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Cover: A male Scarlet Skimmer perching on vegetation by the banks of a waterbody. Ink and watercolour illustration by Anandita Pascal.

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ARTICLE

A checklist of the mammals of Jammu & Kashmir, India

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Abstract: Jammu & Kashmir, located at the intersection of the Palearctic and Oriental biogeographic realms, harbors a rich and unique mammalian diversity shaped by its varied topography and climate. Despite extensive faunal studies, a definitive and evidence-based checklist of the region's mammals has been lacking due to unverified species records. This study presents a comprehensive and critically evaluated checklist of the wild mammals of Jammu & Kashmir, India, compiled through a meticulous collation of specimen collections and media evidence. The checklist documents 111 species across eight orders and 28 families, with 94 species verified by specimens and 70 by photographic records. Chiroptera and Rodentia are the most diverse orders, followed by Carnivora and Artiodactyla. Thirteen species are classified as globally threatened by the IUCN Red List of Threatened Species with an additional 10 species listed as Near Threatened. By excluding provisional and doubtful records, discussed in Appendix A, this checklist provides a robust foundation for biodiversity monitoring, conservation prioritization, and ecological research in the region. All supporting data are publicly accessible via a dedicated website, enhancing transparency and enabling future updates. This work aims to guide effective management strategies and contribute to the long-term conservation of mammalian fauna in the region.

Keywords: Biodiversity, checklists, conservation, distribution, mammalian fauna, threatened species, western Himalaya.

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Author contributions: Conceptualization: MAK, NS, KA; data collection: MAK, AA; writing: MAK, AA; review and editing: all authors.

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INTRODUCTION

A checklist is a fundamental metric of the biodiversity of an area. It is instrumental in monitoring changes in species populations over time, essential for detecting environmental changes and informing management and conservation strategies. A notable issue with biodiversity checklists is the inclusion of contentious species with uncertain origins which often remain unchallenged (Praveen et al. 2013). In compiling any biodiversity checklist, it is crucial to critically evaluate and often exclude species with uncertain origins or unverified presence. Including such contentious species, whether due to misidentifications, escaped captives, or historical records lacking concrete evidence, can inflate biodiversity estimates and misinform scientific and conservation efforts. Once included, these unverified species often become entrenched in subsequent publications and databases, perpetuating misinformation and clouding our understanding of species distribution, biogeographic patterns, and ecological boundaries. This undermines the scientific integrity of the checklist and can distort conservation priorities, leading to misallocated resources or flawed environmental assessments. It then follows that a checklist ought to be based on indubitable records backed by verifiable evidences (Praveen et al. 2013; Kichloo et al. 2024).

The Union Territory of Jammu & Kashmir is located in the northwestern part of the Himalayan Mountain range, between 32.30–35.12° N & 73.40–76.80° E (Figure 1). Spread in an area of 55,538 km^2, it shares borders with the Union Territory of Ladakh to the north and east, and Pakistan to the west. To its south, lies the Indian states of Punjab and Himachal Pradesh. The elevation of Jammu & Kashmir ranges from 247 m to 7,135 m. Geographical location along with a diverse set of physical features characterized by huge snow-capped mountains, lush green forests, extensive drainage and complex geological formations make it a proverbial bridge between two major bio-geographic regions of the world, the Palearctic and the Oriental resulting in a rich mixed fauna (Roberts 1991).

Administratively as well as biogeographically, Jammu & Kashmir is divided into two divisions; Jammu and Kashmir. The southern alluvial plains of Jammu, an extension of the Indo-Gangetic plains, give rise to the Shiwaliks, a range of moderate hills with a gentle slope and elevation rarely exceeding 1,200 m. The Pir-Panjal range, a part of the lesser Himalaya, separates the intermontane valley of Kashmir from the hilly Jammu region. The Great Himalaya (Zanskar range) to the north and north-west separate Kishtwar (in Jammu) and the Valley of Kashmir from Ladakh. The forests in Jammu & Kashmir, sharing 39% of the total geographical area, belong to six major groups that include tropical dry deciduous, subtropical pine, subtropical dry evergreen, Himalayan moist temperate, Himalayan dry temperate, and sub-alpine forests (ISFR 2021). Jammu & Kashmir has a vast protected area network comprising four national parks, 14 wildlife sanctuaries, 16 conservation reserves, 16 wetland reserves including five Ramsar sites, accounting for 11.31% of the total area coverage (J&K Department of Wildlife Protection 2023).

The development of knowledge about the mammalian fauna in Jammu & Kashmir goes back to the British era and started with Moorcroft & Trebeck (1841), Blyth (1841a, 1841b, 1855, 1863), and Vigne (1842). However, the main contributions to the mammalian diversity of Jammu & Kashmir were done by Jerdon (1867), Drew (1875), Dobson (1876), Lydekker (1877), Blanford (1888–1891), True (1894), Pocock (1939, 1941), Ellerman (1947), Ellerman & Morrison-Scott (1951), and Prater (1971). Ward (1905, 1921, 1922a, 1922b, 1922c, 1923, 1924a, 1924b, 1924c, 1925a, 1925b, 1925c, 1926, 1928, 1929) in a series of publications gave a detailed account of the mammalian species particularly large mammals from then Jammu & Kashmir. Mammal surveys by the Bombay Natural History Society (BHNS) could cover only a part of the Anantnag District of the state (Hinton & Thomas 1926).

In addition to these, numerous other publications dealing mainly with the taxonomy, distribution, and conservation of mammals are available, of which Blanford (1875, 1877, 1879, 1898), Thomas (1880, 1888, 1893, 1911, 1917, 1922, 1926), Scully (1881), Miller (1897, 1899, 1911, 1913a, 1913b), Andersen (1905), Bonhote (1905), Pocock (1908, 1930 1932, 1934, 1936), Osmaston (1930), Khajuria (1955), Khan (1970), Sharma & Sharma (1976), and Ahmad (2022) are important. Chakraborty (1983) provided a comprehensive account of 138 species and subspecies of mammalian fauna in Jammu & Kashmir based on specimen collections and literature. Ahmad et al. (2020) published a checklist of 112 mammals belonging to eight orders and 22 families for Jammu, Kashmir, and Ladakh combined. The list is exclusively based on the published records and web sources.

