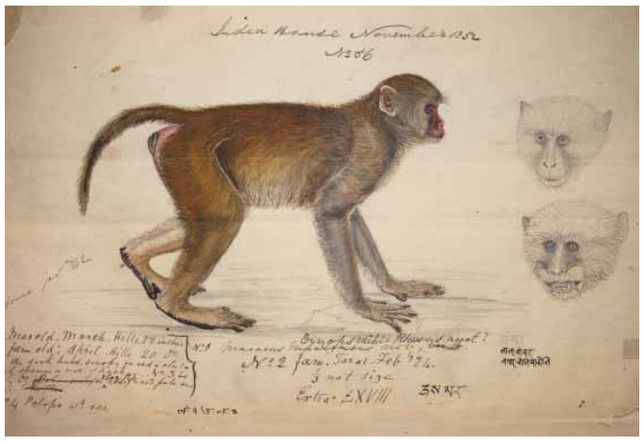
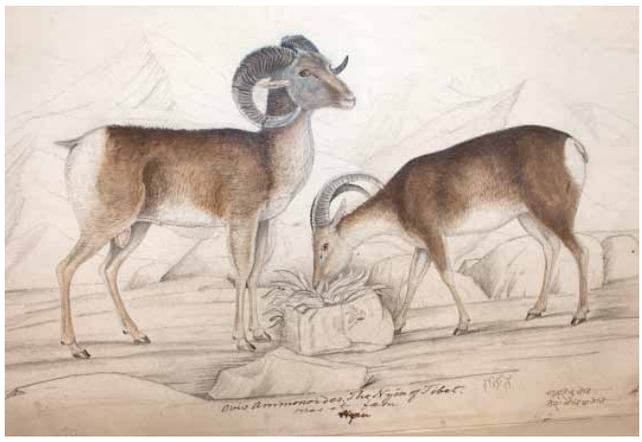
The Status of Nepal's Mammals: The National Red List Series

Compilers:

Jnawali, S.R., Baral, H.S., Lee, S., Acharya, K.P., Upadhyay, G.P., Pandey, M., Shrestha, R., Joshi, D., Lamichhane, B.R., Griffiths, J., Khatiwada, A.P., Subedi, N., and Amin, R.





Notes on front and back cover design:

The watercolours reproduced on the covers and within this book are taken from the notebooks of Brian Houghton Hodgson (1800-1894). For 23 years, Hodgson was posted to Nepal as an official of the British East India Company—at a time when Nepal was virtually terra incognita to Europeans. Hodgson was an energetic polymath who, in addition to carrying out his political and diplomatic duties, published widely on the ethnography, linguistics, architecture, religion and natural history of Nepal and the Himalayas. He published more than 140 scientific papers on zoological subjects, ranging from descriptions of new species to checklists of the fauna. A projected massive volume surveying the birds and mammals of the central Himalaya was unfortunately never completed due to lack of funds, but the present paintings are taken from sketchbooks which Hodgson presented to the Zoological Society of London toward the end of his life. These voluminous collections comprise approximately 1500 pages of drawings, studies and miscellaneous notes. The species depictions were done in watercolours by a cadre of Nepalese traditional artists trained by Hodgson to paint birds and mammals in a natural, lifelike manner surprisingly modern in comparison with European and American artists of the day. Sadly, the names of only two members of this group—Tursmoney Chitterkar and Rajman Singh—are known today. The latter was probably responsible for the majority of these paintings, but he seems to have signed no more than a single bird painting.

ISBN number: 978-0-900881-60-2

Hodgson paintings species IDs *(clockwise from top left)*

Front cover
1 Macaca mulatta
Rhesus Macaque; Rato Bandar
2 Ovis ammon hodgsoni
Argali; Nayan
3 Manis pentadactyla
Chinese Pangolin; Kalo Salak
4 Pteropus giganteus
Indian Flying Fox; Raj Chamero
5 Cuon alpinus
Dhole; Ban kukur

Ungulates
1 Pantholops hodgsonii
Tibetan Antelope; Chiru
2 Naemorhedus goral
Himalayan Goral; Ghoral
3 Axis porcinus
Hog Deer; Laguna

Carnivores
1 Felis chaus (juvenile)
Jungle Cat; Ban Biralo
2 Cuon alpinus
Dhole; Ban kukur

Primates
1 Semnopithecus schistaceus
Nepal Grey Langur; Kalomukhe Bandar, Lampuchhre Bandar, Phetawal Bandar
2 Macaca mulatta
Rhesus Macaque; Rato Bandar
3 *Macaca assamensis*
Assam Macaque; Pahare Bandar

Small mammals
1 Lepus nigricollis
Indian Hare; Khairo Kharayo
2 Cannomys badius
Bay Bamboo Rat, Lesser Bamboo Rat; Sano Tame Bansmuso
3 Manis pentadactyla
Chinese Pangolin; Kalo Salak
4 Caprolagus hispidus
Hispid Hare; Laghukarna Kharayo

Bats
1 Pteropus giganteus
Indian Flying Fox; Raj Chamero
2 Hipposideros armiger
Great Himalayan Leaf-nosed Bat; Thulo Golopatre Chamero

Back cover
1 Naemorhedus goral
Himalayan Goral; Ghoral
2 Petaurista petaurista
Red Giant Flying Squirrel; Rato Rajpankhi Lokharke
3 Felis chaus (juvenile)
Jungle Cat; Ban Biralo
4 Hipposideros armiger
Great Himalayan Leaf-nosed Bat; Thulo Golopatre Chamero
5 Semnopithecus schistaceus
Nepal Grey Langur; Kalomukhe Bandar, Lampuchhre Bandar, Phetawal Bandar

The Status of Nepal's Mammals: The National Red List Series

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Citation:
Jnawali, S.R., Baral, H.S., Lee, S., Acharya, K.P., Upadhyay, G.P., Pandey, M., Shrestha, R., Joshi, D., Laminchhane, B.R., Griffiths, J., Khatiwada, A. P., Subedi, N., and Amin, R. (compilers) (2011)
The Status of Nepal Mammals: The National Red List Series,
Department of National Parks and Wildlife Conservation
Kathmandu, Nepal.

Preface by Simon M. Stuart
Chair IUCN Species Survival Commission

Foreword

Nepal is situated at the heart of the Himalayan belt and at a unique juncture of two of the world's most important bio-geographic regions. Altitudinal variation over a short distance ranges from 60 m above sea-level to 8,848 m atop Sagarmatha, the highest point on Earth. This unique setting has bestowed Nepal with rich biodiversity, yet Nepal is also diverse in its ethnicity, culture and religion, giving it one of the most unique social settings in the region.

A total of 208 species of mammals are found in Nepal, constituting 4.2 % of the world's mammalian fauna. Nepal's faunal diversity ranges from the second largest terrestrial mammal, the Asian Elephant (*Elephas maximus*) to one of the world's smallest mammals, the white-toothed pygmy shrew (*Suncus etruscus)*; it includes the largest of the cats, the Royal Bengal Tiger (*Panthera tigris*) and the smallest deer, the Indian Spotted Chevrotain (*Moschiola indica*).

Much of the biodiversity in the country has been conserved through the establishment of the protected area system, which covers nearly 25% of the country's land mass and represents diverse ecosystems at various elevations. However, ecosystems and biodiversity outside the protected areas suffer the greatest threat, primarily due to encroachment of forest lands, overgrazing,over-exploitation of forest resources and poaching of wildlife species. Deterioration of the quality of the wildlife habitats both inside and outside protected areas due to invasive alien plant species such as *Mikania micrantha, Chromolaena odorata* and *Lantana camara* has only exacerbated the threats.

The Status of Nepal's Mammals is an invaluable project, providing crucial information on taxonomic and geographical gaps in knowledge, and for informing conservation decision making and research, and influencing policy. The information contained here will form the baseline for further development and research in the field of mammalian conservation in Nepal. Nepal is a signatory of many international conventions, including CBD, Ramsar Convention and CITES. The work and publication of the National Red List of Mammals coincides with the 'International Year of Biodiversity' and the Government of Nepal remains committed in its part to conserve the rich natural heritage that it has been graced with.

I would like to thank the Department of National Parks and Wildlife Conservation, National Trust for Nature Conservation, Zoological Society of London, World Wildlife Fund Nepal and all partners and individuals who have coorperated in this publication. In particular, I would like to thank Dr Hem Sagar Baral, Dr Shant Raj Jnawali, Dr Rajan Amin and Samantha Lee for their untiring efforts in the publication of the Status of Nepal's Mammals.

Nabin Kumar Ghimire
Secretary, Ministry of Forests and Soil Conservation.

Preface

It is with great pleasure that I write this foreword to *The Status of Nepal's Mammals*. This landmark publication gives us, for the first time, a comprehensive and detailed understanding of the national conservation status of the 208 species of Nepalese mammals. Almost a quarter of Nepal's mammals are threatened with extinction (23%). However, the true percentage of threatened mammals will probably be much worse than this, because 38% of the species are Data Deficient, and many of these will almost certainly be found to be threatened once they have been properly studied.

The most threatened group of mammals in the country is the ungulates, of which 57% are threatened. Species such as the Barasingha *Rucervus duvaucelii*, the Hog Deer *Axis porcinus* and the Himalayan Musk Deer *Moschus leucogaster* have globally important populations in Nepal, as do the South Asian River Dolphin *Platanista gangetica*, Greater One-horned Rhinoceros *Rhinoceros unicornis* and the Hispid Hare *Caprolagus hispidus*. The most poorly known groups in Nepal are the small mammals (bats, shrews, rodents), of which 48% are Data Deficient.

The Status of Nepal's Mammals has been an invaluable project which was only possible due to the contribution of many committed scientists and conservationists, and the close collaboration between: the Government of Nepal, Ministry of Forest and Soil Conservation, Department of National Parks and Wildlife Conservation; the National Trust for Nature Conservation; the International Union for Conservation of Nature (IUCN); and the Zoological Society of London. Long-term commitment is needed to continue producing national red lists in the region, including birds, reptiles, amphibians, fish and flowering plants. Nepal was one of 183 governments that are parties of the Convention on Biological Diversity that adopted the following target at the Nagoya conference in October 2010: *By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.* This book provides an excellent basis for measuring whether or not Nepal can achieve this important target for mammals.

This publication will have the following outputs for conservation:

- It provides a baseline for further assessments, monitoring changes in mammal status by calculating the National Mammal Red List Index for Nepal and also measuring the success of conservation projects that have already been implemented.
- It can influence the implementation of national legislation and policies, and international conventions in Nepal.
- Because *The Status of Nepal's Mammals* enhances global knowledge on species, it contributes to the growth and updating of the global IUCN Red List of Threatened Species.

I congratulate the large number of people who came together to produce this excellent publication. I hope that when the next edition of *The Status of Nepal's Mammals* is written, it will document the results of successful conservation in many parts of the country.

Simon M. Stuart
Chair IUCN Species Survival Commission

Acknowledgements

The production of the Status of Nepal's Mammals would not have been possible without the extensive support, guidance and knowledge of a network of experts, field technicians and government and conservation organisations in Nepal, IUCN and ZSL.

The final production and assessment of Nepal's mammal species is a result of the knowledge and commitment of those who contributed through the field technician's consultative workshop and Nepal Red List of Mammals National Workshop.

We would like to thank all participants for their contribution (in alphabetical order): Ang Phuri Sherpa, Arjun Karki, Arjun Thapa, Babu Ram Lamichhane, Basu Bidari, Basu Dev Neupane, Bed Badr Khadka, Bhaiya Khanal, Bhumi Nanda Ghimire, Bidur Pokharel, Bikas Pun, Binod Ghimire, Binti Ram Tharu, Bishnu Lama, Bishnu Mahato, Biswa P Adhikari, Biswo Nath Uprety, Buddhi Rijal, Chiranjibi Pokharel, DB Chaudhary, Dipesh Joshi, Fanindra Kharel, Ganga Regmi, Dr Ghana Shyam Gurung, Gopal Prasad Upadhyay, Harka Man Lama, Dr Hem Sagar Baral, Hem Subedi, Hira KC, Jhamak Karki, Jit Bahadun Tamang, Juddha Gurung, Professor Karan Bahadur Shah, Keshab Giri, the late Kirti Nath Poudel, Kaml Prasad Gairhe, Lal Bahadur Bhandari, Laxman Prasad Poudel, Madhu Chetri, Manish Pandey, Megh Bahadur Pandey, Dr Mukesh Chalise, Narayan Dash Tharu, Dr Narendra Pradhan, Naresh Subedi, Dr Rajan Amin, Ram Chandra Nepal, Ram Kumar Aryal, Rameshor D Chaudhary, Ramita Shrestha, Samantha Lee, Sanjan Thapa, Sarita Jnawali, Saroj Upadhyay, Dr Shant Raj Jnawali, Shreejana Bhattarai, Shyam Bajimaya, Suchita Shrestha, Suman Malla, Suresh Thapa, Tej Bahadur Thapa, Tika Ram Adhikari, Tika Ram Giri and Yadav Ghimire.

Thanks to the Nepal Red Data List Committee for their guidance and support of the project and for their long-term support of National Red Lists: Gopal Prasad Upadhyay, Megh Bahadur Pandey, Professor Karan Bahadur Shah, Ganga Jung Thapa, Shiva Raj Bhatta, Dr Shant Raj Jnawali, Dr Ghana Shyam Gurung, Dr Rinjan Shrestha and Bed Kumar Dhakal.

Thanks to all those who reviewed documents, submitted species information and contributed to the Status of Nepal's Mammals: Achyut Aryal, Ardith Eudey, Bhupendra Yadav, Brian Williams, Bruce Kohn, Diana Zlatanova, Dr Gabor Csorba, Hari Adhikari, Howard Clark, James Burton, James D Murdoch, Kamal Thapa, Kate Jones, Kristopher Helgen, Lorrie Kohn, Madhu Chetri, Mukesh Chalise, Naresh Subedi, Naveen Kumar Mahato, Oystein Flagstad, Pete Newton, Pradeep Khanal, Prativa Kaspal, Pushpa Raj Acharya, Rinjan Shrestha, Royce To, Sanjan Thapa, Shyam Bajimaya and Simon Hedges

Additional thanks to David Shenton for the following illustrations: *Eonycteris spelaea*, *Eptesicus serotinus*, *Eptesicus dimissus*, *Kerivoula hardwickii*, *Sorex excelsus*, *Semnopithecus ajax* and the cover pages. Thanks to the ZSL library for providing images of Hodgson's paintings of *Myotis nipalensis* and *Soriculus nigrescens*. Thanks to Himalayan Nature for providing thr remainder of the illustrations in this publication. Thanks to Danielle Burton for the creative design and layout of the publication.

The Status of Nepal's Mammals is a collaborative project between the Government of Nepal, Ministry of Forest and Soil Conservation, Department of National Parks and Wildlife Conservation, National Trust for Nature Conservation and Zoological Society of London.

We would like to thank the following organisations for their support in producing the Nepal Biodiversity Databank and Status of Nepal's Mammals:

Himalayan Nature for use of the illustrations by artist Krishna Gurung. Species thanks to Professor Karan Shah and Sharad Singh.

International Union for the Conservation of Nature (IUCN) for use of the IUCN Categories and Criteria and for technical advice and support. Additional thanks to the Global Mammal Assessment (GMA) team for providing species information.

National Trust for Nature Conservation (NTNC) as project partner, supporting the project throughout its development, providing expertise, logistics, maintaining communication between experts and providing workshop venues. Special thanks to Dr Shant Jnawali (Program Director, NTNC).

National Trust for Nature Conservation Central Zoo for providing office space and facilities for the Status of Nepal's Mammals team. Special thanks to Mrs Sarita Jnawali, Project Manager of NTNC Central Zoo.

National Trust for Nature Conservation Biodiversity Conservation Centre (NTNC BCC) for providing office space and workshop venue, and for maintaining communication between field technicians and experts. Special thanks to Naresh Subedi, Kirti Nath Poudel and Babu Ram Laminchhane.

WWF-Nepal provided expert advice and support throughout the development of the project and formed part of the project steering committee.

Zoological Society of London (ZSL) led the implementation of the Status of Nepal's Mammals Project. Thanks to Dr Rajan Amin (Project Manager), Dr Hem Sagar Baral (Project Manager), Janine Griffiths (Project Coordinator), Samantha Lee (Project Assistant), Dipesh Joshi (Research Intern) and Saroj Uphadyay (Research Volunteer). .Special thanks to Monika Bohm and Nadia Richman who provided technical advice and training; to Ann Sylph and James Godwin for kindly providing the various images of Brian Houghton Hodgson's paintings; and to Dr Reinmar Seidler for editing and technical inputs.

Krishna Prasad Acharya
Director General, Department of National Parks and Wildlife Conservation

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Introduction

Nepal is a highly diverse and unique country harbouring an extraordinary variety of landscapes, cultures and wildlife. Despite making up less than 1% of the world's total land mass, its physiographic features range from the highest terrestrial ecosystem in the world, the Himalayas, to the subtropical lowlands of the Terai. This contrast makes Nepal one of the most biodiverse countries in the world, containing within its small area of 141,181 km^2: 4.2% of all mammals, 8.5% of all birds and 2.2% of all flowering plants on Earth, including threatened flagship species such as the Royal Bengal Tiger (*Panthera tigris tigris*), Asian Elephant (*Elephas maximus*), Greater One-horned Rhino (*Rhinoceros unicornis*) and South Asian River Dolphin (*Platanista gangetica*) (Shrestha *et al. 2001*). In addition to the vast faunal diversity, 35 forest types and 118 ecosystems are present in Nepal (GoN, MoFSC 2009). Almost 25% of the country's landmass is designated as protected area, with 10 national parks, three wildlife reserves, five conservation areas and one hunting reserve (Figure 1).

Positioned between China in the north and India to the south, east and west, Nepal is a land-locked country lying on the collision zone between the Indian subcontinent and Eurasian continent. The majority of Nepal's land mass lies along the Himalayas and as a result, within a small latitudinal range of approximately 200 km, the country undergoes vast altitudinal changes from 60 m along the southern border, up to 8,848 m of Sagarmatha (Mount Everest). This variation causes dramatic changes in Nepal's landscape and climate.

The country can be broadly divided into five physiographic zones: Terai, Siwaliks, Middle Mountains, High Mountains and High Himalayas and between each of these regions the climate varies considerably (Figure 2). The humid and subtropical Terai in the south of the country can reach temperatures greater than 40^oC over the summer months, yet cold arctic-like conditions are experienced at the northern border of the country in places such as Mustang and Solukhumbu, where the temperatures even during summer can fall below freezing. The monsoon season falls between June to September and during this period Nepal receives around 80% of its annual rainfall (ICIMOD 2010).

The Terai runs along the southern border of Nepal and consists of tall alluvial floodplain grasslands, forests of subtropical characteristics including riverine, mixed hardwood and Sal (*Shorea robusta*) forests. The south east of the Terai features Nepal's most significant wetland: Koshi Tappu Wildlife Reserve, an important bird area and the only area in Nepal in which Wild Water Buffalo (*Bubalus arnee*) still occurs. Other iconic and threatened mammalian species in the Terai include the Greater One-horned Rhino, Royal Bengal Tiger and Asian Elephant. The Terai was once prevalent with malaria, therefore preventing human settlements. However, after eradication of malaria in the mid-1950s many areas became habitable and resulted in large scale settlements and today almost half of Nepal's population resides here (CBS 2009, Grimmett et al. 2009, Pant 2010). Consequently, although the Terai represents only 14% of the total area of the country, it contains 42% of the total cultivated land of the country due to its highly fertile soils (UNEP 1993).

Beyond the flat plains of the Terai are the first of the Himalayan foothills, the Siwaliks. This zone consists of subtropical, coniferous and mixed hardwood forests, including chir pine, deciduous and evergreen forests (Inskipp 1989). The Siwaliks is important for species such as Gaur (*Bos gaurus*), Four-horned Antelope (*Tetracerus quadricornis*) and Sloth Bear (*Melursus ursinus*).

North of the Siwaliks run the Middle Mountains, including the Mahabharat range. This zone has temperate, hardwood, pine and subalpine forest and important bamboo habitat, key for the survival of species such as Red Panda (*Ailurus fulgens*) (UNEP 1993, Grimmett 2009). The area is highly cultivated with terraced farming

being the predominant practice. The capital city Kathmandu lies at 1,300 m.The High Mountains zone rises up to altitudes of 4,000 m and has a cool subalpine climate with an average temperature of 10 to 15^{O}C (Agrawala *et al*. 2003). It consists of temperate and subalpine forest and shrubland with both coniferous and hardwood species including oak (*Quercus spp.*), fir (*Abies spectabilis*), birch (*Betula spp.*) and mixed broadleaved and rhododendron forests. This region has some of the least disturbed forests, probably as a result of relatively low human population and general inaccessibility (UNEP 1993). Species such as the Himalayan Pika (*Ochotona himalayana*) occurs here and, along with other small mammals of the region, is associated with increased plant diversity as a result of the soil disturbance caused (Bagchi *et al. 2006*).

Along the northern border of Nepal neighbouring China, is the High Himalayas region with seven of the top ten highest peaks in the world, including the highest point: the summit of Sagarmatha at 8,848 m. The landscape comprises subalpine forests and alpine vegetation, permanent snow and glaciers. It includes the Trans-Himalayan area in the north west which is virtually treeless with a dominant vegetation of shrubs, grasses and alpine flora (Grimmett 2009). The High Himalaya is one of the most vulnerable global regions to the impacts of climate change. Himalayan glaciers are shrinking and have major implications for drinking water supplies, biodiversity, hydropower, local industry, agriculture and threat of Tsunami and glacial lake outbursts (Bajracharya *et al. 2007*). Species that occur in this landscape include the Snow Leopard (*Panthera uncia*), Himalayan Tahr (*Hemitragus jemlahicus*), Tibetan Gazelle (*Procapra picticaudata*) and Grey Wolf (*Canis lupus*).

Whilst Nepal is rich in biodiversity, it is one of the poorest and least developed countries in the world, ranked 138th in Human Development Index and in the 10 least developed countries in Asia and Oceania (UNDP 2010, IMF 2010). The country's rapidly increasing human population is putting huge pressure on natural resources and wildlife and even basic human needs struggle to be met with shortages of water and electricity. In addition to the direct anthropogenic pressures, invasive alien plant species are rapidly destroying prime habitat and the increasing temperatures of climate change are likely to exert severe effects on the world's highest mountain habitats. These combined pressures are pushing many species towards extinction. Although the declines of many species, such as the Royal Bengal Tiger and Greater One-horned Rhino are well known, it has been a challenge to address them with expanding human settlements compounded with inadequate human and financial resources. However for the majority of species in Nepal, baseline information is still lacking, including information on Nepal's two endemic mammal species, the Himalayan Field Mouse (*Apodemus gurkha*) and Csorba's Mouse-eared Myotis (*Myotis csorbai*).

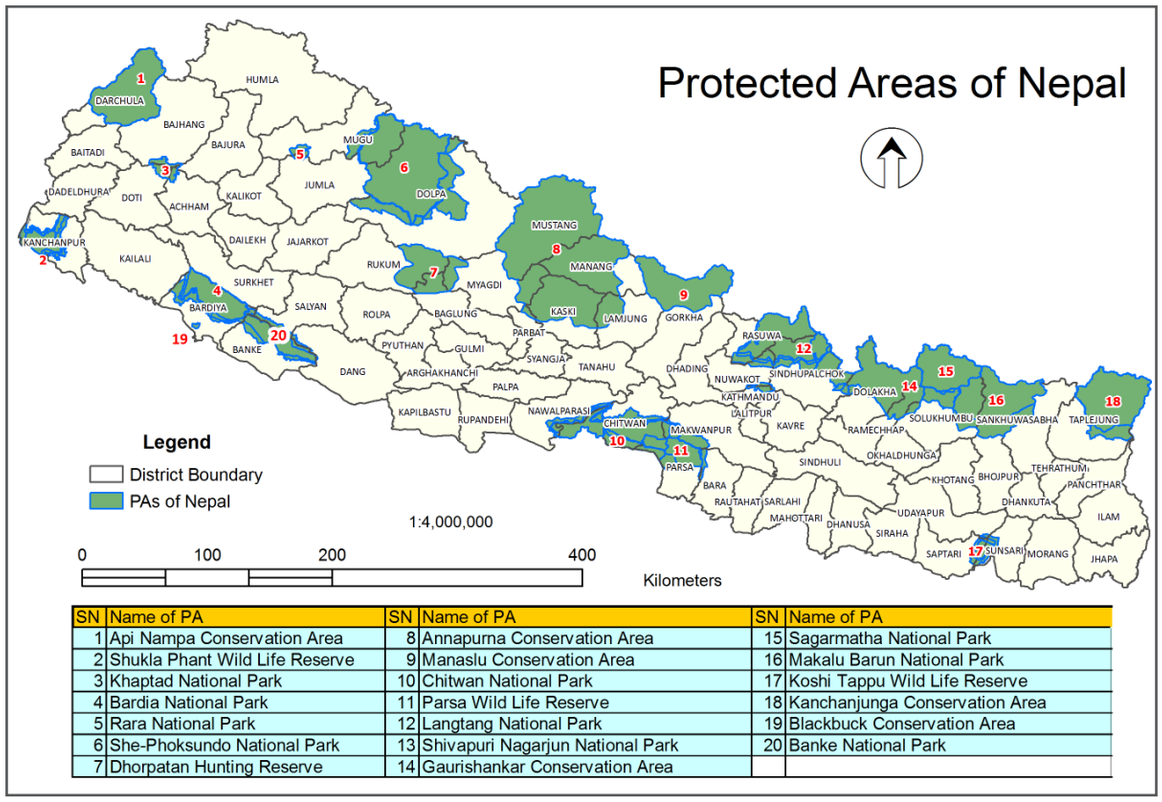
The main objectives of the Status of Nepal's Mammals were to form a comprehensive list of mammals that occur in Nepal, to evaluate the status of each species and to identify specific threats to the species and make conservation recommendations. As part of this process, the species list was reviewed in accordance with the international rules of zoological nomenclature. A Nepal biodiversity databank was established with information on point localities and corresponding dates, species names, synonyms, potential threats, conservation measures, habitat preferences and other fields which were deemed useful for conservation assessments. This data was taken from published reports and past museum records, unpublished project reports and field surveys, as well as expert opinion. This databank provides a baseline for future Red List assessments.

National Red List assessments were carried out in 2010 in accordance with the IUCN Regional Red List Categories and Criteria. It is the first time species conservation status assessments for Nepal have been carried out at a national level using the IUCN Categories and Criteria, which is internationally recognised as the world's most authoritative and objective method for classifying extinction risk. Status of Nepal's Mammals has highlighted those species most at threat, under-represented and under-researched. Through a network of field technicians, scientists and government officials conservation recommendations have been made to further secure the future of Nepal's mammal species.

The Red List will continue to assess all major taxa in Nepal including birds, reptiles, amphibians, fish and flowering plants providing a true picture of the overall state of Nepal's biodiversity and producing conservation recommendations to help prevent its future decline. With each revision of the National Red List it will highlight the biodiversity trends of the country as well as the effectiveness of conservation programmes already in place. This information will also allow the Government of Nepal to monitor its progress towards meeting national and international targets such as those set by the Convention on Biological Diversity.

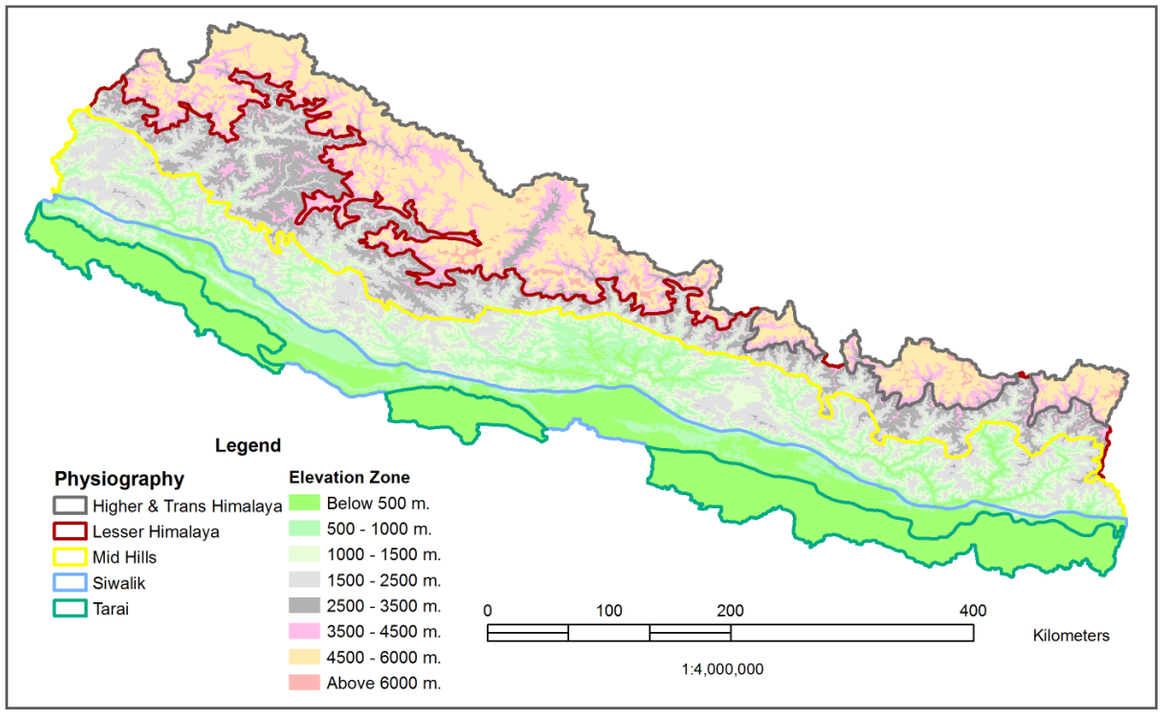
For further information on National Red Listing please visit:
www.nationalredlist.org

Figure 1: *Protected areas of Nepal.*



SN	Name of PA	SN	Name of PA	SN	Name of PA
1	Api Nampa Conservation Area	8	Annapurna Conservation Area	15	Sagarmatha National Park
2	Shukla Phant Wild Life Reserve	9	Manaslu Conservation Area	16	Makalu Barun National Park
3	Khaptad National Park	10	Chitwan National Park	17	Koshi Tappu Wild Life Reserve
4	Bardia National Park	11	Parsa Wild Life Reserve	18	Kanchanjunga Conservation Area
5	Rara National Park	12	Langtang National Park	19	Blackbuck Conservation Area
6	She-Phoksundo National Park	13	Shivapuri Nagarjun National Park	20	Banke National Park
7	Dhorpatan Hunting Reserve	14	Gaurishankar Conservation Area		

Figure 2: *Physiographic regions and elevation zones of Nepal.*



Protected Mammal Species of Nepal

The National Park and Wildlife Conservation Act 2029 (1973) lays the foundation for wildlife conservation. It provides various degree of protection to wildlife based on the national status of the species. Some species have been allocated a higher level of protection: twenty six mammals, nine birds and three reptile species have been fully protected under the Act. Therefore, the illegal killing of these species incurs those responsible with fines, imprisonment or both. For example, the punishment for poaching a tiger is NRs. 50,000-100,000 fine and/or five to 15 years imprisonment.

Listed in Table 1 are the 27 mammal species in Nepal which have been allocated a higher protection status. This list is currently under revision and it is likely that many more species will be added. Although not included here, the protected species list also includes birds, herpetofauna, insects and plants. To access the full list please visit: *www.dnpwc.gov.np/pro-species*

Table 1: *Protected mammal species list under the NPWC Act 2029.*

Scientific Name	English Name	Nepali Name
Macaca assamensis	Assam Macaque	Asami Rato Bandar
Manis pentadactyla	Chinese Pangolin	Kalo Salak
Manis crassicaudata	Indian Pangolin	Tame Salak
Caprolagus hispidus	Hispid Hare	LaghukarnaKkharayo
Canis lupus	Grey Wolf	Bwanso
Ursus arctos	Brown Bear	Himali rato Bhalu
Ailurus fulgens	Red Panda	Habre
Prionodon pardicolor	Spotted Linsang	Silu Biralo
Felis bengalensis	Leopard Cat	Chari Bagh
Felis lynx	Lynx	Pahan Biralo
Neofelis nebulosa	Clouded Leopard	Dwanse Chituwa
Panthera tigris	Tiger	Pate Bagh
Panthera uncia	Snow Leopard	Hiun Chituwa
Elephas maximus	Asian Elephant	Hatti
Rhinoceros unicornis	Greater One-horned Rhino	Gainda
Sus salvanius	Pygmy Hog	Pudke Bandel
*Moschus moschiferos***	Musk Deer	Kasturi Mirga
Cervus duvauceli	Swamp Deer	Bahrasingha
Bos gaurus	Gaur	Gauri Gai
Bos grunniens	Wild Yak	Chauri Gai
Bubalus arnee	Wild Water Buffalo	Arna
Ovis ammon	Great Tibetan Sheep	Nayan
Pantholops hodgsoni	Tibetan Antelope	Chiru
Antilope cervicapra	Blackbuck	Krishnasar
Tetraceros quadricornis	Four-horned Antelope	Chauka
Hyaena hyaena	Striped Hyaena	Hundar
Platanista gangetica	Ganges River Dolphin	Shons

** Taxonomic update suggests that Nepal does not have this species (see species account)

Status of Nepal's Mammals

Of the 208 known species of mammal in Nepal, one is considered Regionally Extinct, eight are considered Critically Endangered, twenty-six are considered Endangered, fourteen are considered Vulnerable and seven are considered Near Threatened (Table 2).

Table 2: *Mammals nationally assessed as Regionally Extinct (RE), Threatened (Critically Endangered (CR), Endangered (EN) and Vulnerable (VU)), and Near Threatened (NT).*

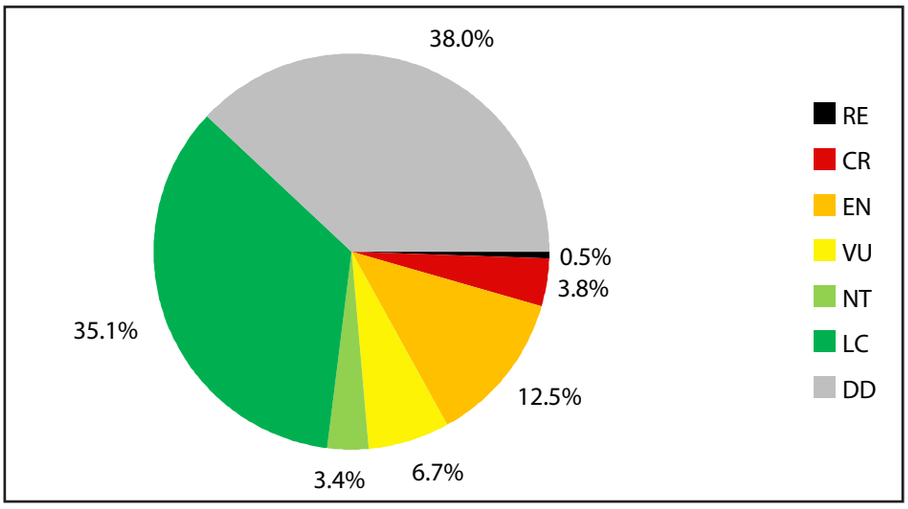
RE	CR	EN	VU	NT
Pygmy Hog *Porcula salvania*	Blackbuck *Antilope cervicapra*	Alpine Musk Deer *Moschus chrysogaster*	Assam Macaque *Macaca assamensis*	Andersen's Leaf-nosed Bat *Hipposideros pomona*
	Brown Bear *Ursus arctos*	Asian Elephant *Elephas maximus*	Axis Deer *Axis axis*	Blyth's Horseshoe Bat *Rhinolophus lepidus*
	Csorba's Mouse-eared Myotis *Myotis csorbai*	Bengal Tiger *Panthera tigris tigris*	Barking Deer *Muntiacus vaginalis*	Eurasian Otter *Lutra lutra*
	Great Evening Bat *Ia io*	Black Giant Squirrel *Ratufa bicolour*	Bengal Fox *Vulpes bengalensis*	Goral *Naemorhedus goral*
	Grey Wolf *Canis lupus*	Chinese Pangolin *Manis pentadactyla*	Common Leopard *Panthera pardus*	Himalayan Tahr *Hemitragus jemlahicus*
	Indian Chevrotain *Moschiola indica*	Clouded Leopard *Neofelis nebulosa*	Crab-eating Mongoose *Herpestes urva*	Large Indian Civet *Viverra zibetha*
	Ganges River Dolphin *Platanista gangetica*	Dhole *Cuon alpinus*	Gaur *Bos gaurus*	Tibetan Tube-nosed Bat *Murina aurata*
	Tibetan Gazelle *Procapra picticaudata*	Fishing Cat *Prionailurus viverrinus*	Kiang *Equus kiang*	
		Greater One-horned Rhino *Rhinoceros unicornis*	Leopard Cat *Prionailurus bengalensis*	
		Harlequin Bat *Scotomanes ornatus*	Lynx *Lynx lynx*	
		Himalayan Black Bear *Ursus thibetanus*	Mandelli's Mouse-eared Bat *Myotis sicarius*	
		Himalayan Field Mouse *Apodemus gurkha*	Nilgai *Boselaphus tragocamelus*	
		Himalayan Pika *Ochotona himalayana*	Sambar *Rusa unicolor*	
		Himalayan water Shrew *Chimarrogale himalayica*	Short-winged Pipistrelle *Philetor brachypterus*	
		Hispid Hare *Caprolagus hispidus*		
		Hog Deer *Axis porcinus*		

RE	CR	EN	VU	NT
		Honey Badger *Mellivora capensis*		
		Indian Pangolin *Manis crassicaudata*		
		Red Panda *Ailurus fulgens*		
		Sloth Bear *Melursus ursinus*		
		Smooth-coated Otter *Lutrogale perspicillata*		
		Snow Leopard *Panthera uncia*		
		Spotted Linsang *Prionodon pardicolor*		
		Striped Hyaena *Hyaena hyaena*		
		Swamp Deer *Rucervus duvaucelii*		
		Water Buffalo *Bubalus arnee*		

A total of 208 mammal species have been recorded to occur in Nepal. Of these 23% are considered to be Nationally Threatened with extinction, with 4% of species considered Critically Endangered, 12% Endangered and 7% Vulnerable. A further 3% are considered Near Threatened, meaning they are likely to qualify for a threatened category in the near future. Thirty-five percent of Nepal's mammals are considered Least Concern, and 38% are considered Data Deficient (Figure 3).

The status of species classified as Data Deficient is uncertain, as the true category of risk is unclear and in fact many of these species could actually be highly threatened. If we assume that the Data Deficient species are threatened in the same proportion as data *sufficient* species we can get a rough estimate of the proportion of Data Deficient species that could be threatened. This would be between 23% (as a lower estimate, considering all Data Deficient species to be Least Concern) to 61% (as an upper estimate, considering all Data Deficient species to be Threatened) with a midpoint of 36%.

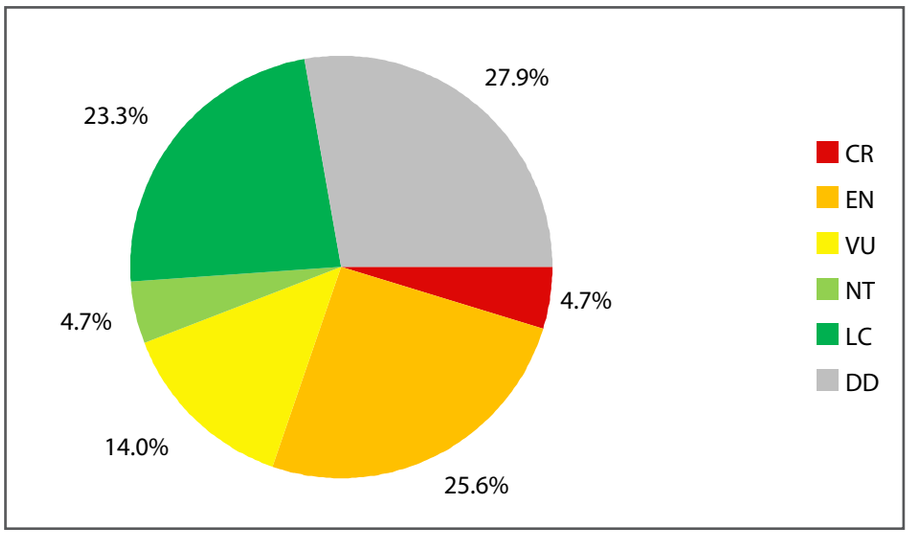
Figure 3: *Status of mammals in Nepal.*



Certain taxonomic groups of mammals are at a greater risk of extinction than others; however certain groups have a larger proportion of Data Deficient species. Research efforts and finances are often concentrated on more charismatic species leaving other groups such as small mammals and bats largely underrepresented in terms of research. However, with limited resources, conservation efforts targeting umbrella/charismatic species will benefit many of the smaller species occurring within their range.

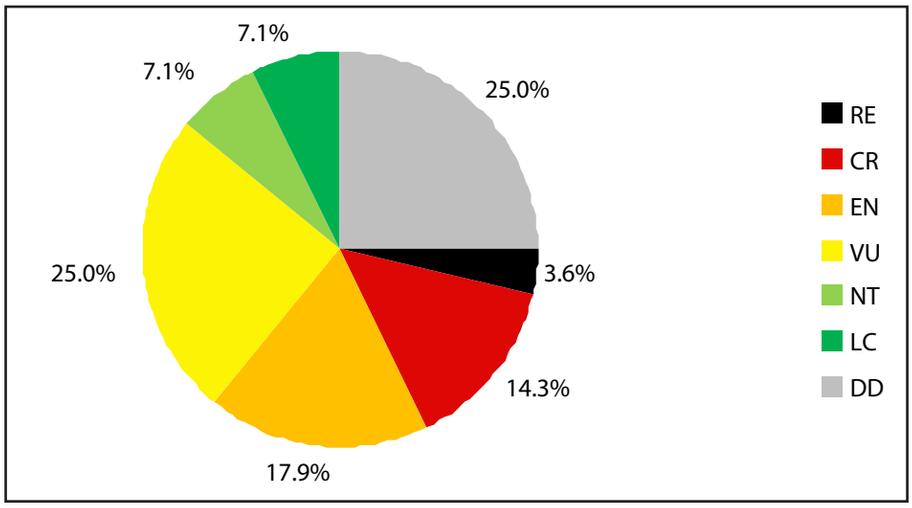
The assessment of carnivorous species (canids, felids, weasels, Red Panda, civets, otters and badgers), shows that 44% of these species are threatened, with a further 5% Near Threatened (Figure 4). That is, half of all carnivore species that occur in Nepal are facing extinction currently or will do so in the near future. Conservation programmes for the larger, charismatic species in this category may also benefit the smaller species (Shafer 1990). Referred to as an 'umbrella species', the conservation of species such as Royal Bengal Tiger will also aid the conservation of other species and habitats within their range.

Figure 4: *Status of carnivore species in Nepal.*



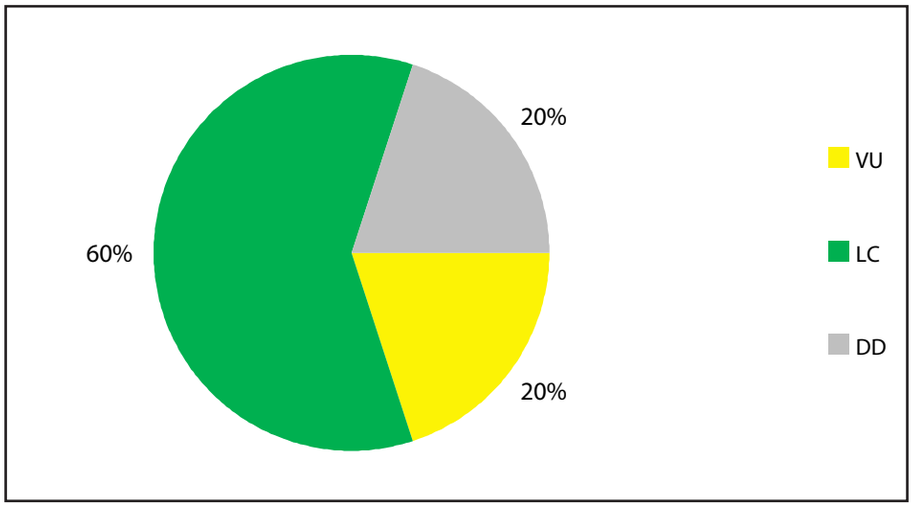
The most threatened group of mammals in Nepal are the ungulates, a group containing the Greater One-horned Rhino, Asian Elephant, Himalayan Tahr and Wild Yak. Over half of all ungulate species in Nepal are threatened and a further 7% Near Threatened. The ungulate group also contains the only species known to be Regionally Extinct (Pygmy Hog) and two species considered 'possibly Regionally Extinct' (the Wild Yak and Indian Chevrotain). Only 7% of ungulates are considered Least Concern and 25% are Data Deficient (Figure 5). The species in this category make up the main prey-base for many carnivores and its depletion is considered a major threat to their survival.

Figure 5: *Status of ungulate species in Nepal.*



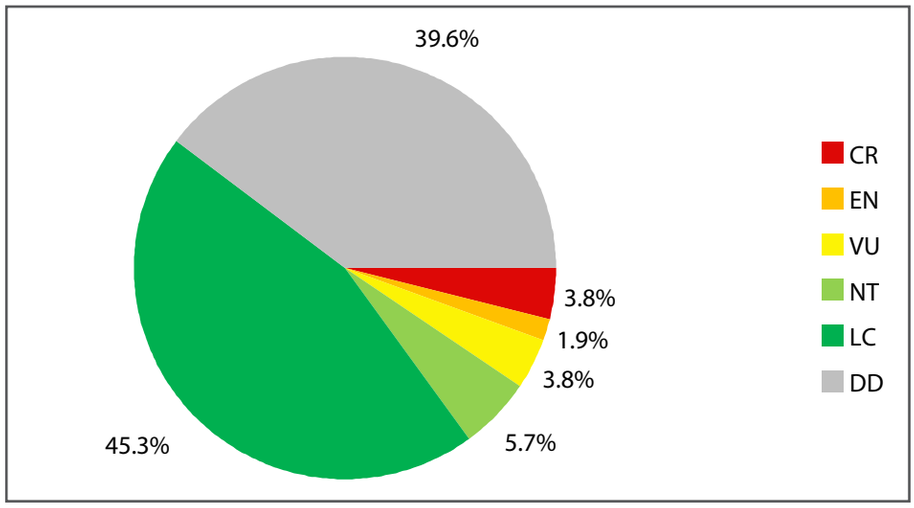
Primates are currently considered the least threatened group of mammals in Nepal. Due to the religious significance of monkeys in the Hindu religion which is prominent in Nepal, primates may benefit from a level of social protection through their association with the Hindu God Hanuman. They are also a highly versatile group of species and can live easily around human settlements. The Assam macaque is categorized as the only threatened primate species in Nepal with 60% considered Least Concern (Figure 6).

Figure 6: *Status of primate species in Nepal.*



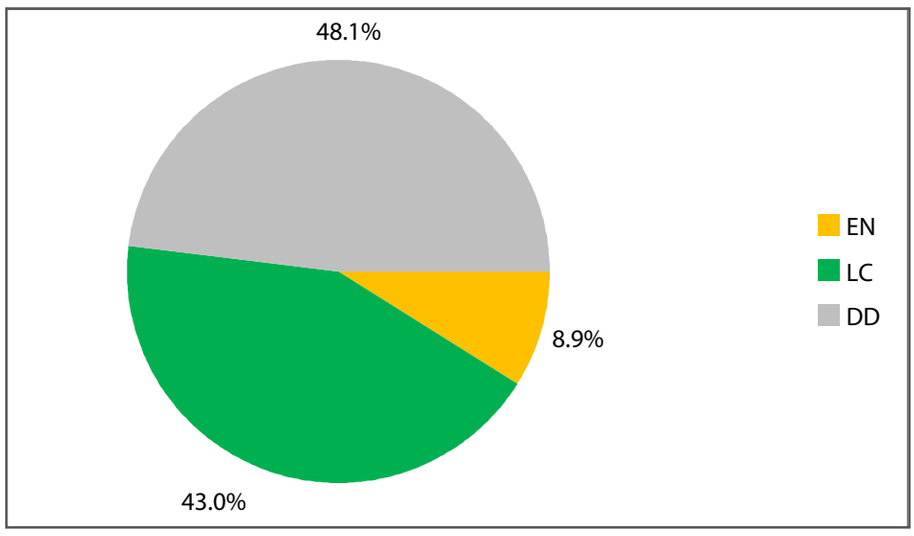
Bat species make up almost a quarter of all mammal species that occur in Nepal, and yet until recent years have been largely neglected in terms of research. Therefore, it is likely that in the next Red List assessment, more species will have been identified and more information will be available to make assessments. From current information, 10% of bat species are considered Threatened, with a further 6% considered Near Threatened. Forty percent are considered Data Deficient (Figure 7).

Figure 7: *Status of bat species in Nepal.*



Small mammals make up almost half of all mammal species in Nepal with 79 recorded species. This is the most underrepresented group in terms of current information and research, with 48% of species assessed considered Data Deficient (Figure 8). It is important not to underestimate the value of the species in this group as they can often be indicators of ecosystem health, prey species and part of ecosystem function (such as seed dispersal). This is a diverse group ranging from common and adaptable species such as the Black Rat, but also includes the endemic Himalayan Field Mouse. The majority of these species are not currently facing high extinction rick and it is likely conservation efforts for other species will incorporate many small mammals. With 43% considered Least Concern and only 9% considered threatened, this is one of the least threatened groups but also the least known of the mammal groups.

Figure 8: *Status of small mammals in Nepal.*



Threats to Mammal Species in Nepal

Throughout the Red Listing process and the national workshop, a range of threats were identified for mammal species in Nepal. A broad spectrum of these threats are summarised below (Table 3, 4). More species specific threats and recommendations are also listed in the species accounts.

Poaching and illegal trade: Poaching remains a significant threat to many species. Even within protected areas, animals continue to be illegally hunted for commercial or subsistence purposes. The Greater One-horned Rhino, Royal Bengal Tiger and the musk deer are some of the most seriously affected species, and are illegally hunted for commercial trade with their parts often used for medicinal purposes and cosmetics. Many species illegally hunted for subsistence go unrecorded.

Reduction of prey base: A large number of ungulate species are now considered threatened in Nepal. Many of these species constitute the main prey base for carnivores, and for large predators such as the Royal Bengal Tiger, prey depletion is considered a major factor in their decline. In fact, where prey species densities are depressed, the numbers of tigers and co-predators would continue to fall, even if other threats are successfully addressed (Karanth and Stith 1999).

Habitat loss and degradation: Habitat loss and degradation are directly attributable to increasing human pressures including encroachment, conversion of grasslands and forests to agricultural lands, unsustainable natural resource extraction (such as sand mining, logging for firewood for local and commercial use), overgrazing by livestock and spread of invasive alien plant species such as *Mikania micrantha* (mile-a-minute weed), *Lantana camara* and *Chromolaena odorata*.

The regions with the highest human population densities, in particular the Terai, have experienced significant natural resource over-exploitation and environmental degradation, with escalating pressures on local biodiversity. Loss of habitat connectivity can have a significant impact on wide ranging species such as the Asian Elephant, Royal Bengal Tiger and Snow Leopard and also on the surrounding communities through compression effects and increasing human-wildlife conflict. Over the longer term, there will be loss of genetic variation as subpopulations become increasingly isolated.

Many species have specific habitat needs. The declining quality of water systems due to unregulated domestic, agricultural and industrial waste disposal may be having a dramatic negative impact on the species that rely on these water habitats. The deforestation of primary forests and lack of planned regeneration are reducing the amount of suitable habitat available to many bat species, which are also suffering from a lack of protection of roosting sites.

Human-wildlife conflict: Due to the increasingly close proximity of people and wildlife and with increasing habitat degradation and declining prey numbers, conflict often occurs as a result of crop raiding, predation on livestock and damage to property. This situation is escalated often by human fear and frequently results in the injury or fatality on both sides. Methods to discourage wildlife from invading human occupied areas often include non-discriminative and fatal measures, such as poisoned bait and electrocution.

Disease transmission: The threat of disease to wildlife in Nepal is a largely un-quantified factor for many species. However, due to the close association, dietary and habitat overlap of many wild and domestic species, the risk of transmission of diseases such as tuberculosis, foot-and-mouth disease and rabies is ever

increasing. Tuberculosis is an increasing problem in domestic Asian Elephants, and if it remains uncontrolled could easily pass to wild populations which would be catastrophic. Rapd decline in vulture populations is leading to a situation where large number of dogs and other scavengers congregate to feed on the the carcasses increasing the possibilities of rapid disease transmission among themselves and ultimately transmitting it to wild species such as Dholes, Lynx and Golden Jackal.

Small and/or fragmented populations: Fragmented, small and isolated populations are at greater risk from demographic (reproductivity and mortality) and environment stochasticity (Purvis *et al. 2000*). Species with small populations, such as the Blackbuck and River Dolphin may also suffer from genetic problems (loss of heterozygozity and inbreeding depression).

Inadequate knowledge and research: Thirty eight percent of all Nepal's mammals are considered Data Deficient. This situation is especially acute for small mammals and bats of which 48% and 40% respectively are lacking in even baseline data on their population size, distribution and ecology. Without this information, it is difficult to develop effective conservation programmes for these species or groups and to assess their risk of extinction.

Persecution: Some species are unduly persecuted due to traditional beliefs and a lack of awareness. This is especially the case for bat species but also affects species which occur in human-wildlife conflict areas. Small mammals are considered pests and transmitters of disease (for example, rats and mice can be associated with rabies, hantavirus pulmonary syndrome, murine typhus, salmonella enterica, serovar typhimurium and eosinophilic meningitis). As such, the negative attitude and association of unhygienic conditions towards rodents and small mammals often results in non-species specific persecution, commonly poisoning. Negative attitudes towards bats based on myth and folklore result in persecution, despite their great importance for pollination, seed dispersal, and pest and disease control.

Table 3: *Summary of the main threats to threatened species in Nepal.*

	Primary Threat
	Secondary Threat
	Tertiary Threat
	Potential / suspected Threat
Specific key threats / drivers of species declines	
Illegal hunting	
1	*Poaching for oil used as fish bait*
2	*Commercial poaching for use of animals/animal parts in trade or for medicinal purposes*
3	*Subsistence hunting*
Human-wildlife conflict (HWC)	
4	*Crop raiding*
5	*Property damage*
6	*Human injury*
7	*Livestock predation*
8	*Retaliatory killing*
9	*Persecution*
Habitat loss, degradation and alteration	
10	*Invasive plant species*
11	*Habitat succession and or bush encroachment*
12	*Indiscriminate burning of grasslands*
13	*Fragmentation (human encroachment, clear for agriculture, livestock etc)*
14	*Disturbance to key roosting sites*
15	*Pollution (industrial, agricultural and domestic)*
16	*Barriers (dams, fences)*
17	*Water development projects*
18	*Sand mining(and other surface quarrying)*
19	*Degradation of forests (logging, man made fires)*
20	*Degradation of grasslands and pastures (livestock grazing)*
Disease	
21	*Tuberculosis*
22	*Rabies*
23	*Foot-and-mouth*
24	*White nose*
Resource depletion	
25	*Depletion of natural prey base (due to over-fishing, reduced carrying capacity, hunting etc)*
Genetic loss	
26	*Inbreeding depression (small isolated populations)*
27	*Hybridization*
Other	
28	Flooding, landslides etc
29	Predation (feral dogs)
30	Entanglement in non-traditional fishing gear such as gill nets

Table 4: *Primary, secondary and tertiary threats to threatened species of Nepal.*

Category of threat	Species	Illegal hunting / collection	Human-wildlife conflict	Habitat loss, degradation and alteration	Disease	Resource depletion	Genetic loss	Other
CR	*Antilope cervicapra*, Blackbuck	2,3	4,8	20	23		26	29
	Canis lupus, Grey Wolf	2	7,8,9	13	22	25		
	Ia io, Great Evening Bat	3		13,14,19	24			
	Moschiola indica, Indian Chevrotain	3		10,12,13 20	23		26	
	Myotis csorbai, Csorba's Mouse-eared Myotis	3		13,19	24			
	Platanista gangetica, River Dolphin	1		15,16,17 18		25	26	30
	Procapra picticaudata, Tibetan Gazelle	2,3		16,20			26	29
	Ursus arctos, Brown Bear	2	4,7,8,9	13		25	26	
EN	*Ailurus fulgens*, Red Panda	2		13,19			26	29
	Apodemus gurkha, Himalayan Field Mouse		9	13,20				
	Axis porcinus, Hog Deer	3		10,11				28
	Bubalus arnee, Wild Water Buffalo	3	4, 8	10,11,20	23		26,27	28
	Caprolagus hispidus, Hispid Hare			11,12,13 20				
	Chimarrogale himalayica, Himalayan Water Shrew		9	13,15				28
	Cuon alpinus, Dhole		7,8,9	13	22	25		
	Elephas maximus, Asian Elephant		4,5,6,8	13,19	21			
	Hyaena hyaena, Striped Hyaena		7,8,9	13,19,20		25		
	Lutrogale perspicillata, Smooth-coated Otter	2	9	13,15,16 17		25		30
	Manis crassicaudata, Indian Pangolin	2,3	9	13,19				
	Manis pentadactyla, Chinese Pangolin	2,3	9	13,19				
	Mellivora capensis, Honey Badger		9	13				
	Melursus ursinus, Sloth Bear	2	4,8,9	13,19				
	Moschus chrysogaster, Alpine Musk Deer	2		13,20	23			
	Neofelis nebulosa, Clouded Leopard	2	7,8	13,19				
	Ochotona himalayana, Himalayan Pika		9	20				
	Panthera tigris tigris, Royal Bengal Tiger	2	6,7,8	13,19,20		25		
	Panthera uncia, Snow Leopard	2	7,8	13,19,20		25		
	Prionodon pardicolor, Spotted Linsang	2		13,19				
	Prionailurus viverrinus, Fishing Cat	2		15,17,19		25		
	Ratufa bicolor, Black Giant Squirrel	2,3	9	19				
	Rhinoceros unicornis, Greater One-horned Rhino	2	4,5,6,8	10,11,12 13,19				
	Rucervus duvaucelii, Swamp Deer	3		13,20	23			
	Scotomanes ornatus, Harlequin Bat	3		13,20	24			
	Ursus thibetanus, Himalayan Black Bear	2	4,6,7,8	13,19				

VU	*Axis axis*, Chital	3		10,13,20	23			
	Boselaphus tragocamelus, Nilgai	3	4,8	13,20	23			
	Bos gaurus, Gaur	3		11,13,19 20	23			
	Equus kiang, Kiang			20				
	Herpestes urva, Crab-eating Mongoose	2		13,15,17 19				
	Lynx lynx, Lynx	2	7,8,9	13,20	22			
	Muntiacus vaginalis, Barking Deer	3		10,13,19 20	23			
	Myotis sicarius, Mandelli's Mouse-eared Bat	3		13,14,19	24			
	Panthera pardus, Leopard	2	6,7,8,9	13		25		
	Philetor brachypterus, Short-winged Pipistrelle	3		13,14,19	24			
	Prionailurus bengalensis, Leopard Cat	3	7,8,9	13				
	Rusa unicolor, Sambar	3		10,13,19	23			
	Vulpes bengalensis, Bengal Fox	2	7,8,9,11	13				

Format of Species Accounts

Scientific name (Authority)

Subspecies in Nepal

The binomial names for species is based on a reviewed and agreed list of species at the national mammal workshop in April 2010 and follows international rules of zoological nomenclature.

Common Names

(English); (Nepali)

Synonyms

Where applicable

Species Description

A description of the species. Species descriptions are taken, with permission, from Baral, H.S and Shah, K.B. (2008) Wild Mammals of Nepal. Himalayan Nature, Kathmandu. With the exception of *Mus phillipsi*, *Sorex excelsus*, *Myotis nipalensis*, *Miniopterus pusillus* and *Eonycteris spelaea*, whose descriptions are taken from the original descriptions.

Species Ecology

A description of habitats in which the species occurs, diet and reproductive traits (when available).

Conservation Status

Global: Global risk of extinction. Based on IUCN Red List of Threatened Species 2010.

National: Extinction risk of species in Nepal. Using the 'IUCN Categories and Criteria: Version 3.1' (IUCN 2001) applied at the regional level using 'Guidelines for Application of IUCN Red List Criteria at Regional Levels: Version 3.0' (IUCN, 2003). Species extinction risk was assessed and confirmed in the national workshop for Nepal mammals held in April 2010. Where species are endemic to Nepal the assessment will be identical to that of the global assessment. Rationale for assessment: Rationale for the selected threat status for the species, to be read in conjunction with the criteria summary sheet.

Legal Status

This includes both international legislations such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the National Park and Wildlife Conservation Act 2029 (1973) and the species listed as protected under the Act. All wildlife in Nepal is protected from undue persecution and/or killing by the Act. Within protected areas all wildlife is strictly protected from hunting or collection (with the exception of Dhorpatan Hunting Reserve, where selected species are managed under a hunting quota system). The Act also states, for species listed as protected priority species; severe penalty and punishment to people involved in its killing or engaged in its trade both live and body parts. The section also states whether species are known to occur within protected areas and where possible, the percentage of the population occurring within these areas.

National Population Size

Total: The total population size based on census and survey results documented in scientific papers, government and non-governmental organisation reports or inferred from consultations with field technicians and experts during workshops.

Adults: The total number of mature individuals based on census and survey results documented in scientific papers, government and non-governmental organisation reports or inferred from consultations with field technicians and experts during workshops.

Trend: The species current national population trend whether increasing, decreasing or stable. General comments on populations are also given.

Where parameters are unknown, these are omitted from the species accounts.

National Distribution

A summary of the national distribution, at the resolution of districts and protected areas, within the area the species is known to occur. The national distribution summary is accompanied by a distribution map at the same resolution and shown shaded in red bars. A map of districts and protected areas (shaded in green) is provided for reference. It should be noted that for many species distribution information is lacking, and therefore these species may appear to have more fragmented distributions due a lack of records. There is also significant bias in research and monitoring data as most work is conducted within protected areas. Distribution maps are not provided for species with poor distribution data.

Distribution outside Nepal

Species range countries based on IUCN Red List of Threatened Species 2010.

Main Threats

The broad-scale dominant threats causing species decline as identified in workshops, government and non-government documents and also expert opinion.

Conservation Measures in Place

Research, conservation projects and/or management plans already in place for species.The Nepal Biodiversity Strategy, Master Plan for the Forestry Sector, and Nepal Conservation Strategy are broad-ranging and encompass most of the mammal species featured in this publication. The TAL (Terai Arc Landscape) - Nepal Strategic Plan 2004-2014 is also a broad ranging conservation strategy for the Terai. This section is only provided for non threatened species if there are conservation measures in place.

Conservation Recommendations

A list of recommendations are provided for the threatened species of Nepal. These recommendations are

broad-scale and have been provided by species experts and/or derived from action plans and government and non-government documents. Due to complexity of the causes of species decline and individual threats and scale of this project, these recommendations do not go into as much detail as would be required to provide effective conservation plans. These recommendations should be used as a broad guideline for developing detailed species action and management plans in addition to guiding further research. For Data Deficient species, the priority is on conducting further research to obtain baseline data on species status, distribution and specific threats using standardised protocols to help develop targeted conservation actions and assessments.

Illustrations

Illustrations have been provided by and are copyright of Himalayan Nature (Registered charity Number 818/056/57 with the Government of Nepal), with the exception of *Eonycteris spelaea*, *Eptesicus serotinus*, *Eptesicus dimissus*, *Kerivoula hardwickii*, *Sorex excelsus* and *Semnopithecus ajax* which have kindly been provided by David Shenton and *Myotis nipalensis* and *Soriculus nigrescens* taken from Brian Houghton Hodgson's unpublished manuscripts, from the ZSL collection (Hodgson 1829-1840).

References

For the full list of references please see reference section.

Data Deficient Species

For Data Deficient species there is insufficient information available on the distribution, population size, trends or threats to make an accurate assessment of the extinction risk of this species in Nepal. In the species accounts for data deficient species, unless stated otherwise the following sections will be applicable:

Species Ecology

Little is known about the habitat needs, feeding ecology or the reproductive parameters of the species.

National Population Size

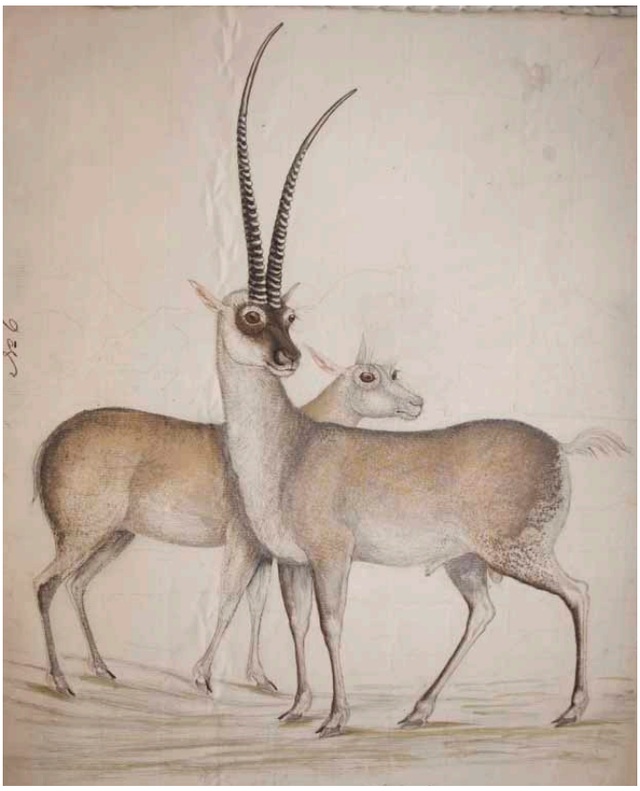
There is no information available on the population size of this species in Nepal.

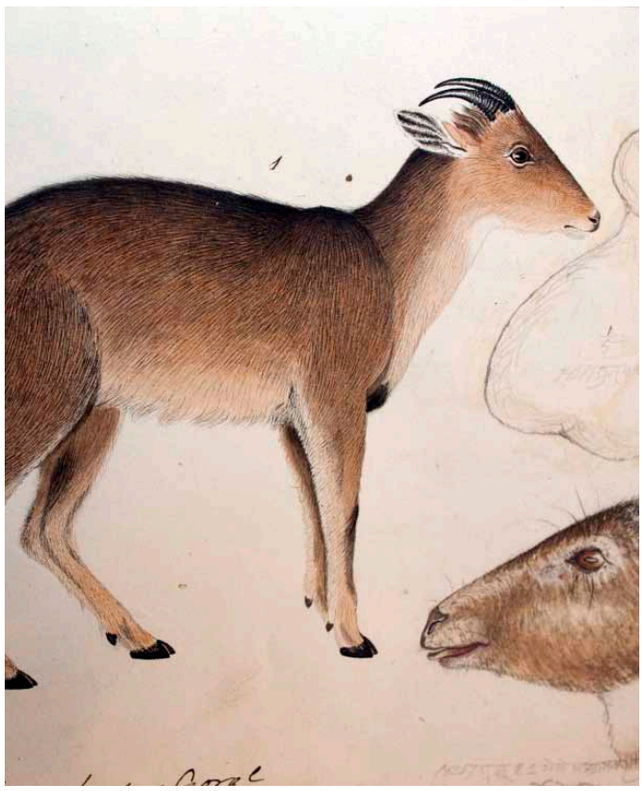
Main threats

Unknown.

Conservation measures in place

None.



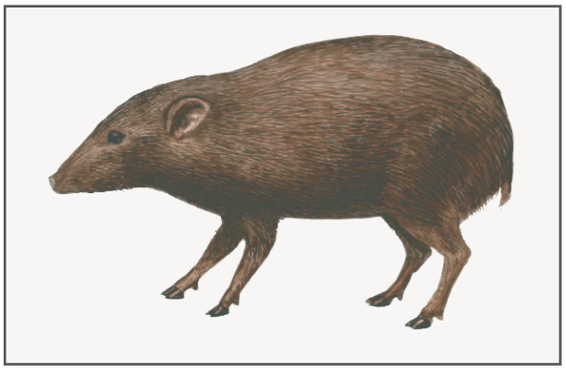


UNGULATES

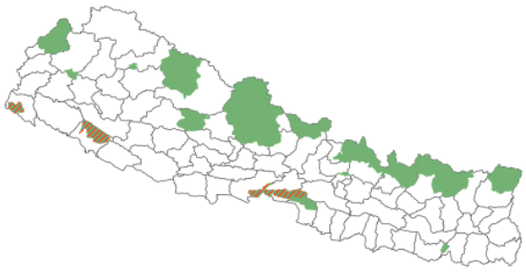
[CETARTIODACTYLA (Including CETACEANS as they are now known to share a common ancestor with ARTIODACTYLA), PERISSODACTYLA, PROBOSCIDEA]

Regionally Extinct

1) ***Porcula salvania*** (Hodgson, 1847)



The distributions shown are from previous records of this species in Nepal. It is now no longer believed to occur within Nepal



Common Names
Pygmy Hog (English); Pudke Badel (Nepali)

Synonyms
Sus salvanius (Hodgson, 1847)

Species Description
Adults have grey-brown to black bristly coats, and are rounded in shape with very short tails. The male has small tusks. Young are born with red stripes.

Species Ecology
The Pygmy Hog is dependent on early successional riverine communities, typically comprising of dense tall grasslands intermixed with a wide variety of herbaceous plants and early colonising shrubs and young trees. The most important grasslands for Pygmy hogs are those which are dominated by *Saccharum spontaneum*, *S. bengalensis*, *Themeda villosa*, *Narenga porphyrocoma* and *Imperata cylindrica*. The Pygmy Hog becomes sexually mature at around 23 months, and produces a litter of three young after a gestation period of approximately 100 days. Life span is between 10 to 12 years in the wild. Reproduction is thought to be seasonal with peak birthing season coinciding with the monsoon.

Conservation Status
Global: Critically Endangered
The Pygmy Hog *(Sus salvanius)* has been assessed as Regionally Extinct. It is unlikely that there exists a self-sustaining population in Nepal. There have been no observations of this species in Nepal since the 1970s and there is no evidence that the species still occurs in Nepal. However, no exhaustive monitoring and surveys have been carried out to confirm this. It is believed the species decline is due to indiscriminate burning of grasslands and habitat loss.

Legal Status
CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
There is no information available on the population size or status of this species in Nepal.

National Distribution
This species was last reported in the 1970s from Trijuga, Koshi Tappu, Chitwan and possibly historically occurred in Bardia National Park and Shukla Phanta Wildlife Reserve. This species may no longer occur in Nepal but an effective survey needs to be carried out to confirm its presence or absence.

Distribution outside Nepal
This species is currently known to occur in Assam, India, with a possible presence in Bhutan.

Main Threats
- Habitat loss and fragmentation.
- Indiscriminate burning of grasslands.

Conservation Measures in Place
None.

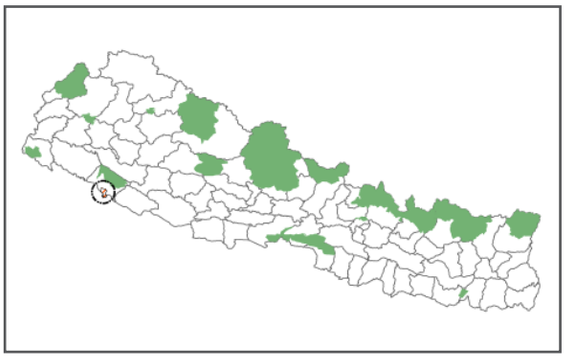
Conservation Recommendations
i) Undertake intensive sign surveys in historical range of the species within existing grassland protected areas to establish presence.
ii) Undertake a feasibility study for establishing a captive breeding centre based on the experience and facilities of the Pygmy Hog Centre in Guwahati, Assam, India. If recommended, establish a captive breeding population for phased reintroduction of animals into selected protected areas following proper field assessments and appropriate monitoring and habitat management systems in place.

References

Oliver and Deb Roy 1993, Suwal and Verheugt 1995, Stinson 2002, Ernst 2003, Baral and Shah 2008, Narayan *et al.* 2008, Nepal Red List of Mammals National Workshop 2010.

Critically Endangered

2) ***Antilope cervicapra*** (Linnaeus, 1758)



Common Names
Blackbuck (English); Krishnashar (Nepali)

Synonyms
Capra cervicapra (Linnaeus, 1758)

Species Description
Males are dark brown to blue-black in colour with white undersides and long twisting horns. Females and young are fawn coloured, also with white undersides.

Species Ecology
Blackbucks inhabit open short grassland, scrubland and lightly-wooded forests. They are primarily grazers and require short grasslands.

Breeding can occur throughout the year; however peak mating periods are March to May and August to October. Females reach sexual maturity by the age of 1.5-2 years and after a gestation period of five to six months, a single young is born (two is possible but rare). Most of the births in Nepal are during March and April. Blackbucks have a life-span of 10-12 years.

Conservation Status
Global: Near Threatened
[Regionally Extinct Nepal]
National: Critically Endangered B1ac(iv)
Rationale for assessment: Blackbuck *(Capra cervicapra)* has been assessed as Critically Endangered under criterion B1ac(iv). In Nepal, Blackbuck experienced large population declines due to increasing human pressures and habitat

loss and fragmentation; at their lowest numbers in the 1970s as few as three individuals remained. Since then, despite experiencing fluctuations, the population has gradually increased over the past ten years. However, the population exists in a single location which is small in size (16 km^2) and isolated from other populations (in India) leaving the current population vulnerable to stochastic events. The small population continues to be threatened by poaching, retaliatory killings, predation by feral dogs and increasing human pressures from livestock and farming in the surrounding areas. A global assessment found this species to be Regionally Extinct in Nepal, but in this assessment the population was deemed large enough to be considered present, although low in numbers and isolated from other populations.

Legal Status

CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

Total: 217
Adults: 180
Trend: Increasing
Trend is now increasing; however, the species distribution is severely restricted. There is currently only a single population of Blackbuck in Nepal, existing within the Blackbuck Conservation Area in Khairapur, Bardia District. The population in Nepal was only nine individuals in 1975 and there has been a slow recovery since then with the establishment of the Blackbuck Conservation Area. The global population in its natural range is estimated as 50,000 individuals (India, Nepal). There is currently only a single population of Blackbuck in Nepal, existing within the Blackbuck Conservation Area in Khairapur, Bardia District. The population in Nepal was only nine individuals in 1975 and there has been a slow recovery since then with the establishment of the Blackbuck Conservation Area. The global population in its natural range is estimated at 50,000 individuals (India, Nepal).

National Distribution

This species is restricted to a single location (16 km^2) in the western Terai within the Blackbuck Conservation Area at Khairapur in the Bardia district.

Distribution outside Nepal

India.

Main Threats

- Retaliatory killing by local farmers in response to crop raiding.
- Inbreeding, disease and associated risks of having all the animals within one confined area.
- Poaching for both trade and subsistence when the species was more widely distributed.
- Predation of newborn calves by feral dogs.

Conservation Measures in Place

Blackbuck Conservation Area established in March 2009. Blackbuck Conservation Action Plan 2007.

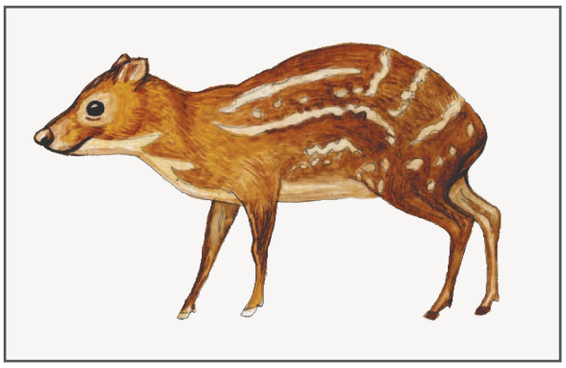
Conservation Recommendations

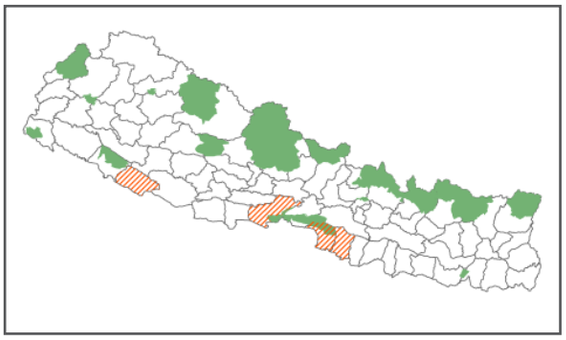
i) Create new populations in Shukla Phanta Wildlife Reserve through carefully planned translocations. Grassland management will need to be carefully considered. Hirapur has been identified as a suitable site for the reintroduction of Blackbuck.
ii) Maintain genetic diversity by introducing animals from other populations (captive populations as well as animals from Indian populations) into the existing confined population to reduce the risk of negative inbreeding effects (metapopulation management).
iii) Develop local community conservation awareness programmes to enhance local support for the conservation of Blackbuck.
iv) Vaccinate livestock in the buffer zone of the existing conservation area to minimise the risk of disease transmission between domestic and wild animals in the existing conservation area.
v) Fence existing conservation area to stop crop damage and retaliatory killing, and minimise disease risk.
vi) Estimate ecological carrying capacity of the existing conservation area for Blackbuck. Manage the grassland habitat effectively using holistic approaches such as controlled mixed grazing systems.
vii) Manage the existing conservation area below ecological carrying capacity to achieve and maintain optimal growth. Harvest from the population to re-stock protected areas in their former range.

References

Prater 1971, Suwal and Verheught 1995, Khanal *et al*. 2002, Ernst 2003, Weigal 2005, Baral and Shah 2008, Bhatta 2008, Mallon 2008, Csurhes and Fisher 2010, Nepal Red List of Mammals National Workshop 2010.

3) ***Moschiola indica*** (Gray, 1852)





Common Names

Indian Spotted Chevrotain (English); Muse Mriga (Nepali)

Synonyms

Meminna indica (Gray, 1843, 1852)

Species Description

Smallest deer in Nepal. Chestnut coloured coat with cream stripes and spots along body.

Species Ecology

The Indian Spotted Chevrotain inhabits evergreen and deciduous forests, Sal forests and grasslands.

Conservation Status

Global: Least Concern
National: Critically Endangered D
Rationale for assessment: The Indian Spotted Chevrotain (*Meminna indica*) has been assessed as Critically Endangered under criterion D as it is suspected that fewer than 50 mature individuals still occur in Nepal. Chevrotains occurred in Nepal up to the 1960s and possibly 1980s but numbers are not known. It is likely that after the eradication of malaria in areas of suitable habitats, increased human pressures, loss of habitat and poaching caused large declines. Lack of observations and records of this species in recent years either suggests numbers are extremely low in the now restricted areas of suitable habitat or completely extirpated from Nepal. However, this assessment deemed it premature to assess this species as Regionally Extinct due to lack of extensive surveys for this inconspicuous species which could be easily missed in more general habitat and species surveys.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size

There have been no recent sightings and it may possibly be Regionally Extinct. If the species does still occur then it is considered to have declined significantly.

National Distribution

Chevrotains were last observed in Banke, Mahadeva, Tamaspur, Nawalparasi, Parsa and Bara Districts, however, there have been no reports of this species from Nepal since the 1970s.

Distribution outside Nepal

India. Although the Indian Chevrotain occurs throughout most of India, it is not clear if it is present in areas neighbouring Nepal from where re-population could occur.

Main Threats

- Inbreeding.
- Poaching.

- Habitat loss and degradation due to burning of grasslands, clearing for agriculture and livestock grazing.
- Disease transmission.

Conservation Measures in Place
None.

Conservation Recommendations
i) Undertake extensive surveys to determine species presence in Nepal.
ii) Explore the feasibility of reintroduction and captive breeding programmes. If recommended, establish a captive breeding population for phased reintroduction of animals into selected protected areas following proper field assessments.

References
Mitchell and Punzo 1976, Duckworth *et al.* 2008a, Baral *et al.* 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

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4) ***Platanista gangetica*** spp. *gangetica* (Roxburgh, 1801)

Common Names
Ganges River Dolphin (English); Shons, Su-su (Nepali)

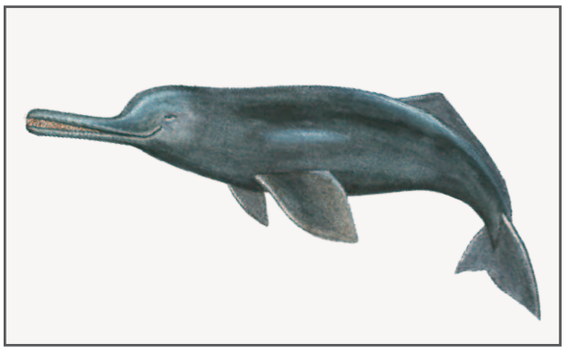
Synonyms
Platanista minor (Owen, 1853)

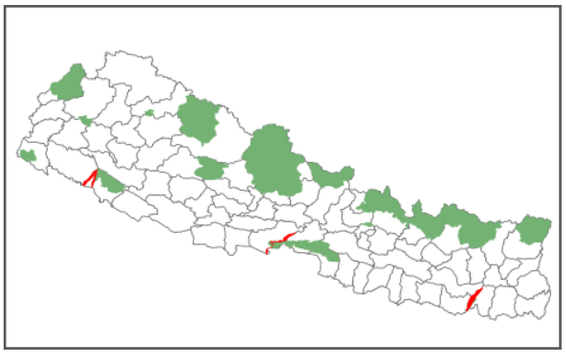
Species Description
Long beak, bearing a row of sharp, interlocking teeth designed to trap prey. Large, paddle-shaped flippers and a low hump on the back. Colour varies from slate blue to muddy brown.

Species Ecology
South Asian River Dolphins occur around the confluences of rivers in counter-current pools and sharp meanders. Dolphins concentrate in locations of high prey availability (fish and crustaceans) and water to make it reduced water flow. A seasonal pattern of migration is observed with dolphins following their prey species into the smaller tributaries during high water levels of the monsoon season, returning to the main channel at the end of monsoon.

Sexual maturity is reached at approximately ten years of age, breeding can occur throughout the year and a single young is produced after a gestation period of eight to twelve months.

Conservation Status
Global: Endangered A2abcde





National: Critically Endangered C2a(i); D
Rationale for assessment: The South Asian River Dolphin (*Platanista gangetica* spp. *gangetica*) has been assessed as Critically Endangered under criterion C2a(i);D. The population in Nepal currently has fewer than 50 mature individuals and has experienced a continuing decline since the 1980s as a result of uncontrolled waste disposal, water development projects such as dams, disturbance, over fishing, accidental death due to certain types of fishing techniques and poaching. The population is restricted to very few river systems and these systems continue to be threatened. The population

is so small that it has been deemed highly likely that the population in Nepal will be regionally extinct in the next ten years if no action is taken.

Legal Status

CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

Adults: < 20
Trend: Decreasing
There are very few South Asian River Dolphins remaining in Nepal, with an estimated total number of less than 20 adults with a population observed to be in decline. No national level population assessments in all of the potential habitats have been carried out simultaneously.

National Distribution

This species is restricted to the Karnali, Geruwa, Mohana, Bhada, Koshi and Narayani river systems.

Distribution outside Nepal

Bangladesh, India.

Main Threats

- Over fishing (resource depletion).
- Habitat alteration (sand mining, cutting down of riverine forests).
- Water development projects (dams and barriers, irrigation projects).
- Accidental killing (gill nets etc).
- Poaching for oil used as fish-bait.
- Industrial, agricultural and domestic pollution.
- Disturbance (boats, sand mining).
- Inbreeding.

Conservation Measures in Place

Karnali River system population data is being collected on a regular basis

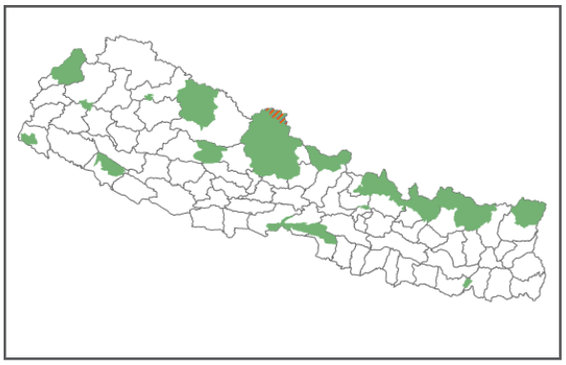
Conservation Recommendations

i) Conduct standardised dolphin surveys (visual/ acoustic and community interviews) in all potential river habitats and identify dolphin priority sites.
ii) Investigate the significance of different threats and drivers of decline and develop effective mitigation mechanisms.
iii) Develop protected areas including trans-boundary programme, with associated protective management mechanisms in remaining dolphin priority sites.
iv) Strengthen local stakeholder capacity to protect remaining identified dolphin hotspot habitats.
v) Investigate dolphin friendly gates or barriers in the Chisapni high dam which threatens perhaps the last remaining South Asian River Dolphin population in Nepal.
vi) Enhance relationships with local communities in identified dolphin priority sites through targeted education and awareness programmes, fostering deeper understanding and ownership of the river ecosystem and the plight of the dolphin as an indicator species.
vii) Develop national river dolphin recovery plans, with improved protective mechanisms for the freshwater ecosystem through input into protective environmental legislations.
viii) Strictly prohibit anthropogenic activities in dolphin bearing river basins.

References

Kasuya and Haque 1972, Shrestha 1989, Smith 1993, Reeves *et al*. 2002, Joshi 2004, WWF 2006, Jefferson *et al.* 2008, Moreno 2003, Nowak 2003, Swinton *et al*. 2009, Nepal Red List of Mammals National Workshop 2010.

5) ***Procapra picticaudata*** (Hodgson, 1846)



Common Names
Tibetan Gazelle (English); Ghowa (Nepali)

Species Description
Small antelope. Males have horns that rise straight upwards and then take a sudden sharp curve back. Short coat and grey-fawn colour in summer and pale fawn in winter with white undersides.

Species Ecology
The Tibetan Gazelle occurs in alpine meadow and alpine steppe but uses other lower-elevation plains, valleys and mountain shrub land at elevations up to 5, 750 m. This species feeds on legumes, grasses and forbs. Gestation takes five to six months usually resulting in a single offspring.

Conservation Status
Global: Near Threatened
National: Critically Endangered B1ab(iii); D
Rationale for assessment: The Tibetan Gazelle (*Procapra picticaudata*) has been assessed as Critically Endangered under criterion B1ab(iii); D. This species has only been observed in a single location in Nepal with an extent of occurrence less than 100 km^2. Alterations to its habitat are causing a decline of suitable habitat areas and preventing cross-border movement of the population due to the construction of a large fence, therefore reducing the chance of any rescue effect from surrounding populations. The areas of suitable habitat available for this species remain limited to within protected areas with little connectivity between areas. This species is also considered to be Critically Endangered under criterion D, because of the small number of mature individuals. In addition to habitat reduction and alterations, this species is also a target for hunters and faces increasing competition from livestock.

Legal Status
National Parks and Wildlife ConservationAct 2029 (1973). This species only occurs in a single protected area.

National Population Size
Total: < 100 (estimated)
Although further and more extensive surveys of their potential habitats are required to establish the true population size, the population in Nepal is currently thought to consist of only 45 individuals in the Dhalung Rangeland.

National Distribution
Observations of this species have been made in Korrala and Dhalung in the Mustang district within the Annapurna Conservation Area.

Distribution outside Nepal
China, India.

Main Threats
- Food competition with livestock.
- Inbreeding.
- Physical barriers (fence) constructed along the border in a core area, affecting migration.
- Hunting.
- Feral dog predation of calves.

Conservation Measures in Place
None.

