A boring life -- the Asiatic wild ass in the Mongolian Gobi

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Wild asses are descendants of the original ancestors of the horse and the donkey. Unfortunately most species of wild ass are now in danger of extinction, largely as a direct result of human activities such as hunting and habitat destruction. Walzer's group has been working together with colleagues in Germany, China and Mongolia on the Asiatic wild ass, which is currently restricted to areas in Mongolia, China, India, Iran and Turkmenistan although it was formerly much more widespread. The researchers are considering the factors responsible for the decline of the species, hoping to develop measures to ensure its future survival.

The Gobi Desert in Mongolia represents one of the most important refuges for a number of endangered species. Petra Kaczensky in Walzer's group has examined the distribution of wild asses in the Mongolian Gobi and observed that the species only occurs in areas where the average production of biomass is below 250 grams of carbon per square metre per year (gC/m2/year). It clearly used to be found also in more productive regions but these are now too heavily used by people for grazing livestock: wild asses are either chased away or killed to prevent them from competing with domestic animals for the limited food and water. Even the hardy wild ass requires some food and water to survive in the steppe and desert, so areas that produce below 100 gC/m2/year cannot be used. As a consequence, the species is gradually being forced into habitats that are barely able to support it.

Animals that live in unproductive areas are frequently nomadic and the Asiatic wild ass is no exception. Walzer's group fitted radiotransmitters

to nearly 20 asses and monitored the animals' movements until the transmitters fell off (as they were designed to!) The results confirmed that individual animals range widely and showed that they avoided hilly or mountainous regions. The mountains that transect the species' distribution in Mongolia thus represent a barrier to movement and the scientists used sophisticated genetic experiments to prove that the populations on either side of the mountains are essentially isolated from each other. Encouragingly for conservation efforts, they could find no evidence of a recent genetic bottleneck and the species showed a relatively high level of genetic diversity, both within and between the two subpopulations.

More worryingly, however, the radiotransmitter data showed that the animals were unable or unwilling to cross man-made barriers such as the Ulaanbaatar–Beijing railway line, which effectively cuts off about 17,000 km2 of suitable habitat, and the border fence between Mongolia and China, which has been constructed and upgraded since the 1970s and now essentially separates the asses on the two sides. The wild ass in the Gobi would certainly profit from a coordinated, multinational conservation strategy. As Walzer says, "Opening the border fence, at least in places, would not only help the Asiatic wild ass but would also be likely to benefit other rare mammals, such as Bactrian camels and re-introduced Przewalski's horses."

More information: The paper Connectivity of the Asiatic wild ass population in the Mongolian Gobi by Petra Kaczensky, Ralph Kuehn, Badamjav Lhagvasuren, Stephanie Pietsch, Weikang Yang and Chris Walzer is published in the February 2011 issue of the journal Biological Conservation (Vol. 144, pp. 920-929).

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