

Mallon DP. 2007. Cheetahs in Central Asia: A historical summary. *Cat News* 46:4-7.

Keywords: 45Asia/*Acinonyx jubatus*/Central Asia/cheetah/distribution/extinction/history

Abstract: The historical distribution of the cheetah *Acinonyx jubatus* extended from Africa through the Arabian Peninsula into Iran and Afghanistan. From there, the range continued eastwards to Pakistan and India, and northeast through Central Asia: Uzbekistan, Kazakhstan and Turkmenistan (Nowell & Jackson 1996). During the Middle Ages, cheetahs also occurred to the west of the Caspian Sea, in Transcaucasia, and according to Vereshchagin (1959) they may have survived in the Kura-Araks lowlands of Azerbaijan until the 18th century.

Cheetahs in Central Asia: A Historical Summary

David P. Mallon¹

The historical distribution of the cheetah *Acinonyx jubatus* extended from Africa through the Arabian Peninsula into Iran and Afghanistan. From there, the range continued eastwards to Pakistan and India, and northeast through Central Asia: Uzbekistan, Kazakhstan and Turkmenistan (Nowell & Jackson 1996). During the Middle Ages, cheetahs also occurred to the west of the Caspian Sea, in Transcaucasia, and according to Vereshchagin (1959) they may have survived in the Kura-Araks lowlands of Azerbaijan until the 18th century.

Most information on Central Asian cheetahs has been published in Russian, and the following summary aims to make this available to a wider audience. Even the Russian literature contains no detailed ecological studies and no systematic field surveys have been carried out. The most comprehensive account is by Heptner & Sludskii (1972). Bannikov (1984) provides a more recent overview, while other sources contain additional information.

Russian authors refer to the cheetahs inhabiting Central Asia as the Transcaspien cheetah, formerly often listing it as a subspecies *Acinonyx jubatus raddei* (Hilzheimer 1913). Asian cheetahs are generally regarded as *A. j. venaticus*. Heptner & Sludskii (1972) said that morphological differences between African and Asian cheetahs were perceptible but not marked. The main differences noted were that African animals had denser spotting and larger spots on a brighter or darker ground colour. Asian animals had a very pale background colour, while winter fur was relatively long, soft and dense, and the winter 'mane' also long and dense. Two specimens in fur shops in Pakistan in 1970 and 1972 had very long, soft belly fur and a fairly pronounced dorsal crest of longer hairs from the nape down the shoulder (Roberts 1977). One of these originated in Afghanistan, and he speculated they may have come from

mountainous areas bordering the former USSR.

Distribution in Central Asia

Central Asian distribution (Fig. 1) extended from the eastern shore of the Caspian Sea across the Kyzyl Kum and Kara Kum deserts to the middle and lower parts of the Syr Darya and Zeravshan Valleys, reaching approximately 68° E (Heptner & Sludskii 1972, Bannikov 1984). In the first half of the 19th century, the distribution possibly extended farther east and may have reached the foothills of the Karatau mountains (Heptner & Sludskii 1972).

The northern boundary of the range lays at approximately 46° N in the area of Mangyshlak Peninsula, on the northeastern corner of the Caspian, the northern *chinks* (escarpments) of Ustyurt (Fig. 2), and in the lower Syr Darya. There were a few unconfirmed records from farther north. Heptner & Sludskii (1972) considered that at least one of these, from near Irgiz (Yrghyz), situated about 48°30' N, may have been locally obtained. The southern edge followed the border of the former USSR with Iran and Afghanistan.

The range covered something in the order of 900,000 – 1,000,000 km², though the area actually occupied by cheetahs was less than this, as there were extensive areas of unsuitable habitat.

Decline

The range contracted rapidly during the second half of the 19th and the early 20th centuries and soon became fragmented. Cheetahs became extinct from east of the Syr Darya, i.e. the easternmost part of their range a long time ago, and probably disappeared from east of the Amu Darya in the early 20th century. By the 1930s cheetahs were confined to only three areas, all in the west of the former range. These were the foothills of the Kopet Dag in southwest Turkmenistan; Badkhyz in southern Turkmenistan; and the Ustyurt plateau, south to the Bolshoi Balkan Mountains, and adjoining Mangyshlak peninsula, in the northwest.

A viable cheetah population in the western Kopet Dag had gone by the early part of the 20th century and only isolated individuals were seen up to the 1930s-1940s (Lukarevskii 2001). They had disappeared altogether from the



Fig. 1. Reconstructed range of cheetah in Central Asia (adapted from Bannikov 1984). Former distribution (green hatching); specific localities (green dots). Probable range in Transcaucasia in 17th-18th centuries (question marks).

area by the 1950s (Bannikov 1984). It is an indication of the extent to which biodiversity in the area has diminished since the beginning of the 20th century that Lukarevskii cited a 1907 publication noting that the tiger *P. t. virgata*, leopard *P. pardus*, and cheetah occurred between Duzyildepe and Saratovskii and were not rare at the time.

