

*The Endangered Mammals
of Tibet*



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FOREWORD

The Environment and Development Desk is releasing an updated version of the book *The Endangered Mammals of Tibet*. This book contains description of mammals found in Tibet, whose existence on this planet is threatened or who are on the verge of extinction, as observed under the relevant international conventions and Chinese laws. The book provides background information about the habitat, behaviour, and threats to survival for each of these mammals.

The discovery of the alarming and increasing trade in animal and animal parts in Asia, particularly in India and China, with Tibet being an important trade link between the supply and demand markets in these two countries, makes the release of this book timely and much needed. Environmental protection is now regarded as a priority in China, but China faces a huge uphill task in protecting the environment. This book is aimed at informing both Tibetan and non-Tibetan readers of the serious risks currently faced by wild animals, which have same rights as humans to live freely and in harmony with their surroundings on this planet.

There have been a few isolated cases of Tibetans being involved in the international trade in animal and animal parts. We strongly urge Tibetans to desist from engaging in activities that directly and indirectly lead to the killing of precious wildlife for short-term monetary gains. Such activities are not only totally against the laws of respective countries but are also morally wrong and against the basic teachings of the Buddha.

In connection to this, we would like to advise Tibetans to stop using clothes made from the pelts, skins and other parts of these precious wild animals. To do so would help Tibetans to gain merit and would help to protect the life of animals, who, unlike humans, cannot speak out in their own defense.

Kalon Tripa
Minister of Department of Information and International Relations
Central Tibetan Administration
Dharamsala
January 2005

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THE CARNIVORES



Bears

ASIATIC BLACK BEAR

Ursus (or *Selenarctos*) *thibetanus*

ཕྱི་རྒྱལ་

Physical Description

The Asiatic Black Bear's scientific name, *Ursus thibetanus*, translates into "Moon Bear of Tibet". The Bear is also known as the Tibetan, Himalayan, or Formosan Black Bear, the Collared Bear, the Moon Bear, and the White-breasted Bear. The Asiatic Black Bear is dark brown and black, with a distinct crescent moon-shaped patch of cream-coloured fur on its chest. The ears of the Asiatic Black Bear appear much larger than those of other bear species. The Asiatic Black Bear is a medium-sized bear, with a body length of 127 to 188 centimetres (50 to 74 inches). Adult male bears weigh between 100 and 200 kilograms (220 and 440 pounds), while adult females weigh between 50 and 125 kilograms (110 to 275 pounds), and have lighter muzzles than the males.

Habitat

The Asiatic Black Bear inhabits thickly forested areas in the hills and mountains and moist tropical forests below alpine levels. The Bear occurs at altitudes as high as 3,000 metres (9,800 feet) in the summer. In the winter, however, the Asiatic Black Bear descends to lower altitudes. The Asiatic Black Bear is found in far eastern Russia, southern Asia, Tibet, China, and Japan. The Bear's habitat range in Tibet includes the Himalayan Mountains in the South, the hilly and mountainous regions, including the Hengduan Mountains, in the East and Southeast, and the area from Yushu Prefecture east towards the Gyalmo Tsawa Rong region in the Northeast.

Eating Habits

The Asiatic Black Bear is omnivorous. Like most other wild animals, the Bear favors foods that yield the greatest dietary value compared to the amount of energy needed to acquire the foods. Seasonal climate and geographical location also affect the Asiatic Black Bear's choice of diet. The Asiatic Black Bear is mainly a carnivore, but it also eats termites, beetles, larvae, honey, fruits, nuts, berries, grasses, and herbs.

Behaviour and Reproduction

The Asiatic Black Bear generally sleeps through most of the day and hunts and eats at night. In the colder areas of the Bear's habitat range, the bears retreat to dens to hibernate in the winter. The bears most often make their dens in rock cavities or hollow trees. It is not known whether hibernation occurs in the consistently warm areas of the Asiatic Black Bear's habitat range. The size of a single bear's territory typically ranges from seven to 13 square kilometres (three to five square miles), but may vary significantly depending on the availability of food sources.

The Asiatic Black Bear usually does not reach sexual maturity until it is between three to four years of age. When exactly the Bear's breeding season begins depends upon climatic conditions. The timing of the breeding season thus varies from year to year, as well as across Bear's habitat range. The Asiatic Black Bear typically mates between June and July, though, and female bears generally give birth in January or February. Asiatic Black Bear mothers give birth in dens they have sought out during the winter or early spring. Most mothers give birth to one to four cubs per breeding season. Each cub weighs about 227 to 298 grams (eight to 10.5 ounces) at birth. Cubs are born blind and helpless, but develop quickly in the few weeks after their birth, nourished by the rich milk of their mothers. Though cubs are usually weaned by the time they are six months old, they stay with their mothers for two to three years. Females typically do not breed again in the year after having given birth, because they are still caring for yearlings.

Asiatic Black bears in captivity have lived beyond 30 years, but the average life span of bears in the wild is unknown. The Bear's predators include wolves, tigers, and Brown bears.

Present Status

The Asiatic Black Bear has been categorized as Vulnerable by the IUCN, The World Conservation Union, as documented in their *2003 IUCN Red List of Threatened Species*. The Asiatic Black Bear has also been included in Appendix I of the UN Convention on International Trade in Endangered Species, or CITES, since 1979. The Asiatic Black Bear is under second class protection in China and is included in Schedule III of the Indian Wild Life (Protection) Act of 1972. Unfortunately, legal protection for the Asiatic Black Bear is rarely enforced. The Asiatic Black Bear population in China was recently estimated to be approximately 7,000.

Threats to Survival

Habitat destruction and poaching are the major threats to the Asiatic Black Bear's survival. The Bear's habitat has been lost and degraded as a result of logging and infrastructure development, including the expansion of human settlements and road networks. Most of the Asiatic Black Bear's habitat range is now composed of highly isolated and non-contiguous areas of land, all of which are subject to human encroachment. As

the bear species most favored by the Asian medicinal market for the presumed potency of its organs, the Asiatic Black Bear population is also suffering from the effects of poaching. The bile and gall bladders of the Bear are highly sought after for their medical use in reducing inflammation and fighting fevers. Poachers also sell the Asiatic Black Bear's pelt and paws.

References

- Asiatic Black Bears, *Asiatic Black Bears*, <http://www.asiatic-black-bears.com>, Aug 2004.
- BBC, *Science and Nature - Wildfacts - Asiatic Black Bear*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/10.shtml>, Aug 2004.
- Bear Taxon Advisory Group, *Asiatic Black Bear*, <http://www.bearden.org/asibear.html>, Aug 2004.
- Bear Specialist Group, 1996: *Ursus thibetanus*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- PBS, *The Living Edens: Bhutan Animal Archive – Black Bear*, http://www.pbs.org/edens/bhutan/a_bb.htm, Aug 2004.
- Servheen, C., Hereto, S., and Peyote, B., 1999: *Bears: Status Survey and Conservation Action Plan*, IUCN Bear and Polar Bear Specialist Groups, IUCN, Gland, Switzerland and Cambridge, UK.
- Stirling, Ian, 1993: *Bears, Majestic Creatures of the Wild*, Rodale Press, Emmaus, Pennsylvania.

TIBETAN BROWN BEAR

Ursus arctos pruinosus

རྩྭ་མེད་ཀྱི་

Physical Description

The Tibetan Brown Bear is a subspecies of the Brown Bear. The Tibetan Brown Bear has shaggy, dark brown to black fur, with a cream to cinnamon face, and a white collar that broadens from the shoulders to the chest. The Tibetan Brown Bear's small ears are covered with long black fur. The Brown Bear's sense of smell is much more acute than its hearing and sight.

The Brown Bear has a concave outline to its massive head and snout, and high shoulders that produce a sloping back line. The claws of a Brown bear can reach almost 12.7 centimetres (five inches) in length. The Tibetan Brown Bear is a medium-sized bear. The combined length of the Brown Bear's head and body is 172 to 284 centimetres (68 to 112 inches). The Bear's tail length ranges from just six to 22 centimetres (2.5 to 8.5 inches). The Brown Bear weighs about 95 to 780 kilograms (209 to 1,720 pounds). Adult male bears are typically heavier than adult females.

Habitat

The Tibetan Brown Bear inhabits alpine forests, meadows, and steppe, at elevations from 2,000 to 4,500 metres (6,560 to 14,760 feet). The Brown Bear has the widest habitat range of any bear species in the world. The Bear's range includes: northwest North America; northern Europe, from Scandinavia to eastern Russia; the central European mountains; and parts of West and Central Asia, from Syria, across the Central Asian Republics, to the Tibetan Plateau. The Tibetan Brown Bear, however, is found only on the Tibetan Plateau.

Eating Habits

The omnivorous Brown Bear can eat up to 11 to 16 kilograms (25 to 35 pounds) of food per day, or roughly two percent of its body weight. The bulk of the Tibetan Brown Bear's diet consists of pikas, green and dry grass, and roots. The Tibetan Brown Bear also eats ungulates (probably scavenged) like blue sheep, argali, chiru, and yaks, as well as marmots, tubers, herbs, and insects. The Tibetan Brown Bear occasionally attacks livestock.

Behaviour and Reproduction

The Brown Bear is a solitary animal, except for mothers accompanied by their cubs. However, Brown bears will congregate where food is abundant, such as at salmon streams or garbage dumps. The Tibetan Brown Bear probably hibernates from October to April. The Brown Bear breeds in May or June. Bear mothers give birth in January or February, each to as many as four cubs. Cubs are helpless at birth and weigh about 364 grams (13 ounces). Cubs stay with their mothers for about four years after their birth. Mothers generally do not give birth to another litter until the spring after they have separated from their cubs.

The life span of the Brown Bear ranges from 20 to 30 years, for bears in the wild. Brown bears in zoos live for somewhat longer. The Brown Bear can run at speeds up to 50 kilometres (30 miles) per hour.

Present Status

The Tibetan Brown Bear is listed under Appendix I of CITES and the U.S. Fish and Wildlife Service has designated the Tibetan Brown Bear endangered. The Tibetan Brown Bear is under second class protection in China. Brown bears are included in Schedule II, Part I of the Indian (Wildlife) Protection Act of 1972.

Threats to Survival

The Brown Bear population has dropped to less than two percent of its original size. This dramatic decrease in numbers can be partially attributed to habitat loss. The most serious threat to the Brown Bear's survival, however, is that posed by increased poaching of the Bear. The Brown Bear is poached to obtain the Bear's body parts, including its gall bladder, for use in traditional Asian medicines. Furthermore, Tibetan nomads often kill the Tibetan Brown Bear because the Bear is dangerous, may prey upon livestock, and may be considered a manifestation of an evil spirit. Because the Brown Bear has a low birth rate and its cubs have a high death rate (up to 50 per cent mortality), it is especially difficult for the Bear population to recover its losses.

References

Schaller, George B., 1998: *Wildlife of the Tibetan Steppe*, The University of Chicago Press, London, 80pp.

Wang, Youzhi, and Hu, Jinchu, 1999: *Color Pictorial Handbook of the Mammals of Sichuan*, Chinese Forestry Publication Press, 278pp.

GIANT PANDA

Ailuropoda melanoleuca

ཕྱག་པུ་ལོ་

Physical Description

The Giant Panda is so endangered that the World Wildlife Fund (WWF) chose to use a picture of the animal as its logo. Although the Panda's historical habitat range falls mostly in Tibet, the Chinese government calls the Giant Panda one of China's national treasures, and has used the Panda as the focus of several of its major publicity campaigns. The Giant Panda is so popular partly because of its attractive, distinctive colouring - the Panda's legs, shoulders, eyes, ears, and nose are black, while the rest of its body is white. This mottled colouring probably serves to camouflage the Giant Panda within its natural habitat of deep forests. Because the forest canopy appears patchy when looked up at from below (overhead branches and leaves look dark and the sky looks light), it is difficult for the Panda's predators to spot it when it is sitting in the trees. The Giant Panda's smooth coat, dual-layered and oily, additionally protects the Panda from the cool and damp climate of its habitat. The inner layer of the Giant Panda's fur is dense and wool-like, while the outer layer is coarse. The Panda also has a small furry tail that measures 10 to 15 centimetres (four to six inches) long.

The Giant Panda's head is large in proportion to the rest of its body. The Panda has large molars and powerful muscles that extend from the top of its head to its jaws that together enable the Panda to crush fibrous plant material like tough stalks. A tough, horny lining protects the Giant Panda's oesophagus from bamboo splinters. Thick muscular wall linings similarly protect the Panda's stomach. The Giant Panda has five fingers and a specialized wrist bone called a sesamoid that enables the Panda to more easily grasp and manipulate bamboo. The hind paws of the Giant Panda lack the heel pads found in the seven other bear species. The Giant Panda is slightly smaller than the Black Bear, with a body length of 160 to 190 centimetres (5.2 to 6.2 feet) and a height of about 70 to 80 centimetres (2.3 to 2.6 feet) at the shoulder. Giant pandas weigh between 80 and 150 kilograms (176 to 331 pounds). Females weigh about 10% less than males.

Habitat

The Giant Panda can tolerate a wide variety of climates, ranging in temperature from very hot to very cold, but most pandas inhabit humid, mountainous forests with dense bamboo stands, near streams, at elevations between 2,700 and 3,900 metres (8,900 to 12,800 feet). Though the Giant Panda may descend to as low as 800 metres (2,600 feet) during the winter, it is usually not found below 1,200 to 1,300 metres (3,900 to 4,300 feet) because of the impact man has had on the Panda's habitat.

The Giant Panda is confined to portions of six mountain ranges in Tibet and China, including the Qinling, Min, Qionglai, Daxiangling, Xiaoxiangling, and Liang Mountains. These mountain ranges are found in the Amdo and Kham regions of Tibet (the Gansu and Sichuan provinces of China) and the Chinese province of Shaanxi. The highest concentration of Giant pandas occurs in eastern Tibet (in Sichuan Province).

Slightly over half of the Giant Panda's population occurs in 33 nature reserves in Tibet and China. Five of these reserves are in Shaanxi Province, two are in Gansu, and the rest are in Sichuan. The largest of the reserves in which the Panda is found is the 2137.5 square-kilometre (825 square mile) Baishuijiang Reserve in Gansu Province. The largest Giant Panda breeding center is located within the Wolong Nature Reserve in Lungu (Wenchuan) County of the Ngaba (Aba) Prefecture, Sichuan Province.

Eating Habits

Though the Giant Panda was once a carnivore, due to environmental changes, the overwhelming bulk of the Panda's diet (over 99%) now consists of bamboo leaves, stems, and shoots. Since the Giant Panda's intestinal system is relatively inefficient, the Panda must consume 10 to 18 kilograms (22 to 40 pounds) of bamboo leaves and stems per day to meet its nutritional needs. When consuming fresh bamboo shoots, however, the necessary intake for a Giant panda rises to approximately 38 kilograms (84 pounds) per day. It is no surprise, then, that the Giant Panda spends 11 to 14 hours of its days foraging. The Panda supplements its diet with grasses and flower bulbs, and, occasionally, fruit, fish,

eggs, insects, carrion, and small rodents like bamboo rats.

Behaviour and Reproduction

The Giant Panda descends to lower elevations in the winter rather than hibernating. The Panda is most active at twilight and at night. The Giant Panda is primarily terrestrial, but it climbs into the trees from time to time, to play and sleep in the sun, or to avoid predators or dominant pandas on the ground. The Panda's short claws make the animal an efficient climber. The Giant Panda can also swim. Pandas communicate with each other using over 12 different types of vocalizations.

The Giant Panda is a solitary animal, living with others only during the mating season. An individual panda's home range generally measures from about 3 to 10 square kilometres (1.2 to 3.9 square miles) in size, which is quite small compared to the home ranges of other bear species. Female pandas tend to remain in discrete home ranges, concentrating most of their activities within a small area of their ranges. Males, on the other hand, tend to have larger home ranges that may overlap the home ranges of several females and adjacent males. The size of a female panda's home range varies according to the availability of bamboo, while the size of a male panda's home range appears to be dependent on the number and availability of reproductive females.

Female Giant pandas reach sexual maturity at 4 to 5 years of age. Males reach sexual maturity at 6 to 7 years of age. The Panda's mating season typically takes place between mid-March and mid-May. The Giant Panda's gestation period is 129 to 159 days. Female pandas that have been impregnated in the spring give birth between August and October. The Giant Panda does not construct a permanent den, but females will take shelter in hollow trees, rock crevices, or caves when giving birth and for three to four months after their cubs are born. Each mother gives birth to one, two, or, rarely, to three cubs. Most of the time, if a mother gives birth to more than one cub in a single breeding season, she will raise one cub and abandon the other(s).

Giant Panda cubs only weigh between 100 to 200 grams (4 to 8 ounces) at birth. Cubs are born blind, helpless, and covered in sparse white hair. Panda mothers take exceptional care of their cubs, sometimes even fasting for several days after having given birth so that they can stay in their dens with their cubs. Cubs become mobile at five to six months of age and are usually weaned approximately ten months after birth. Young pandas become independent of their mothers at about one to two years (average 18 months) of age. Mature females generally only give birth every two years, each to a total of five to eight cubs within a lifetime.

The life span of the Giant Panda, for pandas in the wild, is about 20 years. The Panda is a very shy animal, avoiding humans when possible. The Giant Panda's natural predators include jackals and leopards. Yellow-throated martens prey on panda cubs. The Panda is strong enough to defend itself against most attacks.

Present Status

The Giant Panda is categorized as Endangered in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The Giant Panda is under first class protection in China. In 2004, the Giant Panda population size was estimated at around 1,600. The Panda's population is thought to have remained stable for the last 20 years. There are approximately 25 sub-populations of the Giant Panda remaining, most with fewer than 20 members.

Threats to Survival

The major threat to the Giant Panda's survival is habitat loss and fragmentation. Though the size of the Giant Panda's total range is estimated at 29,500 square kilometres (11,400 square miles), probably less than 20%, or 5,900 square kilometres (2,300 square miles), of that represents panda habitat. The Panda's habitat has been lost and degraded as a result of trees being cut down for timber and fuel wood, the conversion of forest to cropland and plantations, and the expansion of human settlements. Logging was banned throughout most of the Giant Panda's habitat range at the end of 1998, but may continue illegally.

The destruction of the Giant Panda's habitat has resulted in the fragmentation of the Panda's population. Giant pandas are dependent on bamboo. Mature bamboo plants eventually flower, produce seeds, and die. The seeds will grow into new bamboo plants, but it can take up to ten years before these plants are large enough for the Giant Panda to eat. All the plants of one species of bamboo growing in an area flower and die at the same time. Though Giant pandas can eat over 40 different species of bamboo, most pandas depend upon only the 2 to 10 species that are predominant within their home ranges. Bamboo flowers every 30 to 120 years according on the species. Giant pandas living in an area of bamboo that is in the process of dying must migrate to a new bamboo grove or face starvation. Unfortunately, the corridors between isolated groves are increasingly intensively tended agricultural areas or large urban areas. These areas are seldom hospitable to the Giant Panda. Between 1975 and 1976, the whole of the dense bamboo forest in the Namphel and Drukchu regions dried up after flowering, resulting in the death of more than 138 Giant pandas that lacked safe migration paths to new bamboo groves.

An additional threat to the Giant Panda's survival is poaching. The Panda was heavily poached in the past because of the relatively high price its pelt fetches on the international market. The pelt of a Giant panda may earn the initial seller US\$3,000, which is equivalent to two to three times the average annual income of a rural Chinese peasant, and may be resold for as much as US\$40,000 in Taiwan. Poaching of the Panda has become less severe over the last few years, because of increased educational efforts and better enforcement of China's wildlife protection laws. However, the Giant Panda is still caught in traps poachers have set to catch other animals, such as musk deer and other bears.

The Giant Panda's low reproductive rate intensifies the severity of the threats habitat loss and fragmentation and poaching pose to the species' survival. The Giant Panda has a short breeding season, mature females only raise one cub every two years, and births generally take place late in the year. Giant Panda cubs born during the winter are often too weak to survive the cold.

References

- BBC, *Science & Nature – Wildfacts – Giant Panda*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/5.shtml>, Aug 2004.
- Bear Specialist Group, 1996: *Ailuropoda melanoleuca*. In: IUCN 2003, *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://www.bearbiology.com/gpdesc.html>, Aug 2004.
- Catton, C., 1990: *Pandas*, Christopher Helm, London, 152pp.
- Kemf, Elizabeth, Wilson, Alison, and Christopher Servheen, 1999: *Bears in the Wild*, WWF, Gland, Switzerland, 11pp.
- Laidler, Liz and Keith, 1996: *China's Threatened Wildlife*, London.
- Massicot, Paul, Sept 2004: *Animal Info – Giant Panda*, <http://www.animalinfo.org/species/carnivor/ailumela.htm>, Sept 2004.
- San Diego Zoo, *Animal Bytes – Giant Panda*, http://www.sandiegozoo.org/animalbytes/t-giant_panda.html, Sept 2004.
- WWF China, *Panda Central*, <http://www.wfchina.org/english/pandacentral/index.htm>, Sept 2004.

RED PANDA

Ailurus fulgens (or *ochraceus*); *Phasis wallengrenii*

འཕུལ་ཁྱུང་ལྔ་པ་

Physical Description

The Red Panda is also known as the Lesser Panda, the Common Panda, the Bright Panda, the Red Cat Bear, and the Fire Fox. Though the Giant Panda is the Red Panda's closest relative, the Red Panda actually looks more like a raccoon. The Red Panda's fur is thick and russet-coloured, and its black-tipped tail has nine white and yellow bands. The Panda has a bear-like body, short legs, and a specialised wrist bone called the radial sesamoid that the Panda uses for grasping bamboo stalks. Unlike other bear species, the Red Panda's claws are partly retractable. The Red Panda is only slightly bigger than a large housecat, its body weighing 3 to 6 kilograms (7 to 13 pounds) and measuring between 55 and 65 centimetres (22 to 26 inches) in length. The Panda's tail measures between 40 to 45 centimetres (16 to 18 inches) long.

Habitat

The Red Panda inhabits mountainous temperate forests with a bamboo understory, at elevations from 1,500 to 4,000 metres (5,000 to 13,000 ft). The Panda occurs within the moderate climate zones of southern and southeastern Tibet, particularly in the counties of Dechen, Gyalthang, and Balung in Dechen Prefecture. The Red Panda also occurs in the dense lowland forests of northeastern Tibet. A few Red pandas reside outside of Tibet, in the Himalayan regions of Nepal, Sikkim, Bhutan, Burma (Myanmar), Laos, and western China.

Eating Habits

The Red Panda, like the Giant Panda, was originally a carnivore. Today, the Panda's diet is mostly vegetarian. The Red Panda predominately eats bamboo leaves, but may supplement its diet with bamboo shoots, acorns, berries, mushrooms, grasses, roots, lichens, and bark, especially in the spring and summer. The Panda spends much of its day feeding and has developed a low metabolism in order to compensate for the discrepancy between its low-calorie diet and the meat-based diet its digestive system is adapted for. Furthermore, the Red Panda does consume a small amount of meat from time to time - usually insects, but sometimes also bird eggs, nesting birds, and the occasional mouse or bamboo rat.

Behaviour and Reproduction

The secretive and gentle Red Panda sleeps through most of the day, curled up with its tail wrapped around its head. The Panda is most active at dusk and dawn. An agile climber, the Red Panda spends much of its time in the trees. The Panda moves slowly on the ground.

The Red Panda is a solitary animal, except for mothers with cubs. The home ranges of males may overlap those of several females. Mating occurs in early winter. Males attract females to them with loud cries. During the gestation period, which lasts 112 to 158 days, Red Panda females build dens in which to give birth. Maternal dens are constructed in cavities such as tree hollows and rock crevices. Births occur in spring and summer, with most cubs born in June.

Each Red Panda mother gives birth to one to four, but usually to two cubs, per breeding season. Cubs weigh about 100 grams (3.5 ounces) and measure about six centimetres (2.4 inches) in length at birth. Newborn cubs are completely covered in shiny white fur. The cubs' fur begins to darken to the russet colour of the adults' fur a week or so after birth. Cubs open their eyes about 20 days after birth. Cubs generally remain with their mothers for the first year of their lives. Red pandas reach full size at 12 months and sexual maturity at about 18 months. The Red Panda's life span is 12 to 14 years.

Present Status

The Red Panda is categorized as Endangered in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The

Red Panda is under second class protection in China and is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. In 1999, the IUCN estimated the number of mature Red pandas left in the world to be around 2,500. The Red Panda's population is declining.

Threats to Survival

Habitat loss is the main threat to the Red Panda's survival. Large areas of the Panda's forest habitat have been cleared for agriculture. Trees in the forest have also been cut down to provide timber and firewood for the needs of China's growing population. A survey revealed that the Red Panda population density has been significantly reduced in areas of their habitat that have been degraded by commercial logging. The Red Panda is also poached for its fur and the pet trade. The Red Panda's small population has a relatively low reproductive rate, making the threats habitat loss and poaching pose to the species' survival even more severe.

