

Chapter 12

The Status of Bears in Mongolia

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Two sub-species of bears occur in Mongolia: brown bears (*Ursus arctos jeniseensis*), and Gobi bears (*U. a. isabellinus*) (Photo 12.1). This report reviews the status of these two sub-species.

Brown Bear (*Ursus arctos jeniseensis*), 1758 Biology

The taxonomy of the brown bear on a subspecies level in Mongolia is still unclear. In 1953, Russian zoologist A. G. Bannikov first mentioned that *U. a. baicalensis* was distributed in the Khentii, Hovsgol, and Mongolian Altai forests. He also reported that *U. a. beringianus* Middendorf may occur in the Khalkh and Nomrog River Valleys of Eastern Mongolia (Bannikov 1954). Later Russian scientists (Stroganov 1962) classified this subspecies as *U. a. jeniseensis* Ognev. Earlier, Lonnberg (1923) and Allen (1938) had mentioned that the Ikh Khyangan Range Forest (in Eastern Mongolia) may be home to *U. a. beringianus* Middendorf (*mandshuricus* or *basiotus*). This bear is differentiated from *U. a. jeniseensis* by a bigger body and a longer skull. Brown bears (*U. a. jeniseensis*) in Altai, Khangai, Khentii and Hovsgol are differentiated from *U. a. arctos* by their

longer, thicker, and softer hair. Coloration is variable, but mainly brown. Legs, back and sides are dark-brown. Adult males may weigh 140-400 kg (mean 300 kg) compared with 100-210 kg (mean 200 kg) for females. At birth, cubs weigh 350-700 grams (Bannikov 1954; Bold 1967).

Mating takes place from late June to early July, and young are born from about January to February. Litter sizes of 1-2 are most common (Bold 1967).

In Mongolia, brown bears occupy a wide range of habitats including dense forests, sub-alpine mountain areas, and tundra. Common habitats of brown bears in Mongolia are remote and dense forests with fallen trees, marshes and forest glades. During spring and summer they prefer alpine areas and river valleys with forest glades and nearby reservoirs where they rest in tall grasses and bushes. In the Mongolian Altai, brown bears live in small willow groves or rocks. Depending on climate and location in Mongolia, bears hibernate from October-November until March or even May, i.e., 5-6 months. During years in which food is abundant, bears begin hibernation later, at the end of November. Brown bear dens mainly occur under thick fallen trees or gaps among roots and rocks.

Brown bears in Mongolia mainly eat plants such as grasses, sedges, bulbs, and roots. They also eat insects such as ants, as well as fish and small mammals. In some areas they have become significant predators of ungulates such as moose (*Alces alces*), caribou (*Rangifer tarandus*), and red deer (*Cervus elaphus*) (Bold 1967; Dulamtseren 1970). Foods used depend on landscape, plant condition and plant quality. In early spring, brown bears in Mongolian forests feed on poplar, offshoots of trees, moss, roots, nuts from the previous season, and ants. From the beginning of summer, they feed mostly on berries, fruit, nuts, green plants, insects, fish, and often scavenge. They occasionally predate moose, wild boar (*Sus scrofa*), roe deer (*Capreolus capreolus*), red deer, and musk deer (*Moschus moschiferus*). At the end of summer and beginning of autumn, bears mainly feed on plants because of the abundance of various ripe berries, nuts and plant roots. Brown bears in the Mongolian Altai feed on pikas (*Ochotona*



Photo 12.1: A) Brown bear, B) Gobi bear (National Natural History Museum, Ulaanbaatar).

spp.), marmots (*Marmota* spp.), and other rodents. Bears in northern Mongolia often visit oat fields in the fall, where local people sometimes kill them (Bold 1967; Dulamtseren and Ganbat 2000).

Status

Geographic distribution

In Mongolia, brown bears occur in 4 separate populations: in Hovsgol, western Altai, the Hentei Mountains, and in the upper Onon and Uldz valleys (Fig. 12.1). The species is not common anywhere in the country and recent regional extinctions have been reported (Bold 1967; Mallon 1985; CITES reference-book 2001).

