

Extinct in the Wild to Endangered: the History of Przewalski's Horse (*Equus ferus przewalskii*) and its Future Conservation

Sarah R. B. King

Steppe Forward Programme, Faculty of Biology, National University Mongolia, Ulaanbaatar 210646, Mongolia e-mail: sarah.king@zsl.org

Abstract

This paper summarises published research on Przewalski's horse, *Equus ferus przewalskii*. Biology of the species is described, as well as its history in the wild and in captivity. Reintroduction efforts at Takhiin Tal and Hustai National Park are discussed, with current population levels given, as well as some survivorship data. Ecology of the Przewalski horse at the different reintroduction sites is described, showing similarities and differences. Finally future conservation of Przewalski's horse is discussed, with particular reference to the change in status from Extinct in the Wild to Endangered, based on the IUCN Categories and Criteria.

Keywords: *Equus ferus przewalskii*, Mongolia, Reintroduction, takhi

Introduction

The Mongolian Biodiversity Databank workshop took place at Hustai National Park in November, 2005. This Park was one of the first reintroduction sites of Przewalski's horse, *Equus ferus przewalskii* (Groves, 1986), in Mongolia, so was a fitting place for its conservation status to be changed from Extinct in the Wild (EW) to Endangered (EN) (based on the IUCN Categories and Criteria). This note briefly describes the history of the Przewalski's horse ('takhi' in Mongolian), extinction causes and reintroduction efforts. Ecology of the horse since reintroduction is described, together with the potential impacts of the re-classification on future work.

Biological data

The Przewalski's horse is the last of the wild horses. Stocky, with a big head, this species is different from domestic horses (*E. caballus*) both phenotypically and genotypically (Groves, 1994). The Przewalski's horse has an erect mane with no forelock and short guard hairs along the dock – two traits not seen in domestic horses. They are typified by being a dun brown colour, with black or dark brown manes and tails, and often a dorsal line and stripes on the legs. *E. caballus* and *E. f. przewalskii* have a different number of chromosomes ($2n = 64$ and 66 respectively), but can interbreed to produce fertile offspring (Ryder, 1994). Although their karyotypes differ by only one Robertsonian fusion (Ahrens & Stranzinger, 2005), the two equids are separate species, with Przewalski's horses not being ancestral to the domestic horse (Oakenfull

et al., 2000).

Historic range and captive breeding

Although the horse is likely to have once roamed throughout the Eurasian land mass, as evidenced by cave paintings in southern Europe, in recorded history it has only been found within Tibet, China and Mongolia (Wakefield *et al.*, 2002). All sightings within the last 200 years occurred within the relatively small area around the current Chinese-Mongolian border ($85-95^{\circ}\text{E}$, $44-50^{\circ}\text{N}$) (Mohr, 1971). It was in this region that the last wild horse was seen in 1969 (Bouman & Bouman, 1994), and where all Przewalski's horses were captured around the turn of the 19th and 20th Centuries. Fifty three horses reached the west alive from these capture expeditions, and since then only two horses are known to have been caught (Bouman & Bouman, 1994). Of these horses only 12 contribute any genes to the current population, with one additional founder, and the possibility of at least two of these animals being F1 domestic-Przewalski's hybrids (Wakefield *et al.*, 2002). After the Second World War the captive Przewalski's horse population went through another bottleneck as only 12 of the 31 horses that survived the war bred (Wakefield *et al.*, 2002). Until the 1970s Przewalski's horses tended to remain in the same zoos and there were many instances of consanguineous mating, causing the level of inbreeding to rise sharply in most collections (Bouman & Bouman, 1994). Some genetic diversity was lost