References

- BBC, *Science & Nature – Wildfacts – Red panda, Lesser panda*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/6.shtml>, Aug 2004.
- Heath, T. and J. Platnick, 1999: *Ailurus fulgens*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Ailurus_fulgens.html, Aug 2004.
- Ireton, Rob, Red Panda House, *Red Panda (Ailurus fulgens)*, <http://home.fuse.net/redpanda/redpanda.html> (2003).
- Laidler, Liz and Keith, 1996: *China's Threatened Wildlife*, London.
- Massicot, Paul, *Animal Info – Red Panda*, <http://www.animalinfo.org/species/carnivor/ailufulg.htm>, July 2004.
- Mustelid Specialist Group, 1996: *Ailurus fulgens*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- PBS, *The Living Edens: Bhutan – Animal Archive – Red Panda*, http://www.pbs.org/edens/bhutan/a_rp.htm, Aug 2004.

Cats and Dogs



BENGAL TIGER

Panthera tigris tigris

बंगल

Physical Description

Tigers were once widespread throughout the Asian continent. Over the last 70 years, however, three tiger sub-species, the Caspian Tiger, the Javan Tiger, and the Bali Tiger, have been driven to extinction. Now only five sub-species of tigers remain, and all of these are endangered. The five remaining sub-species are the Sumatran Tiger, the Siberian Tiger, the Indo-Chinese Tiger, the South China Tiger, and the Bengal Tiger, also known as the Indian Tiger. The South China Tiger previously ranged as far west as East Tibet, but, today, the only tiger sub-species found in Tibet is the Bengal Tiger.

Tigers are the largest members of the cat family. Most Bengal tigers have a reddish orange to pale yellow coat covered with thick black to dark grey vertical stripes. A few Bengal tigers instead have a black coat with tan stripes, a white coat with dark red or brown stripes, or a white coat with no stripes. No two tigers have the same stripe pattern - a single stripe pattern is as unique to a particular tiger as a person's fingerprints are to that person. Stripe patterns often even differ between the two sides of an individual tiger's body. A tiger's stripes make the tiger's silhouette less prominent in dense vegetation that may include long grass. The undersides of tigers are whitish. Tigers also have white spots on the backs of their ears that may enable them to spot each other in the forest at night. The Tiger's fur is short and thick.

Tigers have large canine teeth and strong, powerful jaws. Their eyesight is excellent and their hearing is good. The tigers' five-toed paws are heavily padded. The tigers' claws are retractable, which helps to keep them sharp. Tigers have long, stiff whiskers. Male Bengal tigers measure an average of 2.9 metres (9.5 feet) from head-to-tail and weigh about 220 kilograms (480 pounds). Females measure an average of 2.5 metres (8 feet) in length and weigh about 140 kilograms (300 pounds). Bengal tigers may be as tall as 1.1 metres (3.5 feet) at the shoulder.

Habitat

The Bengal Tiger inhabits grassland, mangrove swamps, and a wide variety of forest types, including the cold, high-altitude, coniferous forests of the eastern Himalaya Mountains. Most Bengal tigers are found in India, but there are also Bengal tigers in Nepal, Bangladesh, Burma (Myanmar), South and Southeast Tibet, and Northwest Yunnan Province in China. The areas of South and Southeastern Tibet where the Bengal Tiger occurs include the Yarlung Tsangpo River valley and the Namcha Barwa region. Tigers require adequate cover, access to a sufficiently sized population of large prey, and a constant water supply.

Eating Habits

Tigers are carnivorous. The Bengal Tiger's diet consists primarily of prey weighing over 45 kilograms (100 pounds). The Tiger prefers to hunt

wild deer, wild pigs, wild cattle, young buffalo, young elephants, and young rhinos. However, the prey available varies across the Bengal Tiger's habitat range, and the Tiger may also include fowl, fish, lizards, frogs, crocodiles, and carrion in its diet. In Tibet, the Bengal Tiger's natural prey includes takins, muntjacs or barking deer, and red gorals. Tigers rarely attack humans or cattle – those that do are most often young, old, or injured tigers trapped within an over-crowded territory.

Tigers use the element of surprise to advantage when hunting. Tigers approach their prey stealthily, under the cover of dense vegetation, and once in position, wait for an opportune moment to pounce. Tigers are patient, often spending as long as twenty to thirty minutes stalking their prey. Tigers kill prey weighing less than half of their weight with a bite to the nape of the prey's neck, and larger prey with a bite to the prey's throat. Only about one out of every 20 tiger hunts is successful. Tigers usually kill one to two large animals per week. Leftovers are buried and finished over the next few days.

Behaviour and Reproduction

Tigers are primarily nocturnal. Unlike most other cats, tigers are fond of water and are strong swimmers. Tigers can climb trees too, and they can jump as high as 9 metres (30 feet). Tigers are usually solitary, except for mothers accompanied with their cubs, but every now and then they hunt in packs or gather to share a kill. Tigers regularly travel as far as 10 to 19 kilometres (6 to 12 miles) in a day. Tigers use scent-marking and scratch trees to delineate their territory. A female Bengal tiger's range size may measure between 10 and 39 square kilometres (3.9 to 15 square miles). Males occupy larger ranges, measuring from 30 to 105 square kilometres (11.7 to 40.5 square miles), that may overlap the ranges of several females.

Tigers reach maturity at two to three years of age. Mature female tigers only breed every two to two-and-a-half years. Tigers do not have a breeding season, per se, but most Bengal tiger females become pregnant after the monsoon rains. Since the gestation period of tigers is about 104 days, this results in most births taking place between February and May. Litters consist of one to four cubs, or occasionally as many as seven cubs, but most of the time only about two cubs per litter survive to adulthood.

Newborn cubs weigh between one and 1.5 kilograms (2.2 to 3.5 pounds). Cubs open their eyes 15 to 16 days after birth. Though weaned at four to six months of age, cubs do not leave their mother to stake out their own territories until she has given birth to her next litter. Young males look for territories away from where they were born, but females sometimes share their mothers' territories. The life span of tigers in the wild is eight to 10 years, while tigers in captivity may live for 26 years.

Present Status

Tigers are categorized as Endangered in the *2003 IUCN Red List of Threatened Species* and are listed under Appendix I of CITES. The Bengal Tiger is under first class protection in China. Tigers are included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. The population of tigers has decreased over 95% in the last century. There are probably only about 5,000 to 7,000 tigers left in the wild. The Bengal Tiger is the most numerous of the remaining tiger sub-species, with an estimated population of 3,159 to 4,715 in the wild. There may be only about 30 to 35 Bengal tigers in Tibet and China.

Threats to Survival

Tigers have become endangered primarily due to poaching, hunting, and habitat loss brought about by extensive logging. Tiger bone (of which each tiger has approximately 8 to 10 kilograms) sells on the streets of Taiwan for US\$3,250 per kilogram - a quarter the price of gold. A tiger pelt sells for as much as US\$10,000, which is the equivalent of 10 years of government salary in Indochina. Other tiger body parts are sold for medicinal and spiritual purposes, including tiger brain and tiger whiskers. Medicines made from tiger brain are thought to cure acne, while a tiger's whiskers are used as charms for protection and courage. Tigers are hunted for sport as well. The solitary way of life of tigers is in some ways detrimental to the tigers' survival. Apart from not being able to profit from group hunting as lions do, tigers cannot rely on other tigers to bring them food while recuperating from injuries or immediately before and after giving birth.

References

- 5 Tigers: The Tiger Information Center, *All About Tigers*, <http://www.5tigers.org/Directory/allabouttigers.htm>, Sept 2004.
- American Museum of Natural History, 1996: *AMNH – Expedition: Endangered*, <http://www.amnh.org/nationalcenter/Endangered/tiger/tiger.html>, Sept 2004.
- Cat Specialist Group, 2001: *Panthera tigris*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://lynx.uio.no/catfolk/sp-accts.htm>, Aug 2004.
- Mingjiang, Qiu, and Danzhen, Gama, June 2000: *Preserving Tigers in the Namcha Barwa Region, Southeastern Tibet*, <http://www.5tigers.ngo.cn/savetigers/Preserving%20Tigers.htm>, Sept 2004.
- Oakland Zoo, 2003: *Asian Rainforest: Bengal Tiger*, <http://www.oaklandzoo.org/atoz/azbentig.html>, Sept 2004.
- San Diego Zoo, 2004: *Animal Bytes: Tiger*, <http://www.sandiegozoo.org/animalbytes/t-tiger.html>, Sept 2004.
- World Wildlife Fund, *Endangered Species: Bengal tiger | Ecology & Habitat*, http://www.panda.org/about_wwf/what_we_do/species/showspecies.cfm?SID=28&LID=2&FH=E, Sept 2004.
- Yiqing, Ma, Xiaomin, Li, and Helin, Sheng: *Status and Conservation of Tigers in China*, <http://www.5tigers.org/news/CatNews/No.26/cn26p06.htm>, Sept 2004.

CHINESE MOUNTAIN CAT

Felis bieti

Physical Description

Little is known about the Chinese Mountain Cat, a species that, in spite of its name, is endemic to northeastern Tibet. The Mountain Cat was until recently called the Desert Cat. The Cat has a thick, dual-layered coat, consisting of underfur protected by guard hairs. In the summer, the Mountain Cat's coat is dark brown, with paler underparts and darker hind feet. In the winter, the Cat's fur thickens and lightens in colour, turning a pale grey yellowish brown. The Mountain Cat has a few horizontal stripes on its sides and legs, as well as a brown streak across each cheek. The Cat's tail has a black tip and five to six dark grey bands near the tip. These markings are faint in the winter and more distinct in the summer.

The Chinese Mountain Cat has large ears and large auditory bullae. The Cat's ears are tipped with dark brown tufts, similar to a lynx's, but not as long. The hairs of the Mountain Cat's ear tufts measure approximately two centimetres (0.8 inches). The Cat also has hair between the pads of its feet.

The Chinese Mountain Cat has a stocky build and relatively short legs. The Mountain Cat measures about 25 centimetres (9.8 inches) tall at the shoulder. The Cat's head and body length measures 68 to 84 centimetres (27 to 33 inches). The Mountain Cat's tail is fairly short, measuring about 40% of the Cat's head and body length, or 29 to 40 centimetres (11 to 16 inches). The Cat weighs six to nine kilograms (13 to 20 pounds).

Habitat

The Chinese Mountain Cat inhabits alpine meadows, alpine scrub, and the edge of montane forests. The Cat is exclusive to the northeastern edge of the Tibetan Plateau, which falls in eastern Amdo. The Mountain Cat is most widespread in Qinghai province, but may also be found in northwestern Sichuan. The Cat's habitat range includes the Serkhog (Datong) and Daban Mountains near Xining. The Mountain Cat occurs in these mountains at elevations from 2,800 to 4,100 metres (9,200 to 13,500 feet). Most of the Cat's range is not protected, but the Cat's range does overlap three reserves - Sanjiangyuan ("Source of Three Rivers") Reserve, Tso Ngonpo (Qinghai Lake) Reserve, and Zitsa Degu (Jiuzhaigou) Reserve.

Eating Habits

The Chinese Mountain Cat preys on rodents, especially mole rats, pikas, and White-tailed Pine voles. The Cat may also eat pheasants and other birds. The Mountain Cat has been observed listening for mole rats moving underground and then digging them out.

Behaviour and Reproduction

The Chinese Mountain Cat is primarily nocturnal and usually hunts in the early morning and evening. The Cat rests and gives birth in burrows. Burrows are most often constructed on south-facing slopes. Males and females live separately. The burrows of females tend to be deeper and more secure than the burrows of males, with only one entrance. The Chinese Mountain Cat's breeding season occurs from January to March. Most litters are born in May. Litter sizes range from two to four kittens. Kittens become independent seven to eight months after birth.

Present Status

The Chinese Mountain Cat is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix II of CITES. The Mountain Cat is currently under second class protection in China, but there is pressure on the government to increase the Cat's protection to first class. The Mountain Cat probably inhabited a much wider range in the past than it does now. Further research about the Cat's population and distribution is needed.

Threats to Survival

Since the 1950s, the Chinese government has carried out large-scale poisoning campaigns to reduce rodent and lagomorph populations in areas including Qinghai and Sichuan provinces. According to the IUCN, these poisoning campaigns are the most serious threat to the Chinese Mountain Cat's survival. Pikas, previously believed to compete with domestic livestock for graze, are one of types of rodent the poisoning campaigns have targeted. Pikas are an important food source for the Chinese Mountain Cat. Poisoning campaigns targeted at the pika have not only reduced the Chinese Mountain Cat's prey base, they have poisoned cats that prey upon affected pikas and have resulted in environmental pollution. Zinc phosphide, one of the main chemicals used in early poisoning campaigns, has not been used since 1978 because of the toxic effect it was found to have on carnivores that preyed on pikas, but other, similarly poisonous chemicals continue to be used in ongoing campaigns. In recent years, scientists have discovered that pikas actually fulfill an important ecological role, in aerating overgrazed grassland. Furthermore, there are several alternative methods of pest control that are as effective as poisoning but not as damaging as to the environment. Unfortunately, many still subscribe to the wrong view that pikas are vermin and the poison campaigns have continued.

Additional threats to the survival of the Chinese Mountain Cat may include poaching and habitat degradation. Chinese Mountain Cat pelts are sold in Xining and other areas.

References

- Cat Specialist Group, 2001: *Felis bieti*. In: IUCN 2003, *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://lynx.uio.no/catfolk/bieti-01.htm>, Oct 2004.
- Cat Survival Trust, The, 2002: *Chinese Desert Cat*, <http://www.catsurvivaltrust.org/chinese.htm>, Oct 2004.
- He, Li, Garcia-Perea, Rosa, Li, Ming, and Wei, Fuwen, 2004: "Distribution and conservation status of the endemic Chinese mountain cat *Felis bieti*," *Endangered Species Scientific Newsletter*, Issue 3, <http://www.cites.org.cn/newsletter/newsletter12-e.htm#9>, Oct 2004.

CLOUDED LEOPARD

Neofelis (or *Pardofelis*) *nebulosa*

གཞིགས།

Physical Description

The Clouded Leopard has pale yellow to brown fur, with large irregular shaped markings on its body. Each marking is dark brown or black around the edge and lighter in the middle. It is this cloud-like pattern that gives the cat its name. The Clouded Leopard's forehead and legs are spotted. The base of the Leopard's tail is spotted too, but the remainder of the Leopard's tail is banded.

The Clouded Leopard's skull and teeth are similar to those of the big cats (genus *Panthera*). The Leopard's skull is long, narrow, and low. The Clouded Leopard's canine teeth, which measure 3.8 to 4.5 centimetres (1.5 to 1.8 inches) in length, are the largest canine teeth, relative to body size, of any of the cats. It often takes just a single bite from these deadly canines for the Leopard to kill its prey.

The structure of the Clouded Leopard's body and its other traits, on the other hand, are more similar to those of the smaller cats (genus *Felis*). The Leopard is stocky, with short legs and broad paws. The Clouded Leopard's body measures 60 to 107 centimetres (24 to 43 inches) long. The Leopard's tail is long and bushy, measuring on average 60 to 87 centimetres (24 to 35 inches) in length. The Clouded Leopard weighs about 20 to 30 kilograms (44 to 66 pounds). The Leopard cannot roar as loudly as the big cats.

Habitat

The Clouded Leopard inhabits a wide variety of habitats, including primary evergreen tropical rainforests, secondary and logged forests, relatively open, dry forests, grasslands and scrub, and mangrove swamps. In the Himalayan foothills, the Leopard has been spotted at altitudes of up to 2,165 metres (6,500 feet). The Clouded Leopard is found in Tibet, China, Taiwan, Nepal, Bhutan, India, Myanmar (Burma), Laos, Vietnam, Thailand, Malaysia, and Indonesia (Sumatra and Kalimantan).

Eating Habits

The Clouded Leopard hunts young buffalo, deer, small orangutans, monkeys, pigs, wild boar, squirrels, birds, and even porcupines.

Behaviour and Reproduction

The Clouded Leopard is an excellent climber, due to its long tail and broad paws, which provide grasp and balance. The Leopard can climb down tree trunks headfirst, hang from branches with its hind feet, and travel across horizontal branches while hanging beneath them. The Clouded Leopard also has superior binocular vision and is able to see quite well in light conditions that are six times too dark for humans. The Leopard hunts in the early morning and from the late afternoon into the evening. The Clouded Leopard stalks its prey on the ground, or ambushes its prey from overhanging branches. The Leopard rests and sleeps in the trees.

The Clouded Leopard is generally a solitary and secretive animal, except during its breeding season. The Leopard reaches sexual maturity at about two years of age. The Clouded Leopard's gestation period is about 86 to 95 days. The size of a single leopard's litter ranges from one to five kittens and averages three kittens. Kittens weigh 150 to 280 grams (5.3 to 9.9 ounces) at birth. Born blind and helpless, kittens do not open their eyes until 10 to 12 days after birth, and they do not become active until five weeks after birth. Kittens are independent by nine months of age. The average life span of the Clouded Leopard, for leopards in the wild, is 11 years. Leopards in captivity may live for slightly over 17 years.

Present Status

The Clouded Leopard is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species*. The Leopard is also listed under Appendix I of CITES and is protected by national legislation across most of its habitat range. The Clouded Leopard is under first class protection in China and is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. The population size of the Clouded Leopard is declining. It is currently estimated to be at below 10,000 mature breeding individuals, with none of the sub-populations containing more than 1,000 mature breeding individuals.

Threats to Survival

The principal threat to the Clouded Leopard's survival is deforestation due to logging. The Leopard is also widely hunted to obtain its decorative pelt, its teeth, and its bones. The highest proportion of Clouded Leopard pelts for sale is found in Taiwan; however, Leopard pelts are also sold in urban markets across South East Asia. The Clouded Leopard's bones are used in traditional Asian medicine.

References

- BBC, *Science & Nature – Wildfacts – Clouded Leopard*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/20.shtml>, Aug 2004.
 Big Cats Online, *Clouded Leopard*, <http://dialspace.dial.pipex.com/agarman/bco/ver4.htm>, Aug 2004.
 Big Cat Rescue, *Clouded Leopard*, http://www.bigcatrescue.org/clouded_leopard.htm, Aug 2004.
 Cat Specialist Group, 2001: *Neofelis nebulosa*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://lynx.uio.no/catfolk/sp-accts.htm>, Aug 2004.
 Cincinnati Zoo and Botanical Garden, *Clouded Leopard*, <http://www.cincinnati.zoo.org/Exhibits/AnimalExhibits/CatHouse/CloudedLeopard/cloudedleopard.html>, Aug 2004.
 Hattner, R., 2002: *Neofelis nebulosa*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Neofelis_nebulosa.html, Aug 2004.

EURASIAN LYNX

Lynx (or *Felis*) *lynx*

གཡེ།

Physical Description

The Eurasian, or Siberian, Lynx is the largest of the lynxes. The Eurasian Lynx has a stout body and long legs. The Lynx's soft, thick fur is coloured yellow to greyish brown and is marked with faint lines or spots. During the winter, the Eurasian Lynx's fur lightens in colour and becomes even thicker. The Lynx has long, prominent black ear tufts, and a short, black-tipped tail. The Eurasian Lynx often has long hair around its neck and under its chin. The Lynx's large, fur-covered feet function like snowshoes for the animal during the winter. The Lynx's body measures from 80 to 100 centimetres (2.6 to 3.3 feet) long, the Lynx's tail measures from 15 to 25 centimetres (5.9 to 9.8 inches) long, and the Lynx stands 15 to 75 centimetres (5.9 to 29.5 inches) at the shoulder. Males weigh an average of 21.6 kilograms (47.6 pounds), while females weigh an average of 18.1 kilograms (39.9 pounds).

Habitat

The Eurasian Lynx primarily inhabits cold coniferous forests. However, the Lynx also lives in deserts and high mountains. The Eurasian Lynx is found throughout Central Asia and across the entire Tibetan Plateau.

Eating Habits

The Lynx predominately eats small ungulates, including roe deer, musk deer, and chamois. When these are scarce, the Lynx supplements its diet with small hares, woodchucks, and foxes. The Lynx kills its prey with suffocation, or by severing the prey's spinal cord with a bite to the neck. The Lynx buries what it cannot finish in one meal, returning the next day to finish these leftovers off.

Behaviour and Reproduction

The Lynx is crepuscular, or active at dawn and dusk. The Lynx rests around mid-day and midnight. The Lynx generally remains active in the winter; in extreme weather, though, the Lynx takes shelter in caves or trees. The Lynx is a solitary animal, except for mothers with cubs. However, male lynx territories may overlap the territories of several females. The Lynx marks its territory by urinating on trees and rocks. Female lynx usually mate with only one male per breeding season, but males may mate with more than one female. After a gestation period of 67 to 74 days, Lynx mothers give birth to an average of two kittens, each weighing 200 to 300 grams (seven to 11 ounces). The Lynx is shy and avoids humans when possible. In the wild, the Lynx may live for up to 17 years. The Lynx may live for as long as 24 years in captivity.

Present Status

The Eurasian Lynx is categorized as Near Threatened in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix II of CITES. Hunting of the Lynx is prohibited across most of its habitat range. The Lynx is under second class protection in China and is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. The population size of the Eurasian Lynx is declining. It is currently estimated at no more than 50,000 mature breeding individuals.

Threats to Survival

The Lynx is hunted for its pelt and is additionally threatened by habitat loss due to deforestation.

References

- BBC, *Science & Nature – Wildfacts – Eurasian lynx*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/27.shtml>, Aug 2004.

Cat Specialist Group, 2001: *Lynx lynx*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://lynx.uio.no/catfolk/sp-accts.htm>, Aug 2004.

SNOW LEOPARD



Uncia (or *Panthera*) *uncia*

Physical Description

The Snow Leopard, or Ounce, may be distinguished from ordinary leopards by the colour of its fur and its wide, long tail. The Leopard's long fur is light grey, tinged with yellow, and it is marked with dark grey spots and rosettes. This mottled colouring provides camouflage for the Snow Leopard in its snowy, rocky natural habitat. The fur on the Leopard's chest is solid, unspotted white. The Snow Leopard has a dense, woolly underfur, growing to as long as 12 centimetres, that shields the cat from the cold. The Snow Leopard may also wrap its long tail, which measures up to one meter in length, or 75 to 95% of the Leopard's body length, around itself for warmth. However, the Snow Leopard's tail is primarily used for balance.

The Snow Leopard's broad paws, which are cushioned with hair, protect the Leopard's footpads and prevent the cat from sinking into snow. The Snow Leopard's enlarged nasal cavity, short forelimbs, long hind limbs, and well-developed chest muscles help the Leopard to breathe in thin air and to move adeptly across the rocky ridges of the high mountains. The Snow Leopard can jump across a distance of ten metres (33 feet) and over obstacles that are four metres (13 feet) high.

The Snow Leopard has a small, round head, with small ears. The Leopard cannot roar as deeply or as loudly as the other big cats (genus *Panthera*). The Snow Leopard's body size is similar to that of the ordinary leopard. The Snow Leopard has a body length of 100 to 130 centimetres (3.3 to 4.3 feet) and stands about 60 centimetres (2 feet) tall at the shoulder. Males weigh from 54 to 55 kilograms (119 to 121 pounds), while females weigh from 35 to 40 kilograms (77 to 88 pounds).

Habitat

The Snow Leopard is predominately associated with arid and semi-arid shrubland, grassland, steppe, and open coniferous forest, at elevations between 3,000 and 4,500 metres (9,800 to 14,800 feet). In the Himalayas, though, the Leopard may be found above 5,500 metres (18,000 feet), and in the northern areas of its range, the Snow Leopard may be found between 600 and 1,500 metres (2,000 to 4,900 feet). The Leopard spends most of its time in rocky terrain, but may travel several kilometres a day through valleys. The Snow Leopard is widely dispersed throughout the mountain ranges on and around the Tibetan Plateau, as well as on the Tian Shan Altar, Kunlun, and other mountains of Xinjiang.

Eating Habits

The Snow Leopard is an opportunistic predator, capable of killing prey up to three times its own weight. The Ibex and the Bharal are the Leopard's primary prey. However, the Snow Leopard also hunts antelope, deer, wolves, and smaller prey, including marmots, pika, hares, other small rodents, and birds. When the Leopard's typical prey are scarce, the Leopard may attack domestic livestock.

Behaviour and Reproduction

The Snow Leopard generally follows the same route each time it occasionally descends from the mountains into the grasslands and forests, where it rests. The Snow Leopard is most active at dawn and dusk. Female and male leopards live independently, and both hunt. The Snow Leopard reaches sexual maturity at two to three years of age. The Leopards mate between January and March. During the gestation period, which lasts 90 to 103 days, expecting leopard mothers build well-hidden, fur-lined dens in which to give birth, beneath rocks or in rocky crevices. Most births occur in May and June. Each female leopard gives birth to as many as five, but most often to two or three cubs. Cubs weigh approximately 320 to 708 grams (11 to 25 ounces) at birth. Like newborn kittens, the cubs open their eyes only after a week or more, but by the time they are two months old, they are very active. Young leopards leave their mothers after their first winter and begin to hunt on their own. The Snow Leopard's life span, in the wild, is 10 to 12 years. Leopards in captivity may live for as long as 21 years.