Population

According to a report by the Institute of Biology, Mongolian Academy of Sciences (1986), there were about 500 brown bears in Mongolia inhabiting 50,000 km² in 4 provinces. Since then, no population surveys have been conducted for brown bears in Mongolia. However, circumstantial evidence suggests that the number of brown bears and their area of distribution have declined sharply since the early 1990s. Most likely, this is primarily due to illegal hunting and increased demand for bear body parts in the medicinal trade (Zahler et al. 2004).

Threats

Brown bears in Mongolia have almost no natural threats except for occasional natural starvation, of which instances occurred in 1962, 1971 and 1988 (Bold 1967;

Dulamtseren and Ganbat 2000). During starvation events, brown bears visited river valleys and mountain steppes of eastern Mongolia, 130-200 km from their main areas of distribution. In autumn 1988 after a prolonged drought in most forests of Mongolia, there were 103 reported cases of starving and vagrant bears in Central, Khentii and Selenge provinces (Dulamtseren and Ganbat 2000). At that time, local people shot 47 vagrant bears. All of the bears were emaciated and some lacked internal fat entirely. There were two cases of bears visiting towns, one of which occurred in the capital city, Ulaanbaatar (Dulamtseren and Ganbat 2000). There has been increased illegal hunting of bears to take the gall bladder and claws to be sold for Asian markets. Foreign hunters occasionally hunt brown bears.

Human-bear relationships

Mongolians call the brown bear “khuren baavgai,” which means “brown bear.” The name for adult males is “sharmaakhai,” for females “evsh,” and for cubs “bambaruush” or “bambarsh.” There are some specific local names for brown bears in Mongolia. Buryats (minority people) call them “baakhaldai” and/or “khun guruus” which means “man-animal.” Western Mongolians call them “ayu” and/or “khun khar guruus,” which means “man-black-animal,” and they call cubs “almant-sag.”

Brown bears were traditionally hunted by local people for their meat and fur. Reindeer herders in northern Mongolia and Buryats, especially old hunters, hunted bears at least once per year. Beginning in the 1990s

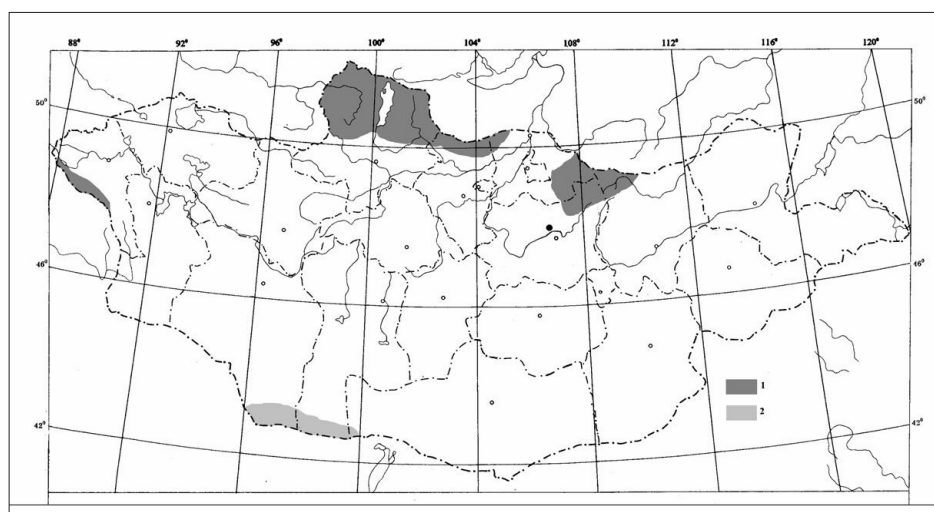


Fig 12.1: Distribution of bears in Mongolia. 1. Brown bear *Ursus arctos jeniseensis*. 2. Gobi bear *U. a. isabellinus*. The map was drawn according to Dulamtseren (1970), Sokolov and Orlov (1980), and Mijiddorj (2006).