As of today, a definitive checklist of wild mammals of Jammu & Kashmir based on verifiable evidences does not exist leading to misdirected conservation efforts, overlooking of critical species and inefficient resource allocations. In this paper, we have attempted to

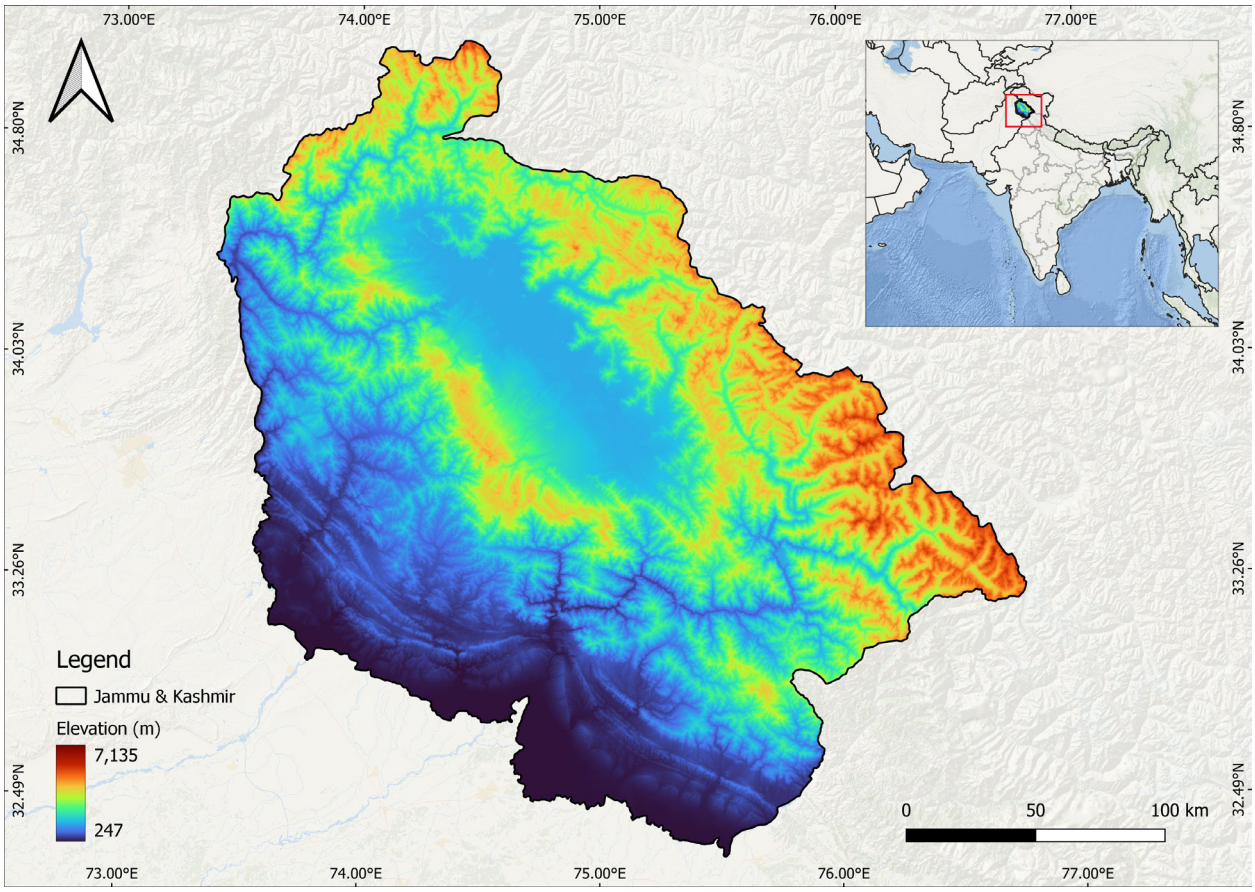

Figure 1. Location and elevation map of Jammu & Kashmir. Inset map shows the location of Jammu & Kashmir in India with respect to South Asia.

compile a checklist of wild mammalian species from the territorial limits of Jammu & Kashmir, as defined by the Government of India (Ministry of Home Affairs 2019).

METHODS

In order to provide an exact representation of the biodiversity of an area, a checklist should be based on definitive records backed by verifiable evidences. A notable issue with biodiversity checklists is the inclusion of contentious species with uncertain origins which often remain unchallenged. To accept a species for Jammu & Kashmir checklist, it had to meet at least one of the two criteria, i.e., a specimen (either museum or an unpreserved) or a media record. The museum specimen, confirmed by competent taxonomists, was the most preferred criterion whereas the unpreserved specimens included only those duly validated by the knowledgeable field workers. We did not track down the actual specimen but relied on the authenticity of the references, which however were examined and cross-checked. The specimen records were supplemented with relevant records from Global Biodiversity Information Facility (GBIF; https://www.gbif.org), BNHS (Hinton & Thomas 1926), Natural History Museum London (NHM) (Anderson 1912; Lydekker 1913), United States National Museum (USNM) (now National Museum of Natural History) (True 1894; Fisher & Ludwig 2014, 2015), and Zoological Survey of India (ZSI) (Dobson 1876; Anderson 1881; Khajuria et al. 1977; Ghosh 2008). Collectively, the list of the mammalian species with well-documented specimens from all these sources reached 94.