The Badkhyz uplands (Fig. 3) lie between the Tejen and Murgab rivers on the borders with Iran and Afghanistan. Cheetahs were not rare here up to the beginning of the 1920s, but the last record dates from 1957 (Bannikov 1984).

Ustyurt is a desert plateau situated on the borders between Kazakhstan, Uzbekistan and Turkmenistan. The Mangyshlak, Buzachi and Krasnovodsk Peninsulas adjoin it to the west, on the shores of the Caspian Sea.

Gvozdev (1989) said there had been no records in Kazakhstan for the previous 20 years. Sadykov (1988) said there had been no evidence of cheetahs in Uzbekistan since 1970, but reported a cheetah killed by poachers in an adjacent area of Turkmenistan in October 1976. The last confirmed specimen on Ustyurt was obtained in 1973; cheetahs were sighted in the early 1970s at Karyn Dzharyka, Kazakhly salt lake, and the Assyk Khudan depression, all in southern Ustyurt, and anecdotal reports of tracks in these areas were received at the end of the 1970s (Bannikov 1984). Flint (1988) provided five additional reports from northwest Turkmenistan between 1975 and 1983. These comprised a sighting on Ustyurt in October 1975; sightings on the Krasnovodsk Peninsula in November 1976 and August 1982; a skull and piece of skin found on the Caspian Sea coast in January 1983; and a sighting of a female with two cubs in July 1983, which represents the latest report from the Ustyurt area.

Lukarevskii (2001) surveyed areas of former cheetah occurrence in Turkmenistan but found no signs of current presence, apart from a few unconfirmed reports through the 1980s and even into the 1990s. One local account concerned a cheetah reportedly killed near Bakharden in the central Kopet Dag in November 1984. The animal had presumably crossed the border from Iran. The evidence thus indicates that chee-



Fig. 2. Chinks on the Ustyurt plateau in Turkmenistan (Photo U. Breitenmoser).

tahs probably disappeared from Central Asia by the mid-1980s, though a few individuals may have persisted for a little longer.

Population

There are no estimates of former population size. Ognev (1935) described cheetahs as 'sporadic and rare' in Turkmenistan and Bobrinskii *et al.* (1944) said they were 'extremely rare' in the USSR. However, Heptner & Sludskii (1972) said that in the 19th century cheetahs were 'very common' in the Badkhyz and Karabil regions of southern Turkmenistan, where they were caught 'in tens', but were rare in the Kara Kum desert. In Badkhyz, 25 cheetahs were captured or killed, and at least 70 were sighted, between 1920 and 1957. On Ustyurt and Mangyshlak there were about 30 sightings and more than 50 reports of tracks between the 1930s and 1960s (Bannikov 1984). Fifteen were captured on Ustyurt between 1947 and 1967 (Heptner & Sludskii 1972). In Uzbekistan (including part of Ustyurt) seven were killed and six observed between 1937 and 1969 (Sadykov 1988).

Reasons for decline

The main causes of the decline were uncontrolled hunting of ungulate prey, especially goitered gazelles *Gazella subgutturosa*, direct killing of cheetahs,

live capture for hunting and collections, severe winters, and development of their habitat; they were also occasionally killed by shepherds' dogs (Heptner & Sludskii 1972, Bannikov 1984, Sadykov 1988, Azimov 2003).

Goitered gazelles declined rapidly throughout Central Asia from the 1930s on, with the advent of motorized hunting. They have since been extirpated from wide tracts of their former range and their status in most of Central Asia is still deteriorating (Mallon & Kingswood 2001). Cheetahs themselves were hunted on Ustyurt and Mangyshlak by members of geological and other expeditions (Heptner & Sludskii 1972, Sadykov 1988). Azimov (2003) listed live capture for collections as a negative factor up to the 1960s in Uzbekistan. Central Asia is subject to periodic severe winters with heavy snow cover or a frozen ice-crust, known locally as *zuut*. Cheetah numbers fell significantly following these, either directly or indirectly through die-off of gazelles.

In Transcaucasia, the rulers of Azerbaijan, Armenia and Georgia hunted with trained cheetahs at least up to the 15th century and one Armenian prince was reported to own 100 animals (Vereshchagin 1959). There are few references in the literature to the use of cheetahs for hunting in Central Asia, especially when compared, for example,



Fig. 3. Badkhyz strictly protected area in southern Turkmenistan bordering Afghanistan and Iran. Rolling hills with pistachio bushes is typical for the region (Photo U. Breitenmoser).

to India, and capture of wild animals for hunting appears not to have been a factor.

