A CHECKLIST OF MAMMALS WITH HISTORICAL RECORDS FROM DARJEELING-SIKKIM HIMALAYA LANDSCAPE, INDIA

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A checklist of mammals with historical records from Darjeeling-Sikkim Himalaya landscape, India

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Abstract: A region-specific species checklist is an important resource for biodiversity documentation and conservation. This review provides an updated mammal species checklist for the biodiversity hotspots of the Darjeeling-Sikkim landscape in Eastern Himalaya. The list was compiled by systematically reviewing 94 available publications spanning 178 years from 1841 to 2019, for mammals from the region. The species checklist is envisioned to aid in understanding the current status of mammal records, historical distribution, ranked conservation status of mammals, and research gaps. A total of 173 mammal species under 11 orders and 33 families, including the recently upgraded taxon, Sikkim Pika Ochotona sikimaria was enlisted. There are 25 species included in the IUCN threatened categories, 58 species listed in the CITES Appendices, and 112 species included in the schedules of the Wildlife (Protection) Act, 1972 in India. Although mammals receive the maximum research attention in the landscape, small mammals and bats have rarely been subjected to systematic studies in recent years.

Keywords: Biodiversity hotspot, Eastern Himalaya, research trends, updated checklist
INTRODUCTION

A region-specific species checklist that summarises and documents the current status is an important resource for biodiversity documentation and conservation (Nameer et al. 2015). Mammals form a significant taxon, often considered for monitoring because of their vulnerability to hunting and sensitivity to human activity (Robinson & Bodmer 1999). In a review of biodiversity research trends in Eastern Himalaya, Kandel et al. (2016) showed that mammals were the most studied taxa in the region. Mammals have been documented in Darjeeling-Sikkim Himalaya in the form of anecdotal accounts, collection records, compiled reports, laboratory-based studies on pathogens found in wild animals, field surveys, and ecological works (Blyth 1841, 1863; Hodgson 1847; Anderson 1881; Blanford 1888; Sclater 1891; Dalglish 1906; Shebbeare 1914; Thomas 1915, 1916a,b, 1920; Elwes 1916; Millard et al. 1916a, 1916b; Primrose 1916; Wroughton 1916a,b,c, 1917; Hinton 1918; Fry 1923; Baldry 1932; Sanborn 1932; Wood 1933; Matthews 1934; Pinckney 1939; Gabb 1945; Maclaren 1949; Dutt-Mazumdar 1955; Saha 1955; Ellerman 1961; Hill 1963, 1986; Ellerman & Morrison-Scott 1966; Gurung & Agarwal 1969; Chatterjee et al. 1970, 2018; Khajuria & Ghose 1970; Topál 1970; Pal & Dasgupta 1982, 1984; Bandopadhay & Dasgupta 1984a,b; Dey et al. 1984; Ghose 1984; Das 1986, 2003; Hill et al. 1986; Dasgupta 1987, 1991; Agrawal et al. 1992; Saha et al. 1992, 1993; Pradhan 1995; Banerjee et al. 1996; Ganguli-Lachungpa 1997; Avasthe & Jha 1999; Biswas et al. 1999; Agrawal 2000; Molur et al. 2002, 2003, 2005; Sharma & Lachungpa 2002; Chakraborty 2003; Brandon-Jones 2004; Vijayan et al. 2004; Ghosh 2005, 2008; Chattopadhay et al. 2006; Sanyal et al. 2007; Lachungpa 2009; Groves & Grubb 2011; Sathyakumar et al. 2011a,b; Ghose et al. 2012; Mallick 2012, 2019; Ghose et al. 2014; Khatriwa & Srivastava 2014; Sharma et al. 2015; Dalal et al. 2017; Saikia et al. 2017; Saikia 2018). The advancements in technology and its applications for wildlife research has enabled photographic records and molecular identification of new species for taxonomic revision while also providing insights into mammal behavioral ecology (Sathyakumar 2001; Chanchani et al. 2010; Bashir et al. 2011; Rawat & Tambe 2011; Ghose et al. 2012, 2014; Dalal et al. 2017; Srivastava & Kumar 2018).

Many attempts in the past to compile mammal records in Darjeeling-Sikkim Himalaya have been carried out. One-hundred-and-fifty-six mammals were recorded in Sikkim by Avasthe & Jha (1999), 169 by Vijayan et al. (2004), 91 by Chattopadhy et al. (2006), and 125 by Chakraborty (2011). Similarly, from Darjeeling, Agrawal et al. (1992) listed 128 mammals, Pradhan & Bhujel (2000) recorded 128 mammals, Mitra (2004) documented 180 mammals, and Sanyal et al. (2007) recorded 126 mammals. All these compilations do not take into account the recent changes in taxonomy, as Sikkim Pika Ochotona sikimaria from Sikkim (Dahal et al. 2017), which was recently upgraded from subspecies to species. The latest species enumeration in Sikkim enlists 125 mammal species (Chakraborty 2011), 126 in Darjeeling, including Kalimpong (Sanyal et al. 2007) and a separate list for Kalimpong stands at 99 species (Mallick 2012).

This necessitated a methodological literature review of mammal species recorded so far to compile a species list of mammals recorded in the landscape. The reviewed species list is envisioned as a precursor to initiate systematic documentation of mammals in the Darjeeling-Sikkim Himalaya landscape. The reviewed species list aims to aid in understanding the current status of mammal records, their distribution and ranked conservation status, and patterns emerging from these records, along with other knowledge gaps in the region. The compiled species list would also be a reference for systematic field surveys to establish new detection localities, distribution range, and catalogue any new species records. The completeness of any inventory from such field surveys could also be compared against this generated species list.

MATERIALS AND METHODS

The study area comprising of Darjeeling, including the newly formed district Kalimpong, (26.45°–27.22° N & 87.98°–88.88°E) in West Bengal and the Himalayan state of Sikkim (27.05°–28.12° N & 88.05°–88.95° E) forms a part of the Eastern Himalaya, India (Figure 1). Hereafter, Darjeeling would imply both the districts of Kalimpong and Darjeeling.

Darjeeling and Sikkim are rich repositories of valuable biodiversity, which always have interested naturalists and natural scientists from as early as the 19th century, as a result of which there is a body of literature which records mammals and other taxa from the region.

A thorough literature survey, both offline and open-access online, of published articles (67), books (17), book section (4), report (4), thesis (1), and news article (1), which include archived literature from various issues of very old journals available at the libraries of Darjeeling
Natural History Museum and Darjeeling Government College, articles from the Journal of the Bombay Natural History Society and Journal of the Asiatic Society of Bengal available in the Biodiversity Heritage Library was done and then used to prepare a checklist of mammals recorded so far from Darjeeling-Sikkim Himalaya.

To update this checklist, necessary corrections from previous publications were made, which include synonyms reported as two different species, subspecies elevated to species, revised nomenclature, and inclusion of new species recorded and not recorded previously. Exclusion of historical species records from singular grey literature not supported by IUCN Red List distribution range and inclusion of species, whose distribution was found to not overlap with IUCN distribution range but supported by peer-reviewed literature were also included. The nomenclature and taxonomic arrangement of the species of the mammals in the checklist are based on the checklist of mammals of southern Asia by Nameer (2015) and cross-checked with the IUCN Red List of Threatened Species for updated nomenclature (IUCN 2020). The present status of each species was also determined at the landscape level based on records updated until 2019, and categorized as Extinct (based on subsequent studies revealing species absence in previously recorded sites or no reports for more than 20 years), Present (species reported within the last 20 years), and Uncertain (reported more than 20 years ago and needs further exploration to confirm species presence). The spellings of location names are kept as-is from the cited literature.

RESULTS

A total of 94 relevant pieces of literature from available sources for mammalian diversity in Sikkim-Darjeeling Himalayan landscape were reviewed. The majority of literature available pertains to cataloguing, species records, new sightings, and reports accounting for 54 sources. Some studies, however, relate to taxonomy (15), ecology (12), pathology (6), genetics & evolution (2), ethno-zoology (2), and conservation (3). This review covered a span of 178 years dating from 1841 to 2019 and revealed a historical record of 173 species representing 11 orders and 33 families in this landscape.
A total of 153 and 145 mammalian species were listed from Sikkim and Darjeeling, respectively. Of the 173 species with historical records in Darjeeling-Sikkim Himalaya landscape, 168 species are currently present; one species—Pygmy Hog *Porcula salvania*, is locally extirpated, and four species—Indian Gerbil *Tatera indica*, Little Indian Field Mouse *Mus booduga*, Hispid Hare *Caprolagus hispidus*, and Black-striped Weasel *Mustela strigidorsa*, need further exploration to confirm their presence.

The available literature, when grouped as <1900 and a decade each after, showed that the number of publications peaked at two points, first during 1911–1920 (n=13) followed by a general decline until 1980. After that, the trend showed a rise in publications from 1981 onwards (Figure 2). The other peak was during 2010–2019 (n=19), however, it is expected that the number of publications is likely to increase by the end of the decade. A closer look at recent studies from 2000–2019, 44 literature in total, showed that the maximum number of studies pertain to medium and large-sized mammals (56.8%) followed by mammals in general (18.2%), bats (13.6%) and small mammals (11.3%). Only one empirical study based on fieldwork for small mammals, 11 for medium and large-sized mammals, four for mammals in general were carried out. However, no study on bats was conducted during this period.

Of 173 species, 17 species are endemic to southern Asia (Nameer 2015), namely Tarai Gray Langur *Semnopithecus hector*; Royle's Mountain Vole *Alticola roylei*; Bhutan Giant Flying Squirrel *Petaurista nobilis*; Lesser Bandicoot Rat *Bandicota bengalensis*; Little Indian Field Mouse *Mus booduga*; Himalayan White-bellied Rat *Niviventer niviventer*; Hispid Hare *Caprolagus hispidus*; Indian Hare *Lepus nigricollis*; Leaf-nosed Bat *Hipposideros lankadiva*; Sombre Bat *Eptesicus tatei*; Indian Pangolin *Manis crassicaudata*; Bengal Fox *Vulpes bengalensis*; Sloth Bear *Melursus ursinus*; Pygmy Hog *Porcula salvania*; Chital *Axis axis*; Himalayan Musk Deer *Moschus leucogaster*, and the recently elevated species Sikkim Pika *Ochotona sikimaria*, a species endemic to eastern Himalaya (Dahal et al. 2017; Dahal et al. 2020).

Order Chiroptera represents the maximum number of species (n=54 species) followed by order Carnivora (n=40) and order Rodentia (n=37) (Figure 3). Family Vespertilionidae of order Chiroptera has the maximum number of representations, with 30 species. Besides this, there are six other families (Pteropodidae, Rhinolophidae, Hipposideridae, Megadermatidae, Emballonuridae, and Molossidae) of the same order amounting to a total of 56 species (Figure 4). The least represented families are Elephantidae, Tuapaiidae, Spalacidae, Hystricidae, Talpidae, Megadermatidae, Molossidae, Prionodontidae, Aiuridae, and Equidae, represented by one species each (Figure 4) (Appendix 1).

According to the IUCN Red List, of the 173 species of mammal recorded from Darjeeling-Sikkim Himalayan landscape, 25 species belong to threatened category (2 Critically Endangered (1.2%), 10 Endangered (5.8%), and 13 Vulnerable (7.5%)); 14 species (8.1%) are Near Threatened; 129 species (74.6%) are Least Concern; four species (2.3%) are Data Deficient; and one species (0.6%) not assessed (Appendix 1). The total number of species falling under various appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) accounts for more than one-fourth (n=54 species) of the total species found in Darjeeling-Sikkim Himalaya, of which 24 species are listed under Appendix I, 15 under Appendix II, and 19 under Appendix III. Almost two-thirds of the total species recorded...
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are protected under the schedules of the Wildlife (Protection) Act, 1972 (WPA, 1972) in India, of which 36 species are listed in Schedule I, 38 in Schedule II, five in Schedule III, four in Schedule IV, and 29 in Schedule V (Appendix 1).

DISCUSSION

The review of biodiversity research trends (Kandel et al. 2016) showed that mammal studies contributed to 45% of total faunal studies in Eastern Himalaya comprising Nepal, Bhutan, and India (Darjeeling-Sikkim). The bulk of mammal documentation in Darjeeling-Sikkim Himalaya was done half a century ago which is likely to have changed in their distribution records and status due to various factors, including the rapidly changing land-use patterns, urbanization, climate change, and other anthropogenic pressures such as hydroelectric projects and road construction (Banerjee et al. 2019).

The resultant checklist from this review is inconsistent with the mammal list of India (Sharma et al. 2014), where the maximum representation is of the orders Chiroptera and Rodentia. This observation could be due to the lack of research in some of the mammal orders like Rodentia in Darjeeling-Sikkim Himalaya. The number of mammal species in Darjeeling and Sikkim also differed, with Sikkim having more number of records than Darjeeling, perhaps due to the considerable altitudinal variation in Sikkim.

This checklist provides for necessary corrections from previous literature, such as the Tarai Gray Langur Semnopithecus entellus ssp. hector, which is now considered a separate species Semnopithecus hector, Greater Hairy-winged Bat Harpisoecephalus mordax now synonymized with Lesser Hairy-winged Bat Harpisoecephalus harpia (Matveev 2005) and Rufous Horseshoe Bat Rhinolophus rouxi is now synonymized with Chinese Rufous Horseshoe Bat Rhinolophus sinicus. New scientific nomenclatures were also incorporated; replacing the old nomenclature such as Cadorna’s Pipistrelle Pipistrellus cadorna is now Hypsugo cadornae (Bates et al. 2019). The present species list also includes a recently upgraded taxon Sikkim Pika Ochotona sikimaria (Dahal et al. 2017).

