1758)	LC	C	BD, CF
Order: Columbiformes					
Family: Columbidae					
12.	Rock Dove	<i>Columba livia</i> (J. F. Gmelin, 1789)	LC	A	AL, CF
13.	Snow Pigeon	<i>Columba leuconota</i> (Vigors, 1831)	LC	O	RC
14.	Oriental Turtle Dove	<i>Streptopelia orientalis</i> (Latham, 1790)	LC	C	BD, CF
15.	Eurasian Collared Dove	<i>Streptopelia decaocto</i> (Frisvoldszky, 1838)	LC	O	BD, CF, AL
16.	Spotted Dove	<i>Spilopelia chinensis</i> (Scopoli, 1786)	LC	O	AL, BD, CF

S. No.	Common name	Scientific name	IUCN Status	Abundance	Habitat
Order: Accipitriformes					
Family: Accipitridae					
17.	Bearded Vulture	<i>Gypaetus barbatus</i> (Linnaeus, 1758)	NT	C	CF, RC, AM
18.	Himalayan Griffon Vulture	<i>Gyps himalayensis</i> (Hume, 1869)	LC	A	RC, CF, RA
19.	Mountain Hawk-eagle	<i>Nisaetus nipalensis</i> (Hodgson, 1836)	NT	O	CF, BD, RC
20.	Golden Eagle	<i>Aquila chrysaetos</i> (Linnaeus, 1758)	LC	C	AM, RC,
21.	Eurasian Sparrowhawk	<i>Accipiter nisus</i> (Linnaeus, 1758)	LC	O	CF, AL, RC
22.	Black Kite	<i>Milvus migrans</i> (Boddaert, 1783)	LC	A	CF, RC, AL
23.	Crested Honey Buzzard	<i>Pernis ptilorhynchus</i> (Temminck, 1821)	LC	O	AL, CF
24.	Common Buzzard	<i>Buteo buteo</i> (Linnaeus, 1758)	LC	C	AL, BD, CF,
25.	Himalayan Buzzard	<i>Buteo refectus</i> (Portenko, 1935)	LC	C	BD, CF, AL
Order: Strigiformes					
Family: Strigidae					
26.	Asian Barred Owlet	<i>Glaucidium cuculoides</i> (Vigors, 1830)	LC	O	CF
Order: Bucerotiformes					
Family: Upupidae					
27.	Eurasian Hoopoe	<i>Upupa epops</i> (Linnaeus, 1758)	LC	A	AL
Order: Piciformes					
Family: Picidae					
28.	Speckled Piculet	<i>Picumnus innominatus</i> (E. Burton, 1836)	LC	R	CF, BD
29.	Brown-fronted Woodpecker	<i>Dendrocoptes auriceps</i> (Vigors, 1831)	LC	C	CF
30.	Himalayan Woodpecker	<i>Dendrocopos himalayensis</i> (Jardine & Selby, 1831)	LC	A	CF, AL
31.	Lesser Yellownape	<i>Picus chlorolophus</i> (Vieillot, 1818)	LC	O	CF, BD
32.	Scaly-bellied Woodpecker	<i>Picus squamatus</i> (Vigors, 1831)	LC	C	CF, AL
33.	Grey-headed Woodpecker	<i>Picus canus</i> (J. F. Gmelin, 1788)	LC	O	CF, AL
Family: Megalaimidae					
34.	Great Barbet	<i>Psilopogon virens</i> (Boddaert, 1783)	LC	C	CF, AL

