

Building evidence for conservation globally

Journal of Threatened TAXA

10.11609/jott.2025.17.3.26571-26762

www.threatenedtaxa.org

26 March 2025 (Online & Print)

17(3): 26571-26762

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)



Open Access





Publisher

Wildlife Information Liaison Development Societywww.wild.zooreach.org

Host

Zoo Outreach Organizationwww.zooreach.org

Srivari Illam, No. 61, Karthik Nagar, 10th Street, Saravanampatti, Coimbatore, Tamil Nadu 641035, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Ph: +91 9385339863 | www.threatenedtaxa.org
Email: sanjay@threatenedtaxa.org

EDITORS

Founder & Chief Editor

Dr. Sanjay Molur

Wildlife Information Liaison Development (WILD) Society & Zoo Outreach Organization (ZOO), Coimbatore, Tamil Nadu 641006, India

Assistant Editor

Dr. Chaithra Shree J., WILD/ZOO, Coimbatore, Tamil Nadu 641006, India

Managing Editor

Mr. B. Ravichandran, WILD/ZOO, Coimbatore, Tamil Nadu 641006, India

Associate Editors

Dr. Mandar Paingankar, Government Science College Gadchiroli, Maharashtra 442605, India**Dr. Ulrike Streicher**, Wildlife Veterinarian, Eugene, Oregon, USA**Ms. Priyanka Iyer**, ZOO/WILD, Coimbatore, Tamil Nadu 641006, India

Board of Editors

Dr. Russel Mittermeier

Executive Vice Chair, Conservation International, Arlington, Virginia 22202, USA

Prof. Mewa Singh Ph.D., FASc, FNA, FNAsc, FNAPsy

Ramanna Fellow and Life-Long Distinguished Professor, Biopsychology Laboratory, and Institute of Excellence, University of Mysore, Mysuru, Karnataka 570006, India; Honorary Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore; and Adjunct Professor, National Institute of Advanced Studies, Bangalore

Stephen D. Nash

Scientific Illustrator, Conservation International, Dept. of Anatomical Sciences, Health Sciences Center, T-8, Room 045, Stony Brook University, Stony Brook, NY 11794-8081, USA

Dr. Fred Pluthero

Toronto, Canada

Dr. Priya Davidar

Sigur Nature Trust, Chadapatti, Mavinhalla PO, Nilgiris, Tamil Nadu 643223, India

Dr. John Fellowes

Honorary Assistant Professor, The Kadoorie Institute, 8/F, T.T. Tsui Building, The University of Hong Kong, Pokfulam Road, Hong Kong

Prof. Dr. Mirco Solé

Universidade Estadual de Santa Cruz, Departamento de Ciências Biológicas, Vice-coordenador do Programa de Pós-Graduação em Zoologia, Rodovia Ilhéus/Itabuna, Km 16 (45662-000) Salobrinho, Ilhéus - Bahia - Brasil

Dr. Rajeev Raghavan

Professor of Taxonomy, Kerala University of Fisheries & Ocean Studies, Kochi, Kerala, India

English Editors**Mrs. Mira Bhojwani**, Pune, India**Dr. Fred Pluthero**, Toronto, Canada**Copy Editors****Ms. Usha Madgunki**, Zooreach, Coimbatore, India**Ms. Trisa Bhattacharjee**, Zooreach. Coimbatore, India**Ms. Paloma Noronha**, Daman & Diu, India**Web Development****Mrs. Latha G. Ravikumar**, ZOO/WILD, Coimbatore, India**Typesetting****Mrs. Radhika**, Zooreach, Coimbatore, India**Mrs. Geetha**, Zooreach, Coimbatore India**Fundraising/Communications****Mrs. Payal B. Molur**, Coimbatore, India**Subject Editors 2021–2023****Fungi****Dr. B. Shivaraju**, Bengaluru, Karnataka, India**Dr. R.K. Verma**, Tropical Forest Research Institute, Jabalpur, India**Dr. Vatsavaya S. Raju**, Kakatiya University, Warangal, Andhra Pradesh, India**Dr. M. Krishnappa**, Jnana Sahyadri, Kuvenpu University, Shimoga, Karnataka, India**Dr. K.R. Sridhar**, Mangalore University, Mangalagangotri, Mangalore, Karnataka, India**Dr. Gunjan Biswas**, Vidyasagar University, Midnapore, West Bengal, India**Dr. Kiran Ramchandra Ranadive**, Annaheb Magar Mahavidyalaya, Maharashtra, India**Plants****Dr. G.P. Sinha**, Botanical Survey of India, Allahabad, India**Dr. N.P. Balakrishnan**, Ret. Joint Director, BSI, Coimbatore, India**Dr. Shonil Bhagwat**, Open University and University of Oxford, UK**Prof. D.J. Bhat**, Retd. Professor, Goa University, Goa, India**Dr. Ferdinand Boero**, Università del Salento, Lecce, Italy**Dr. Dale R. Calder**, Royal Ontario Museum, Toronto, Ontario, Canada**Dr. Cleofas Cervancia**, Univ. of Philippines Los Baños College Laguna, Philippines**Dr. F.B. Vincent Florens**, University of Mauritius, Mauritius**Dr. Merlin Franco**, Curtin University, Malaysia**Dr. V. Irudayaraj**, St. Xavier's College, Palayamkottai, Tamil Nadu, India**Dr. B.S. Kholia**, Botanical Survey of India, Gangtok, Sikkim, India**Dr. Pankaj Kumar**, Department of Plant and Soil Science, Texas Tech University, Lubbock, Texas, USA.**Dr. V. Sampath Kumar**, Botanical Survey of India, Howrah, West Bengal, India**Dr. A.J. Solomon Raju**, Andhra University, Visakhapatnam, India**Dr. Vijayasankar Raman**, University of Mississippi, USA**Dr. B. Ravi Prasad Rao**, Sri Krishnadevaraya University, Anantapur, India**Dr. K. Ravikumar**, FRLHT, Bengaluru, Karnataka, India**Dr. Aparna Watve**, Pune, Maharashtra, India**Dr. Qiang Liu**, Xishuangbanna Tropical Botanical Garden, Yunnan, China**Dr. Noor Azhar Mohamed Shazili**, Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia**Dr. M.K. Vasudeva Rao**, Shiv Ranjan Housing Society, Pune, Maharashtra, India**Prof. A.J. Solomon Raju**, Andhra University, Visakhapatnam, India**Dr. Manda Datar**, Agharkar Research Institute, Pune, Maharashtra, India**Dr. M.K. Janarthanam**, Goa University, Goa, India**Dr. K. Karthigeyan**, Botanical Survey of India, India**Dr. Errol Vela**, University of Montpellier, Montpellier, France**Dr. P. Lakshminarasiham**, Botanical Survey of India, Howrah, India**Dr. Larry R. Noblick**, Montgomery Botanical Center, Miami, USA**Dr. K. Haridasan**, Pallavur, Palakkad District, Kerala, India**Dr. Analinda Manila-Fajard**, University of the Philippines Los Banos, Laguna, Philippines**Dr. P.A. Siru**, Central University of Kerala, Kasaragod, Kerala, India**Dr. Afroz Alam**, Banasthali Vidyapith (accredited A grade by NAAC), Rajasthan, India**Dr. K.P. Rajesh**, Zamorin's Guruvayurappan College, GA College PO, Kozhikode, Kerala, India**Dr. David E. Boufford**, Harvard University Herbaria, Cambridge, MA 02138-2020, USA**Dr. Ritesh Kumar Choudhary**, Agharkar Research Institute, Pune, Maharashtra, India**Dr. A.G. Pandurangan**, Thiruvananthapuram, Kerala, India**Dr. Navendu Page**, Wildlife Institute of India, Chandrabani, Dehradun, Uttarakhand, India**Dr. Kannan C.S. Warrier**, Institute of Forest Genetics and Tree Breeding, Tamil Nadu, India**Invertebrates****Dr. R.K. Avasthi**, Rohtak University, Haryana, India**Dr. D.B. Bastawade**, Maharashtra, India**Dr. Partha Pratim Bhattacharjee**, Tripura University, Suryamaninagar, India**Dr. Kailash Chandra**, Zoological Survey of India, Jabalpur, Madhya Pradesh, India**Dr. Ansie Dippenaar-Schoeman**, University of Pretoria, Queenswood, South Africa**Dr. Rory Dow**, National Museum of natural History Naturalis, The Netherlands**Dr. Brian Fisher**, California Academy of Sciences, USA**Dr. Richard Gallon**, Ilandudno, North Wales, LL30 1UP**Dr. Hemant V. Ghate**, Modern College, Pune, India**Dr. M. Monwar Hossain**, Jahangirnagar University, Dhaka, BangladeshFor Focus, Scope, Aims, and Policies, visit https://threatenedtaxa.org/index.php/JoTT/aims_scopeFor Article Submission Guidelines, visit <https://threatenedtaxa.org/index.php/JoTT/about/submissions>For Policies against Scientific Misconduct, visit https://threatenedtaxa.org/index.php/JoTT/policies_various

continued on the back inside cover

Cover: A bag worm with its beautiful heap of junk. Acrylics on 300 GSM paper by Dupati Poojitha based on a picture by Sanjay Molur.