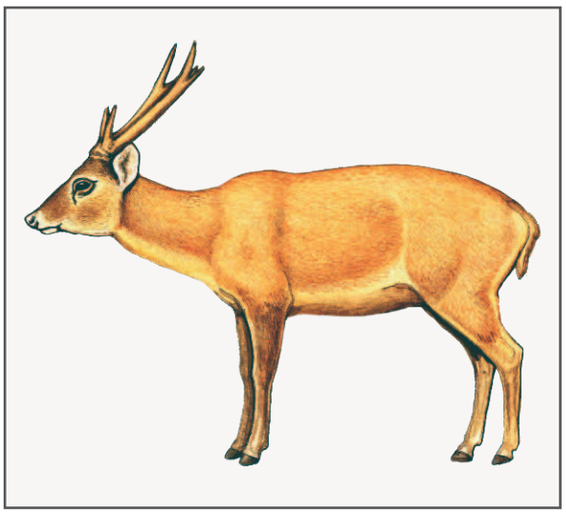
Conservation Recommendations
i) Establish trans-boundary collaboration framework for the protection and conservation of migratory species.
ii) Investigate the impact of a border fence, erected by the Tibet on the movement patterns of the Tibetan Gazelle and other migratory species.
iii) Setup a standardised Tibetan Gazelle monitoring system for informed
management decision making.
iii) Develop and implement policy to completely restrict livestock grazing in gazelle habitats during the breeding season to facilitate colonisation of gazelle.
iv) Train and mobilise local communities to control hunting and poaching.
v) Control / remove feral dogs (which are common in gazelle habitats) from core areas to increase the survival rate of young and newborn gazelles.
vi) Implement conservation awareness programmes in local languages, targeting herders and nomads of both Nepal and Tibet Autonomous Region of China and discourage them to keep young gazelle as pets.

References

Schaller 1998, Chetri 2005b, Smith and Xie 2008, Leslie 2010, Madhu Chetri (pers. comm.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010.

ENDANGERED

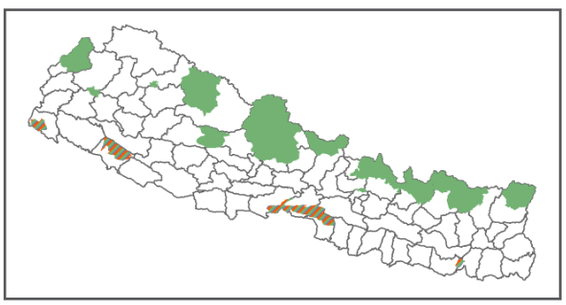
6) ***Axis porcinus*** (Zimmermann, 1780)



Common Names
Hog Deer (English); Laguna (Nepali)

Species Description
Ochre coloured coat, short legs and stocky body, males grow three-tined antlers.

Species Ecology
Hog deer occur in tall alluvial grassland, often associated with medium to large-sized rivers. Studies on Hog deer have shown a preference for Saccharum and Imperata dominated grasslands.



Hog Deer are primarily grazers of young grasses, but will also feed on herbs, flowers, fruits and browse. Hog Deer reach sexual maturity at about 15 months. Peak fawning season is observed in March to April with usually one or two young born after a gestation period of 220 to 230 days.

Conservation Status
Global: Endangered A2bcd
National: Endangered B2ab(i,ii,iii)
Rationale for assessment: The Hog Deer (*Axis*

porcinus) has been assessed as Endangered. This species has a small distribution and is suspected to have an area of occupancy of approximately 300 km^2 restricted to three protected areas in the Terai region. Although the species may occur outside of these areas, it faces significant threat from subsistence hunting. Despite the protection of areas of suitable habitat for this species, the succession of grasslands to woodlands and the introduction of invasive species, in particular *Mikania micrantha, Lantana camara, Chromolaena odorata,* continue to degrade the preferred grassland habitat of this species. The species occurs in the neighbouring Terai grasslands of India, which makes cross-border movement of this species possible. However, this will require maintenance of habitat corridors and stricter measures to curb poaching.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species only occurs in protected areas.

National Population Size

Total: < 2,500 (estimated)
Adults: < 1,500 (estimated)
Trend: Decreasing
However current estimates suggest there may be a total population of less than 2,500 individuals and this population is observed to be in decline.

National Distribution

This species is found within the protected areas of Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve and Shukla Phanta Wildlife Reserve. The species is locally common and restricted within these protected areas.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, India (northern and northeastern areas including areas of Terai grasslands bordering Nepal), Pakistan.

Main Threats

- Habitat loss (especially the succession of suitable grassland habitat to woodland).
- Habitat degradation (invasive plant species).
- Hunting for subsistence.
- Impact of dams (flooding of prime grassland habitats).

Conservation Measures in Place

None. However this species is likely to benefit from conservation measures in place for its sympatric species - the Greater One-horned Rhino.

Conservation Recommendations

i) Improve habitat management through controlled burning of grasslands and control of the principal invasive plants (*Mikania micrantha*, *Lantana camara, Chromolaena odorata)*.
ii) Assess the impact of the proposed high dam on the Karnali River and other
proposed hydropower projects on prime Hog Deer floodplain grassland habitats.
iii) Enhance law enforcement outside protected areas through local community participation and engagement.

References

Seidensticker 1976, Dhungel and O'Gara 1991, Bhowmik and Chakraborty 1999, Bhowmik *et al.* 1999, Biswas and Mathur 2000, Karanth and Nichols 1998, Biswas 2004, Odden *et al.* 2005, Timmins *et al.* 2008a, Sheng and Ohtaishi 1993 in Timmins *et al.* 2008b, Nepal Red List of Mammals Field Technicians Workshop 2010, Nepal Red List of Mammals National Workshop 2010.

7) ***Bubalus arnee*** (Kerr, 1792)

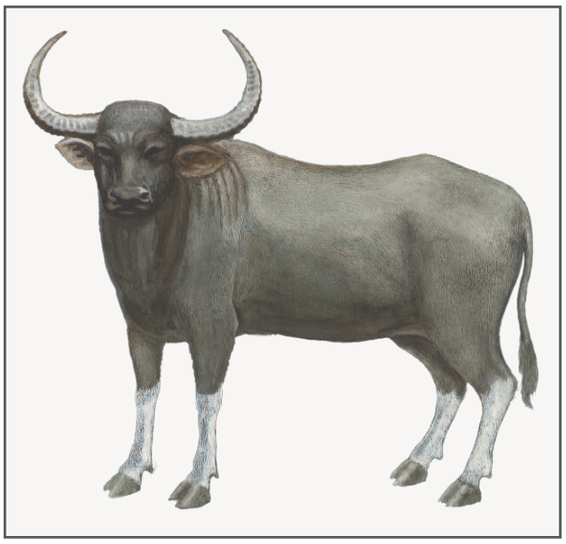
Common Names
Wild Water Buffalo (English); Arna (Nepali)

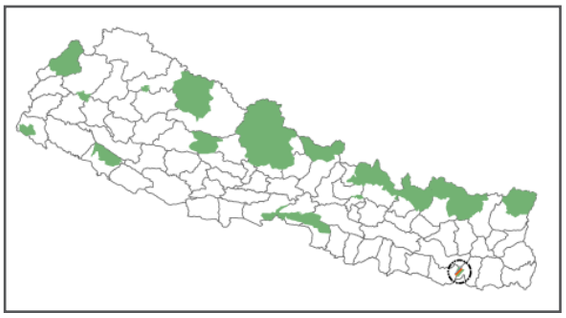
Synonyms
Bos arni (Hamilton Smith, 1827); *Bubalus arna* (Hodgson, 1841); *Bubalus arna macrocerus* (Hodgson, 1842); *Bos bubalus var. fulvus* (Blanford, 1891); *Bubalus bubalus septentrionalis* (Matschie, 1912); *Bubalis bubalis migona* (Deraniyagala, 1953)

Species Description
Large, black and robust, with flat sweeping horns seen on both sexes. Sleeker and heavier than domestic forms. Legs have white stockings from the knee.

Species Ecology
Wild Water Buffaloes are tied to the availability of water, and prefer low-lying alluvial grasslands and riparian forests and woodlands. They feed mainly on grasses, but will also eat herbs, fruits, bark and crop species including rice, sugarcane and jute. Females reach sexual maturity at three years and typically give birth to a single offspring after a gestation period of ten to eleven months with an inter-calving interval of approximately one year. The maximum known lifespan for Wild Water Buffalo is 25 years in the wild.

Conservation Status
Global: Endangered A2cde+3cde+4cde; C1
National: Endangered B1ab(iii)+2ab(iii,iv); D
Rationale for assessment: The Wild Water Buffalo (*Bubalus arnee*) has been assessed as Endangered under criterion B. This species is restricted to a single location within Koshi Tappu Wildlife Reserve which amounts to an extent of occurrence of less than 5,000 km^2. This area is declining in quality due to invasive species (*Mikania micrantha, Lantana camara, Chromolaena odorata),* human encroachment and conversion of habitat for agriculture and flooding. The most recent census has also revealed that there are fewer than 250 mature individuals which also qualifies the species for Endangered under criterion D. Although this species occurs in neighbouring countries, it is not from areas bordering Nepal and therefore the potential of a rescue effect is considered low.





Legal Status
CITES Appendix III [Nepal]
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. This species occurs in a single protected area.

National Population Size
Total: 219
Adults: 132
Trend: Increasing
The last census conducted in 2009 recorded 219 individuals with 101 adult females.
The global population of Wild Water Buffalo is estimated to be less than 4,000 individuals.

National Distribution
This species occurs in a single, isolated location (less than 175 km^2) in south-east lowland Nepal within the Protected Area of Koshi Tappu Wildlife Reserve. This species occasionally migrates into adjoining areas of Saptari and Sunsari districts on either side of the reserve.

Distribution outside Nepal
Bhutan (Royal Manas National Park), Cambodia, India (Arunachal Pradesh, Assam, Madhya Pradesh and possibly in Maharashtra, Meghalaya and Orissa), Myanmar, Thailand.

Main Threats
- Inbreeding.
- Natural disasters (for example, flooding causes widespread habitat degradation and sweeps away individuals).
- Human-wildlife conflict.
- Food competition with domestic livestock.
- Hunting for subsistence.
- Disease transmission.
- Habitat degradation (including invasive plant species).
- Hybridisation with domestic and/or feral buffalo.

Conservation Measures in Place
None.

Conservation Recommendations
i) Create additional secure populations in Chitwan National Park and the Babai valley of Bardia National Park.
ii) Remove domestic livestock from Koshi Tappu to reduce the risk of disease transmission and to reduce food competition.
iii) Improve habitat through implementing an effective management plan for invasive plant species such as *Mikania micrantha*.
iv) Improve anti-poaching and patrol-based security systems to eliminate or minimise poaching.
v) Set up standardised system for collecting and analysing human-wildlife conflict data, and develop a sustainable mitigation plan involving all stakeholders and donor communities.

References

Lydekker 1926, Prater 1971, Lekagul and McNeely 1977, Kushwaha 1986, Bauer 1987, Choudhury 1994, Suwal and Verheugt 1995, Nowak 1999, Hedges *et al.* 2008, Baral and Shah 2008, DNPWC 2009b.

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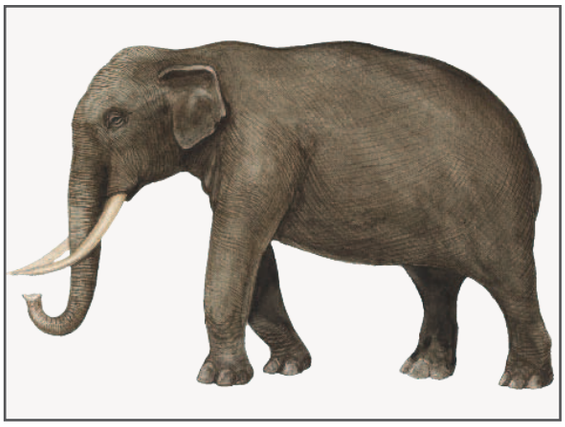
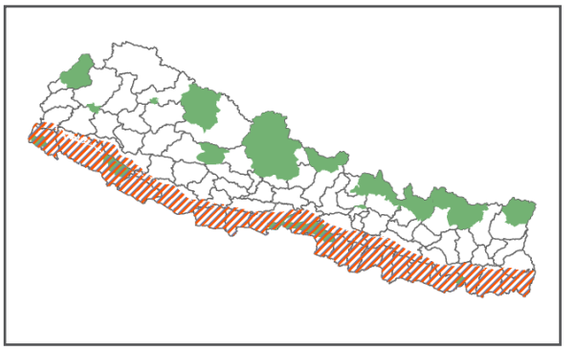
8) ***Elephas maximus*** (Linnaeus, 1758)





Common Names
Asian Elephant (English); Hatti (Nepali)

Species Description
The largest land animal in Asia. Grey wrinkled skin, long trunk and large ears. Males have large tusks whilst females have small dental protuberances called tushes.

Species Ecology
The Asian Elephant occurs in grasslands, riverine forest, mixed hardwood forest and agricultural areas. Asian Elephants are generalists and browse and graze on a variety of plants, fruit and bark. Main species in their diet include grass species, such *Saccharum spontaneum, Saccharum bengalensis, Aundo donex*; tree species, such as *Mallotus phillipinensis, Bombax ceiba, Acacia catechu*; and a number of climbers including *Bahunia valhi*.

Female Asian Elephants become sexually active between nine and twelve years of age and produce a single offspring after a gestation period of 20 to 22

months. Asian Elephants can live up to 70 years and can have a long reproductive period from 12 to 60 years, within which they can produce as many as 12 calves.

Conservation Status
Global: Endangered
National: Endangered D
Rationale for assessment: The Asian elephant (*Elephas Maximus*) has been assessed as Endangered due to a small population of mature individuals and loss of connecting corridors.

Legal Status
CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. The species occurs in protected areas.

National Population Size
Total: 255 - 265 (plus 150 domestic Asian Elephants)
Adults: < 150
The current estimated total number of elephants in Nepal is between 255 and 265. The global population is currently estimated to be between 36,790 and 51,160 individuals. In neighbouring north east India, there are between 9,200 and 11,300 Asian Elephants, and some of these individuals move between bordering areas of Nepal and India. The movement of elephants between Nepal and India occurs through Khata Corridor (Bardia National Park and Katerniaghat Wildlife Sanctuary in India) and Basanta Corridor (in Kailali which connects the larger forests in the north of the district with Dudhwa National Park India). There are approximately 16 to 22 migratory individuals occurring in Shukla Phanta Wildlife Reserve and further migratory individuals entering Bardia National Park from Dudwa. A herd of over 100 animals residing in the forests of Naksalbadi area in India frequently visit Nepal's Bahundangi area stretched along Mechi River that forms the eastern border with India. Few individuals from this group occasionally travel all the way to Koshi Tappu Wildlife Reserve. These and others could potentially re-colonise areas in Nepal.

National Distribution
Asian Elephants are distributed across the Terai region of Nepal and estimated to be present within 22 districts of Nepal. They are present in Bardia National Park, Chitwan National Park, Koshi Tappu, Parsa and Shukla Phanta Wildlife Reserves. Movement of animals has been recorded between protected areas and adjacent forest patches within Nepal and parts of India with corridors connecting Shukla Phanta Wildlife Reserve to Bardia National Park and Dudhwa National Park and Katarniaghat Wildlife Sanctuary across the Indian border.

Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China, India (including north eastern areas extending from the eastern border of Nepal, northern West Bengal through western Assam along the Himalaya foothills), Indonesia, Lao PDR, Malaysia, Myanmar, Sri Lanka, Thailand and Viet Nam.

Main Threats
- Habitat degradation and loss of corridor connectivity.
- Habitat shrinkage outside protected areas.
- Human-wildlife conflict.
- Potential risk of disease (TB).

Conservation Measures in Place
The Elephant Conservation Action Plan for Nepal (2009-2018).

Conservation Recommendations
i) Determine and monitor status of both resident and migrating elephant groups in the Terai districts of Nepal. Implement standardised monitoring systems to provide reliable information on population structures.
ii) Identify and prioritise areas for the conservation of the species.
iii) Maintain and improve corridor connectivity. Develop district-level strategic management intervention work plans and maintain all critical forest corridors (protection forest, production forest, community forest and collaborative managed forest) used by both resident and migratory elephant groups in all Terai districts.
iv) Reduce habitat degradation (for example through effective control of invasive alien plant species) and assess remaining habitats where evidence suggests that elephant populations could be increased.
v) Reduce human-elephant conflict through

effective mitigation (farm-based deterrence methods and maintenance of fencing), quick processing of compensation cases and education, awareness and engagement programmes.
vi) Initiate/continue research/monitoring in identified sites.
vii) Continue to monitor TB in domestic elephants and extend to wild populations where required.
viii) Establish and strengthen a functional modality at local and central levels,between concerned agencies of Nepal and India, using existing bilateral cooperation, Monitoring Illegal Killing of Elephants (MIKE) and CITES, to address cross-border elephant issues.
ixi) Develop trans-boundary initiatives with India; build a greater and effective partnership between rural communities and concerned Government line agencies and conservation organisations to provide continual support to the people in elephant-related conflict and protection of elephants.

References

Steinheim *et al*. 2005, Santiapillai and Sukumar 2006, Pradhan 2007, Pradhan and Wegge 2007, Pradhan *et al.* 2007, Baral and Shah 2008, Choudhary *et al.* 2008, Hemanta Yadav (pers. comm.) 2010, Naresh Subedi (pers. comm.) 2010, Nepal Red List of Mammals National Workshop.

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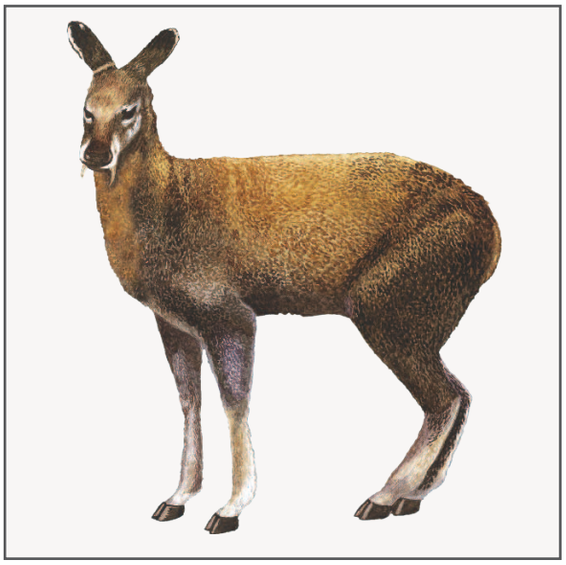
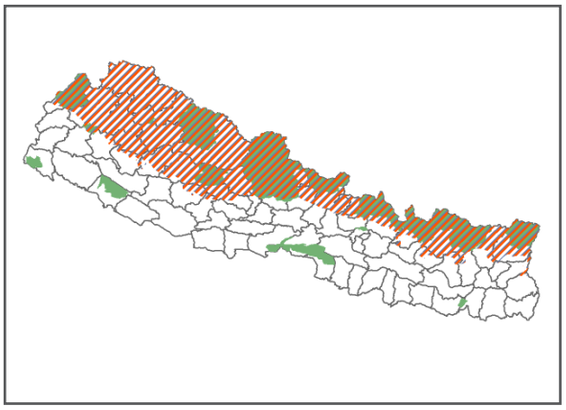
9) ***Moschus chrysogaster*** (Hodgson, 1839)

A recent taxonomic split means that ascertaining which species of musk deer previous studies refer to is difficult, as musk deers were previously thought to be all one species: *Moschus chrysogaster.*





Common Names
Alpine Musk Deer (English); Sunkanthe kasturi (Nepali)

Synonyms
Moschus sifanicus (Büchner, 1891)

Species Description
Brown, bristly coat, with a darker throat than other species of musk deer.

Species Ecology
The Alpine Musk Deer occurs in alpine forest and scrub and is widely distributed along the Himalayas at elevations of 2,200 m to 4,300 m. It is found on barren plateaus, occupying meadows, fell-fields, shrub lands or fir forests and feeding mainly on grasses, shrubs, leaves, moss, lichens, shoots and twigs.

Musk deer become sexually mature between 18 months and two years, with age at first reproduction usually at two years. Breeding occurs primarily in November to December with offspring born from

May to September, after a gestation period of 175 to 185 days.

Conservation Status

Global: Endangered A2cd
National: Endangered A2ade
Rationale for assessment: The Alpine Musk Deer (*Mochus chrysogaster*) has been assessed as Endangered under criterion A due to a population decline of 50% or more inferred from a reduction of observations compared to historical sightings and because the causes, mainly hunting for trade in musk glands for cosmetics and competition with livestock, have not yet ceased. Populations of Musk Deer occur in neighbouring areas in China, however there too they are heavily hunted. This is the only species of musk deer accounted for in Nepal due to taxonomic confusion and insufficient information.

Legal Status

CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. This species occurs in protected areas.

National Population Size

Trend: Decreasing (estimated)
The population abundance of this species is not well known due to confusion in taxonomy.

National Distribution

This species is thinly distributed in least disturbed subalpine and alpine parts of high mountainous areas usually greater than 2,500 m and occurs within the protected areas of Khaptad, Makalu Barun, Rara, Sagarmatha, Langtang, Shey Phoksundo National Parks and Annapurna, Api nampa, Gaurishankar, Kanchanjunga and Manaslu Conservation Areas, Dhorpatan Hunting Reserve and outside protected areas including the districts of Accham, Baitadi, Bajhang, Darchula, Dolpa, Humla, Jumla and Rolpa. Green (1986) estimated a potential habitat of 10,000 km^2 of habitat in Nepal but it should be noted that this refers to all the musk deer species found in the country.

Distribution outside Nepal

China (southern Gansu, southern Ningxia, Qinghai, western Sichuan, southern Tibet, and northern Yunnan), India.

Main Threats

- Poaching for trade in musk gland.
- Habitat encroachment.
- Disease transmission from livestock (potential).

Conservation Measures in Place

CITES bill has been prepared and submitted to Nepal government for endorsement. Musk deer conservation sub-committees have been formed in the majority of protected areas to curb poaching. Habitat improvement for the species, resulting from the establishment of community forest programmes outside the protected areas. Participatory musk deer conservation action plan prepared (Annapurna Conservation Area).

Conservation Recommendations

i) Obtain baseline data on species status including taxonomic status, distribution and threats throughout its range in Nepal.
ii) Prepare Alpine Musk Deer conservation action plan.
iii) Identify suitable areas within the species' former range for creating additional protected viable populations.
iv) Discourage the use of dogs for guarding livestock in high elevation pasture lands.
v) Strengthen law enforcement both inside and outside the protected areas.
vi) Control intentional and unintentional forest fire in the species habitats.
vii) Vaccinate livestock to minimise the risk of disease transmission between domestic and wildlife in musk deer conservation areas.
viii) Develop local community conservation awareness programmes highlighting the species' benefits for ecology and ecotourism.

References

Zheng and Pin 1979, Green 1986, Green 1987a, Deng 1989, Hayssen *et al.* 1993, Jiang 1998, Meng *et al*. 2003ab, Aryal 2005, Nepal Red List of Mammals National Workshop 2010, Professor Karan Shah (pers. comm.) 2010.

10) ***Rhinoceros unicornis*** (Linnaeus, 1758)

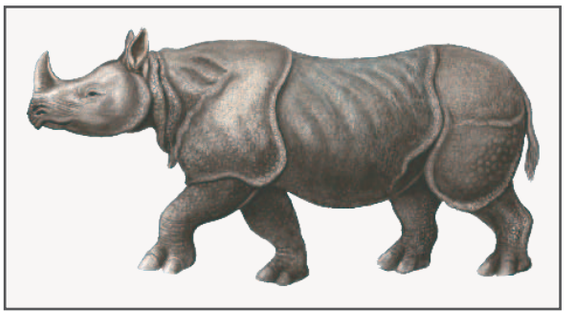
Common Names
Greater One-horned Rhino (English); Gaida (Nepali)

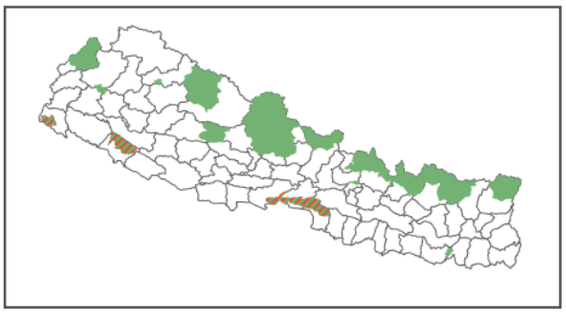
Species Description
Skin is hairless and slate grey, ashy when encrusted with mud, or black when wet. Large folds of skin across the flanks and tubercules resembling plates of armour. The most distinctive feature is the single horn at the end of the animal's nose.

Species Ecology
Greater One-horned Rhino are found in alluvial plain habitats throughout their present range. This habitat consists of tall floodplain grasslands and swampy areas, bordered by riverine woodlands sometimes extending to drier Sal or Terminamlia forests. Greater One-horned Rhino feed on a wide variety of plants (up to 183 different species observed in Chitwan National Park) with a strong seasonal variation: grass (about 80%, mainly *Saccharum spontaneum*, *S. bengalensis, Narenga porphorocoma*, *Arundo donex*, *Phragmites karka*, *Cynodon dactylon* etc.), fruits (*Trewia nudiflora* and *Ficus* spp.), leaves and branches of trees (*Litsea monopetala*, *Ficus glomerata*, *Ehretia laevis*, *Dalbergia*, *Acacia*) and shrubs (*Murraya paniculata*, *Colebrookia oppositifolia*, *Callicarpa macrophylla*, *Coffea bengalensis*), sedges and ferns, aquatic plants and agricultural crops (rice, wheat, maize, lentils).

Sexual maturity is reached at approximately five to seven years in females who produce a single calf after a gestation period of approximately 16 months. In a healthy rapidly breeding population, inter-calving intervals average two and a half to three years.

Conservation Status
Global Status: Vulnerable
National Status: Endangered C1
Rationale for assessment: The Greater One-horned Rhino (*Rhinoceros unicornis*) has been assessed as Endangered under criterion C1 because of a small population which is fragmented and restricted in Shukla Phanta Wildlife Reserve, Bardia National Park and Chitwan National Park. The populations within Nepal are not able to move between these protected areas due to loss of connecting habitat.





The population in Suklaphanta is no longer genetically viable by IUCN standards and the population in Bardia is close to the minimum viable population. The main threats to this species continue to be poaching, habitat loss and degradation due to invasive alien plant species *Mikania micrantha*, *Lantana camara*, *Chromolaena odorata*, *Eichhornia* and *Pistia stratiotes* and human encroachment and conversion of land for agriculture. Greater One-horned Rhino exist in neighbouring areas of India, however significant movement across the border has not been observed.

Legal Status
CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
Total: 435
Adult: 293
Trend: Stable
The 2008 survey counted 435 individuals (408 in Chitwan National Park, 22 in Bardia National Park and 5 in Suklaphanta Wildlife Reserve). Of these, 293 were mature individuals. The global population is estimated at 2,575 individuals.

National Distribution

This species occurs in three locations: Bardia National Park, Chitwan National Park and Shukla Phanta Wildlife Reserve with occasional movement into Parsa Wildlife Reserve from adjoining areas of Chitwan.

Distribution outside Nepal

India.

Main Threats

- Poaching for trade in body parts mainly horn.
- Habitat degradation due to invasive plant species including *Mikania micrantha* and *Lantana camara* (grassland and riverine forests), *Chromolaena odorata* (Sal forests), *Eichhornia* and *Pistia stratiotes* (lakes and river systems).
- Habitat Loss as a result of clearing for agriculture and livestock grazing and human encroachment.
- Human-wildife conflict.

Conservation Measures in Place

Terai Arc Landscape Strategy Plan (2004-2014). National Greater One-horned Rhino Conservation and Management Strategy (2006-2011).
Law enforcement and constant monitoring of sub-populations. Research on the invasive species *Mikania micrantha*. In Bardia National Park, efforts are being made to secure the area beyond the Karnali floodplains so that potential translocations in the future will not be at risk from poaching or encroachment. In Shukla Phanta, efforts are being made to increase the capacity of reserve staff for scientific surveys so that a consistent monitoring system can be established.

Conservation Recommendations

i) Continue effective anti-poaching initiatives (informant networks, dedicated armed and trained anti-poaching units).
ii) Establish/continue regular intensive block monitoring system in all three rhino protected areas.
iii) Establish/continue integrated standardised monitoring and reporting system; capacity building of field staff through training in rhino monitoring using the IUCN Asian Rhino Specialist Group accredited training programme; setup and maintain population master files and rhino database system.
iv) Continue the use of standardised reports for informed decision making such deployment of patrols.
v) Set up a common Bardia-Katerniaghat monitoring system.
vi) Produce park population status reports and synthesise into a national / regional report for metapopulation management.
vii) Develop a rhino recovery plan for Shukla Phanta Wildlife Reserve.
viii) Translocate rhinos to Bardia National Park and Shukla Phanta Wildlife Reserve to create viable, growing populations.
ix) Develop and implement an effective management programme for invasive plant species particularly the primary invasive species *Mikania micrantha*. The management plan should incorporate several types of control: these need research to validate the approaches. The plan needs to include controls that can be used in the short to medium term in priority conservation areas.
x) Maintain floodplain habitat including ox-bow lakes, by preventing spread of woodland, safeguarding wetlands through appropriate water management, implementing rotational grassland patch burning with effective firebreaks and limiting the extent of grazing by domestic livestock.
xi) Enhance community engagement, education and awareness programmes.
xii) Implement an effective human-wildlife conflict mitigation strategy in the buffer zones of the rhino protected areas.

References

Nowak 1999, Amin *et al.* 2006, Amin *et al.* 2009, Sectionov *et al.* 2007, DNPWC 2008, Jnawali *et al.* 2009, Kandel and Jhala 2008, IRF 2009.

11) ***Rucervus duvaucelii*** (Cuvier, 1823)

Common Names
Swamp Deer (English); Barasingha (Nepali)

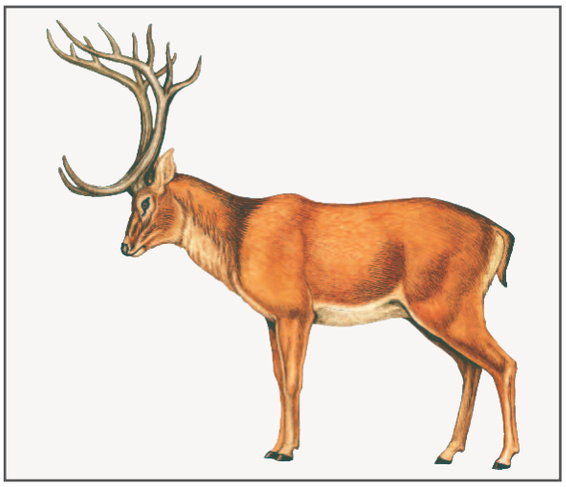
Synonyms
Cervus duvaucelii (Cuvier, 1823)

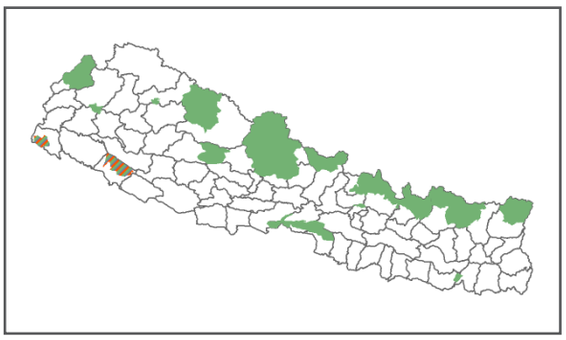
Species Description
Adult males have a dark brown coat during winter and light brown in summer. Females generally are a lighter colour than males. Males have twelve-tined antlers.

Species Ecology
The Swamp Deer inhabits swampy habitats, grasslands and floodplains. Swamp Deer are exclusively grazers feeding only on grasses.

Females become sexually mature between two and three years and produce a single offspring after a gestation period of 240 to 250 days.

Conservation Status
Global: Vulnerable C1
National: Endangered B1+2ab(iii,v)
Rationale for assessment: Swamp Deer (*Rucervus duvaucelii*) has been assessed as Endangered under criterion B due to a small extent of occurrence of 1, 273 km^2 and area of occupancy of approximately 300 km^2. There are very small numbers of this species in Nepal and further examination of the population structure may also qualify the species for Endangered under criterion C. The population is split between two locations, the protected areas of Shukla Phanta Wildlife Reserve and Bardia National Park. Due to a lack of connecting habitat and the increased likelihood of poaching once species leave the boundaries of protected areas, it is unlikely that there is any movement or intermixing between these two sub-populations. There are populations of this species in the neighbouring areas of India, however trans-boundary poaching continues to be a threat to this species. Human disturbance and overgrazing by livestock also causes habitat loss and degradation to the species' grassland and floodplain habitat. The species' close proximity to livestock also raises concerns over potential spread of disease such as foot and mouth and the severe impact this could have on such a small population.





Legal Status
CITES Appendix I (as *Cervus duvaucelii*)
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. The species only occurs in protected areas.

National Population Size
Total: 1843
Adults: < 1,000
This species is restricted to two locations: Bardia National Park with an estimated population of 100 individuals, and Shukla Phanta Wildlife Reserve with an estimated 1743 individuals.

National Distribution
This species occurs only within the protected areas of Bardia National Park and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
India.

Main Threats
- Poaching (on the trans-boundary).
- Disease transmitted from livestock is a potential

risk to the species including foot-and-mouth (*Aphtae epizooticae*).
- Habitat degradation and loss.

Conservation Measures in Place
Grassland rehabilitation including controlled burning, regular count and monitoring, water holes for providing water during hot dry season in Shukla Phanta Wildlife Reserve.

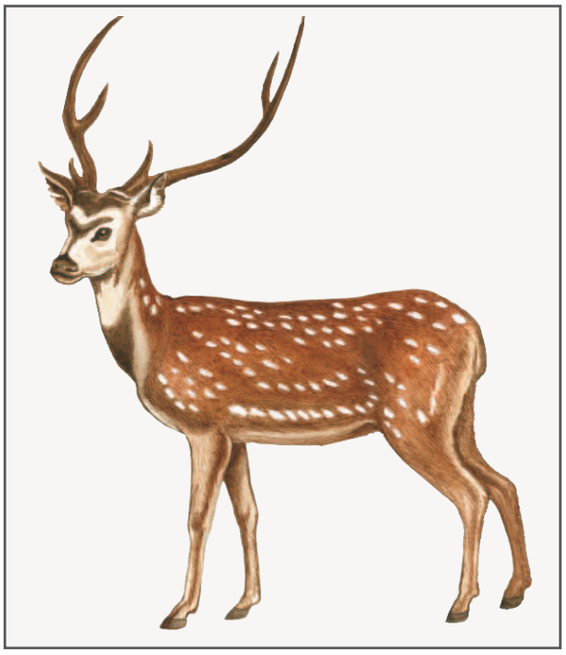
Conservation Recommendations
i) Develop trans-boundary initiatives including cross-border law enforcement operations and collaboration framework for protecting this species and other wildlife.
ii) Enhance law enforcement in protected areas and buffer zones.
iii) Continue monitoring population status and set up a standardised system for collecting demographic data on an ongoing basis.
iv) Control livestock grazing in Swamp Deer habitat.
v) Improve habitat management such as grassland management and water hole maintenance.
vi) Undertake a feasibility study into creating a third viable population in Chitwan National Park or Parsa Wildlife Reserve.
vii) Develop swamp deer conservation action plan.

References

Schaller 1967, Martin 1977, Schaff 1978, Suwal and Verheugt 1995, Qureshi 1995, WWF-Nepal 2001, Subedi 2002, Qureshi *et al.* 2004, Duckworth *et al.* 2008c, Nepal Red List of Mammals National Workshop 2010.

VULNERABLE

12) ***Axis axis*** (Erxleben, 1777)



Common Names
Axis Deer, Indian Spotted Deer (English); Chital (Nepali)

Species Description
The species has an orange rufous coat with white spots, white underparts and a white bib. A darker stripe runs along the back. Only males grow antlers and have darker facial markings than females and young.

Species Ecology
Axis Deer are more commonly known as Chital, and occur in subtropical grasslands and forests. Preferred habitat has been found to consist of riverine forest during the hot dry season while Sal forest is preferred during the monsoon season. Chital occupy grassland habitats more in the weeks following cutting and burning of grasses (January to February), due to new grass growth. Chital feed mainly on fruit, browse and grasses.

Chital are able to breed all year round, however peaks are observed just after grass cutting and burning. They have an average age at first reproduction of 13 months and give birth to one or two young after a gestation period of approximately 235 days.

Conservation Status
Global: Least Concern

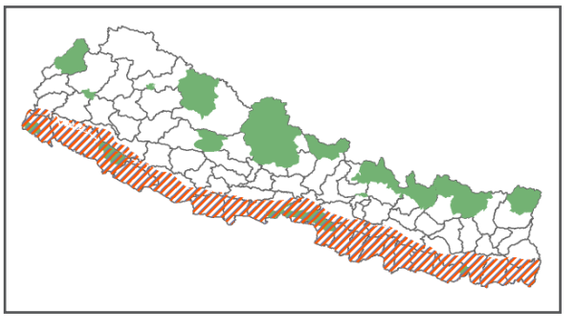
National: Vulnerable A2ade
Rationale for assessment: Axis Deer (*Axis axis*) has been assessed as Vulnerable under criterion A due to an observed population decline of at least 30% over the past 20 years in the wild. Although this species is still frequently observed and occurs along the Terai-Bhabar region of Nepal and all protected areas within this region, the population has been observed to be in decline and is no longer considered as common as it once was. The causes of this decline have not been successfully addressed, nor are any specific measures in place for this species, therefore it is considered to be Vulnerable. Large populations of this species occur in areas of suitable habitat in neighbouring countries, however further research needs to establish the level of movement across these political borders.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: Unknown, but abundant and frequently observed
Trend: Decreasing
This species is frequently observed and the present population may be greater than 20,000 individuals. However the population is considered to be experiencing a decline of at least 30% over the past 20 years inferred from field observations and research on carnivore prey base.

National Distribution
This species is widely distributed along the Terai-Bhabar region of Nepal and within all of the protected areas of the lowlands; Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve, Shukla Phanta Wildlife Reserve and adjoining forests outside the protected areas in Banke, Dang, Gorkana, Kailali and Kathmandu districts.

Distribution outside Nepal
India (including the Terai-Bhabar belt of the foothills



of the Himalaya from Uttar Pradesh and Uttaranchal through Nepal), Sri Lanka

Main Threats
- Hunting for subsistence
- Habitat loss and degradation due to human encroachment and invasive alien plant species such as *Mikania micrantha, Lantana camara* and *Chromolaena odorata*.

Conservation Measures in Place
None.

Conservation Recommendations
i) Enhance law enforcement outside protected areas through local community involvement (community youth anti-poaching units and scouts programmes); Chital is one of the most poached species for dry meat throughout the Terai.
ii) Reduce the dependency of buffer zone communities on the park natural resources through supporting alternative livelihoods, improved livestock management and biogas plants.
iii) Improve grassland management, including implementation of a long term plan for the control of invasive alien plant species both inside and outside protected areas; The Chital is one of the preferred prey species of the tiger, thus tiger conservation is directly linked to that of Chital.
iv) Implement standardised patrol-based monitoring system for grassland species including Chital. Produce standardised status reports for park management.

References
Sharathandra and Gadgil 1980, Mishra 1982ab, Chapple 1989, Chapple *et al.* 1993, Moe and Wegge 1994, Bhat and Rawat 1995, Suwal and Verheugt 1995, Moe and Wegge 1997, Ernst 2003, Naresh Subedi (pers. comm.) 2009, Hem Sagar Baral (pers obs.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010.

13) ***Boselaphus tragocamelus***
(Pallas, 1766)

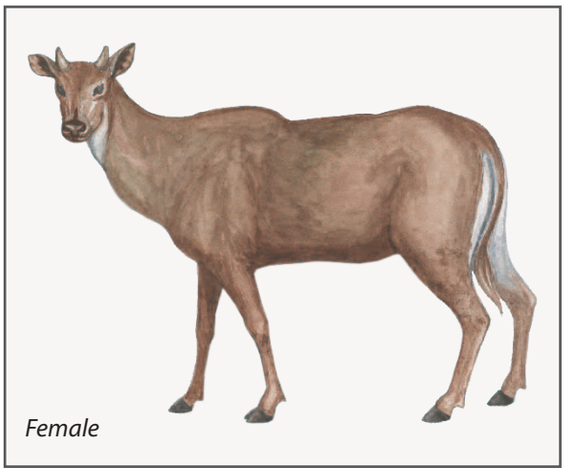
Common Names
Nilgai (English); Nilgai (Nepali)

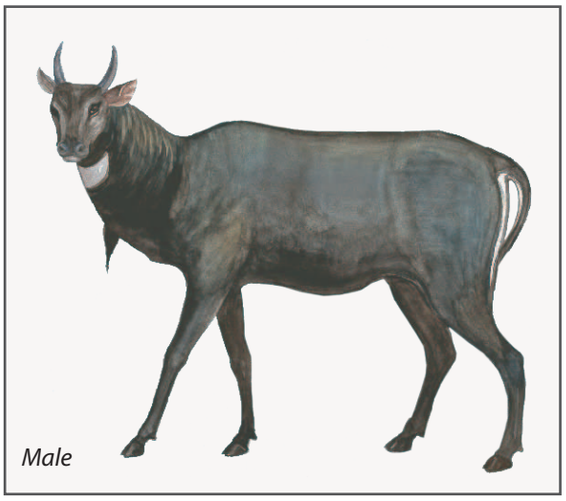
Species Description
The largest antelope in Nepal. Adult males have a dark grey-blue coat, females and calves are sandy brown. Both sexes have a white bib. Both sexes grow small dark coloured horns.

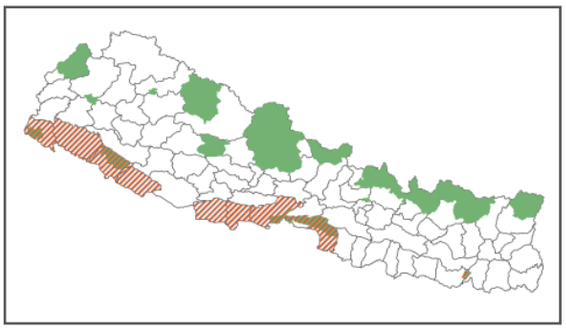
Species Ecology
Nilgai exist in a variety of habitats including savannah, scrub forest, Sal and riverine forests and wooded grassland. They occasionally raid cultivated areas to feed on crops. Nilgai reach sexual maturity at approximately 18 months and females give birth to between one to three young after a gestation period of approximately eight months. They have an overall life span of up to 21 years.

Conservation Status
Global: Least Concern
National: Vulnerable B1ab(i,iii), D1
Rationale for assessment: Nilgai (*Boselaphus tragocamelus*) has been assessed as Vulnerable under criterion B and due to a small population estimated to consist of only 324 individuals and because of the fragmented and restricted distribution of this species in Nepal. Nilgai are considered to have an extent of occurrence of approximately 18,213 km^2 and occur from fewer than ten locations within this range. The main threats to this species include poaching both for subsistence and trade in their hide, retaliatory killings in response to crop raiding and habitat loss and degradation due to human encroachment. Because these threats have not yet been effectively addressed, it is predicted that the species and its associated habitat will continue to decline. The fragmented nature of the species habitat may be limiting intermixing between sub-populations in Nepal and the potential of immigration from populations in India, although this needs further confirmation.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973)


Female


Male



National Population Size
Total: 289-324 (estimated from several separate surveys)
The current distribution range of Nilgai has recently been surveyed at the same time to give accurate population estimates. However in most of its range, the species has drastically declined due to poaching and habitat loss.

National Distribution
This species occurs within the protected areas of

Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve and Shuklaphanta Wildlife Reserve. Nilgai are not confined to these areas and also occur outside in the adjoining districts of Banke, Bardia, Kailali, Kanchanpur, Kapilvastu (Taulihawa), Nawalparasi, Parsa and Rupandehi (Lumbini forests).

Distribution outside Nepal
India, Pakistan.

Main Threats
- Retaliatory killing in response to crop raiding.
- Poaching for subsistence and for hide.
- Habitat loss and degradation due to human encroachment, clearing for agriculture and over-grazing of livestock.

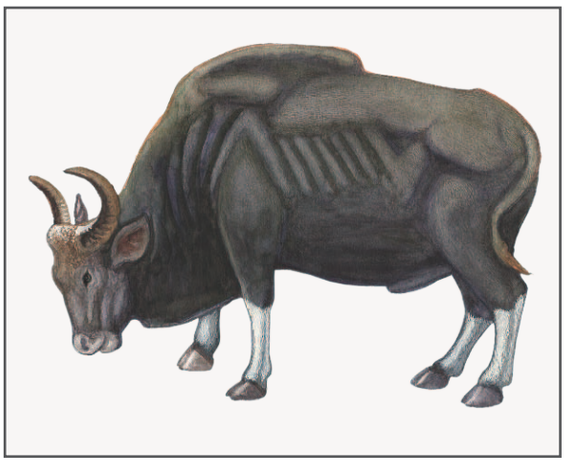
Conservation Measures in Place
Although a number of protected areas show presence of Nilgai, the majority of Nilgai population in Nepal exist outside protected areas in Taulihawa (Kapilvastu district) and Lumbini forests (district of Rupandehi). This species benefits from its association with cows which are considered sacred in Hindu religion and therefore has a limited amount of social and cultural protection.

Conservation Recommendations
i) Conduct periodic standardised population surveys.
ii) Monitor and record human-wildlife conflict data, trial and implement effective mitigation measures working closely with farmers.
iii) Enhance protection of populations occurring outside of protected areas by implementing stricter enforcement of the law, regular monitoring and engagement with local communites (for example, introducing community run anti-poaching units and raising awareness).
iv) Improve habitat management including effective invasive alien plant species control and decreasing competition with livestock (for example, introduce livestock free areas where Nilgai populations occur).

References

Walther 1990, Nowak 1991, Corbett and Hill 1992, Wilson and Reeder 1993, Suwal and Verheugt 1995, Lasiwa 1999,Nepal Red List of Mammals Field Technicians Workshop, Ultimate Ungulate 2010.

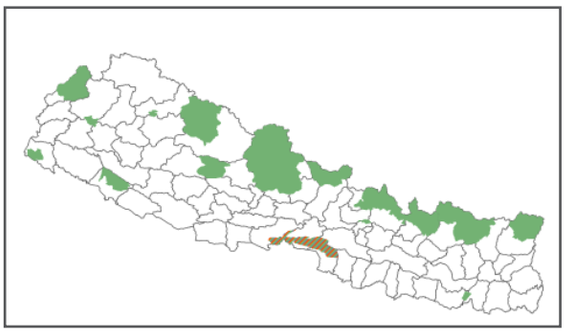
14) ***Bos gaurus*** (Smith, 1827)



Common Names
Gaur (English); Gauri Gai (Nepali)

Synonyms
Bos gour (Hardwicke, 1827); *Bos cavifrons*, *Bos subhemachalus* (Hodgson, 1837); *Bos gaur* (Sundevall, 1846); *Bos asseel* (Horsfield, 1851); *Bubalibos annamiticus*, *Gauribos brachyrhinus*, *Gauribos laosiensis*, *Gauribos mekongensis*, *Gauribos sylvanus*, *Uribos platyceros* (Heude, 1901); *Bos gaurus hubbacki* (Lydekker, 1907);
Sinhaleyus (Deraniyagala, 1951)

Species Description
Largest bovine in the world, with large head, deep chest and muscular shoulder ridge. Adult males are mostly glossy black, females and young are coffee-brown, all with white legs below the knee. Both sexes grow horns which curve upwards and are a yellow-white colour with black tips.



Species Ecology

The Gaur occurs in several forest types including evergreen, semi-evergreen, moist and dry deciduous forests. Gaur habitat is characterised by large and relatively undisturbed forest tracts, hilly terrain below an elevation of 1,500 m to 1,800 m, availability of water and an abundance of forage in the form of coarse grasses (including bamboo), shrubs and trees. In Nepal, Gaur are found below 800 m.

No specific breeding season has been observed for Gaur in Nepal and they appear to be able to breed throughout the year. However it is likely that there is a peak in calving during March and April, as this is a pattern observed in other herbivores in Nepal. The age at first reproduction for Gaur is estimated at three years, producing a single calf after a nine-month gestation period.

Conservation Status

Global: Vulnerable A2cd+3cd+4cd
National: Vulnerable D1
Rationale for assessment: The Gaur (*Bos gaurus*) has been assessed as Vulnerable under criterion D1 as the population in Nepal consists of only 330-350 individuals. It also occurs in a small and restricted area of Chitwan National Park and neighbouring Parsa Wildlife Reserve. The population in Parsa remains very small consisting of only 37 individuals in the last census leaving it vulnerable to the risk of local extinction. The threats to this species are poaching for subsistence, habitat loss and degradation and increased competition with livestock. Due to the close proximity of this species to livestock, the risk of disease transmission may be high (although not yet quantified) and poses a significant threat to the small Gaur population. At the moment however, the overall population of this species is considered to be increasing compared to previous census. Gaur occur in neighbouring countries but it is not known whether there is movement across these political borders.

Legal Status

CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. This species occurs within protected areas.

National Population Size

Total: 330-350
A 2008 census recorded 37 individuals in Parsa Wildlife Reserve and the 2007 census of Chitwan National Park recorded 297 individuals. The total global population is estimated to be 13,000 to 30,000 individuals.

National Distribution

This species is confined to the Sal forests of the Churia foothills in Chitwan National Park and Parsa Wildlife Reserve in southern central parts of Nepal. Stray animals have been observed in Koshi Tappu Wildlife Reserve, and the origin of these animals is suspected to be Trijuga forests in Udayapur District.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, China, India, Lao PDR, Malaysia, Myanmar,
Thailand, Viet Nam.

Main Threats

- Habitat loss and fragmentation due to clearing for agriculture,
  overgrazing and human encroachment.
- Hunting for subsistence.
- Disease transmission from domestic livestock.
- Food competition with domestic livestock.

Conservation Measures in Place

Gaur benefit from conservation actions implemented for other species such as the Greater One-horned Rhino, which shares similar habitat. The DNPWC conducted a Gaur Count in Chitwan National Park in 2007 and in Parsa Wildlife Reserve in 2008; however this is not a regular census.

Conservation Recommendations

i) Improve forest and grassland management including control of invasive species and secure movement corridors between Chital National Park and Parsa Wildlife Reserve.
ii) Enhance security in protected areas and establish community-based anti-poaching units outside protected areas, as part of wider protection of wildlife including high-profile species such as the Royal Bengal Tiger.
iii) Establish and monitor population trends based on standardised survey and monitoring methods.
iv) Remove and prevent livestock encroachment

into the protected areas. Investigate establishing livestock management veterinary units to support communities in core areas, similar to the community-based veterinary units in the buffer zone of Chitwan National Park.

v) Re-introduce Gaur into suitable habitat in Bardia and Banke National Parks, to create additional viable populations.

References

Hubback 1937, Crandall 1964, Schaller 1967, Suwal and Verheugt 1995, Baral and Shah 2008, Duckworth *et al.* 2008b, Naresh Subedi (pers. comm.) 2009, Hem Sagar Baral (pers. comm.) 2010, Nepal Red List of Mammals National Workshop 2010.

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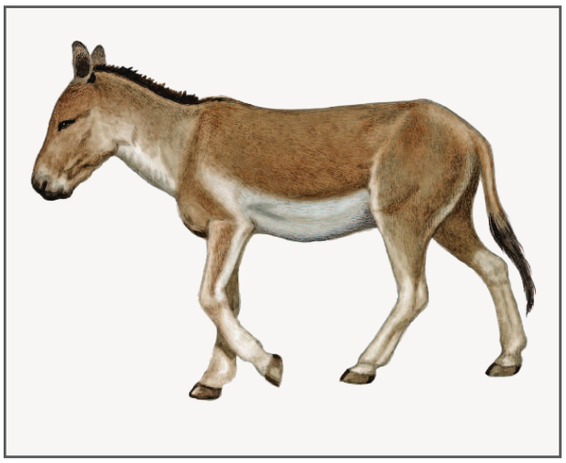
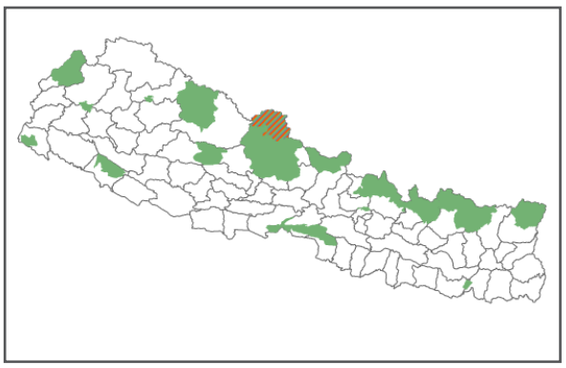
15) ***Equus kiang*** (Moorcroft, 1841)





Common Names

Kiang (English); Kiang (Nepali)

Synonyms

Equus equioides (Hodgson, 1842); *Equus polyodon* (Hodgson, 1847); *Equus holdereri* (Matschie, 1911); *Equus tafeli* (Matschie, 1924); *Equus nepalensis* (Trumler, 1959)

Species Description

Chestnut-brown coats, grey muzzle, with white throat, undersides and backs of legs. The coat is darker in winter, and paler and reddish in summer. Short upright, black mane and black dorsal stripe to the tail. Large ears.

Species Ecology

The Kiang inhabits plains and hills in open valleys in the Trans-Himalayan and alpine grasslands. Primary habitat consists of grass and shrub-land with accessible water sources at high elevations of 4,650 m to 5,350 m with very low human disturbance. Regular migration patterns have not been observed, yet Kiang are known to make seasonal movements between different habitat types. They predominantly feed on grasses and grass-like plants, particularly *Carex* and *Robresia* species with a large proportion of their summer diet consisting of *Austrostipa* (previously known as *Stipa*) but they will also feed on forbs, shrubs and roots. The estimated age at first reproduction for the species is three to four years, producing a single foal after a gestation period of approximately 355 days. They have been reported to live up to 20 years in the wild.

Conservation Status

Global: Least Concern

National: Vulnerable B1ab(iii)+2ab(iii); D1

Rationale for assessment: The Kiang (*Equus kiang*) has been assessed as Vulnerable under criterion B and D due to the species current small range and population size within Nepal. Kiang are known to occur in a single location, Mustang, within the protected area of the Annapurna Conservation (area of occupancy less than 1,000 km^2). Within its range the quality of habitat is considered to be declining due to competition with livestock and overgrazing.

Although estimates of Kiang numbers have varied in the past, it is currently thought that less than 100 individuals now occur within Nepal. While the low population numbers and restricted range size fit the criteria for an Endangered listing, the close proximity of populations in neighbouring countries provides a likely rescue effect, due to the possibility of immigration into suitable habitat. As a result, this species has been assessed as Vulnerable.

Legal Status

CITES Appendix II
National Parks and Wildlife Conservation Act 2029 (1973)

National Population Size

Total: < 100
The current population is estimated to consist of less than 100 individuals with previous estimates ranging widely between 10 and 500. In Mustang, groups of up to 16 individuals have been observed.

National Distribution

Kiang are restricted to a few areas in northern Nepal along the border with China. They have been reported from Mustang (Chhujung, Dhalung / Chhuging, Damodar Kunda, Dolpo, Ghemi Lekh, Kiangchummi, Lapchagawa, Itikhola, Salekhola, and Yarchakhola).

Distribution outside Nepal

China (Tibetan Plateau, Qinghai, southern Gansu, southern Xinjiang), India, Pakistan.

Main Threats

- Food competition with livestock.
- Human disturbance.

Conservation Measures in Place

None.

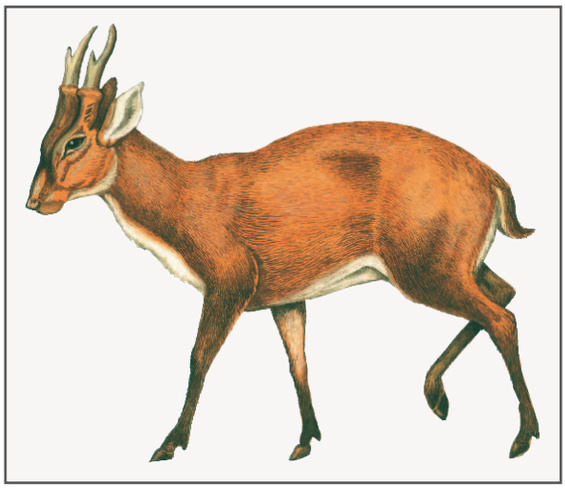
Conservation Recommendations

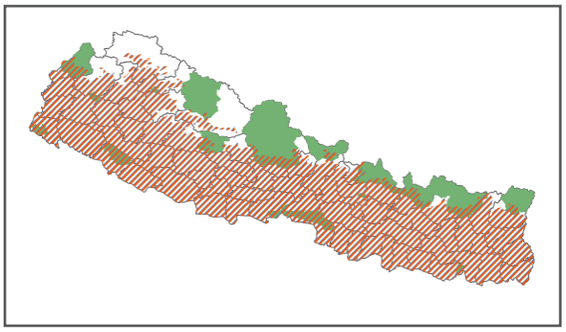
i) Strengthen local communities management and governance systems; train local village development committees in Community Based Natural Resource Management and law enforcement; help establish optimal mixed traditional rotational grazing systems.
ii) Implement zoning and strict control grazing in priority areas (especially Damodar Kunda in Upper Mustang); amend Conservation Area Management Regulations through negotiations with District Development Committees and local communities.
iii) Initiate awareness programmes for herders and nomads to minimise disturbances and to reduce hunting and poaching.
iv) Continue and expand research, monitoring and surveys of rangeland species, habitats and produce or update management plans.

References

Suwal and Verheugt 1995, Shah 2002, Sharma *et al*. 2004, St-Louis and Cote 2009, Nepal Red List of Mammals Field Technicians Workshop 2010,
Nepal Red List of Mammals National Workshop 2010

16) ***Muntiacus vaginalis*** (Boddaert, 1785)





Common Names
Barking Deer (English); Ratuwa (Nepali)

Synonyms
Cervus muntjak (Zimmermann, 1780); *Cervus vaginalis* (Boddaert, 1785); *Cervus moschatus* (Blainville, 1816); *Cervus moschatus* (H. Smith, 1827); *Cervus ratwa* (Hodgson, 1833); *Cervus melas* (Ogilby, 1839); *Cervus stylocerus* (Schinz, 1844); *Prox ratva* (Sundevall, 1846); *Stylocerus muntjac* (Cantor, 1846); *Sylocerus muntjacus* (Kelaart, 1852); *Cervus pleiharicus* (Kohlbrugge, 1896); *Muntiacus bancanus* (Lyon, 1906); *Muntiacus rubidus* (Lyon, 1911)

Species Description
Chestnut-red coloured coat, dark brown-black facial markings, small antlers.

Species Ecology
The Barking Deer occurs in dense tropical and subtropical forests, thickly wooded hills, and prefers ravines, stream gorges, dried-up stream beds and thick undergrowth for cover. Barking Deer feed on fruits, buds and new grass shoots.

Females become sexually mature within their first year. After a gestation period of approximately six months they give birth to a single young. The inter-birth interval is about seven months and births can occur throughout the year.

Conservation Status
Global: Least Concern
National: Vulnerable A2acd
Rationale for assessment: The Barking Deer (*Muntiacus vaginalis*) has been assessed as Vulnerable under criterion A due to an observed decline of populations in the wild of more than 30% over the past 15 years. Like so many of the species in the Terai region, especially herbivores, this species has experienced habitat loss and degradation due to human encroachment and conversion of land into agriculture since the eradication of malaria in the 1950s. The resulting opening of the forests also leads to greater opportunities for subsistence poachers and these threats continue to cause declines in Terai species such as the Barking Deer. Decline in Barking Deer and other prey species will also affect large carnivores such as leopards and tigers.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). The species occurs within protected areas.

National Population Size
Total: > 10, 000
Trend: Decreasing
There are no official population estimates for this species in Nepal but it is estimated to have a population of greater than 10,000 individuals, which has declined rapidly over the past 15 years.

National Distribution
This species is widely distributed across Nepal and occurs within all protected areas.

Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China, Hong Kong, India, Lao PDR, Myanmar, Pakistan, Sri Lanka, Thailand, Viet Nam.

Main Threats
- Hunting for subsistence.

- Habitat loss and degradation due to human encroachment, clearing for agriculture and livestock grazing.

Conservation Measures in Place

None.

Conservation Recommendations

i) Improve habitat management through controlled burning of grasslands and control of the principal invasive plants (*Mikania micrantha, Lantana camera, Chromolaena odorata*).

ii) Enhance law enforcement outside protected areas through local community participation and engagement.

References

Barratte 1977, Mishra 1982a, Chapman 1993, Oli and Jacobson 1995, Pei *et al.* 1995, Suwal and Verheught 1995, Chapman *et al.* 1997, Chen *et al.* 2001, Ernst 2003, Baral and Shah 2008, Nepal Red List of Mammals National Workshop 2010.

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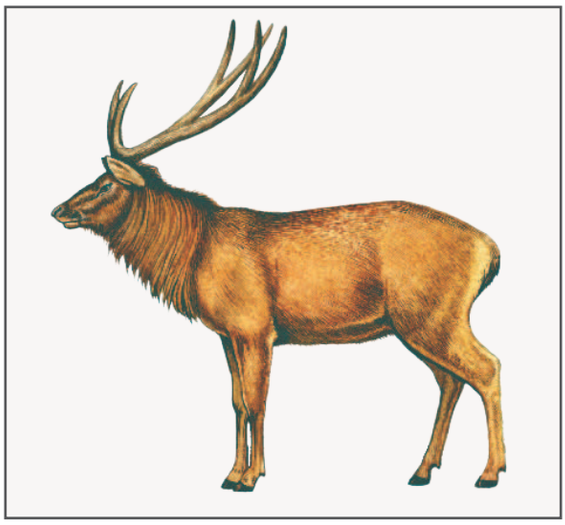
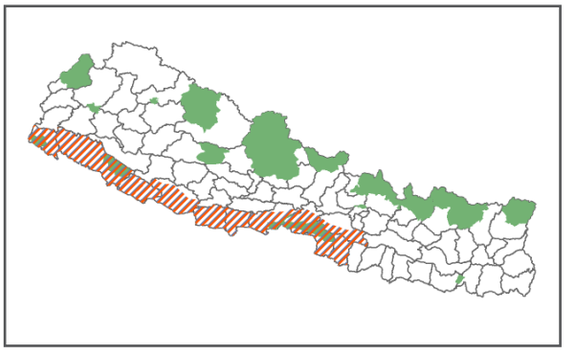
17) ***Rusa unicolor*** (Kerr, 1792)





Common Names

Sambar (English); Jarayo (Nepali)

Synonyms

Cervus unicolor (Kerr, 1792)

Species Description

Nepal's largest deer. Shaggy dark brown coat and large spreading antlers.

Species Ecology

The Sambar is generally found in dense Sal and riverine forests of the lowlands and in subtropical forests of higher elevations. Sambar are both grazers and browsers, feeding on grasses, fruits, leaves.

In Nepal, peak mating activity of Sambar is October to November and peak calving during June to July. Age at first reproduction is approximately 23 months with a gestation period of eight months after which a single calf is born.

Conservation Status

Global: Vulnerable A2cd+3cd+4cd

National: Vulnerable B1ab(ii,iii)+2ab(ii,iii)

Rationale for assessment: Sambar (*Rusa unicolor*) has been assessed as Vulnerable under criterion B as the species occurs in only four locations (possibly five depending on further confirmation of observations in Kathmandu), with the total area of these locations amounting to less than 20,000 km^2. Within this, the actual area of occupancy is thought to be less than 2,000 km^2. Both area and habitat quality are considered to be in decline due to human encroachment into areas of suitable habitat and the associated disturbances such as conversion of land into agriculture and competition and overgrazing of livestock. The current population of Sambar is small and considered to be in decline, with an estimated 1,200 mature individuals spread across the sub-populations. Since Sambar are not restricted to protected areas, the likelihood of being

poached is significantly increased outside of these areas. The distance between protected areas also suggests that the intermixing of sub-populations within Nepal is unlikely. However, mixing may occur across the India-Nepal border, although this needs further confirmation.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973)

National Population Size
Total: < 2,500
Adults: 1,200
Trend: Decreasing
Sambar numbers have declined rapidly and the species is now rare outside protected areas, mostly recorded as isolated reports from forests adjoining the protected areas. The species is estimated to number less than 2,500 individuals in the wild.

National Distribution
This species occurs along the Churia foothills in south west Nepal including within the protected areas of Bardia National Park, Chitwan National Park, Parsa Wildlife Reserve and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Sri Lanka, Thailand, Viet Nam.

Main Threats
- Hunting for subsistence.
- Habitat loss and degradation.

Conservation Measures in Place
None.

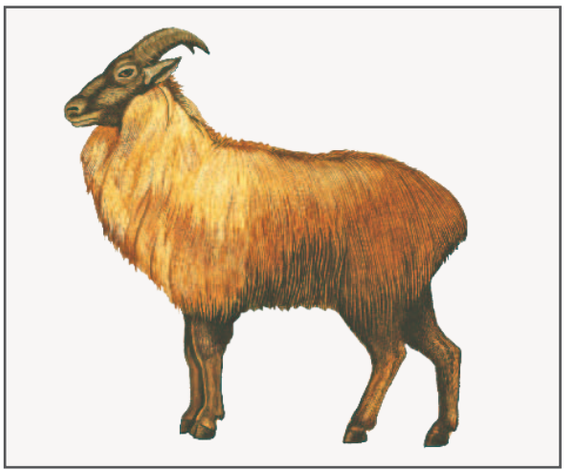
Conservation Recommendations
i) Focused habitat management.
ii) Further research and continuous monitoring to confirm the population size, status, distribution and ecology of this species.
iii) Improve law enforcement within and outside protected areas, as poaching of this species is increasing (mainly through snaring).
iv) Set up disease surveillance systems to monitor risk of disease transmission, such as foot-and-mouth.

References

Mishra 1982, Ernst 2003, Baral and Shah 2008, Timmins *et al.* 2008b, Nepal Red List of Mammals Field Technicians Workshop 2010, Nepal Red List of Mammals National Workshop 2010, Naresh Subedi (pers. comm.) 2010.

NEAR THREATENED

18) ***Hemitragus jemlahicus*** (Smith, 1826)



Common Names
Himalayan Tahr (English); Jharal (Nepali)

Species Description
A deep copper-brown mountain goat, females and young are light brown, males darker with large manes.

Species Ecology
The Himalayan Tahr occurs in temperate to sub-alpine zones and steep rocky mountain sides, between elevations of 3,000 m and 4,000 m. They

have been observed to migrate to higher elevations during the summer. The main diet consists of grasses, herbs and fruits.

Himalayan Tahr reach sexual maturity at 18 months, with females giving birth to one to two young after a gestation period of 180 to 242 days. The life span of Himalayan Tahr is up to 22 years.

Conservation Status

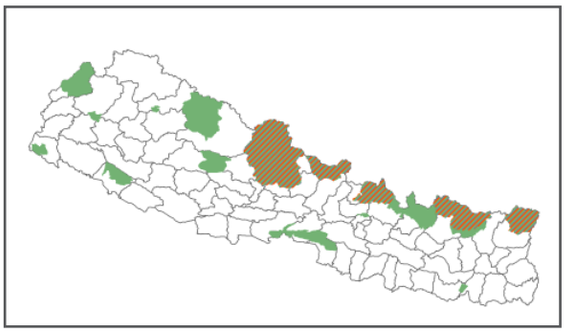
Global: Near Threatened
National: Near Threatened
Rationale for assessment: The Himalayan Tahr (*Hemitragus jemlahicus*) has been assessed as Near Threatened. Further studies on the population size and range may reveal that this species qualifies for a threatened category under criterion A or C due to an observed decline in the population but further research is required to clarify the total population of this species and its rate of decline.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973)

National Population Size

Total: > 2,000
Trend: Decreasing (estimated)
Accurate population estimates are lacking for this species both nationally and globally, however it is considered relatively common with a population estimated to be greater than 2,000 individuals in Nepal. Previous population estimates ranged between 1,300 and 1,800 individuals. A 2010 study in Sagarmatha National Park estimated a decline of one-third in the Himalayan Tahr population.



National Distribution

This species is believed to occur in all of the protected areas along the high hills and Himalayas in Nepal. The present distribution may be limited to lower parts of Kaski, Manang and Annapurna Conservation Area (Mustang), Kanchanjunga Conservation Area, Langtang National Park, Makalu Barun National Park, western parts of Gorkha within the Manaslu Conservation area, Sagarmatha National Park and districts of Dolakha, (around Rolwaling) and Sindhuplanchowk.

Distribution outside Nepal

China (southern Tibet), India.

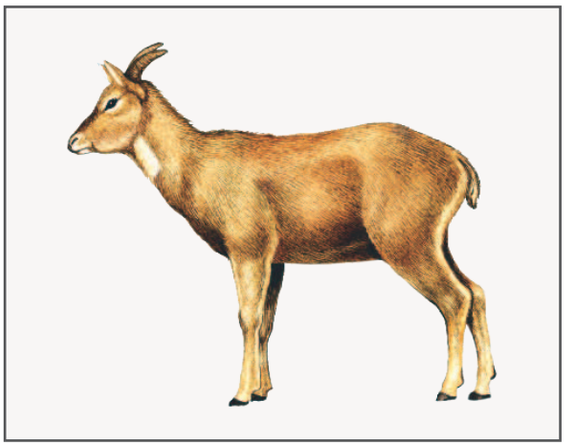
Main Threats

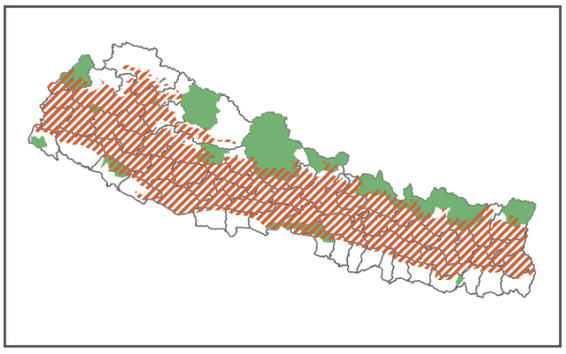
- Poaching for subsistence and trade in fur and skin.
- Habitat fragmentation and loss due to livestock over-grazing and human disturbances.

References

Gurung 1995, Suwal and Verheugt 1995, Shrestha 2006, Baral and Shah 2008, Bhatnagar and Lovari 2008, Smith and Xie 2008, Nepal Red List of Mammals National Workshop 2010, Nepal Red List of Mammals Field Technicians Workshop 2010, Dr Rijan Shrestha (pers comm.) 2010 and Dr Ghana Shyam Gurung (pers comm.) 2010.

19) ***Naemorhedus goral*** (Hardwicke, 1825)





Common Names
Himalayan Goral (English); Ghoral (Nepali)

Species Description
A goat-antelope. Short tail, brown-grey coloured horns which grow backwards. Coat is a grey colour with a white bib.

Species Ecology
Himalayan Goral are widely distributed on the forested slopes and steep mountainous areas up to the tree-line. Their main diet consists of grasses, leaves, twigs, fruits, and nuts.

Males and females reach sexual maturity at three years, giving birth to a single young after a gestation period of 170 to 218 days. They have a lifespan of up to 15 years.

Conservation Status
Global: Near Threatened
National: Near Threatened
Rationale for assessment: The Himalayan Goral (*Nemorhedus goral*) has been assessed as Near Threatened due to an observed population decline caused by poaching and habitat loss. The current decline of this species needs further research to quantify numbers and rates of decline. Current observations suggest that it may almost qualify as Vulnerable under criterion A2cd, however the population decline is not yet believed to exceed 30% over 3 generations (21 years).

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973)

National Population Size
There is no information available on the population abundance of this species in Nepal, however it is a widely hunted species and the population could be decreasing at a high rate.

National Distribution
This species is currently distributed across the Churia and mid-hills between elevations of 300 m and 3,000 m.

Distribution outside Nepal
Bhutan, China (southern Tibet), India, Pakistan.

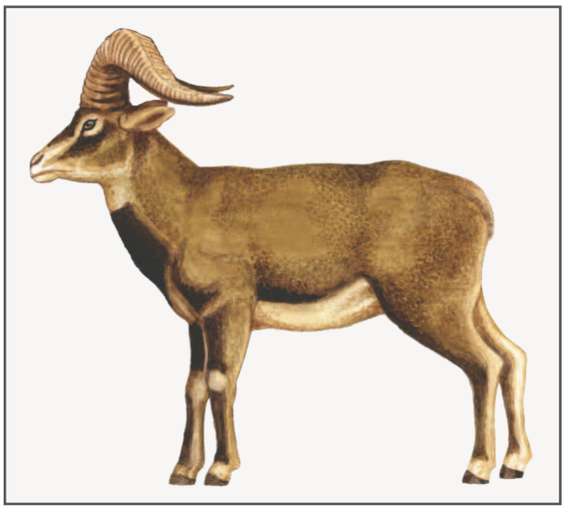
Main Threats
- Hunting for subsistence.

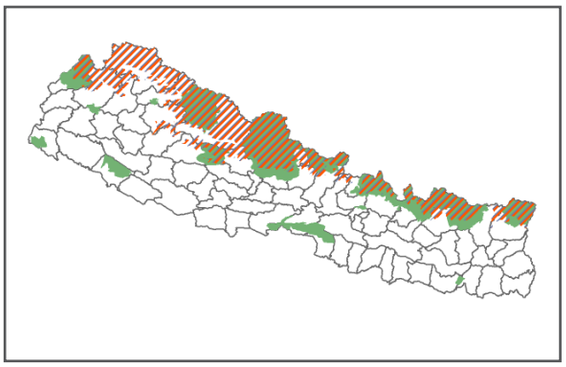
References

Hayseen *et al*. 1993, Wegge and Oli 1997, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010, Nepal Red List of Mammals National Workshop 2010.

LEAST CONCERN

20) ***Pseudois nayaur*** (Hodgson, 1833)





Common Names
Blue Sheep (English); Naur (Nepali)

Species Description
Adult rams are dark brown, black on the chest and front of the legs depending on the season. Underparts and back of legs are white. Both sexes grow horns which grow upwards and diagonally.

Species Ecology
Blue Sheep inhabit a variety of habitats including open grassy slopes in high mountains and can be found near cliffs, feeding on shrubs and herbaceous plants.

Rutting takes place during November to January with births occurring May to June after a gestation period of 160 days. Age at first reproduction is around 18 months. Blue sheep can live up to 15 years.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution and assumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973)

National Population Size
Total: > 10,000 (estimated)
It is difficult to estimate a population for Nepal as studies have been carried out at different times and localities, rather than a single nationwide assessment. However, the national population is expected to be greater than 10,000 individuals and likely to be stable or increasing. Previous total population estimates for this species range from 1,947 to 10,000 individuals. The global population is estimated to be between 47,000 and 414,000 individuals.

National Distribution
This species is distributed in the Himalayan and Trans-Himalayan area and along the northern border of Nepal between elevations of 2,400 m and 6,000 m. Species have been recorded within Annapurna Conservation Area, Arun Valley, Dhorpatan Hunting Reserve, Kanchanjunga Conservation Area, Lamabagar, Lapche, Manaslu Conservation Area and Shey-Phoksundo National Park.

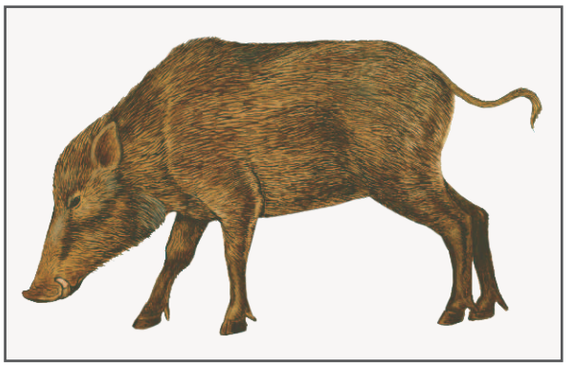
Distribution outside Nepal
Bhutan, China, India, Myanmar, Pakistan.

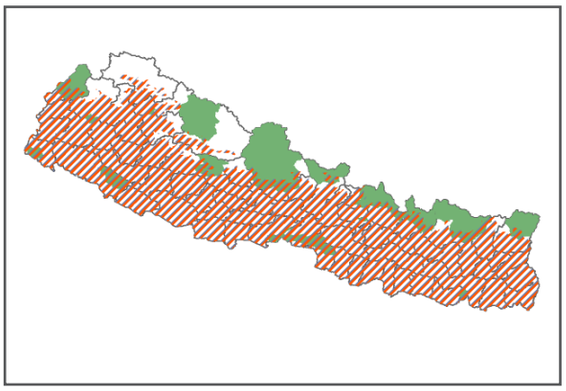
Main Threats
- Poaching, as trophy hunting for horns.

References

Schaller 1973, Schaller 1977, Wegge 1979, Wang and Hoffman 1987 (and references therein), Wegge 1991, Suwal and Verheugt 1995, Shackleton 1997, Schaller 1998, Ernst 2003, Shrestha *et al.* 2005, Baral and Shah 2008, Harris 2008a, Nepal Red List of Mammals Field Technicians Workshop 2010.

21) ***Sus scrofa*** (Linnaeus, 1758)





Common Names

Wild Boar (English); Bandel (Nepali)

Synonyms

Sus andamanensis (Blyth, 1858); *Sus ternatensis* (Rolleston, 1877); *Sus aruensis*, *Sus ceramensis* (Rosenberg, 1878); *Sus niger* (Finsch, 1886); *Sus natunensis* (Miller, 1901); *Sus nicobaricus* (Miller, 1902); *Sus floresianus* (Jentink, 1905); *Sus babi* (Miller, 1906); *Sus enganus, Sus tuancus* (Lyon, 1916); *Sus goramensis* (De Beaux, 1924); *Sus papuensis* (Lesson & Garnot, 1826)

Species Description

Dark grey-brown coat of stiff bristles and a black mane. Males have a set of tusks. Young are ochre in colour with cream spots and stripes.

Species Ecology

Wild Boars are highly versatile and often found along the fringes of forests and close to agricultural fields. They have a broad diet but mainly feed on roots and ground tubers.

A litter of four to eight young is produced after a gestation period of approximately four months.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution range and an abundant population.

National Population Size

Total: > 30,000
Trend: Increasing
There are no population estimates available for this species in Nepal, however it is frequently observed and speculated to be in excess of 30,000 animals and increasing.

National Distribution

This species is widely distributed across Nepal including within all protected areas of the lowland Terai and parts of protected areas in the highland region. It also occurs extensively outside protected areas.

Distribution outside Nepal

Afghanistan, Albania, Algeria, Andorra, Armenia, Austria, Azerbaijan, Bangladesh, Belarus, Belgium, Bhutan, Bosnia and Herzegovina, Bulgaria, Cambodia, China, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Georgia, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Iran, Iraq Israel, Italy, Japan, Jordan, Kazakhstan, Korea, Kyrgyzstan, Lao PDR, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia,

Moldova, Monaco, Mongolia, Montenegro, Morocco, Myanmar, Netherlands, Pakistan, Palestinian, Poland, Portugal, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sri Lanka, Switzerland, Syrian Arab Republic, China, Tajikistan, Thailand, Tunisia, Turkey, Turkmenistan, Ukraine, Uzbekistan, Viet Nam.

Main Threats

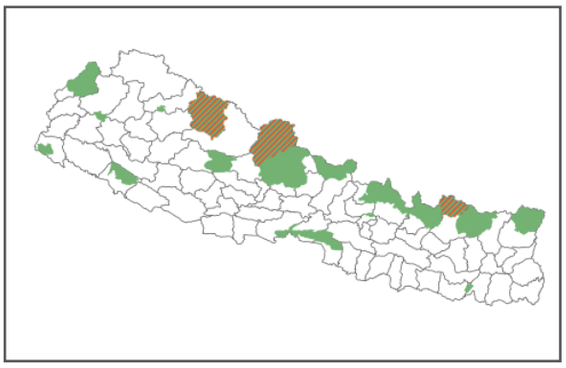
- There are no major threats to this species. In some areas the population is being actively controlled.

References

Suwal and Verheugt 1995, Baral and Shah 2008, Smith and Xie 2008, Nepal Red List of Mammals Field Technicians Workshop 2010, Nepal Red List of Mammals National Workshop 2010, Kamal Thapa (pers. comm.) 2010, Narendra Pradhan (pers. comm.) 2010.

DATA DEFICIENT

22) ***Bos mutus*** (Przewalski, 1883)



Common Names

Wild Yak (English); Jangali Chauri Gai (Nepali)

Species Description

Long shaggy black-dark brown coat, grey muzzle, thick tail, both sexes grow horns which curve upwards. These horns are larger compared to domesticated Yak.

Species Ecology

Wild Yak live in alpine tundra, grasslands and cold desert regions, and move seasonally, descending into lower valleys in the winter. Wild Yak feed mostly on grasses, sedges and forbs.

Wild Yak are seasonal breeders. Age at first reproduction is between three and four years (this may vary depending on environmental conditions) and after a gestation period of 258 to 270 days a single calf is born.

Conservation Status

Global: Vulnerable A2ac+3c+4c [Regionally Extinct in Nepal]
National: Data Deficient [possibly Regionally Extinct in Nepal]
Rationale for assessment: This species has been assessed as Data Deficient due to the lack of reliable information on population size and distribution. No studies have been carried out to confirm whether this species still occurs in Nepal.

Legal Status

CITES Appendix I
Listed in the National Parks and Wildlife

Conservation Act 2029 (1973) as protected priority species.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
The current distribution range of this species is not well known and there have been no recent records or observations of this species. Wild Yak used to occur in northern Nepal and may still exist in the northern border neighbouring Tibet.

Distribution outside Nepal
China, India.

Main Threats
- Food competition with domestic livestock.
- Hunting for subsistence.
- Disease transmission from domestic livestock.

References

Miller *et al*. 1994, Yu and Li 2001, Wiener *et al.* 2003, Zi 2003, Smith and Xie 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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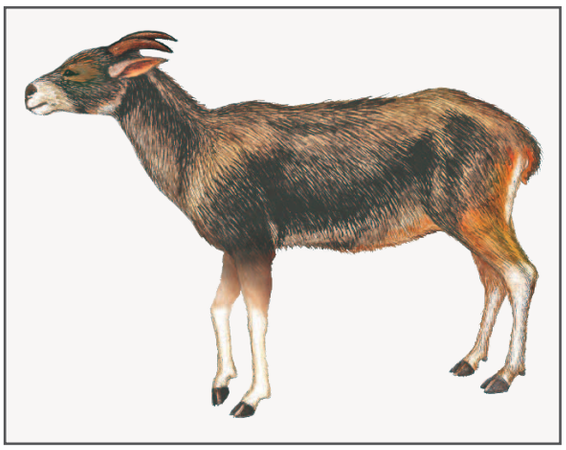
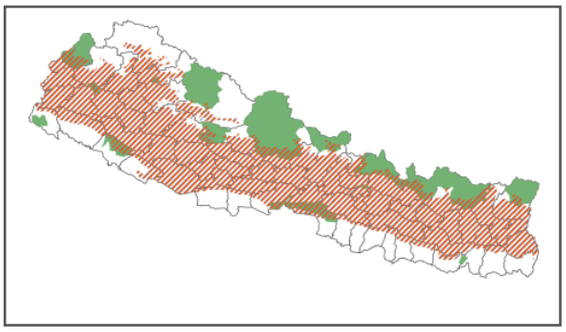
23) ***Capricornis thar*** (Hodgson, 1831)





Common Names
Himalayan Serow (English); Thar (Nepali)

Synonyms
Capricornis sumatraensis ssp. *thar* (Hodgson, 1831)

Species Description
Goat-like body, dark brown coat, white stockings, short tail, grey muzzle. Dark coloured horns that curve backwards are present in both sexes.

Species Ecology
The Himalayan Serow occurs in steep, rugged and densely forested areas and damp and thickly wooded gorges, preferring elevations of 2,500 m to 3,500 m.

Conservation Status
Global: Near Threatened
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species.

Legal Status
CITES Appendix I. National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
There is no reliable information available on the population abundance of this species in Nepal. However, based on observations, it is considered relatively common in its existing range.

National Distribution
The Himalayan Serow occurs across the Churia - Himalayan range between elevations of 500 m and 3,050 m including within the Annapurna Conservation Area, especially in Ghandruk and Landruk and between Sinuwa to Deurali region, Langtang and Makalu Barun National Park.

Distribution outside Nepal
Bangladesh, Bhutan, China, India.

Main Threats
- Hunting for subsistence.
- Habitat fragmentation with incompatible land use changes.
- Human-wildlife conflict due to crop raiding and resource competition with livestock.
- Increased livestock grazing in Serow habitat.

References

Prater 1971, Schaller 1977, Mahato 2004, Aryal 2008, Aryal 2009, Nepal Red List of Mammals National Workshop 2010, Baral and Shah 2008.

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24) ***Moschus fuscus*** (Li, 1981)

A recent taxonomic split makes ascertaining which species of musk deer previous studies refer to difficult, as musk deers were previously thought to be all one species: *Moschus chrysogaster*.

Common Names
Black Musk Deer (English); Kalo Kasturi (Nepali)

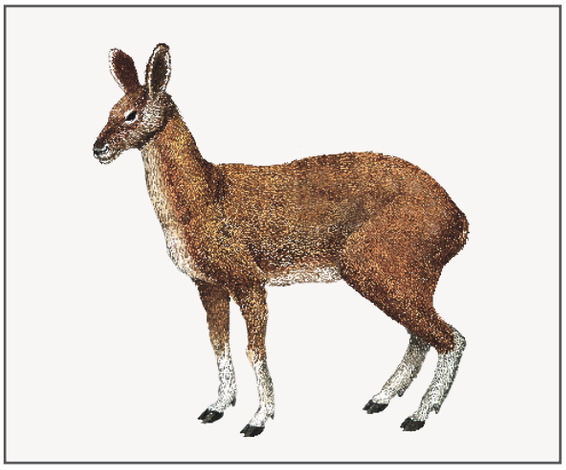
Species Description
Brown and bristly coat.

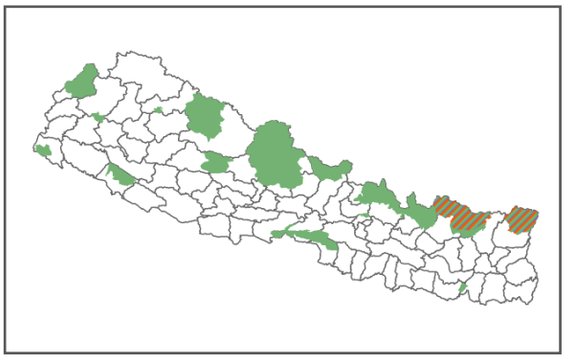
Species Ecology
The Black Musk Deer is associated with temperate, subalpine and alpine zones preferring birch, rhododendron and coniferous forests. This is a poorly known species, although all life-history attributes are likely similar to those of the Alpine Musk Deer (*M. chrysogaster*).

Conservation Status
Global: Endangered A2cd
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
There is no information available on the population size or status of this species in Nepal.





National Distribution
This species is reported from the eastern Himalayas, in Makalu Barun and Sagarmatha National Parks and Kanchanjunga Conservation Area. Due to taxonomic confusion, an accurate description of the distribution and population is not available.

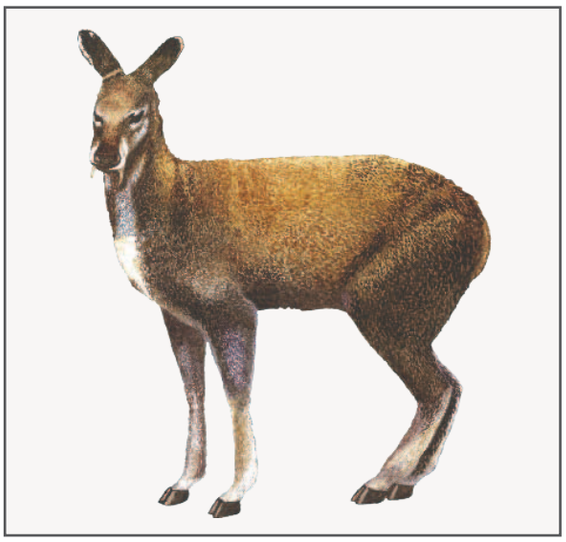
Distribution outside Nepal
Bhutan, China, India, Myanmar.