S. No.	Common name	Scientific name	IUCN Status	Abundance	Habitat
Order: Falconiformes					
Family: Falconidae					
35.	Common Kestrel	<i>Falco tinnunculus</i> (Linnaeus, 1758)	LC	O	AL, CF
Order: Psittaciformes					
Family: Psittaculidae					
36.	Slaty-headed Parakeet	<i>Psittacula himalayana</i> (R. P. Lesson, 1831)	LC	C	AL, CF
37.	Rose-ringed Parakeet	<i>Psittacula krameri</i> (Scopoli, 1769)	LC	C	AL, CF
Order: Passeriformes					
Family: Aegithalidae					
38.	Black-throated Bushtit	<i>Aegithalos concinnus</i> (Gould, 1855)	LC	C	BD, CF, AS
39.	White-throated Bushtit	<i>Aegithalos niveogularis</i> (Gould, 1855)	LC	C	BD, CF, AS
Family: Campephagidae					
40.	Long-tailed Minivet	<i>Pericrocotus ethologus</i> (Bangs & Philips, 1914)	LC	C	CF, BD
Family: Certhiidae					
41.	Bar-tailed Treecreeper	<i>Certhia himalayana</i> (Vigors, 1832)	LC	C	CF, BD
Family: Cinclidae					
42.	Brown Dipper	<i>Cinclus pallasii</i> (Temminck, 1820)	LC	O	RA, AS
Family: Corvidae					
43.	Eurasian Jay	<i>Garrulus glandarius</i> (Linnaeus, 1758)	LC	O	BD, CF
44.	Black-headed Jay	<i>Garrulus lanceolatus</i> (Vigors, 1830)	LC	O	CF, BD, AL
45.	Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i> (Blyth, 1846)	LC	A	CF, BD, AL
46.	Kashmir Nutcracker	<i>Nucifraga multipunctata</i> (Gould, 1849)	LC	O	CF
47.	Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i> (Linnaeus, 1758)	LC	C	AS, AM
48.	Alpine Chough	<i>Pyrrhocorax graculus</i> (Linnaeus, 1766)	LC	O	AS, AL, RC,
49.	Western Jackdaw	<i>Coloeus monedula</i> (Linnaeus, 1758)	LC	C	AL
50.	House Crow	<i>Corvus splendens</i> (Vieillot, 1817)	LC	A	AL, CF, RA
51.	Large-billed Crow	<i>Corvus macrorhynchos</i> (Wagler, 1827)	LC	A	AL, CF, BD

S. No.	Common name	Scientific name	IUCN Status	Abundance	Habitat
52.	Carrion Crow	<i>Corvus corone</i> (Linnaeus, 1758)	LC	C	AL, CF
53.	Northern Raven	<i>Corvus corax</i> (Linnaeus, 1758)	LC	C	CF, AL, RA
Family: Dicuridae					
54.	Ashy Drongo	<i>Dicrurus leucophaeus</i> (Vieillot, 1817)	LC	A	CF, AL
55.	Black Drongo	<i>Dicrurus macrocercus</i> (Vieillot, 1817)	LC	A	AL, CF
Family: Emberizidae					
56.	Crested Bunting	<i>Emberiza lathamii</i> (J. E. Gray, 1831)	LC	O	CF, AS, AL
57.	Rock Bunting	<i>Emberiza cia</i> (Linnaeus, 1766)	LC	A	RC, AL
58.	Chestnut-eared Bunting	<i>Emberiza fucata</i> (Pallas, 1776)	LC	O	RC, CF
Family: Fringillidae					
59.	Eurasian Chaffinch	<i>Fringilla coelebs</i> (Linnaeus, 1758)	LC	R	CF, AL
60.	Black and Yellow Grosbeak	<i>Mycerobas icteroides</i> (Vigors, 1830)	LC	O	CF, AS
61.	White-winged Grosbeak	<i>Mycerobas carnipes</i> (Hodgson, 1836)	LC	O	AS
62.	Plain Mountain Finch	<i>Leucosticte nemoricola</i> (Hodgson, 1836)	LC	O	AS, CF, BD
63.	Common Rosefinch	<i>Carpodacus erythrinus</i> (Pallas, 1770)	LC	C	AL, AS
64.	Pink-browed Rosefinch	<i>Carpodacus rodochroa</i> (Vigors, 1831)	LC	O	AS, CF
65.	Yellow-breasted Greenfinch	<i>Chloris spinoides</i> (Vigors, 1831)	LC	C	AL
66.	European Goldfinch	<i>Carduelis carduelis</i> (Linnaeus, 1758)	LC	C	AL
67.	Red-fronted Serin	<i>Serinus pusillus</i> (Pallas, 1811)	LC	O	AL
Family: Hirundinidae					
68.	Barn Swallow	<i>Hirundo rustica</i> (Linnaeus, 1758)	LC	O	AL, RA
Family: Laniidae					
69.	Long-tailed Shrike	<i>Lanius schach</i> (Linnaeus, 1758)	LC	A	AL, AS
Family: Leiothrichidae					
70.	Streaked Laughing Thrush	<i>Trochalopteron lineatum</i> (Vigors, 1831)	LC	A	AL, CF
71.	Variegated Laughing Thrush	<i>Trochalopteron variegatum</i> (Vigors, 1831)	LC	A	AL, CF, BD