An avifaunal checklist of the Zanskar Region, Ladakh Himalaya, India

Abid Hussain¹ , Zakir Hussain²  & Mumtaz Ali³ 

¹ Department of Zoology, Government Model Degree College Zanskar, Ladakh 194302, India.

² Department of Zoology, Government Degree College Kargil, Ladakh 194103, India.

³ Department of Zoology, EJM College, Leh, Ladakh 194101, India.

¹ abidjabiri@gmail.com (corresponding author), ²hzakir950@gmail.com, ³ mumtazmaahi28@gmail.com

Abstract: The present study highlights the significant records of the avifauna of the Zanskar Region of Ladakh Trans Himalaya and forms a first record of its kind. The study was conducted from 1 July 2023 to 30 June 2024, focusing on early morning and late evening observations. Using line transect and random encounter methods, around 81 bird species across 11 orders, and 27 families were recorded. Passeriformes emerged as the predominant order with (44 species). Among the avifauna, 45 species were identified as summer visitors, 27 as residents, six as passage migrants, and three as vagrants. Habitat-specific distribution patterns revealed 53 species in alpine meadows and grasslands, 16 in wetlands and riverine areas, and 12 in rocky cliffs and gorges. Notably, all species, except the Lammergeier *Gypaetus barbatus* and the Himalayan Griffon *Gyps himalayensis*, are categorized as 'Least Concern' according to the IUCN Red List. Both the Lammergeier and Himalayan Griffon are classified as 'Near Threatened', underscoring the region's biodiversity conservation importance.

Keywords: Avifauna, biodiversity, conservation status, habitat distribution, line transect, migratory patterns, random encounter methods.

Editor: Gopinathan Maheswaran, Zoological Survey of India, Kolkata, India.

Date of publication: 26 March 2025 (online & print)

Citation: Hussain, A., Z. Hussain & M. Ali (2025). An avifaunal checklist of the Zanskar Region, Ladakh Himalaya, India. *Journal of Threatened Taxa* 17(3): 26669-26679. <https://doi.org/10.11609/jott.9288.17.3.26669-26679>

Copyright: © Hussain et al. 2025. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use, reproduction, and distribution of this article in any medium by providing adequate credit to the author(s) and the source of publication.

Funding: None.

Competing interests: The authors declare no competing interests.

Author details: ABID HUSSAIN is an assistant professor in the Department of Zoology at Govt. Model Degree College, Zanskar. His research primarily focuses on animal diversity. ZAKIR HUSSAIN is a faculty member in the Department of Zoology at GDC Kargil. He has a strong passion for entomology, particularly in the field of insect diversity. MUMTAZ ALI is a PhD scholar specializing in the conservation genetics of wild animals. He is currently teaching at EJM College Leh.

Author contributions: AH—contributed to the study design, identification of species, conceptualization and supervision, draft writing, review editing and photography. ZH—contributed to data collection, survey work, photography and table preparation. MA—contributed to data collection, graph preparation and bibliographic study.

Acknowledgements: The authors express their sincere gratitude to the principal Government Degree College, Zanskar, for providing essential equipment during data collection. We also extend our heartfelt thanks to Shri Mohd Ilyaz, forest range officer, Zanskar, for his invaluable support in providing field guide booklets. Additionally, we appreciate the assistance of Murtaza Bashir in the preparation of this article.

INTRODUCTION

Birds are valuable bioindicators of environmental changes, as shifts in their populations, behaviors, and reproductive patterns often reflect the impacts of habitat fragmentation and ecological disturbances (Harisha & Hosetti 2009). Thus, understanding the diversity and structure of bird communities is crucial for avian conservation and landscape management (Kattan & Franco 2004).

India, one of the 17 mega-biodiversity countries, is home to 1,358 of the 11,000 bird species identified globally. A study conducted between 2011 and 2020 recorded 226 bird species in Ladakh, comprising 96 summer visitors, 83 passage migrants, 40 residents, and seven winter visitors. These species span 19 orders and 50 families, representing 72.90% of all species known in Ladakh and 18.23% of those in the Indian subcontinent. Among these, one species is classified as 'Endangered', eight as 'Near Threatened', two as 'Vulnerable', and 215 as 'Least Concern' on the IUCN Red List of threatened Species (Spengku et al. 2021).

Located within the Central Asian Flyway, the Union Territory of Ladakh in India serves as a critical stopover for migratory birds. Positioned just to the northern side of the Himalayan range, it provides essential resting and feeding grounds during spring and autumn migrations (Namgail & Yom-Tov 2009). The significance of this region is well-documented (Ali & Ripley 1971; Pfister 2004; Prins & Namgail 2017; Spengku et al. 2021; Newton 2023). According to (Pfister 2004), Ladakh's avian diversity can be categorized into four groups based on seasonal occurrence: resident birds, summer visitors, winter birds, and migrants.

Early avian studies in Ladakh commenced with (Adam 1859), followed by significant surveys throughout the 20th century (Mallon 1987; Mishra & Humbert-Droz 1998; Namgail 2005; Sangha & Naoroji 2005; Hussain & Pandav 2008; Namgail et al. 2013; Motup & Sahi 2013). The majority of research has concentrated on eastern and central Ladakh, with western regions receiving comparatively less attention. Western Ladakh has been primarily documented through sporadic observations rather than comprehensive surveys (Ahmed et al. 2015). It has reported 69 bird species in the Rangdum Valley, comprising six passage migrants, 25 resident species, 36 summer visitors, and three vagrants. These species belong to seven orders and 24 families, representing approximately 23% of all documented species in Ladakh (Ahmed et al. 2015).

The Zanskar Valley, part of the Suru Valley in Kargil

District of Ladakh, is recognized as an Important Bird and Biodiversity Area (IBA) under the A3 criterion (Rahmani et al. 2016), indicating its significance for species unique to specific biomes. This study aims to document the avian diversity of the Zanskar Region, which remains largely unexplored with sparse documentation on its bird diversity.

MATERIAL AND METHOD

Study area

The Zanskar Valley, situated in the Kargil District of the Union Territory of Ladakh, India, is renowned for its distinctive geography and diverse biodiversity. It is nestled between the Great Himalayan and Zanskar mountain ranges, covering an area of approximately 7,000 km². This remote region features a high-altitude desert landscape, with elevations ranging 3,500–7,000 m (Kumar 2020). Zanskar experiences an extreme climate characterized by long, harsh winters and short, cool summers, with minimal precipitation, making it one of India's driest regions (Bhattacharya 2018).

Vegetation in Zanskar is sparse and predominantly consists of cold desert shrubs, alpine grasses, and occasional willow and poplar trees along watercourses. Despite its limited vegetation, the area supports a diverse array of plant life crucial for sustaining various bird species, especially those adapted to high-altitude conditions.

Zanskar's diverse habitats, including river valleys, wetlands, rocky cliffs, and alpine meadows, host a wide variety of bird species. Key avian habitats in the region include wetlands and riverine areas, alpine meadows and grasslands, and rocky cliffs and gorges. These habitats provide critical ecosystems for a range of bird species adapted to the challenging conditions of this remote and rugged terrain (Sharma 2019).