when border trading was opened between China and Mongolia, many bears have been killed for their gall bladder, skin, internal fat and meat, to sell to Chinese traders. As of 2006, a bear gall bladder could be sold for about US\$500, the skin US\$800, paws about US\$100 each, and meat and internal fat about US\$3/kg. In an October 2004 *UB Post* newspaper article, it was reported that three Vietnamese nationals were captured attempting to smuggle 80 bear gall bladders out of Mongolia. Even if this were the only smuggling effort involving brown bear parts, it was still likely a sizeable fraction of the brown bears left in Mongolia (Zahler et al. 2004).

Historically there are not many records of brown bear conflicts with humans. However, during the 1970s, 2 brown bears were killed in Khentii Mountains due to their constant predation on livestock.

Commercialization of bears

Mongolia has no bear farms for utilization on a commercial basis. Only the Mongolian State Circus has some brown bears for show. There are also no data on the import and export of bears to or from Mongolia.

Present management systems

The Mongolian brown bear is currently listed in Appendix II of CITES. No other conservation measures have been taken for the brown bear in Mongolia. Due to the lack of legislation on this species, their hunting status remains unclear.

Recommendations

Detailed range and population assessments should be done in the near future. The species should be included on the list of rare animals in Mongolia as vulnerable. Enforcement of laws prohibiting illegal sale of bear products on a local market level is also necessary.

Gobi Bear (*Ursus arctos isabellinus*)

Biology

In 1943, Bannikov (1954) reported a dead Gobi bear in the Tsagaan Bogd Range, and he mentioned that this animal might be *Ursus pruinosus*. The skin was smaller than that collected from a specimen in northern Tibet

by Przewalskii and Kozlov, and its claw structure was different. V. E. Sokolov and V. N. Orlov identified it as an independent species, the Gobi bear (*U. gobiensis*) based on their craniological study (Sokolov and Orlov 1992). However, Tuya Tserenbata (Great Gobi Project 2006 personal communication) has recently conducted a genetic study on the Gobi bear and re-classified it as *U. a. isabellinus*.

The general appearance of the Gobi bear is similar to that of the brown bear, but smaller (see Photo 12.1). The body length of an adult male taken by hunters from Tsagaan Bogd Mountain was 168 cm, its crest height 92 cm, and its weight 90 kg (Bold 1967). Some males can reach up to 120 kg (Sokolov et al. 1996). Females are smaller than males, and the length measured from one skin was only 98 cm. Summer color is a homogeneous brown, but in winter and spring color changes to a light brown and/or grayish brown. The feet and neck are darker than the body. Claws are straight, bright, and short, but not sharp.

Status

Distribution and range

In the 1920s and 30s the Gobi bear was found in the eastern Aj Bogd Mountains of the western Trans-Altai Gobi. In the late 1980s, the Gobi bear was distributed from Atas-Uul mountain (96° 20' E) in the west, to the Khutsiin Shand mountain (99° 30' E), the Tost and Nemegt mountains, the Khairkhan and Zakhui Zarman oases, the Edreng range, and south to the border with China, a range of 250 km in length and no more than 50 km in width (Sokolov et al. 1996; Tulgat 1993a). The current distribution is restricted to a narrow line in the Trans-Altai Gobi along the Mongolian and Chinese border from the east slopes of the Atas Uul Mountains, and from the Talin Meltsiin Uul mountains to Khutsin Shand Spring. They can be found in Segs Tsagaan Bogd, Shar Khuls and Tomortoi Khokh Ranges, Atas and the Inges Mountains from Tsagaan Bogd to the east, Baruun Toroi Range to the west, and the Zaraa and Buurin Khar Mountains to the north (Fig.12.2). There are 2 different estimates of range area: 10,000-15,000 km² (Tulgat 1993b) and about 18,000 km² (Mijiddorj 2006), both of which are less than half of the previous range.