The previous records confirming the presence of Rohu’s Bat Philetor brachypterus in Sikkim (Molur et al. 2002; Srinivasulu & Srinivasulu 2012) were that of misidentified Joffre’s Pipistrelle Hypsugo joffrei (Saikia et al. 2017). Previous records of Forrest’s Pika Ochotona forresti in Sikkim were also merged with records of Large-eared Pika Ochotona macrotis in light of the new
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A few species records from singular grey literature (Avasthe & Jha 1999) excluded from the species list in Sikkim were Indian Bush Rat *Golunda ellioti*, Hispid Hare *Caprolagus hispidus*, Edward’s Rat *Leopoldamys edwardsi*, Hardwicke’s Woolly Bat *Kerivoula hardwickii*, Bengal Fox *Vulpes bengalensis*, Smooth-coated Otter *Lutrogale perspicillata*, and Tibetan Antelope/Chiru *Pantholops hodgsonii*. The Bengal Fox although likely present (Gomper & Vanak 2006), is not included in Sikkim species list due to the absence of supporting primary evidence, its distribution range not overlapping as per the extant (resident) shown in the IUCN geographic distribution range and subsequent literature (Menon 2014). The Tibetan Antelope/Chiru was confirmed to be locally extirpated in Sikkim by Chanchani et al. (2010) as they had assumed the species’ presence in the region based on Hooker’s account. Joseph Dalton Hooker, however, had not reported the species’ sighting in Sikkim and had stated that he “found the horns of this animal on the southern side of Donkia Pass, but (I) never saw a live one except in Tibet” (Hooker 1854, p 157). Hence, there is neither concrete and definitive historical evidence, nor subsequent accounts of this species that suggests its presence in Sikkim (Dawson 1934). Therefore it has been excluded from the species list.

Similarly, Tibetan Shrew *Sorex thibetanus* Kastschenko, 1905, and Southeastern Asian Shrew *Crocidura fuliginosa* (Blyth, 1856) were also not included. These species, however, had been mentioned in a non-peer-reviewed report from an ecological study in Teesta Basin (Vijayan et al. 2004). Besides, these species were also not reported in subsequent literature (Molur et al. 2005; Srinivasulu & Srinivasulu 2012), and the IUCN geographic distribution range does not overlap with the study area.

A few species records from singular grey literature from Sikkim (Avasthe & Jha 1999) but whose geographical distribution range are found to overlap with the IUCN distribution range were considered as being present. These include the Northern Tailess Fruit Bat *Megaerops niphanae*, Blyth’s Horseshoe Bat *Rhinolophus lepidus*, Trefoil Horseshoe Bat *Rhinolophus trigolatus*, Greater False Vampire Bat *Megaderma lyra*, European Free-tailed Bat *Tadarida teniotis*, Serotine *Eptesicus serotinus*, Rufous Tube-nosed Bat *Murina leucogaster*, and Crab-eating Mongoose *Herpestes urva*.

Another notable inclusion is the Pygmy Hog *Porcua salvania*. The Pygmy Hog is still included in the checklist, although the current geographic distribution range does not overlap due to empirical research (Hodgson 1847; Sclater 1891) confirming historical presence. Although the Blue Sheep or Bharal *Pseudois nayaur* recorded in Phalut 1955 (Dutt-Mazumdar 1955) is now considered locally extinct in Darjeeling (Mallick 2019), it also is included due to its presence within the landscape.

**CONCLUSION**

The present review of literature, updated till 2019, for records of mammal species in Darjeeling-Sikkim landscape compiles an updated mammal list which generates an overview of mammals in different taxonomic orders, families, and genera which allows an analysis on areas requiring focus on survey, monitoring, and research in the region.

**Small mammals:** Three orders of mammalian taxa, namely Rodentia, Scandentia, and Eulipotyphla form the small mammals. Globally, these three orders comprised of more than 2,800 species, of which 437 (15%) of them are considered to be threatened with extinction by the IUCN (IUCN SMSG 2018). The small mammals, however, are also inadequately studied, with many hundreds of species never being photographed in the wild and even their basic ecology unknown (Gomez et al. 2017). Moreover, they also serve as model organisms for a better understanding of ecosystem and landscape processes due to their short life cycles and smaller areas of land use (Barrett & Peles 1999). Pradhan et al. (2018) reported large- and medium-sized mammals from the agroecosystems of Darjeeling but not the small mammals. The recent species inventory of mammals in protected areas (PAs) of Sikkim also does not include small mammals (Lepcha et al. 2017). The fact that small mammals have less representation in recent research studies as compared to large- and medium-sized mammals calls for a priority survey and focus on small mammals in Darjeeling-Sikkim Himalaya.

**Bats (Order Chiroptera)**

Order Chiroptera has a large number of species in the Darjeeling-Sikkim landscape, but there are minimal systematic surveys and monitoring of bats in the context of changes in land use and agroecosystems.
The most recent study on bats in the region was in 2012 in Kalimpong (Mallick 2012). The species list for bats requires an update for other parts of Darjeeling and Sikkim, and their status needs to be understood for further long term research on bat ecology and monitoring in the region.

Areas outside of protected areas

There is growing recognition of agroecosystems as repositories of significant biodiversity (Altieri 1999; Bali et al. 2007; Bhagwat et al. 2008; Perfecto & Vandermeer 2008; Chazdon et al. 2009; Chettri et al. 2018), which requires serious conservation attention (Perfecto et al. 2005). For instance, there is no record of threatened species such as the Critically Endangered Chinese Pangolin in the recent study by the Forest Department, Sikkim in the protected areas (Lepcha et al. 2017) although there were records of its presence in Sikkim (Avasthe & Jha 1999; Sathyakumar et al. 2011b; The Statesman 2019).

Besides the above three major concerns, the findings from this review also give rise to questions as to what is the current distribution and status of the four Data Deficient species—Hairy-footed Flying Squirrel Belomys pearsonii, Millard’s Rat Dacnomys millardi, Sombre Bat Eptesicus tatei, and Joffre’s Pipistrelle Hypsugo joffrei—one not assessed species Sikkim Pika Ochotona sikimaria, and 17 endemic mammals in the region. It is also important to know the present status and understand the ecology of mammals in the agroecological matrix, a prerequisite for their conservation and co-existence with humans in the socioecological landscapes. Future research should be directed to address these gaps in the mammal survey and ecological studies in the region.

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Appendix 1. Mammals of Darjeeling-Sikkim Himalaya with their conservation status, present status, and previous records in the landscape.

| Family                      | Scientific Name         | Common Name         | Conservation Status | Present Status | Previous Records |
|-----------------------------|-------------------------|---------------------|---------------------|----------------|------------------|
| **I. ORDER PROBOSCIDEA**    | **Iliger, 1811**        |                    |                     |                |                  |
| 1) Family Elephantidae      | **Gray, 1821**          | **Elephantidae**    |                     |                |                  |
| **Elephas maximus**         | **Linnaeus, 1758**      | **Asian Elephant**  | Common             | II, (I), (I), Present |                  |
| **II. ORDER SCANDENTIA**    | **Wagner, 1855**        |                    |                     |                |                  |
| 2) Family Tupaiidae         | **Gray, 1825**          | **Tupaiidae**       |                     |                |                  |
| 3. **Tupaia belangeri**     | **Wagner, 1841**        | **Northern Treeshrew** |                     |                 |                  |
| **III. ORDER PRIMATES**     | **Linnaeus, 1758**      |                    |                     |                |                  |
| 3) Family Cercopithecidae   | **Gray, 1821**          | **Cercopithecidae** |                     |                |                  |
| 3. **Macaca assamensis**    | **(M'Clelland, 1840)** | **Assam Macaque**  |                     |                |                  |
| 4. **Macaca mulatta**       | **(Zimmermann, 1780)** | **Rhesus Macaque**  |                     |                |                  |
| **IV. ORDER RODENTIA**      | **Bowdich, 1821**       |                    |                     |                |                  |
| 4) Family Sciuridae         | **Hemprich, 1820**      | **Sciuridae**       |                     |                |                  |
| 7. **Ratufa bicolor**       | **(Sparrman, 1778)**    | **Black Giant Squirrel** |                 |                |                  |
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|-----------------------------------------------|-----------------|---------------------|
| **Subfamily Sciurinae Fischer, 1817** | | |
| Tribe Pteromyini Brandt, 1855 | | |
| 8. Belomys pearsonii (Gray, 1842) Hairy-footed Flying Squirrel | DD, (II), Present | East Sikkim (Cricetetus 1891; Avasthe & Jha 1999; Chattopadhyay et al. 2006), Sombaria (Molur et al. 2005) | Darjeeling, 1828.8 m (Dalgliesh 1906; Molur et al. 2005), Mungpoo (Sanborn 1932), Neora Valley National Park (Ghose 1984) |
| 9. Eupetaurus cinereus Thomas, 1888 Woolly Flying Squirrel | EN, (II), Present | Pangdün, Kangtæn, Rangit Valley and Bakhkim (Avasthe & Jha 1999), Sikkim (Molur et al. 2005; Chattopadhyay et al. 2006) | Neora Valley National Park (Ghose 1984) |
| 10. Hylopetes alboniger (Hodgson, 1836) Particoloured Flying Squirrel | LC, (II), Present | Chuntang and Singhik (Wroughton 1916a), Bakhkim (Avasthe & Jha 1999), Sikkim (Molur et al. 2005; Chattopadhyay et al. 2006), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a) | Pashok (Wroughton 1916a; Molur et al. 2005), Pashok and Amboota (Wroughton 1916b), Rhenok, Neora Valley National Park (Ghose 1984; Biswas et al. 1999), Kuruseong, Pashok and Selimbong (Agrawal et al. 1992) |
| 11. Petaurista elegans (Müller, 1840) Spotted Giant Flying Squirrel | LC, (II), Present | Sikkim (Avasthe & Jha 1999), Yumthang (Molur et al. 2005), Yumthang and Bakhkim (Chattopadhyay et al. 2006) | Darjeeling (Dalgliesh 1906; Gurung & Agarwal 1969; Chatterjee et al. 1970; Bandypahadyp & Dasgupta 1984b; Dey et al. 1984; Banerjee et al. 1996), Ghoom, Manebhanjan, Selimbong (Agrawal et al. 1992), Darjeeling and Ghoom (Molur et al. 2005) |
| 12. Petaurista magnificus (Hodgson, 1836) Hodgson’s Giant Flying Squirrel | LC, (II), Present | Sikkim (Avasthe & Jha 1999), Teesta Valley (Vişayan et al. 2004), Chuntang, Darmthang (Molur et al. 2005), Grezing (Chattopadhyay et al. 2006) | Batasia and Darjeeling (Wroughton 1916a), Neora Valley National Park (Ghose 1984), Ghoom, Manebhanjan and Selimbong (Agrawal et al. 1992), Darjeeling and Ghoom (Molur et al. 2005) |
| 13. Petaurista nabilis (Gray, 1842) Bhutan Giant Flying Squirrel | NT, (II), Present | Sedonchen (Wroughton 1916a), Selimbong (Molur et al. 2005), Singhik, Tumin, Rangit Valley (Molur et al. 2005), Dikchu (Wroughton 1916a), Gopaldhara, Pashok and Tumin (Agrawal et al. 2006), Khangchendzonga Biosphere Reserve (Lepcha et al. 2017) | Bataasia and Darjeeling (Wroughton 1916a), Neora Valley National Park (Ghose 1984), Ghoom, Manebhanjan and Selimbong (Agrawal et al. 1992), Darjeeling and Ghoom (Molur et al. 2005) |
| 14. Petaurista petaurista (Pallas, 1766) Red Giant Flying Squirrel | LC, (II), Present | Fambohnglo Wildlife Sanctuary, Khangchendzonga Biosphere Reserve (Lepcha et al. 2017) | Neora Valley National Park (Mallick 2012) |
| **Subfamily Callosciurinae Pocock, 1923** | | |
| 15. Callosciurus erythraeus (Pallas, 1779) Pallas’s Squirrel | LC, (II), Present | Sikkim (Thomas 1916a), Sedonchen (Wroughton 1916a; Molur et al. 2005; Chattopadhyay et al. 2006), Lintang (Sanborn 1932) | Pashok, Kuruseong, Narbong and Sivok (Wroughton 1916a), Gopaldhara, Pashok and Tong Song (Wroughton 1916b), Nimbong and Sangser (Wroughton 1917), Gopaldhara and Mungpo hills (Fry 1923), Sivok, Sangsir and Mungpoo (Sanborn 1932), Takdah (Khajuria & Ghose 1970), Neora Valley National Park (Ghose 1984; Biswas et al. 1999), Gopaldhara, Mungpo, Narbong, Pashok, Samsing, Sangser, Sivok, Tarkhola and Tirdharia (Agrawal et al. 1992; Molur et al. 2005), Kasset and Lava (Mallick 2012) |
| 16. Callosciurus pygerythrus (L. Geoffroy Saint Hilaire, 1833) Hoary-bellied Squirrel | LC, (II), Present | Sedonchen (Thomas 1916a), Rongli, Gangtok and Dikchu (Wroughton 1916a), Lintang, Dikchu and Toong (Sanborn 1932), Sikkim, 762–1524 m (Madaren 1949; Avasthe & Jha 1999), Teesta Valley (Vişayan et al. 2004), Chuntang, Gangtok and Lachen (Molur et al. 2005), Tumin, Singtam and Ranipool (Chattopadhyay et al. 2006), Khandungdza Biosphere Reserve (Sathyakumar et al. 2011a), Barsay Rhododendron Sanctuary, Fambohnglo Wildlife Sanctuary, Khandungdza Biosphere Reserve (Lepcha et al. 2017) | Darjeeling, 1524 m (Dalgliesh 1906), Pashok (Wroughton 1916b), Palmajua (Khajuria & Ghose 1970), Lava, Damdama danda, Thosum and Rechila, Neora Valley National Park (Ghose 1984; Biswas et al. 1999; Mallick 2012), Palmajua and Selimbong (Agrawal et al. 1992), Sukhipokorhi (Molur et al. 2005) |
| 17. Dreomomys loki rich (Hodgson, 1836) Orange-bellied Himalayan Squirrel | LC, (II), Present | Sedonchen (Thomas 1916a), Karponang, Sedonchen, Chungtang and Gangtok (Wroughton 1916a), Chungthang, Jeluk, Lachen and Lachung (Sanborn 1932), Sikkim between 1500–2700m, Bakhkim (Avasthe & Jha 1999), Teesta Valley (Vişayan et al. 2004), Ringin, Sedonchen, Gangtok (Molur et al. 2005), Rabangla and Bakhkim (Chattopadhyay et al. 2006), Khandungdza Biosphere Reserve (Sathyakumar et al. 2011a), Barsay Rhododendron Sanctuary, Fambohnglo Wildlife Sanctuary, Khandungdza Biosphere Reserve, Maenam Wildlife Sanctuary (Lepcha et al. 2017) | Darjeeling, 1524 m (Dalgliesh 1906), Pashok (Wroughton 1916b), Palmajua (Khajuria & Ghose 1970), Lava, Damdama danda, Thosum and Rechila, Neora Valley National Park (Ghose 1984; Biswas et al. 1999; Mallick 2012), Palmajua and Selimbong (Agrawal et al. 1992), Sukhipokorhi (Molur et al. 2005) |
| 18. Funambulus pennantii (Wroughton, 1905) Five-striped Palm Squirrel | LC, (IV), Present | Sikkim (Avasthe & Jha 1999), Khandungdza Biosphere Reserve (Sathyakumar et al. 2011a) | Sivok (Sanborn 1932) |
| 19. Janiops macrilellandii (Horsfield, 1840) Himalayan Striped Squirrel | LC, (III), Present | Sedonchen, Penlóng, Gangtok, Chungtang and Ringin (Wroughton 1916a), Lintang and Chungthang (Sanborn 1932), Sikkim (Avasthe & Jha 1999), Teesta Valley (Vişayan et al. 2004), Ringin, Sedonchen, Chungtang, Gangtok, Sombaria (Molur et al. 2005) | Darjeeling, 1524m (Dalgliesh 1906), Batasia (Wroughton 1916a), Gopaldhara (Wroughton 1916b), Palmajua (Khajuria & Ghose 1970), Gopaldhara, Palmajua and Selimbong (Agrawal et al. 1992), Lava (Mallick 2012) |
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|---------------------------------------------|-------------------|-----------------------|
| **SUBORDER MYOMORPHA Brandt, 1855**        |                   |                       |
| 5) Family Spalacidae Gray, 1821              |                   |                       |
| **1. Cannomys bedius** (Hodgson, 1841) Lesser Bamboo Rat | LC, (V), Present | Sikkim (Sterndale 1884; Avasthe & Jha 1999) Narbong (Wroughton 1916a, 1916b), Darjeeling (Molur et al. 2005) |
| **2. Alticola roylei** Royle’s Mountain Vole | NT, (V), Present | Changu, Kapup, Gantong, Lachen, Thangu (Wroughton 1916a), Sikkim above 3000m (Avasthe & Jha 1999) Sandakphu (Khajuria & Ghose 1970; Agrawal et al. 1992), Lava and Rechila, Neora Valley National Park (Ghose 1984; Biswas et al. 1999; Mallick 2012) |
| **6) Family Cricetidae Fischer, 1817**      |                   |                       |
| **24. Alticola roylei** Royle’s Mountain Vole | LC, (V), Present | Sikkim (Sterndale 1884; Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), all over India (Srinivasulu & Srinivasulu 2012) Pashok, Ghoom, and Narbong (Wroughton 1916a), Pashok (Wroughton 1916b), Kalimppong and Nimbong (Wroughton 1917), Gopaldirha (Fry 1923), Mungpoo (Sanborn 1932), Tarkhola (Khajuria & Ghose 1970), Kalimppong, Nimbong and Pashok (Agrawal et al. 1992), Kalimppong (Mallick 2012) |
| **25. Bandicota indica** (Horsfield, 1841) Sikkim Vole | LC, (V), Present | Sikkim (Agrawal et al. 1992; Chattopadhyay et al. 2006), Near Human settlements in Sikkim (Avasthe & Jha 1999) Gopaldirha and Pashok (Thomas 1916a; Wroughton 1916b), Mungpoo (Sanborn 1932) |
| **27. Dacnomys millardi** Thomas, 1916 Millard’s Rat | DD, (V), Present | Sikkim (Thomas 1916a; Avasthe & Jha 1999) Gopaldirha and Pashok (Thomas 1916a; Wroughton 1916b), Mungpoo (Sanborn 1932) |
| **28. Golunda edwardsi** (Thomas, 1882) Edward’s Rat | LC, (V), Present | Sikkim (Agrawal et al. 1992; Chattopadhyay et al. 2006), Near Human settlements in Sikkim (Avasthe & Jha 1999) Gopaldirha and Pashok (Thomas 1916a; Wroughton 1916b), Darjeeling (Agrawal 2000; Molur et al. 2005) |
| **30. Mus booduga** Gray, 1837 Little Indian Field Mouse | LC, (V), Present | Sikkim (Thomas 1916a; Avasthe & Jha 1999) Gopaldirha and Pashok (Thomas 1916a; Wroughton 1916b), Mungpoo (Sanborn 1932) |
| **31. Mus cervicolor** Hodgson, 1845 Fawn-colored Mouse | LC, (V), Present | Sikkim (Agrawal et al. 1992; Chattopadhyay et al. 2006), Near Human settlements in Sikkim (Avasthe & Jha 1999) Gopaldirha and Pashok (Thomas 1916a; Wroughton 1916b), Darjeeling (Agrawal 2000; Molur et al. 2005) |
| **32. Mus musculus** Linnaeus, 1758 House Mouse | LC, (V), Present | Sikkim (Agrawal et al. 1992; Chattopadhyay et al. 2006), Near Human settlements in Sikkim (Avasthe & Jha 1999) Gopaldirha and Pashok (Thomas 1916a; Wroughton 1916b), Mungpoo (Sanborn 1932) |