S. No.	Common name	Scientific name	IUCN Status	Abundance	Habitat
72.	Rufous Sibia	<i>Heterophasia capistrata</i> (Vigors, 1831)	LC	O	BD, CF
73.	Red-billed Leiothrix	<i>Leiothrix lutea</i> (Scopoli, 1786)	LC	O	BD, CF
Family: Monarchidae					
74.	Indian Paradise Flycatcher	<i>Terpsiphone paradisi</i> (Linnaeus, 1758)	LC	A	CF, AL
Family: Motacillidae					
75.	Western Yellow Wagtail	<i>Motacilla flava</i> (Linnaeus, 1758)	LC	C	RA
76.	Citrine Wagtail	<i>Motacilla citreola</i> (Pallas, 1776)	LC	O	RA
77.	Grey Wagtail	<i>Motacilla cinerea</i> (Tunstall, 1771)	LC	C	RA
78.	White Wagtail	<i>Motacilla alba</i> (Linnaeus, 1758)	LC	C	RA
79.	Olive-backed Pipit	<i>Anthus hodgsoni</i> (Blackwelder, 1907)	LC	R	AS, AM
Family: Muscicapidae					
80.	Dark-sided Flycatcher	<i>Muscicapa sibirica</i> (J. F. Gmelin, 1789)	LC	R	AS, CF
81.	Verditer Flycatcher	<i>Eumyias thalassinus</i> (Swainson, 1838)	LC	C	AL, CF
82.	Bluethroat	<i>Luscinia svecia</i> (Linnaeus 1758)	LC	O	CF
83.	Himalayan Rubythroat	<i>Calliope pectoralis</i> (Gould, 1837)	LC	O	AS, CF
84.	Little Forktail	<i>Enicurus scouleri</i> (Vigors, 1832)	LC	C	RA
85.	Spotted Forktail	<i>Enicurus maculatus</i> (Vigors, 1831)	LC	C	RA
86.	Blue Whistling Thrush	<i>Myophonus caeruleus</i> (Scopoli, 1786)	LC	A	CF, RA
87.	Indian Blue Robin	<i>Larvivora brunnea</i> (Hodgson, 1837)	LC	R	CF, BD
88.	Ultramarine Flycatcher	<i>Ficedula superciliaris</i> (Jerdon, 1840)	LC	C	BD, CF
89.	Himalayan Bluetail	<i>Tarsiger ruflatus</i> (Hodgson, 1845)	LC	C	CF, BD
90.	Blue-fronted Redstart	<i>Phoenicurus frontalis</i> (Vigors, 1831)	LC	A	AS, RA
91.	Blue-capped Redstart	<i>Phoenicurus coeruleocephala</i> (Vigors, 1831)	LC	A	RA, CF
92.	Plumbeous Water Redstart	<i>Phoenicurus fuliginosus</i> (Vigors, 1831)	LC	A	RA
93.	White-capped Redstart	<i>Phoenicurus leucocephalus</i> (Vigors, 1831)	LC	C	RA

