

Mongolian Red List of Mammals



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INTRODUCTION

Mongolia's vast and diverse landscape has traditionally been a refuge for a rich and unique assemblage of mammals. However, over the past two decades Mongolia has undergone significant social and economic change, and during this time period many of Mongolia's mammals, such as argali (*Ovis ammon*), red deer (*Cervus elaphus*), and Siberian marmot (*Marmota sibirica*) have experienced rapid declines. These declines have been relatively well documented for a few species, although prior to this Red List, the overall conservation status of Mongolian mammals was poorly understood.

This Red List contains all known native Mongolian mammals and highlights their status within Mongolia, accompanied by other information such as their global and regional distribution, legal status, and dominant threats. Species have been assessed using the 'IUCN Red List Categories and Criteria' (IUCN, 2001), which incorporate quantitative thresholds to categorise species in terms of their risk of extinction (Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild, and Extinct). These assessments were carried out by over 70 of the world's leading experts on Mongolian mammals at the Mongolian Biodiversity Databank workshop from October 31st to November 4th 2005.

Both threatened and non-threatened Mongolian mammals are presented in this document, in order to clearly identify all species that have been assessed and to provide an indication of the overall status of the country's mammals. It also provides an excellent field guide of all mammals found in Mongolia. However, only those species listed as Vulnerable, Endangered, or Critically Endangered are considered to be threatened with extinction, and are designated as official Red List species.

The specialists involved in the production of this Red List also helped to develop the Mongolian Biodiversity Databank for mammals, available from the Department of Zoology at the National University of Mongolia, which contains detailed information on species distributions, ecology, habitat preferences, threats, and conservation measures. This databank also contains information on all Mongolian fishes and will, in the near future, contain data for all Mongolian vertebrates. Summary conservation action plans were also composed, providing detailed information on all threatened mammals and actions necessary to ensure their future survival. These summary conservation action plans are published in a separate document, and electronic versions will be available through the Zoological Society of London library (<http://library.zsl.org>) and www.regionalredlist.com.

The production of the Mongolian Red List of Mammals is a milestone for conservation in Mongolia, as it sets the first baseline from which it will be possible to assess whether conditions are improving. It also provides policy makers with the most up-to-date information on threatened mammals, allowing informed decisions to be made, and gives conservationists essential information required to develop detailed conservation action plans and set priorities.

The Red List demonstrates that a large number of species have recently become threatened with extinction. This highlights the importance of conducting regular monitoring and conservation assessments, to ensure that species do not move toward extinction unnoticed.

The Red List also highlights the importance of addressing the dominant threats to Mongolian mammals, overexploitation (for trade) and habitat degradation due to overgrazing. These are fortunately reversible threats that can be addressed through legislation, economic incentives, and education. The emerging potential threat of climate change will be much more difficult to address. Finally, by defining the current state of knowledge, the Red List helps to identify where future research is most needed. This document is only the first step, and it is hoped that it will encourage research and conservation of what is a very poorly known, but extremely interesting group of mammals.

Table 2. Mammals categorised as regionally threatened (Critically Endangered, Endangered and Vulnerable) and Near Threatened in Mongolia.

Critically Endangered	Endangered	Vulnerable	Near Threatened
Gobi bear <i>Ursus arctos gobiensis</i>	Siberian marmot <i>Marmota sibirica</i>	Long-eared jerboa <i>Euchoreutes naso</i>	Eurasian red squirrel <i>Sciurus vulgaris</i>
Przewalski's horse <i>Equus ferus przewalskii</i>	Alashan ground squirrel <i>Spermophilus alashanicus</i>	Sable <i>Martes zibellina</i>	Eurasian lynx <i>Lynx lynx</i>
Red deer <i>Cervus elaphus</i>	Eurasian beaver <i>Castor fiber</i>	Goitered gazelle <i>Gazella subgutturosa</i>	Pallas's cat <i>Otocolobus manul</i>
	Small five-toed jerboa <i>Allactaga elater</i>	Reindeer <i>Rangifer tarandus</i>	Grey wolf <i>Canis lupus</i>
	Mongolian three-toed jerboa <i>Stylodipus sungorus</i>		Corsac fox <i>Vulpes corsac</i>
	Tamarisk jird <i>Meriones tamariscinus</i>		Red fox <i>Vulpes vulpes</i>
	Snow leopard <i>Uncia uncia</i>		Wild boar <i>Sus scrofa</i>
	Asiatic wild ass <i>Equus hemionus</i>		Siberian ibex <i>Capra sibirica</i>
	Bactrian camel <i>Camelus bactrianus ferus</i>		
	Argali <i>Ovis ammon</i>		
	Mongolian gazelle <i>Procapra gutturosa</i>		
	Saiga antelope <i>Saiga tatarica</i>		
	Siberian musk deer <i>Moschus moschiferus</i>		
	Elk <i>Alces alces</i>		