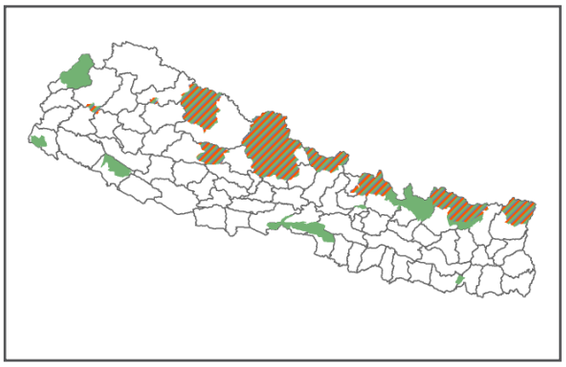
Main Threats
- Poaching for trade in musk gland.
- Habitat encroachment.
- Disease transmission from livestock (potential).

References

Suwal and Verheugt 1995, Baral and Shah 2008, Xie and Smith 2008.

25) ***Moschus leucogaster*** (Hodgson, 1839)





A recent taxonomic split makes ascertaining which species of musk deer previous studies refer to difficult, as musk deers were previously thought to be all one species: *Moschus chrysogaster*.

Common Names

Himalayan Musk Deer (English); Setokanthe Kasturi (Nepali)

Synonyms

Moschus chrysogaster ssp. *leucogaster* (Hodgson, 1839)

Species Description

Brown with thick bristly coat. These are small deer without antlers and with notably longer and more robust hind legs than front legs. This species has a white throat. Males have small tusks which are used during fighting.

Species Ecology

The Himalayan Musk Deer inhabits high alpine environments.

Musk deer become sexually mature between 18 months and two years, with age at first reproduction usually at two years. Breeding occurs primarily in November to December with offspring born from May to September, after a gestation period of 175 to 185 days.

Conservation Status

Global: Endangered A2d
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Only one species of musk deer has previously been recorded in Nepal. However, due to a recent taxonomic split into three species; *Moschus leucogaster*, *Moschus chrysogaster* and *Moschus fuscus*, these reports and research are now unreliable, as it is not clear to which species of musk deer they refer to.

Legal Status

CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

There is no information available on the population size or status of this species in Nepal.

National Distribution

The Himalayan Musk Deer are reported occurring at elevations of 2,200 m and 4,300 m. They have been reported from Kanchenjunga, Annapurna, Manaslu Conservation Areas, Sagarmatha, Langtang, Shey Phoksundo, Rara and Khaptad National Parks

including Dhorpatan Hunting Reserve.

Distribution outside Nepal
Bhutan, China, India.

Main Threats
- Poaching for trade in musk gland.
- Habitat encroachment.
- Disease transmission from livestock (potential).
- Overgrazing & Forest product collection.

References

Zeng and Pin 1979, Oza 1988, Deng 1989, Hayssen *et al*. 1993, Meng *et al.* 2003ab, Groves *et al.* 1995, Suwal and Verheugt 1995, Jiang 1998, Aryal 2005, Xie and Smith 2008.

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26) ***Ovis ammon*** (Linnaeus, 1758)
Subspecies *Ovis ammon hodgsoni*

Common Names
Argali (English); Nayan (Nepali)

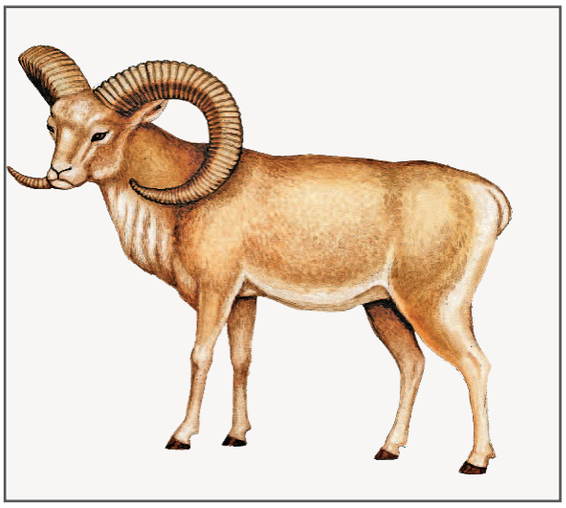
Species Description
Nepal's largest wild sheep. Red-brown or grey in colour with thick coat. Large horns that curve backwards - when the horns get particularly long they twist.

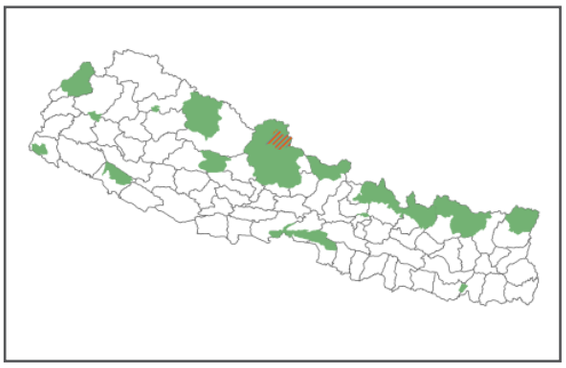
Species Ecology
Argali inhabit mountains, steppe valleys, rocky outcrops, open desert habitats and alpine grasslands between 3,000 m and 5,500 m, often descending lower in winter and generally avoiding forested areas. This species mainly feeds on forbs, but when sympatric with Blue Sheep, Argali tend to occur in grass-dominated communities.

Females become sexually mature at two years with a gestation period lasting approximately 160 days resulting in the birth of a single offspring. The maximum life span of Argali is between 10 and 13 years.

Conservation Status
Global: Near Threatened
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. It is likely that with further information this species will be considered threatened.

Legal Status
CITES Appendix I
Listed in the National Parks and Wildlife





Conservation Act 2029 (1973) as protected priority species.

National Population Size
The population of Argali in Nepal is unknown. However, it is likely to be small, as a total of only 77 Argali were reported from north-eastern side of Mustang district of Annapurna Conservation Area, nothern Nepal in 2005.

National Distribution
This species occurs in the high mountains of Nepal within the protected area of the Annapurna

Conservation Area, towards the north of Mustang and Manang district, bordering Tibet.

Distribution outside Nepal
China, India.

Main Threats
- Competition with livestock.
- Poaching as a result of weak trans-boundary security.

References

Suwal and Verheugt 1995, Wegge and Oli 1997, Reading *et al.* 2003, Tserenbataa *et al.* 2004, Chetri and Pokhrel 2005, Fedonsenko and Blank 2005, Reading *et al.* 2005, Shrestha *et al.* 2005, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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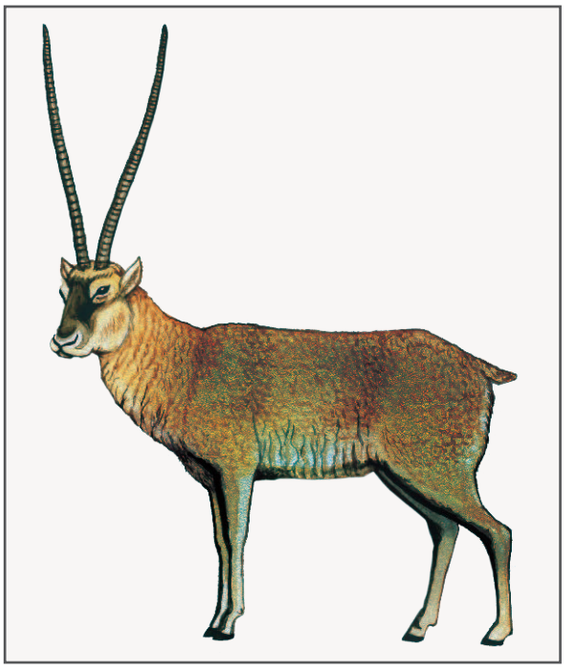
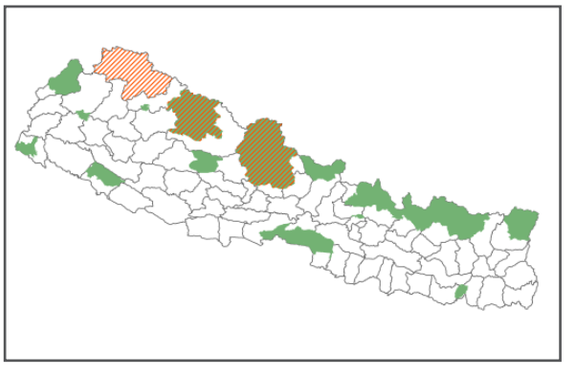
27) ***Pantholops hodgsonii*** (Abel, 1826)





Common Names
Tibetan Antelope (English); Chiru (Nepali)

Species Description
A woolly tan and grey winter coat with white undercoat. Red-fawn summer coat. Dark brown-black face and darker colours on front of legs with a lighter colour on the back. Long, black horns that grow upwards.

Species Ecology
The Tibetan Antelope occupies grassy open slopes of steppe habitats of Tibetan plateau. Most populations are highly migratory or nomadic, moving hundreds of kilometres between summer and winter ranges.

Tibetan Antelope reach sexual maturity at 18 to 30 months and give birth to a single young around June or July after a gestation period of 183 to 198 days. The maximum life span of the Tibetan antelope is estimated to be around 10 years.

Conservation Status
Global: Endangered
[Regionally Extinct in Nepal]
National: Data Deficient [Possibly Regionally Extinct]
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. There have been no studies to confirm whether this species still occurs in Nepal.

Legal Status
CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
There is no information available on the population size or status of this species in Nepal. There have been no recent observations of this species.

National Distribution
This species may occur within the Annapurna Conservation Area, Shey Phoksundo National Park, district of Humla (locals report sightings, but these need verification) and possibly other districts in areas adjoining the Chinese border. The Tibetan Antelope is a trans-boundary species suspected to move from China (Tibet) into north west Nepal.

Distribution outside Nepal
India, China.

Main Threats
- Poaching for trade.
- Habitat degradation due to overgrazing by livestock.

References
Schaller 1977, Grzimek 1990, Suwal and Verheugt 1995, Schaller 1998, Schaller *et al.* 2006, Nepal Red List of Mammals Field Technicians Workshop 2010.

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28) ***Tetracerus quadricornis*** (de Blainville, 1816)

Common Names
Four-horned Antelope (English); Chauka (Nepali)

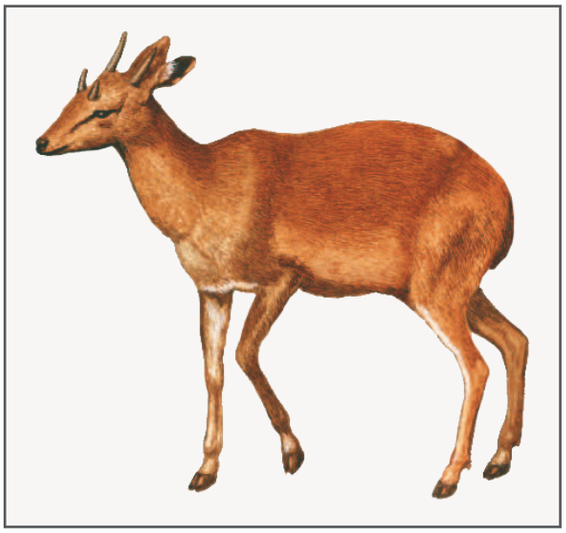
Species Description
Coat light brown to red when young, becoming more yellow with age. Males have two pairs of horns, the anterior pair of horns are always shorter than the posterior pair. Females are hornless.

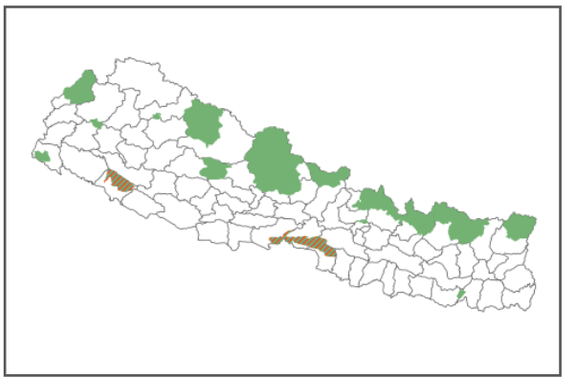
Species Ecology
The Four-horned Antelope inhabits tropical and subtropical habitats, dry deciduous forests, dry Sal forests and grasslands. The Four-horned Antelope is a browser and mainly feeds on shrubs and legumes.

The life history of the Four-horned Antelope is not well known, however based on captive animals, age at first reproduction is approximately 21 months, producing one or two young after a gestation period of 8 months (244 days). Peak breeding is likely to be between June and July.

Conservation Status
Global: Vulnerable C2a(i)
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Further research may result in the species being allocated a threatened category.

Legal Status
CITES Appendix III [Nepal]





Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
The current population of Four-horned Antelope in Nepal is unknown but likely to be less than 2,500 individuals.

National Distribution

The Four-horned Antelope's current distribution includes Bardia National Park, Chitwan National Park and Parsa Wildlife Reserve. This species may be restricted to the Churia range in Bardia National Park and areas around Banswari Khola and Tamar Tal in Chitwan National Park, however this needs further verification.

Distribution outside Nepal

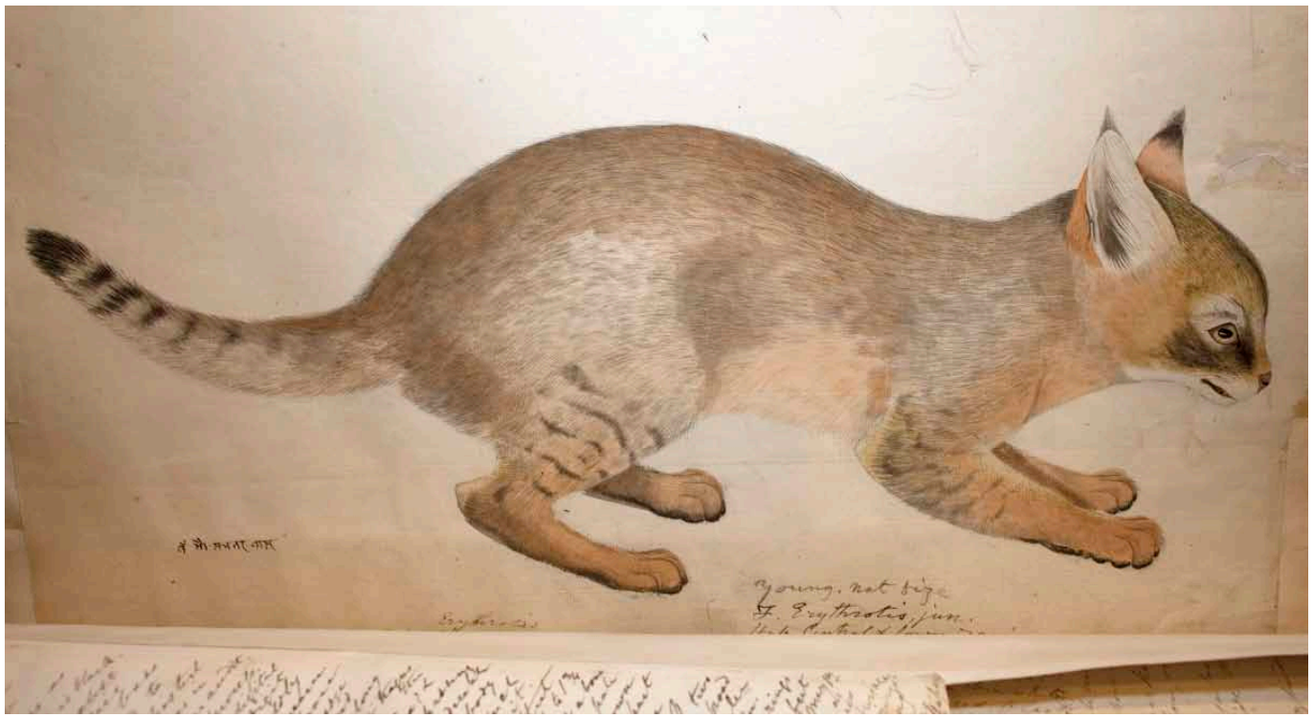
India.

Main Threats

- Habitat degradation and fragmentation.
- Fragmented population.
- Hunting for subsistence.

References

Shull 1958, Acharjyo and Misra 1975ab, Grzimek 1990, Mauget *et al.* 2000, Sharma *et al.* 2005, Krishna *et al.* 2009, Nepal Red List of Mammals National Workshop 2010, Nepal Red List of Mammals Field Technicians Workshop 2010.

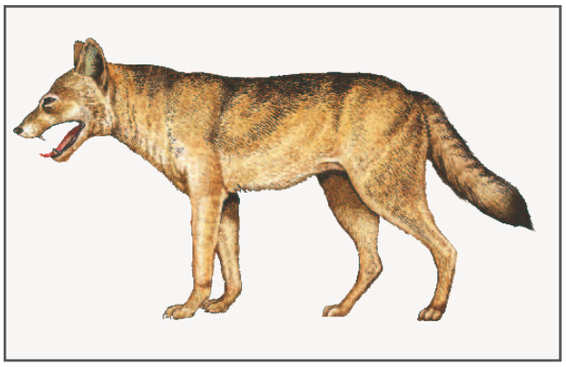


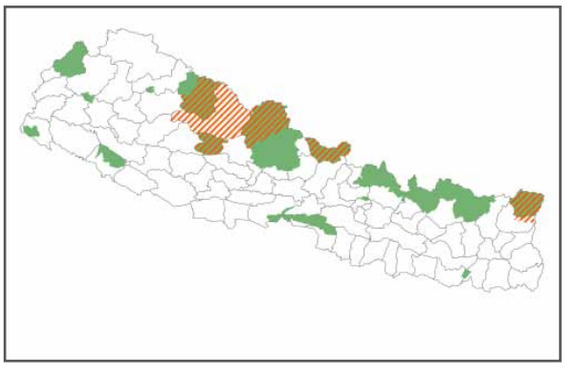
CARNIVORES

[CARNIVORA]

CRITICALLY ENDANGERED

29) ***Canis lupus*** (Linnaeus, 1758)
Subspecies *Canis lupus lupus*





Common Names
Grey Wolf (English); Bwasho (Nepali)

Species Description
Pelage colour can vary greatly between light grey/white right through to black, but most often is grey fur intermingled with longer black guard hair. Undersides are paler. Longer thinner legs than wolf-like domesticated dogs.

Species Ecology
The Grey Wolf occurs in high-elevation scrubby lands. It is adapted for hunting on relatively open grounds. The Grey Wolf's diet mainly comprises of large ungulates including Blue Sheep, Tibetan Argali, Tibetan Gazelle, Himalayan Tahr and Kiang. They are also capable of killing fully-grown mules and horses and cause significant damage to livestock populations (goats and sheep), especially in high elevation remote pasture in Upper Mustang.

Females become sexually mature at two to three years of age, producing litters of between two to four pups after a gestation period of nine weeks. Grey Wolves live up to 13 years in the wild, and 16 years in captivity.

Conservation Status
Global: Least Concern
National: Critically Endangered C2a(i); D
Rationale for assessment: The Grey Wolf (*Canis lupus)* has been assessed as Critically Endangered under Criterion C and D as less than 50 mature individuals have been observed to persist in Nepal. Although wolves do occur across the border in China (Tibet), it is not known whether or how frequently cross-border movements occur. However, as the threats to this species have not yet been effectively addressed and given the small population, threats such as indiscriminate poisoning, canine diseases, poaching and retaliatory killings could easily drive this species to local extinction and prevent re-colonisation from nearby areas.

Legal Status
CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
Total: 30-50
Trend: Decreasing
There have been no recent scientific studies on this species in Nepal, however it is estimated that there may be as few as 30 to 50 individuals remaining in Nepal.

National Distribution
Currently this species is known only from Annapurna Conservation Area (Upper Mustang), Dolpa, Manaslu Conservation Area, Kanchanjunga Conservation Area and Dhorpatan Hunting Reserve.

Distribution outside Nepal
Afghanistan, Albania, Armenia, Azerbaijan, Belarus, Bhutan, Bosnia and Herzegovina, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark, Estonia,

Finland, France, Georgia, Germany, Greece, Greenland, Hungary, India, Iran, Islamic Republic of Iraq, Israel, Italy, Jordan, Kazakhstan, Korea, Democratic People's Republic of Korea, Republic of Kyrgyzstan, Latvia, Libyan Arab Jamahiriya, Lithuania, Macedonia, Mexico, Moldova, Mongolia, Montenegro, Myanmar, Norway, Oman, Pakistan, Poland, Portugal, Romania, Russian Federation, Saudi Arabia, Serbia, Slovakia, Slovenia, Spain, Sweden, Syrian Arab Republic, Tajikistan, Turkey, Turkmenistan, Ukraine, United Arab Emirates, United States, Uzbekistan, Yemen.

Main Threats

- Habitat loss and fragmentation due to human settlements and clearing for agriculture and livestock.
- Poaching for fur.
- Reduction in natural prey base.
- Human-wildlife conflict.
- Canine diseases (including rabies and canine distemper).

Conservation Measures in Place

None.

Conservation Recommendations

i) Establish the genetic lineage, status and distribution of the Grey Wolf.
ii) Obtain baseline information on the ecology, behaviour and ranging patterns of the species through the use of camera traps and GPS satellite collars.
iii) Obtain baseline information on the food habits; establish status and distribution of the major prey species.
iv) Obtain baseline information on potential threats including existing human-wolf (and other predators) conflict and declining prey-base, and develop effective mitigation strategies.
v) Conduct awareness programmes among the communities residing within the wolf's range about the importance of the species and highlight misconceptions and traditional beliefs.
vi) Train and mobilise local community members to control carcass poisoning.
vii) Improve guarding systems to minimise livestock losses and disseminate the knowledge of wolf range and habitats to the herders.
viii) Develop livestock compensation schemes to mitigate human-carnivore conflict.
ix) Develop conservation action plans with a trans-boundary component for the species.

References

Suwal and Verheugt 1995, Sillero-Zubiri 2004 (and references therein), Chetri 2007, Nepal Red List of Mammals Field Technicians Workshop 2010, Kamal Thapa (pers. comm.) 2010, Madhu Chetri (pers. comm.) 2010.

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30) ***Ursus arctos*** (Linnaeus, 1758)

Common Names

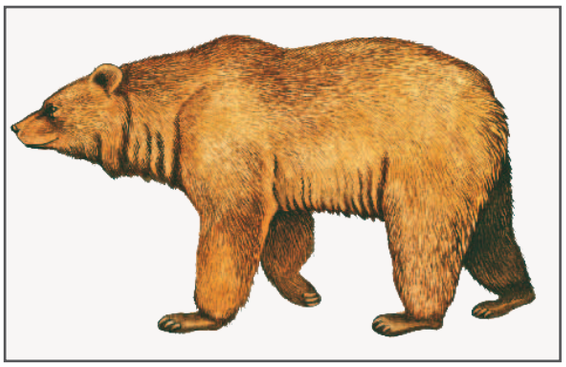
Brown Bear (English); Rato Bhalu (Nepali)

Species Description

Largest bear in Nepal. Thick red-brown coat and no clear chest markings.

Species Ecology

The Brown Bear occurs above the tree line in barren, grassy and rocky uplands and subalpine and temperate forests. Brown Bears are omnivorous and feed on a diet of grasses, leaves, roots and herbs as well as birds, eggs, insects and some ungulates. Occasionally they will also take livestock such as sheep, goat, yak and horses.



Brown Bears have an average age at first reproduction of five years and can reproduce throughout their life, giving birth to a litter of between one to four young after a gestation of approximately six months. Young stay with the

female for two to three years before dispersing. Longevity is between 20-30 years.

Conservation Status

Global: Least Concern
National: Critically Endangered C2a(i); D
Rationale for assessment: The Brown Bear (*Ursus arctos*) has been assessed as Critically Endangered in Nepal under Criterion C and D in view of a small population which consists of fewer than 20 mature individuals and is anticipated to decline by at least 25% in the next three years due to the threats of persecution, habitat loss and degradation caused by human disturbance and livestock grazing, factors which will also affect the bears prey species. Brown Bears do occur in neighbouring areas of China, however it is not yet clear if they travel across the border. Furthermore, due to the continued threats in Nepal it may be unlikely that individuals would be able to successfully re-colonise.

Legal Status

CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size

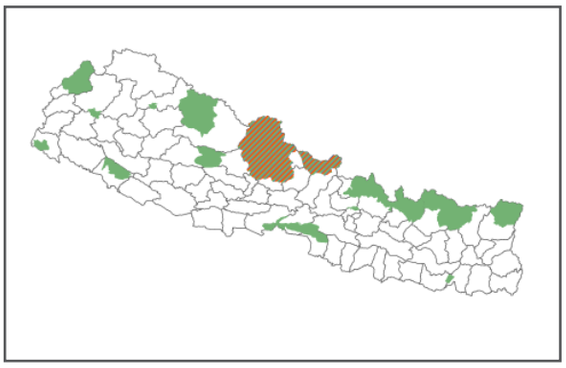
Total: 20 (estimated)
Trend: Declining
The population of Brown Bear in Nepal is estimated to be as few as 20 individuals and considered to be in decline.

National Distribution

This species is now only present in the higher elevations of Mustang (Surkhang, Chhosher and Ghemi VDCs) within the Annapurna Conservation Area and Manaslu Conservation Area (Samdo and Chhekampar VDCs). The first official sightings and video footage of Brown Bear in Nepal were recorded in Upper Mustang in September 2007.

Distribution outside Nepal

Afghanistan, Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Bhutan, Bosnia and Herzegovina, Bulgaria, Canada, China, Croatia, Czech Republic, Estonia, Finland, France, Georgia, Greece, India, Iraq, Islamic Republic of Iran, Italy, Japan, Kazakhstan, Democratic People's Republic of Korea, Kyrgyzstan, Latvia, the Former Yugoslav Republic



of Macedonia, Mongolia, Montenegro, Norway, Pakistan, Poland, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Tajikistan, Turkey, Turkmenistan, Ukraine, United States, and Uzbekistan.

Main Threats

- Poaching.
- Human wildife conflict and persecution.
- Habitat loss and degradation due to human settlements, clearing for agriculture and livestock over-grazing.
- Reduction of prey base.
- Inbreeding.

Conservation Measures in Place

Village development level 'Conservation Area Management Committees' formed in the Conservation Areas in order to protect the biodiversity and sustainable use of natural resources. Regular training and awareness programme launched since the inception of the Conservation Areas in order to safeguard the species.

Conservation Recommendations

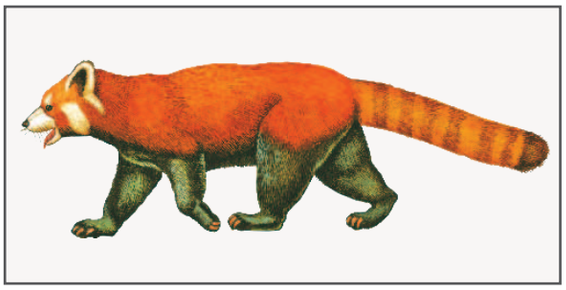
i) Carry out further surveys to confirm whether the species breeds in Nepal, their migration patterns and the possibility of a rescue effect from populations in Tibet.
ii) Implement education and awareness programmes focussing on this species, use positive myths and beliefs of the region to support this.
iii) Mitigate human-bear conflict, providing/advising locals with non-fatal methods of deterrent.
iv) Develop trans-boundary conservation initiatives.

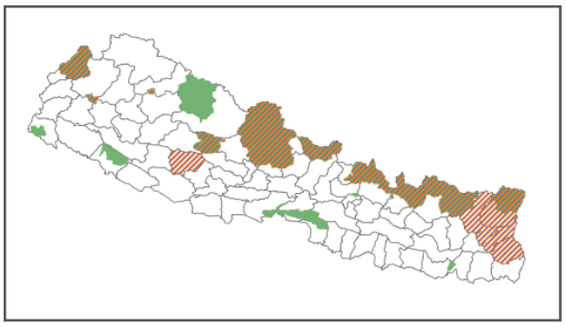
References

Pasitschniak-Arts 1993 (and references therein), Suwal and Verheugt 1995, Ernst 2003, Chetri 2008, Madhu Chetri (pers. comm.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010, Rinjan Shrestha (pers. comm.) 2010.

ENDANGERED

31) ***Ailurus fulgens*** (Cuvier, 1825)





Common Names

Red Panda (English); Habre, Hobrakpa, Punde Kundo (Nepali)

Species Description

Red-ginger colour coat on the body, with white snout, inner ears and cheek patches. Dark brown/ black legs and paws. Bushy tail with rings of alternating light/dark red colour.

Species Ecology

Red Pandas occur only in the temperate forest zone of the Eastern Himalayan eco-region characterised by *Abies spectabilies*, *Tsuga dumosa*, *Aesculus* spp., *Betula utilis*, *Pinus wallichiana*, *Quercus* spp., *Rhododendron* spp. and Acer forests with bamboo thicket in the understory with humus ground. Red Pandas are found between elevations of 2,800 m up to 3,600 m. This species is largely vegetarian, with a diet consisting predominantly of young leaves and shoots of bamboo, but also feeds on fruits, roots, grasses, acorns, lichens, insects, grubs, small mammals, eggs and birds.

Red Pandas become sexually mature at 18 months and produce one to four young after a gestation period of approximately 134 days.

Conservation Status

Global: Vulnerable C1
National: Endangered C2a(i)
Rationale for assessment: The Red Panda (*Ailurus fulgens*) has been nationally assessed as Endangered under criterion C due to a small population of 317-582 individuals spilt across 11 subpopulations, with the highest estimated number of individuals in a single subpopulation (Kanchanjunga) of 67. The population in Nepal continues to face declines due to human disturbances, deforestation and grazing of livestock in addition to forest fires, poaching for the species pelt and death caused by feral or local dogs. Although the Red Panda mainly occurs within conservation areas this species remains threatened and in decline. It does occur in neighbouring parts of China but it is not known if individuals ever move across the borders.

Legal status

CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

Total: 317-582
Trend: Declining
The most recent population estimate for the Red Panda in Nepal considered 11 subpopulations (Annapurnna, Manaslu, Darchula, Dhorpatan, Gaurishankar, Kanchanjungha, Khaptad, Langtang, Rara, Sagarmatha, Sakhuwasabha East,

Sakhuwasabha West) with a total population ranging between 317 and 582 individuals. The global population is estimated between 8,000 and 10,000 individuals.

National Distribution

The Red Panda is distributed from Ilam, Panchthar and Taplejung districts in the east to Darchula district in the west Nepal. A recent GIS based study suggests a gradual decline in probability of occurrence of Red Panda from east to west Nepal. A similar study estimates 67% of Red Panda habitat within the Sacred Himalayan Landscape area. Red Pandas occur within the protected areas of Annapurna Conservation Area, Dhorpatan Hunting Reserve, Kanchenjunga Conservation Area, Makalu-Barun National Park, Manaslu Conservation Area, Rara National Park, Sagarmatha National Park, Lantang National Park. Outside of protected areas Red Pandas occur in the districts of Dolakha, Ilam, Panchthar, Ramechhap, Sankhuwasabha, Solukhumbu and Taplejung district.

Distribution outside Nepal

Bhutan, China, India, Myanmar.

Main Threats

- Habitat loss and degradation due to human disturbances, cleaing for livestock grazing and agriculture.
- Man-made forest fires.
- Poaching.
- Injury/death caused by local dogs.
- Inbreeding.

Conservation Measures in Place

Approximately 22.5% of potential Red Panda habitat in Nepal is protected by a network of protected areas. A number of organisations including Red Panda Network (Nepal and US), WWF, NTNC, DNPWC have been conducting scientific research and community-based Red Panda conservation. This includes a long-term monitoring and a community-based conservation project in lower Kanchenjunga Mountain Complex; development of an action plan for Red Panda in Langtang National Park; survey of the species in the Sacred Himalayan Landscape; a GIS based nationwide assessment of red panda distribution and a Red Panda Population and Habitat Viability Assessment (PHVA) workshop in 2010.

Conservation Recommendations

i) Identify and verify potential and key habitats of Red Panda.
ii) Obtain accurate baseline data on the distribution and population status of the species in identified areas based on the six complexes and 11 subpopulations.
iii) Conduct scientific research on genetic diversity, population structure and habitat and ecology of the Red Panda in Nepal.
iv) Set up protection and management programmes for key habitats through government and community participation.

References

Roberts and Gittleman 1984, Yonzon 1989, Yonzon and Hunter 1991ab, Roberts 1992, Pradhan 1996, Yonzon *et al.* 1997, Choudhury 2001, Pradhan *et al*. 2001ab, Shrestha and Ale 2001, Mahato 2003, Mahato 2004, Mahato and Karki 2005, Sharma 2008, Wang *et al.* 2008a, RPN 2007-09, Sharma and Belant 2009, Mahato 2010ab, Red Panda Population and Habitat Viability Assessment (PHVA) Workshop 2010, Thapa 2010a.

32) ***Cuon alpinus*** (Pallas, 1811)

Common Names
Dhole (English); Ban kukur (Nepali)

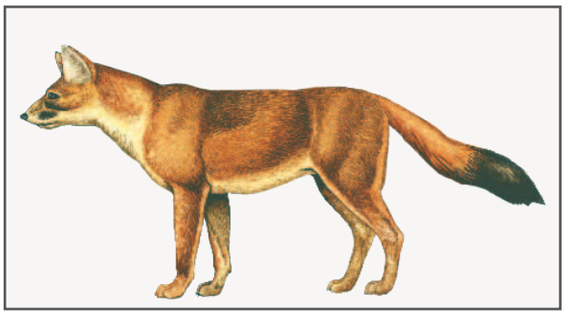
Species Descriptions
Red-brown forest dog which has shorter legs, a bushy tail and a thicker muzzle than both the wolf and the domestic dog. Body colour is light chestnut to brown-yellow.

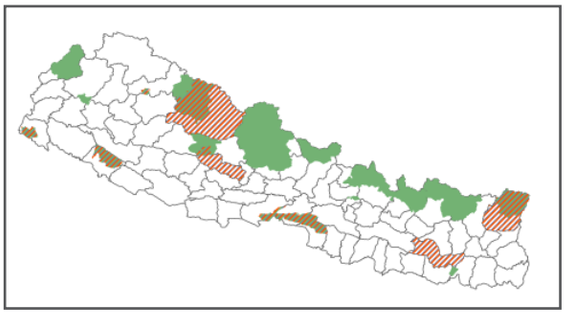
Species Ecology
The Dhole is a a versatile species occurring in all habitats with the exception of the desert. They are found in a wide variety of vegetation types, including tropical dry and moist deciduous forest, evergreen and semi-evergreen forests, dry thorn forests, grassland scrub forest mosaics and alpine steppe (above 3,000 m). Their main diet consists of large mammals such as Sambar, Chital, Wild Boar, Buffalo, Swamp Deer, Nilgai, Gaur, Musk Deer, Himalayan Tahr, Goral and small mammals such as hares and other rodents.

The gestation period for Dhole is approximately two months after which a litter of four to six pups are born inside a den, which can be an earthen burrow or rocky cavern.

Conservation Status
Global: Endangered C2a(i)
National: Endangered C2a(i)
Rationale for assessment: The Dhole (*Cuon alpinus*) has been assessed as Endangered in Nepal under criterion C. The Dhole currently has a small population with fewer than 250 individuals in any one sub-population and the total population is considered to be in decline as the threats to this species have not yet been effectively addressed. Threats include habitat loss and degradation, depleting prey species and therefore higher competition with other large carnivores, persecution and disease. These factors are therefore likely to cause further decline of this species in the future.

Legal Status
CITES Appendix II
National Parks and Wildlife Conservation Act 2029 (1973).





National Population Size
Total: < 500 (estimated)
Trend: Decreasing (estimated)
This species is considered rare with a current population estimate of less than 500 individuals, however this figure needs verification.

National Distribution
The current distribution of Dhole in Nepal includes Bardia, Chitwan and Rara National Parks, Parsa and Shukla Phanta Wildlife Reserves. Outside the protected areas it has been observed in Udayapur in the 1990s. Local communities in Baglung, Dolpa and Taplejung have also reported this species. However, despite what seems like a potentially widespread distribution, sightings of this species are not common. A study in Chitwan National Park in 1991 found no signs of the species, yet it was widespread throughout the park in the 1970s.

Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Mongolia, Myanmar, Nepal, Russian Federation, Tajikistan, Thailand, Viet Nam.

Main Threats
- Depletion of natural prey base.
- Competition with other large carnivores such as tigers and leopards.
- Habitat loss due to human encroachment and

agricultural expansion.
- Direct and indirect persecution.
- Disease particularly those transmitted by feral and/or domestic dogs (including mange, canine distemper, parvovirus and rabies).

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct periodic surveys to obtain population status, distribution and trends.

ii) Implement effective protection and management of prey base habitats inside protected areas and in key sites outside protected areas; ensure adequate protection through strengthening systems and engagement with local communities in buffer zones and conservation areas.
iii) Minimise persecution through education and awareness programmes, and public engagement activities.
iv) Implement management plan of feral dog populations/disease in the buffer zones of national parks and in conservation areas.

References

Cohen 1978, Stewart 1993, Sillero-Zubiri *et al.* 2004, Smith and Xie 2008, Kamal Thapa (pers. comm.) 2009, Naresh Subedi (pers. comm.) 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

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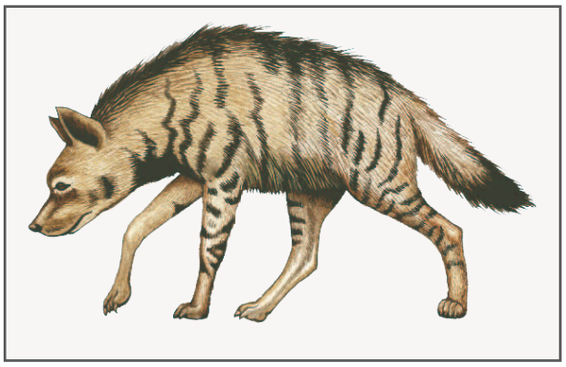
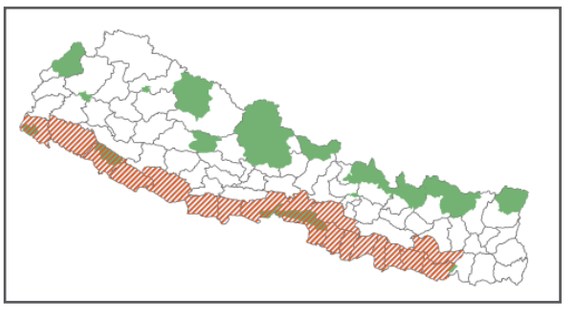
33) ***Hyaena hyaena*** (Linnaeus, 1758)





Common Names
Striped Hyaena (English); Hundar (Nepali)

Species Description
Sloping back, thin legs. Long, beige coloured coat with black stripes on body and legs. Long dorsal hair. Black patch on throat.

Species Ecology
The Striped Hyaena occurs in grasslands, dense forest and undulating grounds. It also scavenges on carcasses of wild and domestic animals, such as Chital and Hog Deer. It has also been noted to feed on comparatively more vegetables than other hyaena species.

Striped Hyaena's age at first reproduction is approximately 28 months. After a gestation period of 90 to 92 days, a litter of one to five young is born. The Striped Hyeana lives up to 24 years (recorded in captive animals).

Conservation Status
Global: Near Threatened
National: Endangered C2a(i); D
Rationale for assessment: The Striped Hyaena (*Hyeana hyeana*) has been assessed as Endangered under criterion C and D in view of a small population estimated to consist of fewer than 100 individuals, with fewer than 50 mature individuals in any one sub-population. It has a restricted distribution, which is limited to protected areas of the Terai. The species has been recorded outside protected areas, however these records are likely to refer to small numbers / stray individuals. Because the threats to this species include retaliatory killings and persecution, depleting prey populations and loss of habitat, it is unlikely that the species will be able to persist in large numbers outside protected areas. These threats are also highly likely to prevent intermixing between sub-populations, and a rescue

effect from populations in India is unlikely, as it occurs in patchy distributions and faces deliberate persecution in most of these areas. The threats to this species are yet to be effectively addressed and therefore it is anticipated that this species will experience further population declines in the future.

Legal Status

Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

Total: 10-100 (estimated)
Trend: Decreasing (estimated, observed)
Sightings of this species are not common and the population is considered to be in decline. The current population in Nepal is estimated to be less than 100 individuals. Hofer and Mills (1998) considered a maximum population of 50 individuals, possibly with as few as 10, they also estimated the global population of striped hyaena to be 5,000 to 14,000 individuals.

National Distribution

The Striped Hyaena is distributed in the Terai region of Nepal within the protected areas of Bardia National Park, Chitwan National Park, Parsa Wildlife Reserve and Shukla Phanta Wildlife Reserve. Outside of protected areas they have been recorded in the districts of Bara, Kailali, Kapilbastu (Niglihawa VDC), west of the Bagmati to Kanchanpur and one dead Striped Hyaena was found in Udayapur District in August 2003.

Distribution outside Nepal

Algeria, Armenia, Azerbaijan, Burkina Faso, Cameroon, Chad, Djibouti, Egypt, Ethiopia, Georgia, India, Islamic Republic Iran, Iraq, Israel, Jordan, Kenya, Lebanon, Libyan Arab Jamahiriya, Mali, Mauritania, Morocco, Niger, Nigeria, Oman, Saudi Arabia, Senegal, Tajikistan, Tanzania, United Republic of Tunisia, Turkey, Turkmenistan, Uzbekistan, Western Sahara and Yemen.

Main Threats

- Persecution (especially poisoning).
- Decreasing natural and domestic sources of carrion due to declines in the herbivore populations.
- Habitat loss due to human settlements, conversion of land for agriculture, clearing of forests for firewood and livestock grazing.

Conservation Measures in Place

The establishment of community forest programmes has improved habitat for the species in some of its non-protected range.

Conservation Recommendations

i) Conduct surveys on its distribution, population status and conservation threats throughout the country.
ii) Develop local community conservation awareness programmes highlighting the species ecological role as a natural scavenger, in order to prevent further killing (especially through poisoned prey carcasses).
iii) Implement effective grassland management systems in protected areas, including invasive alien plant species control and law enforcement.
iv) Develop and implement a conservation action plan for this species, its prey base and habitat.

References

Rieger 1983 (and references therein), Suwal and Verheught 1995, Hofer and Mills 1998, Ernst 2003, Hem Sagar Baral (pers. obs.) 2010, Karan Shah (pers. comm.)
Nepal Red List of Mammals Field Technicians Workshop 2010.

34) *Lutrogale perspicillata*
(I. Geoffroy Saint-Hilaire, 1826)

Common Names
Smooth-coated Otter (English); Khairo Oat (Nepali)

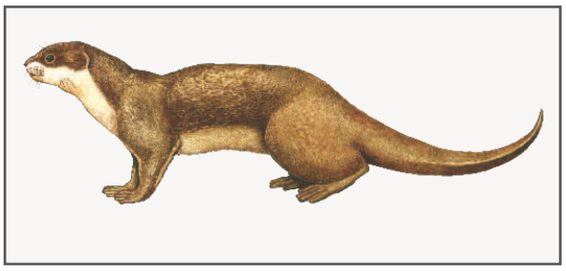
Synonyms
Lutra perspicillata (I. Geoffroy Saint-Hilaire, 1826)

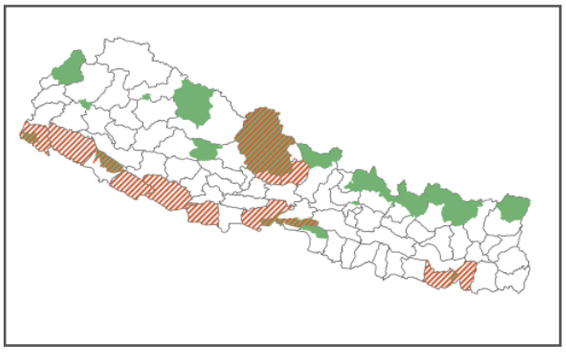
Species Description
Chocolate brown coat. Underside lighter, paws dark brown but lighter than the body. Differs from the Eurasian Otter in having V-shaped nostrils and a flatter tail towards the tip.

Species Ecology
The Smooth-coated Otter occurs along large rivers, lakes and rice fields. The preferred riparian vegetation is dominated by Common Reed (*Phragmites karka*) and Kans Grass (*Saccharum spontaneum*). The Smooth-coated Otter is predominantly a fish eater, but supplements its diet with shrimp, crayfish, crab and insects, and other vertebrates such as frogs, mudskippers, birds and rats.

Knowledge of the breeding behaviour of this species is based on observations of captive animals where individuals attained sexual maturity at twenty-two months.

Conservation Status
Global: Vulnerable A2acd
National: Endangered C1
Rationale for assessment: The Smooth-coated Otter (*Lutrogale perspicillata*) has been assessed as Endangered under criterion C in view of a small population estimated to consist of fewer than 1,000 individuals and anticipated future population declines. The threats to this species continue and include lack of waste management of the waterways which affects both the species' habitat as well as the entire freshwater ecosystem, over-exploitation of fish and poaching for fur. It is anticipated that these threats will cause further population declines of at least 20% over five years. This species does exist in areas of suitable habitat in neighbouring countries; however, hydropower schemes and disruption to the waterways is likely to prevent significant movement of this species.





Legal Status
CITES Appendix II
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: < 1,000 (estimated)
Trend: Decreasing
This species is considered rare and recent population estimates range from 200 to 1,000 individuals. This species has been observed as undergoing a rapid population decline in recent years.

National Distribution
Direct observations are said to be rare and only from Bardia National Park, Chitwan National Park and Shukla Phanta Wildlife Reserve. This species has previously been recorded within the protected areas of Annapurna Conservation Area, Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve, Shukla Phanta Wildlife Reserve certain areas of Banke, Dang and Kapilvastu (around Rapti and other local river systems), Ghodaghodi Lake and rivers in Kailali, wetlands in Kanchanpur, Beeshazari lake and other wetlands of Chitwan, outside Annapurna Conservation Area in Lamjung, Nawalparari and around Koshi River and surrounding areas in Saptari and Sunsari.

Distribution outside Nepal
Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Iraq, Lao PDR, Malaysia, Myanmar, Pakistan, Thailand, Viet Nam.

Main Threats
- Habitat loss, degradation (due to pollution/ pesticides or over-exploitation) and fragmentation.
- Decrease of prey species due to competition with fishermen.
- Poaching for fur and illegal trade.
- Accidental mortality due to entanglement in fishing equipment.
- Persecution as a pest species.
- Construction of dams.

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct surveys using direct and indirect survey methods, including camera traps in suitable habitat in Chitwan and Bardia National Parks, and Shukla Phanta Wildlife Reserve and in areas of suitable habitat outside of protected areas to establish occupancy and population size.
ii) Increase education and awareness programmes focussing on this species in areas where it occurs with a strong anti-pollution of waterways message.
iii) Ensure future dam developments are otter/ aquatic animal friendly.

References

Prater 1971, Desai 1974, Foster-Turly 1992, Chetri et.al. 2003, Hwang and Lariviere 2005, Harka Man Lama and Basu Bidari (pers. comm.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010, Kafle 2009.

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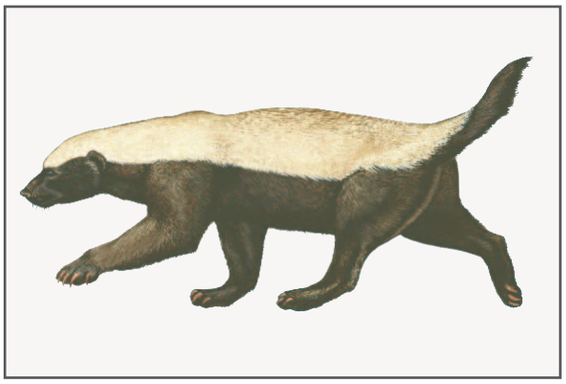
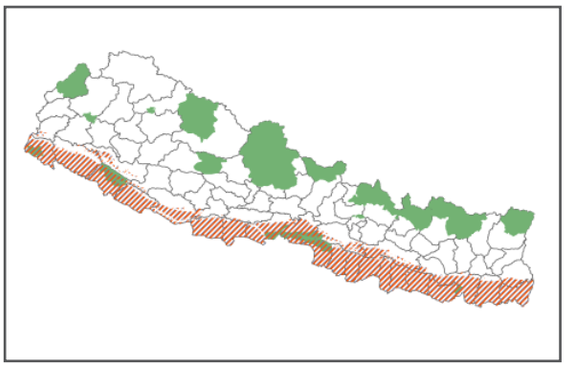
35) ***Mellivora capensis*** (Schreber, 1776)





Common Names
Honey Badger (English); Ratel (Nepali)

Species Description
Broad streak of silver-grey from the crown to base of the tail, has a short snout and coarse yet glossy black fur. The species has small ears and large claws.

Species Ecology
The Honey Badger inhabits the dense forests, grasslands, undulating grounds and scrub forests of the foothills in Nepal. This species feeds on other mammals, birds, reptiles, insects, fruit and honey.

The reproductive traits of this species are not well known. Mating has been recorded throughout the year and gestation periods have been estimated between six weeks to six months, after which a litter of two young is produced.

Conservation Status
Global: Least Concern
National: Endangered C2a(ii)
Rationale for assessment: The Honey badger (*Mellivora capensis*) has been assessed as Endangered under criterion C as the population is estimated to consist of fewer than 100 individuals with fewer than 50 mature individuals existing in any one sub-population. The population is anticipated to experience further declines due to habitat loss and persecution, which are considered

to be the main drivers of population decline. Further research and effective conservation actions are urgently needed to address the conservation of this species. This species does occur throughout India, however it is not known whether individuals move across the political boundaries in sufficient numbers to recolonise areas of suitable habitat in Nepal.

Legal Status

CITES Appendix III

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

Total: < 100 (estimated)

Trend: Decreasing

There is little available information for this species. Field technicians and scientists report this species as rare with an estimated population of as few as 100 individuals which is in decline.

National Distribution

This species occurs in the Terai region including within the protected areas of Bardia National Park, Chitwan National Park, Parsa Wildlife Reserve, Shukla Phanta Wildlife Reserve and the districts of Banke and Kailali.

Distribution outside Nepal

Afghanistan, Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Djibouti, Ecuador, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, India, Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakhstan, Kenya, Kuwait, Lebanon, Liberia, Malawi, Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Oman, Pakistan, Rwanda, Saudi Arabia, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Syrian Arab Republic, Tanzania, Togo, Turkmenistan, Uganda, United Arab Emirates, Uzbekistan, Western Sahara, Yemen, Zambia, Zimbabwe.

Main Threats

- Habitat loss due to human settlements, conversion of land for agriculture and livestock grazing.
- Persecution as a pest species.
- Accidental mortality in traps laid for other species.

Conservation Measures in Place

None.

Conservation Recommendations

i) Conduct surveys of this species using camera traps and indirect survey methods within suitable habitats in Bardia National Park, Chitwan National Park and Shukla Phanta Wildlife reserve to determine occupancy of this species within protected areas. Extend survey to include areas of suitable habitat outside these areas including interviews with local people once species presence is confirmed.

ii) Increase education and awareness programmes in areas in which the species occurs.

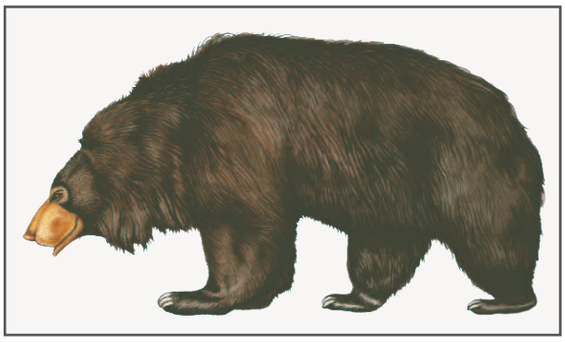
iii) Incorporate species conservation needs into management plans.

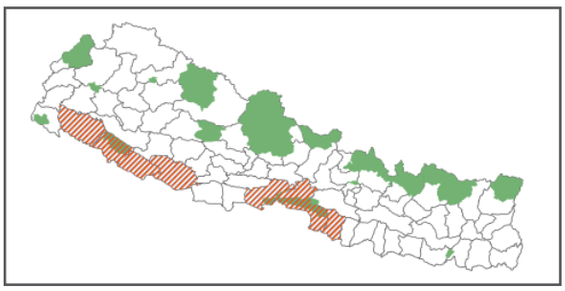
iv) Conduct research into life-history traits.

References

Prater 1971, Suwal and Verheugt 1995, Vanderhaar and Hwang 2003 (and reference therein), Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

36) ***Melursus ursinus*** (Shaw, 1791)





Common Names
Sloth Bear (English); Kathe Bhalu (Nepali)

Species Description
A shaggy black animal with a long flexible grey coloured snout, cream ring around eyes and cream 'horseshoe' on chest. Long claws.

Species Ecology
Sloth Bears occur in a wide variety of habitats ranging from grasslands, thorn scrub, sal forest, moist evergreen forest and riverine forest. The main food sources for this species are termites, honey, berries, roots, carrion, insects and fruit.

Sloth Bears have an average litter size of two cubs after a gestation period of approximately five months.

Conservation Status
Global: Vulnerable A2cd+4cd; C1
National: Endangered C2a(i); D1
Rationale for assessment: The Sloth Bear (*Melursus ursinus*) has been assessed as Endangered under criterion C in view of a small population suspected to consist of fewer than 250 mature individuals and anticipated future population declines of at least 20% over the next five years. The threats to this species include poaching and trapping for trade in gall bladder and for use as dancing bears and further persecution due to human-wildlife conflict, and have not yet been effectively addressed. Sloth Bears also occur in India and Bhutan, however their distribution is now highly fragmented throughout their range which makes recolonisation from outside populations less likely.

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: < 1,000
Adults: < 250 (estimated)
The current population is estimated to consist of less than 1,000 individuals and may be as few as 250 to 500 in a remaining range of approximately 17,000 km^2. Chitwan National Park is considered to have the highest population density of Sloth Bears with an estimated 200 to 250. Based on local information, there is an estimated population of around 40 to 50 individuals in Sundarpur (Trijuga) of Udayapur district and signs and confrontations have been reported from Kapilbastu and Satbariya. The Sloth Bear is rarely sighted in Bardia National Park and thought to have been extirpated in Shukla Phanta Wildlife Reserve, where the last sign was recorded in 1994.

National Distribution
This species is restricted to the Terai area of Nepal and occurs within the protected areas of Bardia National Park, Chitwan National Park, Parsa Wildlife Reserve and surrounding districts of Banke (west of Bhalubang), Bara, Kailali and Dang.

Distribution outside Nepal
Bhutan, India, Sri Lanka.

Main Threats
- Habitat loss, degradation and fragmentation due to human settlements, conversion of land for agriculture, deforestation and livestock grazing.
- Retaliatory killing in response to crop raiding or human injury.
- Poaching for gall bladder.

- Trapping for use as dancing bears.

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct survey using camera traps, GPS collars and indirect sign survey methods in Bardia National Park, Chitwan National Park and Shukla Phanta Wildlife Reserve to establish this species presence within protected areas, movements and home range sizes; extend the study to outside these areas and to areas of suitable habitats based on interviews with local people and reported sightings.
ii) Enhance law enforcement both within and outside protected areas.
iii) Consider translocations of this species from areas of high occupancy (for example, Chitwan National Park to areas of suitable habitats such as in Bardia National Park and Shukla Phanta Wildlife Reserve).
iv)Implement community based monitoring and increase education and awareness programmes focussing on this species.

References

Laurie and Seidensticker 1977, Servheen *et al*. 1999 (and references therein), Yoganand *et al*. (in press) (and references therein),
Rajbhandari 2000 (and references therein), Ernst 2003, Harka Man Lama (pers. comm.) 2010, Binti Ram Tharu (pers. comm.) 2010,
Naresh Subedi (pers. comm.) 2010, Rinjan Shrestha (pers. comm.) 2010,
Nepal Red List of Mammals Field Tehnicians Workshop 2010.

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37) ***Neofelis nebulosa*** (Griffith, 1821)

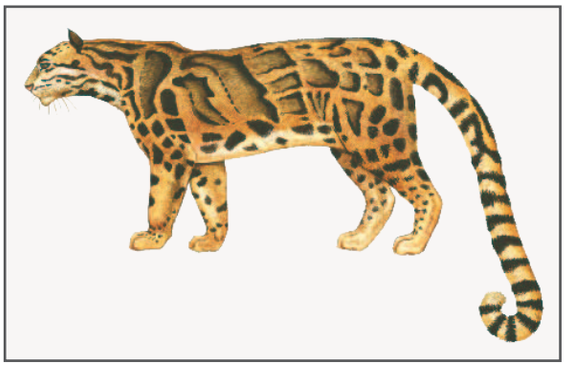
Common Names
Clouded Leopard (English); Dhwase Chituwa (Nepali)

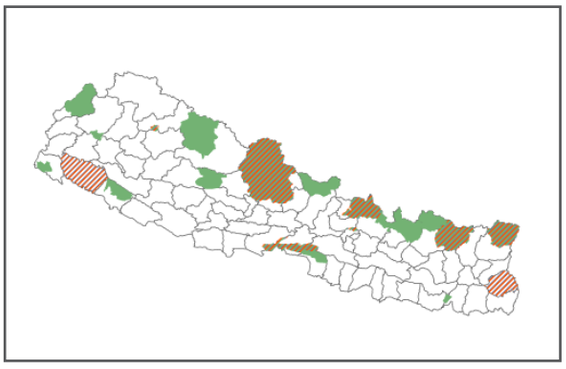
Species Description
Warm ochre coat with grey elliptical clouds edged with black. These turn into black oval spots on the legs and into blurred rings on its long tail. Its head is spotted, with two broad bars on its neck and stripes on its cheek. The back of each ear is black with a grey spot in the middle.

Species Ecology
The Clouded Leopard occurs in primary evergreen forest, moist subtropical semi-deciduous forest, selectively logged forest, degraded woodland, tall grassland, and marginal scrub forest. This species feeds on small mammals and birds.

Clouded Leopards become sexually mature at approximately two years of age. After a gestation period of 85 to 93 days, a litter of between one to five young is produced.

Conservation status
Global: Vulnerable C1+2a(i)
National: Endangered B1ab(iii,v); C2a(i); D





Rationale for assessment: The Clouded Leopard (*Neofelis nebulosa*) has been assessed as Endangered under criteria B, C and D. The population of this species in Nepal is very small and believed to consist of less than 100 individuals with a continuing decline in the population as a result of ongoing and unmiti-

gated threats, namely poaching for the species' fur, persecution and habitat loss. Estimated numbers and observations of the Clouded Leopard in Nepal have previously been so low that the species was believed to be regionally extinct. There are no specific conservation measures in place for this species and the drivers of decline are anticipated to continue causing future declines. The Clouded Leopard does occur in neighbouring areas of China, however the distribution is not well known and poaching and habitat loss are likely to have caused declines in these areas as well.

Legal Status

CITES Appendix I
Included in the CITES CoP decision 12.5 and 14.5 for the conservation of ABC (Asian Big Cats)
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

Total: <100
Trend: Decreasing
This species is rarely observed with an estimated population of less than 100 individuals and considered to be in decline. Before the documentation of four Clouded Leopards during 1987 to 1988, the only previous record of this species in Nepal was from 1863 and therefore was previously believed to be extinct.

National Distribution

This species has been reported to occur in the protected areas of Annapurna Conservation Area, Chitwan National Park, Kanchanjunga Conservation Area (skin seized four years ago), Langtang National Park (one casualty recorded in Langtang 10 years ago), Makalu Barun (two pelts were recently recorded from the buffer zone area of the park), Rara National Park, Shivapuri Nagarjun National Park and Ghodaghodi Lake Area and districts of Ilam, Kailali, Kaski. However, Nowell and Jackson (1996) restrict its distribution to Langtang National Park and along the mid-hills eastwards. Recent information is lacking and current status and distribution needs to be confirmed.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

Main Threats

- Habitat loss and degradation due to human settlements, overgrazing and deforestation.
- Poaching for fur.
- Retaliatory killing in response to livestock depredation.

Conservation Measures in Place

None.

Conservation Recommendations

i) Identify and ground verify key habitats of the species.
ii) Obtain distribution and population status of the species in identified areas particularly in protected areas.
iii) Set-up protection and management programmes for the species and its key habitats through government, NGO and community participation.
iv) Conduct awareness programmes among the communities residing in the species range.
v) Set-up/enhance law enforcement in government and community systems.
vi) Improve guarding systems to minimise livestock losses and develop livestock compensation schemes to mitigate human-carnivore conflict.

References

Dinerstein and Mehta 1989, Rabinowitz *et al*. 1987, Suwal and Verheught 1995, Nowell and Jackson 1996, IUCN Nepal 2004, Baral and Inskipp 2005, Grassman *et al.* 2005a, WWF-Nepal and DNPWC 2006, Austin *et al.* 2007, Kafle *et al.* 2007, Jhamak B Karki (pers. comm.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010, Yadav Ghimirey (pers. comm.) 2010, The Clouded Leopard Project 2010.

38) ***Panthera tigris*** (Mazak, 1968)
Subspecies *Panthera tigris tigris* (Linnaeus, 1758)

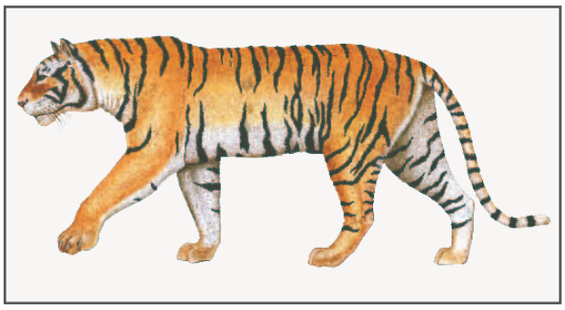
Common Names
Royal Bengal Tiger (English); Bagh (Nepali)

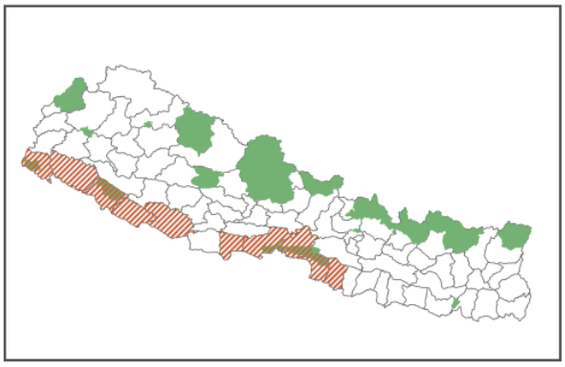
Species Description
Orange coat with black stripes. The back of the ears are black with white spot. Long banded tail. White undersides.

Species Ecology
Royal Bengal Tigers live in humid evergreen forests, dry open jungle and grassy swamps of the Terai. The Terai grasslands, where a large percentage of tigers are distributed, are one of the most critically threatened tiger habitats in the world. Smith *et al.* (1998) conducted a study of tiger distribution and habitat quality in Nepal and suggested that when the ratio of good-to-poor habitat drops below 50%, tigers no longer breed; when it drops below 30%, tigers no longer occupy an area. The main diet consists of medium to large ungulates such as Wild Boar, Chital, Hog Deer, Sambar and will also predate on livestock.

Age at first reproduction is three years and females produce a litter of two to five cubs after a gestation of 103 days. The overall lifespan of a Royal Bengal Tiger can be up to 20 years.

Conservation Status
Global: Endangered A2bcd+4bcd; C1+2a (i)
National: Endangered A2acd; C2a(i); D
Rationale for assessment: The Royal Bengal Tiger (*Panthera tigris*) has been assessed as Endangered under criteria A, C and D. This species has experienced significant population declines of at least 50% over three generations (estimated as 15 years, with the average generation time of Royal Bengal Tigers being 5 years), mainly due to poaching for illegal trade in body parts. The population remains small with 155 mature individuals existing in few locations and mainly within protected areas. The populations are heavily fragmented due to habitat loss and modification from human encroachment and movement between these areas is likely to be limited due to a lack of continuous habitat and because of increased threats outside of the protected areas, particularly human-wildlife





conflict and retaliatory killings. Royal Bengal Tigers do occur in neighbouring areas of India, but also as highly fragmented sub-populations.

Legal Status
CITES Appendix I
Included in the CITES CoP decision 12.5 and 14.5 for the conservation of ABC (Asian Big Cats)
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. This species primarily occurs within protected areas.

National Population Size
Adults: 155
The current total number of adult tigers in Nepal is estimated to be 155 (range 124 to 229), including the most recent census results from Chitwan National Park (Dec 2009 to March 2010), which revealed 125 (range 95 to 185) adult tigers in the whole Chitwan National Park area, including Churia. Estimates of adult tiger populations in the other protected areas known to be occupied by tigers are taken from the December 2008 to March 2009 camera trap census: Bardia National Park, 18 (range 17 to 29); Parsa Wildlife Reserve, 4; Shukla Phanta Wildlife Reserve, 8 (with a range 8 to14).

National Distribution
Royal Bengal Tiger populations exist in fragmented locations in the Terai region and core sub populations are concentrated in the protected areas of Bardia National Park, Chitwan National Park, Parsa Wildlife Reserve and Shukla Phanta Wildlife Reserve and the districts of Banke, Bara, Bardia, Chitwan, Dang, Kailali, Kanchanpur, Makawanpur, Nawalparasi, Parsa and Rupandehi. This area was once a continuous subtropical forest zone but tigers are now isolated to the remnants of remaining suitable habitat. Most tigers exist within protected areas however approximately a quarter remain outside.

Distribution outside Nepal
India, Bangladesh, Bhutan.

Main Threats
- Poaching and illegal trade.
- Reduction in prey base.
- Habitat fragmentation or modification.
- Human-tiger conflict.

Conservation Measures in Place
Tiger Conservation Action Plan 2008-2012 of Nepal TAL (Terai Arc Landscape) - Nepal Strategic Plan 2004-2014. The Nepal Government has made a commitment to double Tiger numbers by 2022. A number of national and international NGOs are specifically supporting various conservation activities and programmes in the remaining protected areas to conserve tigers. Human-wildlife conflict issues are being addressed by the Government providing relief to victim's families.

Conservation Recommendations
i) Enhance law enforcement systems for strict protection of wild tigers and their core breeding areas.
ii) Implement systematic patrols in both protected areas and buffer zones.
iii) Strengthen intelligence network.
iv) Maintain large prey base population and their habitats.
v) Implement capacity development programmes to achieve effective landscape and protected area management.
vi) Stop infrastructure/development projects in core tiger breeding areas.
vii) Develop strategies for protecting tigers from retaliatory killings; develop strategies for effective and sustainable conflict mitigation.
viii) Increase awareness, education and community engagement activities.
ix) Enhance trans-boundary cooperation for combating illegal trade in wildlife, maintaining ecological integrity in the tiger landscapes and promoting tiger tourism.
x) Protect national and international biological corridors, controlling and managing encroachment in the remaining grasslands of Terai.

References
Prater 1971, McDougal 1977, Sunquist 1981, Smith *et al.* 1987, Smith 1993b, Suwal and Verheugt 1995, Smith *et al.* 1997, Gurung *et al.* 2006, DNPWC 2007, Dinerstein 2009, DNPWC 2009abc, Karki *et al.* 2009, Karki 2010.

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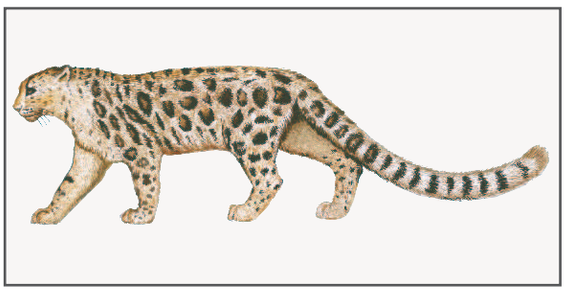
39) ***Panthera uncia*** (Schreber, 1775)



Common Names
Snow Leopard (English); Hiun Chituwa (Nepali)

Synonyms
Uncia uncia (Schreber, 1775)

Species Description
Has a luxuriant pale smokey-grey coat with dark grey rosettes, black spots on limbs and face.

Species Ecology

Snow Leopards occur in cold, arid and semi-arid shrub land, alpine and subalpine areas, grasslands and open forests, favouring steep terrain characterised by cliffs, ridges, gullies and rocky outcrops at elevations of between 3,000 m and 5,500 m. The main prey species of Snow Leopards are Ibex, Blue Sheep and the Himalayan Tahr, although smaller species including Marmot, Pika, Hares, small rodents and game birds such as the Snowcock and Chukar Partridge also supplement the Snow Leopard diet. Considerable predation is reported on domestic livestock, usually goats and sheep.

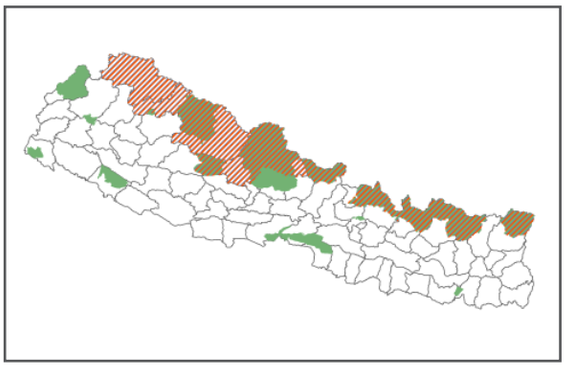
Age at first reproduction is estimated at 30 months and females produce litters of between two to three cubs after a gestation period of 90 to 103 days. Captive females have been known to breed to up to 15 years of age; however the longevity of Snow Leopards in the wild is about 10-12 years.

Conservation Status

Global: Endangered C1
National: Endangered D
Rationale for assessment: The Snow Leopard (*Panthera uncia*) has been assessed as Endangered under criterion D in view of a small population estimated to consist of between 300-500 individuals overall, with less than 200 mature individuals. This species is restricted to areas of the high Himalaya and is limited by the lack of connectivity between areas of suitable habitat. It is suspected that individuals cross the northern border into China, however these movements are not well documented and require further research. Threats to Snow Leopards include poaching for trade in their pelts and retaliatory killings, often in response to depredation on livestock which may increase as a consequence to reductions in their natural prey base. These threats persist on both sides of the political border and trans-boundary research and conservation actions will be required to prevent further decline of this species and its habitat.

Legal Status

CITES Appendix I
Included in the CITES CoP decision 12.5 and 14.5 for the conservation of ABC (Asian Big Cats)
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.



National Population Size

Total: 300-500
Adults: < 200
The total population of Snow Leopards existing in the Nepal Himalaya is estimated to be 300 to 500 individuals. The global Snow Leopard population is estimated to be 4,510 to 7,350 individuals. In east Nepal, the populations are significantly lower due to a more fragmented habitat.

National Distribution

Snow Leopards are distributed along the northern border with China (Tibet) and occur within seven mountain protected areas: Annapurna Conservation Area, Kanchanjunga Conservation Area, Langtang National Park, Makalu Barun National Park, Manaslu Conservation Area, Sagarmatha National Park and Shey Phoksundo National Park. The largest populations are in the districts of Dolpo, Humla, Mugu, Manang, Mustang and Myagdi.

Distribution outside Nepal

Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Russian Federation, Tajikistan, Uzbekistan.

Main Threats

- Human-Snow Leopard conflict.
- Reduction of natural prey base.
- Habitat loss and fragmentation due to deforestation, human settlements and livestock grazing.
- None or weak trans-boundary cooperation.
- Poaching and illegal trade.

Conservation Measures in Place

Government of Nepal's Sacred Himalayan Landscape Programme. The Snow Leopard is considered as one of the mountain deities by the Sherpas. This religious belief is encouraging for the long-term survival of Snow Leopards in Sagarmatha, as there is unlikely to be retribution when livestock are depredated.

Conservation Recommendations

i) Establish Snow Leopard population status and distribution.
ii) Obtain baseline information on the ecology, behaviour and ranging patterns of the species through the use of camera traps and GPS satellite collars.
iii) Obtain baseline information on the food habits; Establish status and distribution of the major prey species.
iv) Improve management of prey species through establishing optimal mixed grazing systems.
v) Create livestock free zones in species priority areas to improve habitats (removing grazing competition for prey species and human-carnivore conflict).
vi) Conduct awareness programmes among the communities residing in the species range.
vii) Support livestock herders in making livestock pen/corrals predator proof.
viii) Develop livestock compensation schemes to mitigate human-Snow Leopard conflict.
ix) Train and mobilise local community members to control carcass poisoning.
x) Incorporate species range outside protected areas in management plans.
xi) Establish trans-boundary protected areas.

References

Roberts 1977, Schaller 1977, Jackson 1979, Fox 1989, Jackson and Ahlborn 1990, Gunderson 1999, Mishra *et al.* 2003 (and references therein), Ale and Karky 2002, Ernst 2003, McCarthy *et al.* 2003, DNPWC 2004, Gurung and Thapa 2004, Chetri 2005a, Ale *et al.* 2007, Dr S. M. Amatya (pers. comm.) 2009, Lovari *et al.* 2009, Kamal Thapa (pers. comm.) 2010, Rinjan Shrestha (pers. comm.) 2010, WWF-Nepal 2010.

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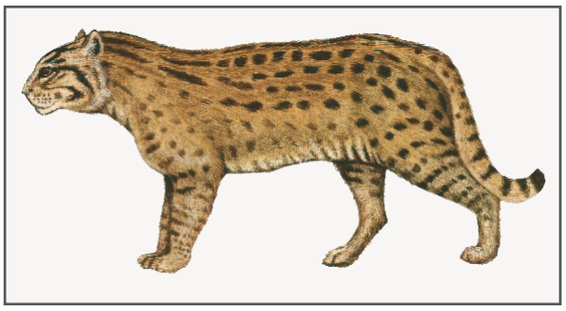
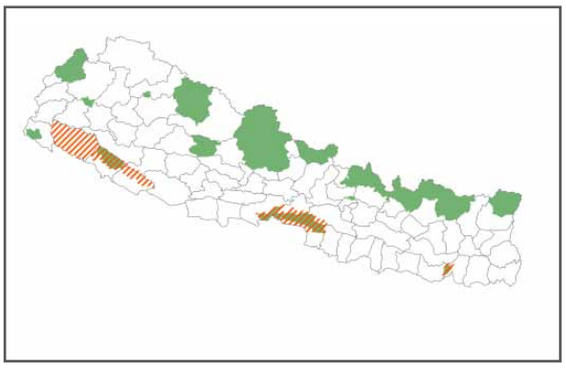
40) ***Prionailurus viverrinus*** (Bennett, 1833)





Common Names

Fishing Cat (English); Malaha Biralo (Nepali)

Species Description

Larger than the Leopard and Jungle Cats. The Fishing Cat has an olive brown coat, short legs and stocky body. Black elongated spots in parallel lines over the back, merging into longitudinal stripes on the neck, pale cheeks have two darker stripes.

Species Ecology

The Fishing Cat is commonly found in wetlands, marshy grasslands and riveriene belts and edges of lakes. Fishing Cats are good swimmers and prey primarily on fish but will also feed on birds, crabs and small mammals. They are capable of taking large mammal prey, including small Chital fawns and have been seen scavenging livestock carcasses and tiger kills.

The gestation period is 63 days, after which the female gives birth to one to four kittens.

Conservation Status

Global: Endangered A2cd+4cd
National: Endangered C2a(i); D1
Rationale for assessment: The Fishing Cat

(*Prionailurus viverrinus*) has been nationally assessed as Endangered under criteria C and D. This species is suspected to have approximately 150-200 mature individuals restricted to the Terai. Although it is suspected to occur in most of the Terai protected areas, it is only regularly reported and has been observed to breed from Koshi Tappu Wildlife Reserve. The sub-populations of this species are likely to be relatively small and intermixing between these sub populations may be limited due to the fragmented nature of the species habitat and the increased threats outside of protected areas, however further research on their movement patterns is required. The Fishing Cat also occurs in India within suitable areas of wetland habitats, however its distribution is discontinuous and it is unlikely that animals from India could or would recolonize suitable habitat in Nepal. It is likely that this species and its habitat will continue to decline as a consequence of over-fishing (and methods used), conversion of its wetland habitat and poaching for its pelt. These threats are present in most areas of this species' global range.

Legal Status

CITES Appendix II

National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size

Adults: 150-200 (estimated)

This species is not considered common and the population is estimated to be 150 to 200 individuals in Nepal. The Fishing Cat has bred in Koshi Tappu Wildlife Reserve and one kitten was regularly observed for a number of months in 2009, although this is the only area from where the animal is regularly reported.

National Distribution

The Fishing Cat has a distribution restricted to the Terai region and has been reported from Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve mainly in the flood plains of the Karnali, Babai, Rapti, Narayani, Koshi and Reu Rivers and Ghodaghodi Tal.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, India (mainly eastern India into Bangladesh, now extirpated from Bharatpur region and possibly the southern Western Ghats), Indonesia, Lao PDR, Myanmar, Sri Lanka, Thailand, Viet Nam.

Main Threats

- Poaching for fur.
- Habitat loss including wetland destruction and degradation.
- Decreasing fish population because of poisoning and over-harvesting.

Conservation Measures in Place

None. Previous research on this species includes a radio-telemetry study that took place in Nepal's Chitwan National Park in the early 1990s.

Conservation Recommendations

i) Conduct surveys using camera traps, indirect sign survey and radio collaring to establish occupancy, populations size and ranging patterns.

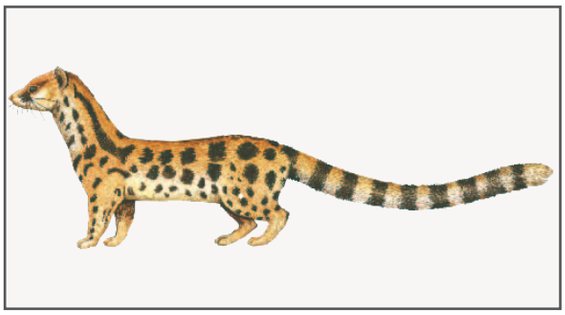
ii) Develop and implement management plans for key wetland areas.

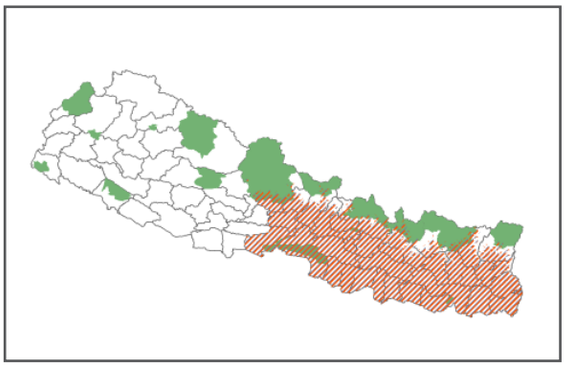
iii) Increase education and awareness programmes to decrease pollution and over-fishing of wetland habitat; Increase community engagement in conservation activities for this species.

References

Suwal and Verheugt 1995, Nowell and Jackson 1996, Sunquist and Sunquist 2002, Baral and Shah 2008, Hem Baral (pers. comm.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010.

41) ***Prionodon pardicolor*** (Hodgson, 1842)





Common Names
Spotted Linsang (English); Silu biralo, Silu (Nepali)

Species Description
This species has a low slung, weasel-like body and long tail. Richer in colouration than the other spotted civets. Coat ranges from the ochre-brown to deep buff and the spinal area is darker than the flanks. The black spots on its coat are set in lines off the spine, while the markings on the flank vary from small spots to large patches. Legs and tail are also spotted with black and white rings.

Species Ecology
The Spotted Linsang inhabits riverine forests and dry undulating grounds feeding on rats and other small rodents.

This species gives birth to a litter of two young.

Conservation Status
Global: Least Concern
National: Endangered C2a(i)
Rationale for assessment: The Spotted Linsang (*Prionodon pardicolor*) has been nationally assessed as Endangered under criterion C due to a small population of approximately 100 individuals based on reports from field scientists and technicians who have rarely observed this species in recent years. Poaching and habitat loss are the main, ongoing threats to this species and it is therefore suspected to be in decline. This species does occur within the neighbouring countries of India and China but whether any cross-boundary movement occurs is not known.

Legal Status
Appendix I CITES
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
Total: 100 (estimated)
There is no information available on the population size or status of this species in Nepal. Field scientists and technicians report the species as rarely sighted and estimate a population of less than 100 individuals.

National Distribution
This species occurs from Annapurna Conservation Area to east Nepal below elevations of 2,000 m and has been observed in Chitwan National Park (Hetauda and Island Jungle Resort areas) and the Lelep area of Kanchenjunga Conservation Area.

Distribution outside Nepal
Cambodia, China (central to southern China, western Sichuan, Yunnan, Guizhou, Xizang, Hunan, Jiangxi, Guangdong, and Guangxi), India (Sikkim, Assam, Bengal and other states of north-east India), Lao PDR, Myanmar, Thailand, Viet Nam.

Main Threats
- Poaching for fur.
- Habitat loss and degradation due to human settlements, clearing for agriculture and livestock grazing, collection of firewood.

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct survey using camera traps and indirect sign surveys to establish occupancy and population size in areas of suitable habitat both inside and out

of protected areas.
ii) Implement a captive breeding programme for this species with intention of reintroductions to suitable habitats.
iii) Incorporate species conservation needs into protected area management plans and law enforcement strategies.

References

Ernst 2003, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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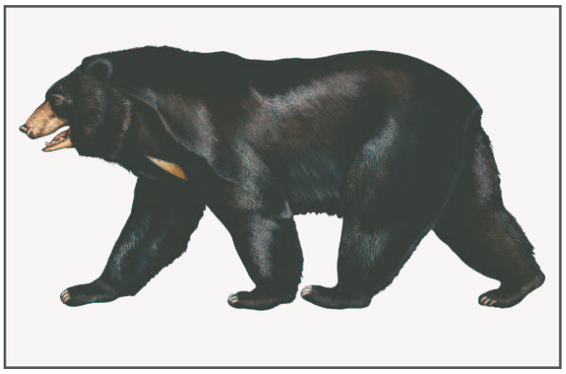
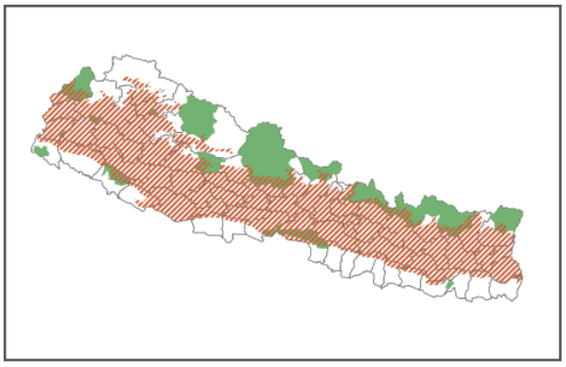
42) ***Ursus thibetanus*** (G. (Baron) Cuvier 1823)





Common Names
Himalayan Black Bear (English); Kalo Bhalu (Nepali)

Species Description
Large bear. Short black fur, which is much shorter than that of the Sloth Bear, similar cream patch on chest.

Species Ecology
The Himalayan Black Bear occurs in dense, mixed broadleaf forests and steep forest hills, using rock caves and tree hollows as shelter. The estimated available area of suitable habitat for this species has declined by approximately 30% over the past 10 years.

Age at first reproduction is between four to five years, producing litters of one or two cubs every other year. Maximum lifespan is over 30 years, but average lifespan is less in the wild.

Conservation Status
Global: Vulnerable A2cd+3d+4d
National: Endangered C2a(i)
Rationale for assessment: The Himalayan Black Bear (*Ursus thibetanus*) has been nationally assessed as Endangered under criterion C in view of a small estimated population size of approximately 500 individuals which is observed to be decreasing and is likely to suffer further declines in the future due to habitat loss and fragmentation caused by human encroachment, livestock grazing and deforestation, decreasing natural prey base, poaching for body parts and retaliatory killings in response to human-wildlife conflict. This species does occur within the neighbouring countries of China and India, however a patchy distribution across its range and discontinuous habitat suggest it is unlikely that there is significant movement, if any, between these areas and Nepal, although further research needs to confirm this.

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: 500 (estimated)
Trend: Decreasing (estimated, observed)
The population is estimated to consist of 500 individuals. This species is considered uncommon despite its broad distribution, and the population is observed to be in decline.

National Distribution
The Himalayan Black Bear occurs across the mid-hills and within all of the Himalayan Protected Areas (Kanchenjunga Conservation Area, Makalu-Barun,

Sagarmatha, Langtang, Shivapuri Nagarjun, Shey-Phoksundo, Rara and Khaptad National Parks, and Annapurna and Manaslu Conservation Areas, and Dhorpatan Hunting Reserve) and from the districts of Dhading, Surkhet, Dailekh, Dadeldhura, Doti, Bajura, Rukum and Myagdi. Although it is considered to occur mainly between elevations of 1,400 m to 4,000 m, it was recorded in Bardia National Park, Babai Valley in a 1999 camera trap.

Distribution outside Nepal

Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Islamic Republic of Iran, Japan, Democratic People's Republic of Korea, Republic of Korea, Lao PDR, Myanmar, Pakistan, Russian Federation, Taiwan, Province of China, Thailand, Viet Nam.

Main Threats

- Poaching for trade in body parts.
- Habitat loss and fragmentation due to human settlements, clearing for agriculture and livestock grazing, collection of firewood.
- Human-wildlife conflict and retaliatory killings.

Conservation Measures in Place

None.

Conservation Recommendations

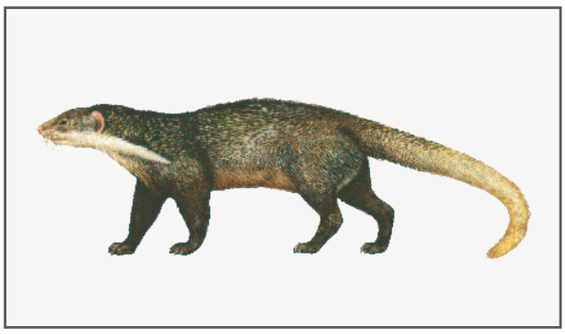
i) Undertake surveys of Himalayan Black Bear using camera traps, radio collaring and indirect sign surveys in all areas of suitable habitat both within and outside protected areas to establish baseline data on distribution and population status.
ii) Enhance law enforcement inside and out of protected areas to reduce poaching and illegal wildlife trade of bear parts (paws, skins, bile); implement community-based anti-poaching units in conservation areas, buffer zones and community forests.
iii) Create community-based night vigilance with local people and provide training in effective methods of preventing crop raiding from bears and other wild animals in areas of highest risk.
iv) Initiate Department of National Parks and Wildlife Conservation led coordination of conservation measures with local people and related organisations; control trade by creating a network with Nepal Police, Nepal Army, youth clubs, NGOs, representatives of local people and conservation committee members.
v) Prevent retaliatory killing by mitigating human-bear conflict and introducing non fatal methods of deterrent and increasing awareness.
vi) Provide compensation and support to the bear victims to reduce negative attitudes and retaliatory killings. The Government of Nepal has recently finalised regulations for compensation schemes to wildlife victims.
vii) Raise awareness through community-based conservation education programmes especially within conservation areas, buffer zones and community forests, which support the local people and their livelihoods and help reduce human-bear conflict.
viii) Develop management plan to improve / maintain areas of prime habitat in community forests and buffer zones.

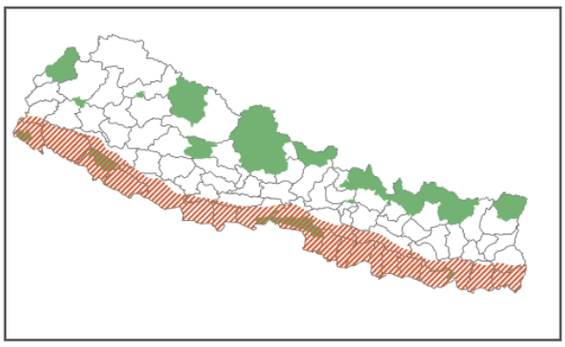
References

Suwal and Verheugt 1995, Stubblefield and Shrestha 2007, Baral and Shah 2008, Garshelis and Steinmetz 2008, Bhupendra Prasad Yadav (pers. comm.) 2010, Nepal Red List of Mammals Technicians Workshop 2010.

VULNERABLE

43) ***Herpestes urva*** (Hodgson, 1836)





Common Names
Crab-eating Mongoose (English); Gangate Nyaurimusa (Nepali)

Species Description
A large mongoose with a broad white stripe on its neck, which stretches from the cheeks to the chest. Its throat is grey with lighter hair tips giving it a speckled look. The soles of its hind feet are hairy and tail is uniformly coloured with a paler tip.

Species Ecology
The Crab-eating Mongoose occurs in tropical and subtropical evergreen and moist deciduous forests with a diet consisting of crabs, birds, rodents, lizards and snakes.

The life history traits of this species are not well known but it is likely they will be similar to that of other mongoose species in Nepal.