Ecology and habitat

The Gobi bear mainly occurs in hilly rock areas, close to ponds and springs of oases such as Shar Khuls, Tsagaan Tokhoi, Tsagaan Burgas, Ulziibelgikh, and Khushuut. The main habitat of the Gobi bear is directly connected with open water sources and oases, where it

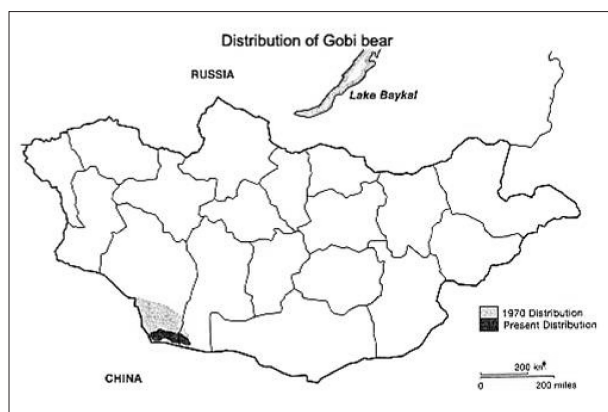


Fig. 12.2: Distribution of the Gobi bear in Mongolia (Mijiddorj 2006).

mainly feeds on *Anabasis* sp., *Sympegma* sp., and in summer prefers *Rheum* spp. roots, *Nitraria* spp. berries, *Lycium* spp., *Glycyrrhiza* spp. roots, upper sprouts of *Ephedra przewalskii*, leaves of *Zygophyllum potanini*, and young shoots of *Phragmites communis*. During times of low food supply, they scavenge on carcasses of ibex (*Capra ibex*) and other animals. In summer, they mainly feed on *Nitraria sibirica* berries. Bold (1967) mentioned that the Gobi bear is polygamous, however, Tulgat (1999) concluded that it is monogamous based on his observational study.

Population and threats

During the 1960s there were an estimated 15-20 bears (Bold 1967), 20 in 1970 (Bold and Dulamtseren 1975), 25-30 at the beginning of the 1980s (Sokolov et al. 1996), 50-60 towards the end of the 1980s, 30 in the early 1990s (Tulgat 1995), and 25-35 in the beginning of 2002 (Mijiddorj 2002). As of 2006, the population numbered at least 20 (Amgalan et al. 2005). One possible reason for the low population is that bears cannot find each other during the mating season at the few water sources of Gobi region (Mijiddorj 2006).

Human-bear relationships

Mongolians call the Gobi bear “mazaalai.” Male, female and cub names are similar to the brown bear names. Local people from the Gobi area call the Gobi bear “khun khar guruus,” which means “man-black-animal” and they call cubs “almantsag.”

Because of its highly endangered status and rarity, Mongolians traditionally do not hunt Gobi bears. However, since the 1940s, there have been 16 documented Gobi bear deaths at the hands of humans: 6 were killed by Russian geologists mistakenly believing them to be

brown bears, 5 by border guards (for unknown reasons), 4 by locals defending themselves from bear attacks, and 1 for the Natural History Museum (Mijiddorj 2006).

There is only one report of the capture of a Gobi bear cub by nomads, who fed it for a short time and released it (Bold 1967). Also, in 1969, a cub caught by nomads from Tsagaan Bogd mountain, was brought to the state circus in Ulaanbaatar and was fed and trained for 1 year (Mijiddorj 2006).

Present management Systems

Conservation measures

Hunting has been prohibited since 1953. Gobi bear habitat is included within the Great Gobi Strictly Protected Area, where supplemental feeding is being conducted. Rangers are responsible for monitoring scientific research within Gobi bear habitat. Gobi bears are categorized as rare species in the Mongolian Red Book (Shiirevdamba 1997) and CITES Appendix I. According to present “Law on Fauna,” a person who hunts or captures rare animals without an appropriate permit will be held criminally responsible and will be imprisoned for 3-5 years. The Mongolian government is starting a captive breeding program.

Limitations of current systems

Similar to brown bear conservation, very limited funds have been available for the Gobi bear until 2004, when UNDP/GEF’s “Conservation of Great Gobi and its umbrella species project began.