THREATS TO MONGOLIAN MAMMALS

The assessment process identified the main activities or processes driving the decline of species (e.g. resource extraction or hunting), and the direct threats causing these declines (e.g. loss of habitat or intentional mortality). Where applicable, the primary, secondary and tertiary direct threats were ranked for each species.

Intentional mortality caused by hunting is the primary threat identified for more than half of Mongolia's threatened mammals (57%; see Table 3). This is a particularly serious threat for ungulates such as red deer (*Cervus elaphus*), argali (*Ovis ammon*), Mongolian gazelle (*Procapra gutturosa*), and musk deer (*Moschus moschiferus*), as well as species hunted for their fur, such as Siberian marmot (*Marmota sibirica*) and snow leopard (*Uncia uncia*).

Habitat degradation is the primary threat to one species, tamarisk jird (*Meriones tamariscinus*) and a secondary threat to five species, all of which are ungulates. In most cases, habitat degradation is believed to be resulting from increasing numbers of livestock grazing. When combined, habitat loss, fragmentation and degradation constitute a secondary threat to more than half of Mongolia's threatened mammals (52%). Habitat loss is a secondary threat to five species, including three artiodactyls, commonly caused by increasing resource extraction such as mining. Other forms of resource extraction, such as logging and clear-felling of forests also threaten species such as Eurasian beaver (*Castor fiber*) and sable (*Martes zibellina*). Habitat fragmentation is a secondary or tertiary threat to four species, all of which are ungulates with large range sizes.

Climate change represents a threat to several species, including rodents, artiodactyls and carnivores, and is highlighted as an important threat for the future. Many of these species occur in southern Mongolia, where droughts and dry conditions commonly occur. However, it remains unclear if these represent natural environmental changes or are driven by anthropogenic activity. Other tertiary threats are more varied, and include pollution, disease, and competition for resources (often with increasing numbers of livestock).

Table 3. Summary of direct threats facing threatened Mongolian mammals, as identified by participants at the Mongolian Biodiversity Databank Workshop. Primary threat represented in black, secondary threat in mid grey, and tertiary threat in light grey.

Category of threat	Species	Habitat degradation	Habitat fragmentation	Habitat loss	Pollution	Disease	Parasites	Predation	Hybridisation	Competitors	Intentional mortality	Accidental mortality	Climate change	Other	Not known
CR	<i>Ursus arctos gobiensis</i>														
	<i>Equus ferus przewalskii</i>														
	<i>Cervus elaphus</i>														
EN	<i>Marmota sibirica</i>														
	<i>Spermophilus alashanicus</i>														
	<i>Castor fiber</i>														
	<i>Allactaga elater</i>														
	<i>Stylodipus sungorus</i>														
	<i>Meriones tamariscinus</i>														
	<i>Uncia uncia</i>														
	<i>Equus hemionus</i>														
	<i>Camelus bactrianus ferus</i>														
	<i>Ovis ammon</i>														
	<i>Procapra gutturosa</i>														
	<i>Saiga tatarica</i>														
	<i>Moschus moschiferus</i>														
	<i>Alces alces</i>														
VU	<i>Euchoreutes naso</i>														
	<i>Martes zibellina</i>														
	<i>Gazella subgutturosa</i>														
	<i>Rangifer tarandus</i>														