Conservation Status
Global: Least Concern
National: Vulnerable C2a(i)
Rationale for assessment: The Crab-eating Mongoose (*Herpestes urva*) has been nationally assessed as Vulnerable under criterion C in view of a small population estimated to consist of approximately 1,000 individuals (based on observations) which continues to be in decline due to threats to this species' habitats, poaching and natural prey base.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: < 1,000
Trend: Decreasing (estimated)
This species is estimated to have a population size of less than 1,000 individuals in Nepal. The population is observed to be in decline.

National Distribution
This species occurs across Nepal between 100 m and 1,300 m including within the protected areas of Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve and Shukla Phanta Wildlife Reserve and is fairly common in the lowland forests of eastern Nepal (for example, Dharan Forests and Mai Valley forests).

Distribution outside Nepal
Bangladesh, Cambodia, China (South east), India (North eastern), Lao PDR, Malaysia, Myanmar, Taiwan Province of China, Thailand, Viet Nam.

Main Threats
- Poaching for fur.
- Habitat loss and degradation due to draining of wetlands, unmanaged pollution of waterways, clearing of forests for livestock and agriculture.

Conservation Measures in Place
None.

Conservation Recommendations

i) Conduct research using direct and indirect sign surveys to establish occupancy, ecology and population size of this species.
ii) Develop local community conservation awareness programmes to prevent any hunting and disturbance to the species. Discourage illegal trade on the live animal and its body parts.
iii) Ensure that forested areas outside protected areas remain good habitat for the species with adequate food supply.
iv) Develop captive breeding programmes to study the life-history traits of this species and to provide a source for potential reintroduction programmes in the future.

References

Suwal and Verheught 1995, Nepal Red List of Mammals Field Technicians Workshop 2010, Hem Sagar Baral (pers. obs.) 2010.

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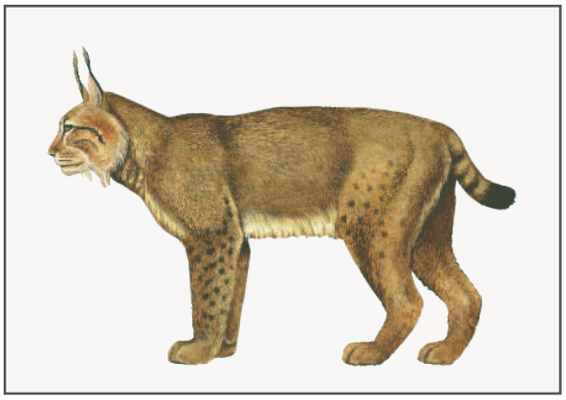
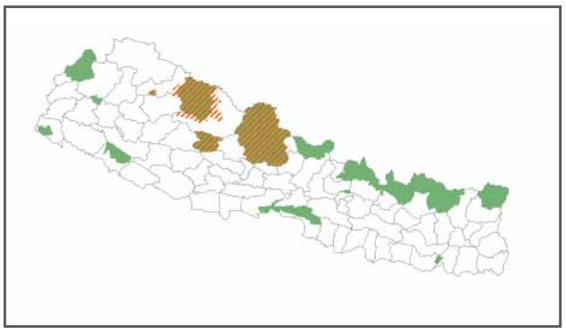
44) ***Lynx lynx*** (Linnaeus, 1758)





Common Names

Eurasian Lynx, Lynx (English); Pahan Biralo, Phyaku Biralo (Nepali)

Species Description

Sandy grey coat, black spots mainly on the legs (although can occur all over). Short tail. Longer hair around the face like a small mane. Characteristic black tufts on the tips of the ears. Large paws.

Species Ecology

The Eurasian Lynx occurs at high elevations in open scrubby lands and areas with dense forest cover and tends to avoid areas of high human activity such as agricultural areas and major roads. Home range size varies widely and densities are typically one to three adults per 100 km^2. The Eurasian Lynx feeds mainly on ungulate prey, although it relies on smaller prey where and when ungulates are less abundant. Eurasian Lynx also predate on livestock and losses can be quite significant, for example in 2003 the species was responsible for 7% of livestock taken by wild predators in the VDCs of Chhosher, Chhonup, Surkhang and Tsarang in the Upper Mustang district of the Annapurna Conservation Area, with the majority of kills being goat (86%).

Females become sexually mature at around two years and have been recorded to be sexually active up to an age of 14 years. Gestation period is between 67 to 74 days after which a litter of between one to five kittens is born.

Conservation Status

Global: Least Concern
National: Vulnerable B1a; D2
National Vulnerable B1ab (iii); D2
Rationale for assessment: The Eurasian Lynx (*Lynx lynx*) has been nationally assessed as Vulnerable under criterion B and D due to a suspected small population (based on infrequency of observations) and small estimated extent of occurrence from less than 10 locations. The threats to this species include persecution and retaliatory killings in response to depredation on livestock and poaching for its fur. These threats are likely to be also present in the

species' range in neighbouring China (Tibetan plateau), but individuals may move across the border and into Nepal. Further research needs to establish the level of movement between populations on either side of the political border.

Legal Status

CITES Appendix II
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority.

National Population Size

Trend: Decreasing (estimated)
There are no population estimates available for this species in Nepal, but wildlife field staff report that it is rarely sighted, possibly having a population as few as 100 individuals and is believed to be in decline.

National Distribution

This species has a potential distribution across the whole Trans-Himalaya including the protected areas of the Annapurna Conservation Area – Upper Mustang (the eastern limit of its range in Nepal where is had been observed), Dhorpatan Hunting Reserve, Rara National Park and Shey Phoksundo National Park.

Distribution outside Nepal

Afghanistan, Albania, Armenia, Austria, Azerbaijan, Belarus, Bhutan, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech Republic, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, India, Islamic Republic of Iran, Iraq, Italy, Kazakhstan, Democratic People's Republic of Korea, Kyrgyzstan, Latvia, Lithuania, the former Yugoslav Republic Macedonia, Moldova, Mongolia, Montenegro, Norway, Pakistan, Poland, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan.

Main Threats

- Poaching for fur.
- Human-wildlife conflict and persecution.
- Habitat loss and alteration due to human settlements, conversion of land for agriculture and livestock grazing.
- Disease (rabies or parvovirus).

Conservation Measures in Place

None.

Conservation Recommendations

i) Identify and verify key habitats of the species.
ii) Obtain distribution and population status of the species in identified areas particularly in protected areas.
iii) Set up protection and management programmes for the species and its key habitats through government, NGO and community participation.
iv) Conduct awareness programmes among the communities residing in the species range.
v) Train and mobilise local community members to control carcass poisoning.
vi) Improve guarding systems to minimise livestock losses and develop livestock compensation schemes to mitigate human-wildlife conflict.
vii) Develop conservation action plan for this species, co-predators and prey (or as part of a carnivore action plan).
viii) Initiate trans-boundary conservation initiatives with neighbouring Eurasian Lynx range countries.

References

Nowell and Jackson 1996, Breitenmoser *et al.* 2000, Sunquist and Sunquist 2002, Pandey and Chetri 2004, Baral and Shah 2008, Basille *et al.* 2008, Kang and Alexander 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

45) ***Panthera pardus*** (Schlegel, 1857)

Common Names
Leopard (English); Chituwa (Nepali)

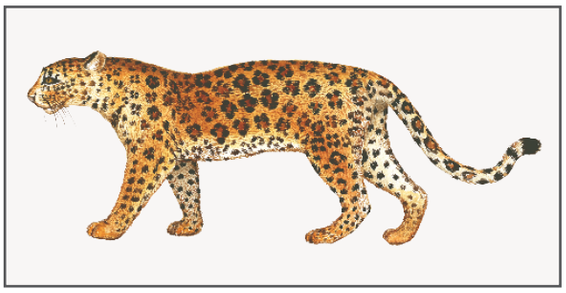
Species Description
Smaller than the tiger. Yellow coat marked with black rosettes, although the colour of the coat can vary from gold to tawny. Small spotted head, long tail and white undersides.

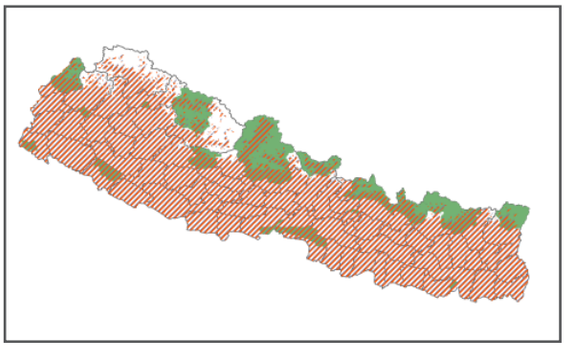
Species Ecology
Leopards are generalist species and therefore found in a variety of habitats, from desert to rainforest and high mountains. They are also very opportunistic animals and have an extremely flexible diet ranging from mice and hares to large antelope.

Age at first reproduction for this species is approximately 34 months and after a gestation period of just over three months produce a litter of two to three young.

Conservation Status
Global: Near Threatened
National: Vulnerable D1
Rationale for assessment: The Leopard (*Panthera pardus*) has been nationally assessed as Vulnerable under criterion D based on a population suspected to consist of fewer than 1,000 mature individuals. Previously regarded as common, recent studies have established that in some areas Leopard populations are declining due to habitat loss and fragmentation, decreasing abundance of the natural prey base, persecution and retaliatory killings in response to human-wildlife conflict such as attacks on humans and livestock depredation. It may be that in certain areas the species also experiences competition with other large carnivores such as tigers. Leopards were once considered present in almost all districts of Nepal, but due to the species' suspected decline this may no longer be true.

Legal Status
CITES Appendix I
Included in the CITES CoP decision 12.5 and 14.5 for the conservation of ABC (Asian Big Cats).
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.





National Population Size
Total: < 1,000 (estimated)
Trend: Decreasing (estimated)
There are no estimates available for the population of Leopards in Nepal. They are considered by most as relatively common, however recent and ongoing research suggests that the species has declined in numbers. A recent camera trap study carried out in the Makalu Barun area recorded no Leopards after a sampling effort of 1,030 trap nights. In Bardia National Park, Leopards are being possibly displaced by Royal Bengal Tigers through social dominance in prey rich areas.

National Distribution
The species is distributed widely across Nepal in areas below 4,400 m elevation. There is evidence to support the presence of Leopards from 73 districts of the country.

Distribution outside Nepal
Afghanistan, Algeria, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic Chad, China, Congo, The Democratic Republic of the Congo, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Georgia, Ghana, Guinea, Guinea-Bissau, India, Indonesia, Islamic Republic of Iran, Israel, Jordan, Kenya, Democratic People's Republic Korea,

Lao PDR, Liberia, Malawi, Malaysia, Mali, Morocco, Mozambique, Myanmar, Namibia, Niger, Nigeria, Oman, Pakistan, Russian Federation, Rwanda, Saudi Arabia, Senegal, Sierra Leone, Somalia, South Africa, Sri Lanka, Sudan, Swaziland, Tajikistan, Tanzania, Thailand, Togo, Turkey, Turkmenistan, Uganda, United Arab Emirates, Uzbekistan, Viet Nam, Yemen, Zambia, Zimbabwe.

Main Threats

- Human-Leopard conflict and retaliatory killings.
- Reduction in prey base.
- Poaching for trade in fur and bones.

Conservation Measures in Place

This species is likely to benefit from conservation measures in place for the tiger.

Conservation Recommendations

i) Improve prey base inside and outside protected areas through effective habitat management and law enforcement.
ii) Set up/enhance law enforcement in government and community systems.
iii) Develop strategies for protecting leopards from retaliatory killings; develop strategies for effective and sustainable conflict mitigation.
iv) Increase awareness, education and community engagement activities.
v) Develop a management plan for Leopards captured in urban areas including suitable sites for holding and creation of further holding areas, release areas and monitoring of those re-released.

References

Suwal and Verheugt 1995, Ernst 2003, Trude 2003, Baral and Shah 2008, Gavashelishvili and Lukarevskiy 2008, Ghimirey 2010, Tej Thapa (pers. comm.) 2010.

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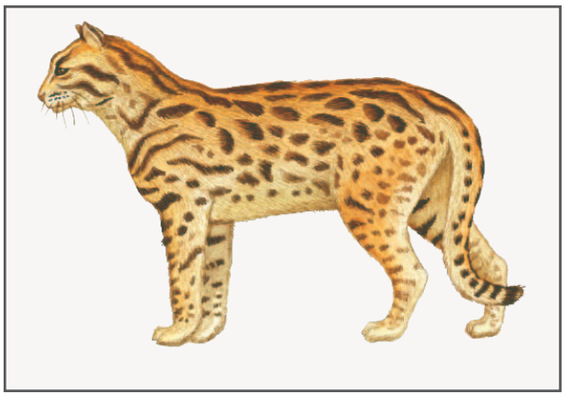
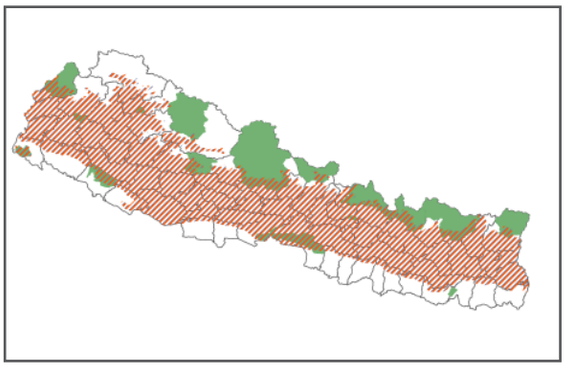
46) ***Prionailurus bengalensis*** (Kerr, 1792)





Common Names

Leopard Cat (English); Chari Bagh (Nepali)

Synonyms

Felis bengalensis

Species Description

Leopard-like small cat. Limbs longer than those of other cats.

Species Ecology

The Leopard Cat occurs in Sal forest, tropical and subtropical forests and dry streams up to 3,254 m. The main diet is comprised of chickens, jungle fowl, other birds and rodents.

Age of first reproduction is approximately 18 months producing a litter of two young after a gestation period of just over two months.

Conservation Status

Global: Least Concern
National: Vulnerable C2a(i)
Rationale for assessment: The Leopard Cat (*Prionailurus bengalensis*) has been nationally assessed as Vulnerable under criterion C in view of a small population size estimated from observations and field records to number approximately 2,500 or less mature individuals across subpopulations

spanning the country. Although the population structure needs further research to confirm numbers, it is not considered likely that any subpopulation will exceed 1,000 mature individuals and that the population as a whole faces decline due to the continuing threats of poaching for the species pelt, persecution in retaliation of livestock depredation and habitat loss as a result of human disturbances. The species is widespread in other countries and it may be that individuals from across the political borders of China and India may be able to disperse into areas of Nepal so long as areas of suitable habitat exist. However, the extent of movement between these regions needs further research.

Legal Status

CITES Appendix II
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

Total: < 2, 500 (estimated)
Trend: Decreasing (estimated)
This species is not considered common and it is estimated that the current population is in decline with possibly fewer than 2,500 individuals.
A recent camera trapping study in Saldim valley (Makalu-Barun National Park) resulted in the identification of at least six individuals based on distinct markings.

National Distribution

This species is reported to occur within the protected areas of Annapurna Conservation Area, Bardia National Park, Chitwan National Park, Dhorpatan Hunting Reserve, Kanchenjunga Conservation Area, Khaptad National Park, Langtang National Park, Manaslu Conservation Area, Parsa Wildlife Reserve, Shukla Phanta Wildlife Reserve and districts in the midhill region namely Bajhang, Doti, Ilam, Kanchanpur, Panchthar and Ramechhap.

Distribution outside Nepal

Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Hong Kong, India, Indonesia, Japan, Republic of Korea, Democratic People's Republic of Korea, Lao PDR, Malaysia, Myanmar, Pakistan, Philippines, Russian Federation, Singapore, Taiwan Province of China, Thailand, Viet Nam.

Main Threats

- Poaching for fur.
- Persecution as a pest species / retaliatory killing in response to livestock depredation.
- Habitat loss due human disturbances and settlements, clearing for agriculture and livestock grazing.

Conservation Measures in Place

None.

Conservation Recommendations

i) Conduct surveys using camera traps, indirect sign surveys and interviews with local people to establish the population size, occupancy and threats to this species.
ii) Identify key habitats and implement suitable management plans.
iii) Increase education and awareness of this species in areas in which it occurs.

References

Suwal and Verheught 1995, Ernst 2003, Ghimirey and Ghimire 2010, Nepal Red List of Mammals Field Technicians Workshop 2010.

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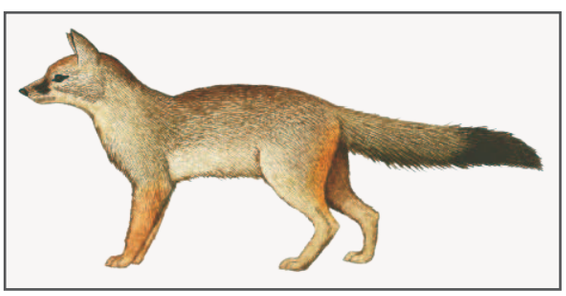
47) ***Vulpes bengalensis*** (Shaw, 1800)



Common Names

Bengal Fox (English); Phusro Phyauro (Nepali)

Species Description

Grey appearance, black tipped tail, legs browner than the body, ears are brown with a black fringe,

small black patches on the muzzle and black tear marks around eye.

Species Ecology

The Bengal Fox occurs near human settlements and in open degraded lands, preferring semi-arid flat to undulating terrain occurring up to 1,350 m and 1,500 m. The Bengal Fox is an omnivorous species, feeding on small mammals, wild birds and chickens, arthropods, termites and fruits.

Age at first reproduction for the Bengal Fox is approximately nine months, producing a litter of two to four young after a gestation period of 50 to 53 days.

Conservation Status

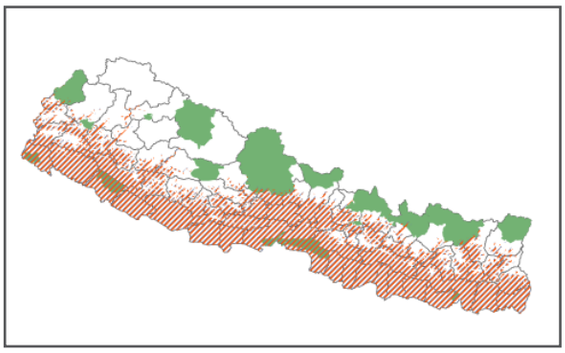
Global: Least Concern
National: Vulnerable C1+2a(i)
Rationale for assessment: The Bengal Fox (*Vulpes bengalensis*) has been nationally assessed as Vulnerable under criterion C based on a small population size of less than 2,500 mature individuals, coupled with a continuous decline in its population of approximately 10% over 10 years based on observations and continued threats causing this species decline. This species is threatened by persecution, retaliatory killings in response to livestock depredation and poaching for its fur and these threats are likely to continue to cause declines in this species' population in Nepal. The Bengal Fox is endemic to the Indian subcontinent and it may be possible that individuals move from India into in areas of suitable habitat in Nepal, however further research needs to establish whether such movement occurs.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

Total: 500 - 2,500 (estimated)
Trend: Decreasing (estimated)



The current population size of this species is not well known with current estimates ranging widely between 500 up to 2,500 individuals. The population is considered to be in decline.

National Distribution

This species has a large distribution including the whole Terai region and up to the mid-hills. It is present within Annapurna Conservation Area, Bardia National Park, Chitwan National Park, Dhorpatan Hunting Reserve, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal

Bangladesh, India, Pakistan.

Main Threats

- Persecution as a pest species/ retaliatory killing in response to depredation on livestock.
- Poaching for fur.

Conservation Measures in Place

None.

Conservation Recommendations

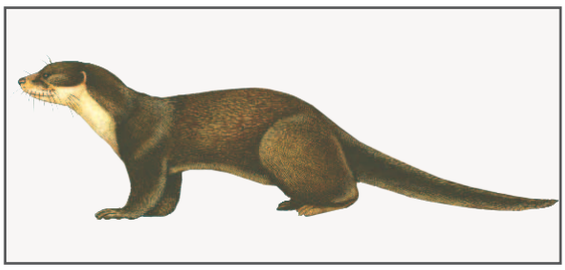
i) Conduct survey of this species in areas of suitable habitats using camera trapping, radio collaring, indirect sign surveys and community surveys to establish baseline data on population status, occupancy and threats.
ii) Increase education and awareness programmes in areas where this species is present including non-lethal methods of deterrents.

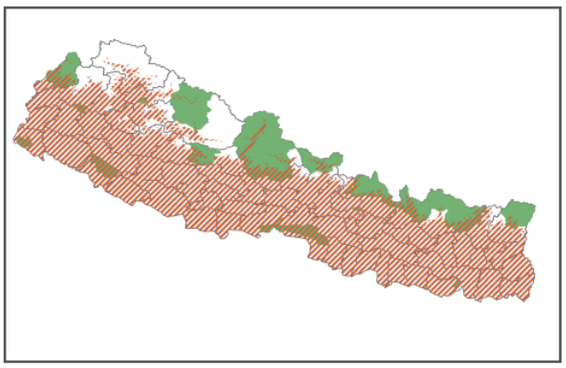
References

Pocock 1936, Mitchell 1977, Johnson *et al.* 1980, Ernst 2003, Gompper and Vanak 2006, Baral and Shah 2008, Home and Jhala 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

NEAR THREATENED

48) ***Lutra lutra*** (Linnaeus, 1758)





Common Names
Eurasian Otter (English); Kalo Oat (Nepali)

Synonyms
Lutra nippon (Imaizumi & Yoshiyuki, 1989)

Species Description
This species has a course, dusky brown coat that looks scruffy when wet. Its underside is light grey and often has dark spots on its lips and nose.

Species Ecology
The Eurasian Otter mainly lives in streams and lakes. During summer (April - June) this species may occur up to 3,660 m, following the upward migration of spawning fish, in winter they return to lower elevations. Fish is the major prey of Eurasian Otter, sometimes exceeding more than 80% of their diet, but they also feed on aquatic insects, reptiles, amphibians, birds, small mammals, and crustaceans.

Female reach sexual maturity at two years, and after a gestation period of approximately 63 to 65 days, produce a litter between one to five pups.

Conservation Status
Global: Near Threatened
National: Near Threatened
Rationale for assessment: The Eurasian Otter (*Lutra lutra*) has been nationally assessed as Near Threatened in view of a suspected declining population that may consist of between 1,000-4,000 individuals, the lower end of which would qualify it for a threatened category under criterion D. Disturbances to the species' habitat, including over-fishing, pollution of waterways and dam construction, are likely to be affecting this species, however further information on its distribution and status is required. It may already qualify as Vulnerable under criterion C, however further evidence is required to establish whether this species will decline by 10% over the next 10 years. It may also qualify as Vulnerable under criterion B based on a restricted extent of occupancy or area of occurrence. Further research is necessary to establish whether this species indeed should be listed in a threatened category.

Legal Status
Appendix I CITES
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a number of protected areas.

National Population Size
Total: 1,000 - 4,000 (estimated)
There are no comprehensive status surveys for this species in Nepal. However, a survey by Acharya and Gurung (1994) concluded that the species was still common in a lake area of 46 km^2 in western Nepal. Population estimates of between 1,000 and 4,000 animals were based on interviews with local people.

National Distribution
This species occurs has been reported from the Rupa and Begnas Lakes of Pokhara valley and in approximately 21 districts in Nepal: Saptari, Sunsari, Chitwan, Bardia, Kapilvastu, Bara, Kailali, Kanchanpur, Kaski, Bajhang, Bajura, Ilam, Panchther, Taplejung, Gorkha, Lamjung, Myagdi, Mugu,

Solukhumbu, Manang and Sankhuwasabha including within the protected areas of Annapurna Conservation Area, Makalu Barun National Park, Koshi Tappu Wildlife Reserve, Rara National Park, Bardia National Park, Ghodaghodi Lake Area.

Distribution outside Nepal

Afghanistan, Albania, Algeria, Andorra, Armenia, Austria, Azerbaijan, Bangladesh, Belarus, Belgium, Bhutan, Bosnia and Herzegovina, Bulgaria, Cambodia, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Gibraltar, Greece, Hong Kong, Hungary, India, Indonesia, Islamic Republic of Iran, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Republic of Korea, Democratic People's Republic of Korea, Kyrgyzstan, Lao PDR, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, the former Yugoslav Republic of Macedonia, Moldova, Mongolia, Montenegro, Morocco, Myanmar, Netherlands, Norway, Pakistan, Poland, Portugal, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sri Lanka, Sweden, Switzerland, Syrian Arab Republic, Taiwan Province of China, Tajikistan, Thailand, Tunisia, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan,
Viet Nam.

Main Threats

- Habitat loss, degradation (due to pollution/pesticides or over-exploitation) and fragmentation.
- Decrease of prey species due to competition with fishermen.
- Poaching for fur and illegal trade.
- Accidental mortality due to entanglement in fishing gear.
- Persecution as a pest species.
- Construction of dams.

References

Erlinge 1969, Prater 1971, Webb 1975, Adrian and Delibes 1987, Reuther 1991, Skaren 1993, Acharya and Gurung 1994, Suwal and Verheugt 1995, Ruiz-Olmo and Palazon 1997, Conroy *et al.* 1998, Kafle 2009.

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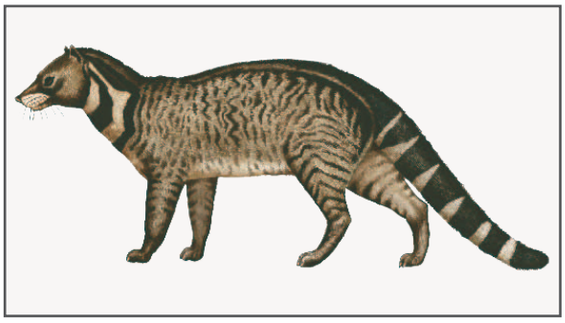
49) ***Viverra zibetha*** (Linnaeus, 1758)

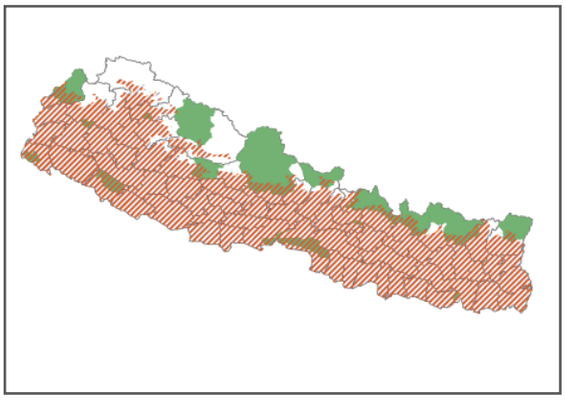


Common Names

Large Indian Civet (English); Zik, Thulo Nir Biralo, Sili (Nepali)

Synonyms

Viverra tainguensis (Sokolov, Rozhnov and Pham Chong, 1997)



Species Description

Grey coloured coat with distinctive black markings. Black spots on the flanks, dark limbs and a black and white banded tail. Dark dorsal crest running from shoulder to tail, throat and upper chest are black. The bands on the tail are normally broader and fewer in number than the Small Indian Civet. Short legs.

Species Ecology

The Large Indian Civet occurs in riverine and Sal forests, scrub jungle, near human settlements, grasslands and in thick bushes and trees. This

species is omnivorous and feeds on fruits, birds, bird eggs and poultry.

The Large Indian Civet produces litters on average of two young and can live up to 20 years.

Conservation Status
Global: Near Threatened
National: Near Threatened
Rationale for assessment: The Large Indian Civet (*Viverra zibetha*) is considered Near Threatened. Despite having a wide distribution, the population of this species is not abundant and due to poaching of civets for their glands it is likely that the population may be in decline, although perhaps not yet at a rate to qualify for a threatened category. It may qualify for Vulnerable under category C but further information on the population status is required.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: 5,000 (estimated)
This species is estimated to have a population of approximately 5,000 individuals.

National Distribution
The Large Indian Civet occurs across most of Nepal (except in the high mountains and Trans-Himalayan area) and within the protected areas of Annapurna Conservation Area, Bardia National Park, Chitwan National Park, Dhorpatan Hunting Reserve, Khaptad National Park, Makalu Barun National Park, Shivapuri-Nagarjun National Park, Sagarmatha National Park and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
Bhutan, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Singapore, Thailand, Viet Nam.

Main Threats
- Habitat loss due to human disturbances and settlements, conversion of land for agriculture, clearing for livestock grazing.
- Poaching for trade in body parts.
- Persecution as a pest species.

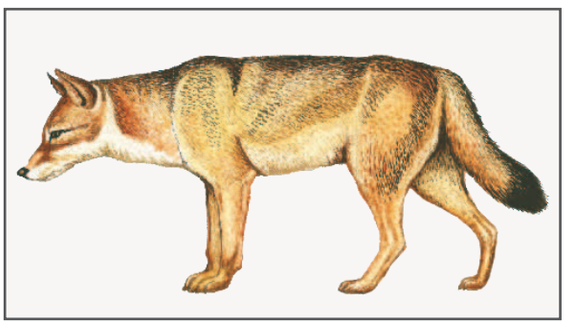
References
Suwal and Verheugt 1995, Ernst 2003, Baral and Shah 2008, Nepal Red List of Mammals Field Technician Workshop 2010.

LEAST CONCERN

50) ***Canis aureus*** (Linnaeus, 1758)

Common Names
Golden Jackal (English); Syal (Nepali)

Species Description
Grey-brown coloured coat fading into sandy coloured legs, bushy tail and large ears. Throat and area around the eyes and lips are white.



Species Ecology
The Golden Jackal is a very versatile species occurring mainly in open country and near human settlements, feeding mainly on carcasses, chickens, wild birds and small mammals. Breeding occurs mainly in February to March with females giving birth to a litter of between two and five young after a gestation period of 63 days.

Conservation Status
Global: Least Concern
National: Least Concern

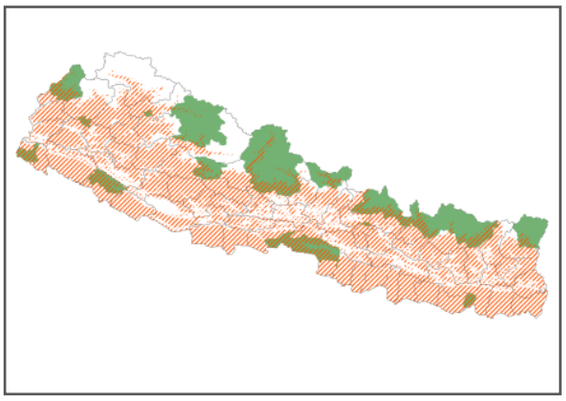
Rationale for assessment: The Golden Jackal (*Canis aureus*) is considered Least Concern in view of a large distribution, presence within several protected areas and assumed large population, which is unlikely to be declining at a rate that would qualify this species for a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
This species is currently considered common, however observational evidence indicate that the population has declined over the past decade.

National Distribution
This species is one of the widest distributed mammals in the country, occurring in all protected areas of the lowlands and high hills and found in almost all 75 districts.

Distribution outside Nepal
Afghanistan, Albania, Algeria, Bahrain, Bhutan, Bosnia and Herzegovina, Bulgaria, Central African Republic, Croatia, Djibouti, Egypt, Eritrea, Ethiopia, Greece, India, Iran, Iraq, Israel, Jordan, Kenya, Kuwait,



Lebanon, Libyan Arab Jamahiriya, Mali, Mauritania, Morocco, Myanmar, Nepal, Niger, Nigeria, Oman, Pakistan, Qatar, Saudi Arabia, Senegal, Somalia, Sri Lanka, Sudan, Syrian Arab Republic, Tanzania, Thailand, Tunisia, Turkey, Turkmenistan, United Arab Emirates, Viet Nam, Western Sahara, Yemen.

Main Threats
- Persecution.
- Poaching for medicinal purposes (the meat of the Golden Jackal is thought to cure arthritis).
- Flooding which damages dens and holes.
- Reduction of natural prey base.
- Canine diseases (including rabies, canine distemper).

References
Suwal and Verheugt 1995, Sillero-Zubiri *et al.* 2004 (and references therein), Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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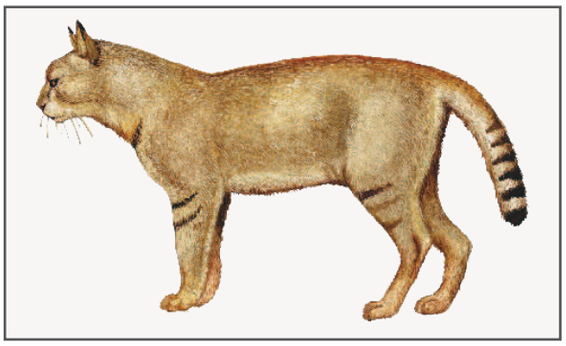
51) ***Felis chaus*** (Schreber, 1777)

Common Names
Jungle Cat (English); Ban Biralo (Nepali)

Species Description
Pale grey-beige coloured coat with darker coloured ears more reddish brown. Markings on the legs nd short tail distinguish it from domestic cats.

Species Ecology
The Jungle Cat occurs in forests and grasslands and near human settlements. The Jungle Cat primarily feeds on rodents, and birds (including chickens), although they are capable of killing young swine and Chital fawns.



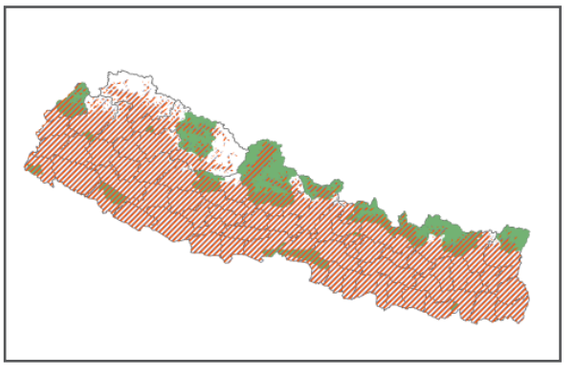
Age at first reproduction is approximately 15 months, producing a litter of one to six young after a gestation period of 63 to 68 days. The longevity of the Jungle Cat is up to 14 years.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is widespread and common with population declines due to habitat loss or persecution unlikely to be at a rate that would qualify it for a more threatened category.

Legal Status
CITES Appendix II
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: > 10, 000
This is considered as the most common wild cat in Nepal, with an estimated population greater than 10,000 individuals.

National Distribution
The Jungle cat is widely distributed across Nepal up to 4,000 m and occurs within all of the protected areas.



Distribution outside Nepal
Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, Egypt, Georgia, India, Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakhstan, Kyrgyzstan, Lao PDR, Lebanon, Myanmar, Pakistan, Russian Federation, Sri Lanka, Syrian Arab Republic, Tajikistan, Thailand, Turkey, Turkmenistan, Uzbekistan, Viet Nam.

Main Threats
- Poaching and persecution.

References
Green 1991, Suwal and Verheugt 1995, Nowell and Jackson 1996, Sunquist and Sunquist 2002, Baral and Shah 2008, Ernst 2003,Nepal Red List of Mammals Field Technicians Workshop.

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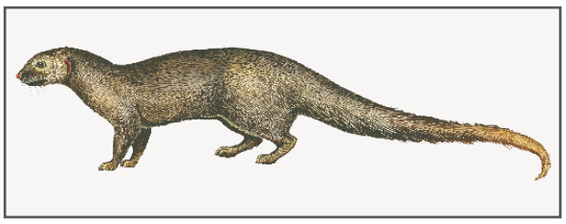
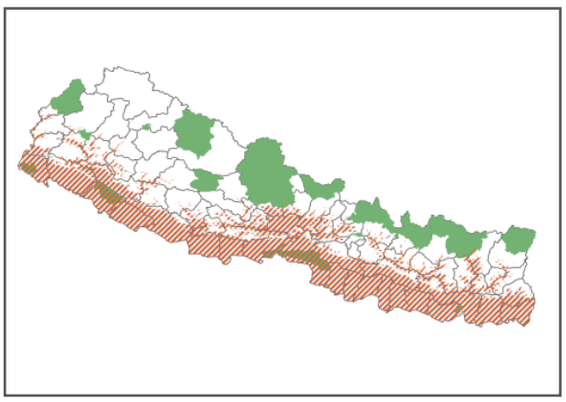
52) ***Herpestes edwardsii***
(É. Geoffroy Saint-Hilaire, 1818)



Common Names
Indian Grey Mongoose (English); Thulo Nyaurimusa (Nepali)



Species Description
Tawny-grey coloured coat. Individual hairs have ten dark and light banding. Hair tips are often pale or white with base a much darker brown. Tail is as long as the head and body. Small pinkish coloured nose and amber eyes.

Species Ecology
The Indian Grey Mongoose is highly adaptable and occurs in dry secondary forests, thorn forests, near human settlements and agricultural lands up to elevations of 715 m.The Indian Grey Mongoose feeds on insects, birds, small rodents, snakes and

occasionally raids on poultry.

Females produce litters of between three to seven young after a gestation period of two months.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is listed as Least Concern in view of its wide distribution, presumed large population and adaptability to human dominated landscapes, and estimated to be increasing.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: > 10,000 (estimated)
Trend: Increasing (estimated)

This species is thought to be common and abundant throughout its range with an increasing population trend.

National Distribution
This species is distributed across Nepal along the southern border and occurs within the protected areas of Chitwan National Park and Bardia National Park, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
Afghanistan, Bahrain, Bhutan, India, Indonesia, Islamic Republic of Iran, Kuwait, Malaysia, Mauritius, Pakistan, Saudi Arabia, Sri Lanka.

Main Threats
- Habitat Loss.
- Persecution as a pest species.
- Poaching for fur and pet trade.

References

Inskipp 1988, Corbet and Hill 1992, Suwal and Verheught 1995, Santiapillai *et al.* 2000, Ernst 2003, Shekhar 2003, Sheikh 2005, Baral and Shah 2008, Hem Sagar Baral (pers. obs.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010.

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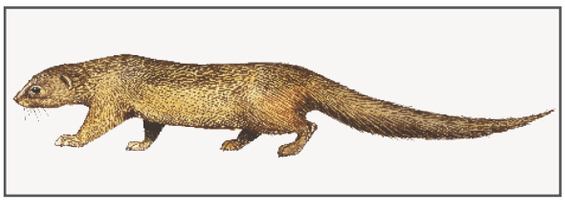
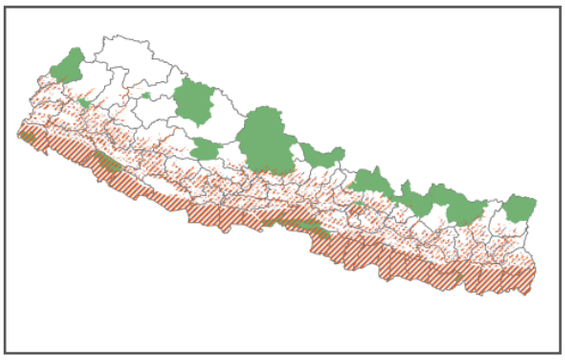
53) ***Herpestes javanicus***
(É. Geoffroy Saint-Hilaire, 1818)





Common Names
Small Asian Mongoose (English); Sano Nyaurimusa (Nepali)

Synonyms
Herpestes palustris (Ghose, 1965)

Species Description
Smallest of Nepalese mongooses. Dark-brown with golden speckles. Coat short and silky. An individual hair if examined shows three dark rings and two pale rings.

Species Ecology
The Small Asian Mongoose occurs in a variety of habitats but appears to prefer well-watered areas, open deciduous forests, shrublands and grasslands. The Small Asian Mongoose has a broad diet which includes rats, birds, reptiles, frogs, crabs, insects and scorpions.

This species produces litters of two to four young, with a gestation period of about seven weeks.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is listed as Least Concern in view of its wide distribution, including both within and outside of protected areas, presumed large population, and because it is unlikely to be declining at nearly the rate required to qualify for listing in a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: > 10, 000 (estimated)
Trend: Decreasing
There are no population estimates for this species but it is considered fairly common, with an estimated population greater than10,000 but experiencing decline.

National Distribution
This species is distributed throughout Nepal between elevations of 240 m to 1,500 m.

Distribution outside Nepal
Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Thailand, Viet Nam.

Main Threats
- Poaching for fur and pet trade.

References
Lekagul and McNeely 1977, Suwal and Verheught 1995, Shekar 2003, Wozencraft *et al.* 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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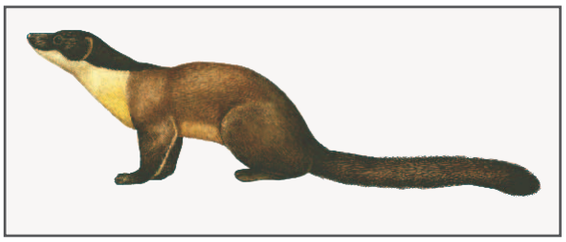
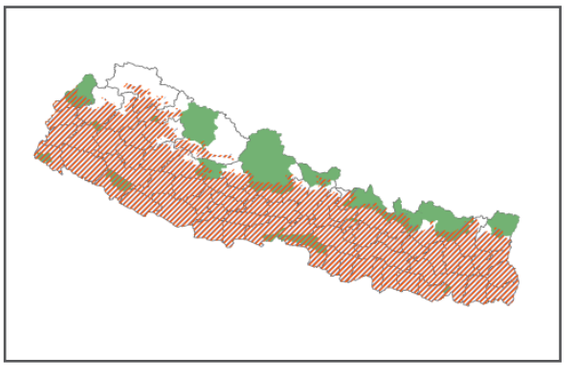
54) ***Martes flavigula*** (Boddaert, 1785)





Common Names
Yellow-throated Marten (English); Kukhauri, Malsapra (Nepali)

Species Description
Dark brown/black coat towards the rear gradually getting lighter brown-orange towards head. Cream-blonde throat and undersides. Larger than the Beech Marten, with a less bushy but longer tail.

Species Ecology
The Yellow-throated Marten is highly adaptable and occurs in shrub lands, near human settlements, dense forests, riverine belt and Sal forests feeding on small animals, birds, bees, eggs and fruits.

This species produces litters of two to three young.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its large distribution across Nepal and assumed large stable population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Trend: Stable (estimated)
This species is considered fairly common and the population stable in most areas except Bardia

National Park where it may be in decline.

National Distribution
This species occurs across most of Nepal and has been recorded up to 3,254 m and within the protected areas of Annapurna Conservation Area, Chitwan National Park, Khaptad National Park, Langtang National Park, Makalu Barun National Park, Rara National Parks, Sagarmatha National Park and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Republic of Korea, Democratic People's Republic of Korea, Lao PDR, Malaysia, Myanmar, Pakistan, Russian Federation, Taiwan Province of China, Thailand, Viet Nam.

Main Threats
- Poaching for fur.
- Habitat loss.

References
Suwal and Verheugt 1995, Ernst 2003, Baral and Shah 2008, Ghimirey 2010, Nepal Red List of Mammals Field Technicians Workshop 2010, Yadav Ghimirey (pers. comm.) 2010.

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55) ***Martes foina*** (Erxleben, 1777)

Common Names
Stone Marten (English); Himali Malsapro (Nepali)

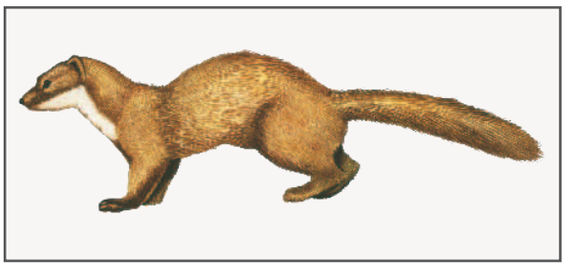
Species Description
Lighter coloured than other martens, chocolate to drab tawny-brown. Its throat is white to pale yellow. Legs and tail darker than the body. Males are larger than females.

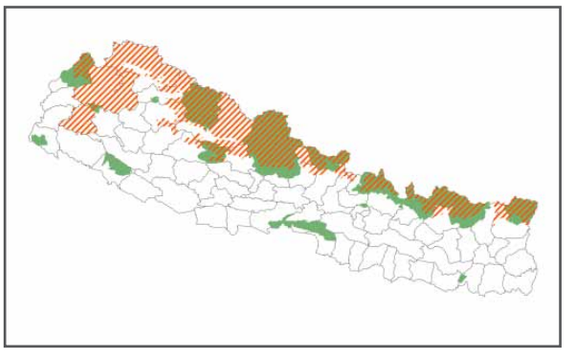
Species Ecology
Stone Martens occur in the temperate and alpine zones of the Himalayas, deciduous forests, forest edge, open rocky hillsides and undisturbed forests. This species has a varied diet, feeding on other small mammals such as voles, squirrels, birds, lizards, snakes, frogs and also honey, nuts and fruit.

Females have litters of four to five young after a gestation period of nine weeks.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, occurrence in several protected areas and assumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.





National Population Size
Although this species is considered fairly common in Langtang National Park, it is not considered common in other areas of Nepal.

National Distribution
This species occurs along the northern border of Nepal, in the High Himalayas and Trans-Himalayan area and within the protected areas of Shey Phoksundo, Makalu Barun and Langtang National Parks and the districts of Doti, Bajhang and Bajura. It is considered fairly common in Langtang National Park.

Distribution outside Nepal

Afghanistan, Albania, Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, France, Georgia, Germany, Greece, Hungary, Islamic Republic of Iran, Italy, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Former Yugoslav Republic of Macedonia, Moldova, Mongolia, Montenegro, Netherlands, Pakistan, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Switzerland, Turkey, Turkmenistan, Ukraine.

Main Threats

- Poaching for fur & persecution.

References

Prater 1971, Suwal and Verheugt 1995, Nepal Red List Field Technicians Workshop 2010, Baral and Shah 2008.

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56) ***Mustela sibirica*** (Pallas, 1773)

Common Names

Siberian Weasel (English); Saiberiyali malasapro (Nepali)

Species Description

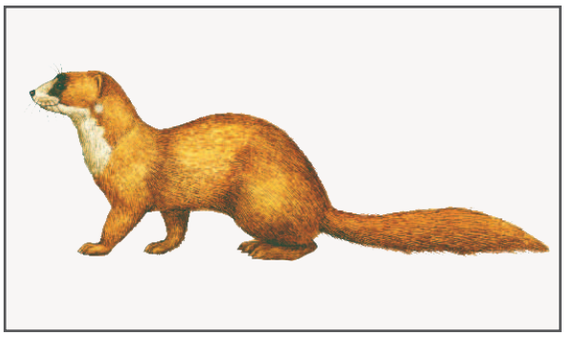
One of the largest weasels in Nepal. Uniformly coloured red-brown species, has a brown belly, undersides lighter than its back. Upper lip and chin are white, with a black stripe from its snout to the eyes, while its throat varies from white to pale brown.

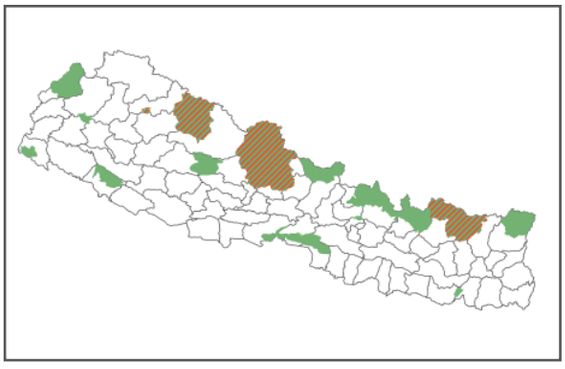
Species Ecology

The Siberian Weasel is found in a wide variety of habitats, including dense forest, in primary and secondary deciduous, coniferous and mixed forests, rhododendron forests, as well as open areas with small patches of forest enclaves and forest steppe and along river valleys and near human settlements. The main diet comprises of small mammals (for example, voles, squirrels, mice and pikas), amphibians, fish, and carrion. This species has a gestation period of approximately one month, producing a litter of about seven young.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population, lack of major threats and because it is unlikely to be declining at nearly the rate required to qualify for listing in a threatened category.





Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There is no information available on the population size or status of this species in Nepal. Video footage of an individual was recently captured in Makalu-Barun National Park.

National Distribution

The Siberian Weasel occurs across Nepal and within the protected areas of Annapurna Conservation Area, Makalu Barun National Park, Shey Phoksundo National Park, Rara National Park and Sagarmatha National Park.

Distribution outside Nepal
Bhutan, China, India, Japan, Democratic People's Republic of Korea, Republic of Korea, Lao PDR, Mongolia, Myanmar, Pakistan, Russian Federation, Taiwan Province of China, Thailand, Viet Nam.

Main Threats
Unknown.

References
Lekagul and McNeely 1988, Suwal and Verheugt 1995, Ernst 2003, Yadav Ghimirey (pers. comm.) 2010, Baral and Shah 2008, Ghimirey 2010.

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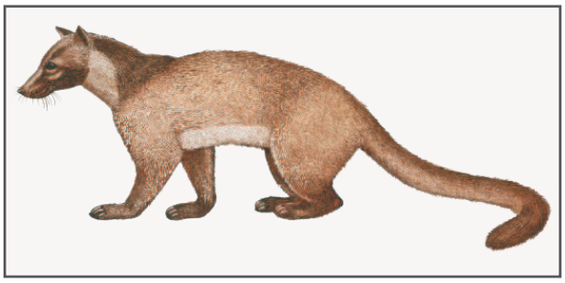
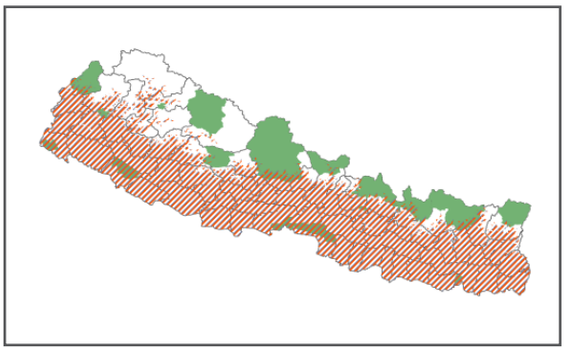
57) ***Paguma larvata*** (C.E.H. Smith, 1827)





Common Names
Masked Palm Civet (English); Dhana-od, Gajale Nir Biralo, Kasturi Biraloo (Nepali)

Species Description
Coat is dark brown to black with grey-buff underparts. The tail is covered in a thick black hair but can have a greyish tip. The facial markings are unique to this civet, with the dark "mask" clearly distinguishing it from other civet species.

Species Ecology
The Masked Palm Civet occurs in forests. This species is recognised as more vegetarian than other species of civets mainly feeding on fruit but will also take birds and poultry.

Litter sizes for Masked Palm Civets range from one to four young.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a broad distribution and assumed abundant population. Although the population status and threats to this species are not well known, it is unlikely to be declining at a rate to qualify it for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size or status of this species in Nepal.

National Distribution
This species has a broad distribution occurring across most of Nepal up to elevations of 2,200 m and has been recorded within the protected areas of Annapurna Conservation Area, Chitwan National Park, Khaptad National Park, Makalu-Barun National Park, Sagarmatha National Park and the districts of Bajhang, Bajura, Doti, Illam, Panchther, Ramechaap, Sindhuli and Taplejung.

Distribution outside Nepal
Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

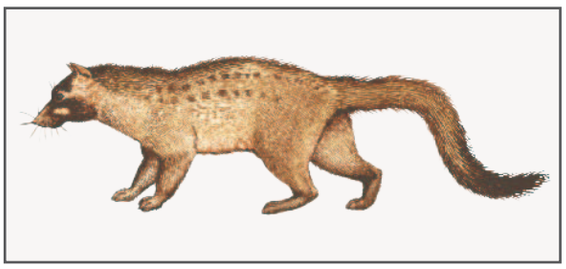
Main Threats
- Disturbance.
- Persecution.
- Trapping and hunting.

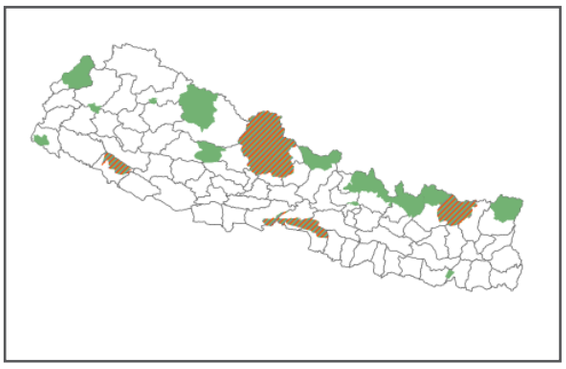
References

Suwal and Verheugt 1995, Lundrigan and Baker 2003 (and references therein), Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

58) *Paradoxurus hermaphroditus*

(Pallas, 1777)





Common Names

Common Palm Civet (English); Tadi Nir Biralo (Nepali)

Species Description

Body colour varies from rich cream to brown-black or even jet black. Unpatterned throat and tail. Dark spots coalesce into stripes on the sides. Three longitudinal stripes on its back.

Species Ecology

The Common Palm Civet occurs in riverine and Sal forests, near human settlements feeding on fruits, insects and bird eggs.

The Common Palm Civet has an average age at first reproduction of 11 months and produces a litter of three young after a gestation period of one and a half months.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern as it has wide distribution, assumed large population, is tolerant of a broad range of habitats and because it is unlikely to be declining at a rate required to qualify for listing in a threatened category.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

Although there are no population estimates for this species, it is considered the most common civet in Nepal.

National Distribution

This species occurs across Nepal and within the protected areas of Annapurna Conservation Area, Bardia National Park, Chitwan National Park, Makalu-Barun National Park and Parsa Wildlife Reserve.

Distribution outside Nepal

Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Sri Lanka, Thailand, Viet Nam.

Main Threats

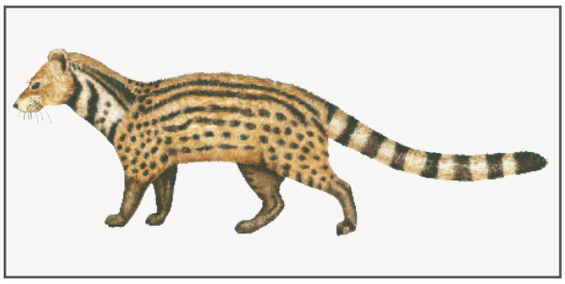
- Habitat loss.
- Poaching for body parts, especially its glands.
- Disturbance to habitat.
- Persecution.

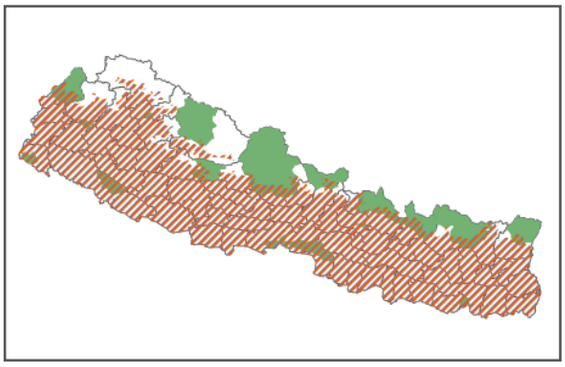
References

Ernst 2003, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

59) *Viverricula indica*

(É. Geoffroy Saint-Hilaire, 1803)





Common Names

Small Indian Civet (English); Sano Nir Biralo (Nepali)

Species Description

This species has a variable coat from brown to grey with spotting all over its body. The black-white ringed tail has 8 to10 dark bands. No spinal crest. Cream throat with two dark bands across it. Small ears, rounded and close to each other on top of the head, legs are dark and long.

Species Ecology

The Small Indian Civet occurs in riverine, Sal and open forests and near human settlements. It avoids heavy forests, preferring long grass or scrub and sheltering in holes or under rocks and brushes. The Small Indian Civet feeds on termites, birds, poultry and fruits.

The Small Indian Civet produces litters of an average three to four young and can live up to ten and a half years.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution and a population that is not declining at a rate to qualify for a more threatened category.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

Total: 5,000 (estimated)
The species is considered fairly common with population of approximately 5,000 individuals.

National Distribution

This species has a wide distribution across Nepal including most protected areas up to 2,500 m.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Sri Lanka, Thailand, Viet Nam.

Main Threats

- Persecution.
- Poaching for body parts.

References

Suwal and Verheugt 1995, Ernst 2003, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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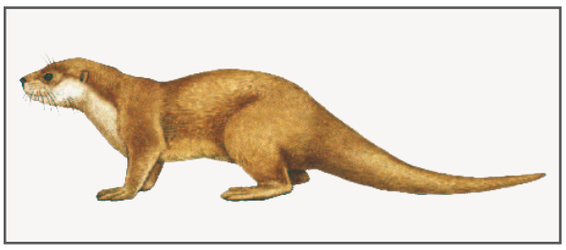
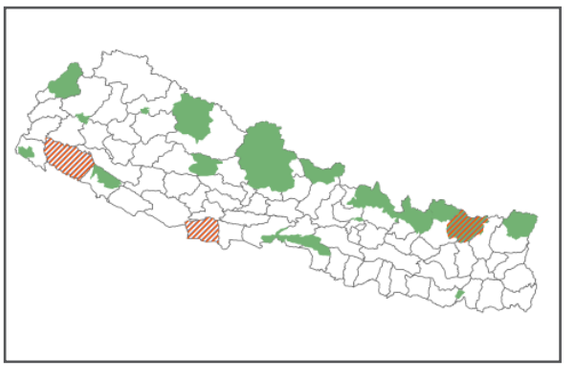
60) ***Aonyx cinerea*** (Illiger, 1815)





Common Names
Asian Small-clawed Otter (English); Sano Oat (Nepali)

Synonyms
Amblonyx cinereus, Aonyx cinereus (Illiger, 1815)

Species Description
Smallest of the otters. Has webbed feet and short spikey claws. Underside is light brown to yellow and the sides of its lips, chin and throat are almost white.

Species Ecology
The Asian Small-clawed Otter occurs in freshwater swamps, forested rivers, mangroves and tidal pools.

Sexual maturity is estimated to occur during the first year and after a gestation of approximately 60 days, a litter of up to seven young is produced. Asian Small-clawed Otters can have two litters per year.

Conservation Status
Global: Vulnerable A2 acd
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
CITES Appendix II
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species is found in Makalu Barun National Park and the districts of Kailali and Kapilbastu and documented to be found up to an elevation of 1,300 m.

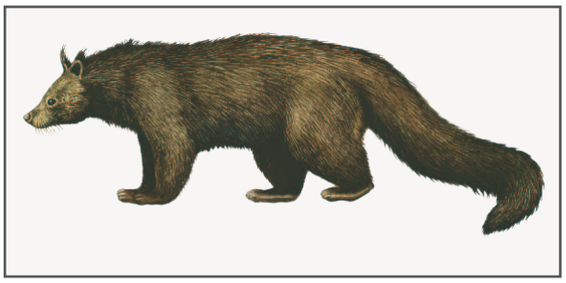
Distribution outside Nepal
Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Taiwan Province of China, Thailand, Viet Nam.

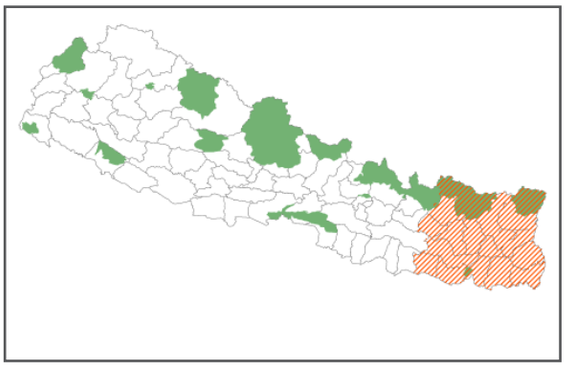
Main Threats
- Habitat loss and degradation (for example, pollution of water courses).
- Reduction in prey base.
- Accidental mortality by getting entangled in fishing nets and traps set for other species.
- Persecution.
- Poaching for fur.

References

Lancaster 1975, Foster-Turley 1990, Suwal and Verheugt 1995, Shrestha 1997, Lariviere 2003, Hussain and de Silva 2008, Kafle 2009.

61) ***Arctictis binturong*** (Raffles, 1821)





Common Names
Binturong (English); Bhalu Biralo (Nepali)

Species Description
Largest civet species in Nepal with black, thick and muscular prehensile tail, long white whiskers and white edge to its ears. Its long shaggy coat is suggestive of a bear. Body colour is mostly black but an intermingling of partly white and buff hairs give it a grizzled appearance. The head is speckled with grey, especially in juveniles.

Species Ecology
The Binturong is confined to tall forests. The main food sources are fruits and small animals such as insects, birds, and rodents and may also include fish.

Age at first reproduction is about 30 months and after a gestation period of 84 to 99 days a litter of one to three cubs is born. Bintourong can live up to 18 years.

Conservation Status
Global: Vulnerable A2cd
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. This species may qualify for a threatened status under category B due to its small extent of occurrence, however further information is required.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973)

National Distribution
This species has been recorded from a small distribution in eastern Nepal although no exact location is given and there have been no recent observations.

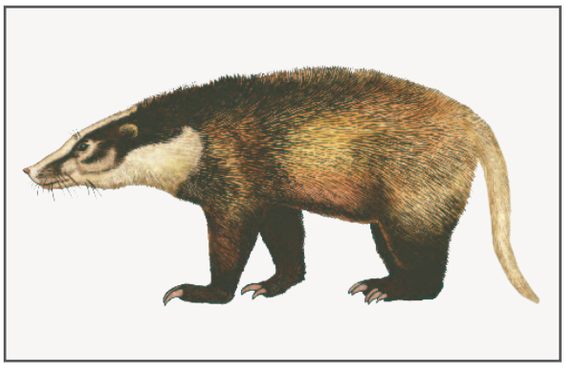
Distribution outside Nepal
Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Viet Nam.

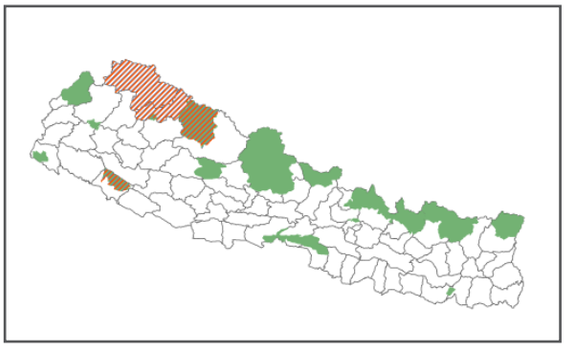
Main Threats
- Habitat loss and degradation.
- Accidental and unintentional mortality.

References

Lekagul and McNeely 1977, Wemmer and Murtaugh 1981, Duckworth *et al.* 1999, Ernst 2003, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

62) ***Arctonyx collaris*** (F.G. Cuvier, 1825)





Common Names
Hog Badger (English); Sungure Bhalu (Nepali)

Species Description
Coat is a uniform grizzled-grey in contrast to the Honey Badger's prominant black and white colouration. The white face has two dark stripes running from the small white ears to the muzzle. Pink snout-like nose. The legs and head are darker than the rest of the body being grey-black, with white claws.

Species Ecology
Very little is known about the ecology and life history traits of the Hog Badger. Although it is known that the species occurs in forests and scrub forests and is an omnivorous species feeding on plants and small animals.

The gestation period of this species is approximately one and a half months and has been known to produce up to four young.

Conservation Status
Global: Near Threatened
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Distribution
This species has been recorded within Shey-Phoksundo National Park and the western sub region of the highlands, and has also been caught on a camera trap in Bardia National Park.

Distribution outside Nepal
Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Mongolia, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss and degradation.
- Disturbance.
- Persecution.
- Poaching.

References
Suwal and Verheugt 1995, Nowak 1999, Ernst 2003, Camera trap database 2009 DNPWC Archive.

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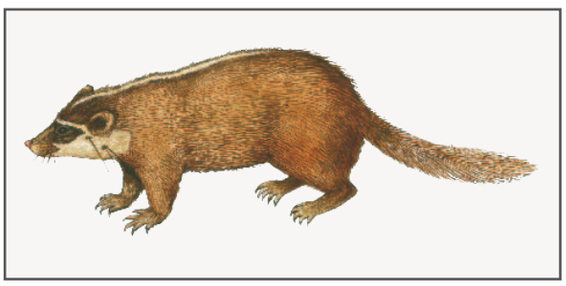
63) ***Melogale personata***
(I. Geoffroy Saint-Hilaire, 1831)



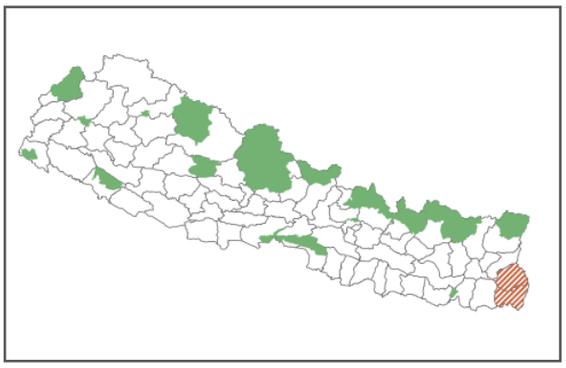
Common Names
Large-toothed Ferret Badger (English); Sano Sungurebhalu (Nepali)

Species Description
This species has a dorsal streak which runs to its tail. White across the eyes and face, black around the nose and black spots on cheeks.

Species Ecology
The Large-toothed Ferret Badger occurs in forests, grasslands and rice fields. This is an omnivorous species feeding on birds, small mammals, insects and fruit.

The life-history traits of this species are likely to be similar to *Melogale moschata* which produces litters of two-four young.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.



Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species is only reported to occur from far eastern areas such as the districts of Ilam and Jhapa. There are no records of this species within any protected areas of Nepal.

Distribution outside Nepal
China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

References

Prater 1971, Lekagul and McNeely 1977, Suwal and Verheugt 1995, Storz and Wozencroft 1999 (and references therein), Baral and Shah 2008.

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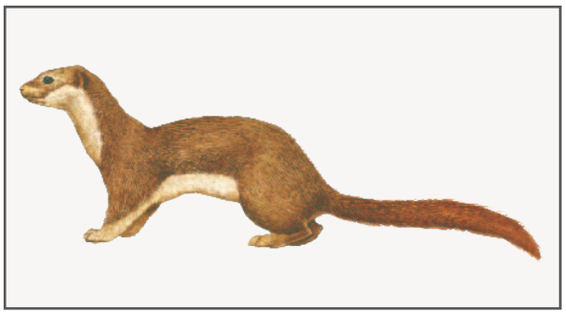
64) ***Mustela altaica*** (Pallas, 1811)

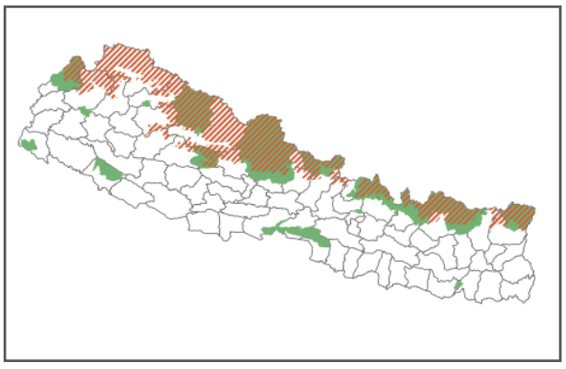
Common Names
Altai Weasel (English); Pahadi Malsapro (Nepali)

Species Description
Sandy-yellow above and creamy yellow below with a flat, narrow skull and a long cylindrical body. Long spindly tail same colour as back and paws conspicuously white.

Species Ecology
The Altai Weasel occurs in alpine meadow, feeding mainly on pikas. This species has a gestation period of approximately one and a half months after which a litter of six young is produced.

Conservation Status
Global: Near Threatened
National: Data Deficient
Rationale for assessment: There is insufficient





information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species is distributed along the northern border of Nepal along the Himalaya and Trans-Himalayan areas. It has been recorded from within the protected areas of Annapurna Conservation Area, Langtang National Park, Makalu Barun National Park and Rara National Park.

Distribution outside Nepal
Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Russian Federation, Tajikistan.

Main Threats
- Depletion of prey-base (pikas) due to poisoning.
- Habitat degradation due to overgrazing of natural vegetation cover by livestock.

References
Smith and Foggin 1999, Baral and Shah 2008, Suwal and Verheugt 1995, Ernst 2003.

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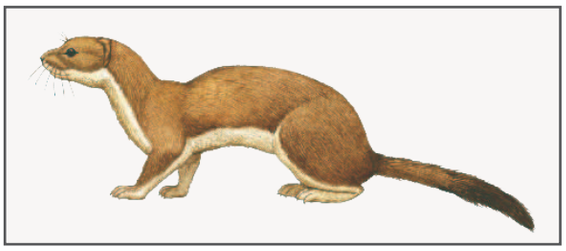
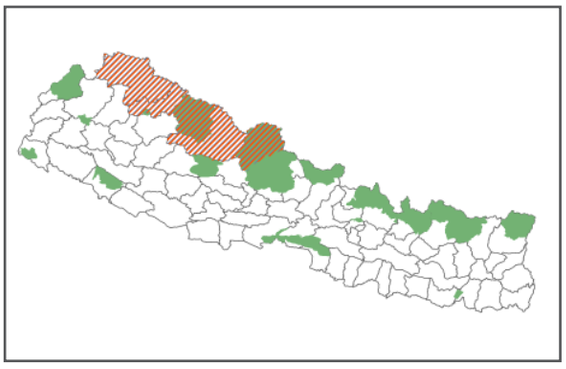
65) ***Mustela erminea*** (Linnaeus, 1758)





Common Names
Ermine (English); Bahurupi Malsapro (Nepali)

Species Description
Small chestnut-brown weasel, flecked with white, and with a white chin, throat and belly. Most individuals change colour dramatically to become pure white between the winter months of October and January. The tail tip remains black all year round.

Species Ecology
The Ermine is highly adaptable and able to live in a variety of habitat conditions including alpine habitat and beech forest, using rocks, hollow stumps, logs and burrows for shelter. The Ermine feeds on birds, eggs, insects and small rodents.

Gestation is around four weeks, after which a litter of four to eight young is produced (although it can be up to 13 young).

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size or status of this species in Nepal.

National Distribution
This species occurs in the Trans-Himalayan area and on the southern slopes of the Annapurna district.

Distribution outside Nepal
Afghanistan, Albania, Andorra, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark,

Estonia, Finland, France, Georgia, Germany, Greece, Hungary, India, Ireland, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Moldova, Mongolia, Montenegro, Netherlands, Norway, Pakistan, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Ukraine, United Kingdom, United States, Uzbekistan.

References

Suwal and Verheugt 1995, Martinoli *et al.* 2001, Purdey and Lawrence 2004, King 1983 (and references therein), Baral and Shah 2008.

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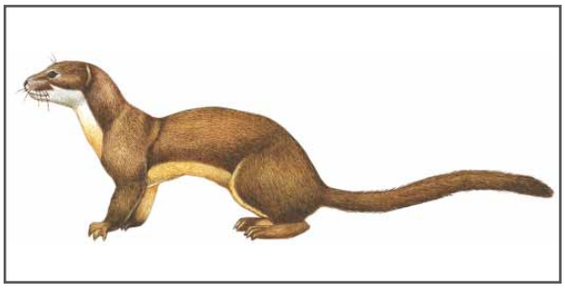
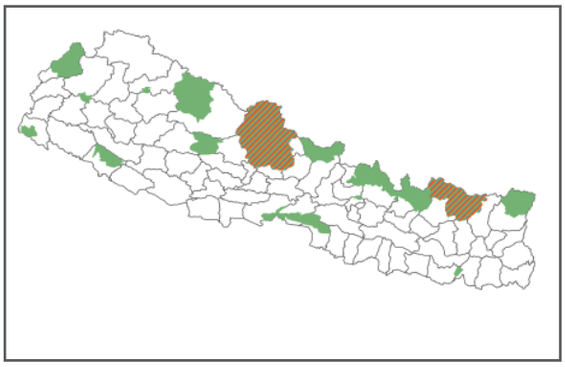
66) ***Mustela kathiah*** (Hodgson, 1835)





Common Names

Yellow-bellied Weasel (English); Kathia-nyal, Pitodar Malsapro (Nepali)

Species Description

A chocolate brown medium sized weasel with a sulphur-yellow belly. Its upper lip, chin and upper throat are whitish and its long tail is the same colour as its back.

Species Ecology

The habitat and ecology of the Yellow-bellied Weasel is not well known. This is a hill-dwelling species, found at elevations of 1,000 m to 2,000 m, using hollows in logs, burrows or holes for shelter. This species feeds on rats.

The reproductive behaviour of this species is not well known.

Conservation Status

Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution

The Yellow-bellied Weasel occurs within and between the protected areas of Annapurna Conservation Area, Sagarmatha National Park and Makalu Barun National Park.

Distribution outside Nepal

Bhutan, China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

References

Suwal and Verheugt 1995, Baral and Shah 2008

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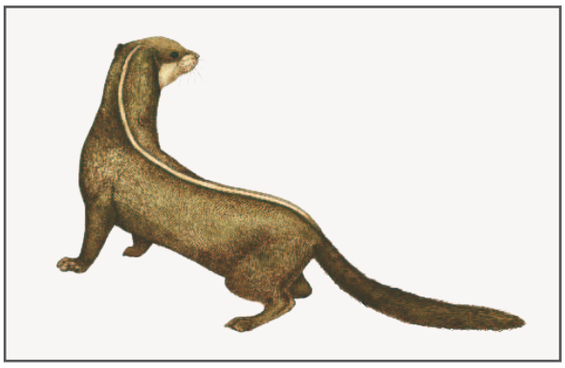
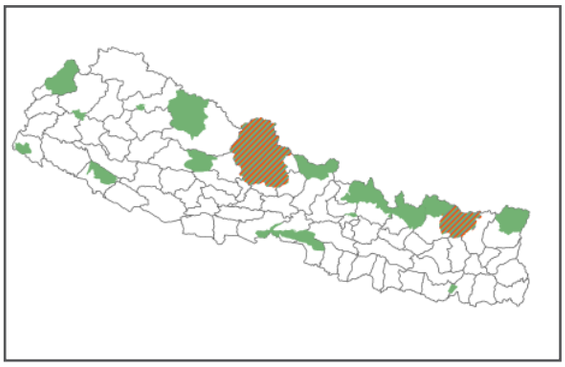
67) ***Mustela strigidorsa*** (Gray, 1853)





Common Names
Stripe-backed Weasel (English); Dharke Malsapro (Nepali)

Species Description
A chocolate brown weasel with a pale silver line running along its back from head to tail and a corresponding yellow stripe from chin to abdomen. It has a much shorter and bushier tail than other weasels.

Species Ecology
The Stripe-backed Weasel mainly occurs in evergreen forests in hills and mountains, but has also been recorded from plains forests, dense scrub, secondary forests, grasslands and farmlands; sheltering among rocks, hollow stumps, burrows and clefts among stone walls. The Stripe-backed Weasel is one of the least-known mustelids in the world, therefore very little is known about its life history traits, although it is likely to be similar to other weasel species in Nepal.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. It may qualify for Endangered under Category B but further knowledge on distribution, population status and habitat is required.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species is reported from only two locations; Annapurna Conservation Area and Makalu Barun National Park. A recent article has questioned whether this species still occurs in Nepal.

Distribution outside Nepal
China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

References
Suwal and Verheugt 1995, Abromov *et al.* 2008, Baral and Shah 2008.

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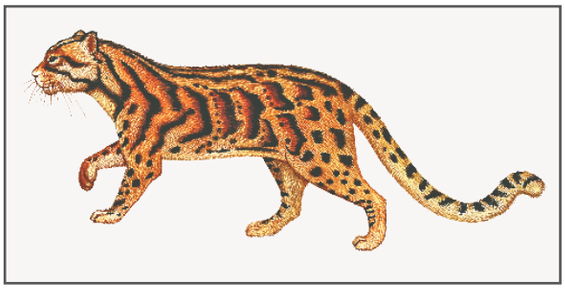
68) ***Pardofelis marmorata*** (Martin, 1837)



Common Names
Marbled Cat (English); Chhirbire Biralo (Nepali)

Species Description
About one-third the size of the Clouded Leopard. Shorter, rounder skull and a long tail equal to the length of its own body. The patches on its body have pale borders unlike the black-edged pattern of the

Clouded Leopard. There are numerous black spots on its legs and tail.

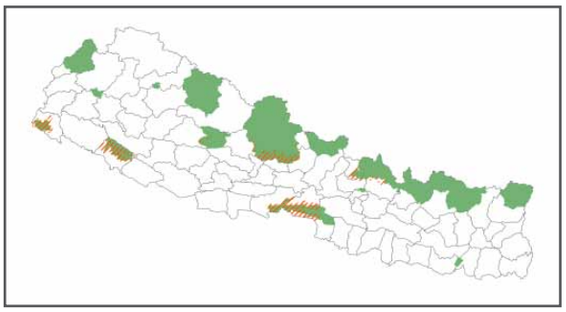
Species Ecology
The Marbled Cat occurs primarily in moist tropical forests feeding on birds, rats and squirrels.

Marbled Cats become sexually mature at about two years and after a gestation period of 66 to 82 days produce a litter of between two to four young.

Conservation Status
Global: Vulnerable C1+2a(i)
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
The distribution range of this species is not well



known. It has previously been recorded in central, mid and mid-western region of Nepal from the Terai in the south up to 2,500 m in the mid-hills and in Annapurna Conservation Area, Rara, Chitwan and Bardia National Parks, Dhorpatan Hunting Reserve and surrounding areas. It may also occur within Shukla Phanta Wildlife Reserve and Langtang National Park.

Distribution outside Nepal
Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss due to deforestation.
- Potential opportunistic poaching for fur.

References
Lekagul and McNeely 1977, Suwal and Verheugt 1995, Nowell and Jackson 1996, Sunquist and Sunquist 2002, Indian Tiger Welfare Society 2005, Baral and Shah 2008, Knibbe *et al.* 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

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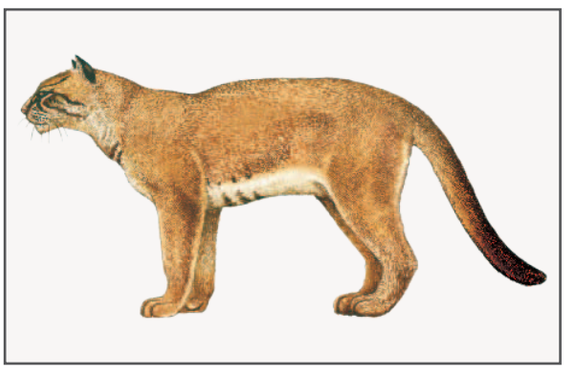
69) ***Pardofelis temminckii*** (Vigors & Horsfield, 1827)

Common Names
Asiatic Golden Cat (English); Sunaulo Biralo (Nepali)

Synonyms
Catopuma temminckii (Vigors & Horsfield, 1827)

Species Description
Unpatterned golden coloured coat broken by broad white moustache-like stripe, two white stripes lining the inner rims of the eyes and white line on the bottom of the tail.

Species Ecology
The Asiatic Golden Cat is primarily found in forest



habitats, ranging from tropical and subtropical evergreen to mixed and dry deciduous forests, but can also be found in shrublands and grasslands. Main prey species include large rodents, amphibians, insects, birds, small reptiles and chevrotain. The Asiatic Golden Cat reaches sexual

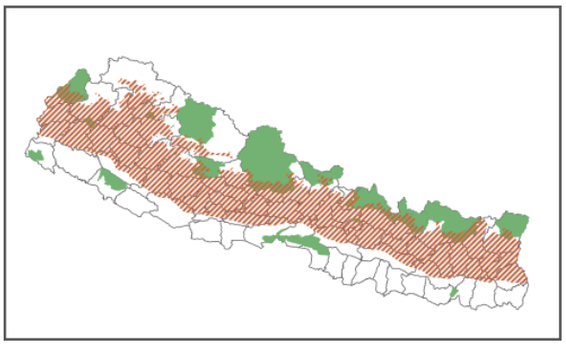
maturity at 18 to 24 months for females and two years for males, producing litters of one to three young. Age at first reproduction for this species is two years for females, three years for males and producing up to four young per litter.

Conservation Status
Global: Near Threatened
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973). This species is confirmed to occur within at least one protected area of Nepal.

National Population Size
There is no information available on the population size or status of this species in Nepal. An individual was camera-trapped in Makalu Barun National Park.

National Distribution
This species is distributed along the mid-hills and



within the Annapurna Conservation Area, Makalu Barun National Park and Rara National Park. Its presence in Makalu Barun has recently been confirmed by camera trap pictures.

Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss and degradation.
- Hunting and trapping for fur.
- Human-wildlife conflict and persecution.
- Disease transmission.

References

Suwal and Verheugt 1995, Nowell and Jackson 1996 (and references therein), Ghimirey and Pal 2009, Yadav Ghimirey (pers comm.) 2009.

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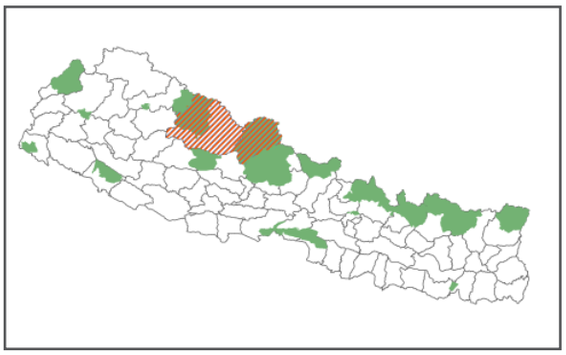
70) ***Vulpes ferrilata*** (Hodgson, 1842)

Common Names
Tibetan Fox (English); Bhote Phyauro (Nepali)

Species Description
This species of fox has a much thicker coat than other species, with a squarish head and small narrow eyes. The coat is mainly sandy brown and grayish on the sides. The undersides, throat and chin are white, and the thick fur around the face is grayish on the cheeks.

Species Ecology
The Tibetan Fox is found in upland plains and hills from about 2,500 m to 5,200 m. Most of its habitat consists of sparse grasslands devoid of trees and

shrubs, particularly where black-lipped pikas are abundant. The diet of the Tibetan Fox consists primarily of pikas and small rodents. They may also scavenge from kills by other species such as the grey wolf and have been known to follow Brown Bears digging up pikas. The gestation period of this species is 50 to 60 days producing litters of two to five young.



Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
The Tibetan Fox has a small distribution in the Trans-Himalayan region of Nepal along the north west border neighbouring Tibet, including the protected areas of Shey-Phoksundo National Park and the Annapurna Conservation Area and district of Upper Mustang.

Distribution outside Nepal
China, India.

Main Threats
- Poaching for fur.
- Persecution.
- Habitat loss and alteration.
- Reduction of natural prey base.

References
Ginsberg and Macdonald 1990, Sillero-Zubiri *et al.* 2004, Clark *et al.* 2008, Baral and Shah 2008, Liu *et al*. 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

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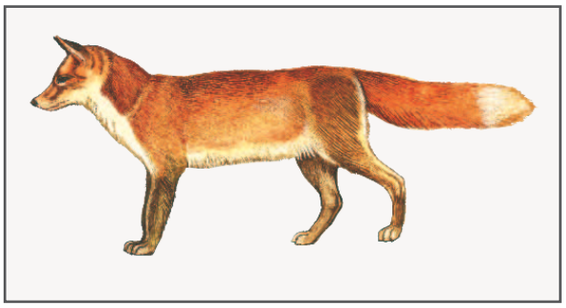
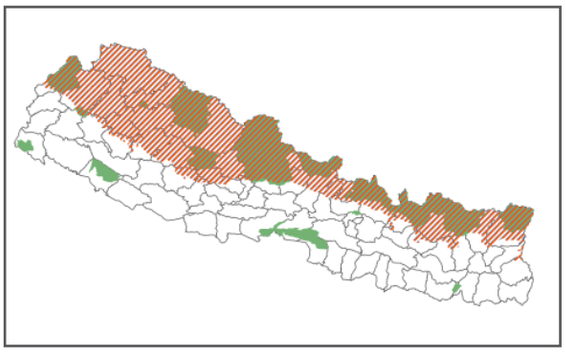
71) ***Vulpes vulpes*** (Linnaeus, 1758)



Common Names
Red Fox (English); Rato phyauro (Nepali)



Species Description
Variable in colour, but usually reddish-ginger coat with white undersides and throat. Black tipped ears and black patches on the back of the ears. Legs are dark brown to black in colour.

Species Ecology
The Red Fox is a highly adaptable species found in a variety of habitats including urban areas where it lives easily alongside humans. Red Foxes are adaptable and opportunistic omnivores, with a diet ranging from invertebrates (for example earthworms and beetles) to mammals and birds, and fruit. Sexual maturity is reached at nine to ten months and females produce a single litter per year after a

gestation period of 49 to 55 days. Litter size varies in response to food availability.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
This species is not considered common and is estimated to be in decline.

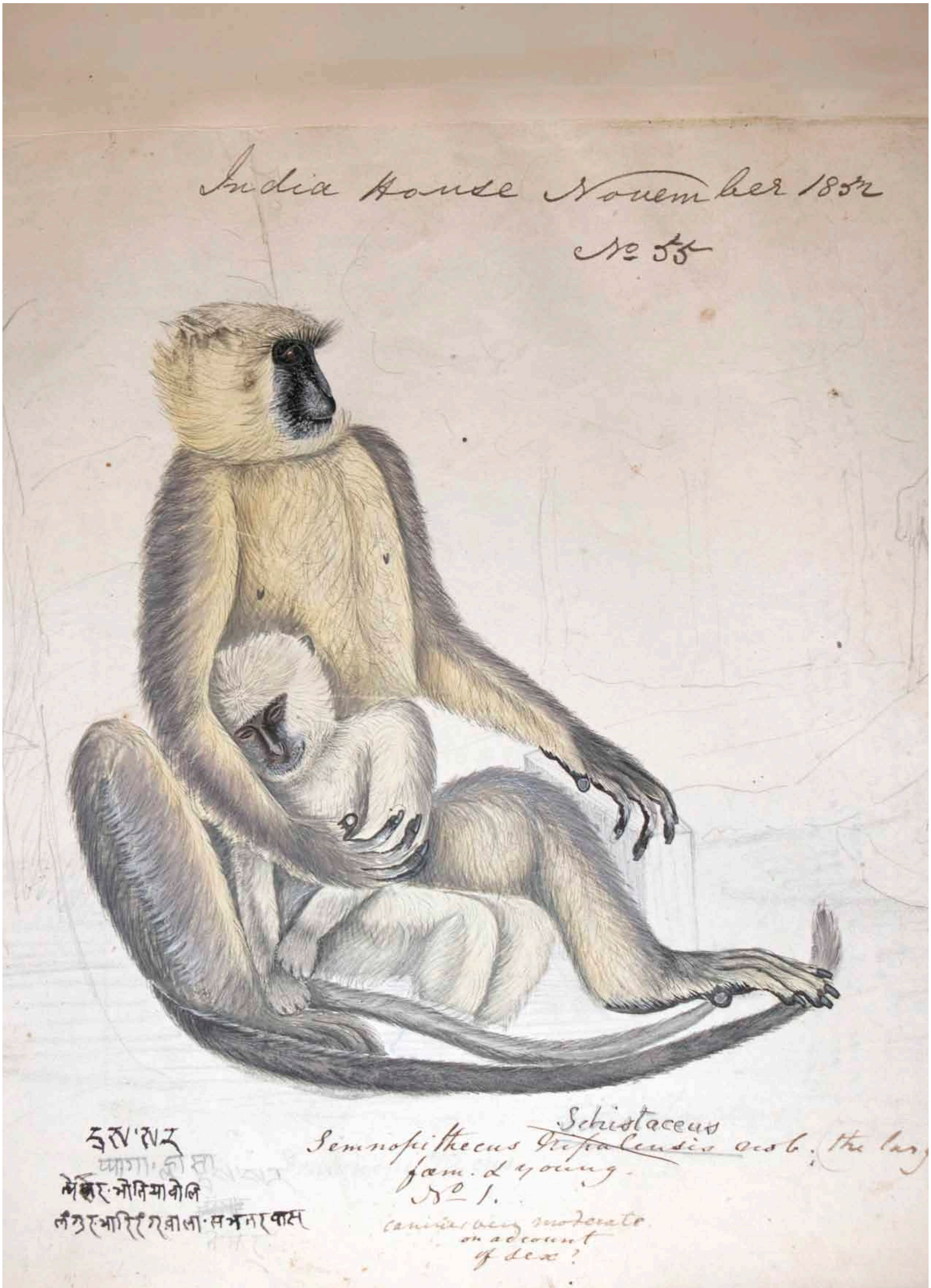
National Distribution
This species occurs across the mid-hills and higher elevations of Nepal, including within the protected areas of Annapurna Conservation Area, Dhorpatan Hunting Reserve, Kanchanjunga Conservation Area, Khaptad National Park, Langtang National Park, Makalu Barun National Park, Manaslu Conservation Area, Rara National Park, Shey Phoksundo National Park. The species was observed in the Manang and Mustang area of the Annapurna Conservation Area in the 1980s.