Data collection

The present study was conducted from 01 July 2023 to 30 June 2024, and involved systematic field surveys carried out daily during specific time intervals. Surveys were conducted early in the morning (before 0800 h) and late in the evening (after 1500 h). During the peak winter months of January and February, random surveys were conducted between 1000 h and 1500 h to avoid the extreme cold temperatures. Avifaunal observations were made using both the line transect and random encounter methods (Sutherland et al. 2006). Observations and photographs were captured

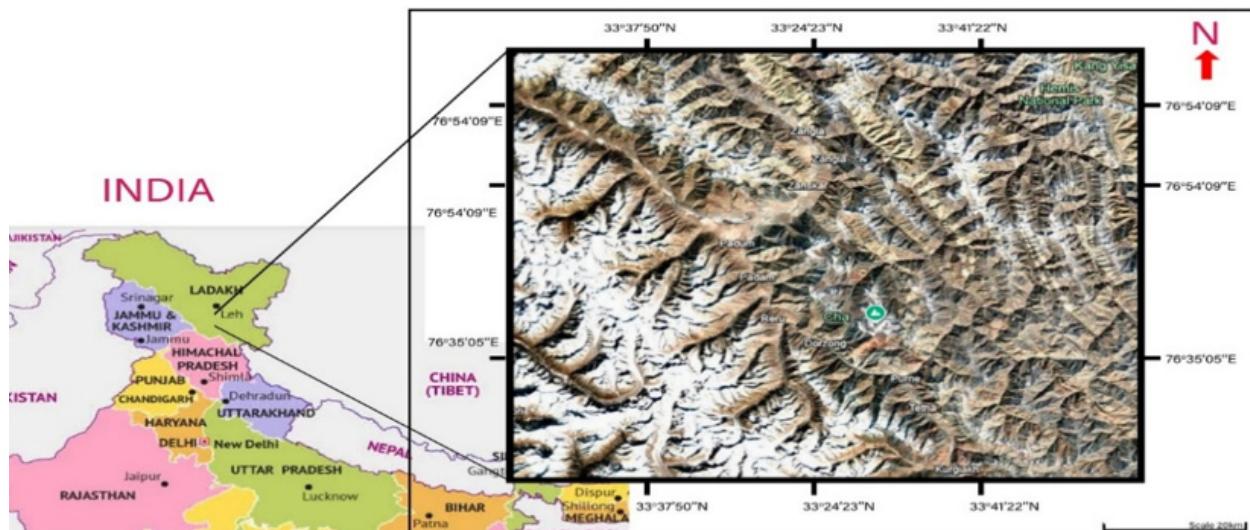


Image 1. Location of the study area (Zanskar).

using a Nikon 10 × 50 binoculars paired with a 200–500 mm lens. Bird identification was facilitated through the use of standard field guides (Ali & Ripley 1987; Grimmett et al. 2016).

The classification of bird sightings considered their threatened status according to the IUCN Red List (IUCN 2022). Birds were categorized based on their frequency of sighting: A – abundant (sighted more than 30 times), C – common (sighted up to less than 15 times), O – occasional (sighted less than 10 times), and R – Rare (sighted less than 5 times), following guidelines adapted from (Mackinnon & Philips 1993) and (Thakur 2008).

RESULTS AND DISCUSSION

In the present study, a total of 81 bird species belonging to 11 orders and 27 families were documented. It accounts for about 27% of the species reported till date from Ladakh. The present findings align with the earlier study conducted by Holmes (1986), Motup & Sahi (2013), Ahmed et al. (2015), and Ajaz et al. (2021). Some similar studies were conducted on the avifauna of Ladakh. Tsewang & Sahi (2013) reported 91 bird species in the Kargil District. Ajaz et al. (2021) documented 136 species in Zanskar and Suru Valley. Ahmed et al. (2015) reported 69 bird species from Rangdum Valley. Holmes (1986) published a checklist of 128 species in Suru Valley. Khan & Kumar (2022) reported 140 bird species in Suru Valley.

Among these, Passeriformes was the most dominant order (50 species) followed by Charadriiformes (nine

species), Columbiformes and Anseriformes (five species each), Accipitriformes (four species), Apodiformes and Galliformes (two species each), Bucerotiformes, Cuculiformes, Falconiformes and Pelecaniformes (one species each). The order Passeriformes was reported as the most dominant order in different regions of Ladakh in general and the Zanskar Valley in particular (Holmes 1986; Tsewang & Sahi 2013; Ahmed et al. 2015; Ajaz et al. 2021).

Among these, 45 species were summer visitors, 27 species were residents, six species were passage migrants, and three species were vagrants. The data analysis revealed that the majority of bird species observed were summer visitors (55.6%), followed by resident species (33.3%), passage migrants (7.4%), and vagrants (3.7%). Similar findings were reported by Ahmed et al. (2015) and (Holmes 1986). The availability and accessibility of resources during the summer season can be correlated with a higher percentage of summer visitor birds in the region provide breeding and feeding habitat (Holmes 1986; Hussain & Pandav 2008; Namgail et al. 2009; Ahmed et al. 2015). Further, Ahmed et al. (2015) recorded 69 species in Rangdum Valley in which the resident status of *Passer domesticus* contradicts the present finding as it was found that the *Passer domesticus* is a summer visitor.

Among the 81 recorded species, 53 were found in alpine meadows and grasslands, 16 species were observed in wetlands and riverine areas, and 12 species were spotted in rocky cliffs and gorges. The majority of the bird's species were found in the Alpine meadows and grasslands (65.4%) followed by wetland and

Table 1. List of avifauna found in the Zanskar Region and their IUCN Red List status.

	Species	Common name	Status	IUCN Red List status	Sighting status	Habitat status
Order (Family) Anseriformes (Anatidae)						
1.	<i>Mergus merganser</i>	Common Merganser	Resident	LC	Common	WL & RA
2.	<i>Tadorna ferruginea</i>	Ruddy Shelduck	Summer Visitor	LC	Occasional	WL & RA
3.	<i>Mareca penelope</i>	Eurasian Wigeon	Summer Visitor	LC	Occasional	WL & RA
4.	<i>Anas querquedula</i>	Garganey	Passage \Migrant	LC	Rare	WL & RA
5.	<i>Anas acuta</i>	Northern Pintail	Passage migrant	LC	Rare	WL & RA
Apodiformes (Apodidae)						
6.	<i>Apus apus</i>	Common Swift	Summer visitor	LC	Common	RC & GL
7.	<i>Apus pacificus</i>	Fork-tailed Swift	Summer Visitor	LC	Common	RC & GL
Passeriformes (Cinclidae)						
8.	<i>Cinclus cinclus</i>	White-throated Dipper	Resident	LC	Rare	WL & RA
9.	<i>Cinclus pallasii</i>	Brown Dipper	Resident	LC	Rare	WL & RA
Bucerotiformes (Upupidae)						
10.	<i>Upupa epops</i>	Common Hoopoe	Summer visitor	LC	Abundant	AM & GL
Cuculiformes (Cuculidae)						
11.	<i>Cuculus canorus</i>	Eurasian Cuckoo	Summer visitor	LC	Common	AM & GL
Galliformes (Phasianidae)						
12.	<i>Alectoris chukar</i>	Chukar Partridge	Resident	LC	Abundant	RC & G
13.	<i>Tetraogallus himalayensis</i>	Himalayan Snowcock	Resident	LC	Occasional	RC & G
Columbiformes (Columbidae)						
14.	<i>Columba livia</i>	Rock Pigeon	Resident	LC	Abundant	AM & GL
15.	<i>Columba rupestris</i>	Hill Pigeon	Resident	LC	Abundant	RC & G
16.	<i>Columba leuconota</i>	Snow Pigeon	Resident	LC	Abundant	AM & GL
17.	<i>Streptopelia orientalis</i>	Oriental Turtle Dove	Summer visitor	LC	Abundant	AM & GL
18.	<i>Streptopelia senegalensis</i>	Laughing Dove	Passage migrant	LC	Rare	AM & GL
Charadriiformes (Pteroclidae)						
19.	<i>Tringa totanus</i>	Common Redshank	Summer visitor	LC	Common	WL & RA
20.	<i>Tringa nebularia</i>	Common Greenshank	Summer Visitor	LC	Abundant	WL & RA
21.	<i>Actitis hypoleucos</i>	Common Sandpiper	Passage migrant	LC	Occasional	WL & RA
22.	<i>Calidris minuta</i>	Little Stint	Summer Visiter	LC	Occassional	WL & RA
23.	<i>Tringa glareola</i>	Wood Sandpiper	Summer Visitor	LC	Common	WL & RA
Charadriiformes (Charadriidae)						
24.	<i>Ibidorhyncha struthersii</i>	Ibis-bill	Summer visitor	LC	Common	WL & RA
25.	<i>Himantopus himantopus</i>	Black-winged Stilt	Passage migrant	LC	Abundant	WL & RA
26.	<i>Charadrius mongolus</i>	Lesser Sand Plover	Summer visitor	LC	Common	WL & RA
Charadriiformes (Laridae)						
27.	<i>Sterna hirundo</i>	Common Tern	Summer visitor	LC	Rare	AM & GL
Accipitriformes (Accipitridae)						
28.	<i>Gypaetus barbatus</i>	Lammergeier	Resident	NT	Rare	RC & G
29.	<i>Gyps himalayensis</i>	Himalayan Griffon	Resident	NT	Rare	RC & G
30.	<i>Accipiter nisus</i>	Eurasian Sparrow Hawk	Summer visitor	LC	Common	RC & G
31.	<i>Aquila chrysaetos</i>	Golden Eagle	Resident	LC	Rare	RC & G