SPECIES ACCOUNTS

Order Rodentia

Family Sciuridae

1. *Marmota baibacina* Kastschenko, 1899

Common names: Grey marmot or Altai marmot (English), altain tarvaga (Mongolian)

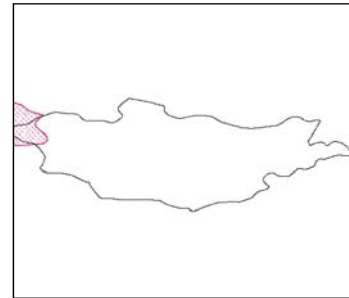
Synonyms: Including *M. altaica*, *M. centralis*, *M. kastschenkoi*, *M. ognevi* (see Wilson and Reeder (1993) for further details)

Global status: Least Concern

Regional status: Data Deficient

Rationale for assessment: Inadequate information on distribution, population size and trends, or the impact of threats.

Legal status: Hunting is permitted between August 11th and October 15th (MNE, 2005). Approximately 16% of the species' range in Mongolia occurs within protected areas.



Global distribution: Russian Federation, Kazakhstan, China (Xinjiang), Kyrgyzstan, Mongolia.

Regional distribution: Alpine meadows in Hovd Province in northern Mongol Altai Mountain Range in western Mongolia. Also occurs along Bulgan and Buyant rivers in western Mongol Altai Mountain Range (Adiya, 2000).

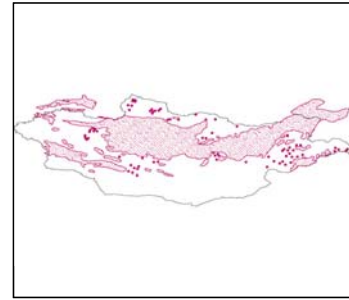
Dominant threats: Unsustainable hunting for meat and skins for international trade, with an estimated off-take of 66,000 individuals in 2004 (Wingard and Zahler, 2006). Possible habitat degradation through grazing by increasing numbers of livestock (further evidence is required).

2. *Marmota sibirica* (Radde, 1862)

Common names: Siberian marmot, Mongolian marmot, tarbagan marmot or Transbaikial marmot (English), Mongol tarvaga (Mongolian)

Subspecies in Mongolia: *M. s. sibiricus*, *M. s. caliginosus*

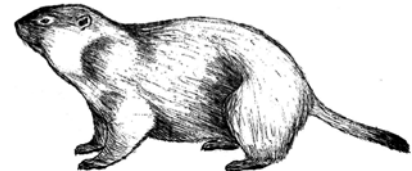
Synonyms: *M. caliginosus*, *M. dahurica* (see Wilson and Reeder (1993) for further details)



Global status: Least Concern

Regional status: Endangered, A2ad

Rationale for assessment: Over the past 60 years, this species has experienced an ongoing decline in population size. In 1990 the population was estimated to consist of 20 million individuals (Wingard and Zahler, 2006), falling to five million by the most recent assessment in 2001, indicating a 75% decline (Batbold, 2002). It is estimated that more than 1.2 million skins per year have been traded since the late 1800s, with as many as three million individuals removed from the population in 2004 (Wingard and Zahler, 2006). Generation length has been estimated as six years based on data from Nowak (1991). This species qualifies as Endangered under Criterion A2ad, based on observed declines of greater than 50% over the past three generations primarily due to exploitation and disease. The assessment remains unchanged following application of regional criteria as there is no significant immigration from adjacent countries.



Legal status: Hunting was completely banned during 2005 and 2006 by the Ministry of Nature and Environment. Prior to this ban, hunting was permitted between August 10th and October 15th, depending on population size (MNE, 2005). Local governments are required by law to conduct population surveys every four years, and have the authority to close areas for the protection of the species. In areas where industrial hunting takes place (when permitted), surveys must be completed on an annual basis and be funded by the hunting company (Wingard and Zahler, 2006). Approximately 6% of the species' range in Mongolia occurs within protected areas.

Global distribution: Russian Federation, China, Mongolia.