**Subfamily Kerinae Osborn, 1910**

**Tribe Marmotini Pocock, 1923**

| Common Name | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|-------------|-----------------------------------------------|-------------------|-----------------------|
| 20. Marmota himalayana Himalayan Marmot | LC, III, (II), Present | Kapup and above Thangu (Wroughton 1916a), Thangu, Gyangong and Ghura la (Sanborn 1932), Cho Lhamu, Lhonak valley, Green Lake, Lasher, Yumesamdong, Kyongnosla Alpine Sanctuary (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Geygong, Yumthang (Molur et al. 2005), Geygong, Lhasar and Thangu (Chattopadhyay et al. 2006), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a) | | |
| | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|---|---|---|---|
| 33. Mus pahari Thomas, 1916 Gairdner's Shrewmouse | LC, (V), Present | Sikkim (Thomas 1916a), Chuntang (Wroughton 1916a; Ellerman 1961; Chattopadhyay et al. 2006), Lingtam (Sanborn 1932), in the forest of Sikkim below 1650m (Avathe & Jha 1999), Teesta Valley (Vijayan et al. 2004) | Tonglu, Singalia National Park (Thomas 1916a), Batasia (Thomas 1916a; Wroughton 1916a), Pashok (Wroughton 1916b), Pedong and Sangser (Wroughton 1917), Takdah and Batasia (Khajuria & Ghose 1970), Thosum and Rechila (Ghose 1984; Biswas et al. 1999; Mallick 2012), Pashok and Takdah (Agrawal et al. 1992) |
| 34. Niviventer eha (Wroughton, 1916) Smoke-bellied Rat | LC, (V), Present | Lachen (Thomas 1916a; Sanborn 1932; Khajuria & Ghose 1970), Lachen and Thangu (Wroughton 1916a), Sikkim in Rhododendron forest (Avathe & Jha 1999), Rabangla, Chuntang, Lachen (Molur et al. 2005), Rabangla (Chattopadhyay et al. 2006) | Ghoom and Sukhiapokhri (Wroughton 1916a), Palmajua and Sandakphu (Khajuria & Ghose 1970; Agrawal et al. 1992), Neora Valley National Park (Ghose 1984) |
| 35. Niviventer fulvescens (Gray, 1847) Chestnut White-bellied Rat | LC, (V), Present | Chuntang and Lachen (Wroughton 1916a), Lingtam and Chuntang (Sanborn 1932), Lower Eastern Himalayas (Avathe & Jha 1999), Rabangla, Chuntang, Lachen (Molur et al. 2005), Rabangla (Chattopadhyay et al. 2006) | Ghoom, Sukhiapokhri, Batasia and Narbong (Wroughton 1916a), Gopalchandra, Songma and Pashok (Wroughton 1916b), Nimbong and Pedong (Wroughton 1917), Mongpu hills (Fry 1923), Mungpoo (Sanborn 1932), Palmajua and Takdah (Khajuria & Ghose 1970), Neora Valley National Park (Ghose 1984), Batasia, Nimbong, Palmajua, Pashok, Pedong, Selimbong and Takdah (Agrawal et al. 1992) |
| 36. Niviventer niiviventer (Hodgson, 1836) Himalayan White-bellied Rat | LC, (V), Present | Chuntang (Thomas 1916a), Chuntang and Lachen (Wroughton 1916a), Lower Himalayas (Avathe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Bakhim, Chuntang, Lachen (Molur et al. 2005), Bakhim (Chattopadhyay et al. 2006) | Palmajua and Sandakphu (Khajuria & Ghose 1970; Agrawal et al. 1992), Neora Valley National Park (Ghose 1984), Ghoombhajan and Selimbong (Agrawal et al. 1992) |
| 37. Rattus andamanensis (Blyth, 1860) Indochinese Forest Rat | LC, (V), Present | Pashok, Singhik, Ringing and Rongli (Hinton 1918), Chakung, Rongli and Singhik (Ellerman 1961; Agrawal 2000; Molur et al. 2005), Teesta Valley (Vijayan et al. 2004), Khangchezhonga Biosphere Reserve (Sathyakumar et al. 2011a) | Gopalchandra (Hinton 1918), Kalimpong, Gopalchandra, Darjeeling, and Pashok (Ellerman 1961; Agrawal 2000; Molur et al. 2005) |
| 38. Rattus nitidus (Hodgson, 1845) Himalayan Field Rat | LC, (V), Present | Gangtok, Gnatong, Rongli, Chuntang and Dikchu (Wroughton 1916a), Gnatong and Lingtam (Sanborn 1932), Eastern Himalayas (Avathe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Gangtok (Molur et al. 2005) | Ghoom, Sukhiapokhri, Pashok and Batasia (Wroughton 1916a), Gopalchandra, Tong Song and Pashok (Wroughton 1916b), Kalimpong, Nimbong, Pedong and Sangser (Wroughton 1917), Gopalchandra and Mongpu hills (Fry 1923), Mungpoo (Sanborn 1932), Takdah and Sandakphu (Khajuria & Ghose 1970) Neora Valley National Park (Ghose 1984), Batasia, Ghoombhanjan, Gopalchandra, Mongpu, Nimbong, Palmajua, Pashok, Pedong, Sangser, Sukhiapokhri and Takdah (Agrawal et al. 1992), Darjeeling, Pashok and Ghoom (Molur et al. 2005) |
| 39. Rattus pyctoris (Hodgson, 1845) Himalayan Rat | LC, (V), Present | Chuntang (Wroughton 1916a; Agrawal et al. 1992), Eastern Himalayas (Avathe & Jha 1999), Lachen and Chuntang (Molur et al. 2005; Chattopadhyay et al. 2006) | Ghoom and Batasia (Wroughton 1916a), Ghoom (Agrawal et al. 1992; Molur et al. 2005) |
| 40. Rattus rattus (Linnaeus, 1758) House Rat | LC, (V), Present | Sedorchen, Rongli, Singhik, Gangtok, Dikchu and Ringing (Wroughton 1916a), Lingtam (Sanborn 1932), Eastern Himalayas (Avathe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Tumin (Chattopadhyay et al. 2006) | Darjeeling (Dalgilesh 1906), Pashok, Batasia and Narbong (Wroughton 1916a), Gopalchandra, Songma and Pashok (Wroughton 1916b), Kalimpong, Nimbong, Pedong and Sangser (Wroughton 1917), Mungpoo and Tarkhola (Sanborn 1932), Tarkhola, Palmajua and Takdah (Khajuria & Ghose 1970) |
| 41. Rattus tanezumi Temminck, 1844 Oriental House Rat | LC, (V), Present | Lingtam (Sanborn 1932), Rabangla and Yuksom (Chattopadhyay et al. 2006) | Sivok, Sangsir and Mungpoo (Sanborn 1932), Gopalchandra and Mungpo hills (Fry 1923), Gopalchandra, Narbong, Kalimpong, Nimbong, Palmajua, Pashok, Pedong, Sangser, Takdah and Tarkhola (Agrawal et al. 1992) |
| 42. Undelesseria olivacea (Bennett, 1832) Asiatic Long-tailed Climbing Mouse | LC, (V), Present | Common in lower Himalayas (Avathe & Jha 1999), Sikkim (Srinivasulu & Srinivasulu 2012) | Pashok (Wroughton 1916b, 1916a; Agrawal et al. 1992), Kalimpong (Wroughton 1917) |
### Checklist of mammals with historical records from Darjeeling-Sikkim