Present Status

The Snow Leopard is categorized as Endangered in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The Snow Leopard is legally protected across most of its range. The Snow Leopard is under first class protection in China and is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. The total Snow Leopard population size was in 1996 estimated to be between 3,500 and 7,000. Most of the remaining Snow leopards, or as many as 2,000 to 2,500, are found in Tibet. The Snow Leopard population is declining and the Leopard's habitat range is shrinking.

Threats to Survival

The main threat to the Snow Leopard's survival is poaching. The Leopard is shot and trapped to obtain its decorative pelt, bones, and body

parts. The Snow Leopard's bones are used for medicinal purposes, sometimes substituting for tiger bones. The Leopard's pelt is in high demand on the black market, selling for three to four times as much as the pelt of an ordinary leopard.

Many of the prey species upon which the Snow Leopard depends have been depleted as a result of their being hunted for game by humans and their competing with livestock for resources. Leopards that cannot feed upon their usual prey may attack livestock. Herders often retaliate by trapping, poisoning, or shooting the leopard intruders.

Another threat to the Snow Leopard is the loss and degradation of its habitat. The Leopard's natural habitat has been lost and degraded as a result of the encroachment of increasingly large human and domestic livestock populations.

References

BBC, *Science & Nature – Wildfacts – Snow leopard*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/15.shtml>, Aug 2004.

Cat Specialist Group, 2001: *Uncia uncia*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://lynx.uio.no/catfolk/sp-accts.htm>, Aug 2004.

International Snow Leopard Trust, *Cat Facts*, <http://www.snowleopard.org/islt/facts/facts.html>, Aug 2004.

DHOLE

Cuon alpinus

ཕ་རྩུ།

Physical Description

The Dhole is also known as the Asiatic or Indian Wild Dog, the Red Dog, and the Whistling Hunter. The Dhole differs from other members of the Canidae, or dog, family in that it has a thicker muzzle, one less molar tooth on each side of its lower jaw, and extra teats. The Dhole's fur is dense and thick. The colour of the Dhole's fur ranges from pale golden yellow to greyish brown to dark reddish brown. The Dhole's underparts (including the Dhole's throat, chest, belly, paws, and the insides of the Dhole's legs) are paler or white, the Dhole's rounded ears are lined with paler or white fur, and the Dhole's long, bushy tail is tipped with a darker colour, usually black. The Dhole often also has an area of darker fur on its back. In general, the dholes living in the northern regions of the Dhole's range have longer and lighter fur than do the dholes living in the southern regions. The Dhole's eyes are amber-coloured.

The Dhole is of average size compared to other canids. The Dhole's legs are relatively short. The Dhole stands 42 to 55 centimetres (16 to 21 inches) high at the shoulder. The Dhole's head and body length measures 88 to 113 centimetres (35 to 44 inches) and the Dhole's tail measures 40 to 50 centimetres (16 to 20 inches) long. Female dholes weigh 12 to 16 kilograms (26 to 35 pounds). Males are significantly larger, weighing 14 to 18 kilograms (31 to 40 pounds). The Dhole's short, square muzzle affords it a powerful bite.

Habitat

The Dhole inhabits a wide range of forested areas, typically in the mountains and hills. The Dhole may also be found in meadows or on the steppe. The Dhole's distribution is correlated with prey abundance, water availability, the absence of human disturbance, and the presence of potential den sites. The Dhole may build its den in rock crevices, porcupine burrows, hyena dens, or similar sites.

The Dhole's historical range extended across South, Central, and East Asia. The Dhole has since disappeared from much of its former range and its population has become fragmented in many regions. Today, the Dhole probably still occurs, in limited numbers, in Turkey, Kazakhstan, Kyrgyzstan, Tajikistan, Russia, India, Nepal, Bangladesh, Bhutan, Tibet, Mongolia, Korea, Cambodia, Laos, Vietnam, Thailand, Burma (Myanmar), Malaysia, and Indonesia. In Tibet, the Dhole may be found in the forested mountains of Amdo and Kham. In India and Nepal, the Dhole primarily occurs in protected national parks and wildlife sanctuaries, including the Bandipur and Nagerahole National Parks in Karnataka State.

Eating Habits

The Dhole is mostly carnivorous, preying primarily on medium-sized ungulates, such as spotted and sambar deer, small deer, wild sheep, and wild goats. The Dhole also eats wild boars, rodents, hares, reptiles, insects, berries, and occasionally monkeys. The Dhole rarely attacks livestock. Hunting in packs, the Dhole is capable of bringing down prey up to ten times its size. Packs rely on their sense of smell to locate prey within densely vegetated areas. Since the Dhole is a good swimmer, sometimes packs drive prey into water. The Dhole is capable of devouring up to four kilograms (nine pounds) of meat in an hour and often begins to feed upon its prey before the prey has died. The Dhole viciously defends its kills from other animals, including tigers and bears.

Behaviour and Reproduction

The Dhole is primarily active at dusk and dawn, and may also be active at night. The Dhole lives in hierarchical packs of five to 12 animals, consisting of an alpha female, an alpha male, and their offspring. There are generally more males than females in a pack, and there is usually only one breeding female per pack. Packs occasionally aggregate to form groups of up to 40 animals. Though packs are hierarchical, members are

rarely aggressive with each other.

Packs inhabit a territory that ranges from 40 to 84 square kilometres (15 to 34 square miles), depending on the availability of food and water and the presence or absence of pups. Packs with pups tend to occupy smaller territories. Scent marking is used to delineate territories.

Dholes use several vocalizations to communicate with each other, including a distinctive whistle that is used to reassemble pack members that have become separated from each other in the forest. Dholes can jump higher than 2.3 metres (7.5 feet), so they may also jump up in the air to “get their bearings” (ARKive).

The Dhole reaches sexual maturity at about one year of age. The mating season takes place from September to March. After a gestation period of 60 to 63 days, each female dhole gives birth to typically three to four but occasionally up to ten pups. Pups are soot-coloured at birth, but take on their adult colour by the time they reach three months of age. Births take place in a den. Dens may be shared with other breeding females. Pack members help to take care of mothers and their litters, bringing them food (in the form of regurgitated meat) and guarding the dens.

The pups begin to explore the area outside the den at ten weeks of age, and start hunting with the pack when they are seven months old. Pack members make sure pups get their fair share of food at pack kills. Pups play and fight with each other. Dominance orders are usually established among a pack's pups by the time they begin hunting with the pack. When pups reach maturity, some stay with their parents' pack and others leave. The Dhole's life span is approximately ten years. In captivity, dholes have lived for up to 16 years. Dholes are shy and avoid humans when possible.

Present Status

The Dhole is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix II of CITES. The Dhole is under second class protection in China and is included in Schedule II, Part I of the Indian Wild Life (Protection) Act of 1972.

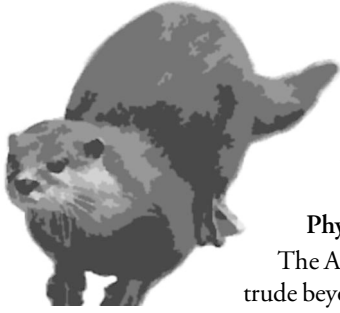
Threats to Survival

The most significant threat to the Dhole's survival is habitat loss and degradation. Deforestation has occurred throughout the Dhole's habitat range due to logging, collection of wood for fuel, agricultural expansion, and the construction of human settlements. In India, areas of the Dhole's habitat have also been lost as a result of flooding caused by dam construction. Habitat loss and degradation affects the Dhole directly and through reductions in the Dhole's prey base. Another important threat to the Dhole's survival is disease, especially in India, where the Dhole has come into close contact with humans and domestic dogs. Canine distemper and rabies are the diseases most often contracted by dholes in India. The Dhole has also been hunted and persecuted by humans. Humans have poisoned, trapped, shot, and destroyed the den sites of the Dhole, for various reasons. The Dhole has been killed for food, to obtain its fur, because of the perceived threat it poses to livestock, and because some hunters view it as a competitor. In some areas, humans steal the Dhole's kills, waiting until a pack has killed a large animal before driving the pack away and claiming the meat. The Dhole has also been poisoned indirectly, such as in Russia, where poison campaigns targeted at wolves resulted in the deaths of several dholes.

References

- ARKive, *Dhole - Cuon alpinus: More Information* – ARKive, http://www.arkive.org/species/GES/mammals/Cuon_alpinus/more_info.html, Oct 2004.
- Canid Specialist Group, 1996: *Cuon alpinus*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://www.canids.org/SPPACCTS/dhole.htm>, Oct 2004.
- Chacon, Rachel, 2000: *Cuon alpinus*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Cuon_alpinus.html, Oct 2004.
- Durbin, L, *Dhole Home Page: information on the Asiatic wild dog, its biology, research and conservation*, <http://www.cuon.net/dholes/>, Oct 2004.
- Postanowicz, Rebecca, *Lioncrusher's Domain — Dhole (Cuon alpinus) facts and pictures*, <http://www.lioncrusher.com/animal.asp?animal=14>, Oct 2004.

Otters



ASIAN SMALL-CLAWED OTTER

Amblonyx (or Aonyx) cinerea

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Physical Description

The Asian Small-clawed, Short-clawed, or Clawless, Otter's name derives from its small claws, which do not protrude beyond the ends of its digital pads. This otter is also known as the Chinese Dwarf Otter and the Laughing Otter of India. The Asian Small-clawed Otter's feet lack fully developed webbing and look very much like human hands. Specialised structures on the Small-clawed Otter's eyes enhance the Otter's vision on land and in the water. The Small-clawed Otter has a dark brown to ash grey coat with lighter undersides. The Otter's throat is pale grey to whitish.

The Asian Small-clawed Otter is the smallest of the 13 otter species. Adult Small-clawed otters weigh between 2.7 and 5.4 kilograms (six and 12 pounds). The Otter's average length is 65 centimetres (two feet) from head to tail, and the average length of the Otter's tapered tail is over 20 centimetres (eight inches).

Habitat

The Asian Small-clawed Otter inhabits freshwater and peat swamp forests, rice fields, lakes, streams, reservoirs, canals, mangroves, and tidal pools. The Otter avoids bare, open areas that offer little shelter. The Asian Small-clawed Otter is found in the hill ranges of southern India and Kerala, in the Himalayan foothills of northern India, Nepal, Bhutan, and Tibet, in southern China and Taiwan, in northwest India and Bangladesh, and throughout South East Asia.

Eating Habits

In the wild, the Asian Small-clawed Otter's diet consists mainly of crabs, snails, mollusks, and other crustaceans. The Otter uses its sensitive finger pads to locate its prey in the mud beneath rocks. The Small-clawed Otter's diet requires the otter to do more crushing than slicing, and as a result, the Otter has developed enlarged, broadened cheek teeth. The Small-clawed Otter also feeds on aquatic birds, frogs, and small fish. Although otters in the wild rarely eat plants, otters in captivity quickly adapt to plant-based diets.

Behaviour and Reproduction

The Otter is active during the day and the night, but is mainly nocturnal. The Asian Small-clawed Otter, unlike sea otters, actually spends more time on land than in water. The Otter takes shelter in riverside shrubbery, the deserted dens of other animals, and dens it has constructed itself. A Small-clawed Otter's everyday activities include hunting, sleeping, sunning on rocks or stumps, and playing. Games popular with the social animal include chasing other otters and slipping and sliding on muddy or icy hills. The Asian Small-clawed Otter is one of the few species of otters that lives in social groups. Groups range in size from four to 12 otters. The otters use at least 12 distinct calls to communicate amongst themselves.

The Small-clawed Otter usually fishes or swims in quiet pools and sluggish streams. The Otter is a skillful, agile swimmer and diver. The Small-clawed Otter keeps its front legs tucked tightly under its body while swimming. The Otter kicks its hind legs to propel itself through the water and uses its lean tail for steering. The Small-clawed Otter has great endurance. On long-distance swims, the Otter swims on its back or its side. The Small-clawed Otter is able to remain underwater for six to eight minutes.

The Small-clawed Otter can give birth to up to two litters per year. The Otter's gestation period is 60 to 64 days. Each mother generally gives birth to two to six pups. Otters pair for life, and as such, father and mother both participate in raising the pups. Pups are small and helpless at birth, not opening their eyes for 40 days. The pups are able to swim by nine weeks of age, and begin eating solid food at about 80 days of age. The pups reach sexual maturity by two to three years of age. Young otters usually remain with their parents even after they have reached maturity, forming the nucleus of a small social group. The life span of the Small-clawed Otter is about 11 years for otters in captivity.

Present Status

The Asian Small-clawed Otter is categorized as Lower Risk: Near Threatened in the *2003 IUCN Red List of Threatened Species* and is listed in Appendix II of CITES. The Asian Small-clawed Otter is under second class protection in China and is included in Schedule IV of the Indian Wild Life (Protection) Act of 1972.

Threats to Survival

Much of the Asian Small-clawed Otter's habitat has been destroyed by developmental activities, including the reclamation of peat swamp forests and mangroves, increased human settlements, aquaculture, and logging, which results in the siltation of small streams. Furthermore, the Otter's prey base has been negatively impacted by overharvesting and the contamination of waterways with organochlorides and heavy metals.

As a result, fewer prey are available for the otters to eat, and otters that eat contaminated prey may become ill and die or fail to reproduce successfully. The Asian Small-clawed Otter is also mercilessly hunted for its pelt, which is used to trim garments.

References

Columbus Zoo, *Asian small-clawed otter*, <http://columbuszoo.com/animalareas/islands/otter.html>, Aug 2004.

Hussain, S.A., 2000: *Amblyonyx cinereus*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://www.wii.gov.in/envis/envisdec99/smallclawedotter.htm>, Aug 2004.

International Otter Survival Fund, *Species – Asian Short Clawed Otter*, <http://www.otter.org/Small%20clawed.html>, Aug 2004.

Lincoln Park Zoo, *Asian Small-clawed Otter*, http://www.lpzoo.com/tour/factsheets/mammals/s_c_otter.html, Aug 2004.

EURASIAN RIVER OTTER

Lutra lutra



Physical Description

There are about eleven subspecies of the Eurasian River Otter, which is also known as the European, Common, or Old World Otter. One of these subspecies definitely occurs in Tibet, and at least four others occur in nearby regions. The range of *Lutra lutra kutab* extends from Kashmir to Tibet, *L. lutra monticola* and *L. lutra aurobrunnea* are found in the Himalayas, *L. lutra lutra* ranges across northern Asia and Siberia, and *L. lutra chinensis* occurs in China and Taiwan.

The Eurasian River Otter's coat is grayish brown to reddish or dark brown, with a lighter belly. The Otter's lips, cheeks, and throat are spotted yellow, grey, or white. The Eurasian River Otter's fur is dual-layered. The coarse, glossy guard hairs that compose the outer layer of the Otter's fur measure about 17 to 18 millimetres long and are waterproof. The Eurasian River Otter's soft, dense underfur measures about 8 to 9 millimetres long and provides insulation.

Like other mustelids, the Eurasian River Otter has a long body with short legs and a thick, round tail that tapers and flattens from the base to the tip. The Otter's body, including its tail, is muscular; the Otter lacks the insulating layer of body fat found in other aquatic mammals, relying entirely on its fur to keep it warm. The Eurasian River Otter has small, round ears set low on its head, small, round, and wide-set eyes, a short, broad, round muzzle, a trapezoid-shaped nose, thick whiskers, powerful jaws, and a short, thick neck.

The Eurasian River Otter has developed several adaptations for aquatic life. In addition to having waterproof guard hairs, the Otter has webbed paws, with five toes each and strong claws. The Eurasian River Otter uses its webbed paws in combination with its powerful tail to propel itself in the water. The Otter's front legs are shorter than its back legs, which makes the Otter a more efficient swimmer. The Eurasian River Otter can also close its ears and nostrils to prevent water from entering during dives underwater. The Otter is able to remain underwater for up to two minutes.

The Eurasian River Otter is medium-sized in comparison to other otters. The Otter's body length is 55 to 95 centimetres (22 to 38 inches) and the Otter's tail length is 30 to 55 centimetres (12 to 22 inches). The Eurasian River Otter stands about 30 centimetres (12 inches) tall at the shoulder, and weighs from five to 12 kilograms (11 to 26 pounds).

Habitat

The Eurasian River Otter inhabits many different types of shallow freshwater ecosystems, including rivers, lakes, streams, marshes, swamp forests, rice fields, sewer systems, estuaries, caves, and terrestrial habitats adjacent to waterways. The Otter is found at elevations from below sea level (in the Netherlands) to above 4,120 metres, or 13,500 feet (in Tibet).

The Eurasian River Otter builds dens for itself called holts, by lining, with grass and dry leaves, holes in the river bank or hollows among tree roots, piles of rock, wood, or debris. Entrances to the holts are generally located underwater. The living chambers, located above ground, include ventilation shafts. The Otter rarely strays more than 100 metres (330 feet) away from water.

The Eurasian River Otter is distributed more widely than any other otter species. The Otter is found throughout Europe and Asia, south of the Arctic Circle, and even occurs in a portion of northern Africa.

Eating Habits

The Eurasian Otter hunts and feeds several times in a day, consuming about one kilogram of food per day. The bulk of the Eurasian Otter's diet (sometimes over 80%) consists of fish. The Otter also eats crustaceans, clams, small mammals including rabbits and voles, amphibians, water birds, eggs, insects, worms, and some vegetation. The Eurasian Otter uses its whiskers to sense the movements of prey underwater. The Otter uses its mouth, rather than its hands, to catch its prey.

Behaviour and Reproduction

Eurasian River otters are most active at dusk and during the night. Except in coastal areas, the otters usually spend the days resting under cover or sunning themselves. Eurasian River otters occasionally form groups of up to six animals, but for the most part, otters are solitary, with the exception of mothers accompanied by their young and mates paired temporarily. On the other hand, otters do like to play with each other. Young and old otters alike have been observed sliding down slopes covered with mud or snow on their bellies and chasing each other in the water. Eurasian River otters communicate with each other vocally, using over 12 specific calls.

Eurasian River otters are territorial, using scent marking to delineate the boundaries of their home ranges and displaying aggression towards intruders of the same sex. Home ranges measure about seven to 15 kilometres (four to nine miles) for straight-line territory. Males have larger territories than females. The most dominant males within a hierarchy occupy the most favorable areas. Male territories may overlap the territories of several females, but not the territories of other males. Similarly, female territories do not overlap each other.

The Eurasian River Otter reaches sexual maturity at two to three years of age. The Otter is able to breed throughout the year. When the peak in mating occurs depends on climatic conditions. Mating occurs both on land and in the water. The Eurasian River Otter's gestation period is 61 to 65 days. Females give birth in their holts. Litter sizes range from one to five cubs and average two or three cubs. Cubs weigh 99 to 122 grams (3.5 to 4.3 ounces) and are covered in soft dark or grey fur at birth. Cubs begin to crawl at two to three weeks of age and begin to swim at eight weeks of age. Cubs do not open their eyes until about four to five weeks after birth. Cubs are weaned at about three to four months of age, and generally leave their mothers at eight to twelve months of age. Occasionally, cubs stay with their mothers until they are 14 months old.

The Eurasian River Otter's life span, for otters in the wild, is about ten to fifteen years. In captivity, the Otter may live for as many as 22 years. The Eurasian River Otter's natural predators include wolves, lynx, and birds of prey.

Present Status

The Eurasian River Otter is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species* and is included in Appendix I of CITES. The Otter is under second class protection in China and is listed under Schedule IV of the Indian Wild Life (Protection) Act of 1972. The Eurasian River Otter has become extinct throughout much of its range, and its populations have decreased significantly in other areas. Far more is known about the status of the otters inhabiting Europe than those inhabiting Asia.

Threats to Survival

The most severe threat to the Eurasian River Otter's survival is the loss and degradation of the Otter's fragile aquatic habitat as a result of several developmental activities. These include the canalization of rivers, the construction of dams, the removal of bank side vegetation, wetlands draining, and aquaculture. Furthermore, industrial waste, untreated sewage, and agricultural runoff have polluted waterways the Otter depends upon. The Eurasian River Otter is also threatened by hunting, especially in the Asian region, where the trade in endangered animal products continues to flourish despite legislation efforts. In Tibet, otter pelts are used to line and trim traditional garments. The Eurasian River Otter may additionally be killed in traps or nets set for other animals. In areas where the Otter lives in close vicinity to roads, otters are vulnerable to being accidentally run over.

References

- BBC, *BBC – Science & Nature – Wildfacts – Eurasian river otter, European otter, common otter...*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/196.shtml>, Oct 2004.
- Kennedy, S., 2003: *Lutra lutra*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Lutra_lutra.html, Oct 2004.
- Otternet, *OTTERNET.COM Species Profiles- Eurasian Otter*, <http://www.otternet.com/species/otter.htm>, Oct 2004.
- Postanowicz, Rebecca, *Lioncrusher's Domain — Eurasian River Otter (Lutra lutra) facts and pictures*, <http://www.lioncrusher.com/animal.asp?animal=179>, Oct 2004.
- Reuther, C., 1999: *Lutra lutra*, In: IUCN 2003, *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Oct 2004.
- Hussain, S.A., *Mustelids, Viverrids and Herpestids of India: Species Profile and Conservation Status*, www.wii.gov.in/envis/envisdec99/eurasianotter.htm, Oct 2004.

THE HOOFED MAMMALS



TIBETAN WILD ASS
Equus kiang

Asses



Physical Description

The Tibetan Wild Ass, or Kiang, was until recently considered to be a subspecies of *Equus hemionus*, the Kulan or Asiatic Wild Ass. Though the Kiang is very similar to the Kulan, it is now recognized as a distinct species, *Equus kiang*. The Kiang has a reddish brown coat that darkens in color during the winter months. The Kiang's legs, undersides, the insides of the ears, and the border around the Kiang's grey muzzle are white. The Kiang's short mane, long, tufted tail, and the tips of the Kiang's short ears are dark brown. The Kiang also has a dark dorsal stripe, which extends from its mane to its tail. The Kiang's summer coat is short, sparse, and sleek in comparison to its longer, thicker winter coat.

The Kiang is the largest of the wild asses. The Kiang actually resembles a horse more than it does an ass, due to its small ears and long tail. The Kiang has a body length of approximately 210 centimetres (seven feet), a tail length of 50 centimetres (50 inches), and a shoulder height of 140 centimetres (4.6 feet). The Kiang weighs about 250 to 400 kilograms (550 to 880 pounds). During August and September, the only months when the Kiang's food sources are abundant, the Kiang may gain up to 45 kilograms (88 to 100 pounds) in weight.

Habitat

The Kiang inhabits plains, hills, basins, broad valleys, and other types of open terrain, at elevations from 2,700 to 5,300 metres (8,900 to 17,400 feet). The Kiang is most abundant in alpine meadows and alpine steppes, but also occurs in more arid habitats. The Kiang is only found on the Tibetan Plateau and the area just west of the Plateau. The Kiang's habitat range includes Tibet and bordering areas of China, Pakistan, and India, including Ladakh and Sikkim. The Kiang's population has become increasingly fragmented. Today, the Kiang is most densely distributed in protected areas and areas under army jurisdiction, including the Arjin Shan, Kalamaili Mountain, Chang Tang, and Chomo Langma (Qomolangma) Nature Reserves.

Eating Habits

The Kiang's diet consists of grasses (*Stipa spp.*), sedges, and other low plants.

Behaviour and Reproduction

The Kiang is a strong swimmer and takes apparent pleasure in bathing in rivers during the summer months. The Kiang lives alone or in small herds. Herds are smallest in the summer and largest in the winter. Mares, accompanied by their foals or yearlings, tend to form herds with other mares that are in the same stage of reproduction. Stallions are more likely than mares to be solitary, especially during the rut season. During the rut, some stallions seem to be territorial, and others group mares into harems. Herds and solitary kiangs may congregate on good pastures during the fall and winter. Congregations of as many as a 1,000 kiangs have been spotted, but congregations of 100 to 300 kiangs are more common.

The Kiang probably reaches sexual maturity at about two to three years of age. Breeding and births take place in the summer months, from July to September, when the most forage is available. The Kiang's gestation period is about 355 days, close to one year. Each mother gives birth to one foal, which may weigh about 30 kilograms (66 pounds) and stand about 90 centimetres (3 feet) tall at the shoulder. Foals are weaned within a year after birth and reach adult size soon after.

The Kiang may live for as long as 20 years, but most Kiang live to between 7 and 11 years of age. Young kiangs are susceptible to harsh weather conditions and many die during their first or second winter. Wolves are the Kiang's main natural predators. Kiangs, especially the stallions, are quite curious animals, often watching the humans they encounter rather than fleeing from them.