Regional distribution: *M. s. sibiricus* inhabits steppe and grassland habitats, from the extreme east to the Altai Mountains of the west (Wingard and Zahler, 2006). *M. s. caliginosus* inhabits higher mountains and ranges in northern, western and central Mongolia, including Hangai, Hövsgöl and Mongol Altai mountain ranges (Adiya, 2000).

Dominant threats: Hunting for skins, traditional medicines, and meat for local, national, and international trade. Marmot oil contains naturally high levels of corticosterone² and has several traditional uses in Mongolia, including as a leather conditioner, to treat burns, frostbite, anaemia and tuberculosis, and as a dietary supplement for animals and children (Adiya, 2000; Wingard and Zahler, 2006). At least 104.2 million marmot skins were prepared in Mongolia between 1906 and 1994 (Batbold, 1996). Recent surveys estimate that actual trading numbers presently exceed hunting quotas by more than three times, in 2004 more than 117,000 illegally traded marmot skins were confiscated (Zahler *et al.*, 2004). Outbreaks

of plague also constitutes a threat and human plague cases are known to have occurred as a result of marmot hunting, prompting extermination campaigns (Batbold, 2002). However, outbreaks are becoming less frequent as the population size declines.

3. *Pteromys volans* (Linnaeus, 1758)

Common names: Russian flying squirrel or Siberian flying squirrel (English), khovkhor olbi (Mongolian)

Subspecies in Mongolia: *P. v. turovi*

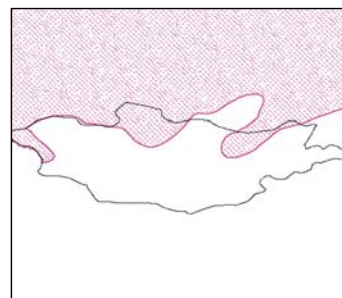
Synonyms: Including *P. ognevi*, *P. russicus*, *P. sibiricus* (see Wilson and Reeder (1993) for further details)

Global status: Near Threatened

Regional status: Data Deficient

Rationale for assessment: Inadequate information on distribution, population size and trends, or the impact of threats.

Legal status: Approximately 11% of the species' range in Mongolia occurs within protected areas.



Global distribution: Finland, Latvia, Estonia, Belarus, China, Mongolia, Republic of Korea, Democratic People's Republic of Korea, Japan.

Regional distribution: Forest habitats including Hövsgöl, Hangai, Hentii, and north-western Mongol Altai mountain ranges, and Mongol Daguur Steppe (Dulamtsuren *et al.*, 1989).

Dominant threats: Habitat loss caused by selective logging, and human-caused and natural wildfires in some parts of its range.

4. *Sciurus vulgaris* Linnaeus, 1758

Common names: Eurasian red squirrel (English), baraan herem (Mongolian)

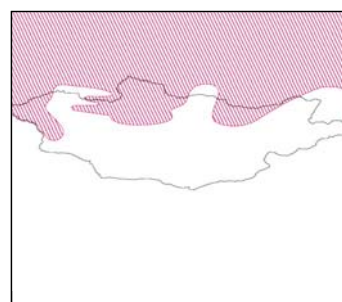
Subspecies in Mongolia: *S. v. fusconigricans*, *S. v. altaicus*, *S. v. mantchuricus*. Further research on subspecies designation within Mongolia is required.

Synonyms: Including *S. mantchuricus*, *S. ognevi*, *S. orientis* (see Wilson and Reeder (1993) for further details)

Global status: Near Threatened

Regional status: Near Threatened

Rationale for assessment: There is very little information available on population trends for this species in Mongolia. However, exploitation is believed to be occurring at high levels throughout its range. When population data becomes available, this species may be re-categorised as threatened

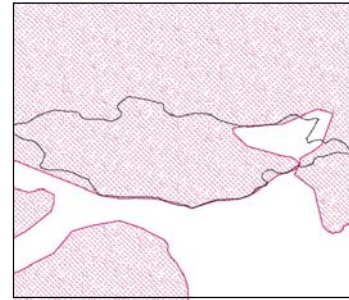


93. *Lynx lynx* (Linnaeus, 1758)