The media record included a photograph or a video available in the public domain as a published record or a web source. The image database incorporated published field guides, books, magazines, newsletters, journals, and web resources like social media groups along with personal collections, which underwent careful examination and scrutiny. A significant effort was made to consolidate and centralize all media records from these scattered sources onto a single platform.

This was achieved by creating a website dedicated to the mammals of Jammu & Kashmir (https://mammalsofjk.in/) and then uploading the photographs of mammals taken by the authors and requesting others to contribute towards the website. In order to ensure data accuracy and reliability, only those photographic records were accepted that were taken within the territorial limits of Jammu & Kashmir. It is noteworthy that all the accepted records are publicly accessible through this website, reinforcing the reliability of the data compilation process.

We exercised caution while accepting species that were supported solely by sight records unless accompanied by media evidence or specimens. This was done to ensure no dubious species find entry in the checklist.

Our checklist follows the taxonomic order and species limits defined by the American Society of Mammologists' Mammal Diversity Database (MDD) version 2.0 (Mammal Diversity Database 2025). While Wilson & Reeder (2005), has long served as a foundational reference for mammalian taxonomy, it has not been revised since 2005 and thus, does not reflect the significant taxonomic changes that have occurred over the past two decades, particularly those informed by molecular phylogenetics and recent field discoveries. In contrast, MDD is actively maintained by the American Society of Mammologists and incorporates the latest peer-reviewed revisions, newly described species, and changes in species-level taxonomy and phylogenetic sequence. Its adoption ensures that the checklist aligns with current scientific consensus and provides the most accurate and contemporary reflection of mammalian diversity in the region. For English names we have followed the IUCN Red List of Threatened Species (IUCN 2025). Species which are considered provisional, doubtful or unconfirmed, are not included in this checklist.

Establishing threat and conservation status

The International Union for Conservation of Nature (IUCN) produces The IUCN Red List of Threatened Species, the world's most comprehensive inventory of species classified based on the level of extinction threat to the species. In this checklist, the species have been classified under different categories as per IUCN Red List of Threatened Species (Version 2024-2) (IUCN 2025) as well as CITES appendices and different schedules of the Indian Wildlife (Protection) Amendment Act, 2022 (Anonymous 2022).

RESULTS

The current checklist of the mammals of Jammu & Kashmir reports 111 mammal species across eight orders and 28 families representing 24% of the total wild mammal species found in India. Of these, 94 have been examined in hand or deposited in museums across the world and 70 have media records (Table 1). Orders Chiroptera and Rodentia are represented by maximum number of species, 31 and 26 respectively, followed by Carnivora (23) and Artiodactyla (13).

A second list (Appendix A) includes species that have not gained automatic entry into the checklist based on the criteria set in the methodology.

Conservation Status

Jammu & Kashmir has 13 species which fall under various categories of the IUCN Red List of Threatened Species. Among these, one species (Hangul) is 'Critically Endangered' (CR), six species (Kashmir Gray Langur, Woolly Flying Squirrel, Indian Pangolin, Himalayan Wolf, Hog Deer, and Kashmir Musk Deer) are 'Endangered' (EN), and six species (Central Kashmir Vole, Asiatic Black Bear, Leopard, Snow Leopard, Himalayan Serow, and Sambar) are 'Vulnerable' (VU). An additional 10 species are listed as 'Near Threatened' (NT) (Table 1). Forty-one species fall under Schedule–I of the Indian Wildlife (Protection) Amendment Act 2022, of which one is CR, six EN, five VU, seven NT, and 22 species 'Least Concern' (LC) (Table 1). Sixteen species fall under CITES Appendix–I, three under Appendix–II and 17 under Appendix–III.

Data availability

All the data supporting the checklist is publicly accessible through Supplementary information SD1 and website https://mammalsofjk.in/.

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Table 1. Checklist of mammals of Jammu & Kashmir, India.

	Order/ Family	Common Name	Scientific Name	Authority	Alternate Name	Specimen	Media	IUCN	IWLPA 2022	CITES
1	**Primates** Cercopithecidae	Rhesus Macaque	*Macaca mulatta*	(Zimmermann, 1780)		G	M	LC	-	-
2		Kashmir Gray Langur	*Semnopithecus ajax*	(Pocock, 1928)	Chamba Sacred Langur		M	EN	I	I
3		Nepal Gray Langur	*Semnopithecus schistaceus*	Hodgson, 1841		G	M	LC	I	I
4	**Lagomorpha** Leporidae	Cape Hare	*Lepus capensis*	Linnaeus,1758		O		LC	-	-
5		Indian Hare	*Lepus nigricollis*	Cuvier, 1823	Black-napped Hare	O	M	LC	II	-
6	Ochotonidae	Large-eared Pika	*Ochotona macrotis*	(Günther, 1875)		O	M	LC	-	-
7		Royle's Pika	*Ochotona roylii*	(Ogilby, 1839)		G	M	LC	I	-
8	**Rodentia** Hystricidae	Indian Crested Porcupine	*Hystrix indica*	Kerr, 1792			M	LC	I	-
9	Sciuridae	Five-striped Palm Squirrel	*Funambulus pennantii*	Wroughton, 1905	Northern Palm Squirrel	O	M	LC	-	-
10		Small Kashmir Flying Squirrel	*Eoglaucomys fimbriatus*	(Gray, 1837)	Kashmir Flying Squirrel	G	M	LC	-	-
11		Woolly Flying Squirrel	*Eupetaurus cinereus*	Thomas, 1888		O	M	EN	I	-
12		White-bellied Giant Flying Squirrel	*Petaurista albiventer*	(Gray, 1834)		G	M	NE	I	-
13		Long-tailed Marmot	*Marmota caudata*	(Geoffroy Saint-Hilaire, 1844)	Golden Marmot	G	M	LC	I	III
14		Himalayan Marmot	*Marmota himalayana*	(Hodgson, 1841)		O		LC	I	III
15	Sminthidae	Chinese Birch Mouse	*Sicista concolor*	(Büchner, 1892)	Kashmir Birch Mouse (*S.c. leathemi*)	G		LC	-	-
16	Cricetidae	Central Kashmir Vole	*Alticola montosus*	(True, 1894)	Kashmir Mountain Vole	G	M	VU	-	-
17		Burrowing Vole	*Hyperacrius fertilis*	(True, 1894)	True's Vole / Subalpine Kashmir Vole	G	M	NT	-	-
18		Murree Vole	*Hyperacrius wynnei*	(Blanford, 1881)	Conifer Kashmir Vole	G		LC	-	-
19	Muridae	Indian Gerbil	*Tatera indica*	(Hardwicke, 1807)	Antelope Rat	G		LC	-	-
20		Himalayan Field Mouse	*Apodemus pallipes*	(Barrett-Hamilton, 1900)	Ward's Field Mouse/ Wroughton's Wood Mouse	G	M	LC	-	-
21		Kashmir Field Mouse	*Apodemus rusiges*	Miller, 1913	Miller's Wood Mouse	G	M	LC	-	-
22		Indian Bush-rat	*Golunda ellioti*	Gray, 1837		O		LC	-	-
23		Soft-furred Metad	*Millardia meltada*	(Gray, 1837)	Common Metad / Soft-furred Rat	O		LC	-	-
24		Little Indian Field Mouse	*Mus booduga*	(Gray, 1837)		O		LC	-	-
25		Fawn-colored Mouse	*Mus cervicolor*	Hodgson, 1845		O		LC	-	-
26		House Mouse	*Mus musculus*	Linnaeus, 1758		G	M	LC	-	-
27		Brown Spiny Mouse	*Mus platythrix*	Bennett, 1832	Flat-haired Mouse	O		LC	-	-
28		Himalayan White-bellied Rat	*Niviventer niviventer*	(Hodgson, 1836)			M	LC	-	-