Present Status

The Kiang is categorized as Lower Risk: Least Concern in the 2003 IUCN Red List of Threatened Species and is listed under Appendix II of CITES. The Kiang is under first class protection in China and is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. In the last few decades, the Kiang's population has decreased significantly in size and has become fragmented.

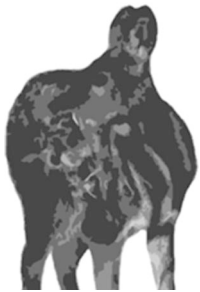
Threats to Survival

Much of the northern part of the Kiang's habitat has been degraded or lost entirely due to the establishment of significant mining and oil exploration operations in this region, and the incursion of the large populations needed to cater to the mines and the processing of minerals. Pastoralists and their livestock have encroached upon other areas of the Kiang's habitat. These livestock compete with the Kiang for water and forage and may carry diseases. Furthermore, because more and more pastoralists are "sedentary", rather than nomadic, overgrazing is becoming

a problem, and wild animals, such as the Kiang, are being fenced out of their traditional foraging areas. Intensifying the Kiang's troubles, pastoralists, miners, oil workers, and others hunt the Kiang for food. New and improved roads provide easier access to previously isolated areas of the Kiang's habitat range. The increased military presence on the border between Ladakh and Tibet that bisects the Chang Tang may also pose a threat to the Kiang.

References

- Huffman, Brent, *Kiang, Tibetan wild ass*, http://www.ultimateungulate.com/Perissodactyla/Equus_kiang.html, Sept 2004.
 Schaller, George B., 1998: *Wildlife of the Tibetan Steppe*, The University of Chicago Press, London.
 Shah, Nita, *Status and Action Plan for the Kiang (Equus kiang)*, <http://www.iucn.org/themes/ssc/actionplans/equids/part2chapter6.pdf>, Sept 2004.
 Wang, H., 2002: *Equus kiang*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Equus_kiang.html, Sept 2004.



MUSK DEER

Moschus spp.

Physical Description

There are probably about five species of Musk deer. Four of these species, including the Forest or Dwarf Musk Deer (*Moschus berezovskii*), the Black or Dusky Musk Deer (*M. fuscus*), the Alpine Musk Deer (*M. sifanicus* or *M. chrysogaster leucogaster*), and the Himalayan Musk Deer (*M. chrysogaster chrysogaster*), occur in Tibet.

The Musk Deer's fur is long, thick, coarse, and wavy. The color of the Deer's coat varies among species, ranging from golden to grayish brown. The Musk Deer's rump and flanks are darker than the rest of its coat, while the Deer's belly and genital regions are lighter. The Musk Deer's ears are long and rounded and are usually lined with white fur. The tips of the Deer's ears may be coloured white or cream to dark brown. The Musk Deer's tail measures from four to six centimetres (1.6 to 2.4 inches) and is hairless except for a tuft of hair at the tip. The Alpine Musk Deer has a wide cream-coloured stripe from its chest to its chin and several yellow blotches on the nape of its neck. Young Musk deer have white spots.

The Musk Deer's morphology is halfway between that of chevrotains, or mouse deer, and true deer. Unlike true deer, the Musk Deer lacks facial glands and antlers. Furthermore, the Musk Deer has a gall bladder, a caudal gland, and a musk gland, none of which are found in true deer. The caudal gland, located at the base of the Musk Deer's tail, secretes a foul-smelling, thick yellow substance. The musk gland, from which the Musk Deer's name derives, is present only in male Musk deer. Visible externally, the musk gland develops between the genitals and the navel of males during their third year of sexual maturity. During the Musk Deer's breeding season, the musk, or *katsuri*, produced in the musk glands of males is a dark red brown granular powder with a strong smell. In the months before and after the breeding season, however, the musk is pasty, white, and only smells slightly.

The Musk Deer has long, curved canine teeth that project well below its lips. When the Deer's mouth is closed, the canines point backwards, but when the Deer's mouth is open, a muscle in the Deer's jaws pulls the canines upright. The Musk Deer's canines grow continuously but are easily broken. The canines of males typically measure from seven to ten centimetres (three to four inches) in length. The canines of females are shorter.

In many ways, the Musk Deer actually looks like a large woolly hare, especially when it is curled up and sleeping. In addition to having hare-like ears, the Musk Deer's hind legs are almost a third longer than the Deer's forelegs. The Musk Deer also has dew claws and large feet. The Deer measures about 86 to 100 centimetres (2.8 to 3.3 feet) from head to tail. The Musk Deer stands 51 to 53 centimetres (20 to 21 inches) tall at the shoulder and 55 centimetres (22 inches) tall at the rump. The Deer weighs between 10 to 18 kilograms (22 to 40 pounds).

Habitat

The Musk Deer inhabits alpine forests and scrub. The Deer is typically found at elevations between 2,200 and 4,300 metres (7,250 to 14,200 feet), and is rarely found below 1,000 metres (3,280 feet). The Forest Musk Deer occurs in Tibet, the Chinese provinces of Sichuan, Yunnan, Qinghai, Gansu, Shanxi, Shaanxi, Ningxia, Guizhou, Anhui, Hubei, Hunan, and Guangxi, Laos, and northeastern Vietnam. The Forest Musk Deer inhabits high mountains and mixed coniferous and broadleaf forests. The Black Musk Deer is found in southeastern Tibet, western Yunnan province in China, Nepal's Everest region, Assam and Sikkim in India, Bhutan, and Burma (Myanmar). Mountainous areas of Tibet and China where the Black Musk Deer has been spotted include the counties of Dzayul (Chayu), Metog (Motuo), Menling (Milin), and Bijang, and the Gaoligong Nature Reserve. The Alpine Musk Deer is endemic to the Tibetan Plateau, occurring in Tibet, the Chinese provinces

Deer

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of Qinghai, western Sichuan, Yunnan, Ningxia, and Xingjiang, and India. The Alpine Musk Deer prefers high mountains and plateau, meadows, shrub, and coniferous forest. The Himalayan Musk Deer is confined to the Himalayas, occurring in Tibet, Afghanistan, Pakistan, India, Nepal, and Bhutan. Alpine Musk deer are usually distributed in the western Himalayas, while Himalayan Musk deer are distributed in the eastern Himalayas. The Indian states in which Alpine and/or Himalayan Musk deer are found include Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, Sikkim, and Arunachal Pradesh.

Eating Habits

The Musk Deer is a herbivorous ruminant that consumes over 130 different species of plants. The Deer's diet includes forbs, grasses, leaves, buds, flowers, young shoots, coniferous needles, and the bark of trees including mountain ash, aspen, maple, willow, bird cherry, and honeysuckle. The Musk Deer also eats twigs, mosses, and lichens. When weather conditions are harsh, arboreal lichens and some terrestrial bushy lichens may compose roughly 70 percent of the contents of the Deer's stomach.

Behaviour and Reproduction

The Musk Deer is most active at night or at dawn and dusk. The Deer prefers to take shelter within dense vegetation and brush during the daylight hours. Except during the breeding season, the Musk Deer is a solitary animal. The Deer is also strongly territorial. The territory of a female deer typically encompasses about 0.5 square kilometres (0.2 square miles). A male deer's territory may overlap the territories of several females. Due to the sophistication of the Musk Deer's scent glands, communication between individual deer is believed to be based primarily on their sense of smell. The deer rub their caudal glands against plants and males release musk in their urine during certain times of the year. Musk deer squat when urinating or defecating, and all the deer within a particular area tend to defecate in the same spot. The Musk Deer does not migrate seasonally.

The Musk Deer reaches sexual maturity at around 1.5 years of age. The Deer mates from November to January. The Musk Deer's gestation period is much shorter than that of true deer, lasting only 180 to 200 days. Most births take place in May and June, each doe giving birth to one fawn, or to twins. Fawns may hide for up to two months after birth. Fawns are weaned after a few months, but stay with their mothers for up to two winters.

The Musk Deer is a shy animal. The Deer emits a loud double hiss when it is alarmed and may scream when injured. The Musk Deer escapes its predators by climbing leaning trees, taking refuge in thick foliage, or fleeing. The Deer's long hind legs make it an agile jumper, able to take broad leaps up to six metres (19 feet) in length and to change directions quickly. The Musk Deer's natural predators include snow leopards and common leopards, lynx, wolves, foxes, and Yellow-throated martens. Young deer are also vulnerable to birds of prey, and sometimes even to crows. The Musk Deer's life span is eight to ten years, for deer in the wild, and about 15 years for deer in captivity.

Present Status

All of the species of Musk deer found in Tibet are categorized as Lower Risk: Near Threatened in the *2003 IUCN Red List of Threatened Species*. Musk Deer populations in Afghanistan, Pakistan, India, Nepal, and Bhutan are listed under Appendix I of CITES. All other Musk Deer populations are included in Appendix II of CITES. Musk Deer are under second class protection in China. The Musk Deer is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. Unfortunately, enforcement of these laws is often minimal, and the numbers of Musk deer continue to decline throughout the Deer's distribution. Today, the total population of Musk deer may number 400,000 to 800,000. There were 2 to 3 million Musk deer in China and Tibet in the 1950s; now, there are probably only about 220,000 to 320,000.

Threats to Survival

The Musk Deer's survival is threatened most seriously by poaching. The Musk Deer's meat is not considered delicious, nor is the Deer's pelt valuable, since the hairs fall out so easily. Poaching of the Musk Deer is rather driven by the commercial demand for musk. Musk, or *latsi*, is used in traditional medicines, perfumes, and cosmetic products that include shampoos and conditioners. Musk is used in traditional medicine to treat heart, nerve, skin, abdominal, and breathing ailments. At least 300 different East Asian pharmaceutical preparations contain musk, and musk may also be found in some European homeopathic medicines. Synthetic musk is replacing natural musk in perfumes and cosmetics, but natural musk is still used in several perfumes, especially in France.

Musk is only produced in the musk gland of mature male Musk deer. Each musk gland, or "pod", yields about 15 to 25 grams (0.5 to 1 ounce) of musk. The highest quality of musk is that produced during the Musk Deer's breeding season, in the winter. Musk deer have been hunted for musk for thousands of years, but it is only in the last century that hunters have begun to employ guns and wire snares in their efforts. Unfortunately, snares are indiscriminate, trapping not only their targets - male Musk deer - but also female and young Musk deer and other animals. In general, out of every three Musk deer trapped, only one is a male with a musk gland large enough to be profitable. Between 1991 and 1992, local forestry staff destroyed 62,800 snares in the country of Chamdo (Changdu) in central Tibet alone.

Ninety percent of the musk traded internationally is in the form of medicines or raw musk. In the past, most of the musk pods collected in China were traded within China's domestic market, through local medicine companies. Now, much of the musk harvested in China is exported abroad. Demand for musk exists wherever there are significant Asian populations. In China, the annual demand for musk is 500 to 1,000 kilograms. Between 1981 and 1985, the demand for musk in Japan was 215 to 300 kilograms per year. Western countries involved in the musk

trade include, but are not limited to, France, Belgium, Germany, the Netherlands, the United Kingdom, and the United States. France imported 100 kg of raw musk from East Asia from 1980 to 1995. Because the worldwide demand for musk currently exceeds the supply, the price of musk is increasing. The price of musk now ranges from about US\$12-15 per gram, in Europe and South Korea, to US\$50 per gram in France.

Musk deer farms began to be established in China in 1958, and there were more than 3,000 Musk deer in captivity in such farms by the 1980s. Musk deer are difficult to manage and breed, though, because they are solitary, territorial, and excitable, and the farms themselves have suffered due to insufficient funds, poor equipment, lack of skilled workers, low quality buildings, and harsh climatic conditions. As a result, many Musk deer farms have been closed in recent years. There are now about 1,900 deer on farms. The primary purpose of farming Musk deer in China is to gather musk, but all Chinese Musk deer farms combined only produce about 5 kilograms of musk per year. Though it is possible to remove musk from males without killing the deer, the experience can be traumatizing for the deer. The main causes of death of Musk deer on farms are trauma, pneumonia, and diarrhea.

Though poaching is the primary threat to the Musk Deer's survival, habitat destruction has also been detrimental to the Deer. The forests in which the Musk Deer makes its home have been converted to human settlements and agricultural areas and have been chopped down for timber and fuel wood. In northwestern China, where the Musk Deer inhabits more open landscapes, the Musk Deer must compete with neighboring livestock for forage. The livestock enter the forests when their pastures have become overgrazed.

References

- Deer Specialist Group, 1996: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>. See also: <http://iibce.edu uy/citogeneticaldeer/dsgwww/en3.htm>, Aug 2004.
- Gam, Gabriel, Feb 2002: *ADW: Moschus chrysogaster: Information*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Moschus_chrysogaster.html
- Huffman, Brent, *Ultimate Ungulate Fact Sheet – Himalayan Musk Deer*, http://www.ultimateungulate.com/Artiodactyla/Moschus_chrysogaster.html, Aug 2004.
- PBS, *The Living Edens: Bhutan – Animal Archive – Musk Deer*, http://www.pbs.org/edens/bhutan/a_md.htm, Aug 2004.
- TRAFFIC, 2002: *TRAFFIC Factfile: Musk Deer*, http://www.traffic.org/factfile/factfile_muskdeer.html, Sept 2004.
- Zhigang, Jiang, *International cooperation on conservation of endangered species: Ch. 16-1: Musk Deer*, <http://www.chinabiodiversity.com/shengwudyx2/training/chapter16-1.htm>, Sept 2004.
- Zhou, Yijun, Meng, Xiuxiang, Feng, Jinchao, Yang, Qisen, Feng, Zuojian, Xia, Lin, and Bartos, Ludok, June 2004: *Review of the distribution, status, and conservation of musk deer in China*, *Folia Zool* – 53(2): pp129-140, <http://www.ivb.cz/folia/53/2/129-140.pdf>, Sept 2004.

TIBETAN RED DEER

Cervus elaphus wallichii

གྲོ་མཚོ་འཕྲུ་ལོ་ལོ་

Physical Description

The Tibetan Red Deer, or Shou, is a sub-species of the Red Deer. The Red Deer has a reddish-brown coat for most of the year; in the winter, though, its coat turns brownish-grey. The Deer has a short, beige tail, and a creamy patch on its rump. Calves are born with whitish spots on their coats, but the spots disappear the first time the calves moult, when they are about two months old. Only male Red deer have antlers. The males lose their antlers annually, between February and April, and grow replacements by August. The Red Deer's antlers become increasingly branched with age.

The Red Deer has acute eyesight and hearing and a keen sense of smell. The Deer's several external scent glands serve a variety of functions, including scent-marking territory and indicating sexual fertility in the hinds, or mature females. The Red Deer's scent glands may also enable individual deer to identify each other. The Deer's sensitive muzzle serves as the Deer's primary tactile organ. The Red Deer weighs up to 225 kilograms (500 pounds) and has a shoulder height of 110 to 120 centimetres (3.6 to 3.9 feet).

Habitat

The Red Deer lives in deciduous woodlands and mountains, as well as on moors and plains. The Tibetan Red Deer inhabits the alpine plateau, at elevations between 3,500 to 5,000 metres (11,500 to 16,400 feet). The Tibetan Red Deer occurs in Tibet and possibly in Bhutan. The altitude at which the Red Deer forages depends on the time of year. In the summer, to avoid midges (*Culicoides impunctatus*) and other biting flies, the Deer ascends to higher ground. In the winter, the Red Deer frequents lower lying areas, where more food is available and the Deer can take shelter from the cold.

Eating Habits

The Red Deer is a browser. The Deer feeds on dwarf shrubs, grasses, herbs, leaves, buds, shoots, and bark. The Red Deer also browses on trees,

especially young ones. The Deer's preferred native tree species are willows (*Salix* spp.), aspen (*Populus tremula*), and rowan (*Sorbus aucuparia*). Feeding grounds vary between the sexes. Females tend to concentrate on the better, relatively grass-rich habitats, while males usually graze on the poorer, heather-dominated areas.

Behaviour and Reproduction

The Red Deer is active during the day and at night, but its activity peaks at dawn and dusk. The Deer lives in herds. The female Red deer tends to stay in the locality where she was born, her range overlapping that of her mother. This is known as being "hefted" to an area. The male Red deer, on the other hand, leaves his mother's herd when he is three to four years old and typically moves to a completely new range. Males are thus dispersed more widely across the Red Deer's habitat than are females.

From late August to early September, the stag, or the mature male deer, experiences hormonal changes. These hormonal changes bring about the maturation of the stag's gonads, the development of the stag's larynx, and the thickening of the stag's neck and hair, resulting in the growth of a shaggy mane. Stags with fully developed, hardened antlers may participate in the rut. During the rut, stags that are comparable in antler and body size compete for hinds. At the beginning of a fight, the stags emit an audible roar. Each stag then uses his antlers to attempt to push and shove his rival backwards, into submission. Fights may go on for more than five minutes. Serious or even fatal injuries can result from these battles, and broken antlers are common. The strongest and most powerful male usually wins, securing himself a harem of females with which to mate. It is rare for stags to hold harems until they are six or seven years old. Stags leave harems after mating and regroup with other, unrelated stags over the winter.

Female Red deer that inhabit wooded areas reach sexual maturity at 15 to 16 months of age, but those that dwell in open areas do not reach sexual maturity until their third or fourth autumn. The Red Deer's gestation period is 33 to 34 weeks. Red Deer mothers give birth between late May and late July, with most births taking place in the first half of June. Mothers typically give birth in the standing position. Each mother gives birth to a single calf, weighing an average of 6.5 kilograms (14 pounds). Calves begin to suckle within 40 minutes after birth. Calves suckle every two to three hours for the first few days of their lives, but feed less and less frequently in the days that follow. Calves grow quickly, gaining as much as 30 kilograms (66 pounds) before November. Mothers usually begin to wean their calves in December and January, in which case the calves are weaned by an age of about eight months. However, mothers that have not conceived again in the fall rut may continue to feed their calves until the calves are 18 months old.

Under optimum environmental conditions, the Red Deer may live for longer than 20 years. However, in its natural habitat, the Deer's life span rarely extends beyond 15 years. Stags typically live for nine to twelve years, whereas hinds may live for a year or two longer. Natural deaths of the Red Deer usually occur between late winter and early spring, when the least food is available and temperatures are at their lowest. During this time of year, the Deer is particularly susceptible to malnutrition and cold exposure. The Red Deer's mortality rate is heightened in years of cold, wet weather.

Present Status

The Tibetan Red Deer has been on the verge of extinction since the 1940s, so it is only very rarely spotted anymore. The Tibetan Red Deer is classified as Data Deficient in the *2003 IUCN Red List of Threatened Species*, but it is under second class protection in China. The Tibetan Forestry Department has plans to establish a 500 square-kilometer (193 square-mile) nature reserve in Shannan (Lhokha) Prefecture to protect the Tibetan Red Deer and its habitat.

Threats to Survival

The Red Deer is hunted as a game species and is also threatened by habitat loss.

References

- BBC, *Science & Nature – Wildfacts – Red deer, wapiti, elk*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/199.shtml>, Aug 2004.
 Deer Specialist Group, 1996: *Cervus elaphus ssp. walliichi*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Sept 2004.
 WWF China, <http://www.wwfchina.org/english>, Sept 2004.

WHITE-LIPPED DEER

Cervus albirostris

བྱ་མཚུངས་ཀྱི་འཕྲུལ་ལྗང་།

Physical Description

The White-lipped Deer is also known as Thorold's Deer, the Grass or Rock Deer, the Yellow Deer, and the White-faced Maral. The White-lipped Deer is a large, strong deer. The Deer's name originates from its white lips. The inside of the White-lipped Deer's ears, the tip of its muzzle, its throat, the underside of its chin, and the inner side of its legs are also white. The Deer's belly is cream to greyish white and the Deer's rump patch

is reddish brown. The rest of the White-lipped Deer's body tends to be dark brown in the summer and light buff to greyish brown in the winter. However, the colour of the Deer's coat varies somewhat according to gender, season, and, possibly, locality.

The White-lipped Deer's coat is coarse and stiff, with hollow hairs (like those of the Bharal, or Blue Sheep) that provide the Deer with an insulating layer of warm air. The coat lengthens in the winter. The hair in the center of the White-lipped Deer's back grows in the direction opposite to that in which the surrounding hairs grow, making it look as though the Deer is wearing a saddle. The light coloured band near the tips of the White-lipped Deer's dark hairs gives the animal a grizzled appearance.

The White-lipped Deer has broad, rounded hooves like those of cattle. These hooves help the Deer to climb steep, uneven terrain and make a clicking sound as they hit the ground. The White-lipped Deer has excellent eyesight. Stags have large, somewhat flattened antlers, with five to six tips. Antlers are white, or, rarely, light brown, and grow as long as 130 centimetres (4.3 feet) and as heavy as seven kilograms (15 pounds). Does have a tuft of hair on the top of their heads. The White-lipped Deer's ears are thin and pointed. Stags stand about 120 to 140 centimetres (3.9 to 4.6 feet) tall at the shoulder and weigh 180 to 230 kilograms (197 to 507 pounds). Does stand about 115 centimetres (3.8 feet) tall and usually weigh less than 180 kilograms (197 pounds).

Habitat

The White-lipped Deer inhabits coniferous forests, willow and rhododendron scrub, and alpine meadows, from 3,500 to 5,000 metres (11,500 to 16,400 feet) in elevation. The Deer also inhabits arid, treeless mountain ranges. The White-lipped Deer is endemic to the Tibetan Plateau. The Deer occurs in low densities within its habitat range, which, though extensive, has become highly fragmented. The White-lipped Deer is currently found in Tibet, east of Lhasa into western Kham (Sichuan Province), and in eastern Amdo (the eastern two-thirds of Qinghai Province into Gansu Province). Though the Deer is spread over a large area, it occurs at low densities and its populations are highly fragmented.

Eating Habits

The White-lipped Deer's diet consists mainly of grasses, including *Stipa*, *Kobresia*, and *Carex spp.* The Deer may also eat sedges and herbs.

Behaviour and Reproduction

The White-lipped Deer is active during the day. The Deer can swim. Males and females live separately for most of the year. Young males form herds of up to eight members, while older males are solitary. Pregnant females, females with their young, and preadult females live together. During the rut, which takes place from September to November, males and females commingle, forming mixed herds that consist of an average of 50 deer but sometimes as many as 200 to 300 deer. These mixed herds usually include one to eight stags. Rutting stags compete with each other for access to females and try to collect harems. Stags lose weight during the rut because they expend large amounts of energy mating and fighting with each other.

The White-lipped Deer's gestation period is 225 to 250 days. Does give birth from late May to July, each mother to a single fawn. Mothers move their fawns to more sheltered areas two to three days after giving birth. Fawns are weaned by about one year of age. Young males join male herds after they are weaned, while young females, though independent, remain in their mothers' herds. White-lipped deer reach sexual maturity at about 15 months of age.

The life span of the White-lipped Deer is 16 to 18 years. The Deer's natural predators include wolves and snow leopards. The White-lipped Deer, a fast and agile runner, will flee from danger or use its sharp hooves to defend itself. If a mother observes a predator approaching her infant, she may run in the opposite direction to divert the predator's attention away from the infant. The White-lipped Deer is extremely shy of humans, since humans have hunted it for decades.

Present Status

The White-lipped Deer is categorized as Vulnerable in the 2003 IUCN Red List of Threatened Species. The White-lipped Deer is under first class protection in China. In 1993, the population of White-lipped deer was estimated at between 50,000 to 100,000.

Threats to Survival

The White-lipped Deer is hunted for food and to obtain its antlers and other body parts for use in traditional Chinese medicine. The Deer must also compete with increasing livestock populations for forage. Another threat to the White-lipped Deer's survival is hybridization. There are several deer farms in China that keep White-lipped deer and Red deer together. These two species often interbreed when kept together, and their hybrid offspring may contaminate wild populations of White-lipped deer if they escape from the farms.

References

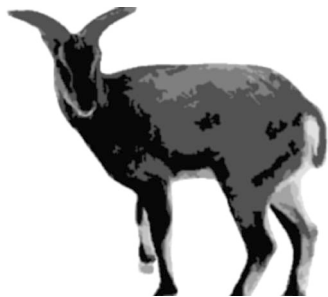
Deer Specialist Group, 1996: *Cervus albirostris*. In: IUCN, 2003: 2003 IUCN Red List of Threatened Species, <http://www.redlist.org>, Aug 2004.

Ehler, P., 2002: *Cervus albirostris*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Cervus_albirostris.html, Sept 2004.

Massicot, Paul, July 2004: *Animal Info – White-lipped (Thorold's) Deer*, <http://www.animalinfo.org/species/artiperi/cervalbi.htm>, Sept 2004.

Schaller, George B., 1997: *Tibet's Hidden Wilderness: Wildlife and Nomads of the Chang Tang Reserves*, Harry N. Abrams, New York, NY.