Common names: Eurasian lynx (English), shiluus mii or evroasiin shiluus (Mongolian)

Subspecies in Mongolia: *L. l. isabellina*

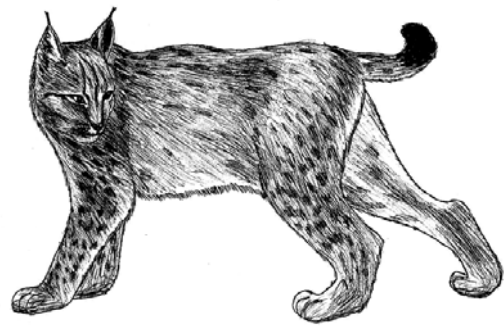
Synonyms: Including *L. isabellina*, *L. kozlovi*, *L. vulgaris* (see Wilson and Reeder (1993) for further details)



Global status: Near Threatened

Regional status: Near Threatened

Rationale for assessment: There is very little data available on population trends for this species in Mongolia. However, exploitation is believed to be occurring at high levels throughout its range. When population data becomes available, this species may be re-categorised as threatened under Criterion A if conservation actions are not implemented. The assessment remains unchanged following application of regional criteria as there is no significant immigration from adjacent countries.



Legal status: Listed under CITES Appendix II (UNEP-WCMC, 2006). *L. l. isabellina* is protected as Rare under the 2001 revision (Mongolian Government Act No. 264) of the 2000 Mongolian Law on Fauna (Badam and Ariunzul, 2005). Listed as Rare under the 1995 Mongolian Hunting Law, which only permits hunting between October 21st and February 16th (MNE, 2005). Trophy hunters can purchase a hunting license to export trophies, from which \$1,800 USD is allocated to the government (MNE, 2005). According to the Mongolian Law on Reinvestment of Natural Resource Use Fees, a percentage of this fee is designated to conservation efforts (Wingard and Zahler, 2006). Approximately 13% of the species' range in Mongolia occurs within protected areas.

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

Regional distribution: Widely distributed throughout Mongolia, although frequently undetected. Most commonly encountered in coniferous forest habitats in Darkhad, Chandmani-Öndör, Tsagaan-Üür, Renchinlkhümbe, Ulaan-Uul, and Bayanzürkh villages in Hövsgöl Mountain Range (Dulamtsuren, 1970). This is one of the few species in Mongolia known to exist in desert mountain habitats.

Dominant threats: Illegal and unsustainable hunting for skins, for international trade. Between 1958 and 1960, an estimated 350 lynx were removed annually (Stubbe, 1965). Also threatened by a reduction in its prey base, including Siberian ibex (*Capra sibirica*) and

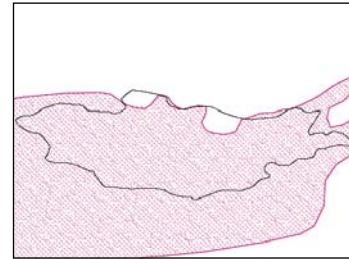
Siberian marmots (*Marmota sibirica*), and occasionally attacked and killed by domestic dogs. Habitat may potentially be lost or degraded due to resource extraction in some parts of its range, particularly clear cutting and logging.

94. *Otocolobus manul* (Pallas, 1776)

Common names: Pallas's cat (English), manuul mii (Mongolian)

Subspecies in Mongolia: *O. m. manul*

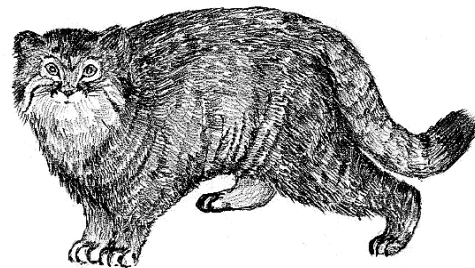
Synonyms: *O. ferrugineus*, *O. mongolicus*, *O. nigripectus*, *O. satuni* (see Wilson and Reeder (1993) for further details)



Global status: Near Threatened

Regional status: Near Threatened

Rationale for assessment: There is very little data available on population trends for this species in Mongolia. However, exploitation is believed to be occurring at high levels throughout its range. When population data becomes available, this species may be re-categorised as threatened under Criterion A if conservation actions are not implemented.