**Naulak & Pradhan**

#### SUBORDER HYSTRICOMORPHA Brandt, 1855

8) Family Hystricidae G. Fisher, 1817 (Old World porcupines)

| 43. Hystrix brachyura Linnaeus, 1758 Malayan Porcupine | LC, (II), Present | Foothills (Wroughton 1916a), Sikkim, below 1000m (Avasthe & Jha 1999; Molur et al. 2005; Chattopadhyay et al. 2006), Teesta Valley (Vijayan et al. 2004), Kanchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Barsyey Rhododendron Sanctuary, Fambonghingho Wildlife Sanctuary, Kitam Bird Sanctuary, Kanchendzonga Biosphere Reserve (Lepcha et al. 2017) | Mungpoo (Sanborn 1932), Alubari, Neora Valley National Park (Biswas et al. 1999; Mallick 2012), Darjeeling (Molur et al. 2005) |

#### ORDER LAGOMORPHA Brandt, 1855

9) Family Ochotonidae Thomas, 1897 (pikas)

| 44. Ochotona curzoniae (Hodgson, 1858) Plateau Pika | LC, Present | Kamarapab to Kala (Maclaren 1849), Sikkim (Molur et al. 2005; Chattopadhyay et al. 2006), Kanchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Tso Lhamo plateau (Rawat & Tambe 2011) | |
| 45. Ochotona macratai (Günther, 1875) Large-eared Pika | LC, Present | Teesta Valley (Vijayan et al. 2004), Sikkim (Molur et al. 2005), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a) | |
| 46. Ochotona roylei (Ogilby, 1839) Royle’s Pika | LC, (IV), Present | Gnatong and Lachen (Wroughton 1916a), Cho Lhamu, Lhonak Valley, Kishongla, Jelep La, Lampa Khiri, Botang La, Thangu, Samthong and Dzongri (Avasthe & Jha 1999), East Sikkim (Molur et al. 2005), Gomchen and Thangsiing (Chattopadhyay et al. 2006) | |
| 47. Ochotona sikimaria Thomas, 1922 Sikkim Pika | NE, Present | Gnatong, Lachen, Thangu (Sanborn 1932), Sikkim-Tibet, Between 2438.4-3657.6 m (Maclaren 1949), Lachen (Khajuria & Ghose 1970), North Sikkim (Avasthe & Jha 1999), Lachen (Molur et al. 2005), Lachung, Yumthang, Thang, Dzongri, Menam, Kyongnosla and Tsomgo (Chattopadhyay et al. 2006), 2600–4754m (Dahal et al. 2017) | Sandakphu (Khajuria & Ghose 1970; Agravat et al. 1992), Darjeeling (Molur et al. 2005), Kalimpong, Nimpong, Pedong and Sangser (Wroughton 1917) |

#### ORDER EULIPOTYPHLA Waddell et al., 1999

11) Family Soricidae Fischer, 1817 (shrews, moles, and hedgehogs)

| 51. Crocidura attenuata Milne-Edwards, 1872 Grey Shrew | LC, Present | Sikkim, upto 2700m (Avasthe & Jha 1999), Dikling, East Sikkim (Chattopadhyay et al. 2006) | Kurseong (Dalgleish 1906), Gopaldhara (Wroughton 1916b), Mungpo Hills (Fry 1923), Munsong, Kalimpong (Sanborn 1932), Darjeeling and Tonglu (Agrawal et al. 1992), Samsing, Tarkhola, Neora Valley National Park (Mallick 2012) |
| 52. Suncus etruscus (Savi, 1822) Pygmy White-toothed Shrew | LC, Present | Kongra Lama Pass, above Thangu (Wroughton 1916a), Tangla to Kala, Tang pun sum plain and west of Dochen (Maclaren 1949), Gyagong (Sanborn 1932), Sikkim plateau, usually above 3300m (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Rabangla, South Sikkim and Kongra Lama Pass (Chattopadhyay et al. 2006), Tso Lhamo plateau (Rawat & Tambe 2011) | }
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|-----------------------------------------------|---------------------|----------------------|
| **53. Suncus murinus Linnaeus, 1766 House Shrew** | LC, Present         | Gntang, Rongli, Dikchu (Wroughton 1916a), Lingtam and Rongli (Sanborn 1932), Teesta Valley (Vijayan et al. 2004), Sikimm, tropical, sub-tropical and temperate regions (Avasthe & Jha 1999), Rongli (Chattopadhyay et al. 2006) | Darjeeling (Dalglish 1906; Bandopadhyay and Daugupta, 1984a), Darjeeling, Ghoom, Narbong, Sivok, Siliguri (Wroughton 1916a), Gopalighara and Pashok (Wroughton 1916b), Kalimpong, Nimpong, Pedong and Sangsang (Wroughton 1917), Mungpoop and Sangsir (Sanborn 1932), Tarkhola (Khajuria & Ghose 1970), Neora Valley National Park (Ghose 1984), Shrubbery Park, Darjeeling (Daugupta, 1987), Ghoom, Kalimpong, Kurseong, Manibhanjan, Pedong, Rangireom, Sivok, Ghoombhanjan, Tonglu and Tarkhola (Agrawal et al. 1992) |

**Tribe: Nectogalini Anderson, 1879**

| **54. Chimarrangole himalayica (Gray, 1842) Himalayan Water Shrew** | LC, Present         | Rongli (Wroughton 1916a; Molur et al. 2005), Chattopadhyay et al. 2006, Sikimm (Avasthe & Jha 1999) | Darjeeling, near mountain streams 1524m (Dalglish 1906), Pashok (Agrawal et al. 1992), Gopalighara (Molur et al. 2005) |

| **55. Episoriculus suspendus (Hirsfeld, 1851) Hodgson’s Brown-toothed Shrew** | LC, Present         | Sedonchen, Chuintang, Lachen (Wroughton 1916a), Lingtam (Sanborn 1932), Sikimm, sub-tropical and temperate regions (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Chungthang and Lachen (Molur et al. 2005), Lachen and Chunthang (Chattopadhyay et al. 2006) | Ghoom (Wroughton 1916a), Gopalighara, Songma, and Pashok (Wroughton 1916b), Sangsang (Wroughton 1917), Sandakphu (Khajuria & Ghose 1970), Mungpo and Sandakphu (Agrawal et al. 1992), Ghoombanganj (Molur et al. 2005) |

| **56. Episoriculus leucops (Hirsfeld, 1855) Long-tailed Brown-toothed Shrew** | LC, Present         | Lachen (Molur et al. 2005) | Darjeeling (Agrawal et al. 1992) |

| **57. Episoriculus macrurus (Blanford 1888) Long-tailed Mountain Shrew** | LC, Present         | Chuintang and Lachen (Wroughton 1916a; Chattopadhyay et al. 2006) | Darjeeling (Molur et al. 2005) |

| **58. Nectogale elegans Milne-Edwards, 1870 Elegant Water Shrew** | LC, Present         | Gangtok (Millard et al. 1916b), Chuintang (Wroughton 1916a), Chungthang, Lachung and Lachen (Sanborn 1932), Sikimm (Avasthe & Jha 1999), Yumthang (Molur et al. 2005), Lachen, Chunthang, Yumthang (Chattopadhyay et al. 2006) | Tong Song and Pashok (Wroughton 1916b) |

| **59. Soriculus nigrescens (Gray, 1842) Himalayan Shrew** | LC, Present         | Sedonchen, Gangtok, Chuintang, Lachen (Wroughton 1916a), Lingtam (Sanborn 1932), Sikimm (Avasthe & Jha 1999), Yumthang (Molur et al. 2005), Lachen, Chunthang, Yumthang (Chattopadhyay et al. 2006) | Darjeeling, 1524m (Dalglish 1906), Ghoom, Sukhiapokhri (Wroughton 1916a), Gopalighara and Pashok (Wroughton 1916b), Palmajua (Khajuria & Ghose 1970), Jaributi, Neora Valley National Park (Ghose 1984), Biswas et al. 1999; Mallick 2012), Ghoom, Gopalighara and Palmajua (Agrawal et al. 1992) |

| **12) Family Talpidae Fischer, 1817 (desmans, shrew moles and moles)** |
| **Subfamily Talpinae G. Fischer, 1814 (moles)** |
| **Tribe: Talpini G. Fischer, 1814**|

| **60. Euroscaptor micrura (Hodgson, 1841) Himalayan Mole** | LC, Present         | Dikchu (Wroughton 1916a), Zeluq (Sanborn 1932), Sikimm, between 1500–2400m (Avasthe & Jha 1999; Chattopadhyay et al. 2006) | Kurseong and Darjeeling (Dalglish 1906), Gopalighara, Tong Song, Pashok and Songma (Wroughton 1916b), Darjeeling, Batasia, Sivok (Wroughton 1916a), Gopalighara (Fry 1923), Mungpoop and Tarkhola (Sanborn 1932), Neora Valley National Park (Ghose 1984), Mallick 2012), Gopalighara, Pashok and Seilimpong (Agrawal et al. 1992); Batasia and Gopalighara (Molur et al. 2005) |

| **VII. ORDER CHIROPTERA Blumenbach, 1779** |
| **13) Family Pteropodidae Gray, 1821 (Old World fruit bats)** |

| **61. Cynopterus sphinx (Vahl, 1797) Greater Short-nosed Fruit Bat** | LC, (V), Present     | Sikkim, up to 2000m (Avasthe & Jha 1999; Das 2003; Chattopadhyay et al. 2006) | Darjeeling (Dalglish 1906; Molur et al. 2002), Singla (Wroughton 1916a), Tong Song and Pashok (Wroughton 1916b), Sivok (Sanborn 1932), Neora Valley National Park (Ghose 1984), Chunabhati, Darjeeling, Gorubathan, Kumani and Sukma (Agrawal et al. 1992; Das 2003), Darjeeling, Kumani (Ghosh 2005) |

| **62. Eonycteris spelaea (Dodson, 1871) Lesser Dawn Bat** | LC, (V), Present     | Sikkim, up to 2000m (Avasthe & Jha 1999; Das 2003; Chattopadhyay et al. 2006), Hee Gyanthang (Molur et al. 2002) | Pashok (Agrawal et al. 1992), Pashok, Sivok and Sukma (Das 2003; Ghosh 2005) |

| **63. Megaderops niphonae Yenbutra and Felten, 1983 Northern Tailless Fruit Bat** | LC, (V), Present     | Sikimm (Avasthe & Jha 1999) | Pashok (Molur et al. 2002; Das 2003) |
64. *Macroglossus sobrinus* K. Andersen, 1911 Greater Long-nosed Fruit Bat

LC, (V), Present

Sikkim (Avasthe & Jha 1999; Molur et al. 2002; Das 2003; Ghosh 2005)

Darjeeling (Agrawal et al. 1992; Molur et al. 2002; Das 2003; Ghosh 2005)

65. *Pteropus giganteus* (Brünnich, 1782) Indian Flying Fox

LC, II, (V), Present

Melli, Singtam, Rango, Tong, Chakung and Ranipool (Avasthe & Jha 1999), Gangtok (Molur et al. 2002)

Darjeeling, warmer valleys at low elevation (Dalgleish 1906), Silguri (Wroughton 1916a; Agrawal et al. 1992; Molur et al. 2002; Das 2003; Ghosh 2005)

66. *Roussetus leschenaulti* (Desmarest, 1820) Leschenault’s Rousette

LC, (V), Present

Sikkim, upto 2250m (Avasthe & Jha 1999), 17km SSW Mangan (Molur et al. 2002), Hee Gyatham (Ghosh 2005; Chattopadhyay et al. 2006)

Pedong (Wroughton 1917), Tarkhola (Khajuria & Ghose 1970), Neora Valley National Park (Ghose 1984), Gorubathan and Tarkhola (Agrawal et al. 1992; Das 2003; Ghosh 2005), Darjeeling (Molur et al. 2002)

67. *Hipposideros blanci* (Thomas, 1891) Blanford’s Fruit Bat

LC, (V), Present

Sikkim (Avasthe & Jha 1999; Das 2003), Fambong Lho Wildlife Sanctuary (Molur et al. 2002), Tumin (Ghosh 2005; Chattopadhyay et al. 2006)

Darjeeling, Ghoom and Palmajua (Agrawal et al. 1992; Das 2003; Ghosh 2005), Darjeeling and Goomti (Molur et al. 2002)

14) Family Rhinolophidae Gray, 1825 (horseshoe bats)

68. *Rhinolophus affinis* Horsfield, 1823 Intermediate Horseshoe Bat

LC, Present

Sikkim (Avasthe & Jha 1999; Srinivasulu & Srinivasulu 2012)

Kurseong, (Dalgleish 1906), Pashok (Wroughton 1916b; Agrawal et al. 1992; Das 2003), Darjeeling and Pashok (Molur et al. 2002)

69. *Rhinolophus ferrumequinum* (Schreber, 1774) Greater Horseshoe Bat

LC, Present

Rongli (Wroughton 1916a), Ringin and Rongli

Darjeeling (Molur et al. 2002)