Sheep, Goats, Antelopes, Gazelles, and Cattle



BLUE SHEEP

Pseudois nayaur

(Dwarf Blue Sheep) *Pseudois schaeferi*

གནའ།

Physical Description

The Blue Sheep, or Bharal, is endemic to the Tibetan Plateau. According to noted biologist George Schaller, Blue sheep are best described as “goats with sheeplike traits.” The Blue Sheep has a short, lustrous, brownish grey to greyish blue coat that provides excellent camouflage for the animal among the blue shale, rocks, and brown grasses of Tibet’s open hillsides. The tip of the Sheep’s muzzle, the belly, the inside and backs of the legs, and the rump patch are white. There is also a white spot on the knees and above the hooves. The front of the neck, the chest, and the fronts of the legs are dark grey in females and black in males. A grey or black stripe divides the darker upper parts of the Blue Sheep’s body from the lighter under parts. The male’s neck is swollen during the rut.

Both male and female Blue sheep have ridged horns. The horns of males are relatively short but massive, curving up and out from the top of the animal’s head, then backwards, and curling at the tip. The horns of males measure about 24 centimetres (9.4 inches) in circumference, in males of at least six years of age, and may grow to be as long as 84 cm (33 inches). The horn tips of males are sometimes splintered, but are rarely broken. The horns of females are shorter, measuring between 10 to 20 centimetres (3.9 to 7.9 inches) long, and do not curve as much as the horns of males.

The Blue Sheep has short, pointed ears and large eyes. The Sheep’s stocky body and stout legs make it an excellent climber. Adult males stand about 80 to 91 centimetres (2.6 to 3 feet) at the shoulder and typically weigh from 60 to 75 kilograms (132 to 165 pounds). Females weigh from 35 to 45 kilograms (77 to 99 pounds). The Dwarf Blue Sheep is smaller than the common Blue Sheep. Dwarf Blue sheep males weigh about 28 to 39 kilograms (62 to 86 pounds) and females weigh about 25 to 35 kilograms (55 to 77 pounds). The Dwarf Blue Sheep also has thinner horns than the common Blue Sheep, with less of an inward curve and tips that turn up more.

Habitat

The Blue Sheep inhabits treeless slopes and alpine meadows and shrub zones above the timberline. The Sheep prefers relatively gentle hillsides covered with grasses and sedges, but usually remains within 200 metres (650 feet) of cliffs up which it can climb to escape from predators. Highly tolerant of environmental extremes, the Blue Sheep may be found in regions ranging from hot and dry to cold, windy, and snowy, and elevations from below 1,200 metres (3,900 feet) to as high as 5,300 metres (17,400 feet). The Sheep is distributed across the Tibetan Plateau and on associated and neighboring mountain ranges. The Blue Sheep’s habitat range includes Tibet, regions of Pakistan, India, Nepal, and Bhutan that border Tibet, and portions of China’s Xinjiang, Gansu, Sichuan, Yunnan, and Ningxia provinces.

The Dwarf Blue Sheep inhabits the steep, arid, lower slopes of the Yangtze River valley, at elevations from 2,600 to 3,200 metres (8,500 to 10,500 feet). The Dwarf Blue Sheep occurs in and to the north, south, and west of Bathang (Batang) county in Kham (Sichuan province). The common Blue Sheep also lives in this region, but remains in alpine meadows at higher altitudes than the Dwarf Blue Sheep; approximately 1,000 metres (3,300 feet) of forest zone separate the two species.

Eating Habits

The Blue Sheep eats grasses, herbs, lichens, and mosses.

Behaviour and Reproduction

The Blue Sheep is most active in the early morning, in the late afternoon, and briefly around midday. The Sheep typically lives in herds. Herds may consist of all males, all females, females with young and yearlings, or females and males both adult and young. Herds range in size from as few as two Blue sheep (most often a female and her offspring) to as many as 400. Most herds, however, contain about 30 animals. During the summer, males separate from females in some areas of the Sheep’s habitat range.

The Blue Sheep reaches sexual maturity between one and two years of age, but most males are not able to secure a mate until they are seven years old. The mating and birth seasons of the Sheep vary across the animal’s habitat range. In general, the Blue Sheep mates during the winter and gives birth in the summer. Reproductive success depends upon weather conditions and level of nutrition. The Blue Sheep’s gestation period is 160 days. Each pregnant female gives birth to one offspring. Offspring are weaned at about six months of age.

The Blue Sheep’s life span is 11 to 15 years. The Sheep’s natural predators include snow leopards, wolves, and common leopards. The Blue Sheep is the Snow Leopard’s principal prey on the Tibetan Plateau. Blue sheep freeze when a potential predator is in their vicinity. Their excellent camouflage often results in them being overlooked as part of the landscape. Blue sheep flee if a predator does manage to spot them.

Present Status

The Blue Sheep is categorized as Least Concern in the *2003 IUCN Red List of Threatened Species*. The Blue Sheep is under second class protection in China and is included in Schedule III of the Indian Wild Life (Protection) Act of 1972. The total population size of the Blue Sheep is estimated at between 47,000 and 414,000. The Dwarf Blue Sheep is categorized as Endangered in the *2003 IUCN Red List of Threatened Species* and is protected under the laws of Sichuan province. In 1997, there were estimated to be 200 Dwarf Blue sheep remaining.

Threats to Survival

The Blue Sheep and Dwarf Blue Sheep have been heavily hunted, mostly on a subsistence basis.

References

- Caprinae Specialist Group, 1996: *Pseudois schaeferi*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Harris, R.B., 2003: *Pseudois nayaur*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Oct 2004.
- Huffman, Brent, March 2004: *Bharal, Himalayan Blue Sheep*, http://www.ultimateungulate.com/Artiodactyla/Pseudois_nayaur.html, Oct 2004.
- Massicot, Paul, July 2004: *Animal Info – Dwarf Blue Sheep*, <http://www.animalinfo.org/species/artiperi/pseuscha.htm>, Oct 2004.
- Schaller, George, B. 1998: *Wildlife of the Tibetan Steppe*, The University of Chicago Press, London, 94pp

GORAL

Naemorhedus spp.

གྲོ་ཁོ་རྒྱ

Physical Description

The Goral is the smallest member of the *Rupicaprini* tribe of goat antelopes, which also includes the Serow, the North American mountain goat, and the European chamois. There are three Goral species: *Naemorhedus baileyi*, the Red Goral; *Naemorhedus goral*, the Himalayan Goral; and *Naemorhedus caudatus*, the Long-tailed or Chinese Goral. At least two of the three Goral species occur in Tibet.

The Goral has a short, woolly undercoat covered with long, coarse outer fur. The Goral's colouration varies across the animal's habitat range and between the three species. The color of the Goral's coat ranges from grizzled grey to dark, reddish brown, with a light throat patch, legs that lighten toward the hooves, and a dark stripe down the spine. Male gorals have a short mane and tend to be darker than female gorals. The Long-tailed Goral has a dark, bushy tail. The Goral's coat thickens and grows shaggy in the winter.

Unlike the Serow, which has a flat face, the Goral has a curved face, with a separate nasal bone and eyes set close together. The Goral's large ears measure from ten to 14 centimetres (3.9 to 5.5 inches) in length. Both male and female gorals have short, sharply pointed horns that curve backwards. The horns have small, irregular ridges and grow to a length of 13 to 18 centimetres (five to seven inches). The horns of Goral males are longer, more divergent, and are thicker at the base than the horns of females. Additionally, the ridges on the males' horns of males are more prominent than the ridges on the females' horns.

The Goral has long, strong limbs and broad, heavy hooves that are well adapted for climbing and jumping. The Goral's back is slightly arched. The Goral is about half the size of the Serow. Adult Goral males weigh between 28 and 42 kilograms (62 to 93 pounds), while females weigh between 22 and 35 kilograms (49 to 77 pounds). The height of an adult goral, taken at the shoulder, ranges from about 50 to 80 centimetres (20 to 32 inches). The Goral's body length measures approximately 80 to 130 centimetres (32 to 51 inches), and the Goral's tail measures about seven to 20 centimetres (2.8 to 8 inches) long.

Habitat

The Goral inhabits open, sparsely vegetated, and forested mountains at elevations from about 1,000 to 4,000 metres (3,300 to 13,500 feet). In areas where the Goral and the Serow share habitat, the Goral is found on rockier, more barren slopes than the Serow. The Red Goral principally occurs in southeast Tibet. The Dongqiu Nature Reserve was established in Nyingtri specifically for the animal's preservation. The Red Goral is also found in northern Burma (Myanmar), Assam State in India, and Yunnan province in China. There is a subspecies of the Red Goral called the Tibetan Red Goral (*Naemorhedus baileyi baileyi*). The Himalayan Goral occurs in the Himalaya Mountains, in northern Pakistan, northern India, southern Tibet, Nepal, and Bhutan. The Long-tailed Goral is found in Far Eastern Russia, China, Korea, eastern Burma (Myanmar), Laos, northwestern Thailand, and possibly in northeastern India (Nagaland and Assam).

Eating Habits

The Goral is a ruminant. It can take up to four days for the Goral to completely digest its food. In the spring and summer, the Goral grazes mostly on grasses, occasionally supplementing its diet with the shoots of certain shrubs and trees. In the fall and winter, the Goral generally switches to eating bamboo, the leaves and twigs of trees and shrubs, and/or nuts, including acorns. The Goral has also been spotted grouping around trees in which monkeys are feeding and eating fallen leaves, flower, and fruits. The Goral visits salt licks to obtain necessary minerals.

Behaviour and Reproduction

The Goral descends to lower elevations in the winter. The Goral tends to be most active early in the morning and in the late evening. The Goral usually spends the middle of the day resting, under the cover of vegetation or on a rocky ledge, but when it is overcast, the Goral may be active throughout the day. Gorals make trails through their habitat and use these frequently.

Female gorals and their offspring, including male gorals that have not yet reached adulthood, form small herds of two to 12 individuals. Adult males are solitary for most of the year, associating with females only during the breeding season. A herd's territory generally encompasses approximately 0.4 square kilometres (100 acres). During the mating season, adult males occupy and mark territories of about 0.2 square kilometres (22 to 25 hectares). Unlike other herding animals, gorals rely more heavily on their acute eyesight than on their sense of smell or hearing.

The Goral reaches sexual maturity between two and three years of age. The timing of the mating season varies across the Goral's habitat range, but generally occurs between September and December. The Goral's gestation period lasts 170 to 218 days, after which females give birth to one, or, occasionally, to two kids. Kids are able to stand after just one hour and begin following their mothers on their second day. Kids are weaned at seven to eight months of age.

The life span of the Goral, in the wild, is approximately eight to 15 years. One captive goral lived as long as 17 years and seven months. The Goral's natural predators include leopards, lynx, tigers, wolves, wild dogs, and martens. The Goral is a shy animal. The Goral's coat provides excellent camouflage for the Goral in its natural habitat, so the Goral's first reaction when confronted by potential danger is to freeze, in hopes of being overlooked. If the Goral does happen to be spotted, it emits a hissing or sneeze-like alarm call and flees. The Goral is capable of moving very quickly and agilely across rocky terrain. The Goral generally avoids areas of loose snow, in which it could rapidly become bogged down and exhausted, and remains close to rocks and cliffs, up which it can quickly escape from its predators. As a last resort, the Goral may use its horns to defend itself and its young.

Present Status

The Red Goral and the Long-tailed Goral are categorized as Vulnerable and the Himalayan Goral is classified as Lower Risk: Near Threatened in the *2003 IUCN Red List of Threatened Species*. All three species of Goral are included in Appendix I of CITES. Gorals are under second class protection in China and are included in Schedule III of the Indian Wild Life (Protection) Act of 1972.

Threats to Survival

The most severe threat to the Goral's survival is the loss, degradation, and fragmentation of the Goral's fragile mountain habitat. Deforestation due to logging and the collection of wood for fuel and agricultural practices including slash and burn have had the harshest effects on the Goral's habitat. The Goral is additionally threatened by hunting. The Goral is hunted for sport, for food, and to obtain its body parts, including its fur, which is used in making clothing, and other body parts that are used in traditional medicine. In some areas, gorals are hunted with the help of dogs, which frightens and over-excites the Goral such that its heart and lungs become susceptible to injury. The Goral is also threatened, albeit to a lesser extent, by natural disasters including avalanches or landslides and temperature extremes.

References

- America Zoo, *Common goral*, <http://www.americazoo.com/goto/index/mammals/414.htm>, Oct 2004.
- Caprinae Specialist Group, 1996: *Naemorhedus spp.* In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Oct 2004.
- Conservation International, *Biodiversity Hotspots – Resources*, <http://www.biodiversityhotspots.org/xp/Hotspots/resources/glossary.xml>, Oct 2004.
- Saint Louis Zoo, *Central Chinese Goral::Saint Louis Zoo*, <http://www.stlzoo.org/animals/abouttheanimals/mammals/hoofedmammals/centralchinesegoral.htm>, Oct 2004.
- Thai Society for the Conservation of Wild Animals, *Thai Wildlife : Rare or Extinct : Goral (Chinese Goral)*, http://www.tscwa.org/wildlife/rare_or_extinct_09.html, Oct 2004.
- Huffman, Brent, *Gray Goral*, http://www.ultimateungulate.com/Artiodactyla/Nemorhaedus_goral.html, Oct 2004.
- Sathyakumar, S. and Bhatnagar, Y.V., "Mountain Ungulates," *Wildlife and Protected Areas*, Vol. 1, No. 1, Dec 2002: *As a Boy...*, <http://www.wii.gov.in/envis/ungulates/chapter12.htm>, Oct 2004.
- Woodland Park Zoo, *Animal Fact Sheets*, http://www.zoo.org/educate/fact_sheets/goral/goral.htm, Oct 2004.

HIMALAYAN TAHR*Hemitragus jemlahicus*

ཨ་མི་ཏ་ར་གྲོ་མོ་

Physical Description

Tahrs are related to wild goats. The Himalayan Tahr, one of the three species of tahrs, is native to the southern range of the Himalayan Mountains. The Himalayan Tahr has a thick, shaggy, dual-layered coat. In the winter, this coat keeps the Tahr warm. Males additionally grow a long mane around their neck and shoulders that extends down to their forelegs in the winter. Adult male tahrs are reddish-brown to black with lighter underparts, a dark face, a dark muzzle, and a reddish rump patch. Males darken in color and develop a light band along their flanks as well as a dark stripe down their backs as they age. Females are grey to brown with a dark muzzle, dark legs, and light underparts. Young tahrs have a solid brown coat, except for the fronts of their legs, which are black. As temperatures rise in the spring, the Himalayan Tahr's coat thins and lightens in colour.

The Himalayan Tahr's head is small in proportion to its body size, but the Tahr's eyes are large. The ears of the Himalayan Tahr are small and pointed. Both male and female tahrs have triangular horns that curve abruptly backwards and then inwards. The Himalayan Tahr's horns reach a maximum length of 45 centimetres (18 inches). The horns of female tahrs are much smaller than the horns of the males. The curvature of the Himalayan Tahr's horns protects male tahrs from being seriously injured in the head-butting battles that occur during the Tahr's mating season. The Himalayan Tahr has no facial glands, but the Tahr's tail contains a large number of glands that secrete a very strong-smelling substance.

The Himalayan Tahr has short legs in comparison to the size of its body. The Tahr's hooves and dewclaws enable the animal to move adeptly through rocky terrain. The hooves are flexible and rubbery in the center, which provides grip on smooth surfaces, and rimmed with hard, sharp keratin on the outside, which allows the Tahr to secure footholds when climbing. The Himalayan Tahr has a body length of 90 to 140 centimetres (three to 4.7 feet) and a tail length of nine to 12 centimetres (3.6 to 4.8 inches). The Tahr stands 65 to 100 centimetres (2.1 to 3.3 feet) tall at the shoulder. The average weight of male tahrs is 73 kilograms (161 pounds) and the average weight of female tahrs is 36 kilograms (79 pounds).

Habitat

The Himalayan Tahr inhabits forested hills and mountains and alpine meadows, at elevations from 2,500 to 5,000 metres (8,200 to 16,400 feet). In the winter, the Tahr descends to lower elevations, where more cover is available, and in the summer, it ascends to alpine meadows at high elevations. The Himalayan Tahr is confined to the southern range of the Himalayan Mountains and occurs in northern India, Nepal, Bhutan, and southern Tibet. Protected areas in which the Himalayan Tahr can be found include the Kishtwar National Park, the Great Himalayan National Park, and the 33,819 square-kilometer Qomalanga Nature Preserve that was established in 1989 in the region surrounding Mt. Everest.

Eating Habits

The Himalayan Tahr is a ruminant. The Tahr eats herbs, grasses, and the leaves of shrubs and trees. The Tahr can rear up on its hind legs to reach tall branches and hold branches down with its forelegs while it eats. The Himalayan Tahr eats less in the winter due to poor food quality and high metabolic costs.

Behaviour and Reproduction

The Himalayan Tahr is most active during the early morning and the late afternoon. In the morning the Tahr moves upslope, where it spends at least half of the hours of daylight ruminating and resting. In the evening, the Himalayan Tahr returns to lower areas. Older tahrs tend to be solitary, but most tahrs live in herds of generally between two and 23 animals, or sometimes as many as 80. Except during the breeding season, males and females live separately, the males in all-male herds and the females in herds composed of females and tahrs under two years of age. Male herds are larger than female herds.

The Himalayan Tahr reaches sexually maturity at about two years of age. The Tahr's breeding season lasts from October to January. During the breeding season, mature males compete with each other for mating privileges. Males younger than four years of age are rarely successful in securing a partner to mate with. The Himalayan Tahr's gestation period is seven months. Pregnant females leave the herds before giving birth and do not return until a few days after young have been born. Females give birth to one, or, occasionally, to two kids. Kids begin nursing within a few minutes and are able to walk after about three hours. Kids are weaned at six months of age but remain with their mothers for up to two years.

In the wild, the Himalayan Tahr's life span is approximately 10 to 14 years, whereas tahrs in captivity may live for up to 22 years. The Tahr is a shy animal, fleeing from potential sources of danger. The Himalayan Tahr's only known natural predators are snow leopards. Tahrs may also be killed in rock slides and avalanches.

Present Status

The Himalayan Tahr is categorized as Vulnerable in the 2003 IUCN Red List of Threatened Species. The Himalayan Tahr is included in Schedule III of the Indian Wild Life (Protection) Act of 1972.

Threats to Survival

The main threat to the Himalayan Tahr's survival is habitat loss, due to logging and the construction of human settlements. Other threats to the Tahr include increasing competition for forage with domesticated animals and hunting. The Himalayan Tahr is hunted for sport and food. Military conflicts in northern India have led to an increase in firearms along the national borders in the Himalayan region, which has in turn resulted in more tahr deaths.

References

- America Zoo, *Himalayan tahr*, <http://www.americazoo.com/goto/index/mammals/420.htm>, Aug 2004.
- ARKive, *Himalayan Tahr – Hemitragus jemlahicus: More Information – ARKive*, http://www.arkive.org/species/GES/mammals/Hemitragus_jemlahicus/more_info.html, Oct 2004.
- Blue Planet Biomes, *Himalayan Tahr – Hemitragus jemlahicus*, http://www.blueplanetbiomes.org/himalayan_tahr.htm, Oct 2004.
- Caprinae Specialist Group, 1996: *Hemitragus jemlahicus*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Huffman, Brent, *Ultimate Ungulate Fact Sheet - Himalayan Tahr*, http://www.ultimateungulate.com/Artiodactyla/Hemitragus_jemlahicus.html, Aug 2004.
- Kennedy, Sara, 2002: *Hemitragus jemlahicus*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Hemitragus_jemlahicus.html, Oct 2004.

MAINLAND SEROW

Capricornis (or *Nemorhaedus*) *sumatraensis*



Physical Description

The Mainland, or Asiatic, Serow is one of the three species of serows. Serows are the most generalized representatives of the bovid subfamily of goat antelopes called Caprinae, all of which probably evolved from a serow-like ancestor. The Mainland Serow's coarse, somewhat long fur is coloured reddish chestnut to black. Most Mainland serows also have a white or pale yellow neck patch and several lighter-coloured patches on their limbs. The Mainland Serow has a short beard, and a thick mane that extends down the length of its back from the back of its neck to its tail.

The Mainland Serow has short, conical horns that are ridged at the base and slope backwards. The horns of female serows are shorter than the horns of males, which measure, at most, 28 centimetres (11 inches) in length. The Mainland Serow's narrow, pointed, mule-like ears are usually longer than its horns. The Serow has a short body and long legs. The length of the Serow's body is 140 to 180 centimetres (55 to 71 inches) and the length of the Serow's tail is 8 to 16 centimetres (3.1 to 6.3 inches). The Serow stands about a meter (3.3 feet) tall at the shoulder, and weighs from 85 and 140 kilograms (187 to 309 pounds).

Habitat

The Mainland Serow inhabits forests and wooded gorges in the mountains, at elevations from 2,000 to 3,330 metres (6,000 to 10,000 feet), as well as grassland and shrubland, at lower altitudes. The Serow's habitat range extends north from the Himalayas of Nepal to China's Gansu and Anhui provinces, and across South East Asia, as far south as the Malay Peninsula and Sumatra.

Eating Habits

The Serow is a ruminant. As is the case with other ungulates, or hoofed mammals, the Serow cannot manipulate food with its forelimbs. Instead, the Serow's lips, teeth, and tongue are modified to take food directly from a plant and to grind vegetation like a mill. The Serow is a selective browser, eating grasses, herbs, and the leaves, shoots, and twigs of trees and shrubs.

Behaviour and Reproduction

The Serow is most active at dawn and dusk. During the heat of the day, the Serow takes shelter among the rocks, in caves, under overhanging rocks or cliffs, or in dense underbrush. The Serow is not as agile as the Goral, nor does it move as quickly, but the Serow is sure-footed, clambering easily along well-defined trails on mountain slopes. Furthermore, the Serow's smell, vision, and hearing are acute. The Serow is also a good swimmer.

The Serow is usually solitary, especially the male; however, serows are sometimes found in pairs or family groups consisting of up to seven individuals. A solitary serow's territory may measure only about 12,000 square metres (three acres) in area, while the territory of a family group may measure up to 220,000 square metres (54 acres) in area. Serows mark their territories by rubbing a secretion from their preorbital glands on rocks.

The Serow mates in late autumn. The gestation period of the Serow is about 200 to 230 days. Serow mothers give birth in the summer, each

to a single kid weighing about 3.6 kilograms (8 pounds). The Serow kid reaches full size and leaves its mother's territory one year after birth. The Serow reaches sexual maturity at approximately three years old. The Serow's life span in the wild is unknown, but Serow in zoos have lived for over 10 years. The Serow's natural predators include bears, tigers, and wolves. The Serow may use its horns to defend itself.

Present Status

The Mainland Serow is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The Serow is under second class protection in China and is included in Schedule II, Part I of the Indian Wild Life (Protection) Act of 1972.

Threats to Survival

The main threat to the Serow's survival is habitat loss. The Serow's habitat has been lost as a result of logging and the conversion of forest into cropland and pastureland. The Serow is also hunted, for food, as game, and to obtain its body parts for sale. The Serow's body parts are used in traditional medicine; serow oil supposedly has bone and joint healing properties. Additionally, the Serow is sometimes trapped in snares set for other animals.

References

- America Zoo, *Mainland serow*, <http://www.americazoo.com/goto/index/mammals/415.htm>, Aug 2004.
 Caprinae Specialist Group, 1996: *Capricornis sumatraensis*, In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
 PBS, *The Living Edens: Bhutan – Animal Archive – Serow*, http://www.pbs.org/edens/bhutan/a_serow.htm, Aug 2004.
 Thai Society for the Conservation of Wild Animals, *Thai Wildlife: Rare or Extinct: Serow*, http://www.tscwa.org/wildlife/rare_or_extinct_08.html, Aug 2004.
 Woodland Park Zoo, *Animal Fact Sheets*, http://www.zoo.org/educate/fact_sheets/serow/serow.htm, Aug 2004.

TAKIN

བ་མེན།

Budorcas taxicolor

Physical Description

The hefty Takin, also known as the Cattle Chamois or the Gnu Goat, belongs to the genus *Budorcas*, which means “oxlike gazelle” in Greek. The closest cousin of the Takin is the Musk Ox. All four of the Takin's recognized sub-species occur in Tibet. The Takin sub-species are *B. t. bedfordi*, the Shensi or Golden Takin (Pusser Bamen, in Tibetan), *B. t. taxicolor*, the Mishmi Takin (Himalaya Bamen), *B. t. tibetana*, the Sichuan Takin (Gyalmo Tsawa Rong gi Bamen), and *B. t. whitei*, the Bhutan Takin (Druk gi Bamen).

The Takin has thick, shaggy fur, with a dark stripe down its back. The Takin's short, bushy tail, which measures approximately 15 centimetres (6 inches) long, is mostly hidden beneath the Takin's fur. The Takin secretes an oily, strong-smelling substance that protects its coat from moisture in the form of fog and rain. The color of the Takin's coat varies among sub-species. The Golden Takin is golden yellow, with a black muzzle. The Mishmi and Bhutan takins are dark brown. The Sichuan Takin is straw-colored, with splotches of dark gray on its back, legs, and rump. The face of male takins tends to be dark, whereas females and young takins tend to just have a dark muzzle.