Recommendations

The development and implementation of protection measures based upon ecological research (which will require satellite telemetry) is needed. We suggest that vegetation and undergrowth in and around oases, ponds and springs be protected and restored. Also, there needs to be an investigation on the feasibility of opening and restoring waterholes in areas with inadequate supplies. An increase in the number of feeding stations providing high quality food during the gestation period would also help in monitoring the bear throughout the year. We suggest that border guard points and local nomadic settlements should be removed from important water sources and oases, where bears can then be translocated. Gobi bears should be reintroduced into the range they occupied during the 1920s and 30s. One critical legislative action should be listing as category I endangered in the IUCN Red Book.

References

- Allen G (1938) The Mammals China and Mongolia. Part I.
- Amgalan L, Mijiddorj B, Batsaikhan N, Tsendjav D, Boldbaatar SH (2005) Current population number of the Gobi Bear (*Ursus gobiensis* Sokolov et Orlov, 1990). Proceedings of the Institute of Biology, MAS.
- Bannikov AG (1954) The Mammals of the Mongolian People's Republic. Proceedings of the Mongolian Commission. 53 pp. (in Russian)
- Bold A (1967) Brown bear and Gobi bear in Mongolia. Proceedings of Institute of Biology. N2. Ulaanbaatar, 5-51. (in Mongolian)
- Bold A, Dulamtseren S (1975) Rare and endangered mammals and birds in MPR. Proceedings of the Institute of General and Experimental Biology. N10. (in Mongolian)
- CITES Reference-book (2001) Ulaanbaatar. (in Mongolian)
- Dulamtseren S (1970) The Guide Book to Mongolian Mammals. Ulaanbaatar. (in Mongolian)
- Dulamtseren S, Ganbat D (2000) Starvation of the brown bear in Khentii mountain. Proceedings of the Institute of Biology. N22. (in Mongolian)
- Institute of Biology, Mongolian Academy of Science (1986) Population assessment of the Mongolian mammals. The property of the Institute of Biology, MAS. (in Mongolian)
- Lonnberg E (1923) Remarks on some Palearctic bears. Proceedings of the Zoological Society of London.
- Mallon DP (1985) The Mammals of the Mongolian People's Republic. Mammal. Rev. 15 (2): 71-102.
- Mijiddorj B (2002) Gobi bear distribution and ecology in Mongolia. Journal of Wildlife Management (14): 12-13.
- Mijiddorj B (2006) "Problems of conservation and some biological and ecological aspects of the Gobi Bear (*Ursus gobiensis*)". Ph.D. thesis. Ulaanbaatar, Mongolia.
- Shiirevdamba TS (ed.) (2006) Mongolian Red Book. Ulaanbaatar, Mongolia.
- Sokolov VE, Orlov VN (1992) New species of bear - *Ursus gobiensis* sp. n. *mazaalai* or Gobi bear. Internationales symposium Erforschung biologischer Ressourcen der Mongolei in Deutschland. vom 25.3-30.3. (in German)
- Sokolov VE, Orlov VN (1980) Guidebook to Mammals of the Mongolian People's Republic. Moscow.
- Sokolov VE, Bold A, Dgebuadze YY, Dulmaa A, Lobachev VS, Munkhbayar KH, Orlov VN, Semionov DV, Fomin VE (1996) Rare animals of Mongolia (vertebrates). Moscow: IPEE RAN. pp. 184. (in Russian)
- Stroganov SU (1962) Siberian mammals. Carnivores. Moscow.
- Tulgat R (1993a) Food of the mazaalai (Gobi bear) in Trans-Altai Gobi. In: Proceedings of the Special Protected Areas workshop. Ulaanbaatar. (in Mongolian)
- Tulgat R (1993b) Breeding, threats and problems of conservation of Gobi bear. In: Proceedings of the Special Protected Areas workshop. Ulaanbaatar. (in Mongolian)
- Tulgat R (1995) Past and present condition on distribution of Gobi bear (*Ursus gobiensis* Sokolov et Orlov, 1992). In: J Badamkhand (ed.) Biological resources and nature condition of Great Gobi Strictly Protected Area. pp. 110-112.
- Tulgat R (1999) Mating behavior and reproduction of Gobi bear (*Ursus gobiensis* Sokolov et Orlov, 1992). Proceedings of General and Experimental Biology Division, Institute of Biology. N1. (in Mongolian)
- Zahler P, Lhagvasuren B, Reading R, Wingard J, Amgalanbaatar S, Gombobaatar S, Barton N, Onon YO (2004) Illegal and unsustainable wildlife hunting and trade in Mongolia. Mongolian Journal of Biological Sciences 2 (2): 23-33.