Habitat & Ecology

Central Asian cheetahs inhabited semi-desert and desert plains and foothills containing a range of vegetation types. They avoided extensive areas of unconsolidated sand, dense trees and shrubs, and areas with heavy human influence and were rare in mountains (Heptner & Sludskii 1972).

The Badkhyz uplands consist of eroded plateaux, canyons, buttes, and saline depressions. Cheetahs occupied elevations of 500-700m in subtropical steppe, dominated by graminoids such as bulbous meadow grass *Poa bulbosa* and sedges *Carex pachystylus*, and containing tall (c. 2 m) species of Umbelliferae, *Ferula badrakema* and *Dorema aitchisoni*. They also occupied hilly areas with ridges covered with open pistachio *Pistacia vera* trees; ravines, and eroded gullies and undulating terrain in depressions with rocky knolls and salt pans (Heptner & Sludskii 1972).

Ustyurt is an undulating desert plateau with an average altitude of 150m, rising in places to 300-350m, with sparse *Artemisia* and *Salsola* shrubs, interspersed with rock escarpments (known locally as *chink*) with tamarisk

Tamarix, saxaul *Arthrophytum*, and *Calligonum* (Bannikov 1984, Heptner & Sludskii 1972).

Few details of the ecology and biology of Central Asian cheetahs are known. The main prey species was goitered gazelle *Gazella subgutturosa* which was formerly widespread and numerous across the region. Other prey species recorded include wild sheep *Ovis orientalis*, young kulan *Equus hemionus*, saiga *Saiga tatarica*, hares *Lepus tolai*, porcupine *Hystrix indica*, small rodents, and birds such as sandgrouse *Pterocles* spp. (Bannikov 1984, Gvozdev 1989, Heptner & Sludskii 1972, Sadykov 1988). Cheetahs rarely preyed on domestic animals and were not considered a threat to livestock. Cheetahs give birth to 2-4 young, usually in May, but possibly also at other seasons (Bannikov 1984).

The wolf (*Canis lupus*) occurs across the whole of former cheetah range in Central Asia and is also known to prey on goitered gazelles and other ungulates, so would have been a potential competitor, but there is no information on actual competition or interactions between the two species. Leopards also co-occurred with cheetahs in places, notably Badkhyz, and although they preyed on goitered gazelles their main prey in Badkhyz was wild sheep

(Heptner & Sludskii 1972). This may have reduced dietary overlap, and the leopard's preference for rocky and more heavily vegetated terrain would provide the possibility for a degree of ecological separation.

Future Prospects

Cheetahs became extinct in India more than 50 years ago. In Afghanistan there have been no sightings since the 1950s (Habibi 2003) and a recent survey in southwest Pakistan found no signs of presence (Husain 2001). Asian cheetahs survive only in Iran and number only 50-60 (Farhadinia 2004). Cheetahs have in the past wandered from north-east Iran across the border into southern Turkmenistan, but construction of a border fence has made this more difficult. Given this, and the small number of animals remaining in Iran, there is no realistic possibility at present that a viable population could be re-established in Central Asia through natural recolonisation.

Reintroduction faces two significant obstacles: finding a site with an adequate prey base and obtaining appropriate stock for release. Overhunting has severely depleted ungulate populations across former cheetah range. Lukarevskii (2001) found that the prey base on Ustyurt was so low that it could no longer support a cheetah population, except perhaps in winter, when saiga *Saiga tatarica* migrated south from Kazakhstan. However, the saiga population has subsequently crashed (Milner-Gulland *et al.* 2001) so even this potential source of prey is no longer available. Breitenmoser (2002) investigated possible reintroduction sites in Turkmenistan, including Ustyurt, Gapslangyr Nature Reserve (2,828 km²), Meana Chacha Wildlife Sanctuary (Fig. 4; 3,000 km²) and Badkhyz NR (877 km²), and concluded that reintroduction was not feasible because of the lack of prey. Badkhyz NR is a *zapovednik* (strict nature reserve) established in 1935 that until recently held numerous goitered gazelle, wild ass *Equus hemionus* and wild sheep *Ovis orientalis* and was suggested as the most suitable reintroduction site for cheetahs by Shcherbina (1975).

The Mangyshlak region in Kazakhstan, where two protected areas have

been designated (Ustyurt NR, 2,270km² and Buzachi Wildlife Sanctuary, 1,820 km²) represents another potential re-introduction site. It contained 15,000 – 25,000 goitered gazelles until relatively recently (Bekenov *et al.* 2001), but these too have since greatly decreased (Yu. Grachev, pers. comm. 2004).

Restoration of gazelle populations is an absolute prerequisite for any future re-introduction. Breitenmoser (2002) reported that protection and management efforts in Badkhyz and elsewhere had begun to improve. Goitered gazelle populations have the capacity to increase their numbers rapidly if they are protected from direct persecution and with a continued commitment to effective protection, the restoration of viable populations of gazelles and other species can be envisaged.