	Species	Common name	Status	IUCN Red List status	Sighting status	Habitat status
Falconiformes (Falconidae)						
32.	<i>Falco tinnunculus</i>	Common Kestrel	Summer visitor	LC	Rare	RC & G
Pelecaniformes (Ardeidae)						
33.	<i>Ardeola grayii</i>	India Pond Heron	Summer visitor	LC	Rare	WL & RA
Passeriformes (Laniidae)						
34.	<i>Lanius schach</i>	Long-tailed Shrike	Summer visitor	LC	Common	AM & GL
35.	<i>Lanius tephronotus</i>	Grey-backed Shrike	Summer visitor	LC	Common	AM & GL
36.	<i>Lanius minor</i>	Lesser Gray Shrike	Summer visitor	LC	Common	AM & GL
Passeriformes (Muscicapidae)						
37.	<i>Monticola solitarius</i>	Blue Rock Thrush	Summer visitor	LC	Rare	AM & GL
38.	<i>Myophonus caeruleus</i>	Blue Whistling Thrush	Summer visitor	LC	Occasional	AM & GL
39.	<i>Calliope pectoralis</i>	Himalayan Ruby Throat	Summer visitor	LC	Rare	AM & GL
40.	<i>Luscinia svecica</i>	Bluethroat	Summer visitor	LC	Rare	AM & GL
41.	<i>Phoenicurus ochruros</i>	Black Redstart	Summer visitor	LC	Abundant	AM & GL
42.	<i>Phoenicurus leucocephalus</i>	White-capped Redstart	Summer visitor	LC	Occasional	AM & GL
43.	<i>Phoenicurus erythrogaster</i>	White-winged Redstart	Resident	LC	Common	AM & GL
44.	<i>Phoenicurus phoenicurus</i>	Common Redstart	Resident	LC	Common	AM & GL
Passeriformes (Corvidae)						
45.	<i>Pica pica</i>	Eurasian Magpie	Resident	LC	Occasional	AM & GL
46.	<i>Pyrrhocorax pyrrhocorax</i>	Red-Billed Chough	Resident	LC	Abundant	AM & GL
47.	<i>Pyrrhocorax graculus</i>	Yellow-Billed Chough	Resident	LC	Abundant	AM & GL
48.	<i>Corvus splendens</i>	House Crow	Vagrant	LC	Rare	AM & GL
49.	<i>Corvus corone</i>	Carrion Crow	Resident	LC	Rare	AM & GL
50.	<i>Corvus corax</i>	Common Raven	Resident	LC	Rare	AM & GL
Passeriformes (Sturnidae)						
51.	<i>Sturnia pagodarum</i>	Brahminy Starling	Summer visitor	LC	Rare	AM & GL
Passeriformes (Paridae)						
52.	<i>Parus cinereous</i>	Cinereous Tit	Resident	LC	Rare	AM & GL
Passeriformes (Hirundinidae)						
53.	<i>Hirundo rupestris</i>	Eurasian Crag Martin	Summer visitor	LC	Common	RC & G
54.	<i>Delichon urbicum</i>	Northern House Martin	Summer visitor	LC	Common	RC & G
Passeriformes (Fringillidae)						
55.	<i>Serinus pusillus</i>	Fire-fronted Serin	Resident	LC	Common	AM & GL
56.	<i>Carduelis carduelis caniceps</i>	European Goldfinch	Summer visitor	LC	Abundant	AM & GL
57.	<i>Leucosticte nemoricola</i>	Plain Mountain Finch	Summer visitor	LC	Abundant	AM & GL
58.	<i>Leucosticte brandti</i>	Brandt's Mountain Finch	Resident	LC	Abundant	AM & GL
59.	<i>Carpodacus erythrinus</i>	Common Rosefinch	Summer visitor	LC	Abundant	AM & GL
60.	<i>Carpodacus rubicilla</i>	Great Rosefinch	Resident	LC	Abundant	AM & GL
61.	<i>Carpodacus puniceus</i>	Red-fronted Rosefinch	Resident	LC	Abundant	AM & GL
Passeriformes (Turdidae)						
62.	<i>Turdus unicolor</i>	Tickell's Thrush	Resident	LC	Occasional	AM & GL
Passeriformes (Alaudidae)						
63.	<i>Alauda gulgula</i>	Oriental Skylark	Summer visitor	LC	Common	AM & GL
64.	<i>Eremophila alpestris</i>	Horned Lark	Resident	LC	Abundant	AM & GL
65.	<i>Galerida cristata</i>	Crested Lark	Summer visitor	LC	Abundant	AM & GL

	Species	Common name	Status	IUCN Red List status	Sighting status	Habitat status
66.	<i>Melanocorypha maxima</i>	Tibetan Lark	Summer visitor	LC	Occasional	AM & GL
Passeriformes (Passeridae)						
67.	<i>Passer domesticus</i>	House Sparrow	Summer Visitor	LC	Abundant	AM & GL
68.	<i>Montifringilla adamsi</i>	Tibetan Snowfinch	Resident	LC	Rare	AM & GL
Passeriformes (Prunellidae)						
69.	<i>Prunella rubeculoides</i>	Robin Accentor	Resident	LC	Common	AM & GL
Passeriformes (Emberizidae)						
70.	<i>Emberiza cia</i>	Rock Bunting	Summer visitor	LC	Abundant	AM & GL
Passeriformes (Motacillidae)						
71.	<i>Motacilla alba</i>	White Wagtail	Summer visitor	LC	Abundant	AM & GL
72.	<i>Motacilla citreola</i>	Citrine Wagtail	Summer visitor	LC	Abundant	AM & GL
73.	<i>Motacilla flava</i>	Yellow Wagtail	Summer visitor	LC	Occasional	AM & GL
74.	<i>Motacilla cinerea</i>	Grey Wagtail	Summer visitor	LC	Rare	AM & GL
Passeriformes (Sylviidae)						
75.	<i>Phylloscopus collybita</i>	Common Chiffchaff	Passage migrant	LC	Abundant	AM & GL
76.	<i>Phylloscopus sindianus</i>	Mountain Chiffchaff	Summer visitor	LC	Common	AM & GL
77.	<i>Phylloscopus neglectus</i>	Plain Leaf Warbler	Vagrant	LC	Rare	AM & GL
78.	<i>Phylloscopus affinis</i>	Tickell's Leaf Warbler	Summer visitor	LC	Occasional	AM & GL
79.	<i>Phylloscopus griseolus</i>	Sulphur-bellied Warbler	Summer visitor	LC	Common	AM & GL
80.	<i>Phylloscopus fuscatus</i>	Dusky Warbler	Vagrant	LC	Rare	AM & GL
81.	<i>Sylvia curruca</i>	Lesser Whitethroat	Summer visitor	LC	Occasional	AM & GL

WL—Wetlands | RA—Riverine areas | AM—Alpine meadows | GL—Grasslands | RC—Rocky cliffs | G—Gorges | LC—Least Concern | NT—Near Threatened.

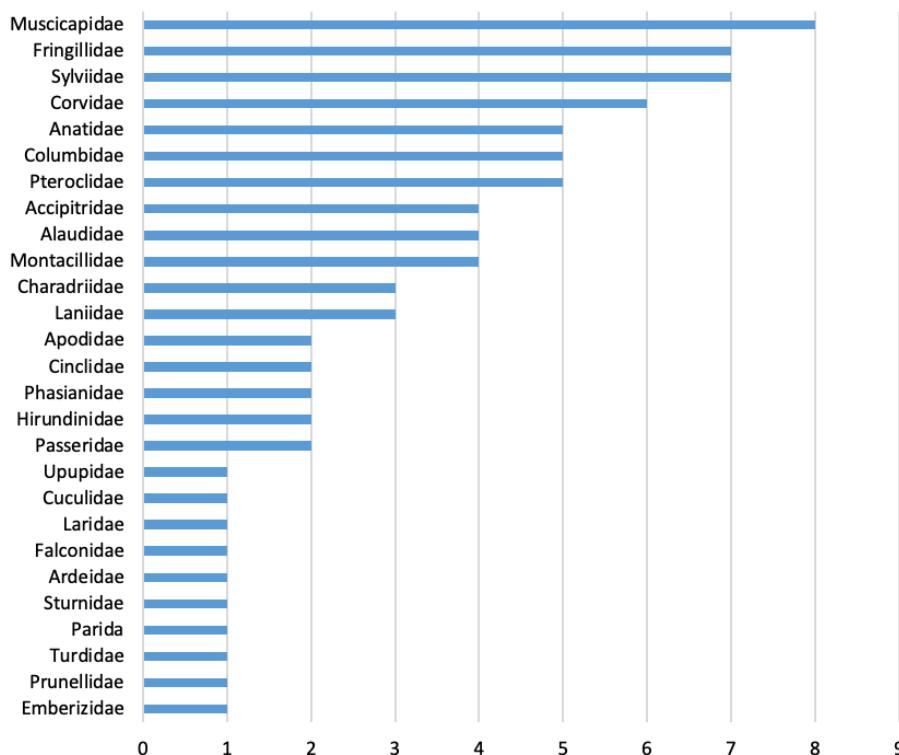


Figure 1. Species richness across different bird families.

riverine areas (19.8%) and least in the rocky cliffs and gorges (14.8%). Ahmed et al. (2015) also reported the maximum number of bird species along the herbaceous meadows of Zanskar Region.