Distribution outside Nepal
Afghanistan, Albania, Algeria, Andorra, Armenia, Austria, Azerbaijan, Bangladesh, Belgium, Bhutan, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Faro Islands, Finland, France, Georgia, Germany, Gibraltar, Greece, Greenland, Holy See (Vatican City State), Hungary, Iceland, India, Iran, Ireland, Italy, Japan, Jordan, Kazakhstan, Democratic People's Republic of Korea, Republic of Korea, Kyrgyzstan, Latvia, Lebanon, Libyan Arab Jamahiriya, Liechtenstein, Lithuania, Luxembourg, the former Yugoslav Republic of Macedonia, Malta, Monaco, Mongolia, Montenegro, Morocco, Myanmar, Netherlands, Norway, Pakistan, Poland, Portugal, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Svalbard and Jan Mayen, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Turkmenistan, United Kingdom, Uzbekistan.

Main Threats
- Poaching for fur.
- Persecution.
- Human-wildlife conflict.

References

Sillero-Zubiri 2004 (and references therein), Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.


India House November 1852
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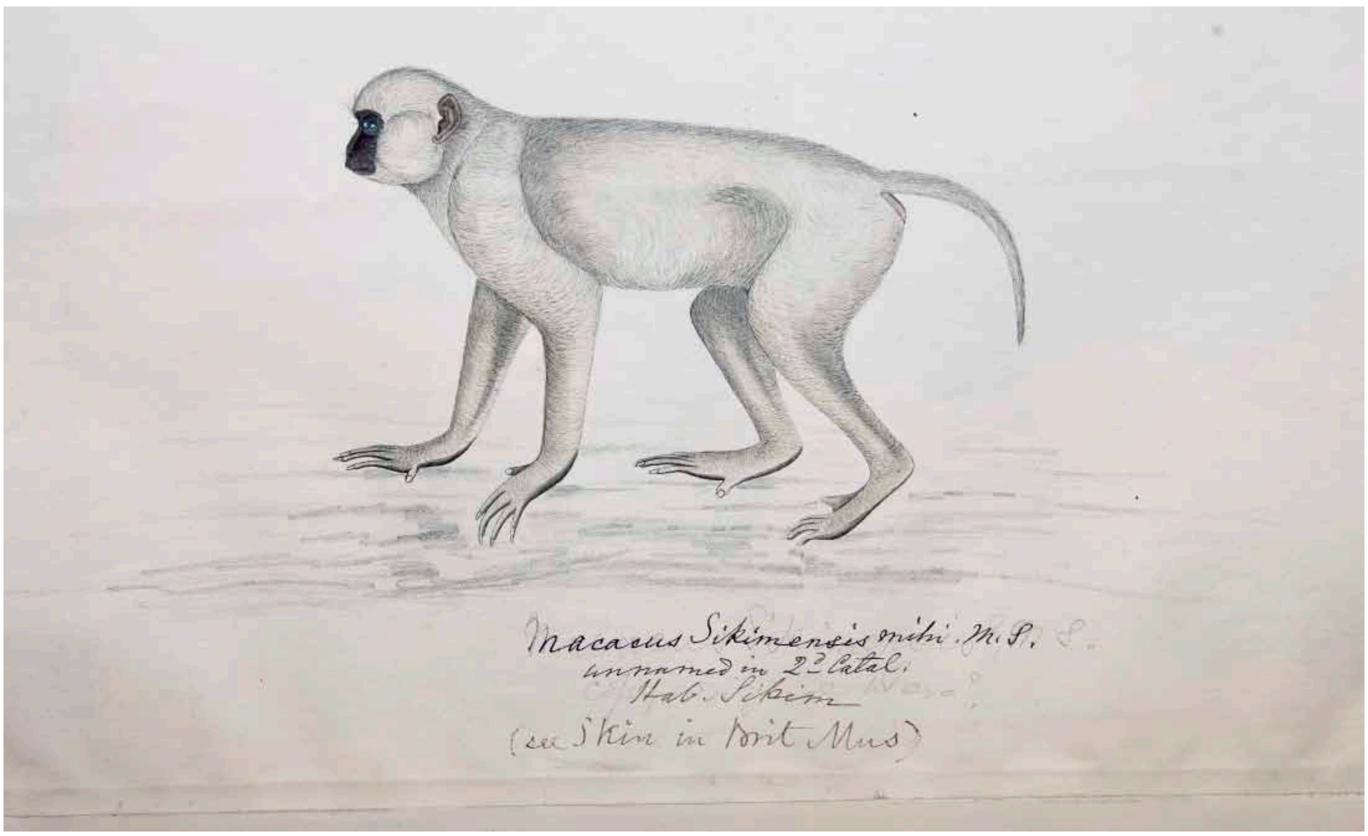
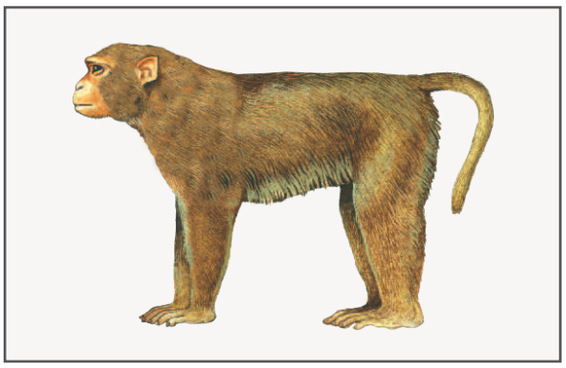
PRIMATES

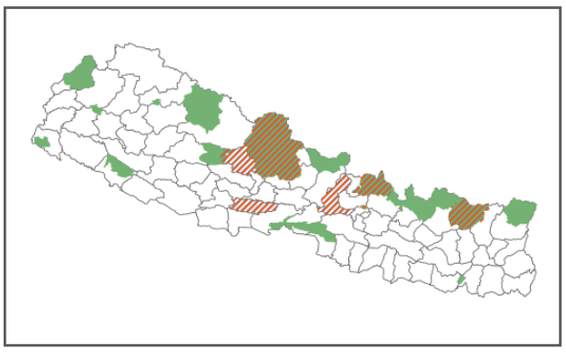

Macacus Sikimensis mihi M.S.
unnamed in 2d Catal.
Hab. Sikim
(see Skin in Brit Mus)

VULNERABLE

72) ***Macaca assamensis*** (Hodgson, 1840)

Molur et al. (2003) consider the species in Nepal different from the two currently recognized subspecies *M. a. pelops* and *M. a. assamensis* which occur in India, Bangladesh, Bhutan, China, Lao PDR, Myanmar, Thailand and Vietnam, based on head-body length, tail length, weight and body colouration. This may be a new subspecies but further taxonomic clarification is required. It may be the western Assamese macaque subspecies *M. a. pelops*, however this is still under debate.





Common Names
Assam Macaque (English); Pahare Bandar (Nepali)

Synonyms
Macaca macclellandii (Gray, 1846); *Macaca sikimensis* (Hodgson, 1867); *Macaca problematicus* (Gray, 1870); *Macaca rhesosimilis* (Sclater, 1872); *Macaca coolidgei* (Osgood, 1932)

Species Description
Brown-grey coat, purple snout, hairless face.

Species Ecology
The Assam Macaque occurs in subtropical hill Sal forests, mixed deciduous forests, temperate broadleaved forests with rocky outcrops and along riverside steep forests of higher elevation. The dominant tree species in the Assam Macaque's current occupied habitats include Schima (*Schima wallichii*), Indian Olive (*Elaeocarpus robusta*), Wallich (*Lyonia ovalifolia*), Wild Pear (*Pyrus pasia*), Nepalese Alder (*Alnus nepalensis*) and *Rhododendron spp*., which they use for shelter and food.

Age at first reproduction for the species is five years with a gestation period of approximately 164 days. Inter-birth interval ranges from approximately 14 to 23 months. Generation length is 10 to 12 years.

Conservation Status
Global: Near Threatened
National: Vulnerable D1
Rationale for assessment: The Assam Macaque (*Macaca assamensis*) has been nationally assessed as Vulnerable under criterion D1 due to a small population of mature individuals suspected to number less than 1000 based on previous research of the population and distribution. The population is considered to exist in a fragmented distribution with an extent of occurrence of approximately 14, 894 km^2.

Legal Status
CITES Appendix II
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. This species occurs within protected areas.

National Population Size
The Assam Macaque is not considered a common species and estimates range from around 300 to 750 individuals with less than 300 mature individuals distributed across eight subpopulations (no subpopulation having more than 50 mature individuals).

National Distribution
The Assam Macaque occurs across Nepal from 380 m to 2,350 m. However its distribution has decreased and become fragmented due to habitat loss and degradation. The Assam macaque has been recorded in Annapurna Conservation Area, Makalu Barun National Park, Langtang National Park, Shivapuri Nagarjun National Park and the districts of Dhading, Myagdi and Palpa.

Distribution outside Nepal
Further taxonomic research may reveal this species as endemic to Nepal.

Macaca assamensis:
Bangladesh, Bhutan, China, India, Lao PDR, Myanmar, Thailand, Viet Nam.
Macaca assamensis pelops:
Bangladesh, Bhutan, northern India.

Main Threats
- Habitat loss and degradation due to habitat alteration, encroachment and fodder collection, natural disasters such as landslide.
- Human-wildlife conflict (persecution in retaliation for crop raiding).

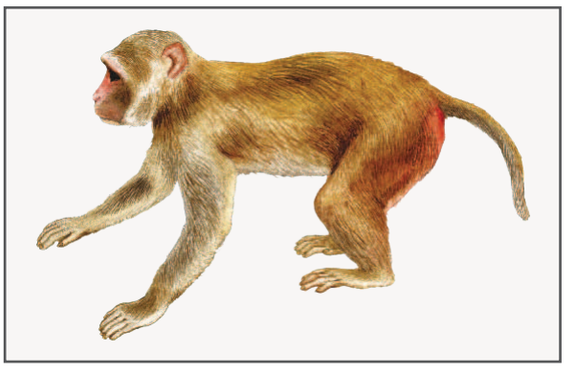
Conservation Measures in Place
None.

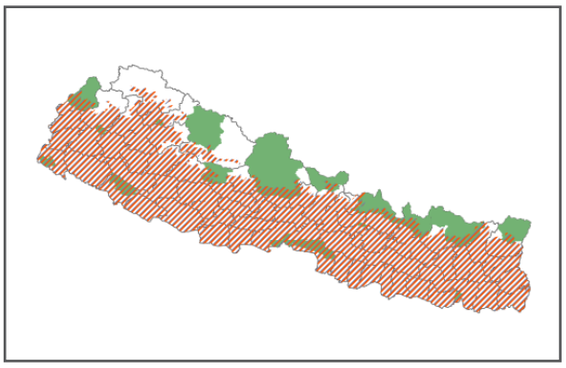
Conservation Recommendations
i) Conduct molecular genetic studies to resolve taxonomic status of this species.
ii) Develop and implement long-term behavioural and ecological studies.
iii) Develop species action plan as required once baseline data on species status has been obtained.

References
Chalise 2003, Molur *et al.* 2003, Wada 2005, Chalise 2008ab, Nepal Red List of Mammals Field Technicians Workshop 2010, Fürtbauer *et al*. 2010, Chalise *in press*.

LEAST CONCERN

73) ***Macaca mulatta*** (Zimmermann, 1780)





Common Names
Rhesus Macaque (English); Rato Bandar (Nepali)

Synonyms
Macaca fulvus (Kerr, 1792); *Macaca rhesus* (Audebert, 1798); *Macaca erythraea* (Shaw, 1800); *Macaca nipalensis* (Hodgson, 1840); *Macaca oinops* (Hodgson, 1840); *Macaca sancti-johannis* (Swinhoe, 1866); *Macaca lasiotus* (Gray, 1868); *Macaca tcheliensis* (Milne-Edwards, 1872); *Macaca vestita* (Milne-Edwards, 1892); *Macaca villosa* (True, 1894); *Macaca brachyurus* (Elliot, 1909); *Macaca littoralis* (Elliot, 1909); *Macaca brevicaudatus* (Elliot, 1913); *Macaca siamica* (Kloss, 1917); *Macaca mcmahoni* (Pocock, 1932)

Species Description
Red face and bottom, chestnut coloured coat.

Species Ecology
The Rhesus Macaque occurs in both subtropical and temperate climates in mixed forests, temperate

coniferous forests, moist and dry deciduous forests, bamboo forests, scrubland, mangroves, cultivated fields and urban areas such as temples. This species is very adaptable to man-made environments and exists successfully in developed areas such as cities and towns, often getting fed directly or foraging from litter but naturally feeds on fruits, seeds, flowers, leaves, buds, shoots, twigs, stems, roots, bark, pith and resin of angiosperms, gymnosperms and fungi.

Age at first reproduction is on average 41 months producing a single young after a gestation period of five and a half months. It has a generation length of 12 years.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its large population, wide distribution, occurrence within several protected areas and lack of any major threats.

Legal Status
CITES Appendix II
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Total: 100,000 (estimated)
Trend: Stable (estimated)
The current total population of Rhesus Macaques is estimated to consist of approximately 100,000 individuals. It is abundant in many places, including in cities, with the species becoming increasingly commensal with humans.

National Distribution
This species is distributed widely across Nepal including the whole Terai and Churia Range and is present within all of Nepal's protected areas in elevations up to 2,440 m.

Distribution outside Nepal
Afghanistan, Bangladesh, Bhutan, China, India, Lao PDR, Myanmar, Pakistan, Thailand, Viet Nam.

Main Threats
None.

References

Ernst 2003, Molur *et al.* 2003, Fooden 2009, Mukesh Chalise (pers. comm.) 2009, Baral and Shah 2008.

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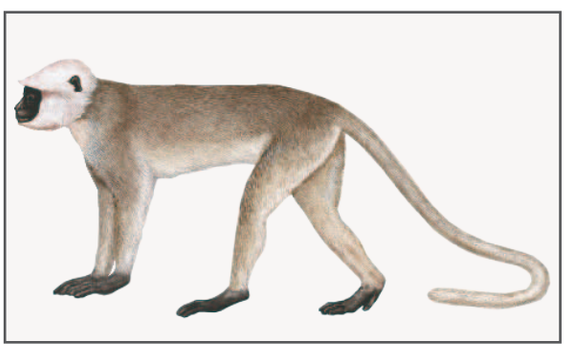
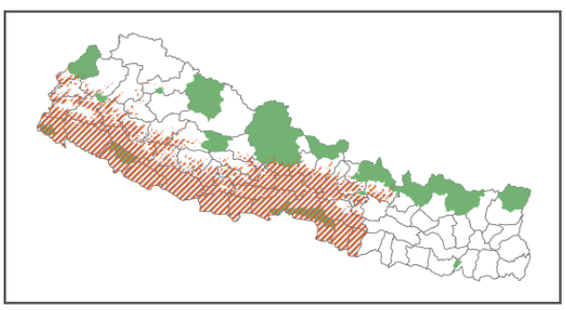
74) ***Semnopithecus hector*** (Pocock, 1928)





Common Names
Terai Grey Langur (English); Kalomukhe Bandar, Lampuchhre Badar, Phetawal Langur (Nepali)

Synonyms
Semnopithecus entellus hector (Pocock, 1928)

Species Description
Black face, silver-grey fur.

Species Ecology
The Terai Grey Langur occurs in riverine and Sal forests. The Terai Grey Langur is a folivore with the main component of its diet being fruits, grass shoots and crops.

The life history of this species is likely to be similar

to that of *S. enetellus,* which has an average age at first reproduction of about three and half years producing a single young after a gestation period of six months. Generation length of this species is 12 years.

Conservation Status
Global: Near Threatened
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution and presence within protected areas.

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
The total population of the Terai Grey Langur is not well known; however it has a broad distribution and is considered a common species.

National Distribution
The Terai Grey Langur occurs in a wide distribution across Nepal from within elevations of 60 m to 1,500 m from Kumaun, east beyond Kathmandu, Chitwan and lowland Nepal. Although some langurs in Nepal have been recorded at up to 4,000 m, these higher ranging langurs are thought to be *S. schistaceus*, not *S. hector* which occurs at much lower elevations of the Himalaya.

Distribution outside Nepal
Bhutan, India.

Main Threats
- Human-wildlife conflict, including persecution as pest species.
- Habitat loss and degradation.

Conservation Measures in Place
This species has a level of social protection through its association with the Hindu God, Hanuman.

References

Ernst 2003, Molur *et al.* 2003, Molur and Walker 2004, Baral and Shah 2008, Sayers and Norconk 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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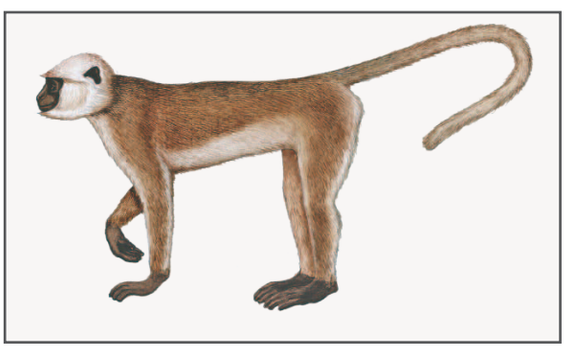
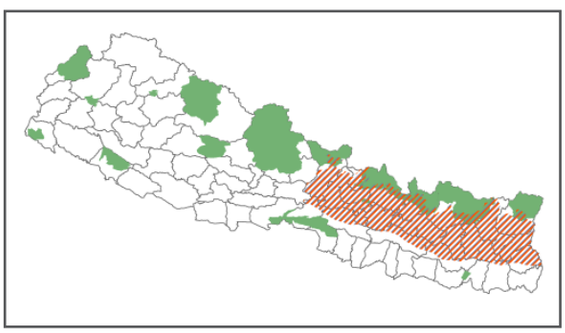
75) ***Semnopithecus schistaceus***
(Hodgson, 1840)





Common Names
Nepal Grey Langur (English); Kalomukhe Bandar, Lampuchhre Bandar, Phetawal Bandar (Nepali)

Synonyms
Semnopithecus nipalensis (Hodgson, 1840); *Semnopithecus lanai* (Elliot, 1909); *Semnopithecus achilles* (Pocock, 1928)

Species Description
Black face, silver grey coat.

Species Ecology
The Nepal Grey Langur occurs in subtropical to temperate, broadleaved forests, pine forests, montane forests, riverine forests, rocky outcrops and scrub jungles. The Nepal Grey Langur is arboreal and only occasionally descends to the ground. They use woody deciduous broad-leaved trees for shelter

and food.

The life history of this species is likely to be similar to that of *S. entellus*, which has an average age at first reproduction of about three and half years producing a single young after a gestation period of six months. Generation length of this species is 12 years.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern as it is widely distributed across Nepal and occurs within several protected areas.

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
The current population size of this species is not well known.

National Distribution
This species has a range from the Himalayan slopes as far west as Gorkha extending eastwards to Sikkim and within the protected areas of Annapurna Conservation Area, Kanchenjunga Conservation Area, Langtang National Park, Manaslu National Park, Sagarmatha National Park and Shivapuri-Nagarjun National Park and district of Solukhumbu. The langurs recorded west of Gorkha in the mid-hills are also likely to be this species but this requires further confirmation.

Distribution outside Nepal
Bhutan, China, India, Pakistan.

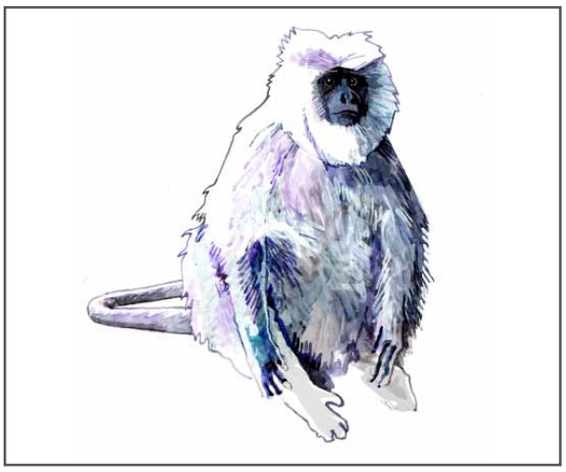
Main Threats
- Habitat Loss.

References

Curtin 1975, Curtin 1982, Ernst 2003, Molur *et al.* 2003, Baral and Shah 2008, Ganga Ram Regmi (pers. obs.) 2010, Nepal Red List of Mammals Field Technicians Workshop 2010.

DATA DEFICIENT

76) ***Semnopithecus ajax*** (Pocock, 1928)



Common Names
Himalayan Grey Langur (English); Paschima Langur (Nepali)

Synonyms
Semnopithecus entellus ajax (Pocock, 1928)

Species Description
Black face, silver-grey fur, darker on forearms. Identification of the three species of langur thought to occur in Nepal is under debate.

Species Ecology
The Himalayan Grey Langur occurs in subtropical, moist temperate, alpine, coniferous and broadleaved forests at elevations of between 2,200 m to 4,000 m. This is a folivorous species. The life history of this species is likely to be similar to that of Semnopithicus entellus, which has an average age at first reproduction of about three and half years producing a single young after a gestation period of six months. The generation time of this species is between 10 to 12 years.

Conservation Status
Global: Endangered B1ab(iii)+2ab(iii); D
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. This species may qualify for a threatened category due to a single, restricted location and small population but further information is required to verify this.

Legal Status
CITES Appendix I
National Parks and Wildlife Conservation Act 2029 (1973).

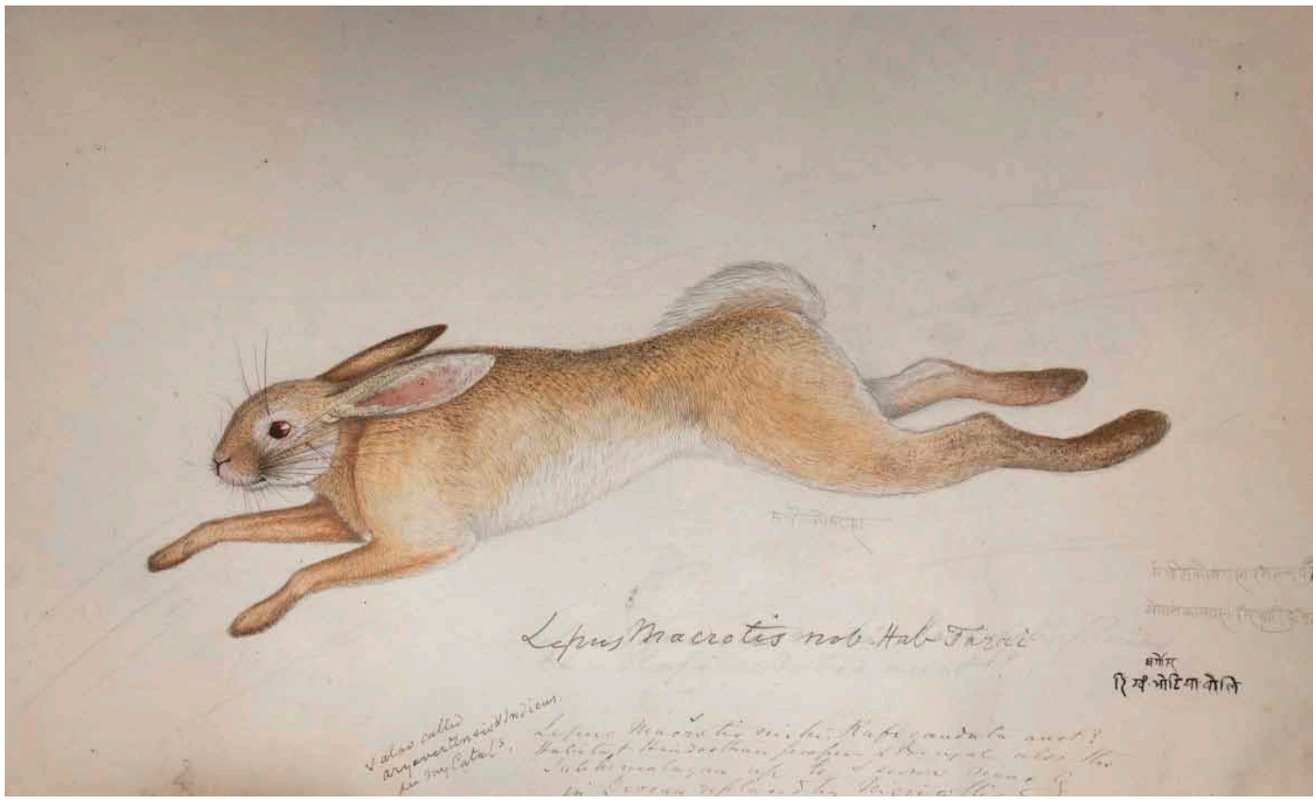
National Population Size
The total population of this species is not well known. According to Molur *et al.* (2003) it may consist of fewer than 50 individuals but further verification is required.

National Distribution
The distribution of this species in Nepal is not well known.

Distribution outside Nepal
India.

Main Threats
- Habitat loss and degradation due to deforestation and overgrazing.

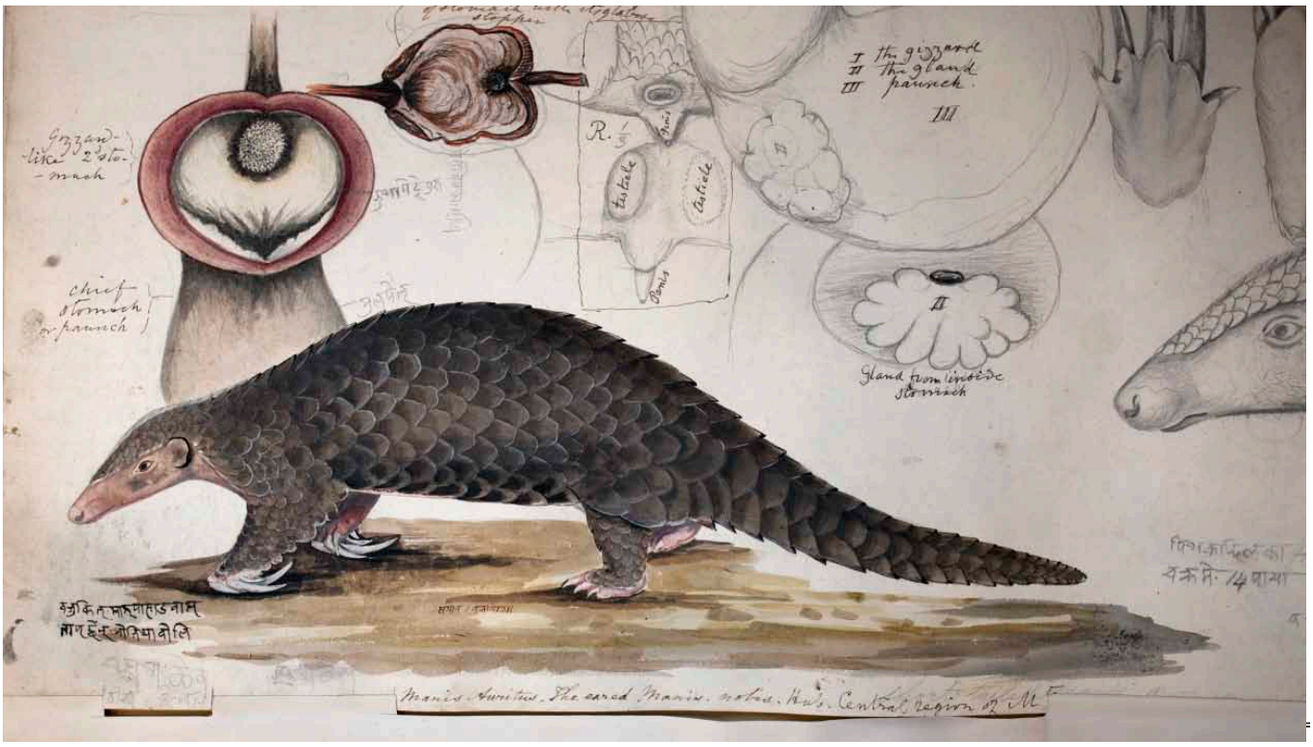
References
Ernst 2003, Molur *et al.* 2003.


Lepus Macrotis nob. Hab. Tagai


Lepus Caprolagus hispidus
Hab. Sal forest

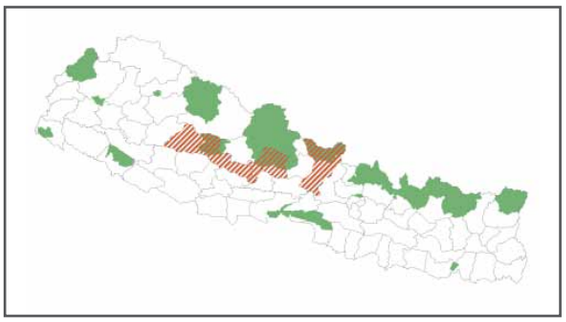
SMALL MAMMALS

[EULIPOTYPHLA, LAGOMORPHA, PHOLIDOTA, RODENTIA, SCANDENTIA]



ENDANGERED

77) ***Apodemus gurkha*** (Thomas, 1924)



Common Names
Himalayan Field Mouse (English); Himali Muso (Nepali)

Synonyms
Apodemus flavicollis gurkha (Thomas, 1924)

Species Description
Body covered in red-brown fur, with white feet. Long bushy tail up to 14.5 cm in length.

Species Ecology
The Himalayan Field Mouse occurs within coniferous forests where it is marginally sympatric and syntopic with the Long-tailed Field Mouse *Apodemus sylvaticus*.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Endangered B1ab(iii)
National: Endangered B1ab(iii)
Rationale for assessment: The Himalayan Field Mouse (*Apodemus gurkha*) has been nationally assessed as Endangered as it is known to have a small extent of occurrence of less than 5,000 km^2, occurs in only a few locations in central Nepal and is facing a continuing decline in habitat quality and area due to human disturbance. The population is also threatened by indiscriminate persecution as a pest species.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs between elevations of 2,200 m to 3,600 m in the districts of Baglung, Gorkha (Laprak village), Kaski, Parbat, Rukum and more specific areas of Chitre, Ghorepani, Larjung, Maharigaon, Tukuche, and upper Ulleri. This species occurs within Annapurna Conservation Area (in several sites) and possibly also Manaslu Conservation Area.

Distribution outside Nepal
This species is endemic to Nepal.

Main Threats
- Habitat loss and degradation due to clearing for agriculture and livestock, and overgrazing.
- Persecution as a pest species.

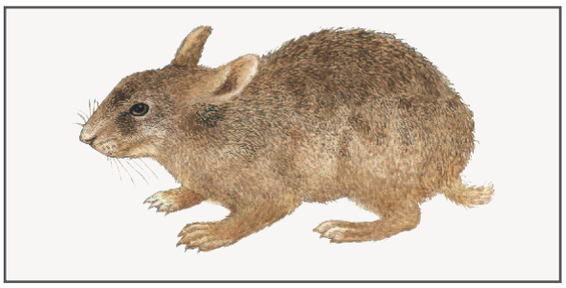
Conservation Measures in Place
The species is recommended for inclusion in the protected species list of National Park and Wildlife Conservation Act 1973 through its amendment.

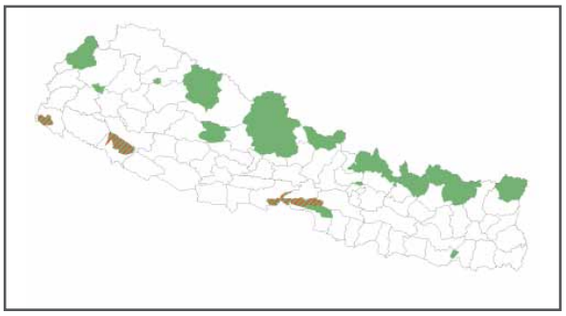
Conservation Recommendations
i) Conduct surveys including live trapping and indirect sign surveys to obtain occupancy and abundance index estimates.
ii) Obtain baseline data on threats.
iii) Control intentional and unintentional forest fires in the habitat of this species.
iv) Implement awareness and education programmes focused on this species habitat and its uniqueness.

References

Suwal and Veheught 1995, Molur *et al.* 2005, Karan Shah (pers. comm.) 2010.

78) ***Caprolagus hispidus*** (Pearson, 1839)





Common Names

Hispid Hare (English); Laghukarna Kharayo (Nepali)

Synonyms

Lepus hispidus (Pearson, 1839)

Species Description

Predominantly brown coat intermixed with black hairs, rufous chest and white belly. Shorter and more rounded ears and smaller hind legs than the Indian Hare.

Species Ecology

The Hispid Hare primarily occurs in early successional tall grasslands. During the dry-season burning of the grasslands, the hares shelter in marshy and riverine areas until the burned areas have begun to regenerate and provide adequate cover. The Hispid Hares move into forested areas within the foothills during monsoon. Grass shoots and roots are the main constituents of the Hispid Hare's diet. They are also known to feed on cultivated crops.

This species breeds during January and February. Studies suggest that Hispid Hares have small litters, with those captured and recorded only having single young and adults having four nipples instead of the usual six seen in most rabbits and hares.

Conservation Status

Global: Endangered B2ab(ii,iii,v)
National: Endangered B2ab(i,iii)
Rationale for assessment: The Hispid Hare (*Caprolagus hispidus*) has been nationally assessed as Endangered under criterion B in view of its small and fragmented distribution with an estimated area of occupancy of less than 500 km^2, and although no estimates are available for the total population of Hispid Hare in Nepal, there is no doubt that the species has experienced dramatic declines and which continue due to indiscriminate burning of its grassland habitat, succession of grasslands and habitat fragmentation.

Legal Status

CITES Appendix I
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species. This species occurs in lowland protected areas.

National Population Size

There are no population estimates available for this species in Nepal, however little doubt exists that the species has experienced a dramatic decline due to habitat loss in recent years. In undisturbed grasslands, population density has been estimated at one individual per 1,470 m^2. The global population is estimated to be as few as 300 individuals.

National Distribution

This species occurs in the Nepal Terai and has been recorded in the past in Bardia National Park, Chitwan National Park and Shukla Phanta Wildlife Reserve. The most recent sightings come from a camera trap survey carried out in Shukla Phanta Wildlife Reserve, April 2010. The extent of occurrence of this species is estimated to be 2,704 km^2, and the area of occupancy is estimated to be less than 500 km^2, in highly fragmented populations.

Distribution outside Nepal
Bangladesh, India (Assam, Bihar, Uttar Pradesh, West Bengal and possibly Madhya Pradesh).

Main Threats
- Habitat loss and fragmentation due to grassland succession, overgrazing and uncontrolled burning of the grasslands during the dry season.

Conservation Measures in Place
The Hispid Hare occurs in lowland protected areas and in Shukla Phanta Wildlife Reserve its habitat needs are considered in the grassland management programmes.

Conservation Recommendations
i) Conduct extensive camera trap and sign surveys to determine the status of the species in all potential grasslands in protected areas.
ii) Undertake a feasibility study on a captive breeding programme to help re-establish populations as is being undertaken for the Pygmy Hog in Assam, India.
iii) Based on the survey results, develop a species action plan.
iv) Develop and implement rotational patch burning using effective fire breaks with no late dry season burning to ensure there is adequate grass cover for the species in its potential grassland habitats.

References
Bell 1987, Bell *et al.* 1990, Oliver 1985, Yadav *et al.* 2008, Wildlife Information Network 2009, Aryal and Yadav 2010.

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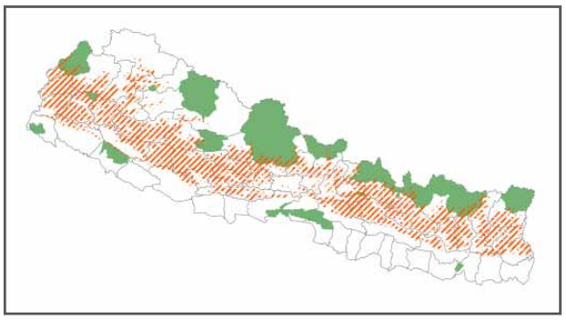
79) *Chimarrogale himalayica*
(Gray, 1842)



Common Names
Himalayan Water Shrew (English); Pahadi Pani Chhuchundro (Nepali)

Synonyms
Crossopus himalayicus (Gray, 1842)

Species Description
Dense waterproof blue-grey coat with silver guard hairs towards the rump. Small eyes and reduced ears closed by a flap when diving. Long white bristles on its feet and nose, whiskers thicker at the base, long black tail with white hair fringes.

Species Ecology
The Himalayan Water Shrew is semi-aquatic, associated with streams in temperate evergreen forests and mainly feeds on aquatic insect larvae.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Endangered B2ab(ii,iii)
Rationale for assessment: The Himayalan Water Shrew (*Chimarrogale himalayica*) has been nationally assessed as Endangered under criterion B in view of a small and declining area of occupancy estimated less than 500 km^2 within only five locations. Human disturbances, uncontrolled waste management, pollution of wetland habitat and natural disasters such as landslides and floods continue to cause declines in this species habitat area and quality. The indiscriminate persecution of small mammals as pest species is also thought to be causing continued decline of the population. Although this species

occurs in neighbouring countries, it is not considered likely that individuals would immigrate into Nepal from these surrounding areas, however further research is required to confirm this.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs at elevations between 900 m to 2,270 m and within the protected areas of Annapurna Conservation Area, Kanchanjunga Conservation Area, Langtang National Park, Makalu-Barun National Park, Rara National Park, Sagarmatha National Park and districts of Bajura and Mugu (Khani area).

Distribution outside Nepal
China, India, Lao PDR, Myanmar, Taiwan Province of China, Viet Nam.

Main Threats
- Habitat loss and fragmentation.
- Pollution.
- Persecution as a pest species (poisoning, pest control activities).
- Natural disasters (for example landslides).

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct surveys using live traps and indirect sign surveys in suitable habitat using standard protocols to obtain occupancy and abundance index estimates.
ii) Conduct research on the ecology of the species including preferred habitats, reproductive life history traits, food habits and threats.
iii) Control intentional and unintentional forest fires in their habitats.
iv) Set up a captive breeding programme.
v) Increase education and awareness programmes focusing on this species as an indicator of the health of the water systems.
vi) Develop and implement a management plan for key habitats of this species.

References

Corbet and Hill 1992, Suwal and Verheugt 1995, Molur *et al.* 2005, Fang *et al.* 2007, Prof. Karan Shah (pers. obs.).

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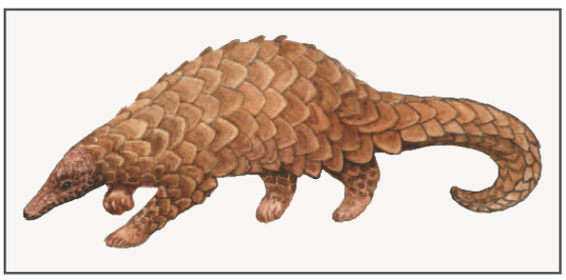
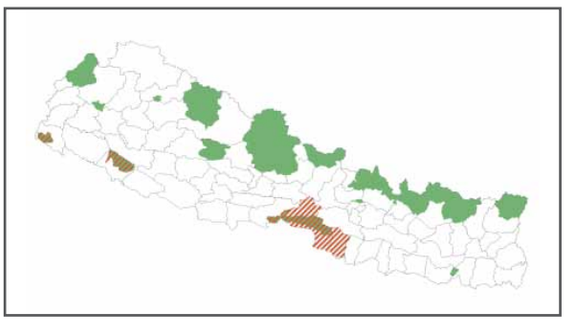
80) ***Manis crassicaudata*** (É. Geoffroy, 1803)





Common Names
Indian Pangolin (English); Tame Salak (Nepali)

Synonyms
Manis laticauda (nom. nud.) (Illiger, 1815); *Manis crassicaudatus* (Gray, 1827); *Pholidotus indicus* (Gray, 1865)

Species Description
Large overlapping scales which protect the body. Brown in colour, lighter around the face.

Species Ecology
The Indian Pangolin occurs in open grasslands, lightly wooded forests, scrub lands and has been recorded near human settlements. This species mainly feeds on eggs, ants and termites. The Indian

Pangolin is nocturnal and spends the day underground in burrows or under rocks and conceals the entrance of the burrow with loose earth, making detection difficult. This species usually gives birth to a single young during January, July and November.

Conservation Status
Global: Near Threatened
National: Endangered B1ab (iii,v)
Rationale for assessment: The Indian Pangolin (*Manis crassicaudata*) has been nationally assessed as Endangered under criterion B in view of a limited extent of occurrence of approximately 3,000 km^2 from three locations between which it is unlikely the species intermixes due to habitat fragmentation between protected areas and poaching for body parts (scales) for trade.

Legal Status
CITES Appendix II. Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size
The current population size of the Indian Pangolin is not known, however indicators point towards declining population.

National Distribution
This species occurs in Bardia National Park, Chitwan National Park, Shukla Phanta Wildlife Reserve and surrounding districts (Bara, Chitwan, Parsa).

Distribution outside Nepal
Bangladesh, India, Pakistan, Sri Lanka.

Main Threats
- Poaching for trade in skin and scales for medicinal purposes and for subsistence.
- Persecution.
- Habitat loss and degradation due to conversion of land for agriculture, livestock grazing, clearing of woodlands.
- Habitat fragmentation due to loss of connectivity of suitable habitat between protected areas.

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct surveys using camera trapping and indirect sign surveys and local interviews to obtain estimates of occupancy, index of population abundance and baseline line data on threats.
ii) Develop and implement species action plan (combined with the Chinese Pangolin) including management of key habitats.
iii) Start community-based initiatives to discourage use and illegal trade in the species' body parts and to reduce persecution, including developing alternative sources of income-generating activities for families which depend on pangolin trade.
iv) Increase awareness and education programmes targeted towards this species.

References

Heath 1995, Suwal and Verheugt 1995, CITES 2000, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008, Prativa Kaspal (pers.comm.) 2009.

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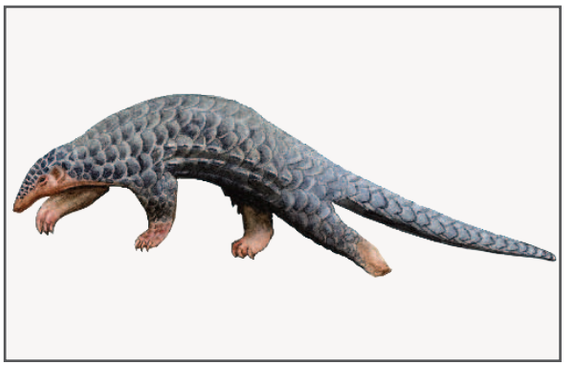
81) ***Manis pentadactyla*** (Linnaeus, 1758)



Common Names
Chinese Pangolin (English); Kalo Salak (Nepali)

Synonyms
Manis auritus (Hodgson, 1836); *Phateges bengalensis, Pholidotus assamensis* (Fitzinger, 1872)

Species Description
Smaller than the Indian Pangolin with smaller scales

(15 to 18 scales over the body). Scales tend to be darker in colour than the Indian pangolin with a pink-beige face and feet.Shorter tail with a naked tip. Protective ear flaps.

Species Ecology

The Chinese Pangolin occurs in subtropical and deciduous forests, agricultural lands and near human settlements. Pangolins are able to adapt to modified habitats such as secondary forests, provided their termite food source remains abundant and they are not heavily persecuted.

The reproductive success of Asian Pangolins is suspected to be low and the generation length for the Chinese Pangolin is thought to be approximately five years.

Conservation Status

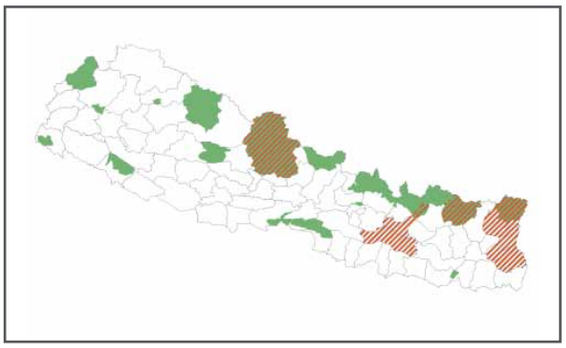
Global: Endangered A2d+3d+4d
National: Endangered A2abcd+3bcd+4a
Rationale for assessment: The Chinese Pangolin (*Manis pentadactyla*) has been nationally assessed as Endangered in view of a population decline inferred from surveys, observations and increasing price of pangolin parts of over 50% during the past 15 years. The main drivers include poaching for species parts for trade, persecution and habitat loss and fragmentation. These threats have not as yet been effectively addressed and it is predicted that this species will continue to experience declines in it's population and habitat.

Legal Status

CITES Appendix II
Listed in the National Parks and Wildlife Conservation Act 2029 (1973) as protected priority species.

National Population Size

There is little available information for the population status of this species. The current population is estimated to consist of approximately 5,000 individuals and has been observed to be in decline. A 1993 survey concluded the general trend across Nepal was that populations were dramatically declining, due to increased hunting and loss of habitat.



National Distribution

This species occurs within Annapurna Conservation Area, Makalu Barun National Park and districts of Baglung. This species is considered to occur throughout Nepal in suitable habitat and elevation including most protected areas in the lowland.

Distribution outside Nepal

Bangladesh, Bhutan, China, Hong Kong, India, Lao PDR, Myanmar, Nepal, Taiwan, Province of China, Thailand, Viet Nam.

Main Threats

- Poaching for trade in skin and scales for medicinal purposes and for subsistence.
- Persecution.
- Habitat loss and fragmentation due to human disturbances, conversion of land for agriculture and livestock grazing.

Conservation Measures in Place

Awareness and educational programmes have been conducted by Himalayan Nature.

Conservation Recommendations

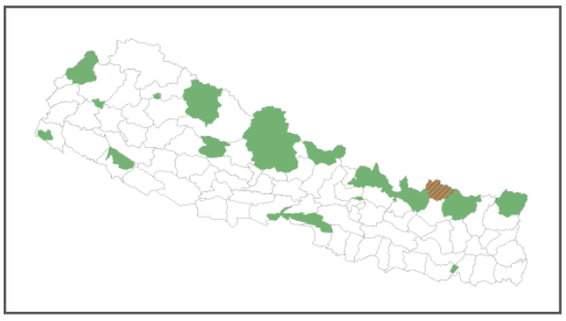
i) Conduct field-based surveys based on camera traps, indirect signs and interviews with local people to establish level of poaching and trade, occupancy and index of abundance.
ii) Implement suitable management of open forests including restrictions on forest fires, grazing and soil mining in key areas.
iii) Implement/enhance awareness and education programmes in areas where the species occurs.
iv) Provide alternative sources of income generating activities to families which depend on pangolin trade.
v) Improve monitoring of illegal pangolin trade including forming community-based monitoring

groups.
vi) Encourage the use of natural fertilisers and pesticides to reduce potential impact on pangolins through the food chain.
vii) Undertake a feasibility study on establishing a community-based pangolin sanctuary in suitable pangolin habitat.
viii) Develop successful captive breeding programme and undertake further research on the ecology of this species.

References

Suwal and Verheught 1995, CITES 2000, Kaspal 2008, Duckworth *et al.* 1999, Prativa Kaspal (pers.comm.) 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

82) ***Ochotona himalayana*** (Feng, 1973)



Common Names
Himalayan Pika (English); Himali Thutekharayo (Nepali)

Synonyms
Ochotona roylei himalayana (Feng, 1973)

Species Description
Difficult to distinguish from other pika species. Brown coloured coat dispersed with black hair along dorsal area. Lighter on the chest. Long whiskers.

Species Ecology
The Himalayan Pika inhabits rocky habitats bordered by evergreen or broadleaved forests, subtropical and tropical montane forests. Pikas mainly feed on grasses, lichens and mosses.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Endangered B1ab(iii,v)
Rationale for assessment: The Himalayan Pika (*Ochotona himalayana*) has been nationally assessed as Endangered under criterion B due to a small distribution from a single location, with an extent of occurrence of approximately 1,000 km^2. This species population and quality of habitat are considered to be in decline due to persecution as a pest species and overgrazing of livestock. Population size is not well known but could potentially be relatively small. The species also occurs in neighbouring areas of China but due to the terrain and altitude between these areas it is unlikely that there is significant movement between populations to down list this species, however further confirmation is required.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This pika has been recorded in the past in Sagarmatha National Park.

Distribution outside Nepal
China (Tibet Autonomous Region).

Main Threats
- Competition with livestock.
- Persecution as pest species.

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct indirect sign surveys and live trapping in Sagarmatha National Park and other areas of suitable habitat to determine presence-absence / occupancy of this species.
ii) Develop and implement effective management plan for the species key habitats.
iii) Raise awareness about this species and its habitat in the areas where it occurs.
iv) Develop a captive breeding programme.

References

Suwal and Verheught 1995, Molur *et al.* 2005, Baral and Shah 2008, Smith and Johnston 2008.

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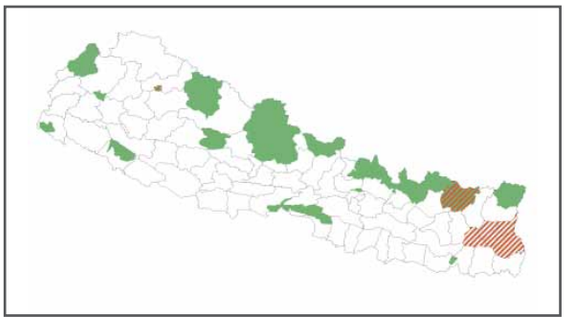
83) ***Ratufa bicolor*** (Sparrman, 1778)



Common Names
Black Giant Squirrel (English); Raj Lokharke (Nepali)

Synonyms
Sciurus bicolor (Sparrman, 1778); *Sciurus giganteus* (McClelland, 1839); *Sciurus macruroides* (*nom. nud.*) (Hodgson, 1849); *Ratufa gigantea stigmosa* (Thomas, 1923)

Species Description
Nepal's largest squirrel, deep brown or black on the back and buff beneath, large black ears, black tail and black marks on chin. Forelegs black in front and buff on the back.

Species Ecology
The Black Giant Squirrel occurs in tropical and subtropical montane evergreen and dry deciduous forests. The main food source of this species is fruit.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Near Threatened
National: Endangered B1ab(i,ii,iii)
Rationale for assessment: The Black Giant Squirrel (*Ratufa bicolor*) has been nationally assessed as Endangered due to a distribution which occurs mainly outside protected areas, in fragmented and few locations (3), and a predicted continuing population decline due to the threats of poaching, persecution and habitat loss and no conservation measures are in place for this species. Further confirmation of the small population size of this species may also consider it Endangered under criterion C2a(i).

Legal Status
CITES Appendix II
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
The population size of this species is estimated to be approximately 500 individuals and considered to be in decline.

National Distribution
Makalu Barun National Park, Rara National Park and the district of Ilam Panchthar, Terathum. Its

occurrence in the far west needs further confirmation.

Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China (southern), India (Arunachal Pradesh, Assam, Meghalaya, Nagaland and West Bengal), Indonesia, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss due to clearing of forest areas for agriculture and livestock grazing.
- Poaching for trade and subsistence.
- Persecution.

Conservation Measures in Place
None.

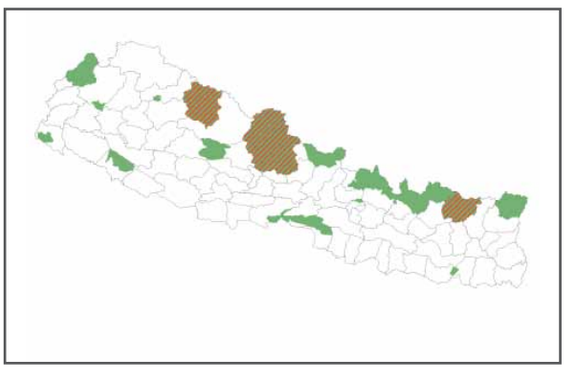
Conservation Recommendations
i) Conduct surveys using camera traps, live trapping, indirect signs and interviews with local people in all potential sites to establish occupancy, distribution, abundance index and baseline information on threats using standardised protocols.
ii) Conduct further study of species ecology and look into the development of a captive breeding programme at NTNC Central Zoo.
iii) Develop and implement habitat management plan for key sites integrated with community initiatives.

References

Suwal and Verheugt 1995, Molur *et al.* 2005,
Nepal Red List of Mammals Field Technicians Consultative Workshop 2010.

LEAST CONCERN

84) ***Apodemus sylvaticus*** (Linnaeus, 1758)



Common Names
Long-tailed Field Mouse (English); Lampuchhre Khetmuso (Nepali)

Synonyms
Mus sylvaticus (Linnaeus, 1758); *Mus arianus griseus* (True, 1894); *Apodemus sylvaticus pentax*, *Micromys sylvaticus pentax* (Wroughton, 1908); *Apodemus flavicollis rusiges* (Miller, 1913)

Species Description
Yellow-brown to grey coloured coat, white feet and long tail which is brown on top and grey beneath. The ventral parts are grey. Large ears are rounded and same colour as the body. The orange-coated upper incisors lack the notch that mouse species normally have.

Species Ecology
The Long-tailed Field Mouse occurs in the dry alpine zone, temperate, subtropical and tropical montane forests, scrublands and grasslands. They mainly feed on seeds, vegetative parts of plants and insects. Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern

National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution across Nepal and occurrence within protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs within the protected areas of Annapurna Conservation Area, Makalu Barun National Park and Shey-Phoksundo National Park.

Distribution outside Nepal
Albania, Algeria, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Liechtenstein, Lithuania, Luxembourg, the former Yugoslav Republic of Macedonia, Moldova, Monaco, Montenegro, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Turkey, Ukraine, United Kingdom.

Main Threats
Unknown.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Khammes and Aulagnier 2007, Baral and Shah 2008.

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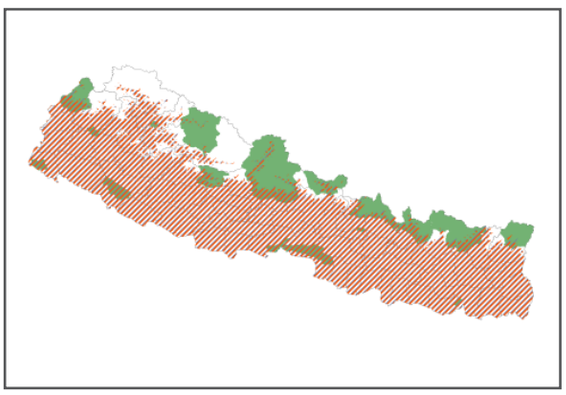
85) ***Bandicota bengalensis*** (Gray, 1835)



Common Names
Lesser Bandicoot Rat (English); Sano Dhademuso (Nepali)

Synonyms
Arvicola bengalensis (Gray and Hardwicke, 1833); *Mus kok* (Gray, 1837); *Mus (Neotoma) providens* (Elliot, 1839); *Mus dubius* (Kelaart, 1850); *Mus deccaensis* (Tytler, 1854); *Mus morungensis, Mus plurimammis, Mus tarayensis* (Horsfield, 1855); *Mus (Nesokia) barclayanus, Mus (Nesokia) blythianus* (Anderson, 1878); *Nesokia gracilis* (Nehring, 1902); *Gunomys varillus, Gunomys varius* (Thomas, 1907); *Gunomys lordi, Gunomys sindicus* (Wroughton, 1908); *Gunomys kok insularis* (Phillips, 1936)

Species Description
Slightly smaller than the Greater Bandicoot Rat, and more brown in colour. Dark tail which is shorter than the head and body length. Undersides grey, face more rounded, with a broad muzzle and round pink ears.

Species Ecology
The Lesser Bandicoot Rat is found in agricultural areas, tropical and subtropical deciduous forests and around human settlements. The main diet of this species consists of grasses, seeds, rice, wheat, herbs and tubers.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population, and it occurs in a number of protected areas, has a tolerance to a degree of habitat modification, and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There are no population estimates available for this species however it is generally considered a common species with a widespread distribution.

National Distribution
This species is widespread across Nepal. Districts of Bara and Ilam and protected areas of Annapurna Conservation Area, Chitwan National Park, Makalu Barun National Park, and Shukla Phanta Wildlife Reserve. It is likely that the species also occurs within Bardia National Park but this needs to be confirmed.

Distribution outside Nepal
India, Malaysia, Myanmar, Pakistan, Sri Lanka, Thailand.

Main Threats
Unknown.

References

Asif *et al.* 1992, Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

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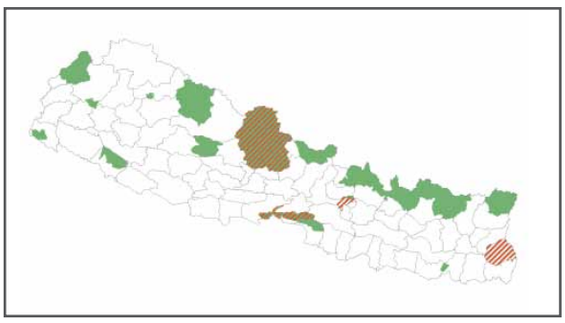
86) ***Bandicota indica*** (Bechstein, 1800)



Common Names
Greater Bandicoot Rat (English); Thulo Dhademuso (Nepali)

Synonyms
Mus Bandicota, Mus indicus (Bechstein, 1800); *Mus malabarica, Mus perchal* (Shaw, 1801); *Mus (Rattus) nemorivagus* (Hodgson, 1836); *Mus macropus* (Hodgson, 1845); *Mus (Nesokia) elliotanus* (Anderson, 1878)

Species Description
Slightly smaller than the Great Bandicoot Rat, more brown rather than black with a dark tail which is shorter than the head and body length. Undersides grey, face more rounded with a broad muzzle and round pink ears.

Species Ecology
The Greater Bandicoot Rat occurs in rice fields and cultivated habitats, subtropical and tropical dry deciduous forests. The Greater Bandicoot Rat has a broad diet which includes rice, molluscs, crustaceans and various plant items.

The gestation length of this species is approximately one month with an average litter size of seven pups.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution,

tolerance of a broad range of habitats, including human modified areas, presumed large population and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
This species is able to live successfully in human modified environments and is considered common and abundant.

National Distribution
This species is widespread across Nepal and within the protected areas of Annapurna Conservation Area, Chitwan National Park and the districts of Ilam and Katmandu.

Distribution outside Nepal
Bangladesh, Cambodia, China, Hong Kong, India, Lao PDR, Malaysia, Myanmar, Sri Lanka, Thailand, Viet Nam.

Main Threats
Unknown.

References

Suwal and Verheugt 1995, Duff and Lawson 2004, Molur *et al.* 2005, Baral and Shah 2008, Thitipramote *et al.* 2009.

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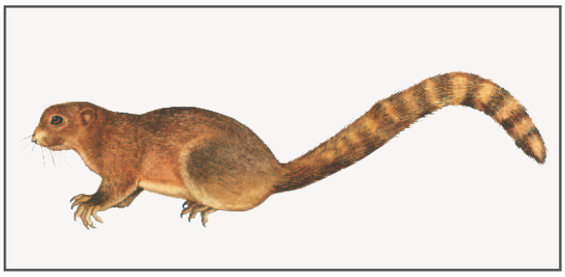
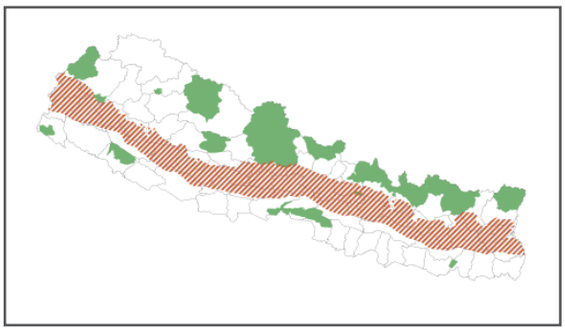
87) *Callosciurus pygerythrus*

(I. Geoffroy Saint Hilaire, 1832)





Common Names
Hoary-bellied Squirrel (English); Pahadi Banlokharke (Nepali)

Synonyms
Sciurus pygerythrus (I. Geoffroy Saint-Hilaire, 1831); *Sciurus lokroides* (Hodgson, 1836); *Sciurus assamensis* (*nom. nud.*) (Gray ex M'Clelland, 1843); *Sciurus Blythi* (Tytler, 1845); *Macroxus similis* (Gray, 1867); *Sciurus stevensi* (Thomas, 1908)

Species Description
Brown squirrel with a grey or white belly. Muzzle blunter than the Orange-bellied Squirrel and long tail without dark tip.

Species Ecology
The Hoary-bellied Squirrel occurs in mid canopy temperate, tropical and subtropical moist forests with thick to moderate evergreen forest patches and gardens. This species feeds on wild banana, fruits, pears and pumpkins and offerings left at temples.

Hoary-bellied Squirrels reproduce once per year, with a litter size averaging three to four young.

Conservation Status
Global: Least Concern

National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution and because the population is unlikely to be declining at a rate to qualify for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
The species is considered common and abundant

with a stable population.

National Distribution
This species occurs across Nepal and within the protected areas of Annapurna Conservation Area, Chitwan National Park, Makalu Barun National Park and the districts of Doti, Ilam, Kaski, Ramechhap and Sindhuli.

Distribution outside Nepal
Bangladesh, China, India, Myanmar.

Main Threats
- Habitat loss.
- Hunting for local consumption and medicinal purposes.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Smith and Xie 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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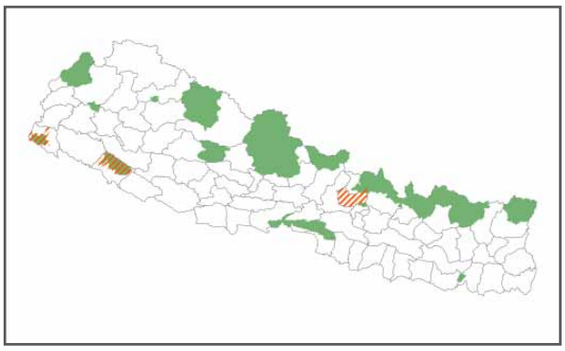
88) ***Crocidura attenuata***
(Milne-Edwards, 1872)



Common Names
Indochinese Shrew (English); Khairo Chhuchundro (Nepali)

Species Description
Medium sized shrew with grey-brown back and pale yellow-grey undersides, a dark brown tail, which is paler below. Feet have short pale hairs on the back.

Species Ecology
The Indochinese Shrew occurs in agricultural fields and lightly wooded forests, rice fields and cut-down forest-farmlands of weeds and grass. This shrew is insectivorous. Their diet is likely to consist mainly of insects and worms.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a broad distribution and assumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species has been reported from Bardia National Park, Shukla Phanta Wildlife Reserve and additionally the district of Nuwakot which needs confirmation.

Distribution outside Nepal
Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Viet Nam.

Main Threats
Unknown.

References
Lekagul and McNeely 1977, Stone 1995, Suwal and Verheugt 1995, Baral and Shah 2008.

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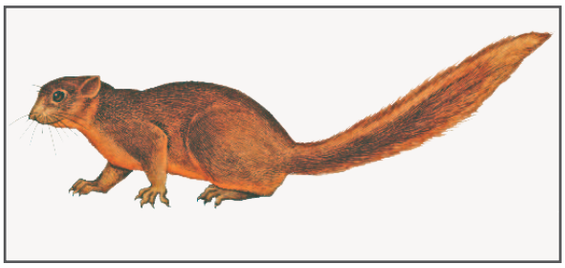
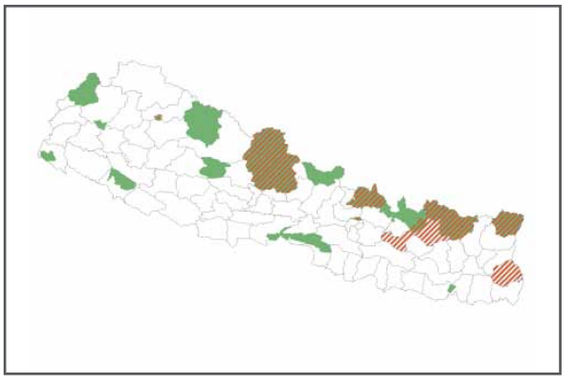
89) ***Dremomys lokriah*** (Hodgson, 1836)





Common Names
Orange-bellied Himalayan Squirrel (English); Himali Banlokharke (Nepali)

Synonyms
Sciurus lokriah (Hodgson, 1836); *Sciurus subflaviventris* (Gray, 1843); *Dremomys lokriah subflaviventris* (Gray, 1843); *Sciurus locriah* (Blanford, 1891); *Dremomys lokriah bhotia* (Wroughton, 1916); *Dremnomys macmillani* (Thomas, 1916); *Dremomys lokriah garonum* (Thomas, 1922)

Species Description
Medium sized forest squirrel with bright orange throat, chest and belly, has chunky body, short limbs, small ears and a pointed snout.

Species Ecology
The Orange-bellied Himalayan Squirrel occurs in forests including subtropical and oak-rhododendron forests and oak, bamboo, fir and pine forest patches. The main diet consists of fruits, berries and grubs found under bark.

This species produces litters of two to five young.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presence within protected areas and presumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
The species is considered common and abundant with a stable population.

National Distribution
The species occurs in Annapurna Conservation Area, Makalu Barun National Park, Langtang National Park, Shivapuri Nagarjun National Park, Sagarmatha National Park, Kanchenjunga Conservation Area and Rara National Park and from the districts of Ilam, Ramechhap and Solukhumbu.

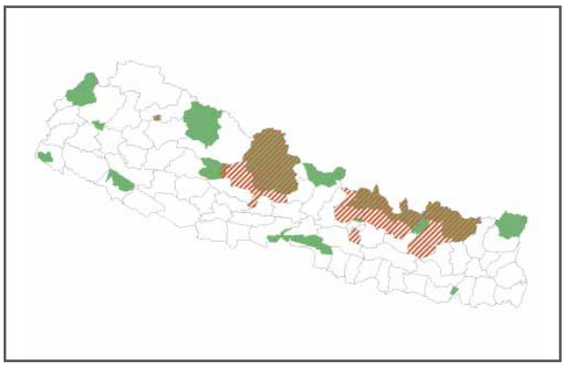
Distribution outside Nepal
Bangladesh, China, India, Myanmar.

Main Threats
- Habitat degradation.
- Hunthing for subsistence.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008, Nepal Red List Field Technicians Consultative Workshop 2010.

90) ***Episoriculus caudatus*** (Horsfield, 1851)



Common Names
Hodgson's Brown-toothed Shrew (English);
Hadsanko Khairadante
Chhuchundro (Nepali)

Synonyms
Soriculus caudatus (Horsfield, 1851)

Species Description
A shrew with a comparatively large body and short tail. Upperside of the body and tail dark-grey, snout light grey. Underside of the body and tail whitish grey. Tail covered by hairs.

Species Ecology
Hodgson's Brown-toothed Shrew occurs in temperate forests, montane coniferous, alpine and rhododendron forests and alpine meadows. They feed on insects, spiders, slugs and worms.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, assumed large population size and occurrence within most of the mountain protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across Nepal between elevations of 1,500 m to 3,600 m and within the protected areas of Annapurna Conservation Area, Langtang National Park, Makalu Barun National Park and Rara National Park and the districts of Dolakha, Kaski, Lalitpur, Myagdi, Nuwakot, Okhaldhunga, Parbat, Rasuwa, Sindhupalchok and Solukhumbu.

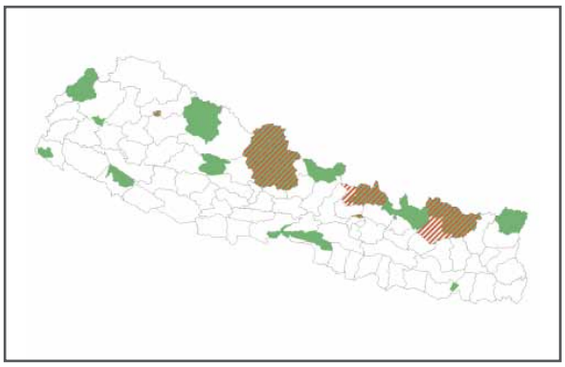
Distribution outside Nepal
China, India, Myanmar.

Main Threats
Unknown.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

91) ***Episoriculus leucops*** (Horsfield, 1855)



Common Names
Long-tailed Brown-toothed Shrew (English); Lampuchhre Khairadante Chhuchundro (Nepali)

Synonyms
Soriculus leucops (Horsfield, 1855); *Sorex nivicola nom. nud.* (Gray, 1863); *Sorex minor* (Dobson, 1890); *Sorex baileyi* (Thomas, 1914); *Soriculus caudatus bailey* (Thomas, 1914); *Soriculus gruberi* (Weigel, 1969)

Species Description
A brown-black, long-tailed shrew.

Species Ecology
The Long-tailed Brown-toothed Shrew occurs in temperate and evergreen forests, moist stands of dwarf bamboo, shrubs and grasses and also inhabits villages and cultivated fields.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, occurrence within most of the mountain protected areas and ability to inhabit several habitat types.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across Nepal and within the protected areas of Annapurna Conservation Area, Langtang National Park, Makalu Barun National Park, Rara National Park and Shivapuri-Nagarjun National Parks and districts of Rasuwa and Solukhumbu.

Distribution outside Nepal
China, India, Myanmar, Viet Nam.

Main Threats
Unknown.

References
Suwal and Verheugt 1995, Chakraborty *et al.* 2004, Molur *et al.* 2005, Smith and Xie 2008.

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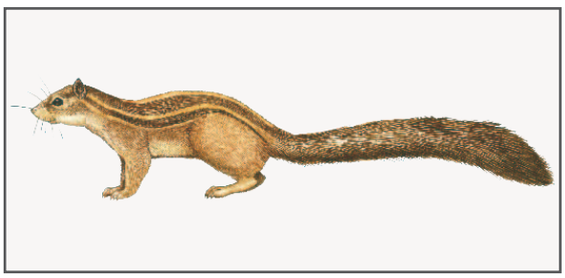
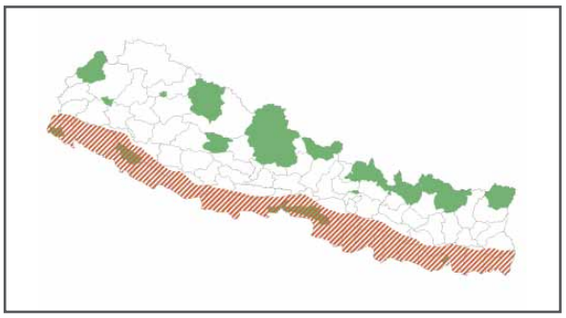
92) ***Funambulus pennantii***
(Wroughton, 1905)



Common Names
Five-striped Palm Squirrel (English); Panchdharke Lokharke (Nepali)

Synonyms
Sciurus lokriah (Hodgson, 1836); *Sciurus subflaviventris* (Gray, 1843); *Dremomys lokriah subflaviventris* (Gray, 1843); *Sciurus lokriah* (Blanford, 1891); *Dremomys lokriah bhotia* (Wroughton, 1916); *Dremnomys macmillani* (Thomas, 1916); *Dremomys lokriah garonum* (Thomas, 1922)



Species Description
Body has five alternating stripes of brown-black and yellow colour. Long bushy dark brown tail.

Species Ecology
The Five-striped Palm Squirrel occurs in tropical and subtropical dry deciduous forests, montane forests, grasslands, scrublands and agricultural lands and gardens. This species feeds on fruits, berries, seeds, grains and offerings made at temples.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, occurrence in protected areas and tolerance to habitat modification. It is unlikely that the population is declining at a rate that would qualify this species to a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across southern Nepal and in all protected areas of the lowlands.

Distribution outside of Nepal
India, Islamic Republic of Iran, Pakistan.

Main Threats
- Habitat loss.
- Poaching for subsistence and pet trade.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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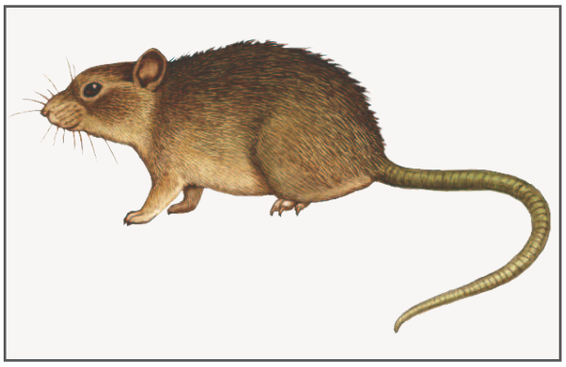
93) ***Golunda ellioti*** (Gray, 1837)



Common Names
Indian Bush-rat (English); Jhadi Muso (Nepali)

Synonyms
Mus hirustus (Elliot, 1839); *Mus myothrix, Golunda ellioti myothrix* (Hodgson, 1845); *Mus newara, Mus nuwara, Golunda ellioti, Nuwara, Golunda coffaeus* (Kelaart, 1850); *Pelomys watsoni, Golunda ellioti watsoni* (Blanford, 1876); *Golunda newara* (Blanford, 1891); *Golundaellioti limitaris, Golunda ellioti bombax, Golunda ellioti coenosa, Golunda ellioti coraginus* (Thomas, 1923)

Species Description
Red-brown rodent with a long tail that is brown above and yellow-grey below. Head is vole-like with large eyes. Ears very large and conch-like and hairy on the outside. A unique characteristic of this rat are its naked and black hind feet soles.

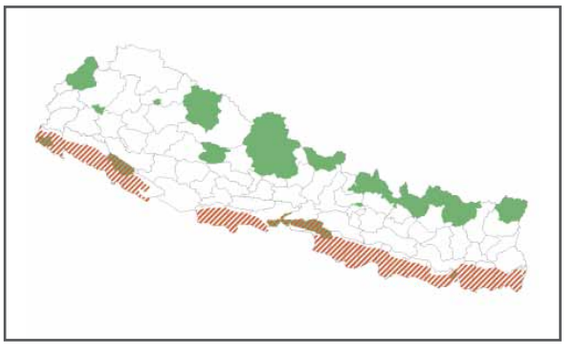
Species Ecology
The preferred habitat for the Indian Bush-rat is bush and scrub jungle; however it also occurs in grasslands and scrub forests, cultivated lands and bushes.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution across Nepal (with an extent of occurrence exceeding that to qualify for a threat category). It is regarded as a common species and probably occurs within several protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973)

National Population Size



There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across Nepal in the Terai and lowland areas and likely to occur within the protected areas of Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve, Shukla Phanta Wildlife Reserve. However the Indian Bush-rats presence in these areas needs to be confirmed.

Distribution outside Nepal
India, Islamic Republic of Iran, Pakistan, Sri Lanka.

Main Threats
- Habitat loss.
- Habitat degradation (invasive alien plant species).
- Human encroachment.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Sakthivel and Neelanarayanan 2009.

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94) ***Hylopetes alboniger*** (Hodgson, 1836)

Common Names
Particolored Flying Squirrel (English); Male Rajpankhi Lokharke (Nepali)

Synonyms
Sciuropterus alboniger (Hodgson, 1836); *Pteromys leachii, Sciuropterus turnbulli* (Gray, 1837)

Species Description
This species has a hoary or black body with white underparts and a long flattened tail.

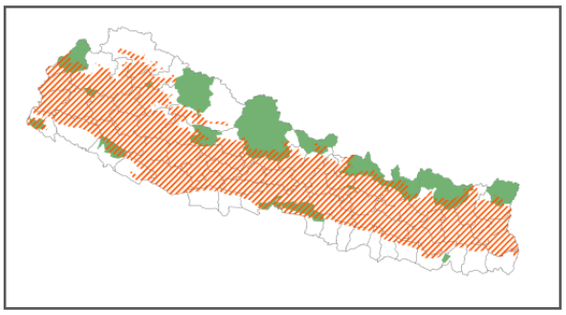
Species Ecology
The Particolored Flying Squirrel is found in tropical and subtropical montane forests and temperate oak and rhododendron forests at elevations between 1,500 m to 3,400 m. Its main diet consists of fruits, nuts, leaves and buds.

The species breeding season runs from April to mid-June with two to three young born in each litter.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, presence within several protected areas and an assumed large population that is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.



National Distribution
This species occurs across Nepal and within the protected areas of Annapurna Conservation Area, Dhorpatan Hunting Reserve, Chitwan, Makalu Barun, Rara and Shivapuri Nagarjun National Parks and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss.

References
Suwal and Verheugt 1995, Baral and Shah 2008, Molur *et al.* 2005, Smith and Xie 2008.

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95) ***Lepus nigricollis*** (F. Cuvier, 1823)

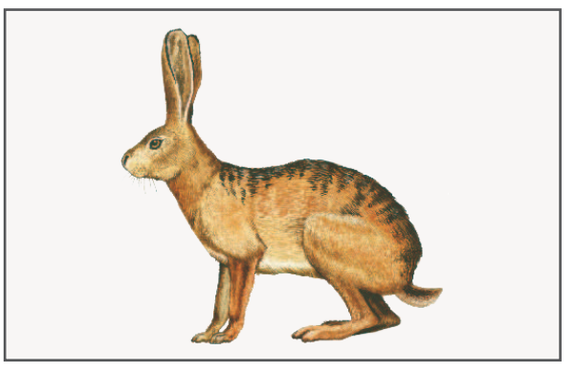
Common Names
Indian Hare (English); Khairo Kharayo (Nepali)

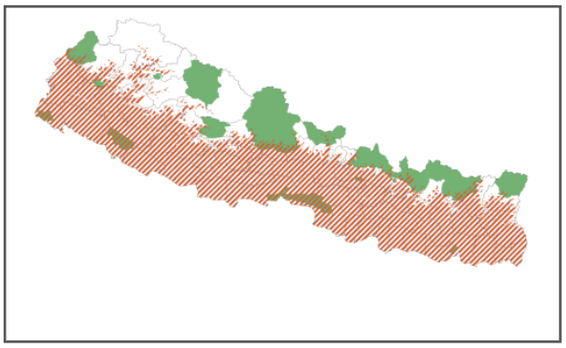
Species Description
Light brown coat with black hair intermixed throughout, rufous tail and whitish underparts.

Species Ecology
The Indian Hare occurs in grasslands, light forests, near human settlements and in wide open fields with scattered bushes with its main diet consisting of forbs, grasses and shoots.

The Indian Hare can breed throughout the year; however peak breeding season is during the monsoon. Litter size is normally one to four young.

Conservation Status
Global: Least Concern
National: Least Concern





Rationale for assessment: This species is considered Least Concern as it is widespread, common and unlikely to be declining at a rate to qualify it for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
The Indian Hare is considered fairly common with an estimated population greater than 10,000 individuals, however it is considered to be in decline.

National Distribution
The Indian hare is distributed throughout Nepal, up to an elevation of 2,500 m.

Distribution outside Nepal
Bangladesh, India, Indonesia, Pakistan, Sri Lanka.

Main Threats
- Hunting for subsistence.
- Habitat loss due to over grazing and succession.
- Persecution as a pest species.

References

Inskipp 1988, Flux and Angermann 1990, Suwal and Verheught 1995, Gurung and Singh 1996, Baral and Shah 2005, Nepal Red List of Mammals Field Technicians Workshop 2010.

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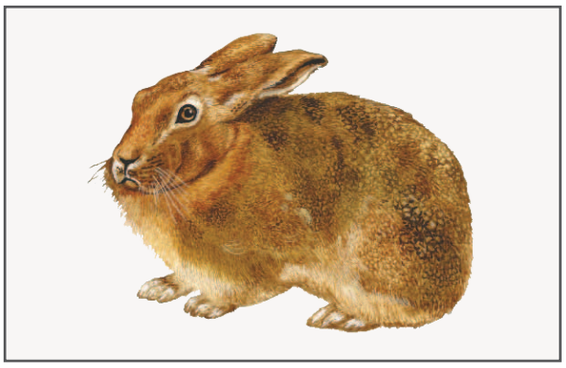
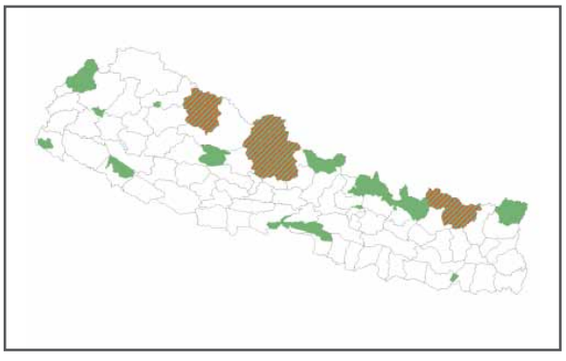
96) ***Lepus oiostolus*** (Hodgson, 1840)





Common names
Woolly Hare (English); Bhote Kharayo (Nepali)

Species Description
Plumb brown, thick curly fur, pale rump and a tail that is brown above and off-white below.

Species Ecology
The Woolly Hare occurs in alpine shrub and grasslands, mountain slopes and meadows. The diet of this species is predominantly grasses and herbaceous plants.

Females produce two litters annually with four to six young per litter.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, occurrence within protected areas and a population unlikely to be declining at a rate to qualify the species for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species has been reported from Dolpa and Mustang districts, the Annapurna Conservation Area, Makalu Barun, Shey Phoksundo, and Sagarmatha National Parks and at elevations

between 3,500 m and 5,500 m throughout the country.

Distribution outside Nepal

China, India.

Main Threats

Unknown.

References

Inskipp 1988, Flux and Angerman 1990, Suwal and Verheught 1995, Chakraborty *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

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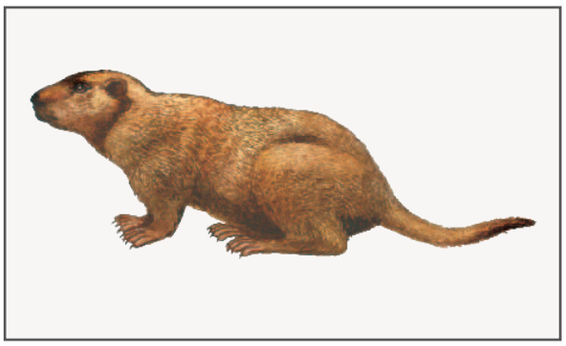
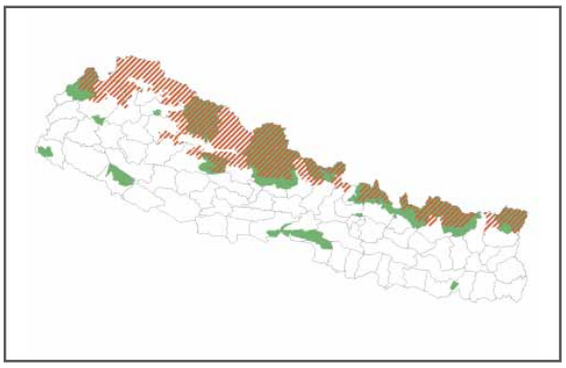
97) ***Marmota himalayana*** (Hodgson, 1841)





Common Names

Himalayan Marmot (English); Himali Phyaumuso (Nepali)

Synonyms

Arctomys himalayanus, Marmotabobak himalayana (Hodgson, 1841); *Arctomys Hemachalanus, Arctomys hemachalana* (Hodgson, 1843); *Arctomys tibetanus* (Gray, 1847)

Species Description

Short, coarse, buff-grey fur with some black hair on back. Face dark brown with buff eye ring, black or brown tail which is one-third of its body length.

Species Ecology

The Himalayan Marmot occurs in alpine meadows, grasslands and drylands with sparse vegetation. The Himalayan Marmot mainly feeds on grasses but also includes roots, leaves and seeds in its diet.

Females reach sexual maturity at approximately two years and after a gestation period of one month produce litters of two to 11 young.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, presumed large population, occurrence in a number of protected areas, and because it is unlikely to be declining at a rate to qualify for a threatened category.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

This species occurs along the northern border of Nepal, within Shey Phoksundo, Langtang and Sagarmatha National Parks, Annapurna and Kanchenjunga Conservation Areas.

Distribution outside Nepal

China, India, Pakistan.

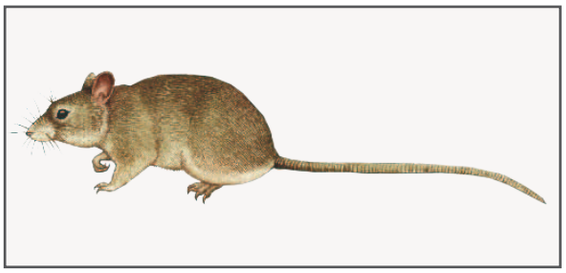
Main Threats

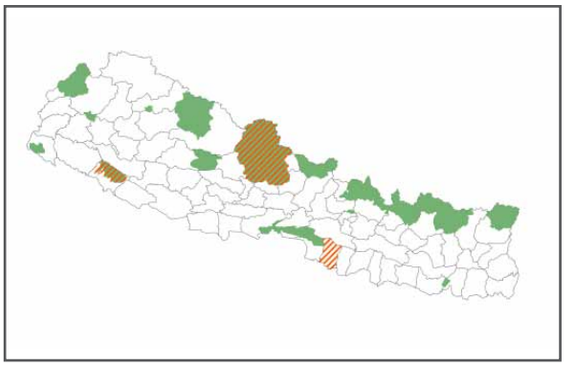
Unknown.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008.

98) ***Millardia meltada*** (Gray, 1837)





Common Names

Soft-furred Field Rat (English); Makhmali Muso (Nepali)

Synonyms

Golunda meltada, Rattus meltada ssp. meltada (Gray, 1837); *Mus lanuginosus* (Elliot, 1839); *Mus comberi, Mus listoni* (Wroughton, 1907); *Millardia meltada* ssp. *pallidor, Rattus meltada* ssp. *pallidor* (Ryley, 1914); *Millardia meltada* ssp. *dunni* (Thomas, 1917)

Species Description

Soft pale grey grizzled fur. Throat, undersides and feet pale grey. Tail dark grey on top and white below with annular rings. Tail is equal to or shorter than the head and body. Rounded ears and eyes. Has four or five pads on the feet instead of the usual six of other rat species.

Species Ecology

The Soft-furred Field Rat occurs in cultivated fields, heavy scrubs surrounded by forests, tropical and subtropical dry deciduous forests, tropical grasslands, irrigated croplands and grasslands with gravel, water courses, embankments and dry rocky hills, often using rocks and fallen walls to shelter. It burrows holes at the roots of bushes or hedges, favouring prickly pear hedges. The diet of this species consists of wheat, sugarcane, sorghum, clover and goosefoots.

This species has an average litter size of six young.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its common occurrence in lowland Sal forests especially in Bardia National Park.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

This species has been recorded from Annapurna Conservation Area, Bardia National Park and district of Bara.

Distribution outside Nepal

India, Pakistan, Sri Lanka.

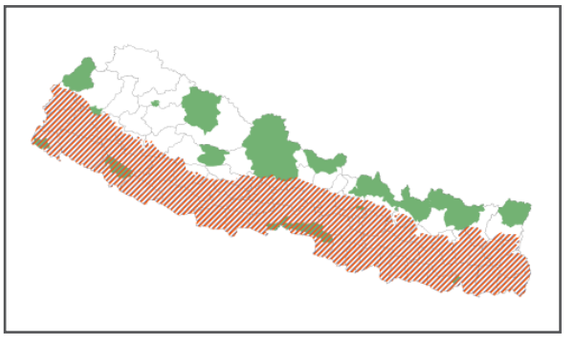
Main Threats

- Habitat loss and degradation.
- Hunting for subsistence.
- Persecution as a pest species.

References

Beg *et al*. 1994, Suwal and Verheugt 1995, Lathiya *et al.* 2003, Molur *et al.* 2005, Baral and Shah 2008.

99) ***Mus booduga*** (Gray, 1837)



Common Names
Common Indian Field Mouse (English); Sano Khetmuso (Nepali)

Synonyms
Leggada booduga (Gray, 1837); *Mus lepidus* (Elliot, 1839); *Mus terricolor* (Blyth, 1851); *Mus albidiventris* (Blyth, 1852); *Mus beavanii* (Peters, 1866); *Leggada dunni* (Wroughton, 1912); *Gatamyia weragami* (Deraniyagala, 1965)

Species Description
Small grey-brown species with white underparts and lower limbs. Large eyes and rounded ears.