The Takin has a large head, with an arched muzzle and a broad, naked nose. Both male and female takins have horns. The Takin's horns, ridged at the base, grow outwards and upwards from the middle of the top of the Takin's head. The Takin's horns measure about 50 to 60 centimetres (20 to 24 inches) in length and 26 to 33 centimetres (10 to 13 inches) in diameter.

The Takin has short legs and strong, two-toed hooves with highly developed spurs. Male takins stand an average of 120 centimetres (3.9 feet) tall at the shoulder, while females reach an average height of 105 centimetres (3.4 feet). The body length of adult male takins ranges from 210 to 220 centimetres (6.9 to 7.2 feet). The body length of female takins averages 170 centimetres (5.6 feet). Male takins are heavy, weighing as much as 400 kilograms (880 pounds). Female takins may weigh up to 250 kilograms (550 pounds).

Habitat

The Takin inhabits forested slopes from about 1,500 to 4,250 metres (5,000 to 14,000 feet) in elevation. In the summer, the Takin frequents rocky, grass-covered alpine zones. In the winter, the Takin migrates to forested valleys at lower elevations.

The Takin's habitat range includes the Himalayas and mountain ranges in west and northwest China. The Golden Takin occurs in the Qin Lin (Qinling) Mountains in China's Shaanxi and Gansu Provinces. The Sichuan Takin is found in China's Sichuan and Gansu Provinces, including the Qionglai Mountains in Sichuan, and in Northeast Tibet, or Amdo. In Northeast Tibet, the Sichuan Takin is found in the deep valleys of Ngawa and Katse and the eastern part of Drukchu. The Mishmi Takin occurs in northern Burma (Myanmar), Bhutan, India's Assam and Sikkim States, and in Southeast Tibet (or the northern region of China's Yunnan Province). The Mishmi Takin's range in Tibet includes the Metok and Gyalthang regions, as well as parts of Drukchu and Ngawa. The Bhutan Takin is found in India, Bhutan, and the Lhoka border

region between Tibet and Bhutan.

Eating Habits

The Takin is a generalist herbivore. The Takin eats deciduous leaves from trees and shrubs, grasses, herbs, and bark. In the winter, the Takin also eats twigs and evergreen leaves. The Takin uses various methods to gain access to vegetation that would otherwise be out of its reach, including snapping off branches, bending saplings and shrubs, toppling saplings (as thick as 8 to 10 centimetres, or 3 to 4 inches), and standing on its hind legs. A takin standing on its hind legs may reach leaves as high as 2.4 metres (7.9 feet) above the ground. The Takin also requires a large mineral intake. Sometimes the Takin travels great distances to reach salt deposits, where it may remain for several days.

Behaviour and Reproduction

The Takin browses for food in the early morning and late afternoon. The Takin spends the middle of the day resting in thick vegetation, unless it is overcast, in which case the Takin is active all day. The Takin makes narrow trails through thickets and uses these to travel from its resting places to its eating places. The Takin generally moves slowly. However, the Takin is remarkably coordinated for an animal of its size and will leap nimbly from rock to rock up steep, rugged slopes to escape from predators.

The Takin lives in mixed herds, consisting of females, kids, young takins, and a few adult males. Older males are mostly solitary, joining the herds only during the mating months. In the summer, large herds of over 100 takins may form, but in the winter, smaller herds of up to 20 takins are more common. Herds sometimes congregate around salt licks and watering holes. Male takins lead the herds. Young calves remain in the middle of the herd, and females bring up the rear. A takin uses a cough-like sound to warn other members of the herd of potential danger.

The Takin reaches sexual maturity at 2.5 years of age. The Takin mates in the summer, but the exact timing of the mating season varying among sub-species. Male takins emit a low bellow as a warning or a challenge to competitors during this season. Some males are injured seriously or killed as a result of fighting with each other. The Takin's gestation period lasts seven to eight months. In the spring, each takin mother gives birth to a single calf. Calves weigh between five and seven kilograms (11 to 15 pounds) at birth. Calves stand immediately after being born and are able to walk two or three steps. By the time the calves are three days old, they can walk well enough to travel through most types of terrain with their mothers. Calves start eating solid food one to two months after birth, and are weaned at about nine months of age.

The Takin's life span is 12 to 15 years, for takins in the wild. Takins in captivity have lived as long as 16 years. The Takin's natural predators include bears, wolves, wild dogs, leopards, and tigers. The Takin responds to predators by making its alarm call, fleeing, and hiding, often laying down in thickets. The Takin's coat provides camouflage.

Present Status

The Takin is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix II of CITES. The Takin is under first class protection in China and is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. The IUCN has also categorized each of the Takin's subspecies. The Golden Takin, of which about 1,200 remain, and the Mishmi Takin, of which fewer than 10,000 remain, are categorized as Endangered. The Sichuan Takin, of which there are less than 5,000 left, and the Bhutan Takin, are categorized as Vulnerable.

Threats to Survival

The Takin is primarily threatened by hunting and habitat destruction. The Takin is hunted for its hide and its "highly prized" meat. The Takin's habitat has been lost and degraded due to deforestation. Deforestation in the Takin's habitat range has occurred as a result of logging, infrastructure development, the expansion of human settlements, agricultural expansion, and fires. The Takin is also threatened by competitors and disease.

References

- Caprinae Specialist Group, 1996: *Budorcas taxicolor*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Huffman, Brent, *Takin*, http://www.ultimateungulate.com/Artiodactyla/Budorcas_taxicolor.html, Sept 2004.
- Marceau, J., 2000: *Budorcas taxicolor*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Budorcas_taxicolor.html, Sept 2004.
- Schaller, G.B., Qitao, Deng, Wenshi, Pan, Zisheng, Qin, Xiaoming, Wang, Jinchu, Hu, Liming, Shen, "Feeding behavior of Sichuan takin (*Budorcas taxicolor*)," <http://natureproducts.net/Ecology/Takin.html>, Sept 2004.
- Woodland Park Zoo, *Animal Fact Sheets*, http://www.zoo.org/educate/fact_sheets/takin/takin.htm, Sept 2004.

TIBETAN ANTELOPE*Pantholops hodgsoni***Physical Description**

The Tibetan Antelope is also known as the Chiru. Morphological characteristics and DNA analysis reveal that the Tibetan Antelope is most closely related to the wild goats and sheep of the subfamily Caprinae. The Antelope's short, dense, woolly hair is fawn-coloured, and the Antelope has black markings on its face and legs. Male Tibetan antelope have long, slender, ridged black horns that curve slightly backwards, which they use to defend their harems against rivals during the rut. Horns measure 50 to 60 centimetres (19 to 23 inches) long.

The Tibetan Antelope is virtually exclusive to the Tibetan Plateau. The Antelope has evolved special characteristics that enable it to withstand cold climates and high altitudes. To keep out the cold, the Tibetan Antelope has a unique downy undercoat called *shabtoosh* (which is Persian for "the king of wool"). The Antelope's nostrils are filled with air sacs that help the Antelope to breathe, giving its muzzle a swollen appearance. The Tibetan Antelope's light and nimble body and the Antelope's increased capacity for breathing, due to the air sacs in its nostrils, make the Antelope a remarkable runner. Despite the thin atmosphere on the high plateau, the Antelope can run up to 80 kilometres per hour (50 miles per hour).

Male antelope stand 80 to 85 centimetres (31 to 33 inches) tall at the shoulder, while female antelope stand about 75 centimetres (30 inches) tall. Males weigh 35 to 40 kilograms (77 to 88 pounds). Females weigh 25 to 30 kilograms (55 to 66 pounds).

Habitat

The Tibetan Antelope favors alpine steppes and similar semi-arid habitats. However, the Antelope may also seasonally occupy desert steppes and other arid areas. The Tibetan Antelope may be found at elevations as low as 3,250 metres (10,700 feet), but most of its range lies above 4000 metres (13,100 feet), where the mean annual temperature is four degrees Celsius (39 degrees Fahrenheit). In northern Ladakh, the Antelope can be found as high as 5,500 metres (18,000 feet).

The Tibetan Antelope primarily inhabits the Tibetan Plateau (although about 200 migrate to Ladakh during the summer months). The great herds of 15,000 antelope or more that Western explorers reported a century ago are now gone, but herds of 1,000 or more can still be seen. The Antelope's habitat range has contracted in Central and eastern Tibet. The largest Tibetan antelope populations survive in the Chang Tang region of northwestern Tibet, in southern Xinjiang, and in Amdo in northeastern Tibet. There are a number of both migratory and resident populations of antelope in these regions. The Tibetan Antelope's habitat range overlaps with the Chang Tang, Arjin Shan, Kekexili, and the Sanjiangyuan ("Source of Three Rivers") Nature Reserves.

Eating Habits

The Tibetan Antelope is a grazer and possibly a browser, feeding on grasses and herbs.

Behaviour and Reproduction

Male Tibetan antelope have several movement patterns. In late April or May, most 10 to 11 month-old males separate from their mothers to join their juvenile male peers or adult males. A few of the male antelope remain resident on their winter grounds throughout the summer, but most travel at least a short distance, usually north, from their winter grounds to a summer range. Some male Tibetan antelope travel far in the summer. Males return to their traditional fall and winter grounds in autumn, for the rut. As a result of these diverse movement patterns, male antelope, in contrast to females, tend to be dispersed widely throughout the Tibetan Antelope's habitat range during the summer.

Female Tibetan antelope probably first conceive at the age of 1.5 or 2.5 years, and give birth at the age of two to three years. The gestation period of the Tibetan Antelope is seven to eight months. Antelope mothers give birth between the second half of June and early July, each mother typically to just one offspring. The life span of the Tibetan Antelope in the wild is eight years or more.

Present Status

The Tibetan Antelope is categorized as Endangered in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The Tibetan Antelope is under second class protection in China, is legally protected in Nepal, and is included in Schedule II, Part I of the Indian Wild Life (Protection) Act of 1972. Jammu and Kashmir State in India, which has its own set of laws, in August 2002 finally placed the Tibetan Antelope under Schedule I of the Jammu and Kashmir (Wildlife) Protection Act, banning the trade and use of Tibetan antelope derivatives.

It is estimated that the Tibetan Antelope's population has declined to approximately 50% of its original size. The Chinese State Forestry Administration estimate that 65,000 to 75,000 of the animals remain, and that poaching claims the lives of approximately 20,000 Tibetan antelope per year. At these rates, the Tibetan Antelope could be driven to extinction within the next five years.

Threats to Survival

Though Tibetan cultural practices traditionally discouraged hunting, Tibetans formerly hunted the Tibetan Antelope on a subsistence basis, principally for food, using traps, dogs, and muzzle-loading rifles. Since then, poaching has become the most serious threat to the Antelope's

survival. The use of Tibetan Antelope horn has been documented in traditional Tibetan and Chinese medicine, but medicinal use accounts for a minority of the poaching of the Antelope. The main reason the Tibetan Antelope is being slaughtered illegally, in the thousands, is to obtain its *shabtoosh* undercoat.

Shabtoosh is finer, softer, and warmer than lambswool, or even cashmere, and as such, it is considered to be one of the most luxurious animal fibres in the world. The demand for *shabtoosh* fuels a lucrative illegal trade, which begins with poachers in Tibet, crosses over to India, and ends in the fashion centres of the world (including Hong Kong, Tokyo, and cities in North America and Europe). *Shabtoosh* is usually smuggled into India via Nepal and transported to Jammu and Kashmir State, where the *shabtoosh* is woven into shawls.

Tibetan antelope pelts sell for up to US\$80 apiece; prices of pure *shabtoosh*, in contrast, range from US\$1,500 to over US\$2,000 per kilogram. A single *shabtoosh* shawl, for which three to five antelope must be killed, typically sells for US\$2,000 to US\$8,000, but may sell for as much as US\$15,000, depending upon the shawl's size and quality. *Shabtoosh* shawls were traditionally called "ring shawls" because they are so fine that they can be passed through a woman's wedding ring. *Shabtoosh* may also be bartered for tiger and leopard bones and pelts, bear gall bladders, and musk pods, fueling a deadly two-way trade in endangered species products.

Other threats to the Tibetan Antelope and its habitat include: fencing and the encroachment of the Antelope's grazeland by pastoralists, which interferes with the Antelope's migration and foraging; extractive activities, including oil drilling and gold mining; and increasing human settlement. The Antelope may compete with livestock for forage where their ranges overlap.

References

- International Campaign for Tibet, 26 August 2002: *Kashmir Bans Shabtoosh Product to Protect Endangered Tibetan Antelope*, <http://www.savetibet.org/News/News.cfm?ID=1278&c=6>, Aug 2004.
- Nowak, R.M., 1999: *Walker's Mammals of the World*, The John Hopkins Univ. Press, Baltimore, MD.
- Mallon, D.P., 2003: *Pantholops hodgsonii*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Schaller, George B., 1998: *Wildlife of the Tibetan Steppe*, The University of Chicago Press, London, 80pp.

TIBETAN ARGALI

Ovis ammon hodgsoni

གཉན་པོ་

Physical Description

The Argali, or the Asian Wild Sheep, is the largest species of wild sheep in the world. The Tibetan Argali is one of the eight recognized sub-species of the Argali. The Tibetan Argali has light grayish brown upper parts that are darker along the back, a white belly, and a white rump patch. The white rump patch surrounds the Tibetan Argali's black-tipped tail, which, at less than six centimetres (2.4 inches) long, is the shortest tail of the Argali sub-species. A stripe runs along the side of the Tibetan Argali's body, separating the light belly from the darker upper parts. During the winter, the contrast between the light and dark parts of the Tibetan Argali's body becomes more pronounced. The lateral stripe darkens in color, and the backs of the legs, the face, and the male's neck ruff turn white.

The Argali has very large, corkscrew-like horns that grow throughout the sheep's life. The horns of Tibetan Argali rams are ridged and the horn tips, which point forwards and sometimes outwards, are usually broken or splintered. The longest horns of a male Tibetan argali that have been measured were 145 centimetres (4.8 feet) long. The horns of female Tibetan argalis are significantly smaller and shorter than those of the males. The longest horns of a female Tibetan argali that have been measured were 46 centimetres (1.5 feet) long.

The Tibetan Argali has a compact body and long legs. Tibetan Argali rams stand about 118 centimetres (3.9 feet) tall at the shoulder and weigh an average of 105 kilograms (231 pounds). Females stand 104 to 112 centimetres (3.4 to 3.7 feet) at the shoulder and weigh only about 68 kilograms (150 pounds).

Habitat

The Argali predominately inhabits high plateaus, rolling hills, and relatively gentle mountain slopes, at elevations from 3,000 to 5,000 metres (10,000 to 16,500 feet). The Tibetan Argali is found throughout the Tibetan Plateau, including regions of Nepal and Sikkim and Ladakh in India that are close to the Tibetan border. In the winter, the Argali tends to migrate to lower elevations or to less snowy areas.

Eating Habits

The Tibetan Argali forages on grasses, herbs, sedges, and shrubs.

Behaviour and Reproduction

The Tibetan Argali usually forms small herds, of 2 to 15 sheep, but groups as large as 50 have been spotted. Adult rams tend to commingle with females only during the rut season. During the rest of the year, they live in separate all-male herds. The Argali's primary vocalizations are an alarm whistle and a warning hiss, which the sheep produces by blowing air through its nostrils.

Female argalis reach sexual maturity at two years of age, while males reach sexual maturity at five years of age. The rut occurs between November and January. During the rut, competing rams fight by rearing up on their hind legs, leaning forward, and racing towards each other, crashing horns upon impact. The Tibetan Argali's gestation period is 150 to 160 days long. Pregnant females separate from the herd and retreat to protected areas. Births take place in late May and early June. Each mother gives birth to one lamb, or, very rarely, to twins. The mother and her newborn lamb remain separated from the herd for several days, during which the mother takes brief forays to graze, while the newborn mostly lays motionless.

The Tibetan Argali rarely lives beyond 9 years of age. The Argali evades its predators, which include wolves and snow leopards, by fleeing or by taking refuge on steep mountain slopes. The Tibetan Argali is a relatively fast runner.

Present Status

The Tibetan Argali is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The Tibetan Argali is under second class protection in China, and is included in Schedule I, Part I of the Indian (Wildlife) Protection Act, 1972. In 1998, noted zoologist Schaller estimated that the total population size of the Tibetan Argali could be as low as 7,000. The Tibetan Argali's population is fragmented and is declining.

Threats to Survival

The Tibetan Argali was traditionally hunted for food on a subsistence basis, but has been increasingly hunted for its horns. The horns are of value to trophy hunters and may also be used in traditional Chinese medicine. Another serious threat to the Argali's survival are the increasingly large livestock populations encroaching upon large sections of the Argali's habitat range. Argalis in these regions are forced to compete with livestock for habitat, forage, minerals, and water.

References

- Caprinae Specialist Group, 1996: *Ovis ammon*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Sathyakumar, S. and Bhatnagar, Y.V., "Mountain Ungulates," *Wildlife and Protected Areas*, Vol. 1, No. 1, Dec 2002, <http://www.wii.gov.in/envis/ungulates/chapter2.htm>, Aug 2004.
- Schaller, George B., 1998: *Wildlife of the Tibetan Steppe*, The University of Chicago Press, London, 80pp.

TIBETAN GAZELLE

Procapra picticaudata

སྐྱེལ

Physical Description

The Tibetan Gazelle is endemic to the Tibetan Plateau. The Gazelle has a sandy-brown to greyish-brown coat that is greyer in the summer than in the winter. The fronts of the Tibetan Gazelle's slender legs are light grey. The inside of the Gazelle's legs, the Gazelle's belly, and the Gazelle's large, heart-shaped rump patch are white. A light, rust-coloured border surrounds the rump patch. The Tibetan Gazelle's hairs are erectile, and conspicuously fan out when the Gazelle is alarmed, such as when the Gazelle is fleeing from a predator.

The Tibetan Gazelle has a short black-tipped tail that measures approximately 5 to 10 centimetres (2 to 4 inches) long. Male gazelles have thin, ridged horns that measure an average of 28.9 centimetres (11.4 inches) in length. These horns curve up, backwards, and up again, the tips often bending in slightly. The Tibetan Gazelle's body is compact, measuring about 95 to 105 centimetres (3.1 to 3.4 feet) in length. The Gazelle stands about 60 to 65 centimetres (2 to 2.1 feet) high at the shoulder and weighs about 25 to 35 kilograms (55 to 77 pounds).

Habitat

The Tibetan Gazelle inhabits open landscapes, including plains, hills, and mountains. In the mountains, the Gazelle is found both in valleys and on high ridges. The Tibetan Gazelle avoids arid areas where few of the small forbs (non-grass herbs) that form an important part of the Gazelle's diet grow. Most Tibetan gazelles occur in Tibet, but small numbers may also be found in Ladakh and Northern Sikkim. Within Tibet, the Gazelle population is concentrated in the Chang Tang in northern Tibet.

Eating Habits

The Tibetan Gazelle predominantly eats forbs, shrubs, and seeds. The Gazelle has a high metabolism, due to its small size, so it requires the most nutritious forage available.

Behaviour and Reproduction

Most Tibetan Gazelle males, both yearling and adult, remain separate from female gazelles between May and December. A few of the males are solitary, but most live in small herds of five to ten. Sometimes several herds of gazelles are found close to each other. Female gazelles are more likely than the males to be dispersed, especially during the birth season.

The Tibetan Gazelle's rut takes place from January to February. The Gazelle's gestation period lasts 5.5 to six months. Most births occur between mid-July and early August. Each mother gives birth to a single young, weighing about 3 kilograms (7 pounds). Newborn gazelles hide for at least two weeks after birth, while they are gaining strength.

Present Status

The Tibetan Gazelle was categorized as Least Concern in the *2003 IUCN Red List of Threatened Animals*. The Tibetan Gazelle is under second class protection in China and is included in Schedule I, Part I of the Indian Wild Life (Protection) Act of 1972. According to noted zoologist George Schaller, there may be as many as 100,000 Tibetan gazelles on the Tibetan Plateau.

Threats to Survival

The Tibetan Gazelle has been and continues to be widely hunted, especially for food. As Rawling noted, in the year 1905: "[the Gazelle's] flesh is delicious." The encroachment of livestock upon much of the Tibetan Gazelle's pasture has also had a detrimental effect on the Gazelle's numbers.

References

Mallon, D.P., 2003: *Procapra picticaudata*, In: IUCN 2003, *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Sept 2004.
Schaller, George, B., 1998: *Wildlife of the Tibetan Steppe*, The University of Chicago Press, London.
Zeitschriftenverlag, Paul Parey, 2003: *JAGEN WELTWEIT: Tibetgazelle Procapra picticaudata*, http://www.jww.de/artikelbeitrag/artikelbeitrag_13078.html, Aug 2004.

WILD YAK

Bos grunniens or *Bos mutus*

འགྲོ་མེད་

Physical Description

The Wild Yak is the ancestor of the domestic yak that Tibetans have relied upon for centuries. Yaks belong to the Bovini tribe, which also includes bisons, buffaloes, and cattle. Though there are over 12 million domestic yaks in the Central Asian highlands, fewer than 10,000 Wild yaks survive. The only zoo in the world that has a Wild yak is in China. Wild yaks are larger and shier than domestic yaks and their coats are usually a different color.

Domestic yaks are usually solid white, grey, or brown, or black with patches of white, grey, and brown. The Wild Yak, on the other hand, is typically solid black, with rust-brown overtones, and is very rarely golden. Young Wild yaks are dark brown. The Wild Yak has a grey area above the tip of its muzzle. The Wild Yak's coat has an inner layer of dense, short, wooly fur beneath coarse guard hairs. A long fringe of hair grows from the Yak's lower neck, chest, sides, and thighs. The Wild Yak has a large, bushy tail.

The Wild Yak's horns are grey to black and curve outwards, forwards, back, and slightly inward. The horns of males are larger than those of females. The horns of male Wild yaks average 42.6 centimetres (16.8 inches) in length, from tip-to-tip, and 35.2 centimetres (13.9 inches) in circumference. The horns of females average 32.2 centimetres (12.7 inches) from tip-to-tip and 19.5 centimetres (7.68 inches) in circumference.

The Wild Yak's thick coat and its relatively small number of sweat glands help the Yak to conserve heat. The Yak can tolerate temperatures as low as minus 40 degrees Celsius. The Wild Yak's large lungs and its blood's high red blood cell count and high concentration of hemoglobin enable the Yak to do well at high altitudes. The Wild Yak's broad hooves and strong legs allow it to adeptly climb steep, rocky slopes. The Wild Yak has poor eyesight, but this is compensated for with its well-developed sense of smell and outstanding hearing. The Yak responds to sounds several kilometres away.

The Yak has a hump just behind its neck. Males are larger than females. Wild yak males measure 175 to 203 centimetres (5.7 to 6.6 feet) tall at the shoulder and 358 to 381 centimetres (11.7 to 12.5 feet) long. Females, in contrast, measure 137 to 156 centimetres (4.5 to 5.1 feet) tall and average 305 centimetres (10 feet) long. Wild yaks weigh between 300 and 1000 kilograms (660 to 2,200 pounds).

Habitat

The Wild Yak inhabits treeless plains, hills, and mountains, from 3,200 to 5,400 metres (10,500 to 17,700 feet) in elevation. The Yak generally avoids arid and warm areas, preferring alpine meadows, and, to a lesser extent, the alpine steppe. The Wild Yak migrates from lower to higher elevations for the warmest months of the year, August and September.

The Wild Yak is endemic to the Tibetan Plateau. The Wild Yak could be found almost everywhere in Tibet prior to 1949. Today, the Wild Yak is mostly confined to the remote northwestern part of the Tibetan Plateau, including North and Northwest Tibet and the southern fringes of the Xinjiang Uyghur Autonomous Region. The highest concentration of Wild yaks is found within the 284,000 square-kilometer Chang Tang

Nature Reserve. A few Wild yaks seasonally migrate into Ladakh and, possibly, into northern Nepal.

Eating Habits

The herbivorous Wild Yak eats grasses, sedges, herbs, and, occasionally, lichens and tubers. In the summer, the Yak drinks water frequently. In the winter, the Wild Yak eats snow to hydrate itself.

Behaviour and Reproduction

The Wild Yak is active during the day. The Yak spends most of its time browsing, often travelling considerable distances. Wild Yak males are often found alone or in all-male herds. Females are usually found in all-female herds or mixed herds. The size of herds ranges from about five yaks to above 100 yaks. Females are usually found on higher, more protected slopes than the males.