All bird species identified in the Zanskar Region are classified as 'Least Concern' according to the IUCN Red List, except for two species, the *Gypaetus barbatus* Lammergeier and the *Gyps himalayensis* Himalayan Griffon, which are categorized as 'Near Threatened'. Khan & Kumar (2022) also reported *Gypaetus barbatus* and *Gyps himalayensis* in addition to *Umenius arquata* and *Locustella* species in the Suru Valley of Ladakh Region.

The Zanskar Valley harbor is home to several bird species found in the Indian subcontinent. It also acts as an important stopover and important summer migration site for the summer visitor birds of the Valley. Besides, the occurrence of 'Near Threatened' species like *Gypaetus barbatus* and *Gyps himalayensis* listed under IUCN Red list shows the importance of the valley regarding avifaunal diversity. A low diversity of avifauna in Zanskar Valley can be attributed to its fragile ecosystem with harsh climatic conditions, low vegetative cover, freezing temperatures, and scanty rainfall. In addition, overgrazing, urbanization, and habitat destruction pose significant threats to the valley's bird species diversity. The forest cover is mainly in the form of salix and poplar trees, which are often preferred habitats for birds, and is utilized on a larger scale for construction purposes, thereby reducing the bird diversity in the valley. The agricultural expansion by the native people is disrupting the local ecosystem. Moreover, the Zanskar Valley is a beautiful and unique tourist destination and the rising influx of tourists at an enormous scale poses a significant concern for the native birds and the wildlife populations of the Zanskar Valley.

It is the need of the hour to protect the avifauna diversity and the fragile environment of the Zanskar Valley. It is the joint responsibility of the administration as well as the local community to conserve the avifauna and its habitats in the Zanskar Valley from the impacts of unchecked development, uncontrolled grazing, and the rising tourism influx. The Ladakh region comprises three protected areas namely Hemis National Park, Karakoram Wildlife Sanctuary, and Changthang Wildlife Sanctuary. It also features two Ramsar sites. The Tsomoriri and Tso-Kar are situated in the Leh District. The Zanskar Valley is concerning in terms of lack of protected areas which poses a threat to the local wildlife population including the bird species. For the conservation of the avifaunal diversity of Zanskar Valley, it is crucial that the

administration takes a significant part in establishing these protected areas. It is also the responsibility of every native person to actively contribute to the preservation of avifaunal diversity and its habitats in the Valley.

CONCLUSION

The present survey provides a checklist of the avifauna of the Zanskar Valley, listing 81 bird species belonging to 11 orders and 27 families. Passeriformes was the most dominant order with 50 species. The majority of the birds were summer visitors with 45 species. They migrate to the area as it offers a suitable environment for feeding and breeding needs. The Zanskar Valley is a paradise for avifaunal diversity, the increasing pressure on the delicate ecosystem poses a threat to bird diversity. The agricultural expansion, increasing tourism, and the various developmental projects are directly contributing to declining avifaunal diversity in Zanskar Valley. The information about the avifauna is scanty and further study is needed to explore the avian species of the Valley. Therefore, it is the need of the hour to monitor the region systematically in the rapidly changing environment with a focused study on the conservation of the avifauna of the region.

REFERENCES

Adams, A.L. (1859). The birds of Cashmere and Ladakh. *Proceeding of the Zoological Society London* 27: 169–190.

Ahmed, T., A. Khan & P. Chandan (2015). A pilot survey of the avifauna of Rangdum Valley, Kargil, Ladakh (Indian trans-Himalaya). *Journal of Threatened Taxa* 7(6): 7274–7281. <https://doi.org/10.11609/JoTT.o3965.7274-81>

Ali, S., S.D. Ripley & J.H. Dick (1987). *Compact Handbook of the Birds of India and Pakistan: Together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*. OUP India, Compact 2 Revised Edition, 890 pp.

Ali, S. & S.D. Ripley (1971). *Handbook of the Birds of India and Pakistan Together with those of Bangladesh, Nepal, Bhutan and Ceylon*. Vol. 6, Cuckoo-shrikes to babaxes: Synopsis no. 1064–1270, Colour plates 65–72. Oxford University Press.

Bhattacharya, S. (2018). The harsh climate and biodiversity of the Zanskar Valley. *Himalayan Ecology Review* 5(1): 45–57.

Grimmett R., C. Inskip & T. Inskip (1998). *Pocket Guide to the Birds of Indian Subcontinent*. Oxford University Press, Mumbai, 384 pp.

Harisha, M.N. & B.B. Hosetti (2009). Diversity and distribution of avifauna of Lakkavalli range forest, Bhadra wildlife sanctuary, western ghat, India. *Ecoprint: An International Journal of Ecology* 16: 21–27.

Holmes, P.R. (1986). Avifauna of the Suru Valley, Ladakh. *Forktail* 2: 21–41.

Hussain, S.A. & B. Pandav (2008). Status of breeding water birds in Changthang Cold Desert Sanctuary, Ladakh. *Indian Forester* 134(4): 469–480.

Hussain A., A. Ahmad, M. Akram, T. Kunchok & M. Raza (2021). Survey of avifauna of Ladakh 2011 to 2020. *Cheetal* 58(2): 19–41.



Image 2. 1—Himalayan Rubythroat | 2—Chukar Partridge | 3—Bluethroat | 4—White-winged Redstart | 5—White-throated Dipper | 6—Eurasian Magpie | 7—Tickell's Thrush | 8—Common Greenshank | 9—European Goldfinch | 10—Common Tern | 11—Common Rosefinch | 12—Grey Wagtail | 13—Wood Sandpiper | 14—White Wagtail | 15—Black Redstart.

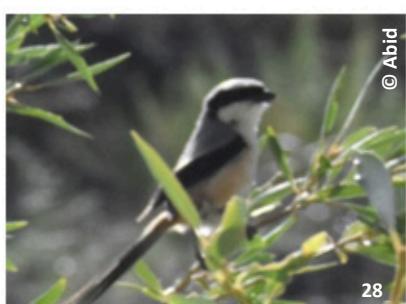


Image 2 cont. 16—House Sparrow | 17—Great Rose Finch | 18—Mongolian Finch | 19—Common Redstart | 20—Black-winged Stilt | 21—Desert Wheateater | 22—Citrine Wagtail | 23—Ruddy Shelduck | 24—Robin Accentor | 25—Crested Lark | 26—Ibis-bill | 27—Eurasian Wigeon | 28—Lesser Grey Shrike | 29—Common Cuckoo | 30—Yellow-billed Chough.