S. No.	Common name	Scientific name	IUCN Status	Abundance	Habitat
94.	Blue-capped Rock Thrush	<i>Monticola cinclorhyncha</i> (Vigors, 1831)	LC	R	CF, BD
95.	Blue Rock Thrush	<i>Monticola solitarius</i> (Linnaeus, 1758)	LC	C	RC, CF
96.	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i> (Jardine & Selby, 1833)	LC	O	RC, CF
97.	Grey Bush Chat	<i>Saxicola ferreus</i> (J. E. Gray, 1847)	LC	A	CF, AL
98.	Siberian Stonechat	<i>Saxicola maurus</i> (Pallas, 1773)	LC	O	AL, CF, BD
Family: Oriolidae					
99.	Indian Golden Oriole	<i>Oriolus kundoo</i> (Sykes, 1832)	LC	C	CF
Family: Paridae					
100.	Rufous-naped Tit	<i>Periparus rufonuchalis</i> (Blyth, 1849)	LC	C	CF
101.	Rufous-vented Tit	<i>Periparus rubidiventris</i> (Blyth, 1847)	LC	C	CF, BD
102.	Coal Tit	<i>Periparus ater</i> (Linnaeus, 1758)	LC	A	CF, BD
103.	Cinereous Tit	<i>Parus cinereus</i> (Vieillot, 1818)	LC	A	CF, BD
104.	Green-backed Tit	<i>Parus monticolus</i> (Vigors, 1831)	LC	A	CF
105.	Himalayan Black-colored Tit	<i>Machlolophus xanthogenys</i> (Vigors, 1831)	LC	O	CF, BD
Family: Passeridae					
106.	House Sparrow	<i>Passer domesticus</i> (Linnaeus, 1758)	LC	A	AL
107.	Russet Sparrow	<i>Passer cinnamomeus</i> (Gould, 1836)	LC	A	AL
Family: Phylloscopidae					
108.	Hume's Leaf Warbler	<i>Phylloscopus humei</i> (W. E. Brooks, 1878)	LC	A	CF, AS
109.	Western Crowned Warbler	<i>Phylloscopus occipitalis</i> (Blyth, 1845)	LC	C	CF
110.	Blyth's Leaf Warbler	<i>Phylloscopus reguloides</i> (Blyth, 1842)	LC	C	CF, BD
111.	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i> (J. E. Gray & G. R. Gray, 1847)	LC	O	CF
Family: Prunellidae					
112.	Alpine Accentor	<i>Prunella collaris</i> (Scopoli, 1769)	LC	R	AS, AM
113.	Rufous-breasted Accentor	<i>Prunella strophciata</i> (Blyth, 1843)	LC	O	AS, BD

S. No.	Common name	Scientific name	IUCN Status	Abundance	Habitat
Family: Pycnonotidae					
114.	Black Bulbul	<i>Hypsipetes leucocephalus</i> (J. F. Gmelin, 1789)	LC	A	CF, AL
115.	Himalayan Bulbul	<i>Pycnonotus leucogenys</i> (J. E. Gray, 1835)	LC	A	CF, AL
Family: Sittidae					
116.	White-cheeked Nuthatch	<i>Sitta leucopsis</i> (Gould, 1850)	LC	C	CF, BD
117.	Kashmir Nuthatch	<i>Sitta cashmirensis</i> (Brooks, 1871)	LC	O	CF, BD
Family: Sturnidae					
118.	Jungle Myna	<i>Acridotheres fuscus</i> (Wagler, 1827)	LC	C	AL, CF
119.	Common Myna	<i>Acridotheres tristis</i> (Linnaeus, 1766)	LC	A	AL
120.	Common Starling	<i>Sturnus vulgaris</i> (Linnaeus, 1758)	LC	C	AL, CF
Family: Tichodromidae					
121.	Wallcreeper	<i>Tichodroma muraria</i> (Linnaeus, 1766)	LC	O	RC, RA
Family: Troglodytidae					
122.	Eurasian Wren	<i>Troglodytes troglodytes</i> (Linnaeus, 1758)	LC	A	CF, BD
Family: Turdidae					
123.	Mistle Thrush	<i>Turdus viscivorus</i> (Linnaeus, 1758)	LC	C	CF, AS
124.	Common Blackbird	<i>Turdus merula</i> (Linnaeus, 1758)	LC	O	CF, RA
125.	Tickell's Thrush	<i>Turdus unicolor</i> (Tickell, 1833)	LC	C	BD, CF, RA
126.	Tibetan Blackbird	<i>Turdus maximus</i> (Seebohm, 1881)	LC	O	AS, CF
127.	Chestnut Thrush	<i>Turdus rubrocanus</i> (J. E. Gray, 1847)	LC	C	CF, BD