	Order/ Family	Common Name	Scientific Name	Authority	Alternate Name	Specimen	Media	IUCN	IWLPA 2022	CITES
29	Muridae	Lesser Bandicoot Rat	*Bandicota bengalensis*	(Gray, 1835)	Indian Mole-rat	G	M	LC	-	-
30		Short-tailed Bandicoot Rat	*Nesokia indica*	(Gray, 1830)	Short-tailed Nesokia	O		LC	-	-
31		Himalayan Field Rat	*Rattus nitidus*	(Hodgson, 1845)	White-footed Indochinese Rat	O	M	LC	-	-
32		Himalayan Rat	*Rattus pyctoris*	(Hodgson, 1845)	Turkestan rat	G	M	LC	-	-
33		House Rat	*Rattus rattus*	(Linnaeus, 1758)	Black Rat / Roof Rat	O	M	LC	-	-
34	**Eulipotyphla** Erinaceidae	Brandt's Hedgehog	*Paraechinus hypomelas*	(Brandt, 1836)			M	LC	-	-
35	Soricidae	Grey Shrew	*Crocidura attenuata*	Milne-Edwards, 1871	Asian Grey Shrew	O		LC	-	-
36		Bicolored Shrew	*Crocidura leucodon*	(Hermann, 1780)	Bicoloured White-toothed Shrew	O		LC	-	-
37		Kashmir White-toothed Shrew	*Crocidura pullata*	Miller, 1911		G		DD	-	-
38		Zarudny's Rock Shrew	*Crocidura zarudnyi*	Ognev, 1928	Zarudny's White-toothed Shrew		M	LC	-	-
39		House Shrew	*Suncus murinus*	(Linnaeus, 1766)	Asian House Shrew	G	M	LC	-	-
40		Himalayan Water Shrew	*Chimarrogale himalayica*	(Gray, 1842)		O		LC	-	-
41		Hodgson's Brown-toothed Shrew	*Episoriculus caudatus*	(Horsfield, 1851)		G		LC	-	-
42		Eurasian Pygmy Shrew	*Sorex minutus*	Linnaeus, 1766		G		LC	-	-
43		Kashmir Shrew	*Sorex planiceps*	Miller, 1911	Flat-headed Kashmir Shrew	G		LC	-	-
44	**Chiroptera** Pteropodidae	Greater Shortnosed Fruit Bat	*Cynopterus sphinx*	(Vahl, 1797)	Short-nosed Indian Fruit Bat	O		LC	-	-
45		Indian Flying Fox	*Pteropus medius*	Temminck, 1825	Greater Indian Fruit Bat	O	M	LC	II	II
46		Leschenault's Rousette	*Rousettus leschenaultii*	(Desmarest, 1821)	Fulvous Fruit Bat	O		NT	-	-
47	Hipposideridae	Fulvus Leaf-nosed Bat	*Hipposideros fulvus*	Gray, 1838		O		LC	-	-
48	Megadermatidae	Greater False Vampire	*Lyroderma lyra*	(Geoffroy Saint-Hilaire, 1810)	Greater False Vampire Bat	O	M	LC	-	-
49	Rhinolophidae	Greater Horseshoe Bat	*Rhinolophus ferrumequinum*	(Schreber, 1774)		O	M	LC	-	-
50		Lesser Horseshoe Bat	*Rhinolophus hipposideros*	(André, 1797)		O	M	LC	-	-
51	Rhinopomatidae	Lesser Mouse-tailed Bat	*Rhinopoma hardwickii*	Gray, 1831		O		LC	-	-
52	Miniopteridae	Asian Long-fingered Bat	*Miniopterus fuliginosus*	(Hodgson, 1835)			M	NE	-	-
53	Vespertilionidae	Hutton's Tube-nosed Bat	*Murina huttoni*	(Peters, 1872)		O		LC	-	-
54		Scully's Tube-nosed Bat	*Murina tubinaris*	(Scully, 1881)			M	DD	-	-
55		Lesser Mouse-eared Myotis	*Myotis blythii*	(Tomes, 1857)	Lesser Mouse-eared Bat	O		LC	-	-
56		Hodgson's Bat	*Myotis formosus*	(Hodgson, 1835)	Copper-winged Bat	O		NT	-	-
57		Kashmir Cave Bat	*Myotis longipes*	(Dobson, 1873)	Kashmir Cave Myotis	G		DD	-	-