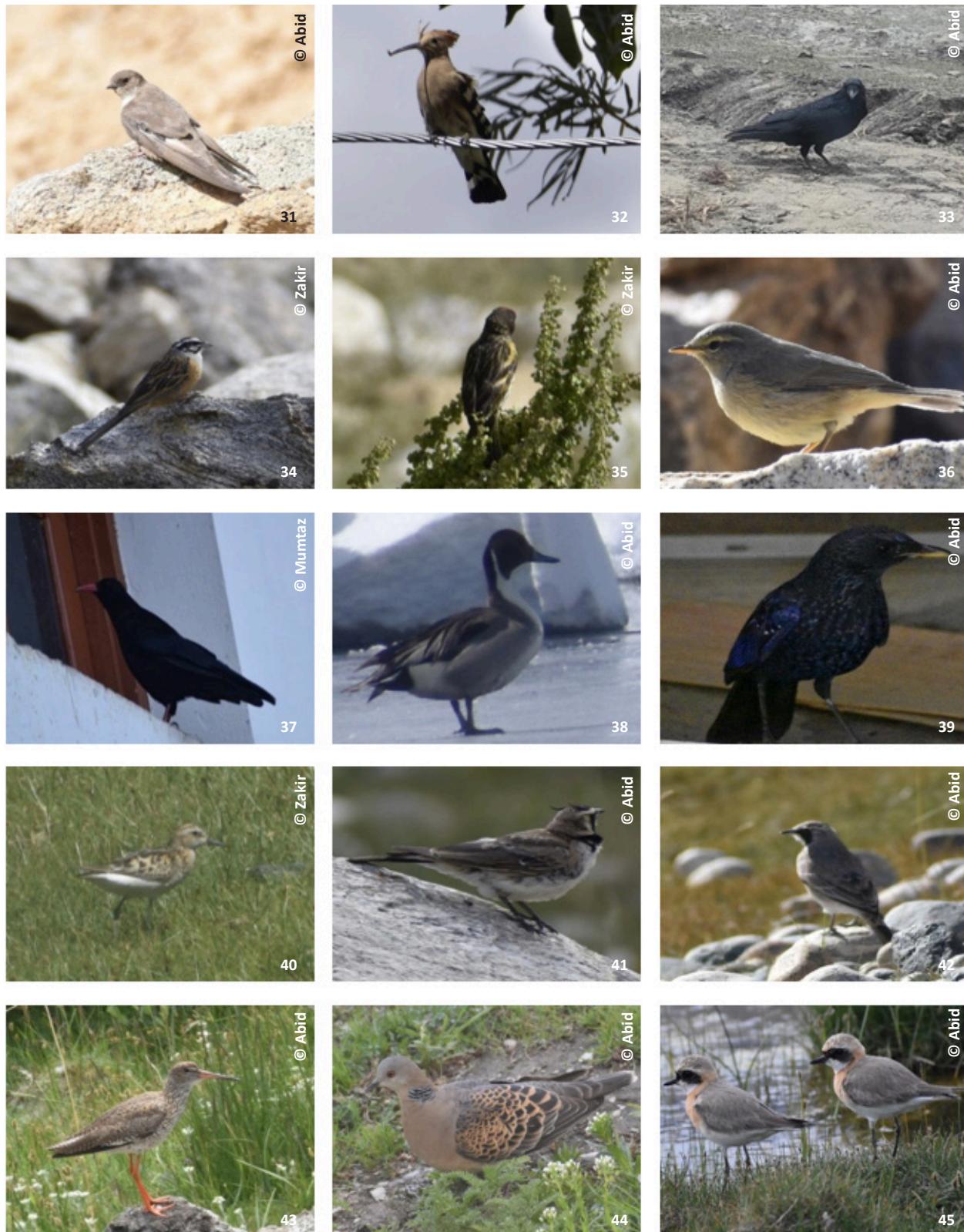


Image 2 cont. 31—Eurasian Crag Martin | 32—Common Hoopoe | 33—Common Raven | 34—Rock Bunting | 35—Fire-fronted Serin | 36—Sulphur-billed Warbler | 37—Red-billed Chough | 38—Northern Pintail | 39—Blue-whistling Thrush | 40—Little Stint | 41—Horned Lark | 42—Northern Wheateater | 43—Common Redshank | 44—Oriental Turtle Dove | 45—Lesser Sand Plover.

Kattan, G.H. & P. Franco (2004). Bird diversity along elevational gradients in the Andes of Colombia: area and mass effects. *Global Ecology and Biogeography* 13(5): 451–458.

Khan, I.Q. & A. Kumar (2022). Avifauna of Suru Valley, pp. 85–99. In: Ilyas, O. & A. Khan (eds.). *Case Studies of Wildlife Ecolofy and Conservation in India*. Routledge, London, 318 pp.

Kumar, R. (2020). Geography and climate of Zanskar Valley: a study of the Ladakh Region. *Ladakh Journal of Geography* 14(3): 112–124.

Mallon, D.P. (1987). The winter birds of Ladakh. *Forktail* 3: 27–41.

MacKinnon, J. & K. Philips (1993). *A Field Guide to the Birds of Sumatra, Java and Bali*. Oxford University Press, Oxford, United Kingdom, 512 pp.

Mishra, C. & B. Humbert-Droz (1998). Avifaunal survey of Tsomoriri Lake and adjoining Nuro Sumdo Wetland in Ladakh, Indian trans-Himalaya. *Forktail* 14: 65–67.

Motup, T. & D.N. Sahi (2013). Feeding guilds of the avifauna of District Kargil in Jammu and Kashmir State. *Environment Conservation Journal* 14(1&2): 107–111. <https://doi.org/10.36953/ECJ.2013.141219>

Namgail, T. & Y. Yom-Tov (2009). Elevational range and timing of breeding in the birds of Ladakh: the effects of body mass, status and diet. *Journal of Ornithology* 150: 505–510.

Namgail, T., D. Mudappa & T.R.S. Raman (2009). Waterbirds number at high altitude lake in eastern Ladakh, India. *Wildfowl* 59: 135–142.

Namgail, T. (2005). Winter birds of the Gya-Miru Wildlife Sanctuary, Ladakh, Jammu and Kashmir, India. *Indian Birds* 1(2): 26–28.

Namgail, T., D. Mudappa & T.R.S. Raman (2013). Waterbird numbers at high altitude lakes in eastern Ladakh, India. *Wildfowl* 59: 135–142.

Newton, I. (2023). *The Migration Ecology of Birds*. Elsevier-Academic Press, 724 pp.

Pfister, O. (2001). Birds recorded during visits to Ladakh, India, from 1994 to 1997. *Forktail* 17: 81–90.

Pfister, O. (2004). *Birds and Mammals of Ladakh*. Oxford University Press, 361 pp.

Prins, H.H.T. & T. Namgail (2017). Bird migration across the Himalayas: wetland functioning amidst mountains and glaciers. Cambridge University Press, 440 pp. <https://doi.org/10.1017/9781316335420>

Rahmani, A.R., M.Z. Islam & R.M. Kasambe (2016). *Important Bird and Biodiversity Areas in India: Priority Sites for Conservation (Revised and updated)*. Bombay Natural History Society, Indian Bird Conservation Network, Royal Society for the Protection of Birds, and BirdLife International (U.K.), xii + 1992 pp.

Sangha, H.S. & R. Naoroji (2005). Occurrence of Little Cormorant Phalacrocorax niger in Ladakh. *Journal of the Bombay Natural History Society* 102(1): 99.

Sharma, A. (2019). Avian biodiversity in the Zanskar Valley: a habitat analysis. *Journal of Himalayan Ecology* 8(2): 74–82.

Spengku, A., B. Brown & C. Smith (2021). Assessing wildlife conservation status. *Environmental Studies Journal* 45(2): 123–134. <https://doi.org/10.1234/esj.2021.05678>

Sutherland, W.J. (2006). *Ecological Census Techniques: A Handbook (2nd Edition)*. Cambridge University Press, Cambridge, UK. 432 pp.

Thakur, M.L. (2008). Studies on status and diversity of avifauna in Himachal Pradesh. Ph.D. thesis, Himachal Pradesh University, Shimla, India, 306 pp.