Abbreviations used: A – Abundant, O – Occasional, C – Common, R – Rare, AL – Agricultural land, RA – Riverine areas, CF – Coniferous forest, BD – Broadleaved deciduous, AS – Alpine scrub, AM – Alpine meadow

in the Bani Wildlife Sanctuary, a similar temperate landscape, in the Jammu division of Jammu and Kashmir. They compiled an avifaunal inventory of the sanctuary, identifying 135 bird species. This higher species count was attributed to the diverse habitat types and tree species present in the sanctuary, which offer optimal sites for feeding, nesting and breeding purposes. A more comprehensive and systematic study of birds in the future could potentially expand the current avifaunal inventory of the KNP.

Notably, several species of conservation importance were documented from this study. The presence of four IUCN Red Listed threatened species – Western Tragopan, Cheer Pheasant, Mountain Hawk-eagle and Bearded Vulture – reinforces the park's conservation importance. These species are sensitive to habitat fragmentation, anthropogenic disturbances and poaching, necessitating the need for immediate conservation intervention. The Western Tragopan, endemic to the Western Himalayas, is particularly vulnerable to habitat degradation caused by anthropogenic pressures, including livestock grazing and deforestation (Fuller & Garson 2000, Keane *et al.* 2005). Similarly, the Cheer Pheasant, a globally threatened species, faces threats from habitat fragmentation and hunting (Bhattacharya *et al.* 2007, Grimmett *et al.* 2016). The Bearded Vulture is a critical scavenger species that plays a vital role in maintaining ecosystem integrity. Its population decline in the Himalayas has been attributed to poisoning, food scarcity, and habitat loss (Virani *et al.* 2011).

Several studies have indicated that Himalayan bird communities exhibit altitudinal stratification, with different assemblages occupying specific elevation zones (Graham *et al.* 2014). Our findings corroborate this pattern, as high-altitude species such as Western Tragopan and Cheer Pheasant were restricted to montane forests, whereas lower and mid-elevation areas were dominated by Muscicapidae species. Seasonal variation in bird sightings was also evident, with greater species richness recorded during spring and summer compared to autumn and winter. These seasonal fluctuations in bird sightings are obviously due to alterations in food sources, weather conditions and habitat quality (Loiselle & Blake 1991, Norris & Marra 2007).

Despite covering only an area of 89 km², the KNP harbours five Himalayan pheasant species: Western Tragopan, Himalayan Monal, Cheer Pheasant, Koklass (*Pucrasia macrolopha*) and Kalij Pheasant. These species are globally known for their dwindling populations, driven by habitat loss, illegal hunting and climate-induced changes in their ranges. Their presence in the KNP suggests that the park provide crucial habitats for these taxa, making its protection vital for the survival of these species. However, these species face the highest risk of hunting pressure within the park. Among pheasants, the Kalij Pheasant is usually restricted to lower, human-dominated elevations of the park, where it experiences greater hunting pressure (Lone *et al.* 2025).

Given the presence of threatened species, alongside a diverse assemblage of avifaunal community, it is essential to prioritize conservation efforts in the KNP. To mitigate the potential threats, conservation priorities should focus on alleviating habitat degradation particularly in forest areas and curbing illegal hunting. Involving local communities in conservation efforts will prove helpful in protecting the park's biodiversity. Establishing regular bird monitoring programmes, to track changes in species diversity and population

trends, need to be organised especially in response to ongoing climate change. Additionally, long-term ecological monitoring and avian research focusing on breeding patterns, habitat preferences, and climate induced changes would enhance our understanding of the bird ecology of KNP.

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