The assessment remains unchanged following application of regional criteria as there is no significant immigration from adjacent countries.

Legal status: Listed under CITES Appendix II, with an export quota of six live individuals in 2005 (UNEP-WCMC, 2006). Trophy hunters can purchase a hunting license to export trophies, from which \$70 USD is allocated to the government (MNE, 2005). According to the Mongolian Law on Reinvestment of Natural Resource Use Fees, a percentage of this fee is designated to conservation efforts (Wingard and Zahler, 2006). Approximately 12% of the species' range in Mongolia occurs within protected areas.

Global distribution: Russian Federation, Armenia, Islamic Republic of Iran, Kazakhstan, Turkmenistan, Uzbekistan, Afghanistan, Pakistan, Tajikistan, China, India, Kyrgyzstan, Mongolia.

Regional distribution: Occurs throughout Mongolia, except in coniferous forest habitats. This species is occasionally found in alpine and desert habitats (Bannikov, 1954; Dulamtseren, 1970; Sokolov and Orlov, 1980).

Dominant threats: Unsustainable hunting for skins and traditional medicines for international trade is believed to be causing a population decline. Hunting records between 1958 and 1960 estimate 5,500 individuals were removed annually (Stubbe, 1965). Poisoning campaigns to control Brandt's vole (*Lasiopodomys brandti*) in Mongol Daguur Steppe and Eastern Mongolia in 2001, 2002, and 2003 using Bromadiolone pose a threat to this species. However, this activity is currently being phased out as the effect of this activity on non-target species is being realised (N. Batsaikhan, pers. comm.). Domestic dogs may occasionally attack and kill this species.

Annex II. List 1: Species identified as occurring within Mongolia and assessed at the Mongolian Biodiversity Databank Workshop.

N.B. The Red List of Mongolian Mammals and its associated documents contain taxa that were on the agreed list for the Mongolian Biodiversity Databank Workshop, i.e. those that were known to occur in Mongolia in 2005. Subsequent to the workshop, several additional species have been suggested to occur in Mongolia, based on recent range expansions or their occurrence close to the Mongolian border. Those which are likely to occur in Mongolia have been added to List 1, but are marked with a plus sign (+) to indicate that they were not assessed during the workshop.

a) Rodentia

<i>Scientific name</i>	<i>Common name</i>	<i>Regional assessment</i>	<i>Global assessment</i>
Sciuridae			
<i>Marmota baibacina</i> Kastschenko, 1899	Grey marmot	Data Deficient	Least Concern
<i>Marmota sibirica</i> (Radde, 1862)	Siberian marmot	Endangered, A2ad	Least Concern
<i>Pteromys volans</i> (Linnaeus, 1758)	Russian flying squirrel	Data Deficient	Near Threatened
<i>Sciurus vulgaris</i> Linnaeus, 1758	Eurasian red squirrel	Near Threatened	Near Threatened
<i>Spermophilus alashanicus</i> Büchner, 1888	Alashan ground squirrel	Endangered, A3c	Least Concern
<i>Spermophilus dauricus</i> Brandt, 1843	Daurian ground squirrel	Data Deficient	Least Concern
<i>Spermophilus erythrogenys</i> Brandt, 1841	Red-cheeked ground squirrel	Least Concern	Least Concern
<i>Spermophilus undulatus</i> (Pallas, 1778)	Long-tailed ground squirrel	Least Concern	Least Concern
<i>Tamias sibiricus</i> (Laxmann, 1769)	Siberian chipmunk	Least Concern	Least Concern
Gliridae			
<i>Dryomys nitedula</i> (Pallas, 1778)	Forest dormouse	Data Deficient	Near Threatened
Castoridae			
<i>Castor fiber</i> Linnaeus, 1758	Eurasian beaver	Endangered, B1ab(iii)	Near Threatened
Dipodidae			
<i>Allactaga balikunica</i> Hsia and Fang, 1964	Balikun jerboa	Least Concern	Least Concern