	Order/ Family	Common Name	Scientific Name	Authority	Alternate Name	Specimen	Media	IUCN	IWLPA 2022	CITES
58	Vespertilionidae	Nepalese Whiskered Bat	*Myotis muricola*	(Gray, 1847)	Nepalese Whiskered Myotis		M	LC	-	-
59		Nepal Myotis	*Myotis nipalensis*	(Dobson, 1871)		O		LC	-	-
60		Himalayan Broad-muzzled Bat	*Submyotodon caliginosus*	(Tomes, 1859)		O		NE	-	-
61		Oriental Serotine	*Cnephaeus pachyomus*	(Tomes, 1857)		G	M	LC	-	-
62		Leisler's Bat	*Nyctalus leisleri*	(Kuhl, 1817)	Leisler's Noctule	O		LC	-	-
63		Common Noctule	*Nyctalus noctula*	(Schreber, 1774)		O		LC	-	-
64		Indian Pipistrelle	*Alionoctula coromandra*	(Gray, 1838)		G		LC	-	-
65		Javan Pipistrelle	*Alionoctula javanicus*	(Gray, 1838)			M	LC	-	-
66		Kuhl's Pipistrelle	*Pipistrellus kuhlii*	(Kuhl, 1817)		O		LC	-	-
67		Mount Popa Pipistrelle	*Alionoctula paterculus*	(Thomas, 1915)		O		LC	-	-
68		Common Pipistrelle	*Pipistrellus pipistrellus*	(Schreber, 1774)		O		LC	-	-
69		Dormer's Bat	*Scotozous dormeri*	Dobson, 1875	Dormer's Pipistrelle	O		LC	-	-
70		Eastern Barbastelle	*Barbastella darjelingensis*	(Hodgson, 1855)	Asian Barbastelle	O	M	LC	-	-
71		Desert Long-eared Bat	*Otonycteris hemprichii*	Peters, 1859	Hemprich's Desert Bat	O		LC	-	-
72		Hodgson's Long-eared Bat	*Plecotus homochrous*	Hodgson, 1847	Himalayan Long-eared Bat	O		DD	-	-
73		Ward's Long-eared Bat	*Plecotus wardi*	Thomas, 1911		O	M	LC	-	-
74		Greater Asiatic Yellow House Bat	*Scotophilus heathii*	(Horsfield, 1831)	Greater Asian Yellow Bat	O		LC	-	-
75	**Pholidota** Manidae	Indian Pangolin	*Manis crassicaudata*	Geoffroy Saint-Hilaire, 1803	Scaly Anteater		M	EN	I	I
76	**Carnivora** Mustelidae	Yellow-throated Marten	*Martes flavigula*	(Boddaert, 1785		G	M	LC	I	III
77		Beech Marten	*Martes foina*	(Schreber, 1776)	Stone marten	G	M	LC	I	III
78		Eurasian Otter	*Lutra lutra*	(Linnaeus, 1758)	European Otter	O	M	NT	I	I
79		Altai Weasel	*Mustela altaica*	Pallas, 1811	Mountain Weasel / Pale Weasel		M	NT	I	III
80		Stoat	*Mustela erminea*	Linnaeus, 1758	Himalayan Stoat / Ermine	G	M	LC	I	III
81		Siberian Weasel	*Mustela sibirica*	Pallas, 1773		G	M	LC	I	III
82	Ursidae	Himalayan Brown Bear	*Ursus arctos isabellinus*	Horsfield, 1826		G	M	LC	I	II
83		Asiatic Black Bear	*Ursus thibetanus*	Cuvier, 1823	Asian Black Bear	G	M	VU	I	I
84	Canidae	Golden Jackal	*Canis aureus*	Linnaeus, 1758	Common Jackal	G	M	LC	I	III
85		Himalayan Wolf	*Canis lupus chanco*	Gray, 1863	Grey Wolf		M	EN	I	I
86		Bengal Fox	*Vulpes bengalensis*	(Shaw, 1800)	Indian Fox	G		LC	I	III
87		Red Fox	*Vulpes vulpes*	(Linnaeus, 1758)		G	M	LC	-	III