70. *Rhinolophus luctus* Blyth, 1844 Blyth’s Horseshoe Bat

LC, Present

Sikkim (Avasthe & Jha 1999)

Nimbong, Pedong, and Sanger (Wroughton 1917), Darjeeling (Molur et al. 2002)

71. *Rhinolophus pusillus* Temminck, 1834 Great Wooly Horseshoe Bat

LC, Present

Sikkim (Avasthe & Jha 1999; Das 2003)

Singla (Wroughton 1916a), Darjeeling and Nimbong (Agrawal et al. 1992; Das 2003), Kalimpong and Rechila, Neora Valley National Park (Biswas et al. 1999; Mallick 2012), Darjeeling and Singla (Molur et al. 2002)

72. *Rhinolophus macroots* Blyth, 1844 Big-eared Horseshoe Bat

LC, Present

Lopchu (Molur et al. 2002)

73. *Rhinolophus pearsonii* Horsfield, 1851 Pearson’s Horseshoe Bat

LC, Present

Sikkim (Hill 1986; Chattopadhyay et al. 2006), Sikkim, Lower Himalayan range (Avasthe & Jha 1999), Chunthang and Fambong Lho Wildlife Sanctuary (Molur et al. 2002), Kangchenchzouga Biosphere Reserve (Sathyakumar et al. 2011a)

Pashok (Wroughton 1916b), Darjeeling, Mahanadi and Pashok (Agrawal et al. 1992; Das 2003; Ghosh 2008), Darjeeling, Pashok and Lopchu (Molur et al. 2002)

74. *Rhinolophus pumilus* Temminck, 1834 Least Horseshoe Bat

LC, Present

Sikkim (Avasthe & Jha 1999; Das 2003), Fambong Wildlife Sanctuary (Molur et al. 2002), Mangan (Ghosh 2008)

Darjeeling, Nimbong, Pashok and Sanger (Agrawal et al. 1992; Das 2003), Sangser, Pashok and Nimbong (Molur et al. 2002), Nimbong, Sanger (Ghosh 2008)

75. *Rhinolophus sinesis* K. Andersen, 1905 Chinese Rufous Horseshoe Bat

LC, Present

Sikkim (Avasthe & Jha 1999; Das 2003), Tashiding (Molur et al. 2002), Tumin (Chattopadhyay et al. 2006; Ghosh 2008)

Nimbong (Wroughton 1917; Ghosh 2008), Singhmari (Pal & Dasgupta 1982), Kumani and Nimbong (Agrawal et al. 1992; Das 2003), Darjeeling, Nimbong and Pashok (Molur et al. 2002)

76. *Rhinolophus triflatus* Temminck, 1834 Trefoil Horseshoe Bat

LC, Present

Sikkim (Avasthe & Jha 1999)

Darjeeling (Agrawal et al. 1992; Molur et al. 2002;Das 2003)

15) Family Hipposideridae Lydekker, 1891 (Old World leaf-nosed bats, trident bats)

77. *Coelops frithi* Blyth, 1848 Tailless Leaf-nosed Bat

LC, Present

Darjeeling (Blanford 1888; Agrawal et al. 1992; Molur et al. 2002; Das 2003), Gopaldhara, Tongson, Nimbong, Pashok (Ghosh 2008)

78. *Hipposideros armiger* (Hodgson, 1835) Great Leaf-nosed Bat

LC, Present

Sikkim, upto 1800m (Blanford 1888; Avasthe & Jha 1999; Das 2003; Chattopadhyay et al. 2006); Hee Gyatham and Ronjil (Molur et al. 2002)

Gopaldhara, Tong Song and Pashok (Wroughton 1916b), Nimbong (Wroughton 1917), Darjeeling, Goomti, Gopaldhara, Lopchu, Mahandi, Nimbong, Pashok and Tongsong (Agrawal et al. 1992; Molur et al. 2002; Das 2003; Gopaldhara, Tongson, Pashok, Nimbong (Ghosh 2008)

79. *Hipposideros cinereus* Blyth, 1853 Least Leaf-nosed Bat

LC, Present

Sangser (Molur et al. 2002), Nimbong, Pashok, Sanger (Das 2003)

80. *Hipposideros lankadiva* Kelaart, 1850 Indian Leaf-nosed Bat

LC, Present

Darjeeling (Anderson 1881; Agrawal et al. 1992; Molur et al. 2002; Das 2003)
| Family | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|--------|------------------------------------------------|-------------------|----------------------|
| 81. Hipposideros pomona E. Andersen, 1918 | LC, Present | Rongli (Wroughton 1916b; Molur et al. 2002; Das 2003), Sukna (Agrawal et al. 1992), Darjeeling (Molur et al. 2002) | Pipishal and Narbong (Wroughton 1916a; Ghosh 2006), Pashok (Wroughton 1916b; Agrawal et al. 1992), Nimbose and Sangser (Wroughton 1917), Tongsong (Agrawal et al. 1992), Darjeeling, and Sangser and Tong Song (Molur et al. 2002) |
| E. 82. Megaderma lyra Geoffroy, 1810 Greater False Vampire Bat | LC, Present | Sikkim (Avasthe & Jha 1999) | Terai, Darjeeling (Baligish 1906; Molur et al. 2002), Sivok (Sanborn 1932), Gopaldhara, Pashok, and Siukna (Agrawal et al. 1992; Das 2003) |
| 83. Taphozous longimanus Gervais, 1855 Long-winged Tomb Bat | LC, Present | | Darjeeling (Blyth 1841; Agrawal et al. 1992; Molur et al. 2002; Das 2003), Peshok, Tong Song (Ghosh 2008) |
| 84. Taphozous nudiventris Cretzschmar, 1830 Naked-rumped Tomb Bat | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002; Das 2003; Chattopadhyay et al. 2006) | Sivok (Wroughton 1916a; Agrawal et al. 1992; Molur et al. 2002) |

### Family Megadermatidae H. Allen, 1864 (false-vampire bats)

16) Family Megadermatidae H. Allen, 1864 (false-vampire bats)

| Subfamily | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|-----------|------------------------------------------------|-------------------|----------------------|
| 85. Tadarida teniotis (Rafinesque, 1814) European Free-tailed Bat | LC, Present | Sukna (Agrawal et al. 1992; Das 2003), Hee Gyathang and Lingtam (Molur et al. 2002) | Darjeeling (Agrawal et al. 1992; Das 2003) |

### Family Emballonuridae Gervais, 1855 (sheath-tailed bats)

17) Family Emballonuridae Gervais, 1855 (sheath-tailed bats)

| Subfamily Taphaloineinae Jerdon, 1867 (tomb bats) | LC, Present | | |
|---------------------------------------------------|--------------|-------------------|----------------------|
| 86. Aziellus circumdatus (Temminick, 1840) Bronze Sprite | LC, Present | Hee Gyathang (Molur et al. 2002) | Rechilha, Neora Valley National Park (Biswas et al. 1999; Millic 2012) |
| 87. Eptesicus serotinus (Schreber, 1774) Serotine | LC, Present | Sikkim, colder areas (Avasthe & Jha 1999) | |
| 88. Eptesicus tatei Ellerman and Morrison-Scott, 1951 Sombre Bat | DD, Present | Sikkim (Blyth 1863; Avasthe & Jha 1999) | Darjeeling (Blyth 1863; Agrawal et al. 1992; Molur et al. 2002) |

### Tribe: Eptesicina Villoth and Heller, 1994

| Subfamily Molossinae Gervais, 1856 | LC, Present | Sikkim, Eastern Himalayas (Avasthe & Jha 1999) | Kurseong (Hall 1963; Molur et al. 2002), Darjeeling (Agrawal et al. 1992; Das 2003) |
|-----------------------------------|--------------|-------------------|----------------------|
| 89. Scotomes anornus (Blyth, 1851) Harlequin Bat | LC, Present | | |
| 90. Scotophilus kuhlii Leach, 1821 Lesser Asiatic Yellow House Bat | LC, Present | | |

### Tribe: Pipistrellini Tate, 1942

| Subfamily Pipistrellinae Gray, 1821 | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002) | Darjeeling (Blyth 1863), Kurseong (Primrose 1916; Millard et al. 1916b), Sikkim (Wroughton 1916a), Tong Song and Pashok (Wroughton 1916b), Darjeeling, and Pashok and Sivok (Agrawal et al. 1992; Das 2003), Peshok, Sivok, Singla, Tong Song (Molur et al. 2002), Tindharia, Pashok, Sivok (Ghosh 2008) |

| Tribe: Nycitcoeni Gervais, 1855 | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002) | Darjeeling (Blyth 1863), Kurseong (Primrose 1916; Millard et al. 1916b), Sikkim (Wroughton 1916a), Tong Song and Pashok (Wroughton 1916b), Darjeeling, and Pashok and Sivok (Agrawal et al. 1992; Das 2003), Peshok, Sivok, Singla, Tong Song (Molur et al. 2002), Tindharia, Pashok, Sivok (Ghosh 2008) |

| Tribe: Pipistrellini Tate, 1942 | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002) | Darjeeling (Blyth 1863), Kurseong (Primrose 1916; Millard et al. 1916b), Sikkim (Wroughton 1916a), Tong Song and Pashok (Wroughton 1916b), Darjeeling, and Pashok and Sivok (Agrawal et al. 1992; Das 2003), Peshok, Sivok, Singla, Tong Song (Molur et al. 2002), Tindharia, Pashok, Sivok (Ghosh 2008) |

| Tribe: Pipistrellini Tate, 1942 | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002) | Tong Song (Wroughton 1916b), Sangser (Wroughton 1917), Darjeeling and Sangser (Agrawal et al. 1992; Das 2003), Sangser and Tong Song (Molur et al. 2002) |

| Tribe: Pipistrellini Tate, 1942 | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002) | Sangser (Wroughton 1917), Darjeeling and Sangser (Agrawal et al. 1992; Das 2003), Sangser and Tong Song (Molur et al. 2002) |

| Tribe: Pipistrellini Tate, 1942 | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002) | Sangser (Wroughton 1917), Darjeeling and Sangser (Agrawal et al. 1992; Das 2003), Sangser and Tong Song (Molur et al. 2002) |

| Tribe: Pipistrellini Tate, 1942 | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002) | Sangser (Wroughton 1917), Darjeeling and Sangser (Agrawal et al. 1992; Das 2003), Sangser and Tong Song (Molur et al. 2002) |
| Tribe: Plecotini, Gray, 1866 | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|---|---|---|---|
| 95. Barbastella leucomelas (Cretzschmar, 1826) Eastern Barbastelle | LC, Present | Sikkim (Avasthe & Jha 1999; Das 2003), Hee Gyathang, Lachung and Mangpau (Molur et al. 2002), Lachung (Chattopadhyay et al. 2006; Ghosh 2008) | Tong Song (Wroughton 1916b), Nimbong (Wroughton 1917; Ghosh 2008), Mungpoo (Sanborn 1932), Darjeeling and Nimbong (Agrawal et al. 1992; Das 2003), Darjeeling, Kurseong, Nimbong, Tongsong (Molur et al. 2002) |
| 96. Plecotus auritus (Linnaeus, 1758) Brown Long-eared Bat | LC, Present | Sikkim (Avasthe & Jha 1999; Das 2003), North Sikkim (Molur et al. 2002), Yumthang and Thangu (Chattopadhyay et al. 2006; Ghosh 2008) | Darjeeling (Agrawal et al. 1992; Molur et al. 2002; Das 2003; Chattopadhyay et al. 2006) |

| Tribe: Vespertilionini, Gray, 1821 | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|---|---|---|---|
| 97. Falsistrellus affinis Dobson, 1871 Chocolate Pipistrelle | LC, Present | Hee Gyathang (Molur et al. 2002; Saikia et al. 2017; Saikia 2018), Sikkim (Srinivasulu & Srinivasulu 2012) | |
| 98. Hypsugo joffrei (Thomas, 1915) Joffre's Pipistrelle | LC, Present | Sivok (Wroughton 1916a), Pashok (Wroughton 1916b), Kalimpong, Nimbong and Sangser (Wroughton 1917), Darjeeling, Kalimpong, Nimbong, Pashok, Sangser, and Sivok (Molur et al. 2002), Darjeeling, Sivok, Pashok, Kalimpong (Ghosh 2008) |

| Tribe: Myotinae Tate, 1942 | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|---|---|---|---|
| 101. Myotis annectans (Dobson, 1871) Hairy-faced Bat | LC, Present | Pashok (Thomas 1920; Topal 1970; Agrawal et al. 1992), Pashok and Teesta Valley (Molur et al. 2002) | |
| 102. Myotis formosus (Hodgson, 1835) Hodgson's Bat | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002; Das 2003) | Darjeeling (Molur et al. 2002; Das 2003) |
| 103. Myotis muricola (Gray, 1846) Nepalese Whiskered Bat | LC, Present | Lachung (Anderson 1881), Sedonchen and Lachen (Wroughton 1916a), Lachung and Jeluk (Sanborn 1932), Jeluk, Lachung, Lachen and Sedonchen (Molur et al. 2002), Lachen (Das 2003), Lachung and Lachen (Chattopadhyay et al. 2006) | Darjeeling (Anderson 1881; Agrawal et al. 1992; Das 2003), Neora Valley National Park (Ghose 1984), Gairibas and Ghoom (Molur et al. 2002) |
| 104. Myotis nipalensis Dobson, 1871 Nepal Myotis | LC, Present | Sikkim (Avasthe & Jha 1999), Lachen (Ghosh 2008) | Neora Valley National Park (Ghose 1984), Darjeeling (Agrawal et al. 1992; Molur et al. 2002; Das 2003) |
| 105. Myotis sicarius Thomas, 1915 Mandelli's Mouse-eared Myotis | VU, Present | Rongli (Sanborn 1932; Molur et al. 2002), Sikkim (Avasthe & Jha 1999; Das 2003) | Pashok (Wroughton 1916b; Molur et al. 2002; Das 2003) |
| 106. Myotis siligorensis (Horsfield, 1855) Himalayan Whiskered Myotis | LC, Present | Sikkim (Avasthe & Jha 1999; Das 2003), Bachkim (Molur et al. 2002), Mangan, Yuksam and Bachkim (Chattopadhyay et al. 2006; Ghosh 2008) | Siliguri (Agrawal et al. 1992; Das 2003), Siliguri and Ghoom (Molur et al. 2002) |