The Wild Yak reaches sexual maturity between four to six years of age, but females may begin breeding at just 3 years of age. The Wild Yak's rut occurs from July to September. During this season, yaks may be heard making one of their few vocalizations, a grunting noise. The Wild Yak's gestation period is 258 to 270 days. Most births take place between April and June. Each *dri* mother gives birth to one calf. Wild yak calves are able to stand immediately after birth and learn how to walk within a few hours. Mothers wean their calves after a year and calves grow to adult size by two years of age.

The Wild Yak lives for a maximum of 25 years. The Yak's only natural predator is the wolf. Wild yaks flee from danger, often up steep slopes, and as far away from the threat as 20 kilometres (12 miles). Yaks also use their massive horns to defend themselves. Wild yaks in herds sometimes respond to the approach of a predator by huddling closely together, with the yaks on the outside of the circle lowering their horns as if ready to attack. Wild yaks will also try to scare predators away by charging.

Present Status

The Wild Yak is categorized as Vulnerable in the 2003 IUCN Red List of Threatened Species and is listed under Appendix I of CITES. The Yak is under first class protection in China and is included in Schedule II, Part I of the Indian Wild Life (Protection) Act of 1972. The Wild Yak's population has declined at least 20% of the last 20 years. In 1995, the number of Wild yaks was estimated at around 15,000. Today, probably fewer than 10,000 mature Wild yaks remain.

Threats to Survival

The most serious threat to the Wild Yak's survival is casual and market hunting. The Yak is hunted for its meat, horns, and other materials. It is illegal to kill a Wild yak in Tibet without a permit from the government, but because the regions where Wild yaks are found are so remote, it is difficult for officers to enforce this law. Male yaks tend to be easier targets than females because they inhabit more open terrain.

The spread of pastoralists and their livestock into areas of Tibet that were previously uninhabited by humans poses additional problems for the Wild Yak. Wild yaks in areas encroached upon by pastoralists now have to compete with livestock for pasture. In other cases, pastoralists may build fences and simply shut the Wild Yak out of its previous grazing lands. Wild yaks have also contracted viral and bacterial diseases from livestock, such as Brucellosis, which can result in spontaneous abortion. Furthermore, Wild yaks may interbreed with domestic yaks, resulting in hybridization. Other areas of the Wild Yak's habitat have been degraded as a result of mining operations.

References

- Hedges, S., 2000: *Bos grunniens*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Huffman, Brent, March 2004: *Yak*, http://www.ultimateungulate.com/Artiodactyla/Bos_grunniens.html, Sept 2004.
- Oliphant, M., 2003: *Bos grunniens*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Bos_grunniens.html, Sept 2004.
- Sathyakumar, S., and Bhatnagar, Y.V., eds., 2002: *Mountain Ungulates*, ENVIS Bulletin: Wildlife and Protected Areas, Vol. 1, No. 1, <http://www.wii.gov.in/envis/ungulates/chapter2.htm>, Sept 2004.
- Schaller, George B., 1998: *Wildlife of the Tibetan Steppe*, The University of Chicago Press, London.
- UNEP World Conservation Monitoring Centre, Oct 2001: *Wild Yak – Bos grunniens*, http://www.unep-wcmc.org/species/data/species_sheets/yak.htm, Sept 2004.

THE PRIMATES

Monkeys



ASSAMESE MACAQUE

Macaca assamensis



Physical Description

The Assamese Macaque is also known as the Himalayan Macaque or the Hill Monkey. The Assamese Macaque's pelt is dark to yellowish brown in colour. The adult Macaque has red skin. The Assamese Macaque has a hairless face and cheek pouches to store food in while foraging. The Macaque's body length measures from 50 to 73 centimetres (20 to 29 inches). The Assamese Macaque's short tail is between 19 and 38 centimetres (7.5 to 15 inches) long. The average body weight of the adult male Assamese Macaque is between 10 and 14.5 kilograms (22 to 32 pounds). The female weighs between eight and 12 kilograms (17 to 26 pounds).

Habitat

The Assamese Macaque inhabits mountain, evergreen, bamboo, and deciduous dry forests, at elevations from 300 to 3,500 metres (980 to 11,500 feet). The Assamese Macaque is found in Bangladesh, Bhutan, Burma, Cambodia, China, Laos, Nepal, Thailand, Tibet, and Vietnam.

Eating Habits

The Assamese Macaque eats fruits, leaves, insects, and small mammals, but prefers immature leaves.

Behaviour and Reproduction

The Assamese Macaque is active during the day, or diurnal, and spends its time both on the ground and in the trees. The Macaque is a social animal, living in hierarchical groups of 10 to 50 monkeys. Each group includes both males and females. After a gestation period of 165 days, Assamese Macaque mothers give birth to one offspring. Each offspring weighs about 400 grams (14 ounces) at birth. Males leave their mothers' groups once they reach maturity. The life span of the Assamese Macaque is unknown.

Present Status

The Assamese Macaque is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Animals*. The Macaque is under first class protection in China.

Threats to Survival

The Assamese Macaque's numbers have declined due mainly to habitat loss resulting from logging. The Macaque is also hunted for food, and is persecuted in areas where it raids crops.

References

BBC, *Science & Nature – Wildfacts – Assamese Macaque*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/216.shtml>, Sept 2004.

Eudey, A. & Members of the Primate Specialist Group, 2000: *Macaca assamensis*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.

Flannery, Sean, Jan 2004: *Assamese Macaque (Macaca assamensis)*, http://members.tripod.com/uakari/macaca_assamensis.html, Oct 2004.

RHESUS MACAQUE

Macaca mulatta



Physical Description

Macaques are second only to humans in their ability to use their fingertips and opposable thumbs to manipulate small objects. The Rhesus Macaque has brown fur, with light underparts, and red skin. The Macaque's face, ears, and rump are hairless. The Rhesus Macaque has cheek pouches to carry food in while foraging. The Macaque's body length ranges from 45 to 65 centimetres (18 to 26 inches), and the Macaque's tail length ranges from 19 to 32 centimetres (7.5 to 13 inches). The average height of male Rhesus macaques measures from 48 to 63.5 centimetres (19 to 25 inches), while the average height of females measures from 47 to 53 centimetres (18.5 to 20.9 inches). Male macaques weigh from 6.5 to 12 kilograms (14 to 26 pounds) and females weigh an average of 3.3 kilograms (7.3 pounds).

Habitat

The Rhesus Macaque is found in a wide range of habitats, ranging from barren areas to dense forest, from very cold to very hot climates, and elevations from sea level up to 2,500 metres (8,200 feet). Several sub-populations of the Macaque have adapted to urban environments. The Macaque has disappeared from much of its original range, but still occurs in Tibet, China, Nepal, Bhutan, Bangladesh, Burma (Myanmar), Thailand, Vietnam, Laos, India, Pakistan, and Afghanistan.

Eating Habits

The Rhesus Macaque is omnivorous, and its diet varies across its habitat range and according to the season. The Macaque's diet may include insects, leaves, fruit, flowers, berries, grain, grass, ground herbs, and algae. The Rhesus Macaque sometimes raids crop fields, gardens, and garbage cans for food.

Behaviour and Reproduction

The Rhesus Macaque is equally comfortable in the trees and on the ground, and is also a good swimmer. The Macaque lives in groups consisting of both females and males. Male macaques are dominant within the groups. Males switch groups every few years, but females stay associated in a strict matrilineal hierarchy. Macaque group sizes often reach into the hundreds, and rarely number below 20 monkeys. The Rhesus Macaque is not territorial.

The Rhesus Macaque generally reaches sexual maturity between 3.5 to four years of age. During the mating season, the buttocks and back of the legs of female and male macaques deepen in colour to a bright red. The timing of the mating season varies across the Rhesus Macaque's habitat range. Macaques that live in cold areas mate in the fall and give birth in spring. The Rhesus Macaque's gestation period is from 135 to 194 days. Each macaque mother typically gives birth to just one offspring. Offspring weigh about 450 grams (16 ounces) at birth. Mothers give birth again the following year or two years later. Rhesus macaques in captivity may live for up to 30 years.

Present Status

The Rhesus Macaque is categorized as Lower Risk: Near Threatened in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix II of CITES. The Rhesus Macaque is under second class protection in China.

Threats to Survival

The main threat to the Rhesus Macaque's survival is habitat loss. The Macaque may also be poached, for the pet trade, or persecuted, because of its crop-raiding tendencies. The Rhesus Macaque is widely used as a test subject in scientific experiments, especially within the fields of biology, medicine, and psychology.

References

- BBC, *Science & Nature – Wildfacts – Rhesus monkey*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/211.shtml>, Aug 2004.
- Eudey, A. & Members of the Primate Specialist Group, 2000: *Macaca mulatta*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Flannery, Sean, Oct 2003: *Rhesus Macaque (Macaca Mulatta)*, http://members.tripod.com/uakari/macaca_mulatta.html, Aug 2004.
- Seinfeld, J., 2000, *Macaca mulatta*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Macaca_mulatta.html, Aug 2004.
- Singapore Zoological Gardens, 2000: *Rhesus Macaque (Macaca Mulatta)*, <http://www.szgdocent.org/pp/p-mcrhes.htm>, Aug 2004.

TIBETAN MACAQUE

Macaca thibetana



Physical Description

The Tibetan Macaque, also known as Pere David's Macaque or the Short-tailed or Stump-tailed Tibetan Macaque, is the largest species of macaque in the world. The Tibetan Macaque has long, thick fur that is especially dense around the Macaque's ears and on the top of its head. This warm coat provides protection against Tibet's cold winters. Most Tibetan macaques are greyish brown, but a few are black. The fur of young macaques tends to be darker than that of the adults, with a silver or whitish tinge. The Tibetan Macaque's whiskers and beard are light-coloured. The Macaque's eyelids generally are also light-coloured, accentuating the Macaque's facial expressions. The Tibetan Macaque has large cheek pouches and a hairless muzzle. Many female Tibetan macaques have red skin around their eyes.

The Tibetan Macaque has a stocky build, with agile, robust limbs. Male Tibetan macaques have a body length of 61.3 to 71 centimetres (24 to 28 inches) and weigh 14.2 to 17.5 kilograms (31.3 to 38.6 pounds). Female Tibetan macaques are smaller than the males. Females have a body length of 50.7 to 63 centimetres (20 to 24.8 inches) and weigh an average of 13 kilograms (29 pounds). The Tibetan Macaque's tail length ranges from five to 7.5 centimetres (2 to 3 inches).

Habitat

The Tibetan Macaque inhabits subtropical evergreen broadleaf forests and mixed deciduous temperate forests at 800 to 2,000 metres (2,600 to 6,600 feet) in elevation. The Macaque may also occur in rocky terrain at higher altitudes. The Tibetan Macaque is found in Tibet and China, its population concentrated in Eastern Tibet and China's Sichuan province. Mountains popular with tourists in China where the Macaque can be found include Emei Shan, in Sichuan Province, and Jiuhua Shan and Huang ("Yellow") Shan, in Anhui Province. The Tibetan Macaque's habitat range overlaps with that of the Rhesus Macaque in some areas, but the Tibetan Macaque is generally found at higher altitudes than the Rhesus Macaque. Many Tibetan macaques now live in close association with humans.

Eating Habits

The Tibetan Macaque is omnivorous. The bulk of the Macaque's diet consists of fruit, leaves, and grass. The Tibetan Macaque also eats flowers, roots, mushrooms, insects, eggs, birds, snakes, and, when available, bamboo shoots and leaves. The Macaque will eat food provided by humans, but, unlike the Rhesus Macaque, the Tibetan Macaque does not raid crop fields. The Tibetan Macaque stores extra food in its cheek pouches.

Behaviour and Reproduction

The Tibetan Macaque is active during the day, or diurnal. The Macaque spends most of its time on the ground, despite its agility in the trees. Tibetan Macaque lives in multi-male, multi-female groups that vary in size from 10 to 100 individuals. Groups are hierarchical. Higher-ranked macaques receive more access to the available resources. Females tend to remain in the groups into which they were born for their entire lives. Males, on the other hand, often switch groups once or more after they reach adulthood, at around eight years of age. Males are responsible for leading the groups, maintaining discipline, and protecting the females and young. The highest-ranked males tend to be around seven to nine years of age; rank decreases with age thereafter. Males do not begin competing for the highest positions in a group until they temporarily leave their mother's group, for a period ranging from about a week to a month, and return. The lowest-ranked males in a large (40+) group of macaques sometimes split away from the original group, forming a new group in a different area.

Tibetan Macaques communicate with each other using a wide range of vocalizations, as well as gestures and facial expressions, all of which seem to carry specific meanings. Though the Tibetan Macaque is considered highly intelligent, once the Macaque reaches maturity, it can be quite bad-tempered and aggressive, both towards members of its own species and those of others. The fights that often break out among male macaques may result in serious injuries or even death. The Tibetan Macaque tends to be the dominant species whenever it is found in association with other monkeys.

Female Tibetan Macaques begin mating at around five years of age. Mating occurs year-round, but there tends to be a peak season, which may correlate to food-availability. The highest-ranked males have the highest chance of securing partners to mate with, and, thus, the most offspring. The highest-ranked females mate the most often and give birth earliest in the season. The Tibetan Macaque has a gestation period of 165 days. Each macaque mother gives birth to a single offspring. Most births occur in January and February. Newborn macaques typically weigh about 400 grams (14 ounces).

Tibetan macaques are highly dependent on their mothers for the first four years of their lives. Macaques that survive past their first four years tend to live to an age between 25 and 30 years. The Tibetan Macaque has few natural predators. When potential danger is spotted, the Tibetan Macaque has been observed to alert the other members of its group with an alarm call and to flee into the trees. Male macaques are very strong and will fight to defend themselves, their relatives, and their friends when necessary.

Present Status

The Tibetan Macaque is categorized as Lower Risk: Conservation Dependent in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix II of CITES. The Tibetan Macaque is under second class protection in China.

Threats to Survival

The main threat to the Tibetan Macaque is believed to be the loss and degradation of its habitat. Other threats include exposure to human diseases, herbicide and pesticide poisoning, and poaching.

References

- Eudey, A. & Members of the Primate Specialist Group, 2000: *Macaca thibetana*, In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Georgia State University Viral Immunology Center, *Photos of Macaque Monkeys/ tibetan1.jpg*, <http://www.gsu.edu/~wwwvir/VirusInfo/pages/tibetan1.jpg.htm>, Aug 2004.
- Huangshan Monkey Management Center, *Basic Information about Tibetan Macaques*, <http://wings.buffalo.edu/anthropology/Faculty/berman/BasicE.htm>, Aug 2004.

GOLDEN SNUB-NOSED MONKEY*Pygathrix* (or *Rhinopithecus*) *roxellana*

ཁམས་སྐལ་སྤྱོད་མེད།

Physical Description

The Golden, or Sichuan, Snub-nosed Monkey is indigenous to Tibet. Like the Giant Panda, very few of these animals exist in the wild. The Golden Snub-nosed Monkey has a small upturned snub nose with exposed nostrils, and lappets at the sides of its mouth. The Monkey's name derives from its nose and its beautiful reddish-golden hair. The Golden Snub-nosed Monkey's face, throat, legs, and underparts are reddish-gold. A portion of the Monkey's tail and neck are light grey. The remainder of the Golden Snub-nosed Monkey's neck and tail are golden brown. The Monkey's muzzle is white, and the skin around its eyes is blue. The body length of a male Golden Snub-nosed monkey ranges from 57 to 76 centimetres (19 to 25 inches). The Monkey's tail length ranges from 51 to 72 centimetres (17 to 24 inches). Males generally weigh between 15 to 39 kilograms (33 to 86 pounds), while females weigh between 6.5 and 10 kilograms (14 to 22 pounds).

Habitat

The Golden Snub-nosed Monkey occupies mixed bamboo, conifer, and deciduous forests from 1,500 to 3,400 metres (5,000 to 11,000 ft) in elevation. The Monkey may descend to lower elevations in the winter. The Golden Snub-nosed Monkey is most often found in the same places as the Giant Panda. However, the Monkey is better adapted to colder climates and higher altitudes than the Panda, and as a result, the Golden Snub-nosed Monkey's habitat extends far beyond that of the Giant Panda. The Monkey's population is mainly found on the southeastern edge of the Tibetan Plateau, in China's Sichuan, Yunnan, Gansu, Shaanxi, and Hubei provinces, and in Kham, in the Gyalmo Tsawa Rong region, Chugar, and in the dense forest of the Ngawa Dzong (District).

Eating Habits

The Golden Snub-nosed Monkey is an omnivore. The Monkey's diet varies according to the season. During warm months, the Golden Snub-nosed Monkey feeds primarily on leaves from broad-leaf trees and fir and pine needles. Buds, bark, and fruit seeds provide supplementary nutrition. During the winter, however, the Monkey switches to a more limited diet of bark and lichen. The Golden Snub-nosed Monkey also occasionally descends to the ground to feed on grasses and wild onions.

Behaviour and Reproduction

The Golden Snub-nosed Monkey is diurnal (active during the day). Most of the Monkey's day-to-day activities take place in the trees, but some feeding and social interaction, including play, take place on the ground. The Golden Snub-nosed Monkey is highly vocal. The vocalizations of males are distinctly different from those of females.

The Golden Snub-nosed Monkey lives in family units consisting of one mature male and numerous females. The male leads and protects the unit, often carrying youngsters. Family units gather to form groups of about 60 to 70 monkeys. In the spring, groups of the Gold Snub-nosed Monkey may unite into bands numbering as many as 600 individuals. These large bands disunite and original groups are reformed when cold weather sets in.

Male Golden Snub-nosed monkeys reach sexual maturity at seven years of age. Females reach sexual maturity at four to five years of age. The timing of the mating season varies across the Monkey's habitat range. In general, the Golden Snub-nosed Monkey mates between October and December, and gives birth between April and June. The Monkey's gestation period is about seven months. Each mother gives birth to one, or, less commonly, to two offspring, per breeding season. The life span of Golden Snub-nosed monkeys is unknown. The Golden Snub-nosed Monkey is a very alert animal; if frightened, it will quickly flee through the upper levels of the forest canopy.

Present Status

The Golden Snub-nosed Monkey is categorized as Vulnerable in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The Monkey is under first class protection in China. In 1991, the Golden Snub-nosed Monkey population was estimated to number between 10,000 and 15,000. The Monkey is rarely spotted moving in groups of over 100 anymore.

Threats to Survival

The Golden Snub-nosed Monkey is intensively hunted for its valuable pelt and for other body parts that are used in traditional medicine. The Golden Snub-nosed Monkey is also hunted for food. In some cases, entire communities have carried out mass round-ups of the Monkey. Furthermore, the Golden Snub-nosed Monkey is a valuable zoo exhibit, and as such there have been reports of poaching of live monkeys for sale to zoos. Other threats to the species' survival include habitat loss due to deforestation and environmental degradation.

References

- BBC, *Science & Nature – Wildfacts – Sichuan golden snub-nosed monkey*, <http://www.bbc.co.uk/nature/wildfacts/factfiles/346.shtml>, Aug 2004.
 Emanoil, Mary, ed., 1994: *Encyclopedia of Endangered Species*, Gale Environmental Library, Detroit, Michigan, xvii.
 Eudey, A. & Members of the Primate Specialist Group, 2000: *Rhinopithecus roxellana*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.

Kirkpatrick, R.C., 1995: "The Natural History and Conservation of the snub-nosed monkeys (Genus *Rhinopithecus*)."

Munoz, P., 1999: *Pygathrix roxellana*, Animal Diversity Web, http://animaldiversity.ummz.umich.edu/site/accounts/information/Pygathrix_roxellana.html, Aug 2004.

Schaller, R., 1985: "China's Golden Treasure," *International Wildlife*.

World Conservation Monitoring Centre, *WCMC/WWF Species Under Threat – Golden Snub-nosed Monkey*, http://www.wcmc.org.uk/species/data/species_sheets/goldensn.htm, Aug 2004.

YUNNAN SNUB-NOSED MONKEY

Pygathrix (or *Rhinopithecus*) *bieti* (or *roxellana bieti*)

ཡུ་ནན་སྐྱ་གྲིན་སྒྲུབ།

Physical Description

The Yunnan Snub-nosed Monkey is an extremely rare primate found only in Tibet and China. Alternative names for the Monkey include the Snow Monkey, Biet's Snub-nosed Monkey, the Black Snub-nosed Monkey, the Black Snub-nosed Langur, and the Yellow-haired Dechen Monkey. The Yunnan Snub-nosed Monkey lives at higher altitudes than any other non-human primate. The French scientist Milne-Edwards first identified the Yunnan Snub-nosed Monkey in 1897. No reliable reports of sightings of the animal surfaced for several decades afterwards, leading some to suspect that the Yunnan Snub-nosed Monkey had become extinct. In 1962, however, a member of the Chinese Animal Research Team obtained approximately eight incomplete Yunnan Snub-nosed Monkey pelts in the Dechen area of Yunnan in Southeast Tibet. Then, in November 1979, a Chinese scientist from the Kunming Institute of Zoology killed a Yunnan Snub-nosed monkey, finally providing conclusive evidence that the Monkey did still indeed exist.

The Yunnan Snub-nosed Monkey has large pink lips and a distinctive upturned nose that lacks nasal bones. The Monkey has long fur that is mainly dark brown to black in colour. In adult monkeys, or those over eight years of age, the back, ends of the arms and legs, end of the tail, and top of the head are dark brown to black, while the armpits, chest, belly, rump, flanks, and tips of the ears are white to yellowish gray. Adults have light pink skin around their muzzle and pale yellowish or greenish skin around their eyes. Newborns, on the other hand, have an entirely white coat, a blue face, and pink toes and fingertips. The young monkeys' fur darkens gradually with age. Male Yunnan Snub-nosed monkeys have longer hair on their flanks, backs, and the top of their heads than do the females.

The Yunnan Snub-nosed Monkey's tail is equal in length, or slightly longer, than the Monkey's body. The Yunnan Snub-nosed Monkey's body length ranges from 51 to 83 centimetres (20 to 33 inches). The average weight of males is 15.3 kilograms (33.7 pounds), while females weigh on average 9.1 kilograms (20 pounds).

Habitat

The Yunnan Snub-nosed Monkey lives in evergreen coniferous forests composed mainly of fir, spruce, evergreen oak, and rhododendron species, at elevations from 3,000 to 4,500 metres (9,800 to 14,800 feet). In forests at these heights, temperatures average below zero degrees Celsius for several months of the year, frost is present on the ground for about 280 days per year, and snow can accumulate to over one meter (3.3 feet) in depth.

Recent surveys suggest that there are currently about 13 isolated sub-populations of the Yunnan Snub-nosed Monkey. These populations are located in the Yunling ("Cloudy") Mountains in southeastern Tibet (Kham) and the northwest of China's Yunnan Province, between the Zachu (Lancang) and Driчу (Jinsha) Rivers (the headwaters of the Mekong and Yangtze Rivers, respectively). The Yunnan Snub-nosed Monkey occurs in the Tibetan counties of Dechen (Deqin), Gyalthang (Zhongdian), and Balung (Weixi), in Dechen Prefecture, and Markham (Mangkang) in Chamdo Prefecture. The Monkey occurs in the Chinese counties of Lijiang, Jianchuan, and Lanping. About half of the Yunnan Snub-nosed Monkey's population is found in nature reserves, including the 1,901 square-kilometer Pema (Baima) Xue Shan ("Snow Mountain") Nature Reserve.

Eating Habits

Studies have indicated that lichens growing on tree bark, including *Bryoria* and *Usnea spp.*, constitute the bulk (over 80%) of the Yunnan Snub-nosed Monkey's diet. Lichen is an abundant food source and it is easy to digest. However, lichen has a relatively low nutritional value and it takes ten to 15 years for lichen to regenerate. As a result, a troop of Yunnan Snub-nosed monkeys may travel as far as 1,500 metres (.93 miles) in one day and have a home range as large as 25 square kilometres (9.7 square miles). The Monkey may supplement its diet with young leaves, grasses, moss, fruit, pine nuts, acorns, seeds, and/or rodents. In Lijiang county, the Yunnan Snub-nosed Monkey's diet is composed primarily of bamboo leaves rather than lichens.

Behaviour & Reproduction

The Yunnan Snub-nosed Monkey forages during the early morning and afternoon and naps for about two hours around the middle of the day. Though comfortable on the ground, the Monkey spends most of its time in the trees. The Yunnan Snub-nosed Monkey often rests on rocky

outcrops, perhaps because predators are easy spied from such outcrops, or because the sun warms these outcrops up during the day, providing a welcome source of warmth in the cold winter months.

The Yunnan Snub-nosed Monkey is rarely spotted travelling alone; males and females tend to cohabit in troops ranging in size from about 20 to 300 members. No other arboreal primate forms troops as large as those of the Yunnan Snub-nosed Monkey. It is thought that the Monkey's food competition dynamics determine the size of the troops. Troops are composed of small family groups, each containing about seven members, including one male, two to three females, and their offspring. The Yunnan Snub-nosed Monkey may also form all-male groups.