Species Ecology
The Common Indian Field Mouse occurs in tropical, subtropical dry deciduous forests and agricultural fields. This species feeds on seeds and crops and is considered an agricultural pest species.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of it's broad distribution across Nepal, its occurrence within protected areas and because it is unlikely that the population is declining at a rate that would qualify the species for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Widely distributed across Nepal and has been found in Bardia National Park and Shukla Phanta Wildlife Reserve and district of Ilam.

Distribution outside Nepal
Bangladesh, India, Myanmar, Pakistan, Sri Lanka.

Main Threats
- Habitat loss and degradation.
- Persecution as a pest species.

References
Sridhara 1983, Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

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100) ***Mus cervicolor*** (Hodgson, 1845)

Common Names
Fawn-colored Mouse (English); Khakirange Muso (Nepali)

Synonyms
Mus strophiatus (Hodgson, 1845); *Mus fulvidiventris*

(Blyth, 1852); *Mus cunicularis* (Blyth, 1855); *Leggada nagarum imphalensis* (Roonwal, 1948)

Species Description

Small mouse with relatively small eyes and ears. Fur soft and brown-grey on the back, grey tipped with cream or buff on the belly. Tail is shorter in length than the head and body. Hindfeet are relatively short and are white with sparse dark hairs.

Species Ecology

The Fawn-colored Mouse occurs in a broad range of habitats; in secondary growth, grass and agricultural areas such as rice fields.

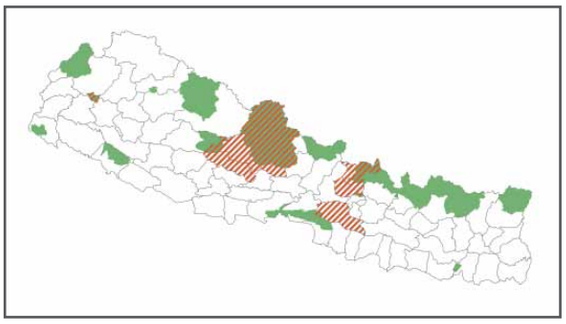
Little is known about the reproductive parameters of the species.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution across Nepal, broad habitat range and presence within protected areas.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.



National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

This species occurs across Nepal within the protected areas of Annapurna Conservation Area, Khaptad National Park and Shivapuri Nagarjun National Park and the districts of Baglung, Bara, Kaski, Makawanpur, Mustang, Myagdi, Nuwakot, Parbat and Rasuwa.

Distribution outside Nepal

Cambodia, India, Lao PDR, Myanmar, Pakistan, Sri Lanka, Thailand, Viet Nam.

Main threats

- Habitat loss and degradation.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Smith and Xie 2008, Baral and Shah 2008.

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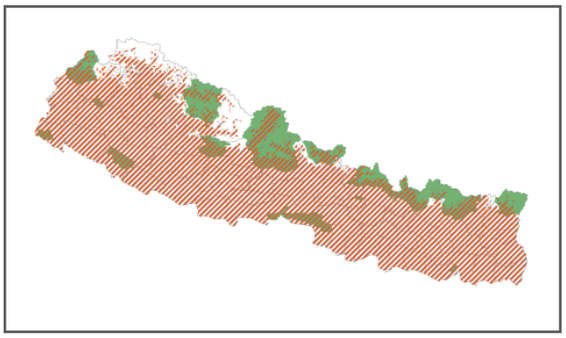
101) ***Mus musculus*** (Linnaeus, 1758)

Common Names

House Mouse (English); Duhure Gharmuso (Nepali)

Synonyms

Mus domesticus (Rutty, 1772); *Mus abbotti* (Waterhouse, 1837); *Mus nipalensis (nom. nud.)* (Hodgson, 1841); *Mus manei* (Gray, 1843); *Mus dubius, Mus humorus, Mus urbanus* (Hodgson, 1845); *Mus bactrianus* (Blyth, 1846); *Mus darjilingensis* (Hodgson, 1849); *Mus manei* (Kelaart, 1852); *Mus gerbillinus, Mus theobaldi* (Blyth, 1853)*; Mus tytleri* (Blyth, 1859); *Mus musculus pygmaeus* (Biswas & Khajuria, 1955); *Mus musculus khumbuensis* (Biswas & Khajuria, 1968)



Species Description
Sandy to rufous in colour with slightly white or paler underparts. Tail is longer than head and body, feet have white toes.

Species Ecology
The House Mouse is an extremely versatile species occurring in several habitat types such as forests, grasslands, agricultural lands and in close proximity to humans. This species feeds on seeds and insects. The House Mouse can breed throughout the year producing several litters per annum consisting of two to 13 young in each litter.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its broad distribution and assumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information on the population abundance of this species but it is a common species.

National Distribution
This species is wide spread across Nepal occurring within the protected areas of Bardia National Park, Chitwan National Park, Langtang National Park, Parsa Wildlife Reserve, Rara National Park, Sagarmatha National Park, and Shivapuri Nagarjun National Park and districts of Ilam, Solukhumbu, Kathmandu and Sindhupalchok.

Distribution outside Nepal
Afghanistan, Albania, Algeria, Andorra, Armenia, Austria, Azerbaijan, Bahrain, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Egypt, Eritrea, Estonia, Faroe Islands, Finland, France, Georgia, Germany, Gibraltar, Greece, Holy See, Hungary, Iceland, India, Islamic Republic of Iran, Iraq, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Democratic People's Republic of Korea, Republic of Korea, Kyrgyzstan, Latvia, Lebanon, Libyan Arab Jamahiriya, Liechtenstein, Lithuania, Luxembourg, the former Yugoslav Republic of Macedonia, Malta, Moldova, Monaco, Mongolia, Montenegro, Morocco, Netherlands, Norway, Oman, Pakistan, Occupied Palestinian Territory, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Turkmenistan, Ukraine, United Arab Emirates, United Kingdom, Uzbekistan, Yemen.

Main Threats
- Persecution as a pest species.

References
Laurie 1946, Badan 1986, Suwal and Verhueugt 1995, Molur *et al*. 2005, Baral and Shah 2008.

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102) ***Mus saxicola*** (Elliot, 1839)

Common Names
Brown Spiny Mouse (English); Dhunge Muso (Nepali)

Synonyms
Mus spinulosus (Blyth, 1854); *Mus platythrix* ssp. *Ramnadensis, Mus ramnadensis* (Bentham, 1908); *Leggada platythrix* ssp. *sadhu, Mus platythrix* ssp. *sadhu* (Wroughton, 1911); *Leggada cindrella* (Wroughton, 1912); *Leggadilla gurkha, Mus platythrix* ssp. *gurkha* (Thomas, 1914)

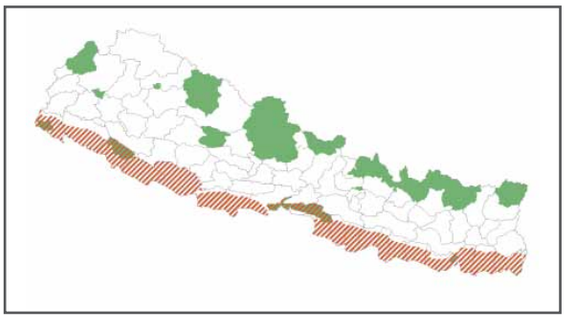
Species Description
Fur usually hispid, especially on lower flanks. Tail bicoloured, white on ventral surface.

Species Ecology
The Brown Spiny Mouse occurs in a broad range of habitats including tropical and subtropical dry deciduous scrub forests, sandy, gravel-rocky habitat, grasslands, agricultural fields, and thorn scrub desert.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its broad distribution across southern Nepal, its ability to utilise a range of habitats and presence within protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.



National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species is widely distributed across southern Nepal and within protected areas of Bardia National Park, Chitwan National Park, Koshi Tappu Wildife Reserve and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
India, Pakistan.

Main Threats
Unknown.

References
Molur *et al.* 2005, Baral and Shah 2008, Molur and Nameer 2008.

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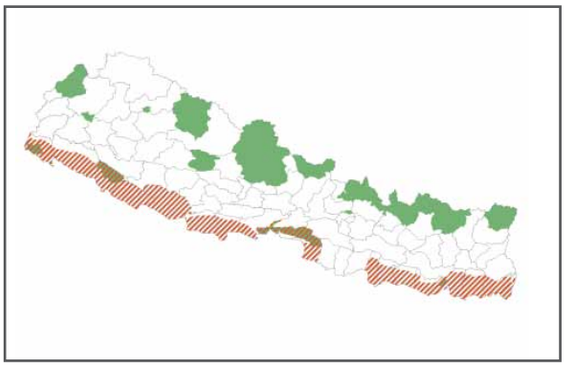
103) ***Mus terricolor*** (Blyth, 1851)

Common Names
Earth-colored Mouse (English); Ban Muso (Nepali)

Species Description
An extremely small mouse with a relatively long tail. Fur on the back is soft and plain brown, the belly is dark grey.

Species Ecology
The habitat and ecology of this species is not well known, however it is likely to occur in a broad range of habitats including forests and grasslands. Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern



Rationale for assessment: This species is considered Least Concern in view of a broad distribution across Nepal and occurrence within several protected areas. This species is not known to have any major threats.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within several protected areas.

National population size
There is no information available on the population size of this species in Nepal.

National distribution
This species occurs along the southern border of Nepal and has been recorded in Bardia National Park, Shukla Phanta Wildlife Reserve and Koshi Tappu Wildlife Reserves and it is likely that it also occurs in Chitwan National Park and Parsa Wildlife Reserve.

Distribution outside Nepal
Bangladesh, India, Pakistan.

Main Threats
Unknown.

References

Baral and Shah 2008.

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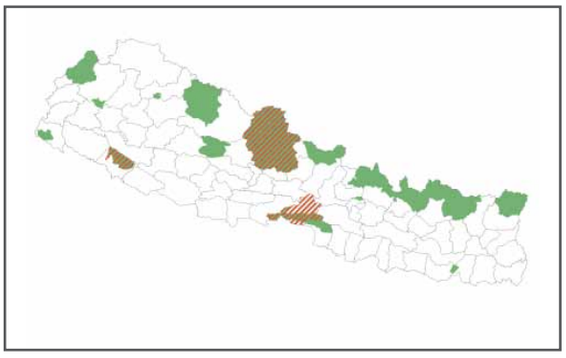
104) ***Nesokia indica*** (Gray, 1830)



Common Names
Short-tailed Bandicoot Rat (English); Thute Dhademuso (Nepali)

Synonyms
Arvicola indica (Gray & Hardwicke, 1832); *Mus hardwickei* (Gray, 1837); *Mus huttoni* (Blyth, 1846); *Nesokia griffithi* (Horsfield, 1851); *Spalacomys indicus* (Peters, 1860); *Nesokia beaba* (Wroughton, 1908)

Species Description
A small dull brown rat with chunky body, lighter grey underside and short dark tail.

Species Ecology
The Short-tailed Bandicoot Rat occurs in rice fields and cultivated habitats, tropical and subtropical dry deciduous forests, scrublands and grasslands.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern as it is commonly found in the district of Bardia, has been reported within protected areas and is unlikely to be declining at a rate fast enough to qualify it for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs within Annapurna Conservation Area and districts of Bardia and Chitwan (including

the National Parks).

Distribution outside Nepal
Afghanistan, Bangladesh, China, Egypt, India, Islamic Republic of Iran, Iraq, Israel, Jordan, Pakistan, Palestinian Territory, Saudi Arabia, Syrian Arab Republic, Tajikistan, Turkmenistan, Uzbekistan.

Main Threats
- Habitat loss and degradation.
- Hunting for subsistence.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Suwal and Verheugt 1995, Baral and Shah 2008

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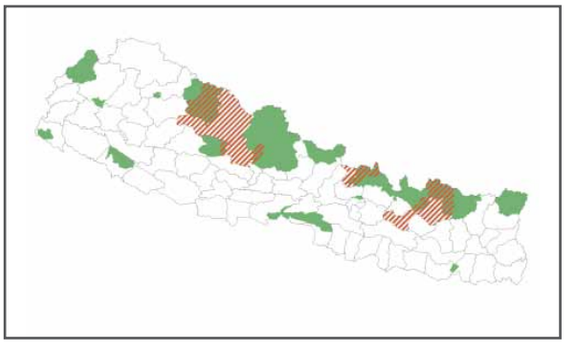
105) ***Niviventer eha*** (Wroughton, 1916)

Common Names
Little Himalayan Rat (English); Dhwanse Muso (Nepali)

Synonyms
Epimys eha, Rattus eha, Rattus eha eha (Wroughton, 1916)

Species Description
Pale sandy brown with smokey underparts. Belly is dashed with ivory-yellow patches of various sizes.



Species Ecology
The Little Himalayan Rat occurs in wet forests dominated by the Himalayan Firr (*Abies spectabilis*) at elevations between 2,600 m and 3,700 m. Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a large distribution, occurrence within protected areas and because it is unlikely the population is declining fast enough to qualify the species for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across Nepal in the districts of Dolpa, Myagdi, Ramechhap, Rasuwa, Solukhumbu and within Langtang National Park and Sagarmatha National Park.

Distribution outside Nepal
China, India, Myanmar.

Main Threats
- Hunting for subsistence.

References
Suwal and Verheugt 1995, Baral and Shah 2008.

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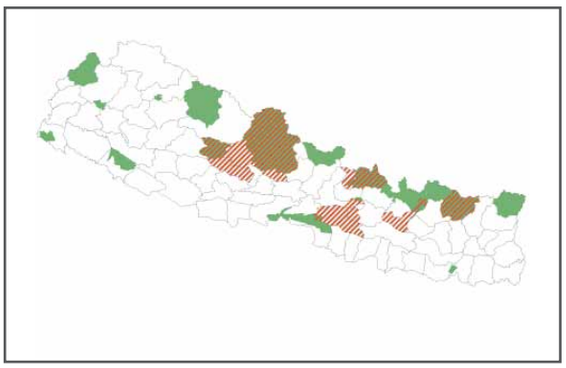
106) ***Niviventer niviventer*** (Hodgson, 1836)



Common Names
Himalayan White-bellied Rat (English); Hadsanko Dudhebhundi Muso (Nepali)

Synonyms
Mus (Rattus) niviventer (Hodgson, 1836); *Mus niveiventer* (Blanford, 1891); *Epimys lepcha, Rattus niviventer lepcha* (Wroughton, 1916)

Species Description
Upper body chestnut-brown with distinct grey back. Underparts, feet and ventral side of the body are white-grey. Tail covered by hairs.

Species Ecology
The Himalayan White-bellied Rat occurs in several forest types including temperate coniferous forests, temperate broad-leaved forests, tropical and sub-tropical evergreen forests and riverine forests.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern as it is present in several locations including within protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across Nepal but does not extend into the far west. Its presence has been recorded within the Annapurna Conservation Area, Dhorpatan Hunting Reserve, Langtang National Park, Makalu Barun National Park and and districts of Baglung, Kathmandu, Kaski, Lalitpur, Makawanpur, Myagdi, Ramechhap and Rasuwa.

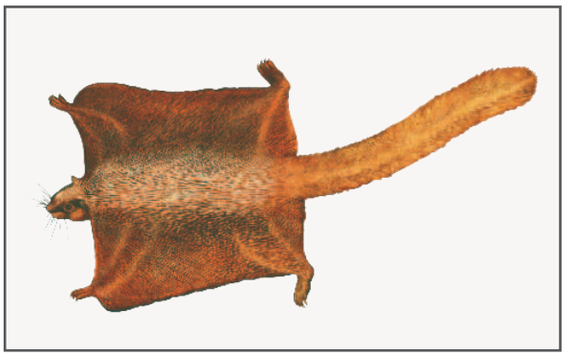
Distribution outside Nepal
Bhutan, India.

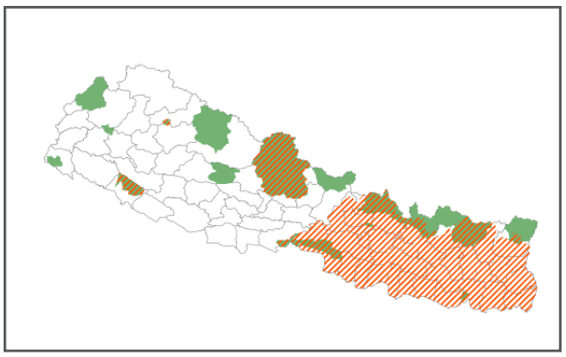
Main Threats
- Habitat loss and degradation.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

107) ***Petaurista petaurista*** (Pallas, 1766)





Common Names
Red Giant Flying Squirrel (English); Rato Rajpankhi Lokharke (Nepali)

Synonyms
Sciurus petaurista (Pallas, 1766); *Pteromys albiventer* (Gray, 1834); *Pteromys inornatus* (Geoffroy, 1844); *Pteromys birrelli, Pteromys fulvinus* (Wroughton, 1911)

Species Description
Chestnut-red body with long slender tail which is not bushy. Rounded head and flesh-coloured nostrils. Belly is buff, and feet are black and furred although the soles are naked.

Species Ecology
The Red Giant Flying Squirrel occurs in temperate forests, boreal scrub forests, rocky areas, mountain peaks and plantations. This species feeds mainly on fruits and berries.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a broad distribution across Nepal and presence within several protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species has been reported from Annapurna Conservation Area, Bardia National Park, Chitwan National Park, Langtang National Park, Makalu Barun National Park, Rara National Park and most districts of the Terai and mid and high hills of central and eastern Nepal.

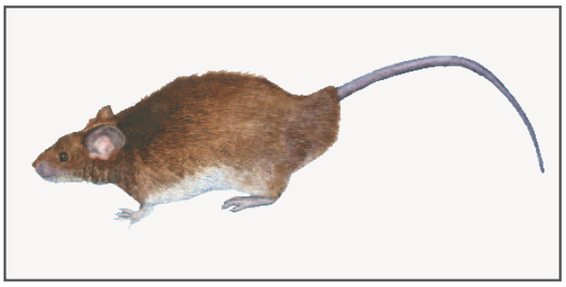
Distribution outside Nepal
Afghanistan, Brunei Darussalam, China, India, Indonesia, Malaysia, Myanmar, Thailand.

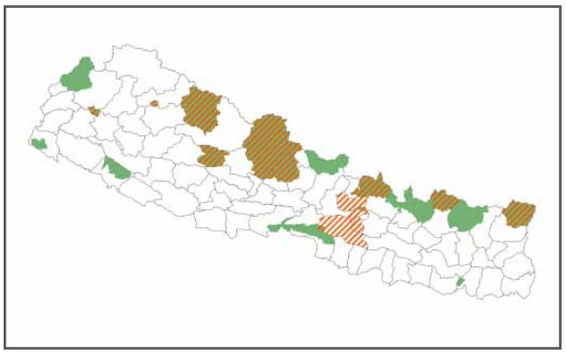
Main Threats
- Poaching for fur and pet trade.
- Habitat loss.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Nepal Red List of Mammals Field Technicians Workshop 2010.

108) ***Rattus nitidus*** (Hodgson, 1845)





Common Names
Himalayan Field Rat (English); Himali Khetmuso (Nepali)

Synonyms
Mus horeites, Mus nitidus, Mus pyctoris (Hodgson, 1845); *Mus aequicaudalis* (Hodgson, 1849); *Mus guhai* (Nath, 1952)

Species Description
Small commensal hill rat, dark grey-brown fur above and dull grey or pale below. Its back has a dark mid-dorsal patch or line. The short guard hairs do not protrude out of the contour hairs, giving it a much sleeker look than other rats. Feet yellow or white, tail dark and naked, longer than the head and body. Six pairs of mammae, thereby distinguishing it from *Rattus rattus*.

Species Ecology
The Himalayan Field Rat occurs near human settlements and in temperate broad leaved and tropical montane forests.

Breeding season for this species is between March and November with an average litter size of eight young and two or three litters per year.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution across Nepal, presence in several protected areas and assumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across Nepal and within the protected areas of Annapurna Conservation Area, Dhorpatan Hunting Reserve, Kanchanjunga Conservation Area, Langtang National Park, Shivapuri Nagarjun National Park, Sagarmatha National Park, Khaptad National Park, Rara National Park and Shey Phoksundo National Park and the districts of Lalitpur, Nuwakot, Kathmandu and Makwanpur.

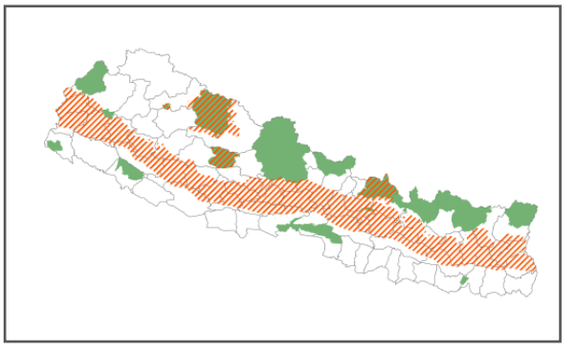
Distribution outside Nepal
Bhutan, China, India, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss and degradation.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008.

109) ***Rattus norvegicus*** (Berkenhout, 1769)



Common Names
Brown Rat (English); Khairo Dhanchari (Nepali)

Synonyms
Rattus caraco (Pallas, 1779); *Rattus caspius* (Oken, 1816); *Rattus decimallus* (Pallas, 1779)

Species Description
A large dark brown rat with lighter underparts and feet, small ears and a tail shorter than the head and body.

Species Ecology
The Brown Rat occurs in several forest types including tropical and subtropical dry deciduous forests, mixed and pine forests, disturbed forest areas and urban areas.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, occurrence within protected areas and presumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species occurs across Nepal, including within protected areas: Annapurna Conservation Area, Dhorpatan Hunting Reserve, Khaptad National Park, Langtang National Park, Rara National Park, Shey Phoksundo National Park and Shivapuri Nagarjun National Park.

Distribution outside Nepal
China, Japan, Russian Federation.

Main Threats
Unknown.

References
Molur *et al.* 2005, Baral and Shah 2008.

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110) ***Rattus pyctoris*** (Hodgson, 1845)

Common Names
Himalayan Rat (English); Turkistane Muso (Nepali)

Synonyms
Rattus rattoides (Hodgson, 1845); *Rattus turkestanicus* (Satunin, 1903)

Species Description
Dorsal fur steely-grey. Ventrum pure white. Tail is bicoloured and longer than head and body length.

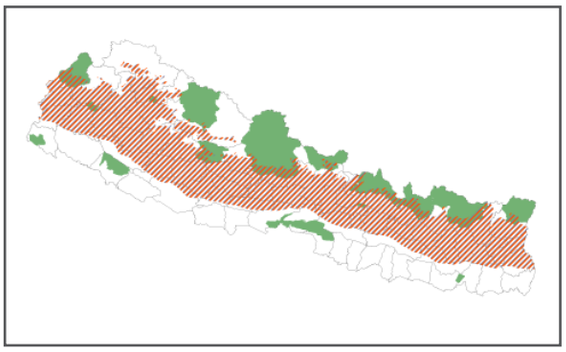
Species Ecology
The Himalayan Rat occurs in montane habitats and rocky areas such as inland cliffs, mountain peaks and cultivated lands.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, presumed large population, occurrence within protected areas and because it is unlikely to be declining at the rate required to qualify for a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.



National Distribution
This species is widespread in Nepal and occurs within the protected areas: Annapurna Conservation Area, Shey-Phoksundo National Park, Dhorpatan Hunting Reserve, Langtang National Park, Sagarmatha National Park and Shivapuri Nagarjun National Park.

Distribution outside Nepal
Afghanistan, Bangladesh, Bhutan, China, India, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Myanmar, Pakistan, Tajikistan, Uzbekistan.

Main Threats
- There are no major threats to this widespread and adaptable species.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Smith and Xie 2008, Baral and Shah 2008.

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111) ***Rattus rattus*** (Linnaeus, 1758)

Common Names
Black Rat (English); Ghar Muso (Nepali)

Synonyms
Mus rattus (Linnaeus, 1758); *Mus indicus* (Desmarest, 1832); *Mus asiaticus* (Gray, 1837); *Mus rufescens* (Gray, 1837); *Mus flavescens* (Elliot, 1839); *Mus brunneus* (Hodgson, 1845); *Mus ceylonus, Mus kandianus, Mus tetragonurus, Rattus rattus ceylonus* (Kelaart, 1850); *Mus arboreus* (Horsfield, 1851); *Mus nemoralis* (Blyth, 1851); *Mus crassipes* (Blyth, 1859); *Mus (Leggada) andamensis, Rattus rattus andamensis* (Blyth, 1860); *Mus infralineatus (nom. nud.)* (Blyth, 1863); *Mus kandianus (emend.)* (Kelaart, 1867); *Mus atratus, Mus*

flebilis, Mus pulliventer, Rattus rattus flebilis (Miller, 1902); *Mus atridorsum* (Miller, 1903); *Epimys kelaarti* (Wroughton, 1915); *Rattus rattus girensis* (Hinton, 1918)

Species Description
A medium-sized dark brown rat. Colour slightly variable. It is characterised by flat spines in its dorsal fur.

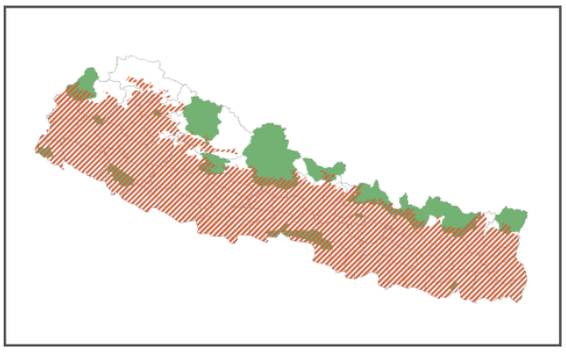
Species Ecology
The Black Rat is highly adaptable and is found in almost all habitats except cold deserts.

This species lives up to four years (in captivity). Females become sexually mature at approximately three months and after a gestation period of 22 days produce a litter of around seven young. They are capable of having four litters per year with the interval between litters at one month.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of it's wide distribution, occurrence in protected areas, high adaptability and broad habitat use, assumed large population and because the population is unlikely to be declining quickly enough for this species to be considered for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population



size of this species in Nepal but it is assumed to be abundant and is considered a pest.

National Distribution
This species is wide spread across Nepal and present within the protected areas of Annapurna Conservation Area, Bardia National Park, Langtang National Park, Makalu Barun National Park, Parsa Wildlife Reserve, Sagarmatha National Park, Shivapuri Nargarjun National Park, Shuklaphanta Wildlife Reserve and the districts of Bhaktapur, Ilam, Kaski, Kathmandu, Lalitpur, Myagdi, Nawalparasi, Nuwakot, Sankhuwasabha and Sindhupalchok.

Distribution outside Nepal
India, Pakistan. This species has been introduced worldwide.

Main Threats
- This species has no major threats, it is a target of pest control but this is not considered to be having a significant impact on the population.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Weigl 2005, de Magalhaes *et al.* 2009.

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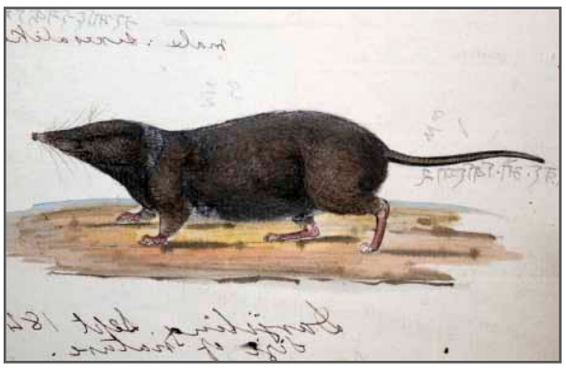
112) ***Soriculus nigrescens*** (Gray, 1842)



Common Names
Sikkim Large-Clawed Shrew (English); Himali Chhuchundro (Nepali)

Species Description
A large shrew with a short tail, large feet and claws.

Species Ecology
The Sikkim Large-Clawed Shrew is found in mixed deciduous-coniferous forests, conifer-rhododendron

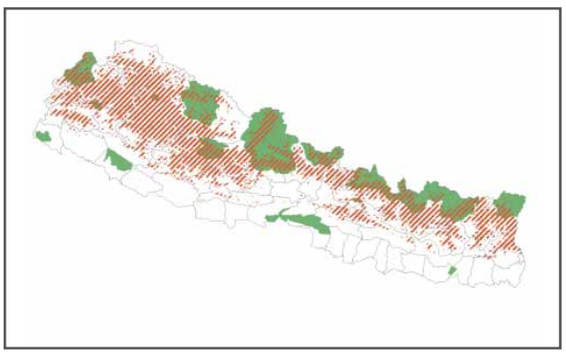
forests, alpine zone and bare rocky areas. The main diet consists of insects and earthworms obtained from leaf litter and humus layer.

Breeding season for this species is from April to June.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution and occurrence within a number of protected areas.

Legal status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.



National Distribution
This species is widely distributed across Nepal and has been recorded in the protected areas of Annapurna Conservation Area, Langtang National Park, Makalu Barun National Park, Rara National Park and Shivapuri Nagarjun National Park.

Distribution outside Nepal
Bhutan, China, India.

Main Threats
- Habitat loss.

References

Suwal and Verheugt 1995, Stone 1995, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008.

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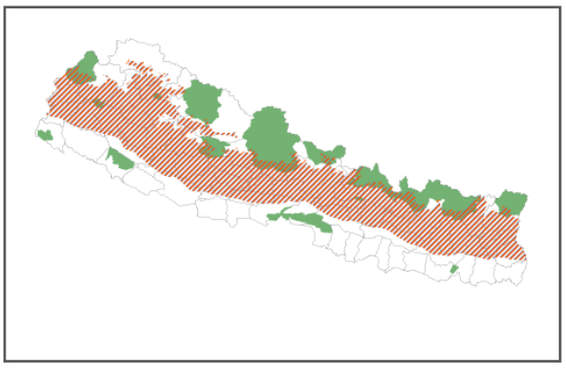
113) ***Suncus murinus*** (Linnaeus, 1766)

Common Names
House Shrew (English); Ghar Chuchundro (Nepali)

Synonyms
Sorex murinus (Linnaeus, 1766); *Sorex indicus* (Geoffroy, I., 1811); *Sorex sonerratii* (Geoffroy, I., 1827); *Sorex giganteus, Sorex serpentarius* (Geoffroy, I., 1831); *Sorex nemorivagus, Sorex soccatus, Suncus murinus soccatus* (Hodgson, 1845); *Sorex griffithi, Suncus murinus griffithi* (Horsfield, 1851); *Sorex kandianus, Suncus murinus kandianus* (Kelaart, 1852); *Sorex heterodon, Sorex kelaarti* (Blyth,1855); *Sorex saturatior, Suncus murinus saturatior* (Hodgson,1855); *Sorex tytleri, Suncus murinus tytleri, Sorex viridiscens* (Blyth, 1859); *Crocidura (Pachyura) ceylanica, Crocidura (Pachyura) media, Crocidura (Pachyura) waldemarii* (Peters, 1870); *Crocidura (Pachyura) blanfordii* (Anderrson, 1877); *Suncus murinus blanfordii* (Anderson, 1877); *Crocidura (Pachyura) blythii, Crocidura (Pachyura) fulvocinerea, Suncus*



murinus fulvocinereus, Crocidura (Pachyura) pealana, Crocidura (Pachyura) sindensis, Crocidura (Pachyura) rubicunda (Anderson, 1877); *Crocidura andersoni* (Trouessart, 1879); *Crocidura beddomei, Sorex beddomei* (Anderson, 1881)

Species Description
Grey-brown coat. Short, thick tail with a few bristles and large pink ears.

Species Ecology
The House Shrew occurs in and around human settlements, grasslands, scrub and forests. It feeds on grains and lives easily around human settlements. Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution across Nepal, occurrence within several protected areas and ability to live successfully within and around human settlements.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no known information on the population size of this species but it is considered to be one of the most common shrews in Nepal.

National Distribution
This species is widely distributed across Nepal and occurs within the protected areas of Annapurna Conservation Area, Langtang National Park, Makalu Barun National Park, Rara National Park and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Singapore, Sri Lanka, Taiwan Province of China, Thailand, Viet Nam.

Main Threats
- Persecution and pest control.

References
Suwal and Verheugt 1995, Baral and Shah 2008.

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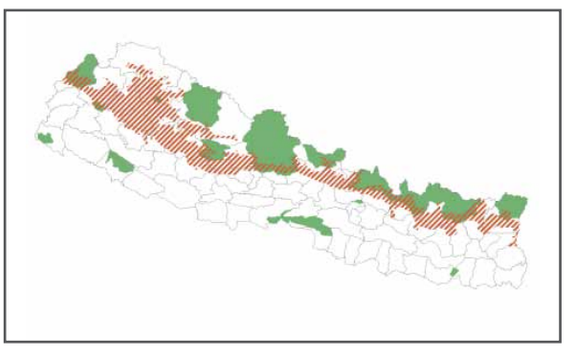
114) ***Tamiops macclellandii*** (Horsfield, 1840)



Common Names
Himalayan Striped Squirrel (English); Himali Dharke Lokharke (Nepali)

Synonyms
Sciurus macclellandii, Sciurus mcclellandi (Horsfield, 1840); *Sciurus pembertonii* (Blyth, 1842); *Sciurus macclellandi manipurensis* (Bonhote, 1900)

Species Description
Grey-brown coat with black, brown and buff stripes on its back.

Species Ecology
The Himalayan Striped Squirrel occurs in subtropical dry deciduous forests in mountains above 700 m. It can be found in association with humans in fruit tree and coconut palm plantations.

Little is known about the reproductive parameters of the species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population, presence within protected areas and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species is distributed across Nepal and within the protected areas of Annapurna Conservation Area, Makalu Barun National Park, Rara National Park and may be present within the Dhorpatan Hunting Reserve though this needs further confirmation.

Distribution outside Nepal
Bhutan, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

Main Threats
Unknown.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008.

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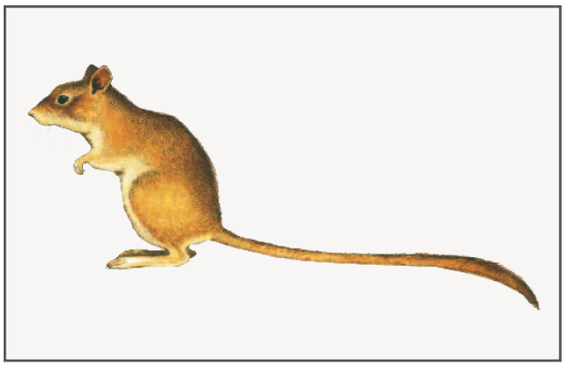
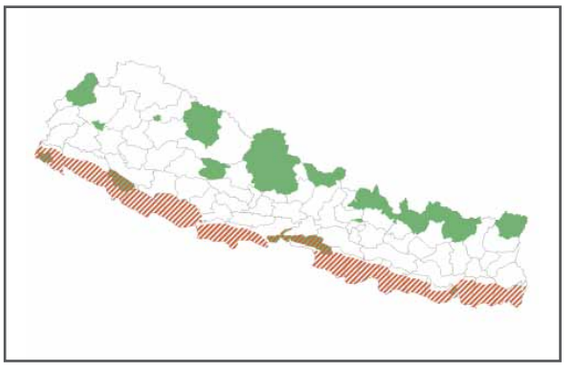
115) ***Tatera indica*** (Hardwicke, 1807)





Common Names
Indian Gerbil (English); Uphrane Muso (Nepali)

Synonyms
Dipus indicus (Hardwicke, 1807); *Gerbillus cuvieri* (Waterhouse, 1838); *Gerbillus otarius* (Cuvier, 1838); *Gerbillus harwickei, Tatera indica hardwickei* (Gray, 1843); *Tatera ceylonica, Tatera indica ceylonica* (Wroughton, 1906); *Tatera dunni, Tatera sherrini* (Wroughton, 1917)

Species Description
A large biscuit-coloured rodent with a white chest, throat and belly. Tail is cream along the sides and grey on top and bottom, ending in a tuft of black-brown hairs. It is distinguished from other gerbils by long, naked ears and naked soles. It has well-developed hind feet that are pale in front.

Species Ecology
The Indian Gerbil occurs in open plains and agricultural fields, tropical and subtropical dry deciduous forests, scrub forests, grasslands and rocky areas. The diet of the Indian Gerbil consists of grain, roots, leaves and grass.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered

Least Concern in view of its wide distribution, presumed large population, and because it is unlikely to be declining fast enough to qualify for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species is distributed across the southern border of Nepal and present within the protected areas of Bardia National Park, Chitwan National Park, Koshi Tappu Wildlife Reserve and Shukla Phanta Wildlife Reserve.

Distribution outside Nepal
Afghanistan, India, Islamic Republic of Iran, Iraq, Kuwait, Pakistan, Sri Lanka, Syrian Arab Republic, Turkey.

Main Threats
Unknown.

References

Prater 1971, Harrison and Bates 1991, Molur *et al.* 2005, Baral and Shah 2008.

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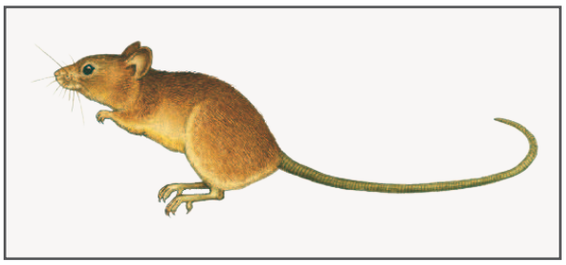
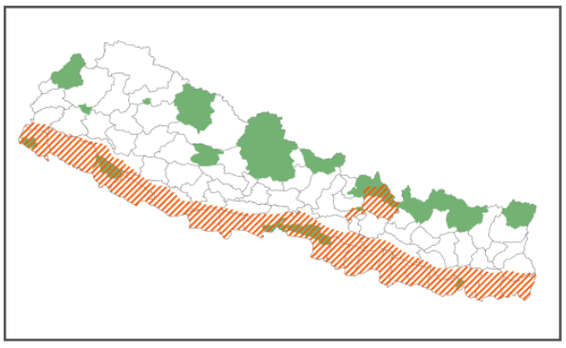
116) ***Vandeleuria oleracea*** (Bennett, 1832)





Common Names
Asiatic Long-tailed Climbing Mouse (English); Lampuchhre Rookhmuso (Nepali)

Synonyms
Vandeleuria nilagirica nolthenii, Vandeleuria oleracea nolthenii (Phillips, 1929)

Species Description
Medium-sized mouse with a very long tail. Overall body colour is light brown with off-white underparts.

Species Ecology
This species occurs in dry deciduous forests, moist deciduous forests, temperate forests, open forests, grasslands and scrub and montane wet zones.

Females have litters of between three and six young.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population and occurrence within protected areas and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species is widespread across Nepal and within the Terai protected areas and the districts of Kathmandu and Sindu Palchok.

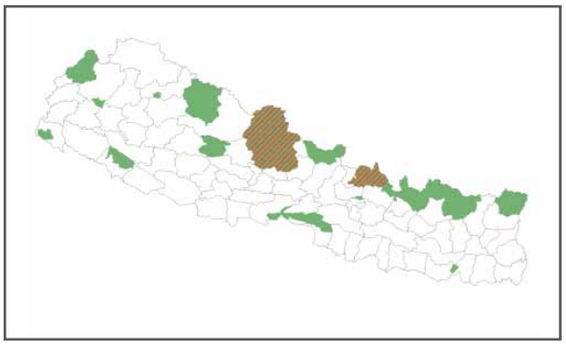
Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China, India, Myanmar, Sri Lanka, Thailand, Viet Nam.

Main Threats
Unknown.

References
Prater 1971, Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

DATA DEFICIENT

117) ***Alticola roylei*** (Gray, 1842)



Common Names
Royle's Mountain Vole (English); Pahadi Ghansemuso (Nepali)

Synonyms
Arvicola roylei (Gray 1842); *Alticola roylei cautus* (Hinton 1926)

Species Description
Rufous-brown animal, pale yellow on the sides, pale brown below, brown tail, ears projecting above the fur.

Species Ecology
The Royle's Mountain Vole occurs at elevations above 3,000 m in grasslands, open uplands and rocky ground covered in coarse grass.

Conservation Status
Global: Near Threatened
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Further information may qualify this species for a threatened category as its extent of occurrence is estimated to be less than 20,000 km^2 and is restricted to two fragmented locations.

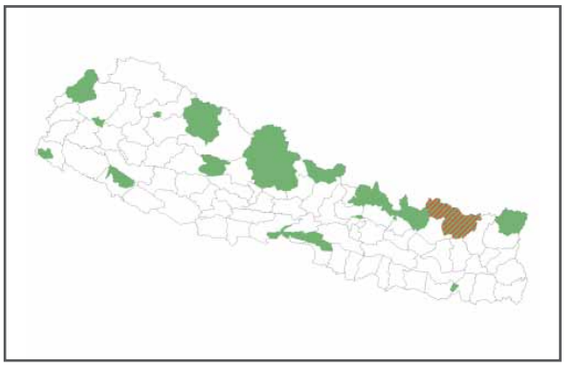
Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs within Annapurna Conservation Area and Langtang National Park.

Distribution outside Nepal
India.

References
Prater 1971, Suwal and Verheugt 1995, Baral and Shah 2008.

118) ***Alticola stoliczkanus*** (Blanford, 1875)



Common Names
Stoliczka's Mountain Vole (English); Stolizkako Ghansemuso (Nepali)

Synonyms
Arvicola stoliczkanus (Blanford, 1875); *Alticola stracheyi* (Thomas, 1880); *Microtus acrophilus, Alticola stoliczkanus acrophilus* (Miller, 1899)

Species Description
Bright rufous-brown vole with white or grey underparts.

Species Ecology
Stoliczka's Mountain Vole is found in montane areas, where it inhabits temperate forests, the upper limits of coniferous forests, scrublands, semi-arid and arid grasslands and rocky areas to the edge of the snow line. It feeds on grass and alpine herbs.

This species breeds twice a year with a litter size of four or five young.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. It may qualify for a threatened category as its extent of occurrence is suspected to be less than 5,000 km^2, and it is restricted to a few locations. However as it also occurs within neighbouring China, there is a chance of migration and recolonisation.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs within Makalu Barun National Park and Sagamartha National Park.

Distribution outside Nepal
China, India.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Smith and Xie 2008, Baral and Shah 2008.

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119) ***Apodemus pallipes*** (Barrett-Hamilton, 1900)

Common Names
Ward's Field Mouse, Himalayan Field Mouse (English); Wardko Khetmuso (Nepali)

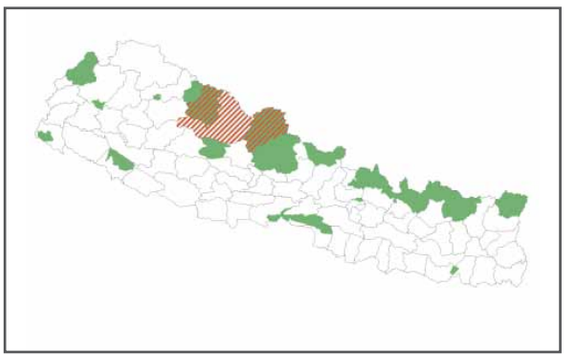
Synonyms
Apodemus wardi (Wroughton, 1908)

Species Description
Dorsal pelage pale rufescent, long semi-naked tail, presence of a dorsal darker stripe and sharp pointed muzzle.

Species Ecology
Ward's Field Mouse occurs at high elevation coniferous and rhododendron forests.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.



National Distribution
This species occurs in north west Nepal and within protected areas of Annapurna Conservation Area and Shey Phoksundo National Park.

Distribution outside Nepal
Afghanistan, China, India, Kyrgyzstan, Pakistan, Tajikistan.

References
Baral and Shah 2008, Smith and Xie 2008.

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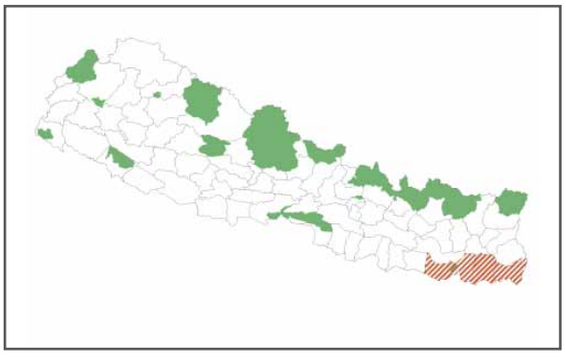
120) ***Bandicota maxima*** (Pradhan *et al*., 1993)

Common Names
Giant Bandicoot-Rat (English); Raja Dhademuso (Nepali)

Synonyms
Mus gigantean (Hardwicke, 1804)

Species Description
A large dark-brown rat with dark thick coarse hairs all over the body. Underside is light grey. Has a long elongated face, pointed muzzle and roundish pink ears. Tail is almost naked and lighter than the body, feet are pink.



Species Ecology
The Giant Bandicoot-Rat occurs in and near human settlements.

Conservation Status
Global: Not Evaluated
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species occurs in lowlands of eastern Nepal, possibly including within the Koshi Tappu Wildlife Reserve, however this needs confirmation.

Distribution outside Nepal
India.

References
Duff and Lawson 2004, Molur *et al.* 2005, Baral and Shah 2008.

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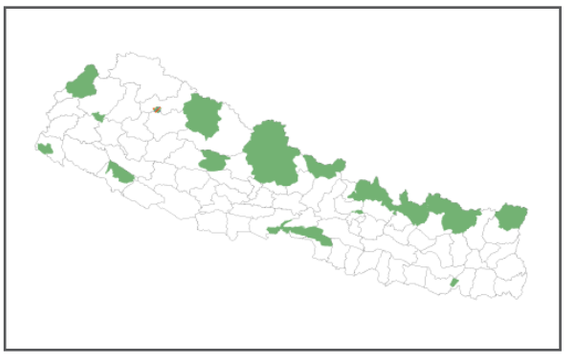
121) ***Belomys pearsonii*** (Gray, 1842)



Common Names
Hairy-footed Flying Squirrel (English); Jhuse Rajpankhi Lokharke (Nepali)

Synonyms
Sciuropetrus villosus (Blyth, 1847); *Sciuropetus pearsonii, Trogopterus pearsonii* (Gray, 1842); *Belomys trichotis, Belomys pearsonii trichotis, Trogopterus pearsonii trichotis* (Thomas, 1908)

Species Description
Top of body dark to red-brown, grizzled with hairs white-tipped and white at the bottom. Parachute evidently darker than the sides, mostly black.

Species Ecology
The Hairy-footed Flying Squirrel may be confined to forested areas. The main sources of food are leaves, fruits, nuts, other plant material and insects.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs from a single location within Rara National Park, one of the smallest protected areas having an area of only 106 km^2. Previously recorded in Chitwan National Park.

Distribution outside Nepal
Bhutan, China, India, Lao PDR, Myanmar, Taiwan Province of China, Thailand, Viet Nam.

Main Threats
- Habitat loss.
- Forest fires.
- Monoculture plantations.
- Hunting for local consumption.

References
Lee and Liao 1998, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008.

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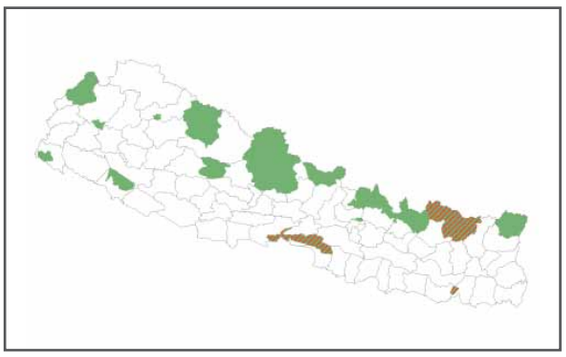
122) ***Cannomys badius*** (Hodgson, 1841)



Common Names
Bay Bamboo Rat, Lesser Bamboo Rat (English); Sano Tame Bansmuso (Nepali)

Synonyms
Rhizomys badius (Hodgson, 1841)

Species Description
Rufous body, blunt face and a short tail. Has dense, soft fur that hangs like a cloak over body. Small eyes and ears.

Species Ecology
The Bay Bamboo Rat occurs in montane temperate forests and subtropical bamboo forests. The Bay Bamboo Rat feeds mainly on young roots and shoots of bamboo. This species reaches sexual maturity at approximately one year and after a gestation period of 40 to 43 days, produces litters of four to five young.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species is distributed across eastern and central Nepal and within the protected areas of Chitwan National Park and Makalu Barun National Park. It may also be present in Koshi Tappu Wildlife Reserve and Sagarmatha National Park however these sites need further verification.

Distribution outside Nepal
Cambodia, India, Lao PDR, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss due to slash and burn cultivation, forest fires.
- Hunting for subsistence.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008.

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123) ***Cricetulus alticola*** (Thomas, 1917)

Common Names
Ladakh Hamster, Tibetan Dwarf Hamster (English); Bhyatle Bhotemuso (Nepali)

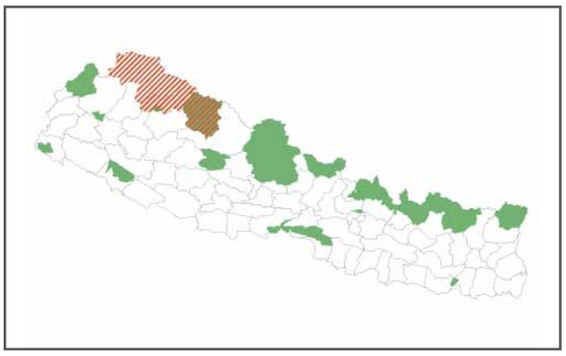
Synonyms
Cricetulus alticola tibetanus (Thomas and Hinton, 1922)

Species Description
Grey body above, underparts light grey with whitish hands and feet. The tail is short, and is around one third the length of head and body, foot is usually longer than the ear.

Species Ecology
The Ladakh Hamster occurs in coniferous and birch forests, desert steppe, shrub land and swampy highland meadows feeding on grains and insects.

The species produces five to ten young per litter.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Further information may qualify this species for a threatened category in view of an extent of occurrence likely to be less than 20,000 km^2.



Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National distribution
This species occurs in the Trans-Himalayan area, Shey-Phoksundo National Park at elevations of approximately 4,000 m.

Distribution outside Nepal
China, India.

References
Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008.

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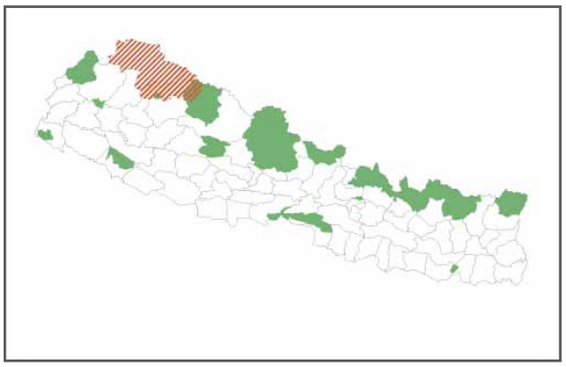
124) ***Crocidura horsfieldii*** (Tomes, 1856)

Common Names
Horsefield's Shrew (English); Dhwaanse Chhuchundro (Nepali)

Species Description
A deep, neutral grey body above with the bottom portion of the hairs brown. Underparts are dark grey. The tail is paler above than beneath, with short scattered silver hairs.

Species Ecology
The Horsefield's Shrew occurs in tropical dry deciduous forests, subtropical montane forests and intermediate montane forests with fairly dense cover.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate



assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species is known to occur in the Trans-Himalayan area of Nepal and has been recorded in the districts of Humla and Mugu but has not been recorded within any protected areas.

Distribution outside Nepal
China, India, Sri Lanka.

References

Stone 1995, Suwal and Verheugt 1995, Baral and Shah 2008, Molur *et al.* 2005.

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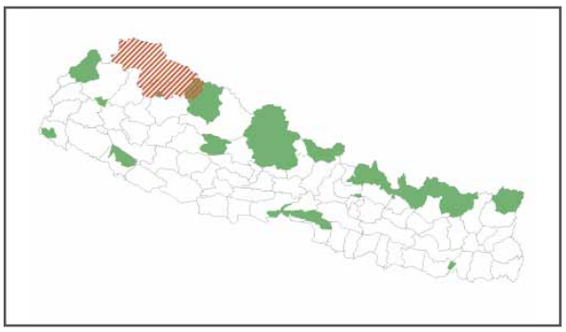
125) ***Crocidura pergrisea*** (Miller, 1913)



Common Names
Pale Grey Shrew (English); Phusre Chhuchundro (Nepali)

Species Description
This medium-sized shrew is chiefly distinguished by its pale-grey brown dorsal pelage with the underparts slightly paler, with creamy slate grey undertones.

Species Ecology
The Pale Grey Shrew occurs in temperate and montane forests and is adapted to semi-arid conditions.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Further information may qualify this species for a threatened category in view of a small extent of a occurrence suspected to be less than 20,000 km^2.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species occurs only in the Trans-Himalayan area of Nepal.

Distribution outside Nepal
Pakistan.

References

Stone 1995, Molur *et al.* 2005, Baral and Shah 2008.

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126) ***Dacnomys millardi*** (Thomas, 1916)

Common Names
Millard's Rat (English); Lamadante Muso (Nepali)

Synonyms
Dacnomys wroughtoni (Thomas, 1922)

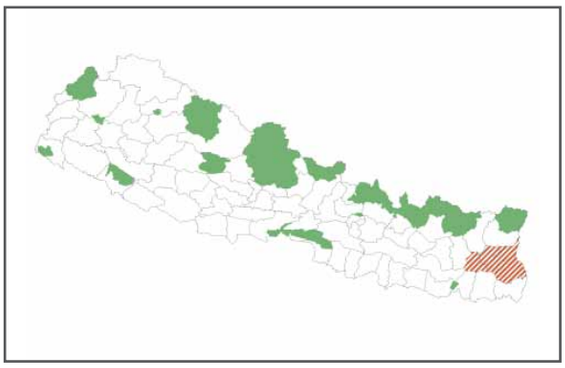
Species Description
Characterised by unusually long molar teeth.

Species Ecology
Millard's Rat occurs in tropical and subtropical montane and evergreen forests.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
The species has a small distribution in eastern



Nepal in the districts of Ilam, Panchthar, Terathum and southern parts of Sankhuwasabha.

Distribution outside Nepal
China, India, Lao PDR, Viet Nam.

References

Duff and Lawson 2004, Molur *et al*. 2005, Baral and Shah 2008.

127) ***Diomys crumpi*** (Thomas, 1917)

Common Names
Crump's Mouse (English); Krampko Muso (Nepali)

Species Description
Back black-grey, the middle dorsal area sometimes darker than the head and shoulders, rump generally black. White feet. Tail black above and whitish below.

Species Ecology
Crump's Mouse occurs in tropical evergreen, temperate broad leaved and moist deciduous forests.

Conservation Status
Global: Data Deficient

National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species has a small distribution in Nepal with records from the south east corner of the country and a single location in the west. It has not been recorded within protected areas and its distribution in Nepal is not well known.

Distribution outside Nepal
India, Myanmar.

Main Threats
- Habitat loss.
- Human encroachment.
- Forest fires.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

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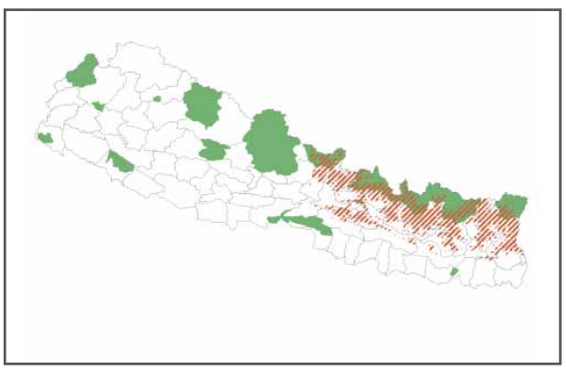
128) ***Episoriculus macrurus***
(Blanford, 1888)



Common Names
Arboreal Brown-toothed Shrew, Long-tailed Mountain Shrew (English);
Lampuchhre Pahadi Chhuchundro (Nepali)

Species Description
A large brown shrew with a long tail and whitish underparts.

Synonyms
Sorex macrurus (Hodgson, 1863); *Soriculus macrurus* (Blanford, 1888)

Species Ecology
This species occurs in temperate forests.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species occurs across central and eastern Nepal between elevations of 1,560 m and 4,300 m.

Distribution outside Nepal
China, India, Myanmar, Viet Nam.

Main threats
- Habitat loss and degradation.

References
Molur *et al.* 2005, Baral and Shah 2008.

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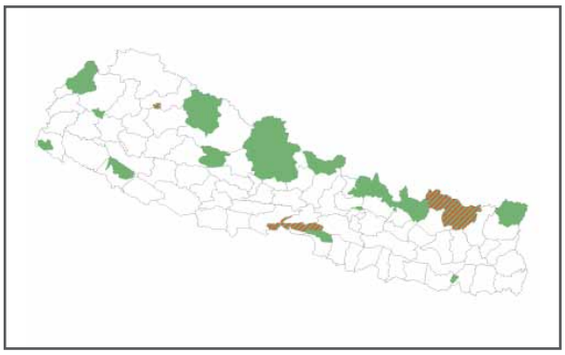
129) ***Euroscaptor micrura*** (Hodgson, 1841)



Common Names
Himalayan Mole (English); Himali Sunguremuso (Nepali)

Species Description
Covered in dense black velvety fur with the only exposed parts being its pink nose-pad and large pink shovel-like forefeet, which are used for tunnelling. Its fur is pliable and can lie in any direction, helping it to move in low burrows. The tail is short.

Species Ecology
The Himalayan Mole occurs in subtropical and tropical montane forests, living in leaf litter and rocky, gravelly areas feeding on worms and insects. The presence of the species can be recorded by the observation of characteristic molehills - several of which can be seen in areas inhabited by the species.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Despite a wide distribution and occurrence within protected areas, it never occurs in large numbers and it still suffers from various threats. This species may qualify as Vulnerable, however further information is needed on its distribution and population status.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species is sparsely distributed across Nepal and present within the protected areas of Chitwan National Park, Makalu-Barun National Park, Rara National Park and Sagamartha National Park.

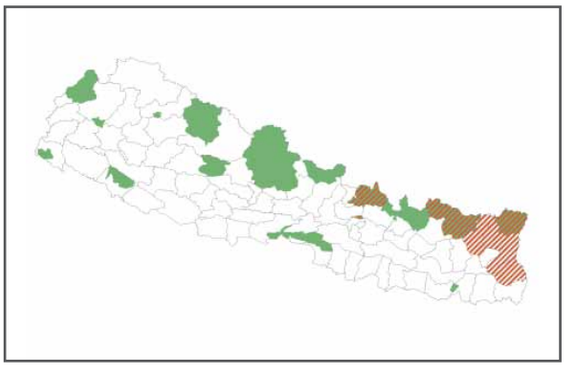
Distribution outside Nepal
Bhutan, China, India, Malaysia.

Main Threats
- Habitat loss and degradation.
- Persecution.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008, Hem Sagar Baral (pers.obs.) 2009.

130) ***Hystrix brachyura*** (Linnaeus, 1758)



Common Names
Himalayan Crestless Porcupine (English); Malaya Dumsi (Nepali)

Synonyms
Acanthion hodgsonii, Hystrix hodgsonii, Hystrix hodgsoni hodgsoni (Gray, 1847); *Hystrix alophus* (Hodgson, 1847); *Hystrix bengalensis* (Blyth, 1851); *Hystrix subcristata* (Swinehoe, 1870); *Acanthion millsi* (Thomas, 1922)

Species Description
Shorter dorsal crest than the Indian Crested Procupine. Small, barely visible tail. Quills begin after the forelegs and stretch to the rump. Quills are white with one dark band. Smaller than the Indian Crested Porcupine with a longer face.

Species Ecology
The Himalayan Crestless Porcupine is able to live in a variety of habitats including arid rocky hillsides, temperate forests, subtropical and tropical montane forests, riverines and gullies. This species feeds on grass roots, shoots and carcasses.

The Himalayan Crestless Porcupine has a gestation period of approximately four months after which a litter of one to two young is produced. Porcupines are one of the longest lived rodents with average longevity 12 to 15 years with the longest record of 27 years in captivity.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species has a broad range in central and eastern Nepal, possibly west Nepal, within protected areas Langtang National Park, Makalu Barun National Park, Sagarmatha National Park Shivapuri Nagarjun National Park and districts of Ilam, Panchthar, Taplejung and Sankhuwasabha.

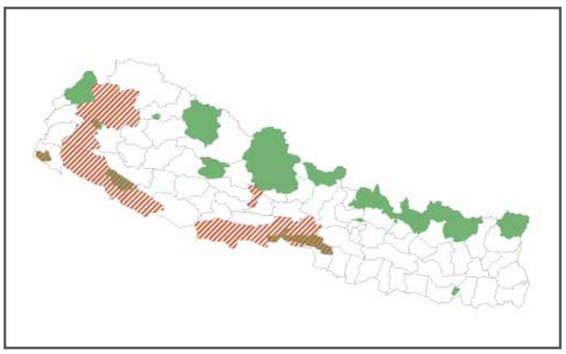
Distribution outsode of Nepal
Bangladesh, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Thailand, Viet Nam.

Main threats
- Hunting for subsistence.
- Habitat loss.

References

Suwal and Verheugt 1995, Nowak 1999, Ernst 2003, Molur *et al.* 2005, Wiegal 2005, Nepal Red List of Mammals Field Technicians Workshop 2010, Baral and Shah 2008.

131) ***Hystrix indica*** (Kerr, 1792)



Common Names
Indian Crested Porcupine (English); Jure Dumsi (Nepali)

Synonyms
Hystrix cristata var. indica (Kerr, 1792); *Hystrix leucurus* (Sykes, 1831); *Hystrix zeylonensis* (Blyth, 1851); *Hystrix malabarica* (Sclatter, 1865); *Hystrix hirustirostris blanfordi* (Muller, 1911); *Hystrix cuneiceps* (Wroughton, 1912)

Species Description
Larger of the two species of porcupine in Nepal. Quills start on forehead and run along the dorsal, two or more dark bands alternate with white on the quills. Smalll white patch on throat.

Species Ecology
The Indian Crested Porcupine is a versatile species, able to occupy a broad range of habitats including rocky hillsides, shrublands, grasslands, forests, agricultural lands, scrub and light open forests close to cultivation and human settlements. The Indian Crested Porcupine is a generalist forager that exploits a wide variety of cultivated and wild plants including potatoes, maize, beans, roots and shoots.

This species has been recorded to live up to 27 years (in captivity). Gestation period is approximately four months with a litter size of two young.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There are no population estimates available for this species in Nepal, however current observations may suggest that this species is in decline and rarer than previously thought.

National Distribution
This species is widespread across Nepal and occurs within the protected areas of Bardia National Park, Chitwan National Park, Parsa Wildlife Reserve, Shukla Phanta Wildlife Reserve and districts of Bajhang, Bajura, Banke, Bardia, Chitwan, Doti, Kailali, Kanchanpur, Nawalparasi, Parbat and Rupandehi.

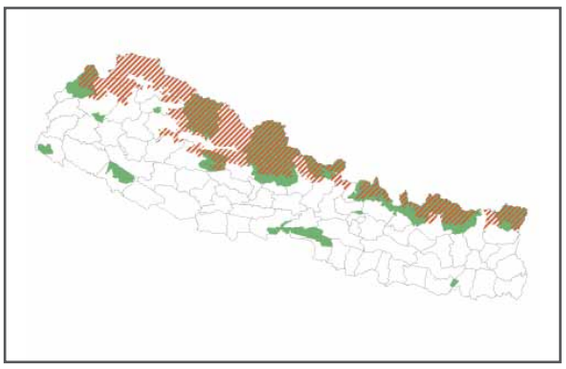
Distribution outside Nepal
Afghanistan, Armenia, Azerbaijan, China, Georgia, India, Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakhstan, Pakistan, Saudi Arabia, Sri Lanka, Turkey, Turkmenistan, Yemen.

Main Threats
- Hunting for subsistence.
- Habitat loss.
- Persecution due to crop damage.

References

Suwal and Verheugt 1995, Molur *et al.* 2005, Wiegal 2005, Baral and Shah 2008, de Magalhaes *et al.* 2009, Nepal Red List of Mammals Field Technicians Workshop 2010.

132) ***Marmota bobak*** (Muller, 1776)



Common names
Bobak Marmot (English); Phyaumuso (Nepali)

Synonyms
Arctomys himalayanus, Marmota bobak himalayana (Hodgson, 1841); *Arctomys Hemachalanus, Arctomys hemachalana* (Hodgson, 1843); *Arctomys tibetanus* (Gray, 1847)

Species Description
Mature marmots are straw to rusty coloured with dark brown hair tips, top of the head darker. The tip of the tail is usually dark brown. Round stomach, stubby legs, short tail, short and dense coat.

Species Ecology
The Bobak Marmot occurs in steppe habitats, including lowland, mixed grass, arid and steppes, with a diet mainly consisting of bulbs, flowers and shoots of grasses.

This species reproduces once a year with litter size of four to seven young.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs along the northern border of Nepal and present within the protected areas of Annapurna Conservation Area, Kanchenjunga Conservation Area, Langtang National Park, Sagarmatha National Park and Shey Phoksundo National Park.

Distribution outside of Nepal
Kazakhstan, Russian Federation, Ukraine.

References
Suwal and Verheugt 1995, Tsytsulina *et al*. 2008, Baral and Shah 2008.

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133) ***Mus cookii*** (Ryley, 1914)

Common Names
Cook's Mouse (English); Kookko Muso (Nepali)

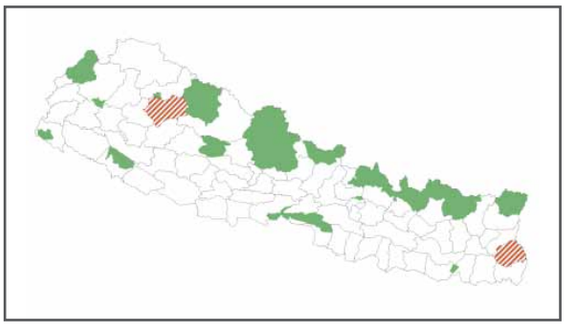
Synonyms
Mus famulus cooki (sic) (Ryley, 1914); *Leggada nagarum, Mus cervicolor nagarum, Paruromys dominator* (Thomas, 1921); *Leggada palnica, Mus*

cervicolor palnica (Thomas, 1924)

Species Description
Large mouse with large eyes and relatively small ears, tail is shorter in length than the head and body. The fur is spiny and brown-grey on the back, grey tipped with buff on the belly.

Species Ecology
Cook's Mouse occurs in forests and grasslands.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. This species has a small distribution and further information on distribution may qualify it for a threatened category.



Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species has a small distribution in Ilam district in south east Nepal.

Distribution outside Nepal
Bangladesh, Bhutan, China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

References
Molur *et al.* 2005, Baral and Shah 2008.

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134) ***Mus phillipsi*** (Wroughton, 1912)

Common Names
Wroughton's Small Spiny Mouse (English); Khakirange Muso (Nepali)

Synonyms
Leggada siva (Thomas and Ryley 1912); *Mus cervicolor ssp. phillipsi* (Wroughton, 1912); *Leggada surkha* (Wroughton & Ryley 1913)

Species Description
Small mouse. Brown-black coarse hairs on back, interspersed with individual silver-grey hairs with long brown tips. Ventral side pure white. Under-fur of short colourless hairs. White hands and feet. Tail same colour as back with short bristly hairs.

Species Ecology
Wroughton's Small Spiny Mouse occurs in grasslands, forests, areas of sparse vegetation, rocky areas, scrub, bush and dry forest patches.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
The presence and distribution of this species in Nepal is not well known and needs to be confirmed.

Distribution outside Nepal
India.

Main Threats
- Habitat loss.

References
Suwal and Verheugt 1995, Molur *et al.* 2005.

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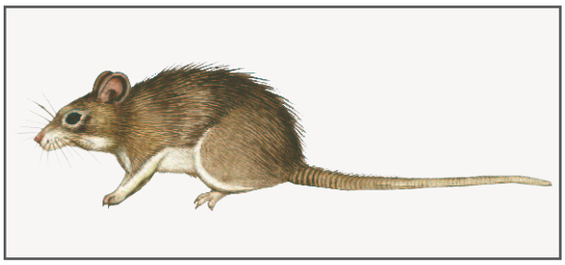
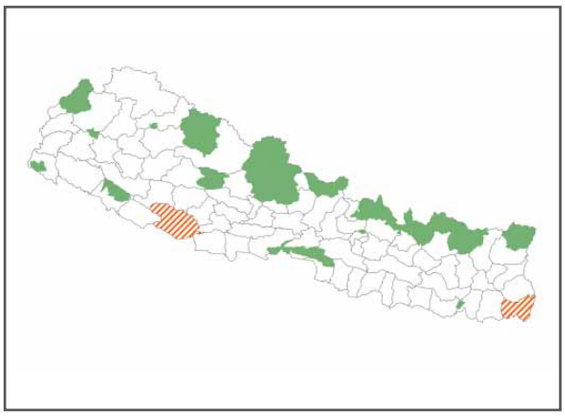
135) ***Mus platythrix*** (Bennett, 1832)





Common Names
Flat-haired Mouse (English); Kande Gharmuso (Nepali)

Synonyms
Leggada Bahadur (Wroughton and Ryley, 1913); *Leggada grahami, Leggada hannygtoni* (Ryley, 1913)

Species Description
A large fossorial mouse with short, spiny fur, brown on its back and white underneath with a clear line separating the two regions. The tail is shorter than the head and body length.

Species Ecology
The Flat-haired Mouse has a broad habitat range including tropical and subtropical dry deciduous, scrub forests, dry open areas and agricultural fields.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species has a small distribution in Nepal with reports from the district of Dang and Jhapa.

Distribution outside Nepal
India.

Main Threats
- Habitat loss and degradation.
- General pest control.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

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136) ***Nectogale elegans*** (Milne-Edwards, 1870)

Common Names
Elegant Water Shrew (English); Sundar Pani Chuchundro (Nepali)

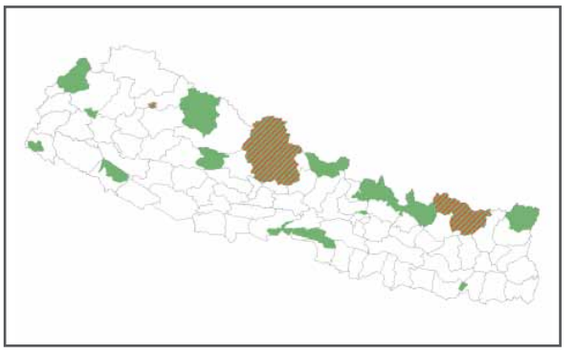
Species Description
Dorsal side has slate-coloured fur with long white guard hairs, ventral side is without guard hairs. Tail is thick and black except for the stiff-haired white lateral fringes. Fur around the mouth is cream in colour.

Species Ecology
The Elegant Water Shrew is an aquatic species living in montane rivers and streams. This species feeds on aquatic invertebrates and small fish.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National distribution
This species occurs across Nepal in Annapurna



Conservation Area, Makalu Barun National Park, Rara National Park and Sagarmatha National Park.

Distribution outside of Nepal
China, India, Myanmar.

Main Threats
- Loss and degradation of wetland habitats.

References
Suwal and Verheugt 1995, Smith and Xie 2008.

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137) ***Neodon sikimensis*** (Horsfield, 1841)

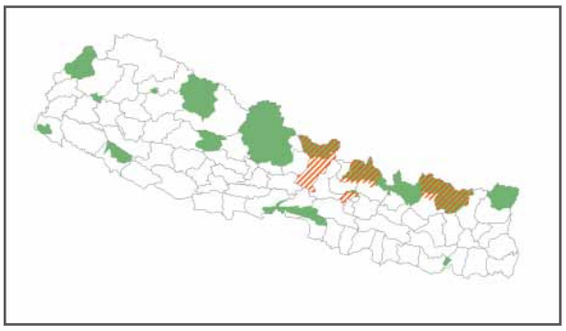
Common Names
Sikkim Vole (English); Sikkime Ghansemuso (Nepali)

Synonyms
Microtus sikimensis (Horsfield, 1841); *Microtus sikimensis, Pitymys sikimensis ssp. sikimensis* (Hodgson, 1849); *Arvicola thricolis* (Gray, 1863)

Species Description
Dark brown coat with a yellow tinge, underparts pale brown. Has large tympanic bulla.

Species Ecology
The Sikkim Vole inhabits coniferous forests.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.



Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs within Langtang National Park and Sagarmatha National Park, Makalu Barun National Park and areas around Kathmandu valley and Deosalli in Gorkha.

Distribution outside Nepal
Bhutan, China, India.

References
Suwal and Verheught 1995, Duff and Lawson 2004, Molur *et al.* 2005, Baral and Shah 2008.

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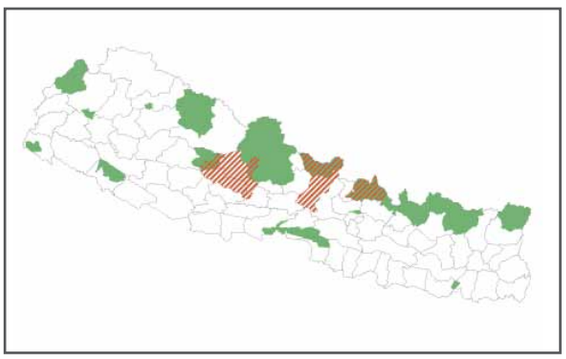
138) ***Niviventer fulvescens*** (Gray, 1847)



Common Names
Chestnut White-bellied Rat (English); Dudhebhundi Muso (Nepali)

Synonyms
Mus fulvescens, Rattus fulvescens (Gray, 1847); *Mus caudatior* (Hodgson, 1849); *Leggada jerdoni* (Blyth, 1863); *Mus octomammis* (Gray, 1863)

Species Description
Chestnut brown in colour with white underparts. Externally the brown back is the only thing that distinguishes it from other white-bellied rats (which have grey backs). Tail is slightly longer than the head and body and is covered with hairs with a paler tip. Some have spines in the fur, but guard hairs are absent.

Species Ecology
The Chestnut White-bellied Rat occurs in forests, grasslands, bushlands and riverbeds.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is no information available on the population size or status of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species has a small distribution occurring in Langtang National Park, Annapurna Conservation Area, Manaslu Conservation Area, and in the districts of Baglung, Gorkha, Myagdi and Parbat.

Distribution outside Nepal
China, Hong Kong, India, Indonesia, Lao PDR, Macao, Malaysia, Myanmar, Thailand.

Main Threats
- Habitat loss and degradation.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

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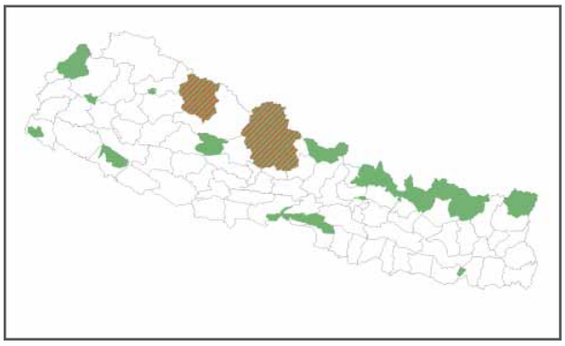
139) ***Ochotona curzoniae*** (Hodgson, 1858)



Common Names
Plateau Pika (English); Kalomukhe Thutekharayo (Nepali)

Synonyms
Lagomys curzoniae, Ochotona dauurica curzoniae (Hodgson, 1858); *Ochotona melanostoma* (Büchner, 1890)

Species Description
Sandy brown with a distinct rust patch behind each ear, a black-tipped nose and black lips and underparts.

Species Ecology
The Plateau Pika occurs in high alpine deserts, steppes and meadows. Pikas feed on grasses, sedges and mosses.

This species breeds during May to August producing two to eight young per litter and are able to have three to five litters per year. Generation length is estimated to be about one year.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

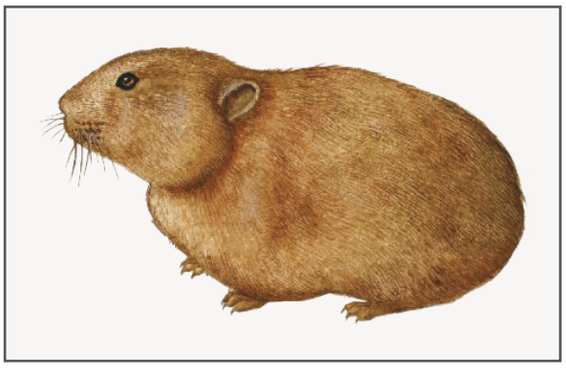
National Distribution
This species occurs at elevations above 3,000 m in Nepal and within Annapurna Conservation Area and west across to Shey-Phoksundo National Park.

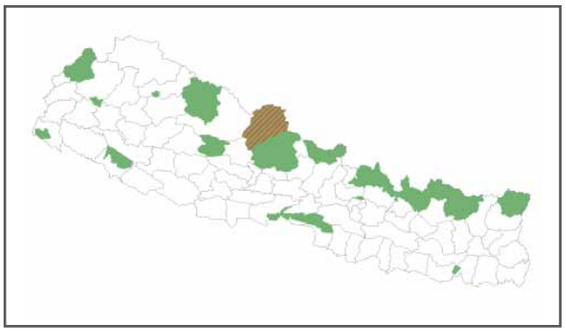
Distribution outside Nepal
China, India.

References

Wang and Dai 1989, Smith *et al.* 1990, Molur *et al.* 2005, Baral and Shah 2008, Smith and Xie 2008, Wildlife Information Network 2009.

140) ***Ochotona lama*** (Mitchell & Punzo, 1975)





Common Names
Lama's Pika (English); Lama Thute Kharayo (Nepali)

Species Description
Brown-ochre fur interdispersed with black hairs, flanks straw grey, belly slightly yellow. Ears have a small white margin and a black spot at their apex. Vibrissae are black basally and white apically. Base of all the hairs are black. Feet are yellow-ochre with black soles.

Species Ecology
The habitat and ecology of this species is not well known.

Conservation status
Global: Not Evaluated
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. The taxonomy of this species is debatable as some consider this only a subspecies of *Ochotona roylei*.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Distribution
This species was first described in Nepal by Mitchell and Punzo (1975). It has been recorded from Lupra, Bathang and Jomsom of Mustang District.

Distribution outside Nepal
Unknown.

References
Mitchell and Punzo 1975, Inskipp 1988, Baral and Shah 2008.

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141) ***Ochotona macrotis*** (Günther, 1875)

Common Names
Large-eared Pika (English); Lamkane Thutekharayo (Nepali)

Synonyms
Lagomys macrotis (Gunther, 1875); *Lagomys auritus, Lagomys griseus* (Blanford, 1875); *Ochotona roylei baltina* (Thomas, 1922); *Ochotona wollastoni* (Thomas and Hinton 1922)

Species Description
Small pikas are often mistaken with the more common Royle's Pika. Pale brown-grey with an ochre tinge, head and front are a paler russet, ears slightly broader and are made conspicuous by the long hairs inside them.

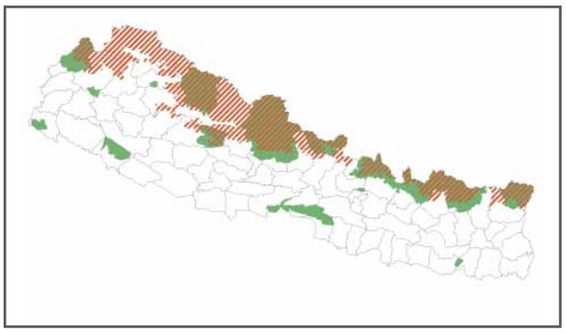
Species Ecology
The Large-eared Pika is a rock-dwelling species

occurring in high alpine deserts and spruce forests. It typically feeds on grasses, leaves, twigs, mosses, and lichens.

This species usually produces two litters of two to three young every year after a gestation period of approximately one month. The longevity of this species is approximately three years.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.



National Distribution
The Large-eared Pika occupies elevations between 2,500 m and 6,400 m. It will occupy higher elevations when sympatric with *O. roylei*. It has been recorded in most of the protected areas along the northern border of Nepal.

Distribution outside Nepal
Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan.

References
Bernstein and Klevezal 1965, Smith *et al.* 1990, Sokolov *et al.* 1994, Gurung and Singh 1996, Baral and Shah 2008.

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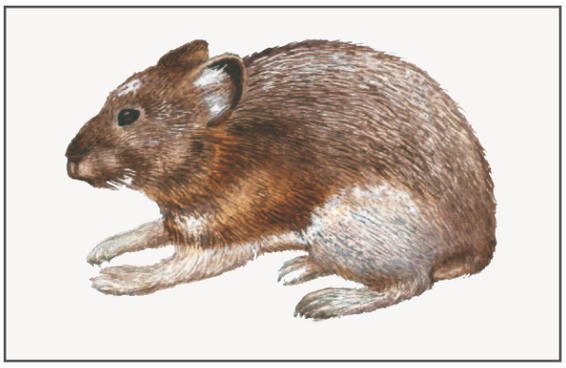
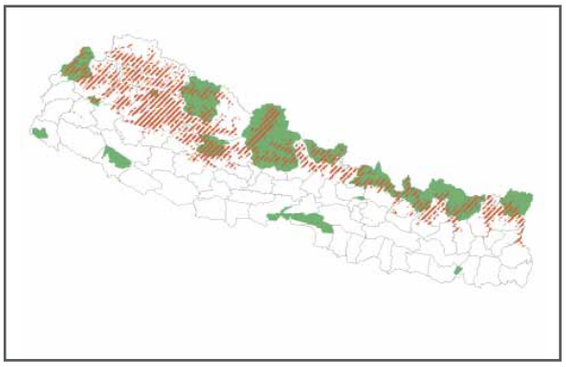
142) ***Ochotona nubrica*** (Thomas, 1922)

Common Names
Nubra Pika (English); Nubri Thutekharayo (Nepali)

Synonyms
Lagomys hodgsoni (Blyth, 1841); *Ochotona pusilla nubrica* (Thomas, 1922)

Species Description
Pale, sandy brown with pale grey underparts, on closer inspection a buff midline is visible on its belly. Feet are brown-grey.





Species Ecology
The Nubra Pika occurs in high elevation areas, alpine and subalpine desert scrub.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate

assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
This species is found across northern Nepal and within all the protected areas along the northern borders.

Distribution outside Nepal
China, India.

References

Smith *et al.* 1990, Suwal and Verheught 1995, Duff and Lawson 2004, Baral and Shah 2008, Smith and Xie 2008.

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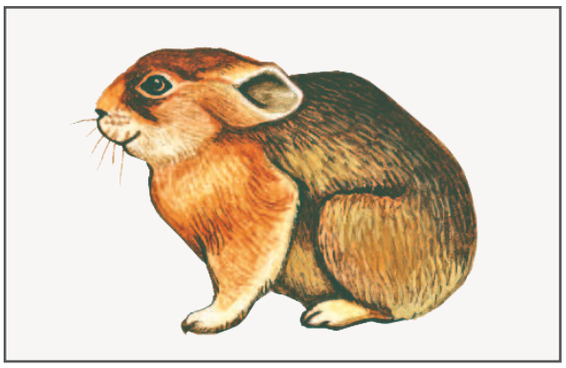
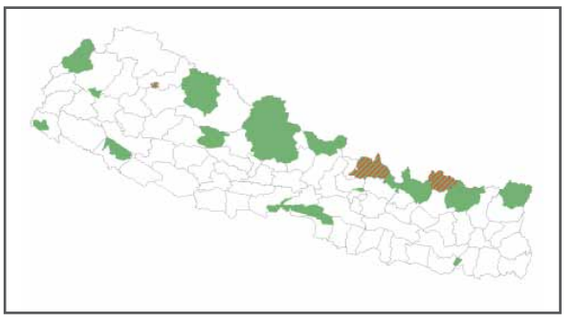
143) ***Ochotona roylei*** (Ogilby, 1839)





Common Names
Royle's Pika (English); Muse Thutekharayo (Nepali)

Synonyms
Lagomys roylei (Ogilby, 1839); *Lagomys nepalensis* (Hodgson, 1841); *Ochotona wardi* (Bonhote, 1904); *Ochotona angdawai* (Biswas and Khajuria, 1955); *Ochotona mitchelli* (Agrawal and Chakraborty, 1971)

Species Description
Rufous grey body, chestnut head, shoulders and upper back. Red-purple throat and grey-white to dark grey underparts. Red colouration fades in winter.

Species Ecology
Royle's Pika occurs in subtropical and tropical montane forests and talus. Royle's Pika exhibits a symbiotic relationship with the Scaly-breasted Wren Babbler in Nepal (*Pnoepyga albiventer*).

Females produce one or two litters annually with an average of three offspring per litter.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There are no current population estimates of this species, however it is considered widespread and without serious threat. This is considered to be the most common pika species in Nepal. However there may be a considerable level of mis-identification and species may be rarer than currently considered.

National Distribution
This species has been reported from Langtang

National Park, Rara National Park and Sagarmatha National Parks between elevations of 2,500 m and 5,000 m in Nepal.

Distribution outside Nepal
China, India, Pakistan.

References
Smith *et al.* 1990, Suwal and Verheught 1995, Molur *et al.* 2005, Khanal 2007, Baral and Shah 2008.

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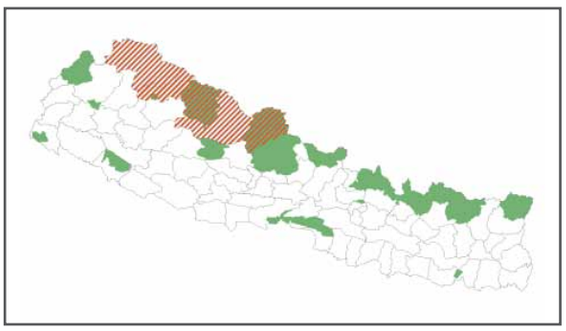
144) ***Ochotona thibetana***
(Milne-Edwards, 1871)



Common Names
Moupin Pika (English); Tibbati Thutekharayo (Nepali)

Synonyms
Lagomys thibetana (Milne-Edwards 1871); *Ochotona tibetana* (deWinton and Styan 1899); *Ochotonahodgsoni* (Bonhote 1905); *Ochotona sikkimaria* (Thomas 1922)

Species Description
Small, rich russet-brown with buff underparts, fur lightly speckled which continues across the throat like a collar. In winter colour fades to buff-brown.

Species Ecology
The Moupin Pika occurs in bamboo, rhododhendron and subalpine forests at elevations of 1,500 m and 4,100 m.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs in the Trans-Himalayan area.

Distribution outside Nepal
Bhutan, China, India, Myanmar.

References
Suwal and Verheugt 1995, Baral and Shah 2008.

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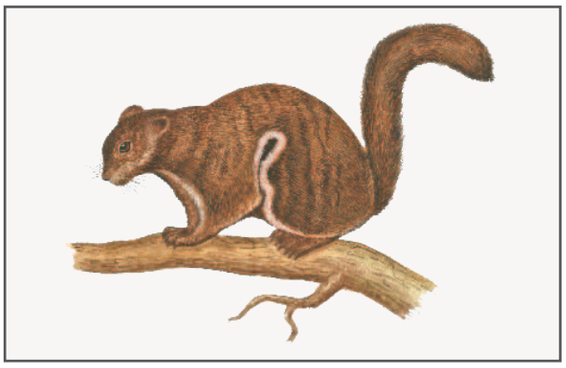
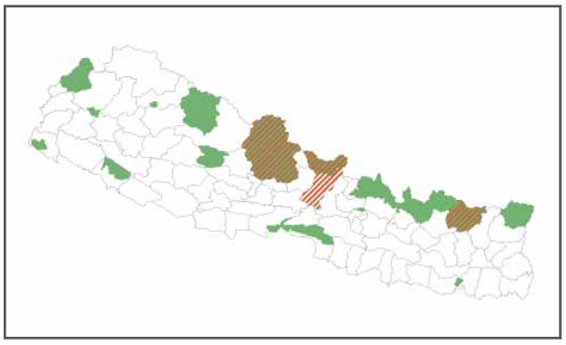
145) ***Petaurista elegans*** (Müller, 1840)





Common Names
Spotted Giant Flying Squirrel (English); Thople Rajpankhi Lokharke (Nepali)

Synonyms
Petaurista caniceps (Gray, 1842)

Species Description
Darker grey back and rump, flying membranes when contracted are dark red-brown, belly deeper red and tail black. Slight mottling effect in the fur with black hairs intermixed with the red-brown. Edges of the flying membrane are white.