	Order/ Family	Common Name	Scientific Name	Authority	Alternate Name	Specimen	Media	IUCN	IWLPA 2022	CITES
88	Felidae	Jungle Cat	*Felis chaus*	Schreber, 1777	Reed Cat/ Swamp Cat	G	M	LC	I	II
89		Mainland Leopard Cat	*Prionailurus bengalensis*	(Kerr, 1792)	Indian Leopard Cat	G	M	LC	I	I
90		Rusty-spotted Cat	*Prionailurus rubiginosus*	(Geoffroy Saint-Hilaire, 1831)		O		NT	I	I
91		Leopard	*Panthera pardus*	(Linnaeus, 1758)	Common Leopard	G	M	VU	I	I
92		Snow Leopard	*Panthera uncia*	(Schreber, 1775)		G	M	VU	I	I
93	Herpestidae	Small Indian Mongoose	*Urva auropunctata*	(Hodgson, 1836)		G	M	LC	I	III
94		Indian Gray Mongoose	*Urva edwardsii*	(Geoffroy Saint-Hilaire, 1818)	Indian Grey Mongoose	O	M	LC	I	III
95		Ruddy Mongoose	*Urva smithii*	(Gray, 1837)		O		LC	I	III
96	Viverridae	Masked Palm Civet	*Paguma larvata*	(Griffith, 1822)	Himalayan Palm Civet	O	M	LC	I	III
97		Common Palm Civet	*Paradoxurus hermaphroditus*	(Pallas, 1777)	Asian Palm Civet, Toddy Cat and Musang	O	M	LC	I	III
98		Small Indian Civet	*Viverricula indica*	(Geoffroy Saint-Hilaire, 1803)		O	M	LC	I	III
99	**Artiodactyla** Bovidae	Markhor	*Capra falconeri*	(Wagner, 1839)	Pir Panjal Markhor	G	M	NT	I	I
100		Siberian Ibex	*Capra sibirica*	(Pallas, 1776)	Himalayan Ibex or Asiatic Ibex	G	M	NT	I	-
101		Himalayan Serow	*Capricornis sumatraensis thar*	Hodgson, 1831		O	M	VU	I	I
102		Himalayan Tahr	*Hemitragus jemlahicus*	(Smith, 1827)		G	M	NT	I	-
103		Himalayan Goral	*Naemorhedus goral*	(Hardwicke, 1825)	Himalayan Grey Goral	O	M	NT	I	I
104		Nilgai	*Boselaphus tragocamelus*	(Pallas, 1766)	Blue Bull		M	LC	II	III
105	Cervidae	Chital	*Axis axis*	(Erxleben, 1777)	Indian Spotted Deer		M	LC	II	-
106		Hog Deer	*Axis porcinus*	(Zimmermann, 1780)			M	EN	I	I
107		Hangul	*Cervus hanglu*	Wagner, 1844	Kashmir Stag/ Kashmir Red Deer	G	M	CR	I	I
108		Sambar	*Rusa unicolor*	(Kerr, 1792)	Sambar Deer	G	M	VU	I	-
109		Northern Red Muntjac	*Muntiacus vaginalis*	(Boddaert, 1785)	Indian Muntjac or Barking Deer		M	LC	I	-
110	Moschidae	Kashmir Musk Deer	*Moschus cupreus*	Grubb, 1982		G	M	EN	I	I
111	Suidae	Wild Boar	*Sus scrofa*	Linnaeus, 1758	Eurasian Wild Pig	G	M	LC	II	-

G—GBIF (Global Biodiversity Information Facility) | O—Other Specimen (Supplementary Data SD1) | M—Media record (https://mammalsofjk.in/) | IUCN—International Union for Conservation of Nature, CR—Critically Endangered | E—Endangered, VU—Vulnerable | NT—Near Threatened | LC—Least Concern | NE—Not Evaluated | DD—Data Deficient | IWPA—Indian Wildlife (Protection) Amendment Act 2022 | CITES—Convention on International Trade in Endangered Species of Wild Fauna and Flora.

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Appendix A. Notes on the species not included in the checklist.

Desert Hare *Lepus tibetanus*: Wilson & Reeder (2005) mention Kashmir in its distribution range probably because Ellerman & Morrison-Scott (1955) fixed its type locality to "Baltistan, Kashmir (modern day Ladakh) instead of Tibet. Ahmad et al. (2020) lists this species for both Jammu & Kashmir region but no records of its specimens or photographs till date. Sharma et al. (2024) in their checklist of India have mentioned Jammu & Kashmir under its distribution, but it is important to mention here that their checklist has considered erstwhile Jammu & Kashmir state (which included Ladakh also) for this checklist. Hence, many of the Jammu & Kashmir species in their checklist may refer to present day Ladakh.

Woolly Hare *Lepus oiostolus*: Wilson & Reeder (2005), Ahmad et al. (2020) and Menon (2023) list this species for Jammu & Kashmir but no records of its specimens or photographs till date.

Stoliczka's Mountain Vole *Alticola stoliczkanus*: Ahmad et al. (2020) mentions both Stoliczka's Mountain Vole *A. stoliczkanus* and Thomas's Short-tailed Vole *A. stracheyi* separately. *A. stracheyi* is a synonym of *A. stoliczkanus*. But the species is listed without any details and hence excluded from the checklist.

Blyth's (Mountain) Vole *Neodon leucurus*: Wilson & Reeder (2005) refer Kashmir in its distribution. This actually refers to present day Ladakh as both Ladakh and Jammu & Kashmir were once a united territory. Ahmad et al. (2020) lists the species for Jammu, Kashmir and Ladakh without any details. The species is present in Ladakh but no specimen or media record could be traced for Jammu & Kashmir and hence excluded from the checklist.

Silver Mountain Vole *Alticola argentatus*: Agrawal (2000; under *A. blanfordi*) mentions Gulmarg in its distribution along with Gilgit and Nultan Valley (Ladakh) which is the type locality of the species. However, the origin of its occurrence in Gulmarg remains unknown as evinced by Hinton (1926), Ellerman (1947, 1961) and Ellerman & Morrison-Scott (1951). The species is accepted by Menon (2023) and listed under Jammu & Kashmir by Sharma et al. (2024) which again may refer to present day Ladakh. Ahmad et al. (2020) lists both *A. blanfordi* and *A. argentatus* separately but without any details and hence excluded from the checklist.

Grey Dwarf Hamster *Nothocricetulus migratorius*: Listed in Ahmad et al. (2020) for Kashmir and Ladakh without any details. The species is present in Ladakh but not in Jammu & Kashmir and hence excluded from the checklist.

Yellow-necked Field Mouse *Apodemus flavicollis*: Three specimens in Smithsonian Institution, National Museum of Natural History (NMNH) of this species collected from Jammu & Kashmir (GBIF 2025) are those of *A. rusiges* originally described as *A. f. rusiges* (Mammal Diversity Database 2025).

Asiatic Long-tailed Climbing Mouse *Vandeleuria oleracea*: Listed in Mohammad (2019) and Ahmad et al. (2020) for Jammu region without any details and hence excluded from the checklist.