Male Yunnan Snub-nosed monkeys reach sexual maturity at five to six years of age. Females reach sexual maturity at between four and five years of age. Mating typically occurs in August and September. The Yunnan Snub-nosed Monkey's gestation period is approximately 200 days. Most births take place from March to April. Each mother gives birth to one, or, occasionally, to two offspring. It is estimated that females only give birth about once every three years. The life span of Yunnan Snub-nosed monkeys is unknown.

Present Status

The Yunnan Snub-nosed Monkey is categorized as Endangered in the *2003 IUCN Red List of Threatened Species* and is listed under Appendix I of CITES. The Monkey is under first class protection in China. The Yunnan Snub-nosed Monkey's population is fragmented into 13 isolated sub-populations. Geographic features make it unlikely that there is any exchange of individuals between these sub-populations. It is estimated that 800 to 1,200 Yunnan Snub-nosed monkeys remain.

Threats to Survival

The Yunnan Snub-nosed Monkey has suffered as a result of habitat loss and intensive hunting and trapping. The Monkey is also caught in snares set for other animals, such as musk deer. The forests in which the Yunnan Snub-nosed Monkey makes its home have been logged and cleared for agriculture.

References

- Eudey, A. & Members of the Primate Specialist Group, 2000: *Rhinopithecus bieti*. In: IUCN, 2003: *2003 IUCN Red List of Threatened Species*, <http://www.redlist.org>, Aug 2004.
- Massicot, Paul, July 2004: *Animal Info – Yunnan Snub-nosed Monkey*, <http://www.animalinfo.org/species/primate/rhinbiet.htm>, Sept 2004.
- ARKive, *Yunnan snub-nosed monkey - Rhinopithecus bieti: More Information – ARKive*, http://www.arkive.org/species/GES/mammals/Rhinopithecus_bieti/more_info.html, Sept 2004.
- Flannery, Sean, Oct 2003: *Black Snub-nosed Langur (Pygathrix bieti)*, http://members.tripod.com/uakari/pygathrix_bieti.html, Sept 2004.

APPENDIX I: THE IUCN AND CITES

The IUCN and the *IUCN Red List of Threatened Species*

About the IUCN

“IUCN - The World Conservation Union, through its Species Survival Commission (SSC) has for four decades been assessing the conservation status of species, subspecies, varieties and even selected subpopulations on a global scale in order to highlight taxa threatened with extinction, and therefore promote their conservation...the SSC remains firmly committed to providing the world with the most objective, scientifically-based information on the current status of globally threatened biodiversity. The taxa assessed for the *IUCN Red List* are the bearers of genetic diversity and the building blocks of ecosystems, and information on their conservation status and distribution provides the foundation for making informed decisions about preserving biodiversity at local to global levels.”

About the *IUCN Red List of Threatened Species*

“The *IUCN Red List of Threatened Species* provides taxonomic, conservation status and distribution information on taxa that have been evaluated using the *IUCN Red List* Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the *IUCN Red List* is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The *IUCN Red List* also includes information on taxa that are categorized as Extinct or Extinct in the Wild; on taxa that cannot be evaluated because of insufficient information (i.e. are Data Deficient); and on taxa that are either close to meeting the threatened thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e. Near Threatened).”

About the *IUCN Red List* Categories

“The threatened species categories now used in Red Data Books and Red Lists have been in place, with some modification, for almost 30 years. Since their introduction these categories have become widely recognised internationally, and they are now used in a whole range of publications and listings, produced by IUCN as well as by numerous governmental and non-governmental organizations. The Red Data Book categories provide an easily and widely understood method for highlighting those species under higher extinction risk, so as to focus attention on conservation measures designed to protect them.”

Definition of the *IUCN Red List* Categories Referred to in this Book

Critically Endangered (CR) – A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future [within approximately ten years or three generations, whichever is longer]...

Endangered (EN) - A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future [within approximately 20 years or five generations, whichever is longer]...

Vulnerable (VU) - A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future [within approximately 100 years]...

Lower Risk (LR) - A taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:

Conservation Dependent (cd). Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.

Near Threatened (nt). Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.

Least Concern (lc). Taxa which do not qualify for Conservation Dependent or Near Threatened.

Data Deficient (DD) A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution is lacking. Data Deficient is therefore not a category of threat or Lower Risk. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and threatened status. If the range of a taxon is suspected to be relatively circumscribed, if a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

Not Evaluated (NE) A taxon is Not Evaluated when it has not yet been assessed against the criteria.”

The IUCN assigns species to categories based on the following criteria:

- percent of population reduction
- extent of occurrence or area of occupation
- population size, and
- quantitative analysis

In making its assessments about taxa, the IUCN takes into consideration:

- direct observations
- appropriate abundance indices
- actual or potential levels of exploitation
- declines in area, extent, and quality of habitat
- the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors, and parasites
- declines and extreme fluctuations in:
 - areas of occupancy
 - extent of occurrence
 - number of locations
 - number and size of subpopulations
 - number of mature individuals

References

International Union for Conservation of Nature and Natural Resources, *IUCN - The World Conservation Union*, <http://www.iucn.org/about/index.htm>, Oct 2004.

The IUCN Species Survival Commission, *The 2004 IUCN Red List of Threatened Species*, <http://www.iucnredlist.org>, Oct 2004.

CITES and the CITES Appendices

About CITES

CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, is an international agreement that seeks to “ensure that international trade in specimens of wild animals and plants does not threaten their survival.” Countries “join” CITES by agreeing to adopt national legislation that regulates wildlife trade in accordance with the framework laid out by CITES. 166 countries, known as Parties, have joined CITES since it entered into force on July 1st, 1975. India joined CITES in 1976 and China joined in 1981. CITES currently accords varying degrees of protection to over 30,000 species of animals and plants.

About the CITES Appendices

“CITES works by subjecting international trade in specimens of selected species to certain controls. These require that all import, export, re-export and introduction from the sea of species covered by the Convention has to be authorized through a licensing system. (‘Re-export’ means export of a specimen that was imported.)

The species covered by CITES are listed in three Appendices, according to the degree of protection they need.

- **Appendix I** includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
- **Appendix II** includes species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival.
- **Appendix III** contains species that are protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade.

Each Party to the Convention must designate one or more Management Authorities in charge of administering the licensing system and one or more Scientific Authorities to advise them on the effects of trade on the status of the species.

A specimen of a CITES-listed species may be imported into or exported (or re-exported) from a State party to the Convention only if the appropriate document has been obtained and presented for clearance at the port of entry or exit. There is some variation of the requirements from one country to another and it is always necessary to check on the national laws, but the main conditions that apply for each Appendix are described.

Appendix-I specimens

1. An import permit issued by the Management Authority of the State of import is required. This may be issued only if the specimen is not to be used for primarily commercial purposes and if the import will be for purposes that are not detrimental to the survival of the species. In the case of a live animal or plant, the Scientific Authority must be satisfied that the proposed recipient is suitably equipped to house and care for it.

2. An export permit or re-export certificate issued by the Management Authority of the State of export or re-export is also required. An export permit may be issued only if the specimen was legally obtained; the trade will not be detrimental to the survival of the species; and an import permit has already been issued.

A re-export certificate may be issued only if the specimen was imported in accordance with the provisions of the Convention and, in the case of a live animal or plant, if an import permit has been issued.

In the case of a live animal or plant, it must be prepared and shipped to minimize any risk of injury, damage to health or cruel treatment.

Appendix-II specimens

1. An export permit or re-export certificate issued by the Management Authority of the State of export or re-export is required. An export permit may be issued only if the specimen was legally obtained and if the export will not be detrimental to the survival of the species.

A re-export certificate may be issued only if the specimen was imported in accordance with the Convention.

2. In the case of a live animal or plant, it must be prepared and shipped to minimize any risk of injury, damage to health or cruel treatment.

3. No import permit is needed unless required by national law.

In the case of specimens introduced from the sea, a certificate has to be issued by the Management Authority of the State into which the specimens are being brought, for species listed in Appendix I or II. For further information, see the text of the Convention, Article III, paragraph 5 and Article IV, paragraph 6.

Appendix-III specimens

1. In the case of trade from a State that included the species in Appendix III, an export permit issued by the Management Authority of that State is required. This may be issued only if the specimen was legally obtained and, in the case of a live animal or plant, if it will be prepared and shipped to minimize any risk of injury, damage to health or cruel treatment.

2. In the case of export from any other State, a certificate of origin issued by its Management Authority is required.

3. In the case of re-export, a re-export certificate issued by the State of re-export is required

The Convention allows or requires Parties to make certain exceptions to the general principles described above, notably in the following cases:

- for specimens in transit or being transhipped;
- for specimens that were acquired before CITES provisions applied to them (known as pre-Convention specimens);
- for specimens that are personal or household effects;
- for animals that were bred in captivity (this term is carefully defined in Resolution Conf. 10.16 Rev.);
- for plants that were artificially propagated (this term is carefully defined in Resolution Conf. 11.11);
- for specimens that are destined for scientific research;
- for animals or plants forming part of a travelling collection or exhibition, such as a circus.

There are special rules in these cases and a permit or certificate will generally still be required. Anyone planning to import or export/re-export specimens of a CITES species should contact the national CITES Management Authorities of the countries of import and export/re-export for information on the rules that apply.

Some Parties have domestic legislation with trade controls stricter than those required by CITES. In these cases, compliance with CITES regulations may not be sufficient to ensure that trade is legal.

When a specimen of a CITES-listed species is transferred between a country that is a Party to CITES and a country that is not, the country that is a Party may accept documentation equivalent to the permits and certificates described above.

References

Convention on International Trade in Endangered Species of Wild Fauna and Flora, *Welcome to CITES*, <http://www.cites.org>, Oct 2004.

APPENDIX II: WILDLIFE PROTECTION LAW IN CHINA AND INDIA

Wildlife Protection Law in China

The “Law of the People’s Republic of China on the Protection of Wildlife” came into effect on March 1, 1989. Selected excerpts follow:

Chapter I. General Provisions

Article 1

This Law is formulated for the purpose of protecting and saving the species of wildlife which are rare or near extinction, protecting, developing and rationally utilizing wildlife resources and maintaining ecological balances.

Article 7

The departments of forestry and fishery administration under the State Council shall be respectively responsible for the nationwide administration of terrestrial and aquatic wildlife.

The departments of forestry administration under the governments of provinces, autonomous regions and municipalities directly under the Central Government shall be responsible for the administration of terrestrial wildlife in their respective areas. The departments in charge of the administration of terrestrial wildlife under the governments of autonomous prefectures, counties and municipalities shall be designated by the governments of provinces, autonomous regions or municipalities directly under the Central Government...

Chapter II. Protection of Wildlife

Article 8

The State shall protect wildlife and the environment for its survival, and shall prohibit the illegal hunting, catching or destruction of wildlife by any unit or individual.

Article 9

The State shall give special protection to the species of wildlife which are rare or near extinction. The wildlife under special state protection shall consist of two classes: wildlife under first class protection and wildlife under second class protection. Lists or revised lists of wildlife under special state protection shall be drawn up by the department of wildlife administration under the State Council and announced after being submitted to and approved by the State Council.

The wildlife under special local protection, being different from the wildlife under special state protection, refers to the wildlife specially protected by provinces, autonomous regions or municipalities directly under the Central Government. Lists of wildlife under special local protection shall be drawn up and announced by the governments of provinces, autonomous regions or municipalities directly under the Central Government and shall be submitted to the State Council for the record.

Lists or revised lists of terrestrial wildlife under state protection, which are beneficial or of important economic or scientific value, shall be drawn up and announced by the department of wildlife administration under the State Council.

Article 10

The department of wildlife administration under the State Council and governments of provinces, autonomous regions and municipalities directly under the Central Government shall, in the main districts and water areas where wildlife under special state or local protection lives and breeds, designate nature reserves and strengthen the protection and administration of wildlife under special state or local protection and the environment for its survival.

The designation and administration of nature reserves shall be effected in accordance with the relevant provisions of the State Council.

Article 11

Departments of wildlife administration at various levels shall keep watch on and monitor the impact of the environment on wildlife. If the environmental impact causes harm to wildlife, the departments of wildlife administration shall conduct investigation and deal with the matter jointly with the departments concerned.

Article 12

If a construction project produces adverse effects on the environment for the survival of wildlife under special state or local protection, the construction unit shall submit a report on the environmental impact. The department of environmental protection shall, in examining and approving the report, seek the opinion of the department of wildlife administration at the same level.

Article 13

If natural disasters present threats to wildlife under special state or local protection, the local governments shall take timely measures to rescue them.

Article 14

If the protection of wildlife under special state or local protection causes losses to crops or other losses, the local governments shall make compensation for them. Measures for such compensation shall be formulated by the government of provinces, autonomous regions and municipalities directly under the Central Government.

Chapter III. Administration of WildlifeArticle 15

The departments of wildlife administration shall regularly carry out surveys of wildlife resources and keep records of them.

Article 16

The hunting, catching or killing of wildlife under special state protection shall be prohibited. Where the catching or fishing of wildlife under first class state protection is necessary for scientific research, domestication and breeding, exhibition or other special purposes, the unit concerned must apply to the department of wildlife administration under the State Council for a special hunting and catching license; where the catching or hunting of wildlife under second class state protection is intended, the unit concerned must apply to the relevant department of wildlife administration under the government of a province, an autonomous region or a municipality directly under the Central Government for a special hunting and catching license.

Article 22

The sale and purchase of wildlife under special state protection or the products thereof shall be prohibited. Where the sale, purchase or utilization of wildlife under first class state protection or the products thereof is necessary for scientific research, domestication and breeding, exhibition or other special purposes, the unit concerned must apply for approval by the department of wildlife administration under the State Council or by a unit authorized by the same department. Where the sale, purchase or utilization of wildlife under second class state protection or the products thereof is necessary, the unit concerned must apply for approval by the department of wildlife administration under the government of the relevant province, autonomous region or municipality directly under the Central Government or by a unit authorized by the same department.

Units and individuals that domesticate and breed wildlife under special state protection may, by presenting their domestication and breeding licenses, sell wildlife under special state protection or the products thereof, in accordance with the relevant regulations, to purchasing units designated by the government.

The administrative authorities for industry and commerce shall exercise supervision and control over wildlife or the products thereof that are placed on the market.

Article 23

The transportation or carrying of wildlife under special state protection or the products thereof out of any county must be approved by the department of wildlife administration under the government of the relevant province, autonomous region or municipality directly under the Central Government, or by a unit authorized by the same department.

Article 24

The export of wildlife under special state protection or the products thereof, and the import or export of wildlife or the products thereof, whose import or export is restricted by international conventions to which China is a party, must be approved by the department of wildlife administration under the State Council or by the State Council, and an import or export permit must be obtained from the state administrative organ in charge of the import and export of the species which are near extinction. The Customs shall clear the imports or exports after examining the import or export permit.

The export of the species of wildlife involving scientific and technological secrets shall be dealt with in accordance with relevant provisions of the State Council.

Article 27

Anyone engaged in the utilization of wildlife or the products thereof shall pay a fee for the protection and administration of wildlife resources. The schedule of the fee and the procedure for collecting it shall be formulated by the department of wildlife administration under the State Council jointly with the financial and pricing authorities and shall enter into force after being submitted to and approved by the State Council.

Article 28

Anyone who has caused losses to crops or other losses while hunting or catching wildlife shall be held responsible for compensation.

Article 29

The local governments concerned shall take measures to prevent and control the harm caused by wildlife so as to guarantee the safety of human beings and livestock and ensure agricultural and forestry production.

Article 30

The administrative measures for wildlife under special local protection and for other wildlife that is not under special state protection shall be formulated by the standing committees of the people's congresses of provinces, autonomous regions and municipalities directly under the Central Government.

Chapter IV. Legal Responsibility

Article 31

Anyone who illegally catches or kills wildlife under special state protection shall be prosecuted for criminal responsibility in accordance with the supplementary provisions on punishing the crimes of catching or killing the species of wildlife under special state protection which are rare or near extinction.

Article 34

If anyone, in violation of the provisions of this Law, destroys in nature reserves or areas closed to hunting the main places where wildlife under special state or local protection lives and breeds, he shall be ordered by the department of wildlife administration to stop his destructive acts and restore these places to their original state within a prescribed time limit, and shall be fined.

Article 35

If anyone, in violation of the provisions of this Law, sells, purchases, transports or carries wildlife under special state or local protection or the products thereof, such wildlife and products and his unlawful income shall be confiscated by the administrative authorities for industry and commerce and he may concurrently be fined.

If anyone, in violation of the provisions of this Law, sells or purchases wildlife under special state protection or the products thereof, and if the circumstances are serious enough to constitute a crime of speculation or smuggling, he shall be prosecuted for criminal responsibility according to the relevant provisions of the Criminal Law.

The wildlife or the products thereof thus confiscated shall, in accordance with the relevant provisions, be disposed of by the relevant department of wildlife administration or by a unit authorized by the same department.

Article 36

If anyone illegally imports or exports wildlife or the products thereof, he shall be punished by the Customs according to the Customs Law; if the circumstances are serious enough to constitute a crime, he shall be prosecuted for criminal responsibility in accordance with the provisions of the Criminal Law on the crimes of smuggling.

References

China Internet Information Center, *Law of the People's Republic of China on the Protection of Wildlife*, <http://www.chinagate.com.cn/english/2158.htm>, Oct 2004.

Wildlife Protection Law in India

India's *Wild Life (Protection) Act* came into effect on September 9th, 1972. Amendments to the act were made in 1986 and 1991 to plug loopholes and to add legislation regarding zoo management, plant protection, and wildlife trade. Animals the act is concerned with protecting are listed in the first four of five schedules. Schedule I has three parts: Part I includes mammals, Part II includes amphibians and reptiles, and part III includes birds. Schedule II includes special game and has two parts. Schedule III includes big game. Schedule IV includes small game. Vermin are listed under Schedule V.

The wild animals included in Schedules I, II, III, and IV of the *Wild Life (Protection) Act* are considered to be government property. Such animals can only be hunted with a written permit from the Chief Wild Life Warden, who is appointed by the State Government. The Chief Wild Life Warden may grant permits to hunt animals that have become “dangerous to human life”, “so disabled or diseased as to be beyond recovery”, or for animals under Schedules II, III, or IV that have become “dangerous to property (including standing crops on any land)”. The Chief Wild Life Warden may also grant permits, for a fee, to hunt certain wild animals for the purpose of education, scientific research, scientific management, or specimen collection for zoos or museums. For these special cases, permission must additionally be obtained from the Central Government, for animals included in Schedule I, or from the State Government, for animals included in Schedules II, III, or IV. It is not against the law to injure or kill wild animals in self-defense or in defense of others.

Acquiring, buying, keeping, transferring, selling, destroying, or damaging an animal included in Schedule I or Part II of Schedule II, or an animal article, trophy, or meat derived from such an animal is prohibited. The transfer or transport of any animal included in Schedule III, Schedule IV, or Part I of Schedule II, or the derivatives of such an animal, is allowed only with the previous permission of the Chief Wild Life Warden or another authorised officer. A certificate of ownership must be issued to the owner and identification marks must be affixed to the animal or animal derivative to be transported. Permission must also be obtained from the Chief Wild Life Warden or other authorised officer in order to buy, sell, or manufacture any animal in Schedule III, Schedule IV, or Part I of Schedule II, or the derivatives of such an animal, in the form of a license. Licenses must be renewed every year and the Chief Wild Life Warden has the power to suspend or cancel licenses. Recognized zoos and museums are exempt from these laws.

Offences committed in relation to the animals included in Schedules I, II, III, and IV and the derivatives of these animals are punishable with imprisonment, fines, and the suspension and cancellation of licenses. Imprisonment terms range from about six months to seven years, and fines range from about two to twenty-five thousand rupees.

References

IndiaLawInfo.com, *Bare Acts – Environmental Laws – Wildlife Act, 1972*, <http://www.indialawinfo.com/bareacts/wildlife.html>, Oct 2004.
Kumar, Ashok, Aug 2002: “The laws that protect wildlife in India: Part I & II,” *Terra Green*, Issues 18 & 19, <http://www.teri.res.in/teriin/terragreen/issue18/essay.htm>, .../issue19/essay.htm, Oct 2004.

APPENDIX III: TAXONOMY

ORDER CARNIVORA

Family Ursidae

- Asiatic Black Bear** (*Ursus thibetanus*)
- Tibetan Brown Bear** (*Ursus arctos pruinosus*)
- Giant Panda** (*Ailuropoda melanoleuca*)

Family Ailuridae

- Red Panda** (*Ailurus fulgens*)

Family Felidae

- Bengal Tiger** (*Panthera tigris tigris*)
- Chinese Mountain Cat** (*Felis bieti*)
- Clouded Leopard** (*Neofelis* (or *Pardofelis*) *nebulosa*)
- Eurasian Lynx** (*Lynx* (or *Felis*) *lynx*)
- Snow Leopard** (*Uncia* (or *Panthera*) *uncia*)

Family Canidae

- Dhole** (*Cuon alpinus*)

Family Mustelidae

- Asian Small-clawed Otter** (*Amblonyx* (or *Aonyx*) *cinerea*)
- Eurasian River Otter** (*Lutra lutra*)

ORDER ARTIODACTYLA

Family Moschidae

- Musk Deer** (*Moschus spp.*)

Family Cervidae

- Tibetan Red Deer** (*Cervus elaphus wallichi*)
- White-lipped Deer** (*Cervus albirostris*)

Family Bovidae

Subfamily Caprinae

- Blue Sheep** (*Pseudois nayaur* & *Pseudois schaeferi*)
- Goral** (*Naemorhedus spp.*)
- Himalayan Tahr** (*Hemitragus jemlabicus*)
- Mainland Serow** (*Capricornis* (or *Nemorhaedus*) *sumatraensis*)
- Takin** (*Budorcas taxicolor*)
- Tibetan Antelope** (*Pantholops hodgsoni*)
- Tibetan Argali** (*Ovis ammon hodgsoni*)

Subfamily Antilopinae

- Tibetan Gazelle** (*Procapra picticaudata*)

Subfamily Bovinae

- Wild Yak** (*Bos grunniens* or *Bos mutus*)

ORDER PERISSODACTYLA

Family Equidae

- Tibetan Wild Ass** (*Equus kiang*)

ORDER PRIMATES

Family Cercopithecidae

- Assamese Macaque** (*Macaca assamensis*)
- Rhesus Macaque** (*Macaca mulatta*)
- Tibetan Macaque** (*Macaca thibetana*)
- Golden Snub-nosed Monkey** (*Pygathrix* (or *Rhinopithecus*) *roxellana*)
- Yunnan Snub-nosed Monkey** (*Pygathrix* (or *Rhinopithecus*) *bieti* (or *roxellana bieti*))

APPENDIX IV: TIBETAN ANIMAL NAMES

Argali	གནན།	<i>Nyen</i>
Bear	དོམ།	<i>Dhom</i>
Blue Sheep	གནལ།	<i>Naa</i>
Brown Bear	དྲེད་མོང་།	<i>Dremong</i>
Dhole	ཕ་ར།	<i>Phara</i>
Giant Panda	དོམ་ཁ།	<i>Thomtra, Thomkar, Jela-Thom</i>
Golden Snub-nosed Monkey	ཁམས་སྒྲིལ་སྐྱ་མིར།	<i>Ser-tral, Trewu Puser, Trewu Serpo, Na-gyen Trewu</i>
Goral	ལྷ་ཁོར།	<i>Gyagora</i>
Leopard	གཟིགས།	<i>Dzig</i>
Lynx	གཡི།	<i>Yi</i>
Macaque	སྒྲིལ།	<i>Tay</i>
Mountain Cat	རི་ཞིམ།	<i>Ri Shim</i>
Musk Deer	ལྷ་བ།	<i>Lawa, La</i>
Otter	སྐམ།	<i>Saam</i>
Red Deer	ཤལ་མར།	<i>Shawa, Shamar</i>
Red Panda	དོམ་ཁ་དམར་རྩུང་།	<i>Wob, Bek, Aku Dongkar (“Uncle White Face”), Thomtra Chungwa, Thomtra Marchung</i>
Serow	ལྷ་ར།	<i>Gyara</i>
Snow Leopard	གསལ།	<i>Saa, Gang dzig, Dzig kya, Sarken</i>
Tahr	ར་ཁོད།	<i>Ra-goth</i>
Takin	བ་མེན།	<i>Bamen, Tsen-nyak</i>
Tibetan Antelope	གཚོད།	<i>Tsod, Olgang, Luk rah Ring-chen</i>
Tibetan Gazelle	གོ་བ།	<i>Gowa</i>
Tibetan Wild Ass	ལྷ་ང་།	<i>Kiang</i>
Tiger	རྟ།	<i>Taag</i>
White-lipped Deer	ཤལ་མཚུ་དགའ།	<i>Shawa chukar, Shakya, Shawa Ogkar, Shawa Khakar</i>
Wild Yak	འབྲོང་།	<i>Drong</i>
Yunnan Snub-nosed Monkey	ཡུ་ནན་སྐྱ་ལྷོ་ལྷོ།	<i>Na-gyen Trewu</i>