Mr. Jatishwor Singh Irungbam, Biology Centre CAS, Branišovská, Czech Republic.
Dr. Ian J. Kitching, Natural History Museum, Cromwell Road, UK
Dr. George Mathew, Kerala Forest Research Institute, Peechi, India
Dr. John Noyes, Natural History Museum, London, UK
Dr. Albert G. Orr, Griffith University, Nathan, Australia
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
Dr. Nancy van der Poorten, Toronto, Canada
Dr. Karen Schnabel, NIWA, Wellington, New Zealand
Dr. R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, Pune, India
Dr. Manju Siliwal, WILD, Coimbatore, Tamil Nadu, India
Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India
Dr. K.A. Subramanian, Zoological Survey of India, New Alipore, Kolkata, India
Dr. P.M. Sureshan, Zoological Survey of India, Kozhikode, Kerala, India
Dr. R. Varatharajan, Manipur University, Imphal, Manipur, India
Dr. Eduard Vives, Museu de Ciències Naturals de Barcelona, Terrassa, Spain
Dr. James Young, Hong Kong Lepidopterists' Society, Hong Kong
Dr. R. Sundararaj, Institute of Wood Science & Technology, Bengaluru, India
Dr. M. Nithyanandan, Environmental Department, La Al Kuwait Real Estate. Co. K.S.C., Kuwait
Dr. Himender Bharti, Punjabi University, Punjab, India
Mr. Purnendu Roy, London, UK
Dr. Saito Motoki, The Butterfly Society of Japan, Tokyo, Japan
Dr. Sanjay Sondhi, TITLI TRUST, Kalpavriksh, Dehradun, India
Dr. Nguyen Thi Phuong Lien, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Dr. Nitin Kulkarni, Tropical Research Institute, Jabalpur, India
Dr. Robin Wen Jiang Ngiam, National Parks Board, Singapore
Dr. Lional Monod, Natural History Museum of Geneva, Genève, Switzerland.
Dr. Asheesh Shivam, Nehru Gram Bharti University, Allahabad, India
Dr. Rosana Moreira da Rocha, Universidade Federal do Paraná, Curitiba, Brasil
Dr. Kurt R. Arnold, North Dakota State University, Saxony, Germany
Dr. James M. Carpenter, American Museum of Natural History, New York, USA
Dr. David M. Claborn, Missouri State University, Springfield, USA
Dr. Karen Schnabel, Marine Biologist, Wellington, New Zealand
Dr. Amazonas Chagas Júnior, Universidade Federal de Mato Grosso, Cuiabá, Brasil
Mr. Monsoon Jyoti Gogoi, Assam University, Silchar, Assam, India
Dr. Heo Chong Chin, Universiti Teknologi MARA (UiTM), Selangor, Malaysia
Dr. R.J. Shiel, University of Adelaide, SA 5005, Australia
Dr. Siddharth Kulkarni, The George Washington University, Washington, USA
Dr. Priyadarshan Dharma Rajan, ATREE, Bengaluru, India
Dr. Phil Alderslade, CSIRO Marine And Atmospheric Research, Hobart, Australia
Dr. John E.N. Veron, Coral Reef Research, Townsville, Australia
Dr. Daniel Whitmore, State Museum of Natural History Stuttgart, Rosenstein, Germany.
Dr. Yu-Feng Hsu, National Taiwan Normal University, Taipei City, Taiwan
Dr. Keith V. Wolfe, Antioch, California, USA
Dr. Siddharth Kulkarni, The Hormiga Lab, The George Washington University, Washington, D.C., USA
Dr. Tomas Ditrich, Faculty of Education, University of South Bohemia in Ceske Budejovice, Czech Republic
Dr. Mihaly Foldvari, Natural History Museum, University of Oslo, Norway
Dr. V.P. Uniyal, Wildlife Institute of India, Dehradun, Uttarakhand 248001, India
Dr. John T.D. Caleb, Zoological Survey of India, Kolkata, West Bengal, India
Dr. Priyadarshan Dharma Rajan, Ashoka Trust for Research in Ecology and the Environment (ATREE), Royal Enclave, Bangalore, Karnataka, India

Fishes

Dr. Topiltzin Contreras MacBeath, Universidad Autónoma del estado de Morelos, México
Dr. Heok Hee Ng, National University of Singapore, Science Drive, Singapore
Dr. Rajeev Raghavan, St. Albert's College, Kochi, Kerala, India
Dr. Robert D. Sluka, Chiltern Gateway Project, A Rocha UK, Southall, Middlesex, UK
Dr. E. Vivekanandan, Central Marine Fisheries Research Institute, Chennai, India
Dr. Davor Zanella, University of Zagreb, Zagreb, Croatia
Dr. A. Biju Kumar, University of Kerala, Thiruvananthapuram, Kerala, India
Dr. Akhilesh KV, ICAR-Central Marine Fisheries Research Institute, Mumbai Research Centre, Mumbai, Maharashtra, India
Dr. J.A. Johnson, Wildlife Institute of India, Dehradun, Uttarakhand, India
Dr. R. Ravinesh, Gujarat Institute of Desert Ecology, Gujarat, India

Amphibians

Dr. Sushil K. Dutta, Indian Institute of Science, Bengaluru, Karnataka, India
Dr. Annemarie Ohler, Muséum national d'Histoire naturelle, Paris, France

Reptiles

Dr. Gernot Vogel, Heidelberg, Germany
Dr. Raja Vyas, Vadodara, Gujarat, India
Dr. Pritpal S. Soorae, Environment Agency, Abu Dhabi, UAE.
Prof. Dr. Wayne J. Fuller, Near East University, Mersin, Turkey
Prof. Chandrashekher U. Rironker, Goa University, Taleigao Plateau, Goa, India
Dr. S.R. Ganesh, Chennai Snake Park, Chennai, Tamil Nadu, India
Dr. Himansu Sekhar Das, Terrestrial & Marine Biodiversity, Abu Dhabi, UAE

Journal of Threatened Taxa is indexed/abstracted in Bibliography of Systematic Mycology, Biological Abstracts, BIOSIS Previews, CAB Abstracts, EBSCO, Google Scholar, Index Copernicus, Index Fungorum, JournalSeek, National Academy of Agricultural Sciences, NewJour, OCLC WorldCat, SCOPUS, Stanford University Libraries, Virtual Library of Biology, Zoological Records.

NAAS rating (India) 5.64

Birds

Dr. Hem Sagar Baral, Charles Sturt University, NSW Australia
Mr. H. Biju, Coimbatore, Tamil Nadu, India
Dr. Chris Bowden, Royal Society for the Protection of Birds, Sandy, UK
Dr. Priya Davidar, Pondicherry University, Kalapet, Puducherry, India
Dr. J.W. Duckworth, IUCN SSC, Bath, UK
Dr. Rajah Jayopal, SACON, Coimbatore, Tamil Nadu, India
Dr. Rajiv S. Kalsi, M.L.N. College, Yamuna Nagar, Haryana, India
Dr. V. Santharam, Rishi Valley Education Centre, Chittoor Dt., Andhra Pradesh, India
Dr. S. Balachandran, Bombay Natural History Society, Mumbai, India
Mr. J. Praveen, Bengaluru, India
Dr. C. Srinivasulu, Osmania University, Hyderabad, India
Dr. K.S. Gopi Sundar, International Crane Foundation, Baraboo, USA
Dr. Gombobaatar Sundev, Professor of Ornithology, Ulaanbaatar, Mongolia
Prof. Reuven Yosef, International Birding & Research Centre, Eilat, Israel
Dr. Taej Mundkur, Wetlands International, Wageningen, The Netherlands
Dr. Carol Inskip, Bishop Auckland Co., Durham, UK
Dr. Tim Inskip, Bishop Auckland Co., Durham, UK
Dr. V. Gokula, National College, Tiruchirappalli, Tamil Nadu, India
Dr. Arkady Lelej, Russian Academy of Sciences, Vladivostok, Russia
Dr. Simon Dowell, Science Director, Chester Zoo, UK
Dr. Mário Gabriel Santiago dos Santos, Universidade de Trás-os-Montes e Alto Douro, Quinta de Prados, Vila Real, Portugal
Dr. Grant Connette, Smithsonian Institution, Royal, VA, USA
Dr. P.A. Azeez, Coimbatore, Tamil Nadu, India

Mammals

Dr. Giovanni Amori, CNR - Institute of Ecosystem Studies, Rome, Italy
Dr. Anwaruddin Chowdhury, Guwahati, India
Dr. David Mallon, Zoological Society of London, UK
Dr. Shomita Mukherjee, SACON, Coimbatore, Tamil Nadu, India
Dr. Angie Appel, Wild Cat Network, Germany
Dr. P.O. Nameer, Kerala Agricultural University, Thrissur, Kerala, India
Dr. Ian Redmond, UNEP Convention on Migratory Species, Lansdown, UK
Dr. Heidi S. Riddle, Riddle's Elephant and Wildlife Sanctuary, Arkansas, USA
Dr. Karin Schwartz, George Mason University, Fairfax, Virginia.
Dr. Lala A.K. Singh, Bhubaneswar, Orissa, India
Dr. Mewa Singh, Mysore University, Mysore, India
Dr. Paul Racey, University of Exeter, Devon, UK
Dr. Honnavalli N. Kumara, SACON, Anaikatty P.O., Coimbatore, Tamil Nadu, India
Dr. Nishith Dharaiya, HNG University, Patan, Gujarat, India
Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy
Dr. Justus Joshua, Green Future Foundation, Tiruchirappalli, Tamil Nadu, India
Dr. H. Raghuram, The American College, Madurai, Tamil Nadu, India
Dr. Paul Bates, Harison Institute, Kent, UK
Dr. Jim Sanderson, Small Wild Cat Conservation Foundation, Hartford, USA
Dr. Dan Challender, University of Kent, Canterbury, UK
Dr. David Mallon, Manchester Metropolitan University, Derbyshire, UK
Dr. Brian L. Cypher, California State University-Stanislaus, Bakersfield, CA
Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India
Prof. Karan Bahadur Shah, Budhanilkantha Municipality, Kathmandu, Nepal
Dr. Susan Cheyne, Borneo Nature Foundation International, Palangkaraya, Indonesia
Dr. Hemanta Kafley, Wildlife Sciences, Tarleton State University, Texas, USA

Other Disciplines

Dr. Aniruddha Belsare, Columbia MO 65203, USA (Veterinary)
Dr. Mandar S. Paingankar, University of Pune, Pune, Maharashtra, India (Molecular)
Dr. Jack Tordoff, Critical Ecosystem Partnership Fund, Arlington, USA (Communities)
Dr. Ulrike Streicher, University of Oregon, Eugene, USA (Veterinary)
Dr. Hari Balasubramanian, EcoAdvisors, Nova Scotia, Canada (Communities)
Dr. Rayanna Helleni Santos Bezerra, Universidade Federal de Sergipe, São Cristóvão, Brazil
Dr. Jamie R. Wood, Landcare Research, Canterbury, New Zealand
Dr. Wendy Collinson-Jonker, Endangered Wildlife Trust, Gauteng, South Africa
Dr. Rajeshkumar G. Jani, Anand Agricultural University, Anand, Gujarat, India
Dr. O.N. Tiwari, Senior Scientist, ICAR-Indian Agricultural Research Institute (IARI), New Delhi, India
Dr. L.D. Singla, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India
Dr. Rupika S. Rajakaruna, University of Peradeniya, Peradeniya, Sri Lanka
Dr. Bharat Baviskar, Wild-CER, Nagpur, Maharashtra 440013, India

Reviewers 2021–2023

Due to paucity of space, the list of reviewers for 2021–2023 is available online.