Indochinese White-bellied Rat (Chestnut Rat) *Niviventer fulvescens*: Kamalkannan & Venkatraman (2017), Menon (2023), and Sharma et al. (2024) list the species for Jammu & Kashmir. Alfred et al. (2002) and Srinivasulu & Pradhan (2003) mention the distribution up to Himachal Pradesh only excluding the species for Jammu & Kashmir. No specimen or media records were traced for this species from Jammu & Kashmir in the current review and hence excluded from the checklist.

Brown Rat *Rattus norvegicus*: Ward (1905) says that all the Kashmir specimens of Brown Rat are in fact Himalayan Rat *Rattus pyctoris*, but is of the opinion that the species occurs in Poonch and many other parts. Sharma & Sharma (1976) reported it from Chammb sector (Jammu), Udhampur and Bhaderwah ranges. No verifiable specimen or media records were found for this species from Jammu & Kashmir and hence not accepted here.

Long-eared Hedgehog *Hemiechinus auritus* / Indian Long-eared Hedgehog *H. collaris*: Sharma & Sharma (1976) reported Long-eared Hedgehog *Hemiechinus auritus* from Naushera, Rajouri, however, the status and traceability of this record remain uncertain. Based on this observation, Chakraborty (1983) accepted the species for Jammu & Kashmir. Surprisingly, Alfred et al. (2002) and Chakraborty et al. (2004) instead listed Indian long-eared Hedgehog *H. collaris* for the region, rather than *H. auritus*. Historically, *H. collaris* was considered a subspecies of *H. auritus*, but Roberts (1977) highlighted significant differences in distribution and morphology between the two, leading to their taxonomic separation. *Hemiechinus collaris* is now regarded as being restricted to Pakistan and northwestern India, whereas *H. auritus* has a broader distribution extending from eastern Ukraine to Mongolia in the north and from Libya to western Pakistan in the south (Wilson & Reeder 2005). This taxonomic distinction likely influenced the acceptance of *H. collaris* for Jammu & Kashmir by Alfred et al. (2002) and Chakraborty et al. (2004).

More recently Kamalakannan & Venkatraman (2017) and Sharma et al. (2024) have excluded both species from Jammu & Kashmir, though no specific justification for this decision has been provided. The ambiguity surrounding the identification of the specimen reported by Sharma & Sharma (1976), its subsequent untraceability, and the absence of recent confirmed records from the region may have contributed to this exclusion. Until verifiable evidence emerges, we continue to classify the species under doubtful category.

Horsfield's Shrew *Crocidura horsfieldi*: Listed in Ahmad et al. (2020) for Jammu, Kashmir, and Ladakh without any details. The species is present in Ladakh but not in Jammu & Kashmir and hence excluded from the checklist.

Pale Grey Shrew *Crocidura pergrisea*: Chakraborty (1983) listed the species for Jammu & Kashmir but mentions the location as Baltistan, which is in modern day Ladakh. Walker (1999) also included it in Kashmir based on Chakraborty (1983).

Lesser White-toothed Shrew *Crocidura suaveolens*: Listed in Mohammad (2019) and accepted by Ahmad et al. (2020) for Jammu & Kashmir but without any details. The species is considered extralimital to India and no major Indian authority includes the species for India (Menon 2023; Sharma et al. 2024).

Hodgsons's Brown-toothed Shrew *Episoriculus caudatus*
Wilson & Reeder (2005) lists Kashmir in the distribution of this species. No specimen or media records were found for this species from Jammu & Kashmir and hence not accepted here.

Naked-rumped Tomb Bat *Taphozous nudiventris*: Sharma & Sharma (1976) recorded it from Bhaderwah and Akhnoor who considered it a new record for Jammu & Kashmir. It is not clear whether the authors have collected the specimens or just had recorded its presence in those regions. The species is included in Jammu & Kashmir by Alfred et al. (2002), the basis of which remains unknown. Until strong evidence is reached, we have kept the species out of the checklist.

Dark (Flat-headed) Woolly Bat *Kerivoula furva*: Chakraborty (1983) collected a specimen of *Kerivoula hardwickii* from Patnitop on 27 October 1975. Ahmad et al. (2020) accepts the species for Jammu & Kashmir. *Kerivoula hardwickii*, a species complex, traditionally included several taxa listed as subspecies or its synonyms including *K. crypta, K. depressa, K. engana, K. fusca,* and *K. malpasi* (Simmons 2005; Rosell-Ambal et al. 2008). After the taxonomic revision of the *K. hardwickii* complex, it is now *sensu stricto* considered extralimital to India and a new species *K. furva* was described (Kuo et al. 2017). This species was accepted by Menon (2023) and Tu et al. (2018) as the one occurring in Jammu & Kashmir. However, considering the complexities of this group and a lack of recent sample from NW Himalayas, the question of its occurrence in NW Himalayas and particularly in Jammu & Kashmir remains unknown (Uttam Saikia in litt. email dated 25.iii.2025). Hence, we have kept this species under unconfirmed category until strong evidence emerges.

Steppe Whiskered Bat (David's Myotis) *Myotis davidii*: Menon (2023) mentions two isolated records from Jammu & Kashmir the origin of which remains unknown.

Botta's Serotine *Cnephaeus bottae*: Listed in Ahmad et al. (2020) for Jammu and Kashmir but without any details. The species is considered extralimital to India and no major Indian authority includes the species for India (Menon 2023; Sharma et al. 2024).

Gobi Big Brown Bat (Bobrinskii's Serotine) *Cnephaeus gobiensis*: Listed in Ahmad et al. (2020) and Sharma et al. (2024) for Jammu and Kashmir without any details. The species is present in Ladakh but not in Jammu & Kashmir and hence excluded from the checklist.

Fulvus Leaf-nosed Bat *Hipposideros fulvus*: Menon (2023) shows one isolated record of this species from Jammu & Kashmir in its distribution map, the origin of which remains unknown.