| Tribe: Murininae Miller, 1904 (tube-nosed bat) | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|---|---|---|---|
| 107. Harpiophaps harpia (Temminick, 1840) Lesser Hairy-winged Bat | LC, Present | Takchom Chu (Maclaren 1949), Sikkim (Avasthe & Jha 1999), Takchom/Roro river, Ranipool (Molur et al. 2002; Ghosh 2008), Sikkim (Das 2003) | Tong Song (Wroughton 1916b), Neora Valley National Park (Ghose 1984), Darjeeling and Kurseong (Agrawal et al. 1992; Das 2003; Ghosh 2008)(Das 2003; Ghosh 2008), Darjeeling, Ghoom, Kurseong, Teesta Valley and Tongsong (Molur et al. 2002) |
| 108. Murina aurata Milne-Edwards, 1872 Little Tube -nosed Bat | LC, Present | Sedonchen (Wroughton 1916a; Molur et al. 2002), Sikkim (Chattopadhyay et al. 2006) | |
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|-----------------------------------------------|------------------|---------------------|
| 109. Murina cyclotis Dobson, 1872 Round-eared Tube-nosed Bat | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002; Das 2003), Yumthang (Chattopadhyay et al. 2006; Ghosh 2008) | Sikkim (Wroughton 1916a), Gopaldhara and Pashok (Wroughton 1916b), Sangser (Wroughton 1917), Takdah (Khatariu & Ghose 1970), Darjeeling, Pashok, Takdah (Agrawal et al. 1992; Das 2003), Darjeeling, Gopaldhara, Tongsong, Singla, Pashok and Teesta Valley (Molur et al. 2002), Darjeeling District (Chattopadhyay et al. 2006), Peshok, Takdah (Ghosh 2008) |
| 110. Murina huttoni (Peters, 1872) White-bellied Tube-nosed Bat | LC, Present | Sikkim (Avasthe & Jha 1999; Molur et al. 2002; Das 2003), Yumthang (Chattopadhyay et al. 2006; Ghosh 2008) | Darjeeling (Agrawal et al. 1992; Das 2003), Darjeeling, Pashok, Sangser, Teesta Valley, Tong Song (Molur et al. 2002) |
| 111. Murina leucogaster (Milne-Edwards, 1872) Rufous Tube-nosed Bat | LC, Present | Sikkim (Avasthe & Jha 1999) | Gopaldhara and Pashok (Wroughton 1916b), Sangser (Wroughton 1917), Darjeeling (Agrawal et al. 1992; Das 2003), Darjeeling and Gopaldhara (Molur et al. 2002) |
| 112. Murina tubinaris (Scully, 1881) Scully's Tube-nosed Bat | LC, Present | Chungthang (Sanborn 1932; Molur et al. 2002), Sikkim (Avasthe & Jha 1999) | Gopaldhara and Pashok (Wroughton 1916b), Sangser (Wroughton 1917), Darjeeling (Agrawal et al. 1992; Das 2003), Darjeeling and Gopaldhara (Molur et al. 2002) |
| Subfamily Kerivoulinae Miller, 1907 (woolly bats) | | | |
| 113. Kerivoula hardwickii (Horsfield, 1824) Hardwicke's Woolly Bat | LC, Present | Gopaldhara, Pashok and Tong Song (Wroughton 1916b; Molur et al. 2002), Gopaldhara (Fry 1923), Gopaldhara and Pashok (Das 2003) | Gopaldhara, Pashok and Tong Song (Wroughton 1916b; Molur et al. 2002), Gopaldhara (Fry 1923), Gopaldhara and Pashok (Das 2003) |
| 114. Kerivoula picta (Pallas, 1767) Painted Woolly Bat | LC, Present | Sikkim (Blanford 1888; Avasthe & Jha 1999; Molur et al. 2002) | Darjeeling (Anderson 1881; Agrawal et al. 1992; Molur et al. 2002) |
| VIII. ORDER PHOLIDOTA Weber, 1904 | | | |
| 20) Family Manidae Gray, 1821 (pangolins) | | | |
| 115. Manis crassicaudata E. Geoffroy, 1803 Indian Pangolin | EN, I, (I), Present | Kalimpong (Mallick 2012) | |
| 116. Manis pentadactyla Linnaeus, 1758 Chinese Pangolin | CR, I, (I), Present | Melli, Kitam, and Manpur (Avasthe & Jha 1999), Yuksam (Sathyakumar et al. 2011a), Sikkim (The Statesman 2019) | Margaret’s Hope Tea Estate at 1524 m, Darjeeling (Dalglesh 1906), Pink Basti, Kalimpong (Mallick 2012) |
| IX. ORDER CARNIVORA Bowdich, 1821 | | | |
| 21) Family Felidae Fischer, 1817 (cats) | | | |
| SUBORDER FELIORMIA Kretzoi, 1945 | | | |
| 117. Catopuma temminckii (Vigors and Horsfield, 1827) Asiatic Golden Cat | NT, I, (I), Present | Gangtok (Millard et al. 1916b), Sikkim (Wroughton 1916a), Sikkim (Pocock 1939), Pangdin, Kangarten, Lashe, Thela, Green Lake, Marcopolo camp, Shibringu within Khangchendzonga National Park, Tamay, Thosa lake, Chimathang, Gochela and Lampokhari (Avasthe & Jha 1999), Kyongnosla Alpine Sanctuary (Khatariu & Srivastava 2014), Nagpok, Legship and Lachung (Chattopadhyay et al. 2006), Khangchendzonga Biosphere Reserve (Bashir et al. 2011; Sathyakumar et al. 2011a), Khangchendzonga Biosphere Reserve, Kyongnosla Alpine Sanctuary (Lepcha et al. 2017) | Neora Valley National Park (Ghose 1984; Chattejee et al. 2018; Mallick 2019) |
| 118. Felis chaus Schreber, 1777 Jungle Cat | LC, II, (II), Present | Sikkim (Wroughton 1916a), Sikkim, tropical forest (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Kyongnosla Alpine Sanctuary (Lepcha et al. 2017) | Darjeeling (Dalgleish 1906; Wroughton 1916a), Nimbing (Wroughton 1917), Kalimpong (Agrawal et al. 1992), Rechiya, Jaributi and Lava (Biswas et al. 1999; Mallick 2012) |
| 119. Lynx lynx (Linnaeus, 1758) Eurasian Lynx | LC, II, (II), Present | Sikkim-Tibet Border (Ganguli-Lachungpa 1997), Sikkim, plateau region (Avasthe & Jha 1999), Tso Lhamo plateau (Rawat and Tambe 2011) | |
| 120. Pardofelis marmorata (Martín, 1837) Marbled Cat | NT, I, (I), Present | Chungthang Bob and Khangchendzonga National Park (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Rabdanche Reserve Forest, Pelling and Rangtalo near Chungthang (Chattopadhyay et al. 2006), Pangolakha Wildlife Sanctuary (Lepcha et al. 2017) | Ghoom (Wroughton 1916a), Jaributi forest, Neora Valley National Park (Ghose 1984; Biswas et al. 1999) |
| Common Name | Scientific Name | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|-------------|-----------------|-----------------------------------------------|------------------|----------------------|
| 121. **Prionailurus bengalensis** (Kerr, 1792) Leopard Cat | *Prionailurus bengalensis* | LC, II, (I), Present | Chuntang and Lachung (Wroughton 1916a), Lingtam (Sanborn 1932), Khangchengzonga National Park and Quite Common throughout Sikkim at an elevation between 2100–2400m (Avasthe & Jha 1999), Yuksum (Chakraborty 2003), Teesta Valley (Vijayan et al. 2004), Kyongnosla Alpine Sanctuary (Khatiwara & Srivastava 2014), Khangchengzonga Biosphere Reserve (Sathyakumar et al. 2011a), Barsey Rhododendron Sanctuary, Famibhongho Wildlife Sanctuary, Khangchengzonga Biosphere Reserve (Lepcha et al. 2017) | Darjeeling (Dalgliesh 1906), Agrawal et al. (1992), Pashok (Wroughton 1916a), Janibut, East Nar and Thosum of Neora Valley National Park (Ghose 1984; Biswas et al. 1999; Mallick 2012) |
| 122. **Prionailurus viverrinus** (Bennett, 1833) Fishing Cat | *Prionailurus viverrinus* | VU, II, (I), Present | East and South Districts, up to 1800m (Avasthe & Jha 1999), Sikkim (Srivivasulu & Srivivasulu 2012) | Aluburi and Janibut of Neora Valley National Park (Biswas et al. 1999; Mallick 2012) |
| **Subfamily Pantherinae** Porock, 1917 | | | | |
| **123. Neofelis nebulosa** (Griffith, 1821) Clouded Leopard | *Neofelis nebulosa* | VU, I, (I), Present | Shot in Sikkim (Wroughton 1916a; Chakraborty 2003), Manpur, Kerabari, Kitam, Dingou, Rhenock, Barapathing, Sombaria, Band, Ramjopool and Khangchengzonga National Park (Avasthe & Jha 1999), Kalikhol (Chattopadhyay et al. 2006), Khangchengzonga Biosphere Reserve (Sathyakumar et al. 2011a), Famibhongho Wildlife Sanctuary (Lepcha et al. 2017) | Darjeeling (Dalgliesh 1906), Kuroseong, Runjeet Valley and Above Rungbee, Teesta Valley (Matthews, 1934), Rungneet Tea Estate (Gabb 1945), Janibut, Mouchowki, East Nar and West Nar of Neora Valley National Park (Ghose 1984; Biswas et al. 1999; Mallick 2012) |
| **124. Panthera uncia** (Schreber, 1775) Snow Leopard | *Panthera uncia* | VU, I, (I), Present | Thangu (Wroughton 1916a), Sikkim-Tibet border (Ganguli-Lachungpa 1997), Lasher Valley, Yumesamdong, Cho Lhamu, Near Thangu, Sebu La, Lhonak valley, Yomoomo, Sekun, Bhamchona, Dzongri, Semo, Semching kha, Sarum, Dudoopkahi and Khangchengzonga National Park (Avasthe & Jha 1999), Kyongnosla Alpine Sanctuary (Khatiwara & Srivastava 2014), Bop, North Sikkim (Chattopadhyay et al. 2006), Tso Lhamo plateau (Rawat & Tambe 2011), Khangchengzonga Biosphere Reserve (Sathyakumar et al. 2011a), Barsey Rhododendron Sanctuary, Khangchengzonga Biosphere Reserve, Kyongnosla Alpine Sanctuary (Lepcha et al. 2017) | Singaila National Park (Chattopadhyay et al. 2006) |
| **125. Panthera pardus** (Linnaeus, 1758) Leopard | *Panthera pardus* | VU, I, (I), Present | Rishi, Phenock, Manpur, Kitam RF, Sombaria and Khangchengzonga National Park (Avasthe & Jha 1999), Khangchengzonga Biosphere Reserve, Pangolakha Wildlife Sanctuary (Sathyakumar et al. 2011a) | Darjeeling (Dalgliesh 1906), Neora Valley National Park (Ghose 1984; Biswas et al. 1999), Samsing, Mal, Chunabhati, Rechila, Aluburi, Janibut, Jorepkiri, Mouchowki, West Nar, East Nar and Thosum (Mallick 2012) |
| **126. Panthera tigris** (Linnaeus, 1758) Tiger | *Panthera tigris* | EN, I, (I), Present | Scare in Sikkim (Wroughton 1916a), Rachela, Talkharga, Regu, Phadachen, Zuluk, Gnatang, Bhulsuk yalli, Men-men chu RF, Changu, Lagyap RF, Tamze RF, Kabi, Phensung, Phodong, Ringu, Tong RF, Chyakhung RF, Khudum, Lema, Lachung, Dombangin north-east, and Karchi, Loddang, Phamthay, Maenam and Rumdung (Avasthe & Jha 1999) | Kuroseong (Dalgliesh 1906), Darjeeling Terai (Saha, 1955), Neora Valley National Park (Ghose 1984; Biswas et al. 1999) East Nar, West Nar, Thosum, Rhenok, Rechila and East Nar (Mallick 2012) |
| **22. Family Viverridae** Gray, 1821 ( civets and palm civets) | | | | |
| **Subfamily Paradoxurinae** Gray, 1865 (palm civets) | | | | |
| **127. Arctictis binturong** (Raffles, 1821) Binturong | *Arctictis binturong* | VU, III, (I), Present | Khangchengzonga National Park, Luing, Parking, Fombong Lho and West Dentam (Avasthe & Jha 1999), Menshithang and Hee Ghyathang (Chattopadhyay et al. 2006), Khangchengzonga Biosphere Reserve (Sathyakumar et al. 2011a) | |
| **128. Paguma larvata** (C. E. H. Smith, 1827) Masked Palm Civet | *Paguma larvata* | LC, III, (I), Present | Yuksom (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Sosing, Singhik, Naya Bazar and Yuksom (Chattopadhyay et al. 2006), Khangchengzonga Biosphere Reserve (Sathyakumar et al. 2011a), Famibhongho Wildlife Sanctuary (Lepcha et al. 2017) | Narbong (Wroughton 1916a), Rechila, Neora Valley National Park (Biswas et al. 1999) |
| **129. Paradoxurus hemaphroditus** (Pallas, 1773) Common Palm Civet | *Paradoxurus hemaphroditus* | LC, III, (I), Present | Sikkim (Pocock 1939; Srivivasulu & Srivivasulu 2012), Sikkim, tropical forest (Avasthe & Jha 1999), Kitam Bird Sanctuary (Lepcha et al. 2017) | Darjeeling (Dalgliesh 1906), Narbong and Sivok (Wroughton 1916a), Rechila, Neora Valley National Park (Biswas et al. 1999) |
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|-----------------------------------------------|-------------------|----------------------|
| **Subfamily Viverrinae Gray, 1821 (civets)**  |                   |                      |
| 130. Viverra zibetha Linnaeus, 1758 Large Indian Civet | LC, III, (ii), Present | Rongl and Gangtok (Wroughton 1916a), Rangpo (Sanborn 1932), Khangchendzonga National Park and throughout the state upto 2100m (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Kyongnosla Alpine Sanctuary (Khatwara & Srivastava 2014), Singhik, Yumsum, Naya Bazar and Pelling (Chattopadhyay et al. 2006), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Fambhongho Wildlife Sanctuary (Lepcha et al. 2017) |
|                                               |                   | Ring-Tong Tea Estate (Dalgliesh 1906), Batasia, Tonglu, Narbong and Sivok (Wroughton 1916a), Gopalchhara, Songma and Pashok (Wroughton 1916b), Nimpong (Wroughton 1917), Sivok and Munugoo (Sanborn 1932), Neora Valley National Park (Ghose 1984), Narbong, Sivok and Sungma (Agrawal et al. 1992), Rechila (Mallick 2012) |
| 131. Viverricula indica (E. Geoffroy Saint-Hilaire, 1803) Small Indian Civet | LC, III, (ii), Present | Singtam, Sangkhola, and Makha (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Sikkim (Srinivasulu & Srinivasulu 2012), Kitam Bird Sanctuary (Lepcha et al. 2017) |