However, the problem of obtaining suitable source animals for release still has to be overcome. The cheetah population in Iran is too small to provide stock for captive breeding and re-introduction. Flint (1988) proposed the use of African animals and justified this on the grounds that African and Asian cheetahs were already mixed in the wild population as a result of escapes during earlier times, when African cheetahs were imported for hunting. This controversial alternative and other considerations were discussed in more detail by Breitenmoser (2002).

Local names for cheetah

koplon (Uzbek), *kabylan* (Kazakh), *alabars* (Kazakhs of Mangyshlak), *pulan* (Turkmen), *gepard* (Russian) *pardus* (Russian; Ognev 1935, Gvozdev 1989, Sadykov 1988, Heptner & Sludskii 1972).

References

Azimov Zh. A. (Editor). 2003. The Red Book of the Republic of Uzbekistan. Volume II. Animals. Chinor ENK, Tashkent. (In Uzbek and Russian, with English summaries).

Bannikov A. G. 1984. [Cheetah]. In Borodin A. M. (Editor). [Red Book of the USSR. Vol. 1. Animals]. Pp. 48-49. Lesnaya Promyshlennost', Moscow. (In Russian).

Bekenov A. B., Blank D. A., Grachev Yu. A. and Plakhov K. N. Kazakhstan. In Mallon D. P. and Kingswood S. C. 2001. (Compilers). Antelopes. Part 4: North Africa, the Middle East, and Asia. Glo-



Fig. 4. Meana Chaacha in Southern Turkmenistan. According to a local elder, cheetahs and gazelles have disappeared from the area when the fence was built between Iran and Turkmenistan in 1957. The gazelles were no longer able to move from the hills to the plain (Photo U. Breitenmoser).

bal Survey and Regional Action Plans. Pp. 134-140. IUCN, Gland.

Bobrinskii N. A., Kuznetsov B. A. and Kuzyakin A. P. 1944. [Key to the Mammals of the USSR]. Academy of Sciences, Moscow. (In Russian).

Breitenmoser U. 2002. Feasibility study on the re-introduction of the cheetah in Turkmenistan. *Cat News* 36, 13-15

Farhadinia M. S. 2004. The last stronghold: cheetah in Iran. *Cat News* 40, 11-13.

Flint V. 1988. The Asiatic cheetah lives on. *Cat News* 8, 11.

Gvozdev E. V. (Ed). 1989. [The Book of the Genetic Fund of the Fauna of the Kazakh SSR. Part 1. Vertebrates]. Nauka, Alma-Ata. (In Russian).

Habibi K. 2003. Mammals of Afghanistan. Zoo Outreach Organization, Coimbatore, India.

Heptner V. G. and Sludskii A. A. 1972. [Mammals of the Soviet Union. Volume II, Part 2. Carnivora (hyenas and cats). Vysshaya Shkola, Moscow. (In Russian).

Husain T. 2001. Survey for the Asiatic cheetah *Acinonyx jubatus* in Balochistan Province, Pakistan. Final Report to CAT – Cat Action Treasury. May 2001. Lahore

Lukarevskii V. S. 2001. [Leopard, Striped Hyena and Wolf in Turkmenistan]. Signar, Moscow. (In Russian).

Mallon D. P. and Kingswood S. C. 2001. (Compilers). Antelopes. Part 4: North Africa, the Middle East, and Asia. Glo-

bal Survey and Regional Action Plans. IUCN, Gland.

Milner-Gulland E. J., Kholodova M. V., Bekenov A., Bukreeva O. M., Grachev Iu. A., Amgalan L. and Lushchekina A. A. 2001. Dramatic declines in saiga antelope populations. *Oryx* 35, 340-345.

Nowell K. and Jackson P. 1996. Wild Cats. Status Survey and Conservation Action Plan. IUCN, Gland.

Ognev S. I. 1935. Mammals of the USSR and Adjacent Countries. Vol. 3. Carnivora (Fissipedia and Pinnipedia). (English translation 1962, Israel Program for Scientific Translations, Jerusalem).

Sadykov A. S. 1988. [Red Book of the Uzbek SSR. Volume 1. Vertebrates]. Fan, Tashkent. (In Russian).

Shcherbina E. I. 1975. [Red Book of Nature]. Academy of Sciences of the Turkmen SSR, Ashkhabad. (In Russian).

Vereshchagin N. K. 1959. The Mammals of the Caucasus: A History of the Evolution of the Fauna. Academy of Sciences, Moscow-Leningrad. (English translation 1967, Israel Program for Scientific Translations, Jerusalem).

¹ Department of Biological Sciences, Manchester Metropolitan University, UK <d.mallon@zoo.co.uk>