Appendix: Publications on Bears in Mongolia

- Avirmed A, Mijiddorj B, Narantsatsralt B (1993) Current status and ecosystem changes of the Great Gobi Strictly Protected Area. Proceedings of the conference "Natural conditions and biological resources of the GGSPA," Ulaanbaatar, Mongolia. (in Mongolian)
- Dash Y (1979) Ecological background of conservation of rare carnivores in Mongolian Gobi. In: Ecological background for conservation and rational use of carnivores. Moscow. (in Russian)
- Masuda R, Murata K, Aiurzaniin A, Yoshida MC (1998) Phylogenetic status of brown bears (*Ursus arctos*) of Asia: A preliminary result inferred from mitochondrial DNA control region sequences. Hereditas 128: 277-280.
- McCarthy T, Mijiddorj B, Waits LP (2000) Status of the Gobi bear in Mongolia as determined by noninvasive genetic methods. Draft. 20 pp.
- McCarthy T (2000) Ecology and conservation of snow leopards, Gobi brown bears and Wild bactrian camels in Mongolia. Ph.D. Dissertation, University of Massachusetts, Amherst, MA.
- Mijiddorj B (1996) Biotechnical measurements to protect the Gobi Bear. Proceedings of the Mongolian Agricultural University. No. 28, pp. 45-51, Ulaanbaatar, Mongolia. (in Mongolian)
- Mijiddorj B (2000) Behavioral peculiarities of the Gobi

- bear. Proceedings of the Institute of Biology, MAS. No. 22, pp. 240-241. (in Mongolian)
- Mijiddorj B (2004) Food composition and seasonal diet changes of the Gobi bear (*Ursus gobiensis*). Proceedings of the conference "Trans-Altai Gobi Study Review," Ulaanbaatar, Mongolia, pp. 58-66. (In Mongolian)
- Namnandorj O (1976) Protected areas and rare animals of the MPR. Ulaanbaatar. (in Mongolian)
- Rogovin KA (1980) Gobi bear in Mongolia. In: Hunting and Hunting farms. N9. (in Russian)
- Schaller GB (1998) Wildlife of the Tibetan Steppe. The University of Chicago Press. Chicago.
- Schaller GB, Navantsatsralt RT (1993) Observations on the Gobi brown bear in Mongolia. In: Bears of Russia and adjacent countries-State of Populations, vol. 2, pp. 110-125. Moscow: Ministry of Environmental Protection.
- Simukov A (1973) In the desert of west Gobi/ Modern Mongolia, N6.
- Sokolov VE, Orlov VN (1992) Rare animals of western Mongolia, Moscow. (in Russian)
- Tumur-Ochir S (1967) Survey of Gobi bear. Report of expedition.
- Tulgat R (1995) Distribution, location of Gobi bear in the past and at present. Proceedings of the conference "Natural condition, biological sources of Great Gobi strictly protected area". pp. 110-112.
- Zhirnov LV, Bugayev KE (1983) Large mammals of Trans-Altai Gobi. In: Complex characteristics of Trans-Altai desert ecosystems. Puschino. (in Russian)
- Zhirnov LV, Ilinsky VO (1985) The Great Gobi Protected Area - refuge of rare animals of Central Asian deserts. Moscow. (in Russian)