|                                               |                   | Neora Valley National Park, Jore Pokhri Wildlife Sanctuary, Mahananda Wildlife Sanctuary and Senchel Wildlife Sanctuary (Saha et al. 1991), Kalimpong (Mallick 2012) |
| 23) Family Prionodontidae Poecock, 1933 (linsangs) |                   |                      |
| 132. Prionodon pardicolor Hodgson, 1842 Spotted Linsang | LC, I, (j), Present | Chuntang, Singhik, and Dikchu (Wroughton 1916a), Lingtam, Sedenchen and Jeluk (Sanborn 1932), Sikkim, tropical and sub-tropical forest upto 2100m (Avasthe & Jha 1999), Yumsum and Lima (Chattopadhyay et al. 2006), Barsey Rhododendron Sanctuary (Ghose et al. 2012, 2014) |
|                                               |                   | Neora Valley National Park, upto 2100m (Mallick 2012) |
| 24) Family Herpestidae Bonnaarte, 1845 (mongooses) |                   |                      |
| 133. Herpestes auropunctatus (Hodgson, 1836) Small Indian Mongoose | LC, (IV), Present | Sikkim (Avasthe & Jha 1999) Fambhongho Wildlife Sanctuary, Kitam Bird Sanctuary (Lepcha et al. 2017) |
|                                               |                   | Darjeeling District (Agrawal et al. 1992), Kalimpong (Mallick 2012) |
| 134. Herpestes edwardsii (E. Geoffroy Saint-Hilaire, 1818) Grey Mongoose | LC, III, (ii), Present | Sikkim, tropical forest edges, scrub jungles and cultivated areas (Avasthe & Jha 1999) Sikkim (Srinivasulu & Srinivasulu 2012) |
|                                               |                   | Darjeeling (Dalgliesh 1906), Suntalekhol (Mallick 2012) |
| 135. Herpestes urva (Hodgson, 1836) Crab-eating Mongoose | LC, III, (ii), Present | Near hill streams in South and East Districts (Avasthe & Jha 1999) |
|                                               |                   | Pashok and Kurseong (Wroughton 1916a), Sivok (Sanborn 1932) |
| **SUBORDER CANIFORMIA Kretzoi, 1938**         |                   |                      |
| 25) Family Canidae Fischer, 1817 (dogs)        |                   |                      |
| 136. Canis aureus Linnaeus, 1758 Golden Jackal | LC, III, (ii), Present | Rongl and Dikchu (Wroughton 1916a, 1916c), Sikkim, upto 3600m (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Yumsum, Geyzing, Pelling, Kabi, Gangtok, Tumin and Fambong (Tso Lhamo Wildife Sanctuary, Kitam Bird Sanctuary (Lepcha et al. 2017), Darjeeling District (Agrawal et al. 1992), Kalimpong (Mallick 2012)) |
|                                               |                   |                      |
| 137. Canis lupus Linnaeus, 1758 Grey Wolf     | LC, I, (j), Present | Gnatong, Thangu and above Lachung (Wroughton 1916a), Lachung (Sanborn 1932), Chiho Lhamo (Ganguli-Lachungsa 1997), Yumthang valley, Lasher valley, Cho Lhamu, Lhonak valley, Shingba Rhododendron Sanctuary, Tamze, Kyongnosla Alpine Sanctuary, Pangolakha, Rachela, Maenam Wildlife Sanctuary, Lampokhari, Kasturi, Odar, Bhanjyang, Hilley, Barsey Rhododendron Sanctuary, Bamchenhona and Sesse la meadows (Avasthe & Jha 1999), Tso Lhamo plateau (Rawat and Tambe 2011), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a) |
|                                               |                   | Thosum, Neora Valley National Park (Mallick 2012) |
| 138. Canis lupinus (Pallas, 1811) Dhole        | EN, II, (ii), Present | Gangtok (Millard et al. 1916b), Sikkim (Ellerman & Morrison-Scott 1966; Chattopadhyay et al. 2006), Khangchendzonga National Park, Cho Lhamu, Pangolakha, Thimshang, Pangdin, Kangarten and Rangit Valley (Avasthe & Jha 1999), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Maenam Wildlife Sanctuary, Pangolakha Wildlife Sanctuary (Lepcha et al. 2017) |
|                                               |                   | Darjeeling (Dalgliesh 1906; Agrawal et al. 1992), Narbong (Wroughton 1916a), Tumsong Tea Estate (Baldry, 1932), Rechila, East Nar, West Nar and Ruka Reserve Forest (Biswas et al. 1999), Dkyat, Ghoombanjan and Pedong (Agrawal et al. 1992) |
| 139. Vulpes bengalensis (Shaw, 1800) Bengal Fox | LC, III, (ii), Present |                                            |
|                                               |                   | Darjeeling (Agrawal et al. 1992), Senchel and Mahananda Wildlife Sanctuaries (Saha et al. 1992), Kalimpong (Mallick 2012) |
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|---|---|---|
| 140. Vulpes ferrilata Hodgson, 1842 Tibetan Fox LC, (I), Present | Menphu (Katao), Chho Lhamu, Green Lake in North Sikkim, Botang La and Doka La in East Sikkim (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Tso Lhamo plateau (Rawat and Tambe 2011) | Neora Valley National Park (Biswas et al. 1999) |
| 141. Vulpes vulpes (Linnaeus, 1758) Red Fox LC, III, (II), Present | Kapup and Thangu (Wroughton 1916a; Pocock, 1941), Gyam Choorna Lake (5400m), Changri meadow along Chichomu Chu and near Olosten, Kanchendzonga National Park (Avasthe & Jha 1999), Kyongnosla Alpine Sanctuary (Khatwara & Srivastava 2014), Kanchendzonga Biosphere Reserve (Sathiyakumar et al. 2011a), Kanchendzonga Biosphere Reserve, Kyongnosla Alpine Sanctuary, Pangolakha Wildlife Sanctuary, Shingba Rhododendron Sanctuary (Lepcha et al. 2017) | Neora Valley National Park (Biswas et al. 1999) |
| 142. Metursrus ursinus (Shaw, 1791) Sloth Bear VU, I, (I), Present | Phuni in Lachung, Green Lake, Lampokhari and the plateau(Avasthe & Jha 1999) Sikkim (Srinivasulu & Srinivasulu 2012) | Neora Valley National Park (Ghose 1984), Darjeeling (Agrawal et al. 1992) |
| 143. Ursus arctos Linnaeus, 1758 Brown Bear LC, II, (I), Present | Gangtok (Millard et al. 1916b), Throughout state at an elevation between 1200–3600 m, Forests below Chewabhanjyang, Uttarey, and Dzongri. Also at Nibe, Naung, Tinjurey (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Fambong Wildlife Sanctuary, Kanchendzonga National Park and Pangolakha National Park (Sathiyakumar 2001), Yukam and Pelling (Chattopadhyay et al. 2006), Kanchendzonga Biosphere Reserve (Sathiyakumar et al. 2011a), Barsye Rhododendron Sanctuary, Fambonghio Wildlife Sanctuary, Kanchendzonga Biosphere Reserve, Pangolakha Wildlife Sanctuary (Lepcha et al. 2017) | Sera to Darjeeling (Dalgliesh 1906), Neora Valley National Park (Ghose 1984; Biswas et al. 1999), Neora Valley National Park, Singgalla National Park, and Mahananda Wildlife Sanctuary (Sathiyakumar 2001), Mouchookoi, Rechila, Thosum, East Nar and Jorepokhri (Mallick 2012) |
| 144. Ursus thibetanus G.[Baron] Cuvier, 1823 Asian Black Bear VU, I, (II), Present | Sikkim (Avasthe & Jha 1999; Srinivasulu & Srinivasulu 2012) | Darjeeling District (Agrawal et al. 1992) |
| 145. Aonyx cinereus (Illiger, 1815) Oriental small-clawed Otter VU, I, (I), Present | Sikkim (Avasthe & Jha 1999; Srinivasulu & Srinivasulu 2012) | Darjeeling District (Agrawal et al. 1992) |
| 146. Lutra lutra (Linnaeus, 1758) Eurasian Otter NT, I, (II), Present | Chuntang and Dikshu (Wroughton 1916a), Sikkim (Sanborn 1932), Rani-Nampey and Doban, throughout Sikkim 600–3600 m (Avasthe & Jha 1999), Dikshu, Phadong, Chuntang, Hee Gyathang and Melli (Chattopadhyay et al. 2006) | Balasound River (Dalgliesh 1906), Darjeeling (Wroughton 1916a; Agrawal et al. 1992), Pedong (Wroughton 1917) |
| 147. Arctonyx collaris F.G. Cuvier, 1823 Hog-badger VU, I, (I), Present | Sikkim, tropical and sub-tropical regions (Bianndon 1888; Avasthe & Jha 1999) | Darjeeling (Agrawal et al. 1992), Neora Valley National Park (Mallick 2012) |
| 148. Martes flavigula (Boddart, 1785) Yellow-throated Marten LC, III, (II), Present | Chuntang (Wroughton 1916a), Gangtok, Yumthang and Yumesamdong, throughout Sikkim between 1200–2700 m (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Phodong (Chattopadhyay et al. 2006), Kanchendzonga Biosphere Reserve (Sathiyakumar et al. 2011a), Barsye Rhododendron Sanctuary, Fambonghio Wildlife Sanctuary, Kanchendzonga Biosphere Reserve, Kyongnosla Alpine Sanctuary, Maenam Wildlife Sanctuary, Pangolakha Wildlife Sanctuary (Lepcha et al. 2017) | Darjeeling (Dalgliesh 1906), Pedong (Wroughton 1917), Lolegaon, Rishyap, West Nar, Jaiributi and Rechila (Ghose 1984; Biswas et al. 1999; Mallick 2012) |
| 149. Martes foina (Erxleben, 1777) Beech Marten LC, III, (II), Present | Ghora la (Sanborn 1932), Cho Lhamu, Lhonak Valley, Kishongla and Samthong, elevations between 1800–3600 m (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Kyongnosla Alpine Sanctuary (Khatwara & Srivastava 2014), Kanchendzonga Biosphere Reserve (Sathiyakumar et al. 2011a) | Jaiributi and Rechila, Neora Valley National park (Ghose 1984; Biswas et al. 1999; Mallick 2012), Darjeeling (Agrawal et al. 1992) |
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|----------------------------------------------|------------------|----------------------|
| 150. Melogale personata I. Geoffroy Saint-Hilaire, 1831 Large-toothed Ferret Badger | LC, (II), Present | Sikkim, tropical and sub-tropical forests (Avasthe & Jha 1999); Sikkim (Srinivasulu & Srinivasulu 2012) |
| 151. Mustela altaica Pallas, 1811 Mountain Weasel | NT, (II), Present | Sikkim, between 2100–4000m (Avasthe & Jha 1999), Kyongnosla Alpine Sanctuary (Khatiwara & Srivastava 2014), Kanchendzonga Biosphere Reserve (Sathyakumar et al. 2011a) |
| 152. Mustela ermine Linnaeus, 1758 Short-tailed Weasel | LC, (III), Present | Teesta Valley (Vijayan et al. 2004), Shingba Rhododendron Sanctuary (Lepcha et al. 2017) |
| 153. Mustela kathiah Hodgson, 1835 Yellow-bellied Weasel | LC, (II), Present | Sikkim (Pocock, 1941), Sikkim, sub-tropical and temperate elevations (Avasthe & Jha 1999), Darjeeling (Dalgilsh 1906; Agrawal et al. 1992), Rechila, Neora Valley National Park (Biswas et al. 1999) |
| 154. Mustela sibirica Pallas, 1773 Siberian Weasel | LC, (I), Uncertain | Sikkim, between 1200–2100m (Sterndale 1884; Blanford 1888; Avasthe & Jha 1999) |
| 155. Mustela strigidorsa Gray, 1853 Black-striped Weasel | LC, (I), Present | Lachung and Lachen (Wroughton 1916a), Lingtam (Sanborn 1932), Sikkim, between 1500–4800m (Avasthe & Jha 1999), Kyongnosla Alpine Sanctuary (Khatiwara & Srivastava 2014), Dzongri, Yumthang and Lachen (Chattopadhyay et al. 2006), Tso Lhamo plateau (Rawat and Tambe 2011), Kanchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Barsey Rhododendron Sanctuary (Ghose et al. 2014) |
| 28) Family Ailuridae Gray, 1843 | | Red panda |
| 156. Ailurus fulgens F.G. Cuvier, 1825 Red Panda | EN, II, (I), Present | Gangtok (Millard et al. 1916a), Teesta Valley (Vijayan et al. 2004), Chuntang, Lachung, Lachen and Ringin (Wroughton 1916a), Lachung valley, Lachen, Kanchendzonga National Park, Tong RF, Tamze, Kyongnosla Alpine Sanctuary, Zuul, Phadamchen, Pangloka, Fambong Uho Wildlife Sanctuary, Maenam Wildlife Sanctuary, Hilley-Barsay, Ohkarey, Rigdee and Chiwabhanjyang (Avasthe & Jha 1999), Chuntang, Menshithang, Lachung and Yuksom (Chattopadhyay et al. 2006), Kanchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Barsay Rhododendron Sanctuary (Ghose et al. 2014) Kanchendzonga Biosphere Reserve, Maenam Wildlife Sanctuary, Pangolakha Wildlife Sanctuary (Lepcha et al. 2017) |
| 29) Family Equidae Gray, 1821 | | Horses, asses, and zebras |
| 157. Equus kiang Moorcroft, 1841 Kiang | LC, (II), Present | North of Gyagong towards Tibetan Plateau (Pinckney 1939), Tuna to Guru and Tang Sun Pum plain (MacLaren 1949), Chho Lhamo (Ganguli-Lachungpa 1997), Chho Lhamo, Gyamchhona, Chulung valley, Yumchho, Kerang, Chulung La, Ramchho La and Sesse La (Avasthe & Jha 1999), Sikkim (Chakraborty 2003), Tso Lhamo plateau (Chanchani et al. 2010; Rawat and Tambe 2011) |
| 30) Family Suidae Gray, 1821 | | Pigs |
| 158. Porcula salvania Hodgson, 1847 Pygmy Hog | CR, I, (I), Extinct | Sikkim Terai (Hodgson 1847; Sclater 1891; Agrawal et al. 1992; Avasthe & Jha 1999) |
| 159. Sus scrofa Linnaeus, 1758 Wild Boar | LC, (III), Present | Melli RF, Kitam, Soreng RF, Lagyap RF, Tong, Chakung, Rate Chu, Premālaka and Rangpo (Avasthe & Jha 1999), Darjeeling Terai (Hodgson 1847; Sclater 1891; Agrawal et al. 1992), East Nar, Thosum and Rechila, Neora Valley National Park (Mallick 2012) |