Least Pipistrelle *Pipistrellus tenuis*: Sharma & Sharma (1976) recorded it from Jammu and in Mandi, Poonch but it is not clear whether they have collected the specimen or just had recorded its presence in those regions. Hence not accepted as per the methodology set above.

Parti-colored Bat *Vespertilio murinus*: Scully (1881) collected two specimens of this species from Nultar Valley in Gilgit. Blanford (1888-1891) mention about some Kashmir specimens and also that the species has been found in Kashmir by Sir O.B. St. John. Neuhauser. Ghosh (2008) also mention Gilgit (Kashmir) in its distribution. Chakraborty (1983) and Ghosh (2008) reported the two specimens from Gilgit as *Eptesicus nilssoni kashgaricus* (= *E. gobiensis*), which were accepted as *V. murinus* by Bates & Harrison (1997). Saikia & Boro (2013) accept the species for Jammu & Kashmir probably accepting the records from Gilgit, Ladakh whereas Ahmad et al. (2020) lists the species for Jammu & Kashmir but without any reference. Based on this account, we assess that all the records mentioning Kashmir are referring to Gilgit, now in Ladakh.

Yellow-bellied Weasel *Mustella kathiah*: Alfred et al. (2002), Kamalkannan & Venkatraman (2017), and Sharma et al. (2024) list Jammu & Kashmir in its distribution range. The basis of the distribution is based on a specimen collected from Baltoro, Karakoram range (Pocock 1941) previously a part of Jammu & Kashmir and now in Ladakh.

Wild Dog (Dhole) *Cuon alpinus*: Lydekker (1877) mentions the species to be present in the Chenab and Warwan Valleys based on the tracks, but did not mention about any specimen. Ward (1928) refers Wild Dog as very rare in the Valley of Kashmir. Blanford (1888–1891) in its distribution said that it is found in Gilgit, Ladakh, and other parts of Upper Indus Valley (all outside of Jammu &

Kashmir) and also occurring throughout the Himalayan forests from Kashmir to Assam. Included in Jammu & Kashmir by Sharma et al. (2024). None of the references refer to any specimens collected from the Jammu & Kashmir and hence excluded from the checklist.

Striped Hyaena *Hyaena hyaena*: Menon (2023) and Sharma et al. (2024) mention Jammu & Kashmir in its geographic range. Ellerman & Morrison-Scott (1951) also list Striped Hyaena for Kashmir in its distribution. Chakraborty (1983) noticed an individual from a considerable distance on the Jammu-Srinagar National Highway near Ramban but didn't collect the specimen. There is no photographic or specimen evidence from present day Jammu & Kashmir and reason for its inclusion in the literature probably origins from Ward (1928) which says 'very rare in Kashmir but has been found on the Murree road'.

Caracal *Caracal caracal*: Ward (1923) mentions about a skin in Srinagar which is said to have come from Ladakh and he later listed the species for Kashmir in '*The Mammals and Birds of Kashmir*' (Ward 1926). Stockley (1928) reported that the Caracal does not occur in Kashmir, finding no evidence of its presence in the Himalayas and noting the absence of skins in the Srinagar skin markets.

Tiger *Panthera tigris*: Lydekker (1877) mentions about a friend who told him that an individual was killed in Warwan and Lydekker considered that if the information was true, the species could be considered as an occasional straggler to the region. Ellerman & Morrison-Scott (1951) however couldn't trace any reliable reference to its occurrence in Kashmir. Sharma & Sharma (1976) mentions that this species is found rarely in the jungles of Loran ranges in Poonch but didn't mention about any material or specimen collected. No reliable reference till date and hence excluded from the checklist.

Cheetah *Acinonyx jubatus*: Fayrer (1879) mentioned in his memoir about an exhibition of a Cheetah hunting in which one or two antelopes were killed along with other acrobatic performances on 21 January 1876 in Jammu. Based on the context provided, we conclude the cheetah was tamed and not a wild one.

Waved Cat *Felis torquata*: Ward (1907, 1926) lists *F. torquata* for Kashmir. This probably refers to the domestic cat and hence excluded from the checklist. Also collected by Dr. Abbott from Lolab Valley, Kashmir who also thought it to be a tame specimen (True 1894).

Large Indian Civet *Viverra zibetha*: Ward (1926) mentions to have shot and trapped this species in Kashmir. Pocock (1939) in his Fauna of British India, says that Col. Ward was mistaken in recording it from Kashmir citing that his measurements of head, body, and weight are correct enough; but his remark that Blanford's skull-measurements are far larger than anything in the western Himalayas shows that the skull he had did not belong to this species. Ward's further statement that the animal is found "often living under thatched roofs" suggests confusion with the Kashmir Toddy-Cat (*Paradoxurus*) (= Common Palm Civet), although he cited the latter under a separate heading. Pocock (1939) further added that he is not acquainted with any other record of *V. zibetha* in Kashmir also citing Col. Stockley wherein, he never came across the species in that country or in Kumaon, although all collectors agree that it is one of the easiest mammals to trap. This discussion is convincing enough to exclude Large Indian Civet from Jammu & Kashmir checklist.

Blackbuck *Antilope cervicapra*: Ward (1925) lists the species for Jammu & Kashmir mentioning few black bucks are left near Jammu, but doesn't provide any further details whether any of them were shot or collected. The measurements provided are those by Dunbar Brander (1923).

Himalayan Musk Deer *Moschus leucogaster*: Ahmad et al. (2020) list Himalayan Musk Deer for the regions of both Jammu as well as Kashmir but without any details. However, Sharief et al. (2023) in their study confirmed the presence of only Kashmir Musk Deer in the Western Himalayas with no other evidence of any other species. We excluded this species from Jammu & Kashmir based on Sharief et al. (2023).

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