Species Ecology
The Spotted Giant Flying Squirrel occurs in oak-rhododendron forests, temperate and coniferous forests and it nests in tree hollows.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs within Annapurna Conservation Area, Makalu Barun National Park, Manaslu Conservation Area and district of Gorkha.

Distribution outside Nepal
Bhutan, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

References
Suwal and Verheugt 1995, Smith and Xie 2008.

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146) ***Petaurista magnificus*** (Hodgson, 1836)

Common Names
Hodgson's Giant Flying Squirrel (English); Sundark Rajpankhi Lokharke (Nepali)

Synonyms
Sciuropterus magnificus (Hodgson, 1836)

Species Description
Colour is variable. Body, neck and head are deep maroon, generally with a visible yellow median line, commencing with a broad spot on the forehead.

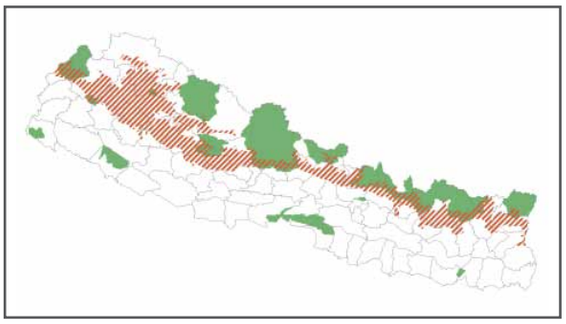
Sides of the neck and inner border of parachute are yellow-buff, remainder of the parachute is rufous, often chestnut. In other colouration phase the

species is lacking a median dorsal line, the body and the head are chestnut above, and grizzled as some of the longer hairs are white near the tip. Dorsal hairs dark, and ash coloured at the base. Feet are chestnut or black, tail rufous with black tip, lower parts pale rufous.

Species Ecology
Hodgson's Giant Flying Squirrel occurs in subtropical montane forests and oak-rhododendron forests.

Conservation Status
Global: Near threatened
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. The population in Nepal is possibly a subspecies of *Petaurista magnificus*.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.



National Distribution
This species occurs across northern Nepal and within the protected areas of the Annapurna Conservation Area, Langtang National Park, Makalu Barun National Park and Rara National Park.

Distribution outside Nepal
Bhutan, China, India.

Main Threats
- Habitat loss and degradation.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

147) ***Petaurista nobilis*** (Gray, 1842)

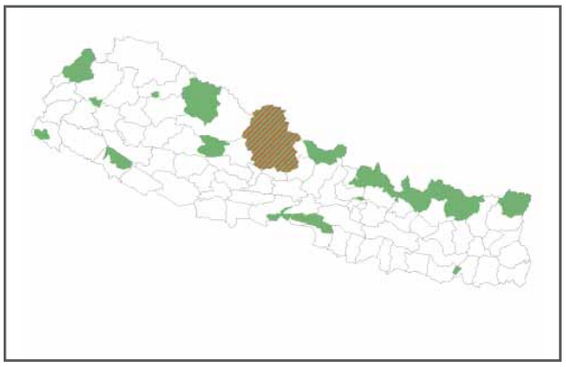
Common Names
Bhutan Giant Flying Squirrel (English); Bhutani Rajpankhi Lokharke (Nepali)

Synonyms
Sciuropterus nobilis (Gray, 1842); *Sciuropterus chrysothrix* (Hodgson, 1844)

Species Description
Larger and richer in colour than Hodgson's Giant Flying Squirrel. Characterised by absence of pale mid-dorsal stripe.

Species Ecology
The Bhutan Giant Flying Squirrel occurs in subtropical montane, pine and rhododendron forests.

Conservation Status
Global: Vulnerable
National: Data Deficient



Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Population Size
The total population size of this species is not known but it is assumed to be declining due to habitat loss.

National Distribution
This species has a small distribution in Nepal occurring within the Annapurna Conservation Area and possibly Langtang National Park.

Distribution outside Nepal
Bhutan, India.

Main Threats
- Habitat loss and degradation.
- Poaching for subsistence.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

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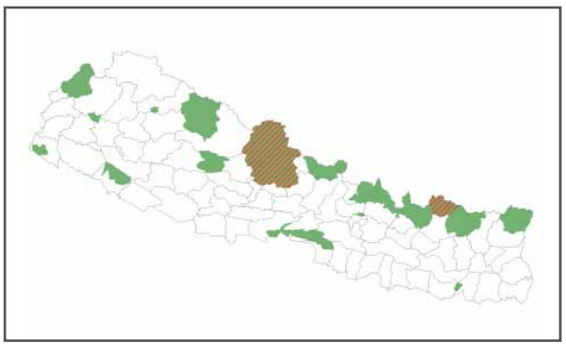
148) ***Phaiomys leucurus*** (Blyth, 1863)



Common Names
Blyth's Vole (English); Blithko Ghansemuso (Nepal)

Synonyms
Microtus leucurus (Blyth, 1863); *Arvicola blythi* (Blanford, 1875); *Microtus waltoni* ssp. *Petulans, Pitymys leucurus ssp. petulans* (Wroughton, 1911); *Phaiomys everesti, Pitymys leucurus* ssp. *everesti* (Thomas & Hinton, 1922)

Species Description
Colour pallid, yellow or grey, moderately thick fur and reduced ear size. Tail short and white in colour. Foot has five toes, the halux being the shortest. Feet are white.

Species Ecology
Blyth's Vole inhabits temperate forests, high, rocky mountains and grasslands.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. This species may qualify for a threatened category in view of its restricted distribution of less than 5,000 km^2, however more information is required on its population and habitat status.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

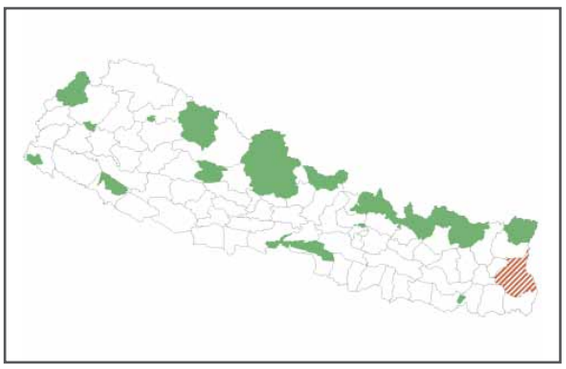
National Distribution
This species occurs within Annurpurna Conservation Area and a single record
from eastern Nepal.

Distribution outside Nepal
China, India.

References

Molur *et al.* 2005, Baral and Shah 2008.

149) ***Rattus andamanensis*** (Blyth, 1860)



Common Names

Sikkim Rat (English); Sikkime Muso (Nepali)

Synonyms

Rattus remotus (Robinson & Kloss, 1914); *Rattus sikimensis* (Hinton, 1919)

Species Description

Dorsal fur and tail light orange, underparts white-grey. Head elongated with pink naked muzzle. Ears pink with white border. Tail is thick and covered by scanty hairs. Feet are thin and white-grey.

Species Ecology

The Sikkim Rat occurs in agricultural lands, scrubland, and near human settlements.

Conservation Status

Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution

This species has a small distribution in the Ilam and Terathum districts of Nepal.

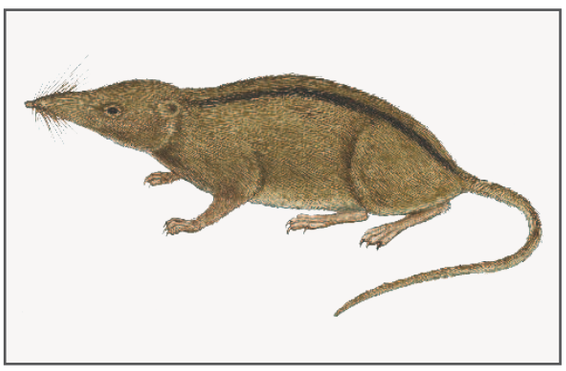
Distribution outside Nepal

Bhutan, Cambodia, China, Hong Kong, India, Lao PDR, Myanmar, Thailand, Viet Nam.

References

Baral and Shah 2008, Smith and Xie 2008.

150) ***Sorex bedfordiae*** (Thomas, 1911)



Common Names

Lesser Stripe-backed Shrew (English); Sano Dharke Chuchundro (Nepali)

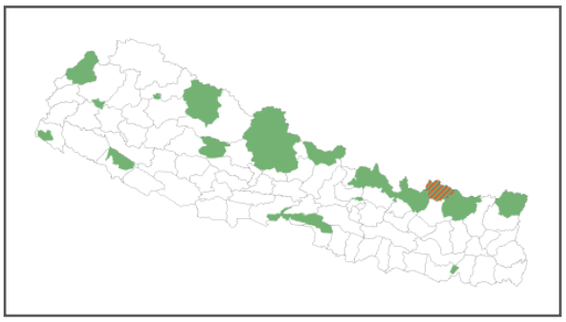
Species Description

Slightly smaller than the Stripe-backed Shrew. Has a dark stripe running behind the neck, down the back and to the base of the tail.

Species Ecology
The Lesser Stripe-backed Shrew occurs in montane forests and alpine areas above 4,000 m and rhododendron-conifer zone.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Further information regarding the habitat status and population of this species may qualify this species as Vulnerable in view of an extent of occurrence of less than 20,000 km^2.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.



National Distribution
This species has been recorded from only two locations in north east Nepal; Khumjung and Ringmo (district of Solukhumbu).

Distribution outside Nepal
China, Myanmar.

References
Suwal and Verheugt 1995, Molur *et al.* 2005, Smith and Xie 2008.

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151) ***Sorex excelsus*** (G.M. Allen, 1923)

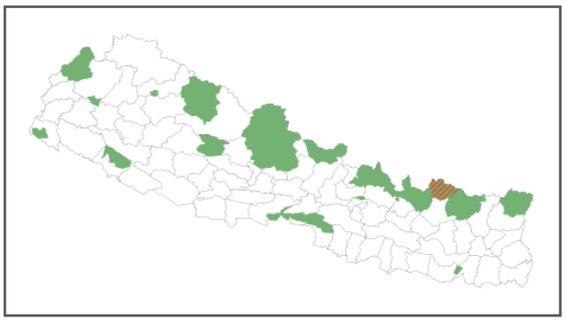
Common Names
Highland Shrew (English)

Species Desription
A medium-sized shrew. Grey-brown above, silvery below. Grey on head, darker on middle of back. Chin white. Sharply bicolour tail, dusky above, white below. Backs of the feet have white hairs.

Species Ecology
There is no information available on the ecology of this species.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species may occur in a protected area.

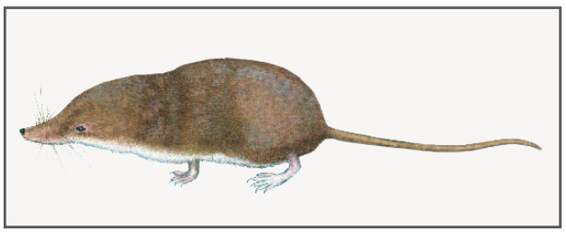


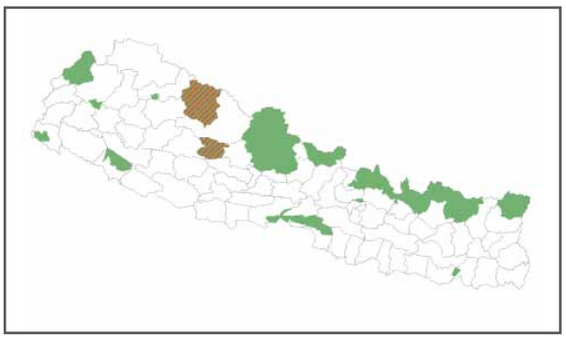
National Distribution
This species has been recorded from a single location in Sagarmatha National Park. Further confirmation is required to substantiate this record and confirm the presence of this species in Nepal.

Distribution outside Nepal
China.

References
Chakraborty *et al.* 2004, Molur *et al*. 2005, Molur 2008.

152) ***Sorex minutus*** (Linnaeus, 1766)





Common Names
Eurasian Pygmy Shrew (English); Pudke Chhuchundro (Nepali)

Synonyms
Sorex thibetanus (nom. nud.) (Kastschenko, 1905)

Species Descripton
This species is about 8 cm in length, including the tail. Dark brown-grey short fur with white underparts, and a thick, dark tail. Small eyes. White whiskers and pink nose. White feet and limbs.

Species Ecology
The Eurasian Pygmy Shrew occurs in a variety of habitats in lowlands and mountains. This is an insectivorous species.

This species breeds from spring to autumn and has one to two litters per year, with each litter producing five to eight young. This shrew has a lifespan of around 18 months.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. It may qualify for Vulnerable under category B, as its extent of occurrence is estimated to be less than 20,000 km^2.

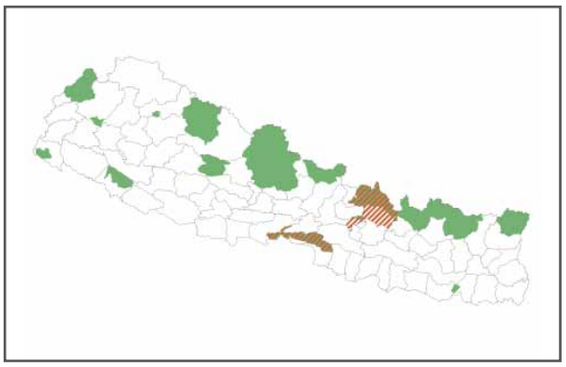
Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species occurs in western Nepal and has been recorded within the protected areas of Dhorpatan Hunting Reserve and Shey Phoksundo National Park.

Distribution outside Nepal
Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, India, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, the former Yugoslav Republic of Macedonia, Moldova, Montenegro, Netherlands, Norway, Pakistan, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom.

References
Pernetta 1976, Suwal and Verheugt 1995, Baral and Shah 2008.

153) ***Suncus etruscus*** (Savi, 1822)



Common Names
Pygmy White-toothed Shrew (English); Setadante Pudke Chhuchundro (Nepali)

Synonyms
Sorex etruscus (Savi, 1822); *Sorex perrotteti* (Duvernoy, 1842); *Sorex atratus* (Blyth, 1855); *Sorex hodgsonii, Sorex micronyx, Sorex nudipes* (Blyth, 1855); *Pachyura assamensis* (Anderson, 1873); *Crocidura (Pachyura) nilagirica, Crocidura (Pachyura) nitidofulva, Crocidura (Pachyura) pygmaeoides, Crocidura (Pachyura) travancorensis* (Anderson, 1877); *Podihik kura* (Deraniyagala, 1958)

Species Description
This shrew is one of the smallest mammals in the world and is Nepal's smallest and lightest mammal species, measuring around 3 to 4.5 cm (not including the tail). Fur is velvety dark grey-brown dorsally with silver-brown below, very short hind limbs compared to its forelimbs, conspicuous pink ears and a long tail.

Species Ecology
The Pygmy White-toothed Shrew is the one of the smallest terrestrial mammals in the world and is Nepal's smallest and lightest mammal. It can be found in both temperate and tropical forests, sometimes close to houses and other buildings. This species mainly feeds on insects.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

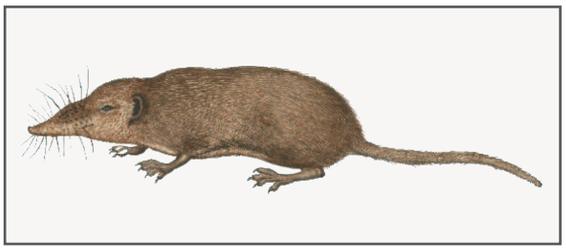
National Distribution
This species occurs in central Nepal and has been recorded within the protected areas of Chitwan National Park, Parsa Wildlife Reserve, Langtang National Park and districts of Kathmandu and Sindhupalchok.

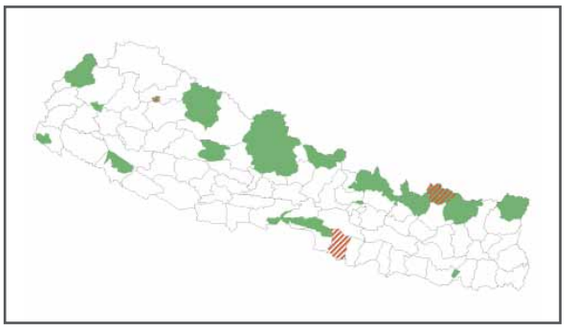
Distribution outside Nepal
Afghanistan, Albania, Algeria, Azerbaijan, Bahrain, Bhutan, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Egypt, Ethiopia, France, Georgia, Greece, Guinea, India, Islamic Republic of Iran, Iraq, Israel, Italy, Jordan, Lao PDR, Lebanon, Libyan Arab Jamahiriya, the former Yugoslav Republic of Macedonia, Malaysia, Malta, Montenegro, Morocco, Myanmar, Nigeria, Oman, Pakistan, Portugal, Slovenia, Spain, Sri Lanka, Syrian Arab Republic, Tajikistan, Thailand, Tunisia, Turkey, Turkmenistan, Viet Nam, Yemen.

Main Threats
- Habitat loss.
- Pest control.

References
Suwal and Verheugt 1995, Nowak 1999, Molur *et al.* 2005, Baral and Shah 2008.

154) ***Suncus stoliczkanus*** (Anderson, 1877)





Common Names
Anderson's Shrew (English); Andersonko Chhuchundro (Nepali)

Synonyms
Crocidura (Pachyura) bidiana, Crocidura (Pachyura) stoliczkanus, Crocidura (Pachyura) subflava (Anderson, 1877); *Crocidura leucogenys, Suncus stoliczkanus leucogenys* (Dobson, 1888)

Species Descriptions
Medium-sized shrew, dorsal fur pale rufous grey.

Species Ecology
Anderson's Shrew occurs in grassy embankments, riverine areas, gardens and paddy fields and in open areas in tropical forests. This species is insectivorous.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Anderson's Shrew may qualify for a threatened category in view of a small distribution with species currently known to be occurring in only three isolated locations, however more information is required.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution
This species has been recorded in three isolated locations: Rara National Park, Sagarmatha National Park and district of Bara in the Terai.

Distribution outside Nepal
India, Pakistan.

Main Threats
- Habitat loss.
- Pesticides.

References
Stone 1995, Suwal and Verheugt 1995, Molur *et al.* 2005, Baral and Shah 2008.

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155) ***Tupaia belangeri*** (Wagner, 1841)

Common Names
Northern Tree Shrew (English); Pahadi Rukh Chhuchundro (Nepali)

Species Descriptions
Large black eyes surrounded by pink skin. Pink mouth and relatively large pink ears. Coat is olive-brown and is buff or orange ventrally. The long furry tail is about equal to its head and body length. Like all tree shrews it has naked foot pads and

strong curved claws.

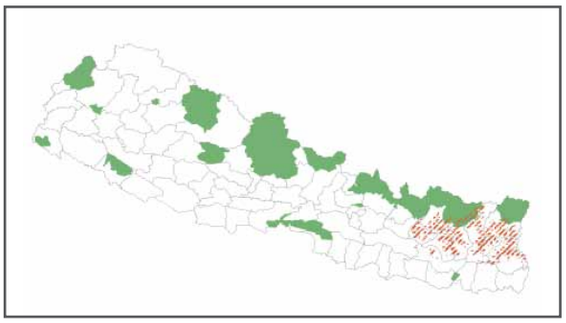
Species Ecology

The Northern Tree Shrew occurs in tropical and subtropical forests, feeding mainly on fruits and seeds, insects, small vertebrates and bird eggs.

Females produce one to two litters per year with two to four young after a gestation period of six weeks.

Conservation Status

Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.



Legal Status

National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution

This species occurs in east Nepal between elevations of 2,300 m to 2,500 m.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

References

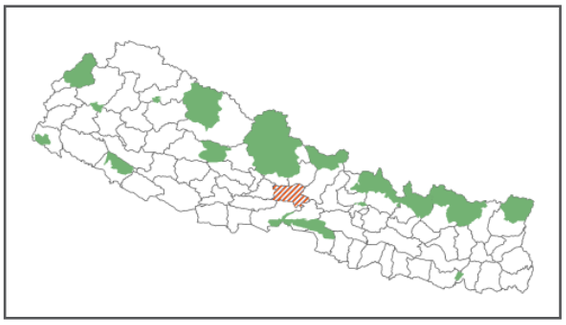
Suwal and Verheugt 1995, Smith and Xie 2008, Baral and Shah 2008.

BATS

[CHIROPTERA]

CRITICALLY ENDANGERED

156) ***Ia io*** (Thomas, 1902)



Common Names
Great Evening Bat (English); Aiya Aayo Chamero (Nepali)

Synonyms
Ia longimana (Pen, 1962); *Pipistrellus io* (Thomas, 1902)

Species Description
One of the biggest and rarest vespertilionids (evening bats) of the world. Resembles a large serotine but has rounded pinna which are about equal in length and breadth. Wing membranes are black throughout and it's tail is longer, extending aproximately 6mm from the inter-femoral membrane. It's coat is a uniform brown-grey.

Species Ecology
The Great Evening Bat is associated with tropical moist forests, where it is exclusively a cave-roosting species. The bats leave their roost in the evening before twilight and feed mainly on beetles, but also include moths, butterflies, bugs and crickets in their diet.

Little is known about the reproductive parameters of this species.

Conservation Status
Global: Least Concern
National: Critically Endangered B1ab(i,ii)
Rationale for assessment: The Great Evening Bat (*Ia io*) has been nationally assessed as Critically Endangered under criterion B in view of its occurrence at a single location with a small extent of occurrence suspected to be less than 100 km^2. Recent research revealed that the species has disappeared from previous areas of occupation. There are no conservation measures in place for bat species in Nepal and declines in numbers continue to be caused by human disturbance and persecution, habitat loss and degradation.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
The largest recorded population in Nepal consists of approximately 100 individuals. A single colony of around 30 individuals was reported in 1995, but most other sightings are of individuals only.

National Distribution
Bimalnagar in Tanahun district.

Distribution outside Nepal
China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat loss and degradation due to habitat alteration outside of protected areas, deforestation and removal of dead trees in urban areas.
- Disturbance of roosting sites by humans due to direct persecution, fire and use of caves for shelter.

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct surveys in current known location and areas of suitable habitat using bat detector technology, direct observations and indirect sign surveys, applying standard protocols to establish occupancy and abundance of this species.
ii) Implement education and awareness programmes engaging local communities to monitor population and stop persecution and reduce disturbances.
iii) Develop and implement management plan for key habitats.
iv) Develop and implement species/taxa action plan.

References

Bates and Harrison 1997, Csorba *et al.* 1999, Hutson *et al*. 2001, Thabah *et al.* 2007, Csorba *et al.* 2008.

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157) ***Myotis csorbai*** (Topál, 1997)

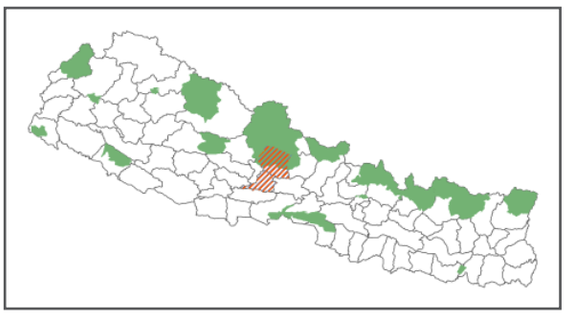
Common names
Csorba's Mouse-eared Bat (English); Nepali Chamero (Nepali)

Species Description
Dense, soft, woolly pelage, with hairs longer on the back than the belly. The dorsal coat colour is a dark brown whilst the ventral is paler and grey in colouration. Forehead and muzzle (except nostrils) covered by hairs. Small ears, which are dark brown-black with evenly convex anterior borders and pointed tips.

Species Ecology
Csorba's Mouse-eared Bat roosts in caves surrounded by subtropical secondary forests and is an insectivorous species.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Data Deficient
National: Critically Endangered B1ab(v)
Rationale for assessment: Csorba's Mouse-eared Bat (*Myotis csorbai*) has been nationally assessed as Critically Endangered under criterion B. This species is endemic to Nepal and although it has been recorded from two sites, the close proximity of these sites means they are considered as a single location for this assessment. Although no population estimates are available, the population size is considered small and is suspected to be in decline based on observations. The area occupied is vulnerable to degradation and anthropogenic impacts, putting this species at great risk from human disturbance. Because the threats have not yet been effectively addressed, it is predicted that this species will suffer further population and range declines.



Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
There is no information available on the population size of this species in Nepal, however it is suspected to be in decline.

National Distribution
This species is endemic to Nepal and known from only a single location; Kailash caves in Syngja district. It may also occur near Pokhara but this needs further confirmation.

Distribution outside Nepal
Endemic to Nepal.

Main Threats
- Deforestation due to collection of fire wood, timber and clearing for agriculture and grazing.

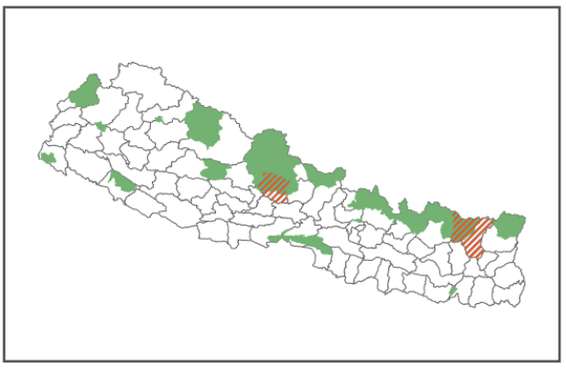
Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct survey using bat detector technology and indirect signs to establish occupancy and abundance in Pokhara and other parts of Kaski district.
ii) Conduct regular monitoring using community groups and establish a database to monitor trends in population size and occupancy over time.
iii) Develop and implement habitat and threat management in both remaining and potential sites for population recovery and expansion.
iv) Implement education and awareness programmes in areas where this species occurs including community engagement activities.
v) Raise awareness internationally for this endemic species.
vi) Develop species conservation action plan.

References
Topál 1997, Csorba *et al.* 1999, Bat Net 2007, Baral and Shah 2008, Thapa 2009b, Sanjan Thapa (pers. comm.) 2010.

ENDANGERED

158) ***Scotomanes ornatus*** (Blyth, 1851)



Common Names
Harlequin Bat (English); Gahana Chamero (Nepali)

Synonyms
Nycticejus ornatus (Blyth, 1851); *Nycticejus nivicolus* (Hodgson, 1855); *Nycticejus emarginatus, Scotomanes emarginatus* (Dobson, 1871)

Species Description
Orange coloured bat with intermittent white tufts, sometimes forming a white line along the back. Underside is a mixture of dark brown and cream, generally paler. the face is naked with a whiskered muzzle. pinna are a light pinkish brown, rounded tips and broad.

Species Ecology
The Harlequin Bat occurs in deep, humid valleys and hilly forests and is an insectivorous species.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Endangered B1ab(iii)
Rationale for assessment: The Harlequin Bat (*Scotomanes ornatus*) has been nationally assessed as Endangered under criterion B as the area of occupancy for this species is suspected to be less than 2,000 km^2 and because it has been recorded from only two locations in Nepal. The threats to this species include habitat loss and human disturbance and these threats continue to cause the area and quality of the species' habitat to decline.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a single protected area.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Annapurna Conservation Area and districts of Kaski (Sudame) and Sankhuwasabha.

Distribution outside Nepal
Bangladesh, China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

Main Threats
- Hunting for subsistence
- Habitat loss and degradation mainly outside protected areas due to clearing for agriculture and livestock grazing, removal of old trees and collection of firewood.

Conservation Measures in Place
None.

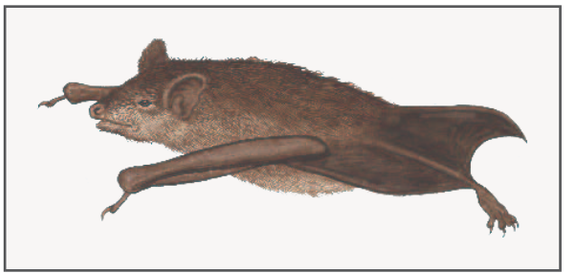
Conservation Recommendations
i) Conduct surveys using bat detector technology, indirect signs and direct observations, and community syrveys using standard protocols in areas of suitable habitat to establish baseline data on occupancy and abundance, ecology and threats to this species.
ii) Implement education and awareness programmes in areas in which it occurs.
iii) Develop and implement management plans for key habitats of the species.

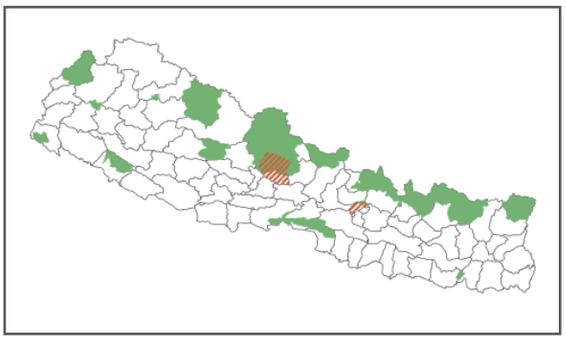
References

Csorba *et al*. 1999, Bat Net 2007, Csorba *et al.* 2008b, Sanjan Thapa (pers.comm.) 2010.

VULNERABLE

159) ***Myotis sicarius*** (Thomas, 1915)





Common Names
Mandelli's Mouse-eared Bat (English); Mandelliko Musakane Chamero (Nepali)

Synonyms
Vespertilio mystacinus (Kuhl, 1819); *Vespertilio pallidiventris* (Hodgson, 1844); *Vespertilio nipalensis* (Dobson, 1871); *Myotis meinertzhageni* (Thomas, 1926)

Species Description
Dense, relatively short and very soft pelage. Dorsal surface uniform deep chocolate brown, ventral surface paler, the hair tips are ginger coloured and roots are dark. The forehead and muzzle are covered by hairs, areas around ears, eyes and nostrils are

bare. Ears are dark, blunt with rounded tip and the tragus is well developed and around half the height of the pinna. The nostrils are crescent shaped and and open laterally.

Species Ecology
Mandelli's Mouse-eared Bat is found in montane forests on hill sides and in valleys.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Vulnerable
National: Vulnerable B2ab(iii, iv)
Rationale for assessment: Mandelli's Mouse-eared Bat (*Myotis sicarius*) has been nationally assessed as Vulnerable under criterion B as it has been recorded from only seven locations in Nepal and has an area of occupancy of less than 2,000 km^2 because the threats to this species, which include habitat loss and degradation, and disturbance to roosting sites, continue to cause a decline in the area and quality of habitat available for this species.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Annapurna Conservation Area, Shivapuri Nagarjun National Park and districts of Kaski (Sudame), sections of Kathmandu Valley (Bansbari, Bajrabarahi Religious Forest, Godavari, Lalitpur). Total extent of occurrence is estimated to be greater than 20,000 km^2, however, the area of occupancy has been estimated as less than 2,000 km^2 based on the availability of habitat in which locations the species has been recorded.

Distribution outside Nepal
India.

Main Threats
- Hunting for subsistence
- Habitat loss and degradation mainly outside protected areas due to clearing for agriculture, removal of old trees and collection of firewood.
- Disturbance to roosting sites.

Conservation Measures in Place
None.

Conservation recommendations
i) Conduct surveys using bat detector technology, indirect sign surveys and observations using standard protocols in current locations and other suitable habitats to obtain occupancy and abundance estimates.
ii) Conduct surveys at regular intervals and create national database to record population size and distribution, and determine trends over time.
iii) Implement education and awareness programmes including engaging local communities and providing incentives to encourage the protection of this species.
iv) Gate the caves and mines inhabited by bats to stop human disturbance to caves.
v) Develop management plans for key habitats where this species occurs.

References

Suwal and Verheugt 1995, Csorba *et al.* 1999, Molur *et al.* 2002, Baral and Shah 2005, Sanjan Thapa (pers.comm.) 2010.

160) ***Philetor brachypterus***
(Temminck, 1840)

Common Names
Short-winged Pipistrelle Bat (English); Rohuko Chamero (Nepali)

Synonyms
Vespertilio brachypterus (Temminck, 1840)

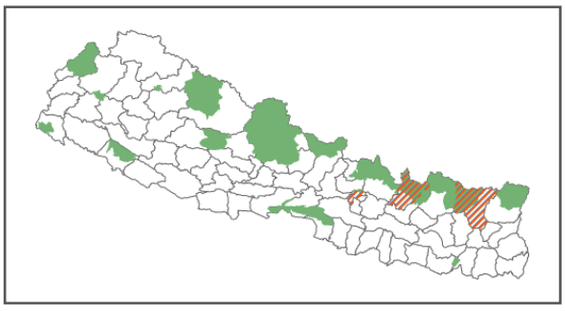
Species Description
A small robust bat with short forearms and proportionally small wings. Pelage is dark brown all over, muzzle and ears are hairless. Face is short, ears are broad and short: the anterior margin is slightly convex, the tip broadly rounded off and the posterior border with its base running forwards to finish behind and below the angle of the mouth. The tragus is fleshy and thickened with an inner margin straight, outer slightly convex. The basal lobule is broad and short, being less than one third the height of the pinna.

Species Ecology
The Short-winged Pipistrelle Bat occurs in montane forests, roosting in tree hollows and coconut palms. This species is insectivorous.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Vulnerable B1ab(iii)+2ab(iii)
Rationale for assessment: The Short-winged Pipistrelle Bat (*Philetor brachypterus*) has been nationally assessed as Vulnerable under criterion B because it has a restricted distribution with an extent of occurrence of approximately 8,608 km^2. In all areas of its range, this species suffers from habitat loss and degradation, including deforestation, conversion of land for agriculture and disturbances to roosting sites. These threats continue to cause declines in the quality and extent of available habitat for this species.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).



National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Districts of Sindhupalchowk (Barabisse), Kathmandu, Sankhuwasabha, and areas of the eastern mid-hills.

Distribution outside Nepal
Indonesia, Malaysia, Papua New Guinea, Philippines.

Main Threats
- Hunting for subsistence
- Habitat loss and degradation due to clearing for agriculture, removal of old trees and collection of firewood.
- Disturbances to roosting sites.

Conservation Measures in Place
None.

Conservation Recommendations
i) Conduct surveys using bat detector technology, indirect signs and direct observations, and community syrveys using standard protocols in areas of suitable habitat to establish baseline data on occupancy and abundance, ecology and threats to this species.
iii) Implement awareness and education programmes in areas in which the species occurs and include community participatory conservation

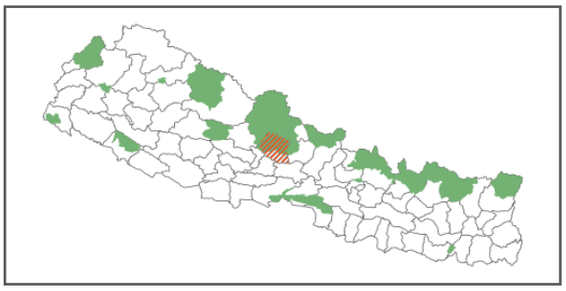
programmes.
iv) Develop management plans for key habitats.

References

Bates and Harrison 1997, Molur *et al.* 2002, Baral and Shah 2008.

NEAR THREATENED

161) ***Hipposideros pomona*** (K. Andersen, 1918)



Common names

Andersen's Leaf-nosed Bat (English); Gudikhane Golopatre Chamero (Nepali)

Synonyms

Hipposideros gentilis (Anderson, 1918)

Species Description

The dorsal pelage of this bat can be various shades of mid-dark brown with the ventral pelage being a more uniform pale beige-brown in colour. Pinkish coloured leaf-nose and dark brown ears.

Species Ecology

Although the species is widespread, little is known about its ecology except that it roosts in small colonies numbering a few individuals in caves and crevices in subterranean habitats.

Conservation Status

Global: Least Concern
National: Near Threatened
Rationale for assessment: Anderson's Leaf-nosed bat (*Hipposideros Pomona*) has been nationally assessed as Near Threatened. This species may qualify for a threatened category under criterion B1 due to a small geographic range with few recorded locations all from within the Kaski district suggesting a limited extent of occurrence of approximately 2, 000 km^2 (based on the size of the district and recorded locations). However further information is required to confirm range and whether the threats identified are causing declines of either the species population, range or habitat quality.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

Lower regions of Annapurna Conservation Area and areas in and around Kaski district (for example Mahendra Gupha and Panchase forest).

Distribution outside Nepal

Bangladesh, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

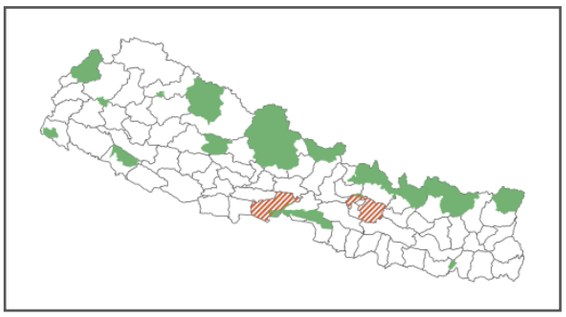
Main Threats

- Disturbance with increased human population and tourism.

References

Molur *et al.* 2002, Bates and Harrison 1997, Aryal and Dhungel 2009, Baral and Shah 2008, Sanjan Thapa (pers. comm.) 2010.

162) ***Murina aurata*** (Milne-Edwards, 1872)



Common Names
Tibetan Tube-nosed Bat (English); Sano Nalinake Chamero (Nepali)

Synonyms
Murinus aurata (Milne-Edwards, 1872)

Species Description
A small bat with thick very soft golden brown pelage. Dark brown hair bases, the mid-parts pale straw brown, tips straw, gold or dark brown. Ventral surface hairs have dark roots and pale grey tips. Wings uniform mid-brown and naked. Muzzle with tubular nostrils, protuberant and opening outwards. Ears broad and rounded without an emargination on the posterior border. Tragus long, narrow and tapering. Hairy feet.

Species Ecology
The species roosts in trees or foliage and is insectivorous.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Near Threatened
Rationale for assessment: The Tibetan Tube-nosed Bat (*Murina aurata*) has been nationally assessed as Near Threatened as further information may reveal that this species qualifies for a threatened category under criterion B1 based on a small area of occupancy as this species has been recorded from only 3 locations but as yet it is unclear whether this population is experiencing range or population declines.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Kathmandu (Shivapuri Nagarjun National Park), Nawalparasi and Kavre districts.

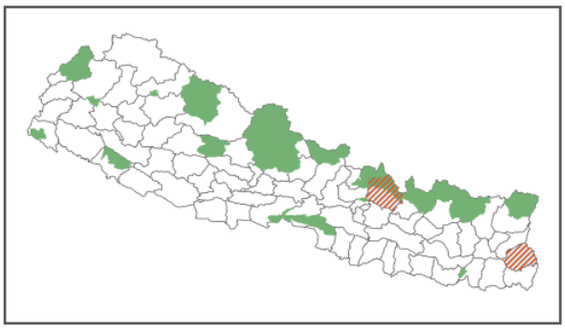
Distribution outside Nepal
China, India, Lao PDR, Myanmar, Thailand, Viet Nam.

Main Threats
- Habitat degradation due to clearing for agriculture, removal of old trees and collection of fire wood.
- Disturbance to roosting sites through through direct persecution or close proximity to human settlements and activity.

References

Bates and Harrison 1997, Molur *et al.* 2002, Smith and Xie 2008.

163) ***Rhinolophus lepidus*** (Blyth, 1844)



Common Names
Blyth's Horseshoe Bat (English); Blythko Ghodnale Chamero (Nepali)

Synonyms
Rhinolophus monticola (Andersen, 1905)

Species Description
Pelage typically grey-brown dorsally and slightly paler ventrally. General morphology similar to that of *R. pusillus* but usually exceeds *R. pusilllus* in size. The anterior surface of the sella is less conspicuously emarginated. The lancet is well developed, the tip is variable in shape, rounded or pointed. Distinguished from *R. pusillus* by longer forearm and tibia measurements.

Species Ecology
This species can be found in both dry and moist forests and fringe areas. Roosting sites include caves, unused tunnels and old and dilapidated buildings. Main prey species include moths and butterflies, beetles, flies, wasps, bees and ants.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Near Threatened
Rationale for assessment: Blyth's Horseshoe Bat (*Rhinolophus lepidus*) has been nationally assessed as Near Threatened. The species has been recorded from only two locations although extent of occurrence may be reasonably large due to the distance of the two sites. Ongoing human disturbance to roosting sites may cause this species' geographic range to decline sufficient to qualify this species as threatened under criterion B1. The species absence from protected areas increases the risk to this species, however further information is required to confirm that either it's range or it's population is in decline.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
The species has been recorded from only two locations; districts of Ilam and Sindhupalchowk.

Distribution outside Nepal
Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Malaysia, Myanmar, Pakistan, Thailand, Viet Nam.

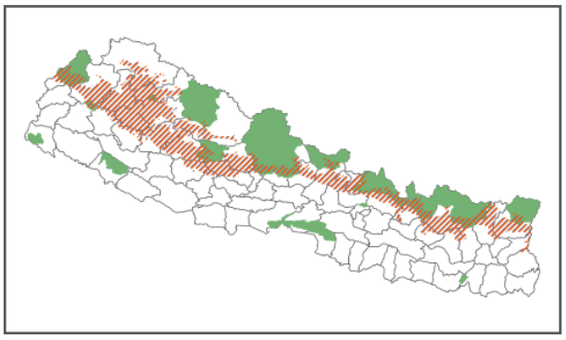
Main Threats
- Human disturbance of roosting sites due to fires and use of these areas for shelter.
- Direct persecution.
- Habitat degradation and loss.

References

Bates and Harrison 1997, Walker and Molur 2002, Bumrungsri *et al*. 2008.

LEAST CONCERN

164) ***Barbastella leucomelas***
(Cretzschmar, 1826)



Common Names
Asian Barbastelle (English); Himali Chamero (Nepali)

Synonyms
Plecotus darjelingensis (Hodgson, 1855); *Barbastella caspica* (Satunin, 1908); *Barbastella walteri* (Bianchi, 1916); *Barbastella blandfordi* (Bianchi, 1917)

Species Description
Pelage long, fine, soft on the dorsal surface and shorter on the belly. Head and back black, posterior, back and flanks with paler tips and a glossy sheen. Ventral surface with dark black-brown hairs. Muzzle short, flat and wide with prominent glandular swellings. Crescent shaped nostrils open upwards and outwards on a flat, hairless median space bordered laterally by two elevated crescentic ridges. Black-brown almost-square ears with ill-defined transverse ridges, hairy on their posterior surfaces, except for the tips. The tragus is triangular and large, being more than half the height of the pinna. Long tail.

Species Ecology
Asian Barbastelle is a solitary, nocturnal species found in Himalayan moist temperate and dry coniferous forest areas roosting in caves, tunnels, crevices, old buildings, mines and tree hollows. The Asian Barbastelle is a sedentary insectivore.

Little is known about the reproductive behaviour of this species.

Conservation status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution and assumed large population that is unlikely to be declining at a rate significant enough to qualify for a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There has been little or no information on the population size and trend of this species in over 100 years.

National Distribution
This species occurs along the high-hills from east to west and including all protected areas in this region.

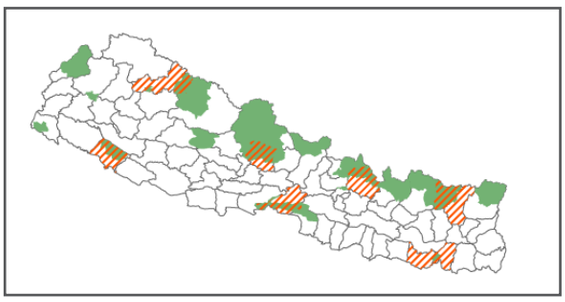
Distribution outside Nepal
Afghanistan, Armenia, Azerbaijan, Bhutan, China, Egypt, Eritrea, Georgia, India, Islamic Republic of Iran, Israel, Japan, Kyrgyzstan, Pakistan, Russian Federation, Saudi Arabia, Taiwan Province of China, Tajikistan, Turkmenistan, Uzbekistan.

Main Threats
- Deforestation.
- Habitat degradation.

References

Suwal and Verheught 1995, Bates and Harrison 1997, Molur *et al.* 2002, Walker and Molur 2002, Benda *et al*. 2008ab, Baral and Shah 2008.

165) ***Cynopterus sphinx*** (Vahl, 1797)



Common Names

Greater Short-nosed Bat (English); Nepte Chamero (Nepali)

Synonyms

Vespertilio fibulatus, Vespertilio sphinx (Vahl, 1797); *Pteropus pusillus* (É. Geoffroy, 1803); *Pteropus marginatus* (É. Geoffroy, 1810); *Pachysoma brevicaudatum* (Temminck, 1837); *Cynopterus brachyotis var. scherzeri* (Zelebor, 1869); *Cynopterus angulatus, Cynopterus brachyotis* ssp. *angulatus* (Miller, 1898); *Cynopterus marginatus* var. *ellitoi* (Gray, 1870); *Cynopterus sphnx* ssp. *gangeticus* (Andersen, 1910)

Species Description

The species has soft and silky fur-lined coffee brown ears and dark brown wings marked by pale 'fingers'. Males are orange on the chin, sides of chest, belly and thighs, females with a paler grey belly and a tawny-brown collar.

Species Ecology

Greater Short-nosed Bat has been observed in a wide variety of habitats, including banana plants and palm leaves, in dense riparian vegetation, in forests and over streams.

The Greater Short-nosed Bat breeds twice a year, and in some areas is known to breed throughout the year, bearing a single young.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, presence within a number of protected areas, tolerance of a broad range of habitats, and a presumed large population which is unlikely to be declining fast enough to qualify for a more threatened category.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There are no population estimates available for this species, however it is considered common and abundant.

National Distribution

Distribution extends across the mid-hills from east to west and from Annapurna Conservation Area (Kaski district), Bardia National Park, Chitwan National Park, Makalu Barun National Park, Rara National Park, lowlands of the east around Koshi Tappu Wildlife Reserve and Chisapani in the Karnali flood plains, Barabise and parts of Sankhuwasabha district.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, China, Hong Kong, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Sri Lanka, Thailand, Viet Nam.

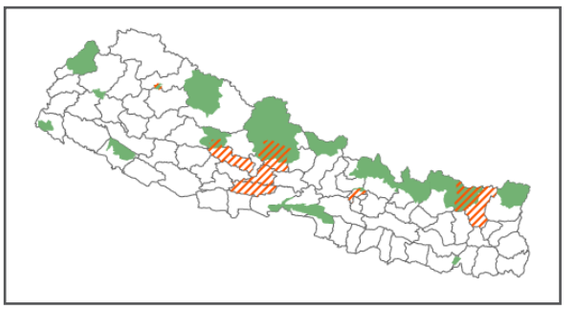
Main Threats

Unknown.

References

Suwal and Verheught 1995, Bates and Harrison 1997, Myers *et al.* 2000, Baral and Shah 2008, Giri 2009, Thapa 2009a, Adhikari 2010, Sanjan Thapa (pers. comm.) 2010.

166) ***Hipposideros armiger***
(Hodgson, 1835)



Common Names
Great Himalayan Leaf-nosed Bat (English);
Thulo Golopatre Chamero (Nepali)

Synonyms
Rhinolophus armiger (Hodgson, 1835)

Species Description
Largest leaf-nosed bat, clearly identified by the four supplementary leaflets on its anterior nose-leaf. Intermediate leaf has wave-shaped patterns and there is a fleshy pad behind the four-celled posterior leaf. Dark-brown wings and membranes stand out against a grey-brown pelage of soft, long fur.

Species Ecology
The Great Himalayan Leaf-nosed Bat is generally found in montane and bamboo forests in high elevations. The species shares its roosting sites with other species of bats, such as *Miniopterus* species and *Rhinolophus* species, in caves and structures such as lofts of houses and old temples.

The species breeds once a year and gives birth to two young. This species has been observed hibernating in November.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population, occurrence within protected areas, and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
It appears to be fairly common throughout its range including Nepal, although there is no official population estimate. This is considered the most common bat species in Nepal.

National Distribution
Distributed across the mid-hills from east to west and within the protected areas of Annapurna Conservation Area (within Kaski district), Makalu Barun and Rara National Parks, Kathmandu Valley (Sundarijal and Godavari), Baglung, Palpa, Syangja (Kailash Gufa) and Sankhuwasabha (Num).

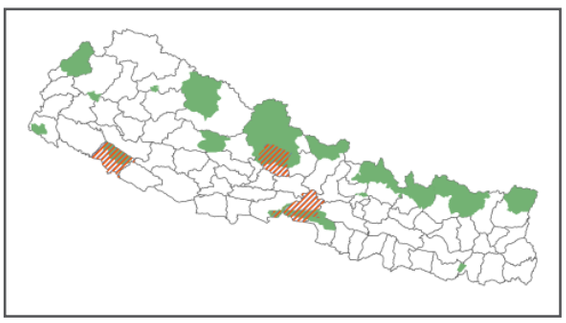
Distribution outside Nepal
Cambodia, China, Hong Kong, India, Lao PDR, Malaysia, Myanmar, Taiwan Province of China, Thailand, Viet Nam.

Main Threats
- Deforestation.
- Disturbance to roosting sites.

References

Mistry 1995, Suwal and Verheugt 1995, Bates and Harrison 1997, Molur *et al.* 2002, Baral and Shah 2008, Giri 2009, Thapa *et al.* 2009ab, Adhikari 2010, Hari Adhikari (pers. comm.) 2010, Thapa 2010b, Sanjan Thapa (pers. comm.) 2010.

167) ***Kerivoula picta*** (Pallas, 1767)



Common Names

Painted Bat (English); Rangichangi Chamero (Nepali)

Synonyms

Vespertilio pictus (Pallas, 1767); *Vespertilio kirivoula* (Cuvier, 1832)

Species Description

Pelage is long, dense and woolly, dorsal surface bright orange to tawny-red, ventral surface buff coloured with orange hue on the flanks. Wings bright orange to black. Muzzle very hairy, naked nostrils slightly protuberant facing outwards and slightly downwards. Hairy lips and feet. Ears relatively large, anterior border smoothly concave, the tip rounded off and distinct concavity just below the tip on the posterior border. Tragus tall and narrow, anterior margin slightly convex, posterior margin has a basal projection at the widest part, above with a small shallow concavity.

Species Ecology

The Painted Bat occurs in plantations and deciduous forests and is insectivorous.

Little is known about the reproductive behaviour of this species.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its presence within protected areas and presumed large population despite being regarded as uncommon.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

This species has been reported from two of the protected areas in the lowlands, Bardia and Chitwan National Parks and Pokhara.

Distribution outside Nepal

Bangladesh, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Sri Lanka, Thailand, Viet Nam.

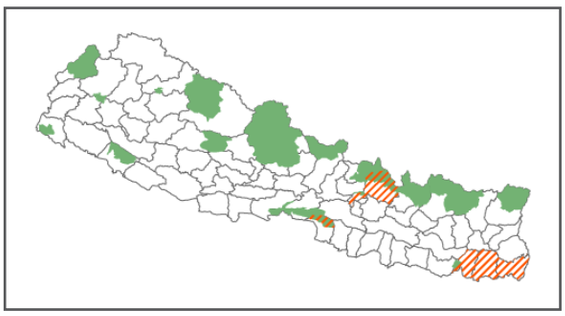
Main Threats

- Habitat loss and degradation.
- Human disturbance.

References

Suwal and Verheugt 1995, Myers *et al.* 2000, Molur *et al.* 2002, Baral and Shah 2008.

168) ***Megaderma lyra*** (E. Geoffroy, 1810)



recorded colony of Greater False Vampire Bat in Nepal.

Common Names
Greater False Vampire Bat (English); Nakkali Boxi Chamero (Nepali)

Synonyms
Vespertilio carnatica (Elliot, 1839); *Megaderma spectrum* (Wagner, 1844); *Megaderma schistacea* (Hodgson, 1847); *Encheira lyra caurina, Megaderma lyra caurina* (Andersen & Wroughton, 1907)

Species Description
A very distinctive bat due to the large grey-black ears which are joined for at least two thirds of their length. Pelage is grey, long and soft. Wing membranes are grey-black with pinkish arms and legs. The bat's snout is naked and has a tall nose-leaf that resembles two joined ovals.

Species Ecology
Greater False Vampire Bat can occur in a wide variety of habitats and will roost in old buildings, caves, temples, tunnels, attics, stone mines and cow sheds in elevations up to 923 m. It feeds on insects and small vertebrates.

The Greater False Vampire Bat breeds once a year, producing a single young after a gestation period of around 150 days.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a fairly abundant population and distribution with no major threats causing significant decline.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
Overall this is a common species though there are no comprehensive assessments for Nepal. A colony of 300 individuals was observed at an abandoned house in Bahundangi, Jhapa which is the largest

National Distribution
Occurs across the mid-hills including Kathmandu (Chobar, Shivapuri-Nagarjun National Park), Barabise, Dolakha district and a number of locations along the eastern Terai, south of Parsa Wildlife Reserve, Sunsari (Kushaha), Morang (Biratnagar) and Jhapa (Bahundangi).

Distribution outside Nepal
Afghanistan, Bangladesh, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Pakistan, Sri Lanka, Thailand, Viet Nam.

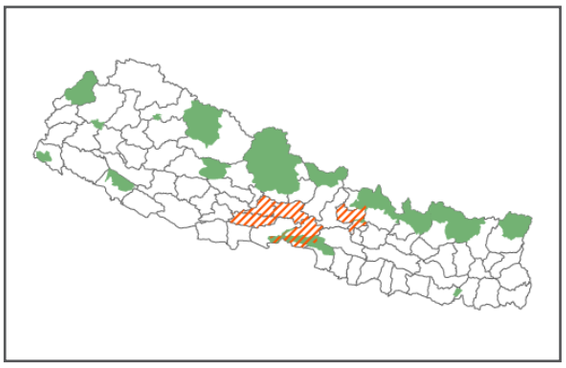
Main Threats
- Disturbance.
- Loss of roosting sites.

Conservation Measures in Place
The colony in Bahundangi, Jhapa is protected by the local community, after a community awareness programme.

References

Audet *et al.* 1991, Bates and Harrison 1997, Csorba *et al.* 1999, Molur *et al*. 2002, Baral and Shah 2008, Thapa 2009b, Sanjan Thapa (pers. comm.) 2010.

169) ***Miniopterus schreibersii*** (Kuhl, 1817)



Common Names

Common Bentwing Bat (English); Bange Chamero (Nepali)

Synonyms

Vespertilio scheibersii (Kuhl, 1819); *Vespertilio fuliginosa* (Hodgson, 1835)

Species Description

Small evening-bat with long dense fur, colours varying from russet to dark brown. This bat has long limbs and a highly enlarged third digit. Ears small, rounded and set apart and do not rise above the domed forehead. Tragus is slender, tall and slightly curled at the tip. Tail is enclosed almost fully in a membrane.

Species Ecology

The Common Bentwing Bat mainly utilises caves and mines for roosting and will often be observed in large mixed colonies with other cave-dwelling bat species (such as *Hipposideros armiger* in Palpa District). In winter it hibernates in underground sites. It forages in a variety of open and semi-open natural and artificial habitats, including suburban areas, feeding on moths and flies.

Little is known about the reproductive behaviour of this species.

Conservation Status

Global: Near Threatened
National: Least Concern
Rationale for assessment: Despite the lack of adequate information, the species has been reported from a number of locations around the country and has an assumed large abundance therefore is considered Least Concern.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

Chitwan National Park, Kathmandu, Kakani, Palpa (Argali VDC and Dovan VDC), Syangja (Kailash cave) and Tanahun (Bimalnagar), Kanchenjunga Conservation area and surrounding areas of Taplejung.

Distribution outside Nepal

Afghanistan, Albania, Algeria, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Cameroon, Croatia, Cyprus, France, Georgia, Gibraltar, Greece, Guinea, Hungary, Israel, Italy, Jordan, Lebanon, Liberia, Former Yugoslav Republic of Macedonia, Malta, Monaco, Montenegro, Morocco, Nigeria, Portugal, Romania, Russian Federation, San Marino, Serbia, Sierra Leone, Slovakia, Slovenia, Spain, Switzerland, Syrian Arab Republic, Tunisia, Turkey.

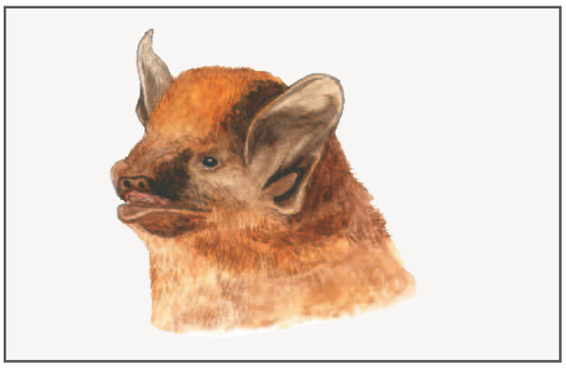
Main Threats

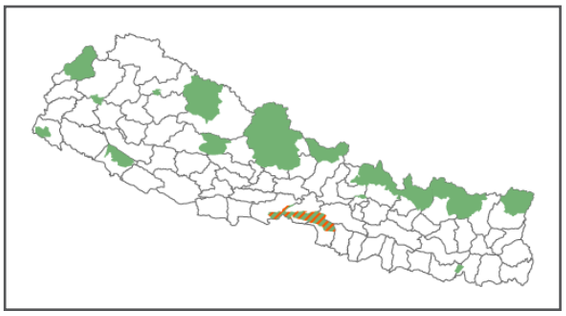
Unknown.

References

Csorba *et al.* 1999, Myers *et al*. 2000, Molur *et al.* 2002, Hutson *et al*. 2008a, Thapa and Thapa 2009, Adhikari 2010, Hari Adhikari (pers. comm.) 2010.

170) ***Murina cyclotis*** (Dobson, 1872)





Common Names

Round-eared Tube-nosed Bat (English); Golakane Nalinake Chamero (Nepali)

Synonyms

Murina eileenae (Phillips, 1932)

Species Description

A small bat with a pale dorsal pelage of gold-orange. Ventral pelage can sometimes appear darker due to greyish roots, but hair tips are pale. The face and muzzle are finely hairy with pinkish skin showing through. Ears are greyish in colour and rounded, top of the wings have fine orange fur while the under-sides are naked. Feet and hind limbs are hairy.

Species Ecology

The Round-eared Tube-nosed Bat occurs in cardamom and coconut plantations and rocky caves in forests and is an insectivorous species.

Little is known about the reproductive behaviour of this species.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population, occurrence within protected areas and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within two protected areas.

National Population Size

There is no information available on the population size of this species in Nepal, however this species is considered common.

National Distribution

Chitwan National Park, Parsa Wildlife reserve and adjoining forests.

Distribution outside Nepal

Brunei Darussalam, Cambodia, China, India, Lao PDR, Malaysia, Myanmar, Philippines, Sri Lanka, Thailand, Viet Nam.

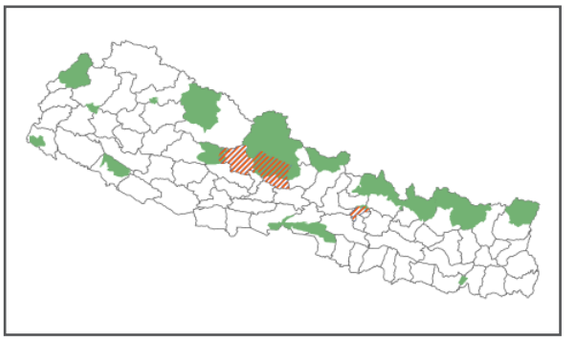
Main Threats

Unknown.

References

Csorba *et al.* 1999, Myers *et al*. 2000, Molur *et al.* 2002.

171) ***Myotis formosus*** (Hodgson, 1835)



Common Names
Hodgson's Bat (English); Hodgsonko Chamero (Nepali)

Synonyms
Vespertilio formosa (Hodgson, 1835); *Kerivoula pallida* (Blyth, 1863); *Vespertilio auratus, Myotis formosus* ssp. *auratus* (Dobson, 1871); *Vespertilio dobsoni* (Andersen, 1881); *Myotis formosus* ssp. *andersoni* (Touessart, 1897); *Vespertilio andersoni* (Trouessart, 1897) [nomen novum for *Vespertilio*]

Species Description
A medium-sized tree bat of striking colouration: ginger-brown back, orange flanks and undersides, with a cinnamon throat. Its oval orange-coloured ears stick out of the hairy head, and wings are orange with triangular black markings.

Species Ecology
Hodgson's Bat inhabits lowland and montane primary forests and rhododendron forests. The species roosts in caves, trees, bushes and houses although in winter they hibernate in caves. The species has been recorded from sea level up to the foothills of the Himalayas. This is an insectivorous species.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population and presence within protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within several protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Occurs across central and western Nepal including Annapurna Conservation Area and around Shivapuri Nagarjun National Park.

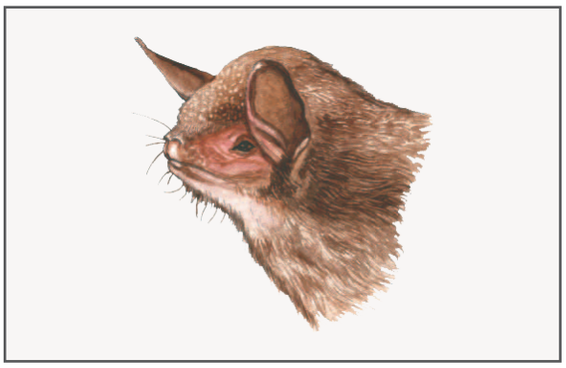
Distribution outside Nepal
Afghanistan, Bangladesh, China, India, Indonesia, Democratic Peoples Republic of Korea, Republic of Korea, Lao PDR, Philippines.

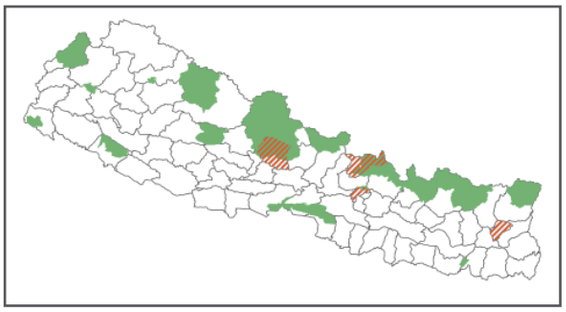
Main Threats
Unknown.

References

Suwal and Verheught 1995, Bates and Harrison 1997, Csorba *et al.* 1999, Molur *et al.* 2002, Smith and Xie 2008, Bat Net 2007.

172) ***Myotis muricola*** (Gray, 1864)





Common Names
Nepalese Whiskered Bat (English); Parkhale Chamero (Nepali)

Synonyms
Vespertilio muricola (Hodgson, 1841); *Vespertilio muricola, Myotis mystacinus* (Gray, 1846); *Myotis mystacinus, Vespertilio caliginosus* (Tomes, 1859); *Vespertilio blanfordi* (Dobson, 1871)

Species Description
A small bat with grey ventral pelage and russet-brown dorsal pelage. Pelage appears darker than that of *M. mysticanus*. Tail is shorter than *M. nipalensis*. Face is hairy with a whisker-like fringe along the upper lip.

Species Ecology
Nepalese Whiskered Bat is found in primary and secondary broadleaved montane and lowland forests, scrub, secondary growth and gardens. It roosts in caves, hollows and among tightly rolled leaves of the broad-leaved trees, especially banana. This species is insectivorous.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, presumed large population and occurrence within protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Patchily distributed across the higher hills of central and western Nepal and within Annapurna Conservation Area, Langtang National Park, Shivapuri Nagajun National Park and surrounding areas and districts of Terhathum (Tinjure Phedi) and Kaski (Banthanti).

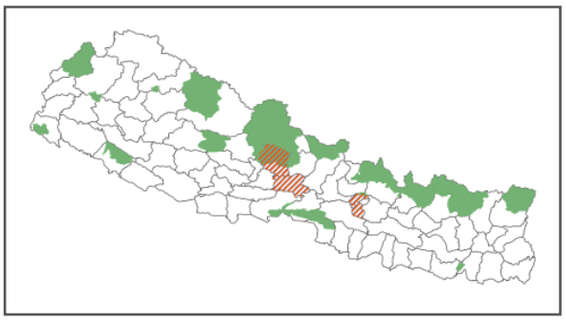
Distribution outside Nepal
Afghanistan, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Thailand, Viet Nam.

Main Threats
Unknown.

References

Molur *et al.* 2002, Csorba *et al.* 1999, Bates *et al*. 2008a, Sanjan Thapa (pers. comm.) 2010.

173) ***Myotis nipalensis*** (Dobson, 1871)



Common Names
Nepal Myotis (English); Nepali Musakaane Chamero (Nepali)

Synonyms
Myotis mystacinus (Kuhl, 1817); *Vespertilio pallidiventris* (Hodgson, 1844); *Myotis mystacinus, Vespertilio nipalensis* (Dobson, 1871); *Myotis meinertzhageni* (Thomas, 1926); *Myotis przewalskii* (Bobrinskoj, 1926); *Myotis transcaspicus* (Ognev & Heptner, 1928); *Myotis kukunoriensis* (Bobrinskii, 1929); *Myotis sogdianus* (Kuzyakin, 1934)

Species Description
Dorsal pelage is russet-brown, ventral pelage is a pale grey to creamy white. Limbs and muzzle are pink. wing membranes are dark brown-grey/ black. Eyes are concealed under the fine hairs on the face.

Species Ecology
The Nepal Myotis is found in a wide variety of arid or mountainous habitats, including forest, shrubland and grassland areas. It roosts in buildings, rocks, caves and old mines.

The species reproduces once a year, giving birth to a single young.

Conservation Status
Global: Least concern
National: Least Concern
Rationale for assessment: This species has been recorded from a number of sites and is considered common.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
There is no information available on the population status of this species in Nepal.

National Distribution
This species occurs in Kathmandu (Godavari, Lalitpur), Tanahun and Pokhara (Kaski).

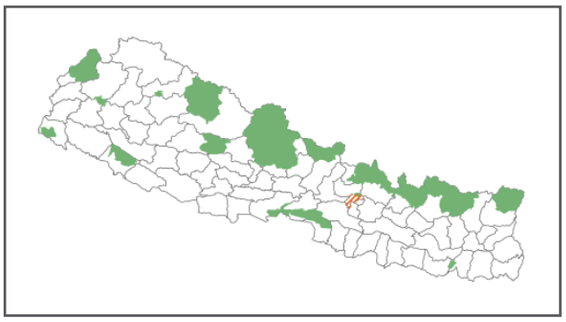
Distribution outside Nepal
Afghanistan, Armenia, Azerbaijan, China, Georgia, India, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan, Uzbekistan.

Main Threats
Unknown.

References

Tsytsulina *et al.* 2008a, Smith and Xie 2008, Giri 2009, Thapa *et al.* 2009ab.

174) ***Myotis siligorensis*** (Horsfield, 1855)



Common Names
Himalayan Whiskered Bat (English); Sana Daate Chamero (Nepali)

Synonyms
Vespertilio darjilingensis, Vespertilio siligorensis (Horsfield, 1855)

Species Description
Pelage colour is uniform dark brown. The hairs on the ventral surface have dark brown roots and pale brown tips. The muzzle is pointed with a well developed fringe of fine hairs on the upper lip. The interfemoral and wing membranes are uniform brown and the wings are attached to the base of the phalanx of the outer metatarsal of each foot.

Species Ecology
The Himalayan Whiskered Bat can be found in the montane forests of Himalayas and has been observed foraging near human dwellings. This species is insectivorous.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, presumed large population, lack of any major threats and occurrence within a number of protected areas.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Population Size
There is no information available on the population size of this species in Nepal, however it is considered widespread and common.

National Distribution
Kathmandu valley, including the Shivapuri Nagarjun National Park.

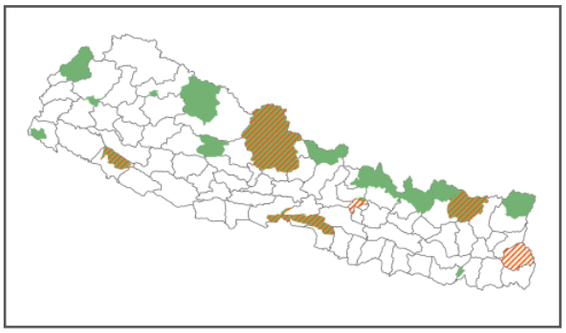
Distribution outside Nepal
Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Viet Nam.

Main Threats
- Human disturbance.

References

Suwal and Verheugt 1995, Bates and Harrison 1997, Molur *et al*. 2002.

175) ***Pipistrellus coromandra*** (Gray, 1838)



Common Names
Coromandel Pipistrelle (English); Buchche Chamero (Nepali)

Synonyms
Sctophilus coromandra (Gray, 1838); *Vespertilio coromandelicus* (Blyth, 1851); *Myotis parvipes* (Blyth, 1853); *Vesperugo blythii* (Wagner, 1855); *Vesperugo nicobaricus* (Fitzinger, 1861); *Scotophilus coromandelianus* (Blyth, 1863); *Pipistrellus coromandra* ssp. *afghanus* (Gaisler, 1870); *Vesperugo micropus* (Peters, 1872)

Species Description
A small brown bat with dorsal pelage of chocolate or chestnut brown. Ventral pelage is distinctly paler in colour being a light beige. It's face and muzzle are lightly haired with bare pink lips. Ears and membranes are dark brown. Ears are rounded at the tips.

Species Ecology
Coromandel Pipistrelle has mostly been recorded over streams, but the species is known to occur in varied habitat types from forested regions, agricultural landscapes to urban areas. The species roosts in trees, crevices of houses, tiles of huts, old buildings, temples and under bark. It hunts on flies, ants and other small insects.

This species has three breeding seasons per year and produce two young.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution and assumed large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal, however, it is considered to be common.

National Distribution
This species occurs within Annapurna Conservation Area, Bardia National Park, Chitwan National Park, Makalu Barun National Park, Parsa Wildlife Reserve and districts of Ilam and Kathmandu.

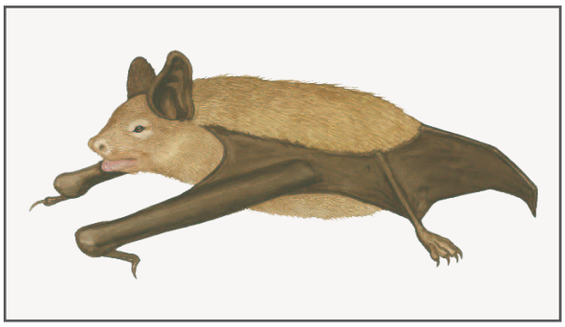
Distribution outside Nepal
Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Lao PDR, Myanmar, Pakistan, Sri Lanka, Viet Nam.

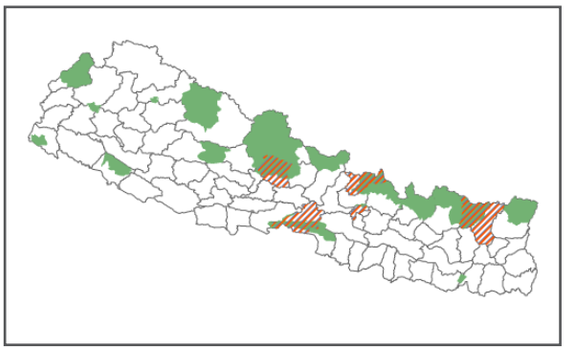
Main Threats
Unknown.

References

Suwal and Verheugt 1995, Bates and Harrison 1997, Myers *et al.* 2000, Baral and Shah 2008, Csorba *et al.* 2008c, Sanjan Thapa (pers. comm.) 2010.

176) ***Pipistrellus javanicus*** (Gray, 1838)





Common Names
Javan Pipistrelle (English); Himali Chamero (Nepali)

Synonyms
Scotophilus javanicus (Gray, 1838); *Pipistrellus camortae* (Miller, 1902); *Pipistrellus babu* (Thomas, 1915); *Pipistrellus peguensis* (Sinha, 1969)

Species Description
The dorsal pelage has dark brown roots with lighter coloured brown tips. Ventral pelage is also darker at the root but tips more buffy brown. Pelage is short and dense. Ears are black in colour with rounded tips and broad.

Species Ecology
The Javan Pipistrelle is found in varied habitats from primary and secondary forested regions, agricultural landscapes and urban areas. The species roosts in trees, crevices and cracks in walls and ceilings of houses, tiles of huts, old buildings, temples and under bark. It feeds on flies, ants and other small insects.

This species has three breeding seasons producing two young.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population, occurrence in a number of protected areas and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no detailed information available on the population size of this species in Nepal, however the species is considered widely distributed, common and the population seems stable and doing well.

National Distribution
This species occurs in Annapurna Conservation Area, Chitwan National Park, Langtang National Park, Makalu Barun National Park, Shivapuri Nagarjun National Park and the districts of Kathmandu (Bouzini, Godavari, Kakani, Nagarkot), Rasuwa, Kaski (Sudame, Banthanti).

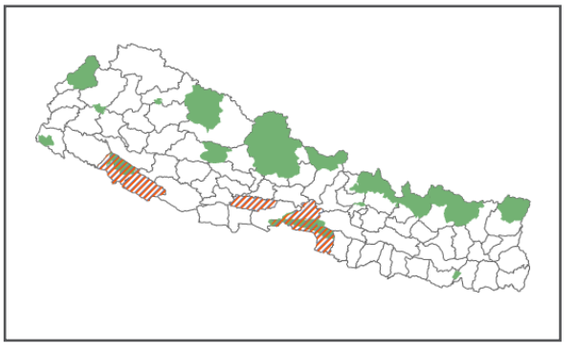
Distribution outside Nepal
Afghanistan, Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Thailand, Viet Nam.

Main Threats
- Disturbance to roosting sites.
- Habitat loss.

References

Suwal and Verheugt 1995, Bates and Harrison 1997, Csorba *et al.* 1999, Myers *et al.* 2000, Molur *et al*. 2002, Baral and Shah 2008, Heaney *et al.* 1998.

177) ***Pipistrellus tenuis*** (Temminck, 1840)



Common Names
Least Pipistrelle (English); Sano Chamero (Nepali)

Synonyms
Vespertilio tenuis (Temminck, 1840); *Pipistrellus mimus, Pipistrellus mimus* ssp. *mimus* (Wroughton, 1899); *Pipistrellus mimus* ssp. *glaucillus* (Wroughton, 1912); *Pipistrellus principulus, Pipistrellus mimus* ssp. *principulus* (Thomas, 1915)

Species Description
Pelage is short and dense with dark brown roots and lighter brown tips. Face and muzzle are hairless and dark brown-black in colour, apart from lighter coloured pinkish lips.

Species Ecology
Least Pipistrelle occurs in crevices in buildings and rocks and wooden structures. This is an insectivorous species.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern as although there is a relatively small distribution, the population is not observed to be undergoing significant decline that would qualify this species for a more threatened category.

Legal status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal, however in South Asia this species is widely distributed and common, and the population is stable and seems to be doing well.

National Distribution
This species occurs within the protected areas of Bardia National Park, Chitwan National Park and districts of Banke, Bara and Palpa.

Distribution outside Nepal
Afghanistan, Bangladesh, Cambodia, China, Christmas Island, Cocos Islands, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand, Timor-Leste, Viet Nam.

Main Threats
Unknown.

References

Bates and Harrison 1997, Myers *et al.* 2000, Molur *et al.* 2002, Bat Net 2007, Adhikari 2010.

178) ***Pteropus giganteus*** (Brünnich, 1782)

Common Names
Indian Flying Fox (English); Raj Chamero (Nepali)

Synonyms
Vespertilio gigantean (Brunnich, 1782); *Pteropus medius* (Temminck, 1825); *Pteropus edwardsi* (I. Geoffroy, 1828); *Pteropus leucocephalus* (Hodgson, 1835); *Pteropus assamensis* (McClelland, 1839); *Pteropus ruvicollis* (Ogilby, 1840); *Pteropus kelaarti* (Gray, 1871); *Pteropus ariel* (Allen, 1908)

Species Description
This is the largest and most well-known of the Nepalese bats. Pelage is chestnut-brown, tan or orange with paler cream-beige ventral pelage. Face and muzzle are black and hairless. Eyes are large an dark brown. Ears are small, rounded and black. Wings are large and black.

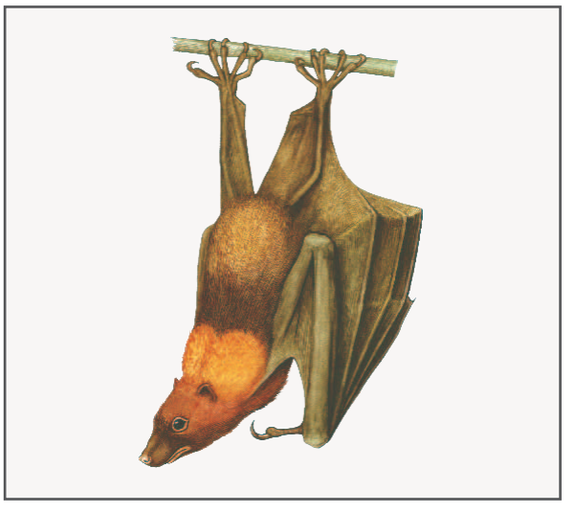
Species Ecology
Indian Flying Fox roosts in large colonies on large trees in rural and urban areas, close to agricultural fields, ponds and by the side of roads.

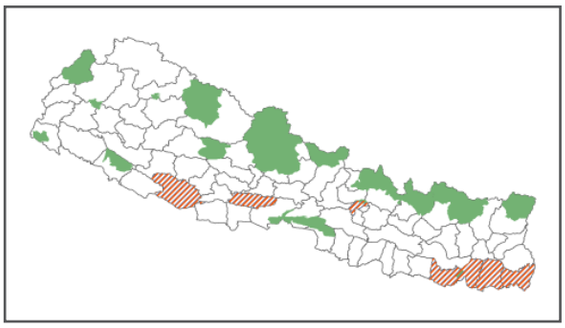
A single young is born between April to early June. Colonies usually have a permanent roost with one or two temporary roosts to which individuals shift depending on season.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population, occurrence within protected areas, tolerance of habitat modification and and because it is unlikely to be declining fast enough to qualify for a threatened category.

Legal Status
All Pteropus species are listed under CITES Appendix II. National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
This species is currently considered common and widespread throughout its range. A colony of 5,000 individuals was recorded at Kerkha, which is the largest colony recorded of this species in Nepal. However, the overall population in Nepal is thought to have experienced decline over the past five years. For example, in the Palpa District, an entire colony of this species disappeared 10 years ago from Argali VDC. Additionally, Madan Pokhara Valley and Tansen Municipality have experienced dramatic declines and research in Kathmandu Valley also indicates declines in local populations.





National Distribution
This species is widely distributed across most of Nepal, including Kathmandu Valley, Kerkha, Jhapa (Taaghandubba), Saptari, Itahari and Prakashpur in Sunsari and Biratnagar in the eastern lowlands, Kaski, Dang, Taulihawa (Kapilvastu District) and Palpa District.

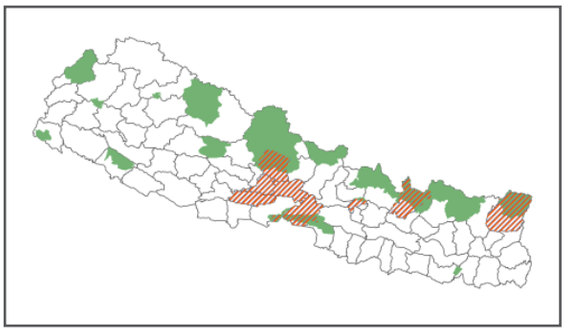
Distribution outside Nepal
Bangladesh, Bhutan, China, India, Maldives, Myanmar, Pakistan, Sri Lanka.

Main Threats
Unknown.

References

Suwal and Verheught 1995, Bates and Harrison 1997, Walker and Molur 2002, Molur *et al.* 2002, Molur *et al.* 2008, Baral and Shah 2008, Hem Sagar Baral (pers. obs.) 2008, Thapa 2008, Giri 2009, Thapa 2009ab, Adhikari 2010, Hari Adhikari pers comm 2010, Pushpa Raj Acharya (pers comm.) 2010; Sanjan Thapa (pers. comm.) 2010.

179) ***Rhinolophus affinis*** (Horsfield, 1823)



Common Names

Intermediate Horseshoe Bat (English); Majhaula Ghodnale Chamero (Nepali)

Synonyms

Rhinolophus andamanensis (Dobson, 1872)

Species Description

The pelage is variable in colour ranging from buff-brown to a distinctive orange colour, although females appear to be darker. This species has short ears and the nose-leaf is essentially similar in all characteristics to that of *R. ferrumequinum* although the horseshoe is relatively broader.

Species Ecology

The Intermediate Horseshoe Bat roosts in caves, and is also found in orchards, degraded habitats and agriculture areas.

Little is known about the foraging behaviour and breeding of this species.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, assumed large population. This species also tolerates secondary habitats and is unlikely to be declining at a rate to qualify for a threatened category.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There is no information available on the population size of this species in Nepal. However it is considered a highly adaptable and common species.

National Distribution

Annapurna Conservation Area and districts of Chitwan, Dolakha, Kaski, Kathmandu (Nagarjun cave within Shivapuri Nagarjun National Park, Godavari and Pharping), Palpa, Syangja, Tanahun and Taplejung.

Distribution outside Nepal

Bangladesh, Bhutan, Cambodia, China, Hong Kong, India Indonesia , Lao PDR, Malaysia, Myanmar, Singapore, Thailand, Viet Nam.

Main Threats

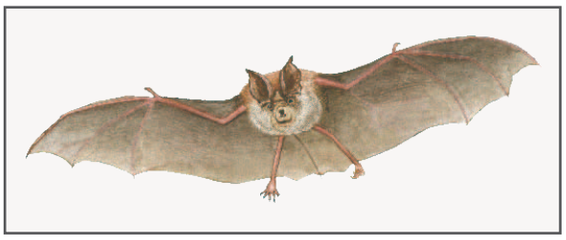
Unknown.

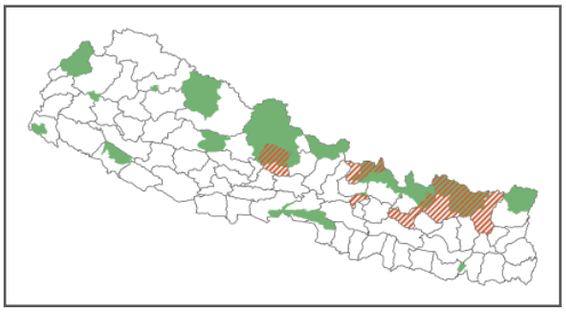
References

Suwal and Verheugt 1995, Bates and Harrison 1997, Csorba *et al.* 1999, Molur *et al.* 2002, Walston *et al.* 2008, Giri 2009, Adhikari 2010, Thapa 2010b.

180) *Rhinolophus ferrumequinum*

(Schreber, 1774)





Common Names

Greater Horseshoe Bat (English); Thulo Ghodnale Chamero (Nepali)

Synonyms

Vespertilio ferrum-equinum (Shreber, 1774); *Rhinolophus tragatus* (Hodgson, 1835); *Rhinolophus brevitarsus* (Blyth, 1863); *Rhinolophus ferrum-equinum proximus, Rhinolophus ferrum-equinum regulus* (Andersen, 1905)

Species Description

A medium-sized bat with large ears and a dense, grey-brown pelage. Sella is narrow, pointed lancet with concave sides. It can be told apart from the Intermediate and Rufous Horseshoe Bats only by the length of the third metacarpal.

Species Ecology

The Greater Horseshoe Bat is found in montane forests among the mountains and valleys of the Himalaya. The main diet consists of small insects, lacewings, small moths, spiders and grasshoppers.

This species breeds during March to May, and after a gestation period of 72 days a single young is born.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is listed as Least Concern in view of a widespread, abundant and stable population.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

Annapurna Conservation Area (Kaski) and extending eastward through Langtang National Park (Syabru), Kathmandu (Nagarjuna Cave in Shivapuri Nagarjun National Park and Chobhar), Ramechhap and Sankhuwasabha (Num).

Distribution outside Nepal

Afghanistan, Albania, Algeria, Andorra, Armenia, Austria, Azerbaijan, Bangladesh, Bhutan, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Czech Republic, France, Georgia, Germany, Gibraltar, Greece, Hungary, India, Islamic Republic of Iran, Iraq, Israel, Italy, Japan, Jordan, Kazakhstan, Democratic Peoples Republic of Korea, Republic of Korea, Kyrgyzstan, Lebanon, Liechtenstein, Luxembourg, Macedonia, Moldova, Monaco, Montenegro, Morocco, Pakistan, Palestinian Territory Occupied, Poland, Portugal, Romania, Russian Federation, San Marino, Saudi Arabia, Serbia, Slovakia, Slovenia, Spain, Switzerland, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan.

Main Threats

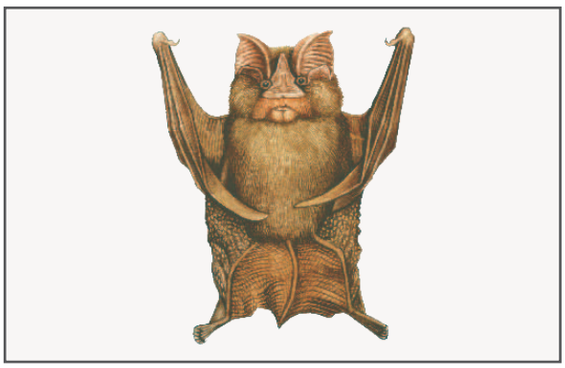
- Habitat fragmentation and loss.
- Increasing use of pesticides in agriculture lands resulting in declining food source.

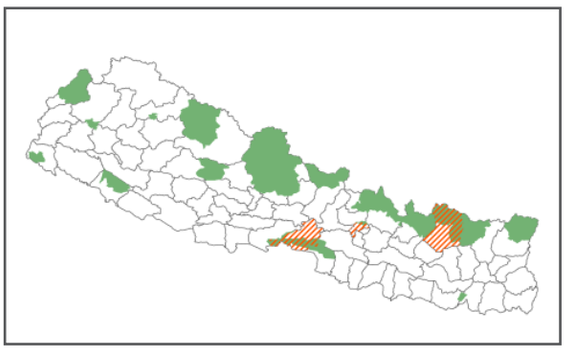
- Disturbance in roosting sites.

References

Suwal and Verheugt 1995, Molur *et al.* 2002, Bates and Harrison, 1997, Csorba *et al.* 1999, Giri 2009, Adhikari 2010, Sanjan Thapa (pers. comm.) 2010, Thapa 2010b.

181) ***Rhinolophus luctus*** (Temminck, 1834)





Common Names

Woolly Horseshoe Bat (English); Makhmali Ghodnale Chamero (Nepali)

Synonyms

Rhinolophus perniger (Hodgson, 1843)

Species Description

This is a large Rhinolophid bat with a woolly, grey-black pelage and large nose-leaf. Its broad horseshoe is divided into two halves and sella has circular flaps on either side.

Species Ecology

This species occurs in forests, caves, rocky outcrops, overhanging ledges and large trees with hollows. This is an insectivorous species.

Little is known about the reproductive behaviour of this species.

Conservation Status

Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern as it is reported from at least three sites in Nepal and the population is not thought to be declining at a rate that would qualify this species for a threat category.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

This species has been reported from Chitwan National Park, forests and high hills around Kathmandu valley and far-east in Sankhuwasabha (Num) and Tanahun.

Distribution outside Nepal

Bangladesh, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Singapore, Thailand, Viet Nam.

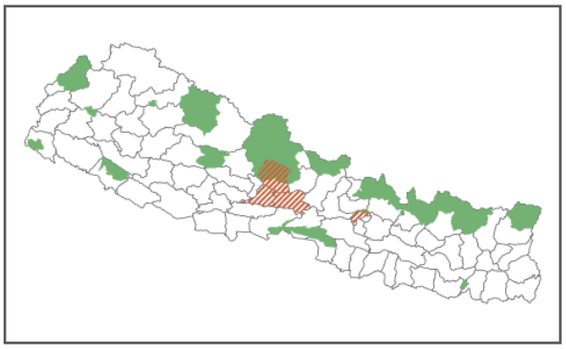
Main Threats

Unknown.

References

Acharya *et al*. 2010, Suwal and Verheugt 1995, Bates and Harrison 1997, Molur *et al.* 2002, Thapa (unpub.) 2010.