The opinions expressed by the authors do not reflect the views of the Journal of Threatened Taxa, Wildlife Information Liaison Development Society, Zoo Outreach Organization, or any of the partners. The journal, the publisher, the host, and the partners are not responsible for the accuracy of the political boundaries shown in the maps by the authors.

Print copies of the Journal are available at cost. Write to:
The Managing Editor, JoTT,
c/o Wildlife Information Liaison Development Society,
3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore,
Tamil Nadu 641006, India
ravi@threatenedtaxa.org & ravi@zooreach.org

Articles

***Dasymaschalon leilamericanum* (Annonaceae), a new species with evidence of non-monophyly from Mount Lantoy Key Biodiversity Area, Philippines**

– Raamah Rosales, Edgardo Lillo, Archiebald Baltazar Malaki, Steve Michael Alcazar, Bernardo Redoblado, John Lou Diaz, Inocencio Buot Jr., Richard Parilla & Jessica Rey, Pp. 26571–26586

Association analysis of *Castanopsis tungurut* and the neighboring vegetation community in Cibodas Biosphere Reserve, Indonesia

– Dian Ridwan Nurdiana & Inocencio E. Buot, Jr., Pp. 26587–26598

Riparian flora of Haveri District, Karnataka, India

– Ningaraj S. Makanur & K. Kotresha, Pp. 26599–26615

Conservation strategies for *Vatica lanceifolia* (Roxb.) Blume: habitat distribution modelling and reintroduction in northeastern India

– Puranjoy Mipun, Amritee Bora, Piyush Kumar Mishra, Baby Doley & Rinku Moni Kalita, Pp. 26616–26626

Patterns and economic impact of livestock predation by large carnivores in protected areas of southern Kashmir, India

– Lubna Rashid & Bilal A. Bhat, Pp. 26627–26635

People perception on use patterns and conservation of Chinese Pangolin

in and around Yangouopkpi Lokchao Wildlife Sanctuary, Manipur, India

– Yengkham Roamer Zest, Awadhesh Kumar, Om Prakash Tripathi, Rakesh Basnett & Dipika Parbo, Pp. 26636–26647

Communications

Population status, threats, and conservation of *Trachycarpus takil*: an endemic and threatened plant species in western Himalaya, India

– Himani Tiwari, Dhanji Arya & K. Chandra Sekar, Pp. 26648–26654

A checklist of fishes of Haiderpur wetland, western Uttar Pradesh, India

– Rahul Rana, Jeyaraj Antony Johnson & Syed Ainul Hussain, Pp. 26655–26668

An avifaunal checklist of the Zanskar Region, Ladakh Himalaya, India

– Abid Hussain, Zakir Hussain & Mumtaz Ali, Pp. 26669–26679

Breeding tern colonies on the sandbars of Adam's Bridge, India: new records and significance

– H. Byju, H. Maitreyi, N. Raveendran, D.A. Marshal & S. Ravichandran, Pp. 26680–26689

Assessment of nest and nesting activities of White-bellied Heron *Ardea insignis* Hume, 1878 (Aves: Ardeidae) in the broad-leaved forests of northeastern India

– Himadri Sekhar Mondal & Gopinathan Maheswaran, Pp. 26690–26696

Preliminary checklist of avifauna from All India Institute of Medical Sciences, Guwahati, Assam, India

– Nitul Ali, Vivek Chetry, Prem Kishan Singha & Maina Boro, Pp. 26697–26703

Implementation strategy and performance analysis of a novel ground vibration-based elephant deterrent system

– Sanjoy Deb, Ramkumar Ravindran & Saravana Kumar Radhakrishnan, Pp. 26704–26714

Short Communications

***Blackwellomyces pseudomilitaris* (Hywel-Jones & Sivichai) Spatafora & Luangsa-ard, 2017 (Sordariomycetes: Hypocreales: Cordycipitaceae): first report from Western Ghats of India**

– Anjali Rajendra Patil, Snehal Sudhir Biranje, Mahesh Yashwant Borde & Yogesh Sadashiv Patil, Pp. 26715–26720

Calvatia craniiformis (Schwein.) Fr. ex De Toni (Agaricomycetes: Lycoperdaceae): a new puffball mushroom record from eastern India
– Asit Mahato, Pritish Mitra, Sabyasachi Chatterjee & Subrata Raha, Pp. 26721–26726

Rediscovery of the gypsy moth *Lymantria kanara* Collenette, 1951 (Insecta: Lepidoptera: Erebidae) from Kerala, India, after 73 years and its taxonomic redescription
– P.K. Adarsh & Abhilash Peter, Pp. 26727–26730

Nest predation by *Vespa tropica* (Linnaeus, 1758): observational insights into polistine wasp defense and hornet feeding behavior
– Shantanu Ojha & Vartika Negi, Pp. 26731–26736

The discovery of a male Malay Crestless Fireback *Lophura erythrophthalma* (Raffles, 1822) (Aves: Galliformes: Phasianidae) at Ulu Sat Forest Reserve, Machang, Kelantan, Peninsular Malaysia
– Ainun Hidayah Wahad, Wan Hafizin Idzni Wan Mohammad Hizam, Muhammad Hamirul Shah Ab Razak, Aainaa Amir, Kamarul Hambali, Hazizi Husain, Mohd Saupi Abdullah, Ehwan Ngadi, Mohamad Arif Iskandar Abdul Wahab & Asrulsani Jambari, Pp. 26737–26740

Notes

New distribution record of *Korthalsia rogersii* Becc, a threatened endemic climbing palm of Andaman archipelago

– Paremmal Sarath, Azhar Ali Ashraf, V.B. Sreekumar, Modhumita Ghosh Dasgupta & Suma Arun Dev, Pp. 26741–26743

Clarifying the nomenclature of Roxburgh's pivotal name *Holigarna racemosa* Roxb. (Anacardiaceae)

– Shruti Kasana, Pp. 26744–26746

First confirmed breeding of Brown Noddy *Anous stolidus* in southeastern India: a new record from Adam's Bridge

– H. Byju, H. Maitreyi, N. Raveendran & D.A. Marshal, Pp. 26747–26749

First record of Painted Stork *Mycteria leucocephala* in Indonesia

– Hasri Abdillah, Iwan Febrianto, Cipto Dwi Handono, Fajar Shiddiq, Febryansah Abdillah Harahap & Muhammad Iqbal, Pp. 26750–26752

New sighting and conservation implications of the endemic Sulu Boobook *Ninox reyi* Oustalet, 1880 at Bolobok Rock Shelter, a key archaeological site in the Sulu Archipelago, southern Philippines

– Fauriza J. Saddari, Yennyrriza T. Abduraup, Adzmer A. Juaini, Roger A. Irlis, Khalid D. Adam, Mary Joyce Z. Guinto-Sali & Richard N. Muallil, Pp. 26753–26756

The occurrence of Glossy Ibis *Plegadis falcinellus* Linnaeus, 1766 (Pelecaniformes: Threskiornithidae) in southern Sumatra, Indonesia

– Muhammad Iqbal, Arum Setiawan, Putri Balqis, Exaudi Beatrice Simanullang, Pormansyah, Selamat Robinsa, Winda Indriati & Indra Yustian, Pp. 26757–26760

Book Review

A whisper of silken wings

– Aparna Sureshchandra Kalawate & Pooja Kumar Misal, Pp. 26761–26762

Publisher & Host



Threatened Taxa