X. ORDER PERISSODACTYLA Owen, 1848

29) Family Equidae Gray, 1821 | | Horses, asses, and zebras |

XI. ORDER CETARTIODACTYLA Owen, 1848

30) Family Suidae Gray, 1821 | | Pigs |
| Family | IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|--------|---------------------------------------------|-------------------|----------------------|
| Moschidae Gray, 1821 (musk deer) | | | |
| 160. Moschus chrysogaster (Hodgson, 1839) Alpine Musk Deer | EN, I, (I), Present | Sikkim (Blanford 1888), Lachen and Lachung (Wroughton 1916a; Chattopadhyay et al. 2006), Ridge between Chumbi valley and Sikkim and Gyantse, above 3657.6 m in summers (Wood 1933), All Protected Areas of Sikkim except Fambonglihong Wildlife Sanctuary (Sharma & Lachungpa 2009), Kyongsola Alpine Sanctuary (Khatwara & Srivastava 2014; Srivastava & Kumar 2018), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a) | Phalut (Dutt-Mazumdar 1955) |
| 161. Moschus fuscus Li, 1981 Black Musk Deer | EN, I, (I), Present | Lachen and Lachung (Wroughton 1916a), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Khangchendzonga Biosphere Reserve, Kyongnosla Alpine Sanctuary, Pangolakha Wildlife Sanctuary (Lepcha et al. 2017) | |
| 162. Moschus leucogaster Hodgson, 1839 Himalayan Musk Deer | EN, I, (I), Present | Sikkim between 2500-4000m (Groves & Grubb 2011; Srinivasulu & Srinivasulu 2012; Sharma et al. 2015) | |
| Cervidae Goldfuss, 1820 (deer) | | | |
| 163. Axis axis (Erxleben, 1777) Chital | LC, (III), Present | Areas bordering West Bengal and Sikkim (Avasthe & Jha 1999; Choudhury 2001), Lowland forests (Sharma & Lachungpa 2002) | West of Balasran River, Terai, Darjeeling (Daligilesh 1906; Dutt-Mazumdar 1955) |
| 164. Muntiacus vaginalis (Boddaert, 1785) Northern Red Muntjac | LC, (III), Present | Ringin (Wroughton 1916a), Khangchendzonga National Park, throughout Sikkim between 600-2800m (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Pelling, Melli, Legship and Bakhim (Chattopadhyay et al. 2006), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Barsay Rhododendron Sanctuary, Fambonglihong Wildlife Sanctuary, Kitam Bird Sanctuary, Khangchendzonga Biosphere Reserve, Maenam Wildlife Sanctuary, Pangolakha Wildlife Sanctuary (Lepcha et al. 2017) | Darjeeling, 1828.8 m (Daligilesh 1906), Sukhiaopokhri, Narbong and Sivok (Wroughton 1916a), Rungeet Tea Estate (Gabb 1945), Lopchu Tea Estate (Saha, 1955), Neora Valley National Park (Ghose 1984; Biswas et al. 1999), East Nar, West Nar, Thosum, Rechila, Gorubathan forest, Tempola, Choudapheri (Mallick 2012) |
| 165. Rusa unicolor (Kerr, 1792) Sambar | VU, (III), Present | Darjeeling, upto 1066.8m (Daligilesh 1906; Dutt-Mazumdar 1955), Neora Valley National Park (Ghose 1984) Samsung, Chel Range, Kalimpong Range, East Nar, Thosum, Rechila (Mallick 2012) | |
| Bovidae Gray, 1821 (cattle, antelope, sheep, and goat) | | | |
| 166. Procapra picticaudata Hodgson, 1846 Tibetan Gazelle | NT, (I), Present | North of Gyagong towards Tibetan Plateau (Pinckney 1939), Between Tuna and Guru (Maclaren 1949), Choho Lhamo, Chhulung La and Kongra La (Ganguli-Lachungpa 1997), Chhomo Chu, meadows near Gyam Chhona(5100m), Chhangri meadow at 4000–4500m (Avasthe & Jha 1999), Tso Lhamo plateau (Chanchani et al. 2010; Rawat and Tambe 2011) | Kurseong (Daligilesh 1906), Sukna Reserve (Dutt-Mazumdar 1955), East Nar, Thosum, Rechila, Tempola and Jorepokhari, Neora Valley National Park (Ghose 1984; Biswas et al. 1999), Balasran Valley, Sukna and Sevoke (Dasgupta 1991) |
| Bovidae Gray, 1821 (cattle) | | | |
| 167. Bos gaurus C.H.Smith, 1827 Gaur | VU, I, (I), Present | Pangolakha, Rache La, and Regu-East Sikkim (Avasthe & Jha 1999; Srinivasulu & Srinivasulu 2012), Mangolakha Wildlife Sanctuary (Lepcha et al. 2017) | Kurseong (Daligilesh 1906), Sukna Reserve (Dutt-Mazumdar 1955), East Nar, Thosum, Rechila, Tempola and Jorepokhari, Neora Valley National Park (Ghose 1984; Biswas et al. 1999; Mallick 2012), Balasran Valley, Sukna and Sevoke (Dasgupta 1991) |
| Caprinae Gray, 1821 (goats and sheep) | | | |
| 168. Budorcas taxicolor Hodgson, 1850 Takin | VU, II, (I), Present | Nimphu, Pangolakha and Rache La, between 2000–3000m (Avasthe & Jha 1999), Menla Reserve Forest (Ganguli-Lachungpa 2000), Sikkim (Choudhury 2001; Srinivasulu & Srinivasulu 2012) | |
| IUCN Status, CITES, (WPA,1972), Present Status | Records in Sikkim | Records in Darjeeling |
|------------------------------------------------|-------------------|----------------------|
| **169. Capricornis thar** (Hodgson, 1831) Himalayan Serow | NT, I, (I), Present | Khangchendzonga National Park, throughout the state between 2200–3700m (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Kyongnosla Alpine Sanctuary (Khatiwara & Srivastava 2014; Srivastava & Kumar 2018), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Barsey Rhododendron Sanctuary, Fambhonghio Wildlife Sanctuary, Khangchendzonga Biosphere Reserve, Maenam Wildlife Sanctuary, Pangolakha Wildlife Sanctuary, Shingba Rhododendron Sanctuary (Lepcha et al. 2017) | Darjeeling (Dalgliesh 1906), Rechila (Mallick 2012) |
| **170. Hemitragus jemlahicus** (C.H. Smith, 1826) Himalayan Tahr | NT, (I), Present | Fimphu, Manandang (Biknatar), above Rahu Chu (Sathiharey), Ruketchu, Ribongthang, Nimphu, Tsingnod, Lingiblob, Khangchendzonga National Park, Aralungchowk and Gomnay (Avasthe & Jha 1999), Chunchhang and BOP, North Sikkim (Chattopadhyay et al. 2006), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Khangchendzonga Biosphere Reserve (Lepcha et al. 2017) | Neora Valley National Park (Ghose 1984), Thosum, Rechila, Jorepokhri, Triangular Point (Biswas et al. 1999; Mallick 2012) |
| **171. Naemorhedus goral** (Hardwicke, 1825) Himalayan Goral | NT, I, (III), Present | Gangtok (Millard et al. 1916b), Khangchenzonga National Park, Kyongnosla, Fimphu and Pentong (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Kyongnosla Alpine Sanctuary (Khatiwara & Srivastava 2014; Srivastava & Kumar 2018), Bop in North Sikkim, Orgalikthang and Tuling Gompha in West Sikkim (Chattopadhyay et al. 2006), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Fambhonghio Wildlife Sanctuary, Khangchendzonga Biosphere Reserve, Kyongnosla Alpine Sanctuary, Shingba Rhododendron Sanctuary (Lepcha et al. 2017) | Darjeeling, 1524km (Dalgliesh 1906), Soom Tea Estate Forest (Gabb 1945), Rechila and East Nari, Neora Valley National Park (Ghose 1984; Biswas et al. 1999; Mallick 2012) |
| **172. Ovis ammon** (Linnaeus, 1758) Argali | NT, II, (I), Present | Sikkim-Tibetan Border (Sanborn 1932), Chhukling La (Ganguli-Lachungpa 1997), Bamchhona, Gyanchhona, Kerang, Chulung valley, Cha La, Unonak Valley, Giagong area south of Plateau, and Khangchendzonga National park (Avasthe & Jha 1999), Lasser (Chattopadhyay et al. 2006), Tso Lhamo plateau (Chanchani et al. 2010; Rawat & Tambe 2011) | |
| **173. Pseudois nayaur** (Hodgson, 1833) Bharal | LC, III, (I), Present | Lachen (Wroughton 1916a), Pangdir, Kangarten, Rangit valley, Yumesamdong, Sebu La, Saisa Lava, Lasher, Oloten area, Thela, Green Lake, Marcoolo camp, Shibringu within Khangchendzonga National Park, Tamaz, Thosa Lake, Chimathang, Gochela, Lampokhari (Avasthe & Jha 1999), Teesta Valley (Vijayan et al. 2004), Geogrong, North Sikkim (Chattopadhyay et al. 2006), Tso Lhamo plateau (Chanchani et al. 2010; Rawat and Tambe 2011), Khangchendzonga Biosphere Reserve (Sathyakumar et al. 2011a), Khangchendzonga Biosphere Reserve (Lepcha et al. 2017) | Phalut (Dutt-Mazumdar 1955) |

NE—Not Evaluated | DD—Data Deficient | LC—Least Concern | NT—Near Threatened | VU—Vulnerable | EN—Endangered | CR—Critically Endangered; I, II and III—CITES Appendices; (I), (II), (III), (IV) and (V)—The Wildlife (Protection) Act, 1972 Schedule List.
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— Rachel Ann Hauser-Davis, Márcio L.V. Barbosa-Filho, Lucia Helena S. de S. Pereira, Catarina A. Lopes, Sérgio C. Moreira, Rafael C.C. Rocha, Tatiana D. Saint’Pierre, Paula Baldassin & Salvatore Siciliano, Pp. 16510–16520

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