182) ***Rhinolophus macrotis*** (Blyth, 1844)



Common Names
Big-eared Horseshoe Bat (English); Lamkane Ghodnale Chamero (Nepali)

Synonyms
Rhinolophus episcopus (Allen, 1923); *Rhinolophus macrotis topali* (Csorba & Bates, 1995)

Species Description
Small bat with a buff woolly coat and large ears. Its nose-leaf differs from that of other bats belonging to this family as it features a projecting sella and short lancet.

Species Ecology
Big-eared Horseshoe Bats roost in abandoned mines and caves in forests. Its flight is fast and high and it feeds on beetles and flies.

Males are sexually active during September.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern as it occurs within protected areas. The population is unlikely to be declining at a rate to qualify for a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is little information available on the population size of this species.

National Distribution
This species occurs in the mid hill region, including Kathmandu (Shivapuri Nagarjun National Park, Nagarjuna Cave), Annapurna Conservation Area and districts of Kaski, Syangja and Tanahu.

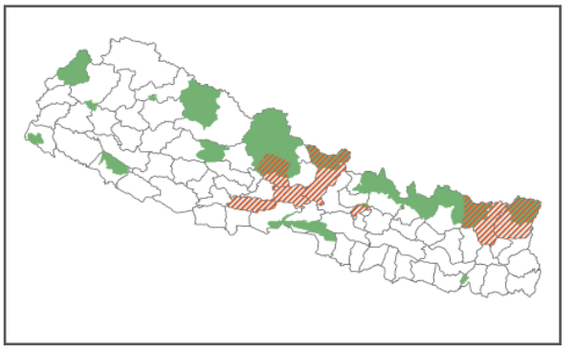
Distribution outside of Nepal
Bangladesh, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Philippines, Thailand, Viet Nam.

Main Threats
- Disturbance caused by increased tourism. Fumigation / pesticides to erradicate roosts in caves.

References

Bates and Harrison 1997, Csorba *et al.* 1999, Molur *et al.* 2002, Sanjan Thapa (pers. comm.) 2010.

183) ***Rhinolophus pearsonii***
(Horsfield, 1851)



Common Names
Pearson's Horseshoe Bat (English); Pearsonko Ghodnale Chamero(Nepali)

Species Description
A medium sized chestnut-brown bat with soft woolly fur. Its nose-leaf is broad and divided into two halves like that of *R. luctus*, but smaller and without circular basal lappets on either side of the sella.

Species Ecology
This species occurs in cultivated areas and montane and bamboo forests. It roosts in caves in hilly areas and is an insectivorous species. Pearson's Horseshoe Bat undergoes deep torpor during October.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a wide distribution, presence within protected areas, tolerance of a degree of habitat modification, presumed large population and because it is unlikely to be declining fast enough to qualify for a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

National Distribution
Patchy distribution across the mid and foot hills of the Himalayas, Annapurna Conservation Area, Shivapuri Nagarjun National Park and districts of Gorkha, Palpa, Sankhuwasabha (Num), Tanahu (Bimalngar) and Taplejung.

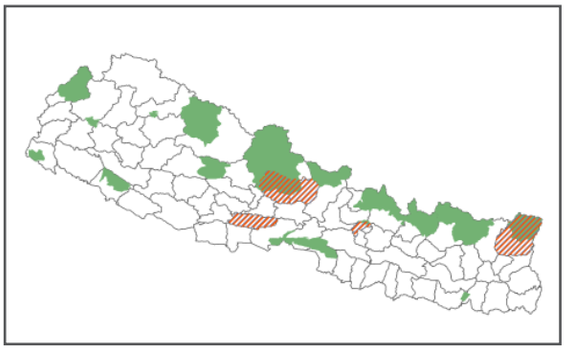
Distribution outside Nepal
Bangladesh, Bhutan, China, India, Lao PDR, Malaysia, Myanmar, Thailand, Viet Nam.

Main Threats
Unknown.

References

Acharya *et al*. 2010, Molur *et al*. 2002, Bates and Harrison 1997, Csorba *et al*. 1999, Adhikari 2010, Sanjan Thapa (pers. comm.) 2010.

184) ***Rhinolophus pusillus***
(Temminck, 1834)



Common Names
Least Horseshoe Bat (English); Sano Ghodnale Chamero (Nepali)

Synonyms
Rhinolophus minor (Horsfield, 1823); *Rhinolophus cornutus* (Temminck, 1835); *Rhinolophus gracilis* (Andersen, 1905); *Rhinolophus monoceros, Rhinolophus pumilus* (K. Andersen, 1905); *Rhinolophus blythi, Rhinolophus cornutus* (Andersen, 1918); *Rhinolophus perditus* (K. Andersen, 1918); *Rhinolophus imaizumii* (Hill & Yoshiyuki, 1980)

Species Description
Pelage is very fine and soft, dorsal light buff-brown to dark teak-brown with paler hair bases, ventral surface is paler. This is a small species with shorter forearm than *R. Lepidus*. In lateral view, the connecting process of the sella is triangular in shape. Lancet shape and size varies from a short equilateral triangle to a more elongated structure.

Species Ecology
The Least Horseshoe Bat species occurs in both primary and secondary moist tropical forests, is characterised as a forest-interior specialist and roosts in caves and houses. This is an insectivorous species.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a widespread distribution and observed abundant population. There are no known major threats to this species and it occurs in a protected area within its range.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Population Size
There is no information available on the population size of this species in Nepal. However, it is observed to be widespread and common throughout its range.

National Distribution
This species occurs within Annapurna Conservation Area, Pokhara, Kathmandu (Shivapuri Nagarjun National Park, Nagarjuna cave, forests of Sundarijal and Nagarjun), Kaski, Lamjung, Parbat, Tanahun (Bimalnagar) and Taplejung.

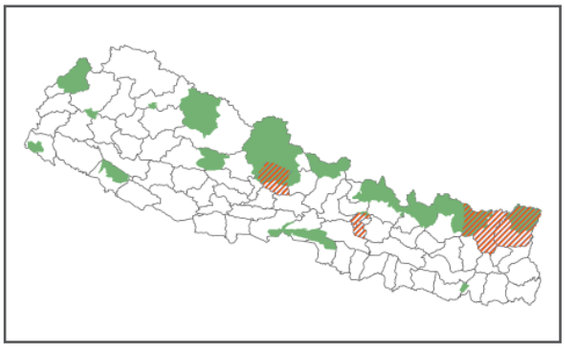
Distribution outside Nepal
Cambodia, China, India, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Taiwan Province of China, Thailand, Viet Nam.

Main Threats
Unknown.

References

Bates and Harrison 1997, Csorba *et al*. 1999, Molur *et al.* 2002, Chen *et al.* 2006, Thapa *et al.* 2009a.

185) ***Rhinolophus sinicus***
(K. Andersen, 1905)



Common Names
Chinese Horseshoe Bat (English); Rato Ghodnale Chamero (Nepali)

Synonyms
Rhinolophus rouxii sinicus (Andersen, 1905)

Species Description
Small chestnut brown coloured bat, slightly paler on the undersides. Well developed secondary leaflet present on nose-leaf. Straight-sided lancet and relatively short second phalanx of the third digit compared to *R. affinis*.

Species Ecology
The Chinese Horseshoe Bat has been observed in disturbed forests far from caves; however in general the species occurs in montane forests roosting in caves, tunnels, temples, houses and hollows of trees. The Chinese Horseshoe Bat forages on cultivated lands surrounded by patchy forests feeding on moths and cockroaches.

Little is known about the reproductive behaviour of this species.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of a broad distribution and fairly large population.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
This species is considered common.

National Distribution
Occurs across Nepal from the mid-hills and mountain areas including Kathmandu (Shivapuri Nagarjun National Park, Godavari, Thankot, Phulchoki) Kaski (Banthati), Sankhuwsabha (Num) Taplejung (Yamphudin and Mamankhe) and Makalu Barun National Park.

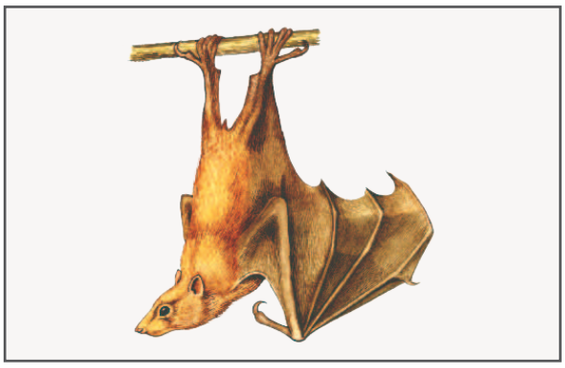
Distribution outside Nepal
China, India, Myanmar, Viet Nam.

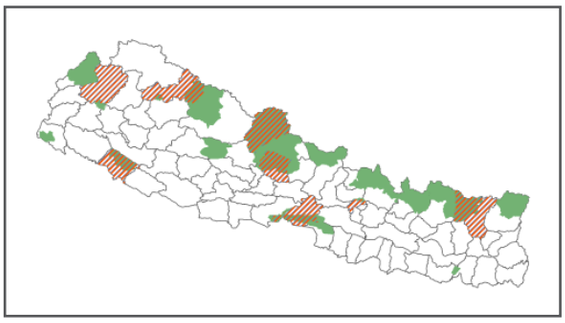
Main Threats
Unknown.

References

Csorba *et al*. 1999, Molur *et al.* 2002, Bates *et al.* 2008b, Sanjan Thapa (pers. comm.) 2010.

186) ***Rousettus leschenaultii***
(Desmarest, 1820)





Common Names
Leschenault's Rousette Bat (English); Sano Badura (Nepali)

Synonyms
Rousettus leschenaulti (Desmarest, 1820); *Pteropus leschenaultii* (Desmarest, 1820); *Rousettus pyrivorus* (Hodgson, 1835); *Rousettus pirivarus* (Hodgson, 1841); *Rousettus affinis, Rousettus marginatus* (Gray, 1843); *Rousettus seminudus* (Kelaart, 1850); *Eleutherura fusca, Xantharpyia seminuda* (Gray, 1870); *Rousettus fuliginosa, Rousettus fusca* (Gray, 1871); *Rousettus infuscata* (Peters, 1873); *Rousettus shortridgei* (Thomas & Wroughton, 1909)

Species Description
This bat is smaller than *Pteropus giganteus*. Muzzle is short and narrow. Pelage is soft and fine, fulvous brown in colour on head, back, flanks and throat and pale grey on the underside. Short tail.

Species Ecology
Leschenault's Rousette Bat is found in a variety of habitats ranging from tropical moist forest to urban environments, roosting in colonies ranging from a few to several thousand individuals in caves, old and ruined buildings, forts and disused tunnels. The species feeds predominantly on fruits and flowers.

This species breeds twice a year, producing a single young.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution, presumed large population and occurrence in a number of protected areas. It also has tolerance to a degree of habitat modification and the population is unlikely to be decreasing at a rate that would qualify it for a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information available on the population size of this species in Nepal.

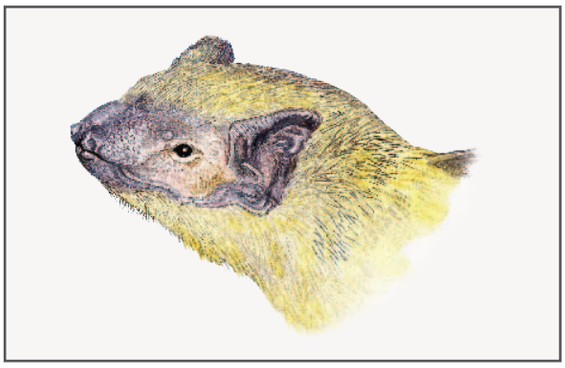
National Distribution
Annapurna Conservation Area (Jomsom), Bardia National Park, Chitwan National Park, Makalu Barun National Park, Rara National Park, the mid-hills of the far west (Baitadi) and areas around Kathmandu and Kaski Districts (World Peace cave in Pokhara).

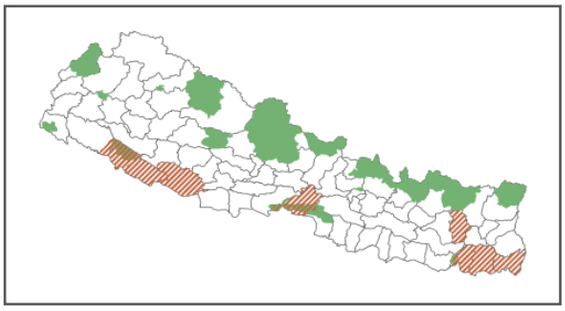
Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Sri Lanka, Thailand, Viet Nam.

Main Threats
Unknown.

References
Acharya *et al.* 2010, Suwal and Verheugt 1995, Bates and Harrison 1997, Csorba *et al.* 1999, Mayers *et al.* 2000, Molur *et al.* 2002, Bates and Helgen 2008, Baral and Shah 2008, Hari Adhikari (pers. comm.) 2010.

187) ***Scotophilus heathii*** (Horsfield, 1831)





Common Names
Greater Asiatic Yellow Bat (English); Thulo Asiali Pitta Chamero (Nepali)

Synonyms
Nycticejus heathii, Scotophilus heathi (Horsfield, 1831); *Scotophilus heathi* ssp. *Belangeri, Vespertilio belangeri* (Geoffroy, 1834); *Nycticejus luteus* (Blyth, 1851); *Scotophilus flaveolous* (Horsfield, 1851)

Species Description
Pelage fine and short, longer on the nape and throat. The head and back have pale buff-brown hair roots and darker olive-grey-brown tips. The nape is paler. The throat, chest and belly are pale yellow-buff throughout. Long tail. Muzzle is broad and blunt, swollen on the sides, dark in colour and mostly naked. The nostrils are simple in form, round and slightly outward facing. The tragus is half the height of the pinna and crescent shaped. The feet are about half the length of the tibiae. Baculum is small, bluntly triangular and very narrow in lateral view.

Species Ecology
Greater Asiatic Yellow Bat is found in a variety of habitat types, including urban areas utilising attics, roofs and pillar spaces in wooden and galvanized steel. It roosts in crevices and cracks in old buildings, among the leaves and crowns of palms, in hollows of trees and among leaves of banana, either singly or in colonies of up to 50 individuals.

After a gestation period of 115 days, one or two young are born.

Conservation Status
Global: Least Concern
National: Least Concern
Rationale for assessment: This species is considered Least Concern in view of its wide distribution and large population, the fact it is facing no serious threats, that it occurs in a number of protected areas and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Population Size
There is no information on the population size of this species in Nepal, however it is considered widespread and common in occurrence.

National Distribution
This species occurs in the Terai region including Bardia and Chitwan National Parks, Koshi Tappu Wildlife Reserve, and districts of Banke, Bhojpur, Dang, Jhapa (Taaghandubba VDC), Morang (Keroun VDC), Parsa (Birgunj-Raxaul) and Sunsari (Inaruwa). There has recently been a possible observation of this species in Pokhara, but this needs further verification.

Distribution outside Nepal
Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Lao PDR, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand, Viet Nam.

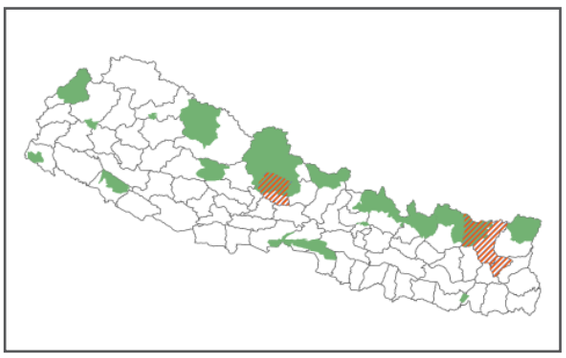
Main Threats
- Habitat loss.

References

Suwal and Verheugt 1995, Bates and Harrison 1997, Myers *et al.* 2000, Molur *et al.* 2002, Baral and Shah 2008, Bates *et al.* 2008c, Thapa 2009, Sanjan Thapa 2010, Hem Sagar Baral (pers. obs.) 2010, Sanjan Thapa (pers. comm.) 2010.

DATA DEFICIENT

188) ***Arielulus circumdatus***
(Temminck, 1840)



Common Names
Bronze Sprite (English); Kale Chamero (Nepali)

Synonyms
Pipistrellus circumdatus, Vespertilio circumdatus
(Temminck, 1840)

Species Description
Pelage is dark brown with soft, long hairs. The dorsal pelage is black but with some hair tips lighter brown giving an orange sheen to head and back. The ears are dark brown-black, hairy and rounded at the tips. Wing membranes are dark brown and hairless.

Species Ecology
The Bronze Sprite occurs in montane forests and also found in secondary teak forests.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Due to its restricted distribution it may qualify for a more threatened category, however this distribution needs to be confirmed.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species occurs in Kaski (Sudame and Banthati), Sankhuwasabha, Terhathum (Lam Pokhari).

Distribution outside Nepal
Cambodia, China, India, Indonesia, Malaysia, Myanmar, Thailand, Viet Nam.

References

Bates and Harrison 1997, Csorba *et al.* 1999, Molur *et al.* 2002.

189) ***Eonycteris spelaea*** (Dobson, 1871)

Common Names
Dawn Bat (English); Mirmire Chamero (Nepali)

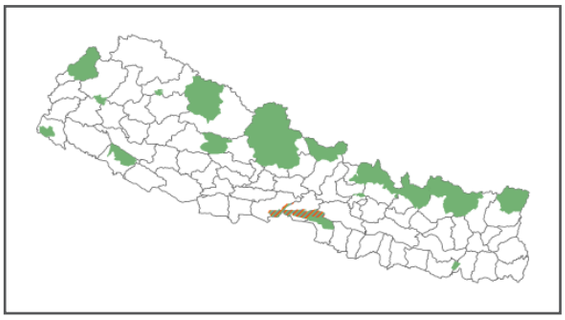
Synonyms
Macroglossus spelaeus (Dobson, 1871)

Species Description
Pelage is dense and dark brown, ventral pelage is lighter. The muzzle is long and narrow. Ears are small and pointed. Tail is very small.

Species Ecology
The Dawn Bat occurs among banana plants near houses and along streams feeding on nectar. The Dawn Bat breeds throughout the year and produces one young.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.



National Distribution
This species was recorded for the first time in Nepal from Chitwan National Park.

Distribution outside Nepal
Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam.

References
Myers *et al*. 2000, Smith and Xie 2008, Bates and Harrison 1997.

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190) ***Eptesicus dimissus*** (Thomas, 1916)

Common Names
Surat Serotine (English); Surat Ko Laampuchhre Chamero (Nepali)

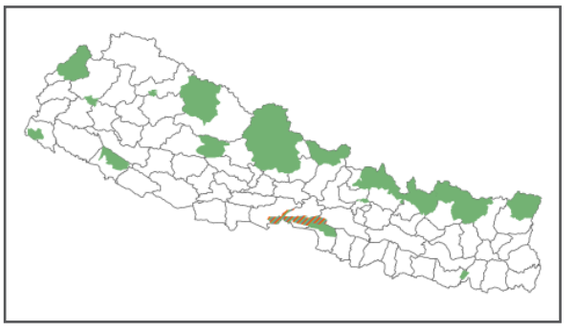
Species Description
Small chestnut coloured bat, with pink legs and dark brown-black wings and membrane.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Distribution
This species was recorded for the first time in Nepal from Chitwan National Park.

Distribution outside Nepal
Thailand.



References
Myers *et al.* 2000.

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191) ***Eptesicus serotinus*** (Schreber, 1774)

Common Names
Serotine (English); Lampuchchhre Chamero (Nepali)

Synonyms
Eptesicus isabellinus (Temminck, 1840)

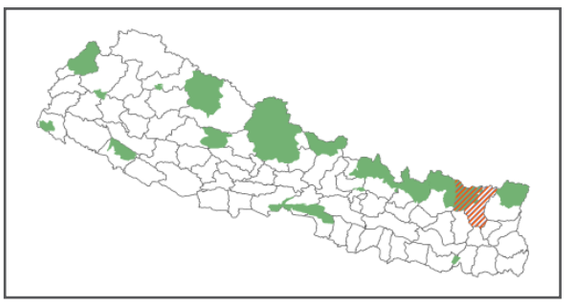
Species Description
A large dark brown bat with a pale brown belly and throat. This species has a thick muzzle, naked except for some hair on the lip, with glandular swellings on both sides. Its ears are dark and long with six parallel ridges. Long tail with a small portion protruding beyond the membrane.

Species Ecology
The Serotine is found in a variety of habitats including semi-desert, temperate and subtropical dry forest, shrub land, farmland and suburban areas. This species feeds on larger beetles, moths and flies.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Distribution
The distribution range of this species in Nepal is limited to the eastern edge of Makalu Barun



National Park and around Tumlingtar in the same district of Sankhuwasabha.

Distribution outside Nepal
Afghanistan, Albania, Algeria, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, China, Cyprus, Czech Republic, Denmark, France, Georgia, Germany, Gibraltar, Greece, Hungary, India, Islamic Republic of Iran, Israel, Italy, Democratic People's Republic of Korea, Republic of Korea, Lao PDR, Latvia, Lebanon, Libyan Arab Jamahiriya, Liechtenstein, Lithuania, Luxembourg, Former Yugoslav Republic of Macedonia, Malta, Moldova, Monaco, Mongolia, Montenegro, Morocco, Netherlands, Pakistan, Poland, Portugal, Romania, Russian Federation, San

Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syrian Arab Republic, Taiwan Province of China, Thailand, Tunisia, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan, Viet Nam.

References

Suwal and Verheugt 1995, Bates and Harrison 1997, Baral and Shah 2008, Hutson *et al.* 2008b.

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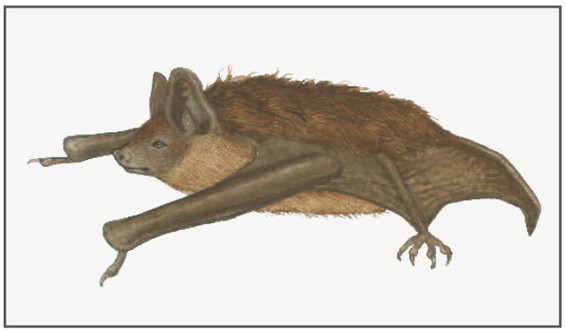
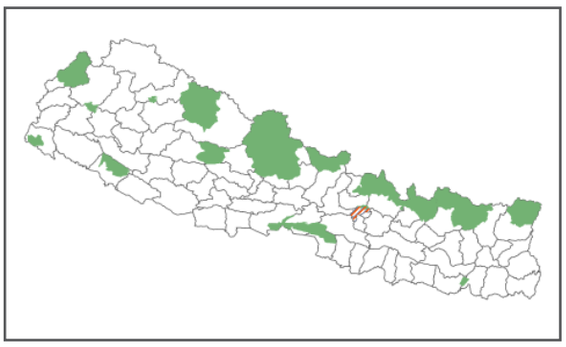
192) ***Falsistrellus affinis*** (Dobson, 1871)





Common Names

Chocolate Pipistrelle (English); Chakleti Chamero (Nepali)

Synonyms

Pipistrellus affinis, Vesperugo affinis (Dobson, 1871)

Species Description

Large bat species with soft dense and relatively long pelage. It is dark brown above, although the extreme tips of some hairs are pale grey giving a slightly grizzled effect. The ventral surface is also dark, only slightly paler than the back. The membranes, ears and naked parts of the face are a uniform black-brown. The baculum is broad, proximally widened and ventrally deeply fluted, with no distal expansion.

Species Ecology

The Chocolate Pipistrelle occurs near human settlements, in roofs of buildings and cracks and hollows in trees. It feeds on small insects.

Conservation status

Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size

There is no information available on the population size of this species in Nepal.

National Distribution

Kathmandu (Nagarkot). There are no records of its presence inside protected areas.

Distribution outside Nepal

China, India, Myanmar, Sri Lanka.

Main Threats

Unknown.

References

Suwal and Verheugt 1995, Bates and Harrison 1997, Molur *et al.* 2002

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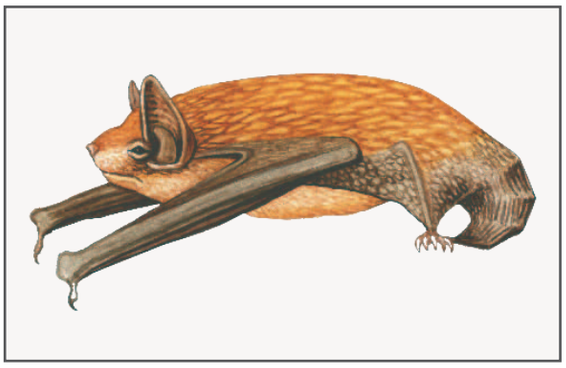
193) ***Hesperoptenus tickelli*** (Blyth, 1851)



Common Names
Tickell's Bat (English); Tickellko Nakkali Chamero (Nepali)

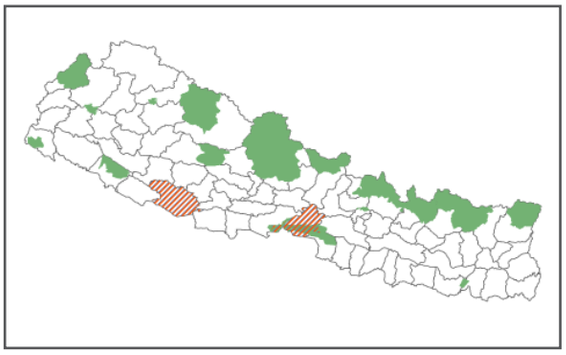
Synonyms
Nycticejus isabellinus (Kelaart, 1850); *Nycticejus isabellinus* (Horsfield, 1851); *Nycticejus tickelli* (Blyth, 1851)

Species Description
Large, pale yellow bat with a grey head, yellow-brown ears with white hair at the base. Long wings and tail, broad and swollen muzzle.

Species Ecology
Tickell's Bat is found in lowlands, hills, ravines, streams, ponds and from forest edge into grasslands. The species forages in open areas among paddy fields and grasslands, with a steady and slow flight, feeding mostly on beetles, termites and other insects.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.



National Distribution
Chitwan National Park and district of Dang.

Distribution outside Nepal
Bangladesh, Bhutan, Cambodia, India, Lao PDR, Myanmar, Sri Lanka, Thailand, Viet Nam.

Main Threats
- Habitat loss due to logging and the conversion of land for agricultural use.
- Hunting for local consumption and medicinal purposes.

References

Molur *et al*. 2002, Myers *et al*. 2000, Baral and Shah 2008.

194) ***Hipposideros cineraceus*** (Blyth, 1853)

Common Names
Least Leaf-nosed Bat (English); Phusro Golopatre Chamero (Nepali)

Synonyms
Hipposideros cineraceus ssp. *Micropus, Phyllorhina micropus* (Peters, 1872)

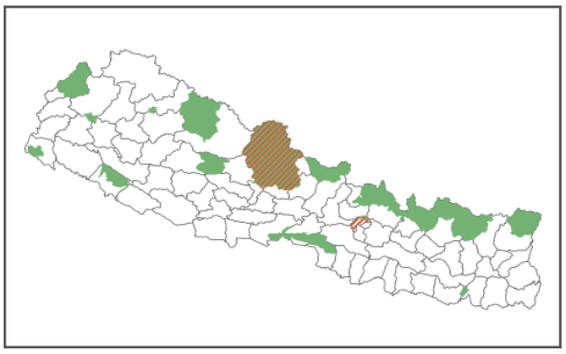
Species Description
The pelage tends to be a dull mid-brown to ginger-orange on the dorsal aspect with paler hair bases. On the ventral surface it is uniformly pale almost white in some specimens, in others the hair tips are tinged with brown or orange, especially on the flanks.

Species Ecology
The Least Leaf-nosed Bat roosts in caves, rock crevices and hollow trees. This species predominantly feeds on moths.

The Least Leaf-nosed Bat has a gestation period of 180 days.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).



National Population Size
More than 100 individuals were estimated from flights at Bagh cave, Naya cave, Manjushree cave and Barahi cave at Chobhar. Otherwise there is very little information on the population of this species.

National Distribution
Annapurna Conservation Area and areas along the periphery of Kathmandu Valley (for example Chobhar).

Distribution outside Nepal
India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Thailand, Viet Nam.

Main Threats
- Disturbance.

References
Suwal and Verheugt 1995, Bates and Harrison 1997, Baral and Shah 2008, Thapa *et al.* 2009a, Thapa 2010b.

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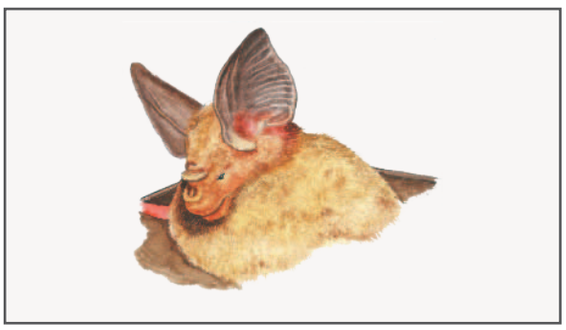
195) ***Hipposideros fulvus*** (Gray, 1838)

Common Names
Fulvous Leaf-nosed Bat (English); Kailo Golopatre Chamero (Nepali)

Synonyms
Hipposideros bicolour, Hipposideros murinus (Gray, 1838); *Rhinolophus fulgens* (Elliot, 1839); *Phyllorhina aurita* (Tomes, 1859); *Phyllorhina atra* (Fitzinger, 1870); *Hipposideros bicolor, Hipposideros fulvus* (Andersen, 1918)

Species Description
Pelage is short and soft ranging from pale golden orange to light grey. Large, broad ears, dark grey



in colour. Supplementary leaflets are absent from nose-leaf.

Species Ecology
The Fulvous Leaf-nosed Bat predominantly occurs around moist areas including wetlands, using old

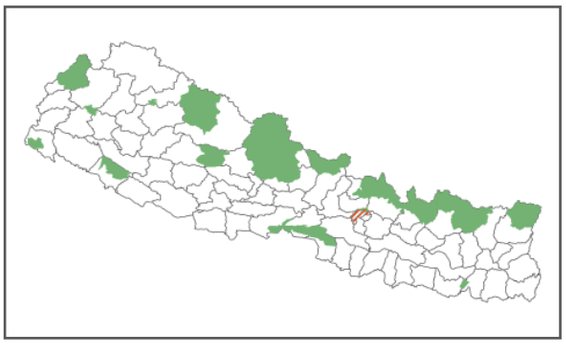
dilapidated buildings, temples, caves, cellars and old wells as roosting sites. This species feeds on cockroaches and insects.

This species gives birth to a single young after a gestation period of 150-160 days.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Distribution



Occurs around Kathmandu Valley including Shivapuri Nagarjun National Park.

Distribution outside Nepal
Afghanistan, Bangladesh, China, India, Pakistan, Sri Lanka.

Main Threats
- Habitat degradation.
- Disturbance.

References
Bates and Harrison 1997, Walker and Molur 2002, Baral and Shah 2008, Sanjan Thapa (pers. comm.) 2010.

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196) ***Kerivoula hardwickii*** (Horsfield, 1824)

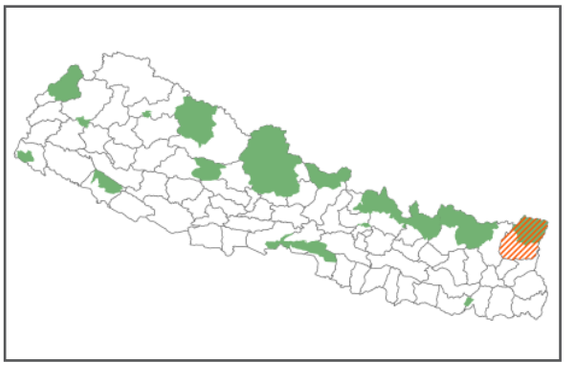
Common Names
Hardwicke's Woolly Bat (English); Hardwicke Ko Bhuwadar Chamero (Nepali)

Synonyms
Vespertilio hardwickii (Horsfield, 1824); *Kerivoula crypta* (Wroughton & Ryley, 1913); *Kerivoula depressa* (Miller, 1906); *Kerivoula fusca* (Dobson, 1871); *Kerivoula malpasi* (Phillips, 1932)

Species Description
A very small bat. Dorsally the pelage is smoky brown, the ventral surface is grey-ochre. Eyes are small and barely visible. Large ears and pinkish coloured mouth.

Species Ecology
This species occurs in warm valleys, forests, buildings and roosts in caves. This is an insectivorous species.

Conservation Status
Global: Least Concern



National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate

assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species is recorded from Mamankhe, Taplejung District.

Distribution outside Nepal
Brunei Darussalam, Cambodia, China, Indonesia, Lao PDR, Myanmar, Philippines, Thailand, Viet Nam.

References
Csorba *et al*. 1999, Molur *et al.* 2002, Bat Net 2007, Korad *et al.* 2007.

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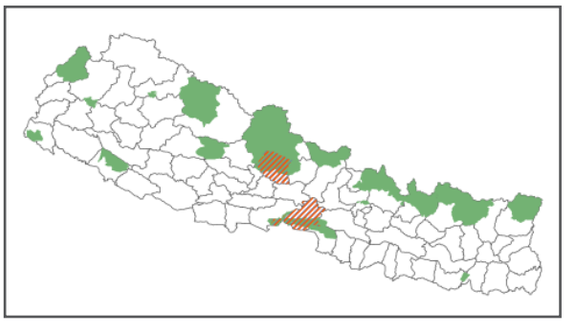
197) ***Miniopterus pusillus*** (Dobson, 1876)



Common Names
Small Long-fingered Bat (English); Sano Bange Chamero (Nepali)

Synonyms
Miniopterus australis (Dobson, 1876)

Species Description
Intensely black fur, extreme tips sometimes grey. Short head and forearm.

Species Ecology
The Small Long-fingered Bat occurs in ravines and roosts in limestone caves and trees. This small long fingered bat is insectivorous.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. However, Molur *et al*. (2002) consider this species Critically Endangered in Nepal; therefore further information may qualify this species for a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within a protected area.

National Distribution
This species has been recorded from Chitwan National Park and around Pokhara where the population is in decline.

Distribution outside Nepal
China, Hong Kong, India, Indonesia, Lao PDR, Myanmar, Nepal, Thailand,
Viet Nam.

Main Threats
- Habitat loss.
- Disturbance and loss of roosting sites.

References
Molur *et al.* 2002, Myers *et al.* 2000.

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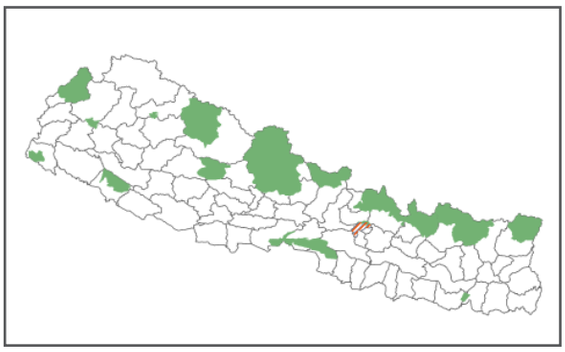
198) ***Murina huttoni*** (Peters, 1872)



Common Names
Hutton's Tube-nosed Bat (English); Huttonko Nalinake Chamero (Nepali)

Synonyms
Harpyiocephalus huttonii (Peters, 1872)

Species Description
The pelage is thick and very soft. Dorsal surface hair roots are mid grey, tips paler grey or brown. Ventral surfaces hairs are pale. Hairy feet.

Species Ecology
Hutton's Tube-nosed Bat occurs in montane forests, banana plantations and tropical broadleaf forests and is an insectivorous species.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
Kathmandu valley and surrounding areas.

Distribution outside Nepal
China, India, Lao PDR, Malaysia, Myanmar, Pakistan, Thailand, Viet Nam.

Main Threats
- Deforestation.
- Disturbance to roosting sites.

References
Molur *et al.* 2002, Bates and Harrison 1997.

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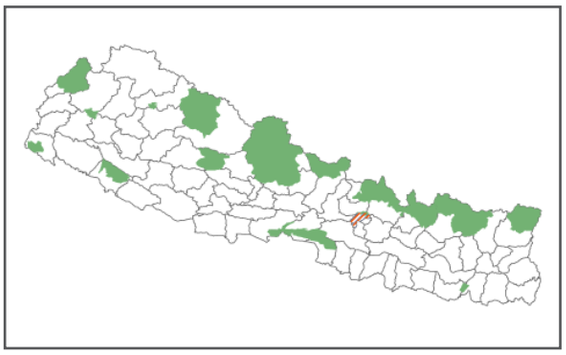
199) ***Murina leucogaster*** (Milne-Edwards, 1872)

Common Names
Rufous Tube-nosed Bat (English); Thulo Nalinake Chamero (Nepali)

Synonyms
Murina leucogastra (Thomas, 1899); *Murina rubex* (Thomas, 1916)

Species Description
Dorsal surface is ferruginous red in colour, intermixed with fawn. Hair roots are dark grey and

ventral surface very pale. Wings short and broad, muzzle and lower lip naked, fleshy and dark. The nostrils are tubular and protuberant; their orifices are circular and open obliquely. Ears are short and broad, anterior margin convex and tip rounded. Tragus long, narrow and tapering, anterior margin convex, the outer tragus concave above, slightly convex below and with a basal notch. Feet with hairy toes, baculum saddle-shaped.



Species Ecology
The Rufous Tube-nosed Bat occurs in grasslands, plantations and mixed woodlands and is a low-flying insectivore species.

Conservation Status
Global: Data Deficient
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
Kathmandu Valley.

Distribution outside Nepal
Bhutan, China, India, Japan, Thailand.

Main Threats
- Disturbances to roosting sites.
- Habitat degradation.

References
Bates and Harrison 1997, Molur *et al.* 2002

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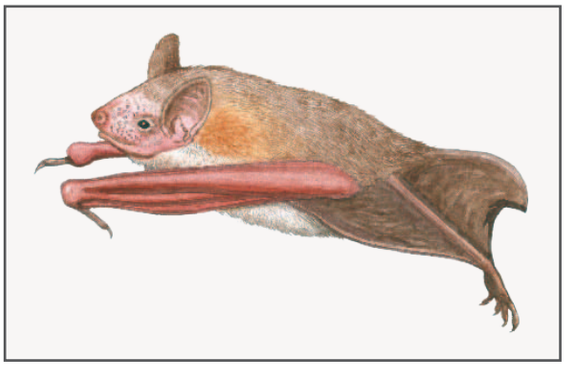
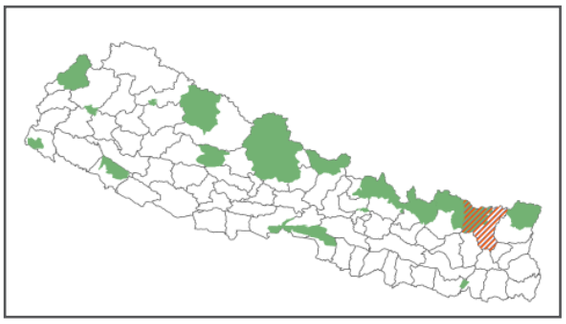
200) ***Myotis blythii*** (Tomes, 1857)



Common Names
Lesser Mouse-eared Bat (English); Sano Musakane Chamero (Nepali)

Synonyms
Vespertilio murinoides (Dobson, 1837); *Vespertilio blythii* (Tomes, 1857); *Myotis africanus* (Dobson, 1875)

Species Description
Pelage woolly, shorter on the belly than back, dorsal surface buff-brown with dark grey hair roots. Ears tall, their tips bluntly rounded. The anterior border of each pinna is evenly convex, with a sharply projecting lobe at the base. The antitragus is small and low. The tragus is tall and narrow above the base and has a straight anterior margin which narrows to the tip, the posterior margin is gently convex in its middle and sharply emarginated just



above the projecting basal lobule. The feet slightly exceed half the length of the tibiae. Long tail.

Species Ecology
This species occurs in scrub forests, low foothills, tropical, semi-evergreen forests and is insectivorous.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
There is no information available on the population size of this species in Nepal. Although in South Asia the population is considered stable.

National Distribution
A single location: Tumlingtar in the Sankhuwasabha district.

Distribution outside Nepal
Afghanistan, Albania, Algeria, Andorra, Angola, Armenia, Austria, Azerbaijan, Bangladesh, Bhutan, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Czech Republic, France, Georgia, Germany, Gibraltar, Greece, Hungary, India, Islamic Republic of Iran, Iraq, Israel, Italy, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Libyan Arab Jamahiriya, Former Yugoslav Republic of Macedonia, Moldova, Monaco, Mongolia, Montenegro, Morocco, Pakistan, Poland, Portugal, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Switzerland, Syrian Arab Republic, Tajikistan, Turkey, Turkmenistan, Ukraine.

Main Threats
- Changes in land management.
- Agricultural pollution.
- Disturbance to roosting sites.

References
Bates and Harrison 1997, Molur *et al.* 2002, Hutson *et al.* 2008c.

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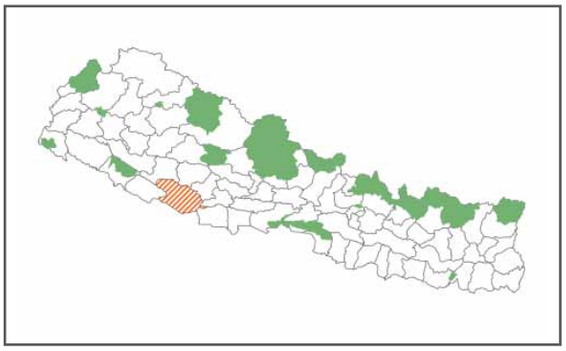
201) ***Nyctalus montanus*** (Barrett-Hamilton, 1906)



Common Names
Mountain Noctule (English); Pahadi Chamero (Nepali)

Synonyms
Nyctalus leisleri, Pterygistes montanus (Barret-Hamilton, 1906)

Species Description
The fur is a uniform brown colour similar to *N. noctula*.

Species Ecology
The Mountain Noctule occurs in riparian, arid flood-plains, riverine and areas dominated by Euphorbia spp., Mango *(Mangifera indica)*, and Banyan *(Ficus benghalensis)* and Khair *(Acacia catechu)*. This species roosts among rocky cliffs, rock crevice and overhanging vegetation, feeding on

insects and fish.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
District of Dang (Deokhuri, Dang valley) and Rapti River.

Distribution outside Nepal
Afghanistan, India.

Main Threats
- Hunting for medicinal purposes.
- Habitat degradation.

References - Mitchell 1980, Bates and Harrison 1997, Molur *et al*. 2002.

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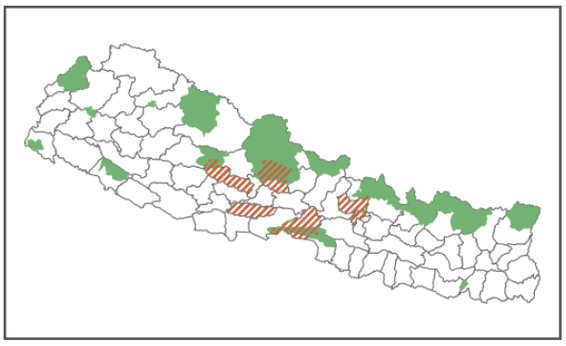
202) ***Nyctalus noctula*** (Schreber, 1774)



Common Names
Noctule (English); Gandhe Chamero (Nepali)

Synonyms
Vespertilio noctula (Schreber, 1774); *Vespertilio labiata* (Hodgson, 1835); *Vesperugo plancyi* (Gerbe, 1880)

Species Description
Large robust mountain bat. Narrow and long leathery black wings and glossy cinnamon or dark brown fur. The short triangular ears have a club-shaped tragus. Large nostrils are set above the mouth, which has a swelling on the upper lip and a yellow buccal pad in adults.

Species Ecology
The Noctule can be found over small ponds and roosting in tree holes, buildings, rocks, crevices and caves. This species forages over wetland, woodland and pastures feeding on large moths, beetles and flies.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
This species occurs in the districts of Kaski (Sudame), Kathmandu and possibly around Baglung, Chitwan, Nuwakot and Palpa.

Distribution outside Nepal
Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Holy See, Hong Kong, Hungary, India, Iran, Iraq,

Israel, Italy, Kazakhstan, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Former Yugoslav Republic of Macedonia, Malaysia, Malta, Monaco, Montenegro, Morocco, Myanmar, Netherlands, Norway, Oman, Pakistan, Poland, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Viet Nam.

References

Harrje 1994, Bates and Harrison 1997, Csorba *et al*. 1999, Myers *et al.* 2000, Mayer *et al.* 2002, Baral and Shah 2008, Sanjan Thapa (pers. comm.) 2010.

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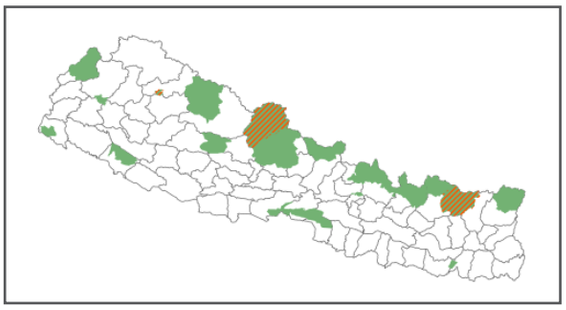
203) ***Plecotus auritus*** (Linnaeus, 1758)



Common Names

Brown Big-eared Bat (English); Khairo Lamkane Chamero (Nepali)

Synonyms

Vespertilio auritus (Linnaeus, 1758); *Plecotus homochrous* (Hodgson, 1847); *Plecotus puck* (Barrett-Hamilton, 1907)

Species Description

Pelage long, soft and dense on the back, shorter on the belly. Dorsal surface buff-brown, ventral surface paler grey buff. Ears pale brown, grossly enlarged, almost hairless, elongated and oval. Rounded lobe at the base of the anterior margin, antitragal lobe absent, tragus half the height of the pinna. Long tail, short and broad wings. Baculum with slender shaft and two slender basal lobes.

Species Ecology

The Brown Big-eared Bat occurs in alpine habitats, roosting in deserted huts, caves and hollow tree trunks and feeding on insects.

Conservation Status

Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. The presence of this species in Nepal needs further verification as it is a predominantly a European species.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973). This species occurs within protected areas.

National Distribution

This species occurs within Annapurna Conservation Area (Jomsom), Makalu Barun National Park and Rara National Park.

Distribution outside Nepal

Albania, Andorra, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Islamic Republic of Iran, Ireland, Italy, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom.

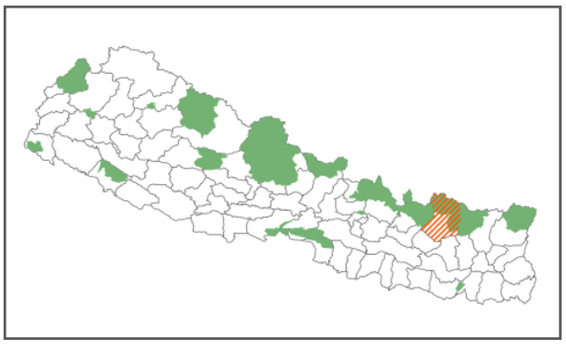
Main Threats

- Habitat loss.

References

Suwal and Verheugt 1995, Molur *et al.* 2002, Baral and Shah 2008, Hutson *et al.* 2008d.

204) ***Plecotus austriacus*** (Fischer, 1829)



Common Names

Grey Long-eared Bat (English); Phusro Lamkane Chamero (Nepali)

Synonyms

Vespertilio auritus austriacus (Fischer, 1829); *Plecotus wardi* (Thomas, 1911)

Species Description

A small dark buff or cream bat with grossly exaggerated ears, characteristic of this family. It is larger than *P. auritus* and the pelage varies from being very pale to darker buff. Ears are pale brown, translucent and ridged with twenty lines on each.

Species Ecology

The Grey Long-eared Bat occurs in montane, moist, mixed, conferous and deciduous forests and is insectivorous.

Conservation Status

Global: Least Concern
National: Data Deficient
Rationale for assessment: This species is listed as Data Deficient due to confusion over taxonomy and lack of population information.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution

This species is recorded in Ringmo in Solukhumbu.

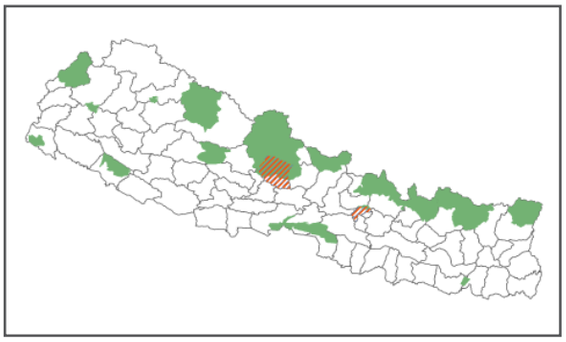
Distribution outside Nepal

Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Gibraltar, Greece, Hungary, Italy, Liechtenstein, Luxembourg, Macedonia, Malta, Mauritania, Moldova, Monaco, Montenegro, Netherlands, Poland, Portugal, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom.

References

Bates and Harrison 1997, Molur *et al*. 2002.

205) ***Rhinolophus subbadius*** (Blyth, 1844)



Common Names
Little Nepalese Horseshoe Bat (English); Nepali Ghodnale Chamero (Nepali)

Synonyms
Rhinolophus garoensis (Dobson, 1872)

Species Description
Smallest *Rhinolophid* bat in Nepal. Pelage colour similar to *R. pusillus*, species is cinnamon-brown above with paler hair bases, the ventral surface is slightly paler but the contrast between the two surfaces is less evident than that in *R. lepidus*. Sella similar to *R. pusillus* with the superior connecting process more horn like, lancet short and broad.

Species Ecology
Little is known about the habitat or ecology of the Little Nepalese Horseshoe Bat, except that it is encountered in dense forests among bamboo clumps.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. Molur *et al.* (2002) listed this species as Endangered for Nepal in the view of a restricted distribution and threats to habitat. However, this assessment considers that there is not enough current information on suitable habitat and population abundance and trend to determine the status of this species.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Population Size
A declining trend in its population is being observed in the Himalayas.

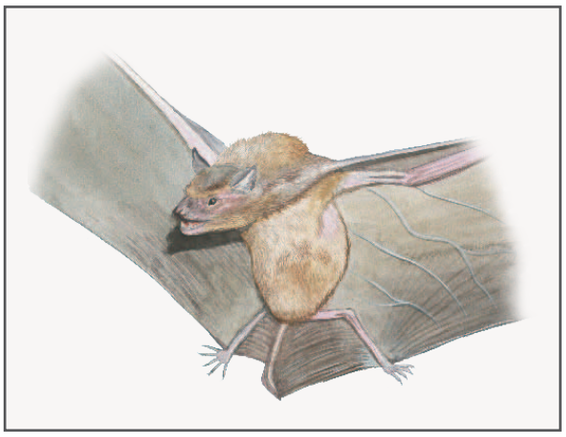
National Distribution
This species occurs in the mid-hills around Kathmandu and Pokhara valley.

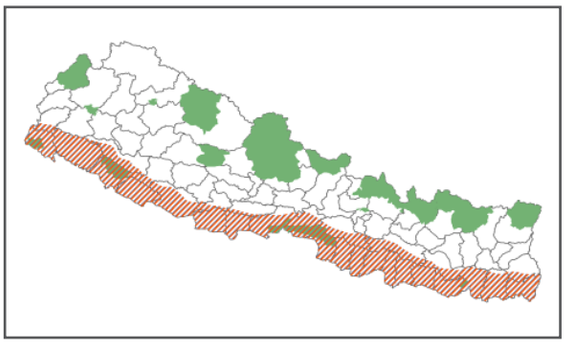
Distribution outside Nepal
Bangladesh, China, India, Myanmar.

Main Threats
- Habitat loss.
- Disturbance to roosting sites.

References
Suwal and Verheught 1995, Bates and Harrison 1997, Walker and Molur 2002, Molur *et al.* 2002.

206) ***Scotophilus kuhlii*** (Leach, 1821)





Common Names
Asiatic Lesser Yellow Bat (English); Sano Asiali Pitta Chamero (Nepali)

Synonyms
Vespertilio temminckii (Horsfield, 1824); *Scotophilus fulvus* (Gray, 1843); *Scotophilus kuhlii wroughtoni, Scotophilus temmincki wroughtoni, Scotophilus wroughtoni* (Thomas, 1897)

Species Description
Pelage chestnut brown above, paler below but usually without the characteristic yellow tinge of *S. heathii.* Distinguished with certainty from *S. heathii* by its smaller sized forearms.

Species Ecology
Asiatic Lesser Yellow Bat occurs in open and dry plains and is an insectivorous species.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution
Distributed along the Terai region, including all protected areas in the Terai and districts of Morang, Jhapa and Parsa (Raxaul-Birgunj).

Distribution outside Nepal
Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand, Timor-Leste, Viet Nam.

References

Molur *et al.* 2002, Bat Net 2007, Baral and Shah 2008, Sanjan Thapa (pers. comm.) 2010. Corbet and Hill, 1992

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207) ***Sphaerias blanfordi*** (Thomas, 1891)

Common Names
Blandford's Fruit Bat (English); Blanfordko Phalahari Chamero (Nepali)

Synonyms
Cynopterus blanfordi (Thomas, 1891)

Species Description

Pelage long and dense, grey-brown all over. Ears similar in size and shape to those of the genus *Cynopterus* with the tips narrowly rounded off. The anterior margin of each ear has a thin white broder, antitragal lobe small and triangular. Tail absent.

Species Ecology
Blandford's Fruit Bat occurs in bamboo forests.

Conservation Status
Global: Least Concern
National: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate assessment of the extinction risk of this species in Nepal. With additional information it is likely that this species will qualify for a threatened category.

Legal Status
National Parks and Wildlife Conservation Act 2029 (1973)

National Distribution
This species occurs from a single location in eastern Nepal, however the exact location is not known. It has not been recorded from within any protected areas.

Distribution outside Nepal
Bhutan, China, India, Myanmar, Nepal, Thailand, Viet Nam.

References

Suwal and Verheugt 1995, Bates and Harrison 1997, Sanjan Thapa (pers. comm.) 2010.

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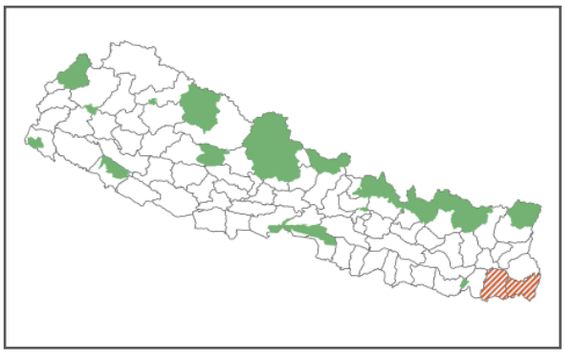
208) ***Taphozous longimanus*** (Hardwicke, 1825)



Common Names
Longed-winged Tomb Bat (English); Lampkhete Chamero (Nepali)

Synonyms
Taphozous brevicaudus, Taphozous fulvidus (Blyth, 1841); *Taphozous cantorii* (Blyth, 1842)

Species Description
A small species with short forearms. Pelage short and soft, cinnamon brown to red to black. Females are usually darker in colour. May be speckled with paler patches on the dorsal surfaces, the belly lighter brown than the back. Hair bases paler than the tips. Muzzle simple, nostrils opening forwards with a narrow groove between them. The sides of the face are almost naked and dark brown. Ears are relatively short and narrow, tips bluntly rounded off, and the anterior and posterior margins are straight.

Species Ecology
Throughout its range, the Longed-winged Tomb Bat is found in varied habitats from arid areas to humid zones. It roosts in caves resulting from mud excavations, old tunnels, forts, dungeons, large wells, hollows and crowns of trees and eaves of houses. This species feeds on cockroaches and beetles. There are two breeding seasons, one in mid January and the other in mid May.

Conservation Status
Global Status: Least Concern
National Status: Data Deficient
Rationale for assessment: There is insufficient information available to make an accurate

assessment of the extinction risk of this species in Nepal.

Legal Status

National Parks and Wildlife Conservation Act 2029 (1973).

National Distribution

Occurs in the Terai and mid-hills of east Nepal, Biratnagar in Morang district and Jhapa in the eastern Terai.

Distribution outside Nepal

Bangladesh, Cambodia, India, Indonesia, Malaysia, Myanmar; Sri Lanka, Thailand.

Main Threats

- Disturbance to roosting sites.

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Appendix I

Genus	Species	Common names	National/ Regional Status
Order: CARNIVORA			
Canis	*lupus*	Grey Wolf	CR
Ursus	*arctos*	Brown Bear	CR
Cuon	*alpinus*	Dhole	EN
Neofelis	*nebulosa*	Clouded Leopard	EN
Panthera	*tigris*	Royal Bengal Tiger	EN
Panthera	*uncia*	Snow Leopard	EN
Prionailurus	*viverrinus*	Fishing Cat	EN
Hyaena	*hyaena*	Striped Hyaena	EN
Lutrogale	*perspicillata*	Smooth-coated Otter	EN
Mellivora	*capensis*	Honey Badger	EN
Prionodon	*pardicolor*	Spotted Linsang	EN
Melursus	*ursinus*	Sloth Bear	EN
Ursus	*thibetanus*	Himalayan Black Bear	EN
Ailurus	*fulgens*	Red Panda	EN
Vulpes	*bengalensis*	Bengal Fox	VU
Lynx	*lynx*	Lynx	VU
Panthera	*pardus*	Common Leopard	VU
Prionailurus	*bengalensis*	Leopard Cat	VU
Herpestes	*urva*	Crab-eating Mongoose	VU
Lutra	*lutra*	Eurasian Otter	NT
Viverra	*zibetha*	Large Indian Civet	NT
Canis	*aureus*	Golden Jackal	LC
Felis	*chaus*	Jungle Cat	LC
Herpestes	*edwardsii*	Indian Grey Mongoose	LC
Herpestes	*javanicus*	Small Asian Mongoose	LC
Martes	*flavigula*	Yellow-throated Marten	LC
Martes	*foina*	Stone Marten	LC
Mustela	*sibirica*	Siberian Weasel	LC
Paguma	*larvata*	Masked Palm Civet	LC
Paradoxurus	*hermaphroditus*	Common Palm Civet	LC
Viverricula	*indica*	Small Indian Civet	LC
Vulpes	*ferrilata*	Tibetan Fox	DD
Vulpes	*vulpes*	Red Fox	DD
Pardofelis	*temminckii*	Asiatic Golden Cat	DD
Pardofelis	*marmorata*	Marbled Cat	DD
Aonyx	*cinerea*	Asian Small-clawed Otter	DD
Arctonyx	*collaris*	Hog Badger	DD
Melogale	*personata*	Large-toothed Ferret Badger	DD
Mustela	*strigidorsa*	Stripe-backed Weasel	DD
Mustela	*altaica*	Altai Weasel	DD

Mustela	*erminea*	Ermine	DD
Mustela	*kathiah*	Yellow-bellied Weasel	DD
Arctictis	*binturong*	Binturong	DD
Order: CETARTIODACTYLA			
Porcula	*salvania*	Pygmy Hog	RE
Antilope	*cervicapra*	Blackbuck	CR
Procapra	*picticaudata*	Tibetan Gazelle	CR
Platanista	*gangetica*	South Asian River Dolphin	CR
Moschiola	*indica*	Indian Chevrotain	CR
Bubalus	*arnee*	Wild Water Buffalo	EN
Axis	*porcinus*	Hog Deer	EN
Moschus	*chrysogaster*	Alpine Musk Deer	EN
Rucervus	*duvaucelii*	Swamp Deer	EN
Bos	*gaurus*	Gaur	VU
Boselaphus	*tragocamelus*	Nilgai	VU
Axis	*axis*	Axis Deer	VU
Muntiacus	*vaginalis*	Barking Deer	VU
Rusa	*unicolor*	Sambar	VU
Hemitragus	*jemlahicus*	Himalayan Tahr	NT
Naemorhedus	*goral*	Himalayan Goral	NT
Pseudois	*nayaur*	Blue Sheep	LC
Sus	*scrofa*	Wild Boar	LC
Bos	*mutus*	Wild Yak	DD
Pantholops	*hodgsonii*	Tibetan Antelope	DD
Capricornis	*thar*	Himalayan Serow	DD
Ovis	*ammon*	Argali	DD
Tetracerus	*quadricornis*	Four-horned Antelope	DD
Moschus	*leucogaster*	Himalayan Musk Deer	DD
Moschus	*fuscus*	Black Musk Deer	DD
Order: CHIROPTERA			
Ia	*io*	Great Evening Bat	CR
Myotis	*csorbai*	Csorba's Mouse-eared Bat	CR
Scotomanes	*ornatus*	Harlequin Bat	EN
Myotis	*sicarius*	Mandelli's Mouse-eared Bat	VU
Philetor	*brachypterus*	Short-winged Pipistrelle	VU
Hipposideros	*pomona*	Andersen's Leaf-nosed Bat	NT
Rhinolophus	*lepidus*	Blyth's Horseshoe Bat	NT
Murina	*aurata*	Tibetan Tube-nosed Bat	NT
Rousettus	*leschenaultii*	Leschenault's Rousette	LC
Hipposideros	*armiger*	Great Himalayan Leaf-nosed Bat	LC
Megaderma	*lyra*	Greater False Vampire	LC
Cynopterus	*sphinx*	Greater Shortnosed Fruit Bat	LC
Pteropus	*giganteus*	Indian Flying Fox	LC
Rhinolophus	*affinis*	Intermediate Horseshoe Bat	LC
Rhinolophus	*ferrumequinum*	Greater Horseshoe Bat	LC
Rhinolophus	*luctus*	Woolly Horseshoe Bat	LC

Rhinolophus	*macrotis*	Big-eared Horseshoe Bat	LC
Rhinolophus	*pearsonii*	Pearson's Horseshoe Bat	LC
Rhinolophus	*pusillus*	Least Horseshoe Bat	LC
Rhinolophus	*sinicus*	Chinese Horseshoe Bat	LC
Barbastella	*leucomelas*	Asian Barbastelle	LC
Kerivoula	*picta*	Painted Bat	LC
Miniopterus	*schreibersii*	Common Bentwing Bat	LC
Murina	*cyclotis*	Round-eared Tube-nosed Bat	LC
Myotis	*formosus*	Hodgson's Bat	LC
Myotis	*muricola*	Nepalese Whiskered Bat	LC
Myotis	*nipalensis*	Nepal Myotis	LC
Myotis	*siligorensis*	Himalayan Whiskered Bat	LC
Pipistrellus	*coromandra*	Coromandel Pipistrelle	LC
Pipistrellus	*javanicus*	Javan Pipistrelle	LC
Pipistrellus	*tenuis*	Least Pipistrelle	LC
Scotophilus	*heathii*	Greater Asiatic Yellow House Bat	LC
Taphozous	*longimanus*	Longed-winged Tomb Bat	DD
Hipposideros	*cineraceus*	Least Leaf-nosed Bat	DD
Hipposideros	*fulvus*	Fulvus Leaf-nosed Bat	DD
Eonycteris	*spelaea*	Dawn Bat	DD
Sphaerias	*blanfordi*	Blandford's Fruit Bat	DD
Rhinolophus	*subbadius*	Little Nepalese Horseshoe Bat	DD
Arielulus	*circumdatus*	Bronze Sprite	DD
Eptesicus	*dimissus*	Surat Serotine	DD
Eptesicus	*serotinus*	Serotine	DD
Falsistrellus	*affinis*	Chocolate Pipistrelle	DD
Hesperoptenus	*tickelli*	Tickell's Bat	DD
Kerivoula	*hardwickii*	Hardwicke's Woolly Bat	DD
Miniopterus	*pusillus*	Small Long-fingered Bat	DD
Murina	*huttoni*	Hutton's Tube-nosed Bat	DD
Murina	*leucogaster*	Rufous Tube-nosed Bat	DD
Myotis	*blythii*	Lesser Mouse-eared Bat	DD
Nyctalus	*montanus*	Mountain Noctule	DD
Nyctalus	*noctula*	Noctule	DD
Plecotus	*auritus*	Brown Big-eared Bat	DD
Plecotus	*austriacus*	Grey Long-earred Bat	DD
Scotophilus	*kuhlii*	Lesser Asiatic Yellow House Bat	DD
Order: EULIPOTYPHLA			
Chimarrogale	*himalayica*	Himalayan Water Shrew	EN
Crocidura	*attenuata*	Indochinese Shrew	LC
Episoriculus	*caudatus*	Hodgson's Brown-toothed Shrew	LC
Episoriculus	*leucops*	Long-tailed Brown-toothed Shrew	LC
Soriculus	*nigrescens*	Sikkim Large-clawed Shrew	LC
Suncus	*murinus*	House Shrew	LC
Crocidura	*horsfieldii*	Horsefield's Shrew	DD
Crocidura	*pergrisea*	Pale Grey Shrew	DD
Episoriculus	*macrurus*	Arboreal Brown-toothed Shrew	DD

Nectogale	*elegans*	Elegant Water Shrew	DD
Sorex	*bedfordiae*	Lesser Stripe-backed Shrew	DD
Sorex	*excelsus*	Highland Shrew	DD
Sorex	*minutus*	Eurasian Pygmy Shrew	DD
Suncus	*etruscus*	Pygmy White-toothed Shrew	DD
Suncus	*stoliczkanus*	Anderson's Shrew	DD
Euroscaptor	*micrura*	Himalayan mole	DD
Order: LAGOMORPHA			
Caprolagus	*hispidus*	Hispid hare	EN
Ochotona	*himalayana*	Himalayan pika	EN
Lepus	*nigricollis*	Indian hare	LC
Lepus	*oiostolus*	Woolly hare	LC
Ochotona	*curzoniae*	Plateau Pika	DD
Ochotona	*lama*	Lama's pika	DD
Ochotona	*macrotis*	Large-eared pika	DD
Ochotona	*nubrica*	Nubra pika	DD
Ochotona	*roylei*	Royle's pika	DD
Ochotona	*thibetana*	Moupin pika	DD
Order: PERISSODACTYLA			
Rhinoceros	*unicornis*	Greater One-horned Rhinoceros	EN
Equus	*kiang*	Kiang	VU
Order: PHOLIDOTA			
Manis	*crassicaudata*	Indian Pangolin	EN
Manis	*pentadactyla*	Chinese Pangolin	EN
Order: PRIMATES			
Macaca	*assamensis*	Assam Macaque	VU
Semnopithecus	*hector*	Tarai Grey Langur	LC
Semnopithecus	*schistaceus*	Nepal Grey Langur	LC
Macaca	*mulatta*	Rhesus Macaque	LC
Semnopithecus	*ajax*	Himlayan Grey Langur	DD
Order: PROBOSCIDEA			
Elephas	*maximus*	Asian Elephant	EN
Order: RODENTIA			
Apodemus	*gurkha*	Himalayan Field Mouse	EN
Ratufa	*bicolor*	Black Giant Squirrel	EN
Apodemus	*sylvaticus*	Long-tailed Field Mouse	LC
Bandicota	*bengalensis*	Lesser Bandicoot Rat	LC
Bandicota	*indica*	Greater Bandicoot Rat	LC
Golunda	*ellioti*	Indian Bush Rat	LC
Millardia	*meltada*	Soft-furred Metad	LC
Mus	*booduga*	Common Indian Field Mouse	LC
Mus	*cervicolor*	Fawn-colored Mouse	LC
Mus	*musculus*	House Mouse	LC
Mus	*saxicola*	Brown Spiny Mouse	LC
Mus	*terricolor*	Earth-colored Mouse	LC
Nesokia	*indica*	Short-tailed Bandicoot Rat	LC

Niviventer	*eha*	Little Himalayan Rat	LC
Niviventer	*niviventer*	Himalayan White-bellied Rat	LC
Rattus	*nitidus*	Himalayan Field Rat	LC
Rattus	*norvegicus*	Brown Rat	LC
Rattus	*pyctoris*	Himalayan Rat	LC
Rattus	*rattus*	Black Rat	LC
Tatera	*indica*	Indian Gerbil	LC
Vandeleuria	*oleracea*	Asiatic Long-tailed Climbing Mouse	LC
Callosciurus	*pygerythrus*	Hoary-bellied Squirrel	LC
Dremomys	*lokriah*	Orange-bellied Himalayan Squirrel	LC
Funambulus	*pennantii*	Five-striped Palm Squirrel	LC
Hylopetes	*alboniger*	Particolored Flying Squirrel	LC
Marmota	*bobak*	Bobak Marmot	LC
Marmota	*himalayana*	Himalayan Marmot	LC
Petaurista	*petaurista*	Red Giant Flying Squirrel	LC
Tamiops	*macclellandii*	Himalayan Striped Squirrel	LC
Alticola	*roylei*	Royle's Mountain Vole	DD
Alticola	*stoliczkanus*	Stoliczka's Mountain Vole	DD
Cricetulus	*alticola*	Ladakh Hamster	DD
Neodon	*sikimensis*	Sikkim Vole	DD
Phaiomys	*leucurus*	Blyth's Vole	DD
Hystrix	*brachyura*	Himalayan Crestless Porcupine	DD
Hystrix	*indica*	Indian Crested Porcupine	DD
Apodemus	*pallipes*	Ward's Field Mouse	DD
Bandicota	*maxima*	Giant Bandicoot-Rat	DD
Dacnomys	*millardi*	Millard's Rat	DD
Diomys	*crumpi*	Crump's Mouse	DD
Mus	*cookii*	Cook's Mouse	DD
Mus	*phillipsi*	Wroughton's Small Spiny Mouse	DD
Mus	*platythrix*	Flat-haired Mouse	DD
Niviventer	*fulvescens*	Chestnut White-bellied Rat	DD
Rattus	*andamanensis*	Sikkim Rat	DD
Belomys	*pearsonii*	Hairy-footed Flying Squirrel	DD
Petaurista	*elegans*	Spotted Giant Flying Squirrel	DD
Petaurista	*nobilis*	Bhutan Giant Flying Squirrel	DD
Petaurista	*magnificus*	Hodgson's Giant Flying Squirrel	DD
Cannomys	*badius*	Bay Bamboo Rat	DD
Order: SCANDENTIA			
Tupaia	*belangeri*	Northern Tree Shrew	DD

Appendix II

Summary of the five criteria (A–E) used to evaluate if a taxon belongs in a threatened category (Critically Endangered, Endangered or Vulnerable).

Use any of the criteria A–E	Critically Endangered	Endangered	Vulnerable
A. Population reduction	Declines measured over the longer of 10 years or 3 generations		
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%
Al. Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible **AND** understood **AND** have ceased, based on and specifying any of the following: **(a)** direct observation **(b)** an index of abundance appropriate to the taxon **(c)** a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality **(d)** actual or potential levels of exploitation **(e)** effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.			
A2. Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased **OR** may not be understood **OR** may not be reversible, based on (a) to (e) under Al			
A3. Population reduction projected or suspected to be met in the future (up to a maximum of 100 years) based on (b) to (e) under Al.			
A4. An observed, estimated, inferred, projected or suspected population reduction (up to a maximum of 100 years) where the time period must include both the past and the future, and where the causes of reduction may not have ceased **OR** may not be understood **OR** may not be reversible, based on (a) to (e) under Al.			
B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)			
B1. Extent of occurrence	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy	< 10 km²	< 500 km²	< 2,000 km²
AND at least 2 of the following:			
(a) Severely fragmented, **OR** Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** area, extent and/or quality of habitat; **(iv)** number of locations or subpopulations; **(v)** number of mature individuals			
(c) Extreme fluctuations in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** number of locations or subpopulations; **(iv)** number of mature individuals			
C. Small population size and decline			
Number of mature individuals	< 250	< 2,500	< 10,000
AND either C1 or C2:			
C1. An estimated continuing decline of at least: (up to a max. of 100 years in future)	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations
C2. A continuing decline **AND** (a) and/or (b):			
(a i) number mature individuals in each subpopulation:	< 50	< 250	< 1,000
(a ii) or % individuals in one subpopulation =	90–100%	95–100%	100%
(b) extreme fluctuations in the number of mature individuals			
D. Very small or restricted population			
Either: Number of mature individuals	< 50	< 250	**D1.** < 1,000
			AND/OR
	Restricted area of occupancy		**D2.** typically: AOO < 20 km² or number of locations ≤ 5
E. Quantitative Analysis			
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations (100 years max)	≥ 20% in 20 years or 5 generations (100 years max)	≥ 10% in 100 years

Appendix III

The 2001 IUCN Categories - Definitions

EX **EXTINCT.** A species is assessed as Extinct when there is no reasonable doubt that the last individual has died.

EW **EXTINCT IN THE WILD.** This applies to species which only occur in captivity or as naturalised populations.

RE **REGIONALLY EXTINCT.** A species is considered Regionally Extinct when it has disappeared from a nation or region and there is no doubt that the last individual has died there. However, such species may occur in other parts of the world.

THREATENED

CR **CRITICALLY ENDANGERED.** Species are that are Critically Endangered face an extremely high risk of extinction and fulfil the criteria A-E for Critically Endangered.

EN **ENDANGERED.** Endangered species face a high risk of extinction and fulfil criteria A-E for Endangered.

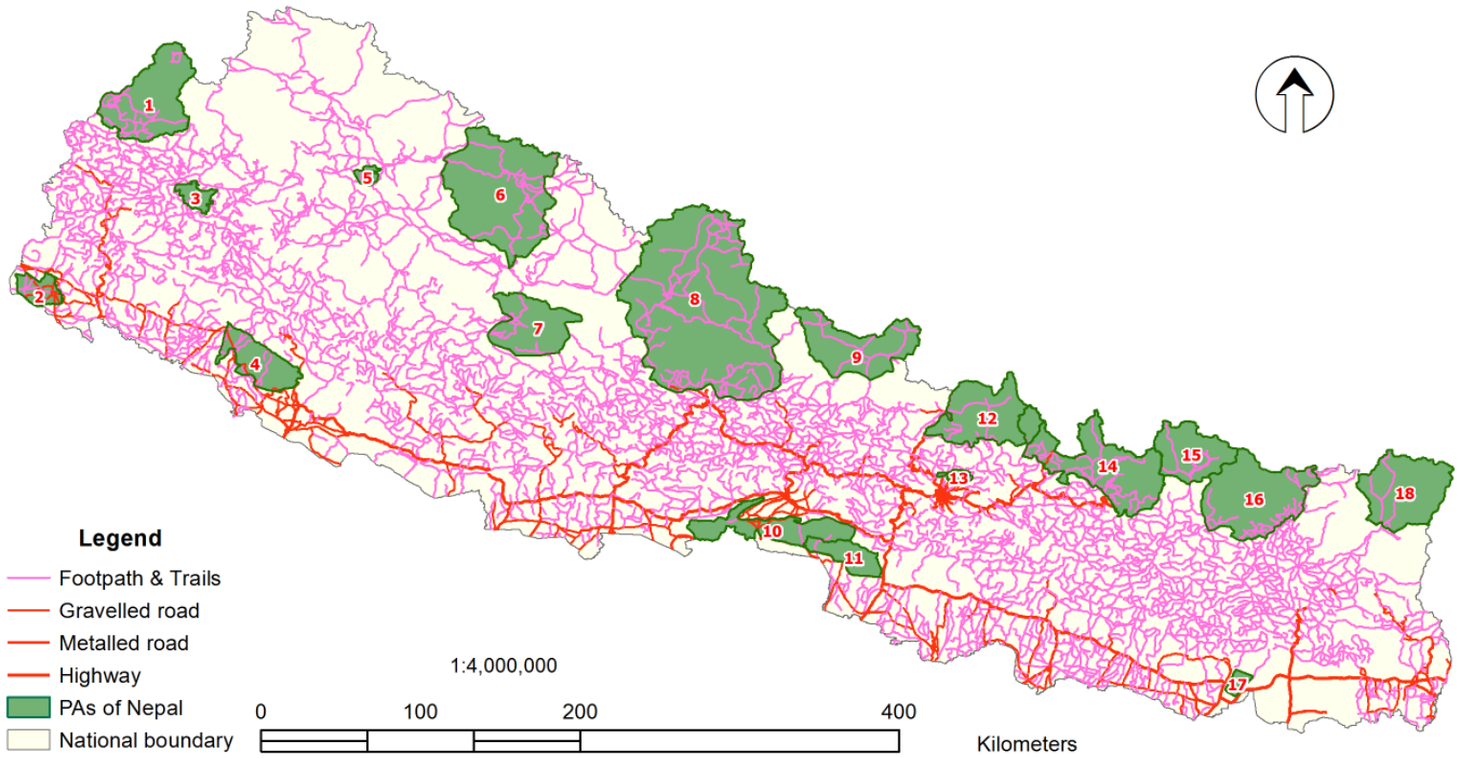
VU **VULNERABLE.** Species considered Vulnerable face a high risk of extinction and fulfil criteria A-E for a Vulnerable species.

NT **NEAR THREATENED.** This category applies to species that do not currently qualify for a threatened category but is close to qualifying and is likely to qualify in the near future.

LC **LEAST CONCERN.** Least Concern species are usually common and face no serious threats. Species in this category do not qualify for a threat category and face little or no threat of extinction.

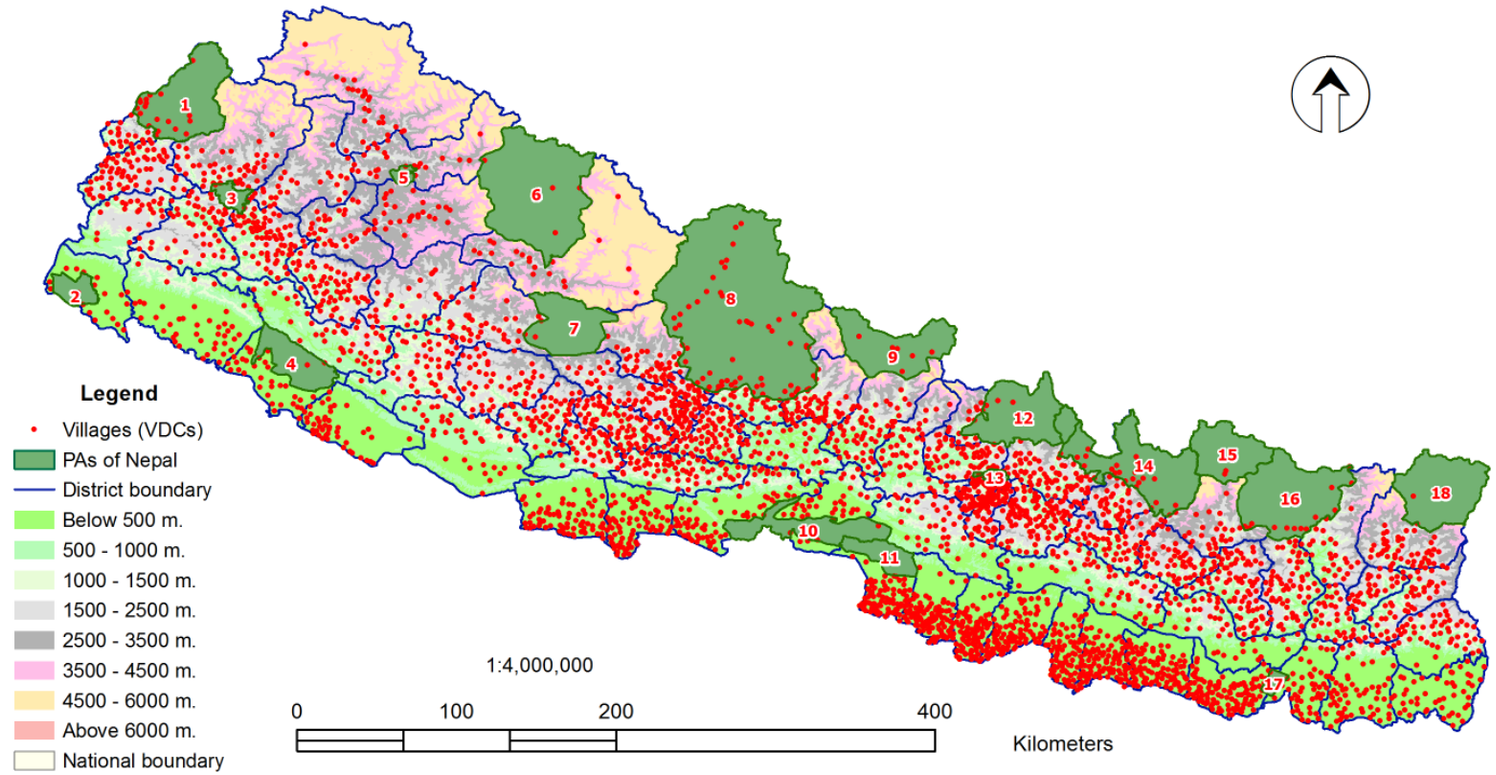
DD **DATA DEFICIENT.** A species is Data Deficient when there is not sufficient available information to assess the species against the criteria.

Appendix IV: Major roads in Nepal



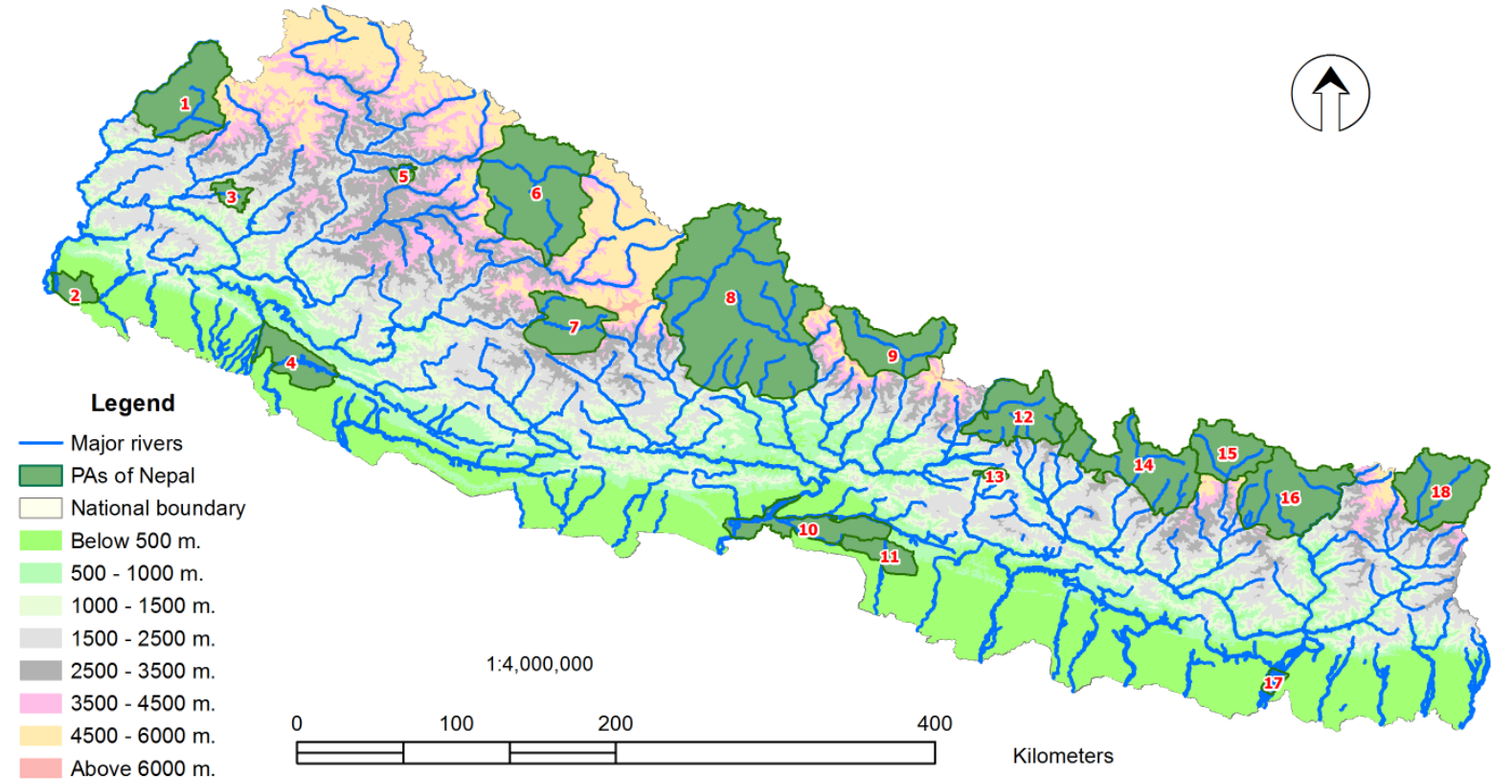
SN	Name of PA	SN	Name of PA	SN	Name of PA
1	Api Nampa Conservation Area	7	Dhorpatan Hunting Reserve	13	Shivapuri Nagarjun National Park
2	Shukla Phant Wild Life Reserve	8	Annapurna Conservation Area	14	Gaurishankar Conservation Area
3	Khaptad National Park	9	Manaslu Conservation Area	15	Sagarmatha National Park
4	Bardia National Park	10	Chitwan National Park	16	Makalu Barun National Park
5	Rara National Park	11	Parsa Wild Life Reserve	17	Koshi Tappu Wild Life Reserve
6	She-Phoksundo National Park	12	Langtang National Park	18	Kanchanjunga Conservation Area

Appendix V: Major settlements in Nepal

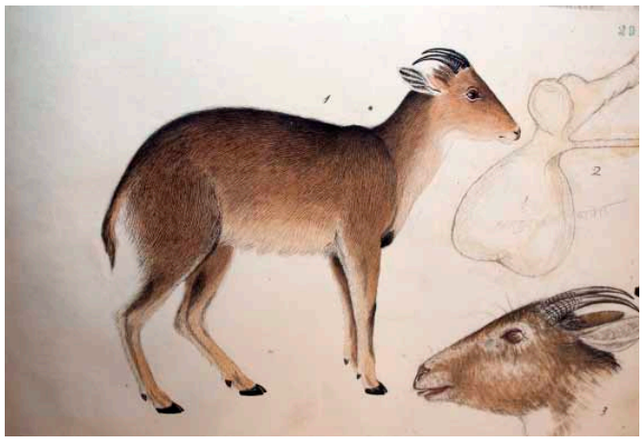


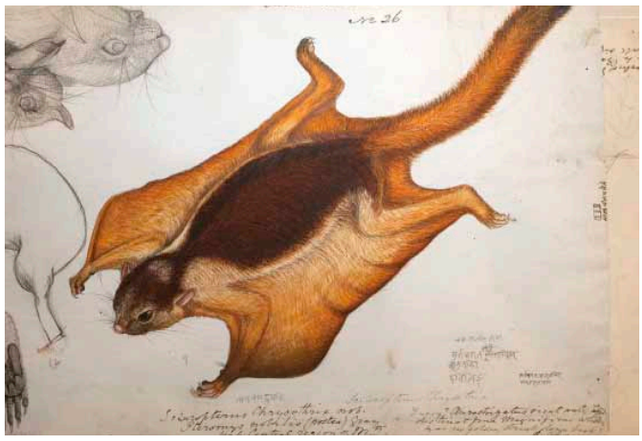
SN	Name of PA	SN	Name of PA	SN	Name of PA
1	Api Nampa Conservation Area	7	Dhorpatan Hunting Reserve	13	Shivapuri Nagarjun National Park
2	Shukla Phant Wild Life Reserve	8	Annapurna Conservation Area	14	Gaurishankar Conservation Area
3	Khaptad National Park	9	Manaslu Conservation Area	15	Sagarmatha National Park
4	Bardia National Park	10	Chitwan National Park	16	Makalu Barun National Park
5	Rara National Park	11	Parsa Wild Life Reserve	17	Koshi Tappu Wild Life Reserve
6	She-Phoksundo National Park	12	Langtang National Park	18	Kanchanjunga Conservation Area

Appendix VI: Major river systems in Nepal



SN	Name of PA	SN	Name of PA	SN	Name of PA
1	Api Nampa Conservation Area	7	Dhorpatan Hunting Reserve	13	Shivapuri Nagarjun National Park
2	Shukla Phant Wild Life Reserve	8	Annapurna Conservation Area	14	Gaurishankar Conservation Area
3	Khaptad National Park	9	Manaslu Conservation Area	15	Sagarmatha National Park
4	Bardia National Park	10	Chitwan National Park	16	Makalu Barun National Park
5	Rara National Park	11	Parsa Wild Life Reserve	17	Koshi Tappu Wild Life Reserve
6	She-Phoksundo National Park	12	Langtang National Park	18	Kanchanjunga Conservation Area





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