

The principal cause of the Tibetan antelope population decline has been poaching on a massive scale for the species' fur (wool), known in trade as shahtoosh ("king of wool"), which is one of the finest animal fibers known (Ginsberg *et al.* 1999). Shahtoosh is processed into high-fashion scarves and shawls in the Indian State of Jammu and Kashmir; these items are greatly valued by certain people of wealth and fashion around the world. The international demand for chiru fiber and shahtoosh products is the most serious threat to the continued existence of the Tibetan antelope. Although overall mortality rates are not known, poaching mortality was estimated to be as high as 20,000 individuals per year (SFA 1998). Poaching appears to have declined in some areas in recent years (Xinhuanet 2002a), most likely because there are not enough animals to warrant an organized poaching effort. But Chinese officials acknowledge that "poaching is still far from being eradicated in China." (Xinhuanet 2002c). Annual recruitment of young has been estimated at around 12 percent (Schaller 1998). If one assumes that the total population of chiru is 70,000 individuals and that the population is currently declining at a rate of 1,000–3,500 individuals per year (admittedly a rough estimate, given available data), then the species could go extinct within the next 20 to 70 years. The species' role as the dominant native grazing herbivore of the Tibetan Plateau ecosystem has already been significantly diminished, and its influence on ecosystem structure and function would likely be substantially reduced or eliminated well before the species actually goes extinct.

Although the shahtoosh trade has existed for centuries, killing of Tibetan antelope on a widespread, commercial basis probably began only in the 1970s or 1980s, resulting from an increase in international consumer demand and increased availability of vehicles on the Tibetan Plateau. Schaller and Gu (1994) noted that, with the increasing availability of vehicles beginning three decades ago, "truck drivers, officials, military personnel and other outsiders also began to shoot wildlife * * *." Most chiru poaching takes place in the Arjin Shan, Chang Tang, and Kekexili Nature Reserves by a variety of hunters, including local herders, residents, officials, military personnel, gold miners, and truck drivers (Schaller 1993, Schaller and Gu 1994). Organized, large-scale poaching rings have developed in some areas. Poachers always kill Tibetan antelope to collect their fiber. No cases of capture-and-

release wool collection are known, nor is naturally shed fiber collected from shrubs and grass tufts, as is often claimed (primarily by people within the shahtoosh industry). Poachers shear the hides, and collect and clean the underfur of the antelope, or sell the hides to dealers who prepare the shahtoosh (Wright and Kumar 1997).

Schaller speculated that, during the 1980s and 1990s, tens of thousands of chiru were killed for their wool (Ginsberg *et al.* 1999). One chiru carcass yields about 125–150 grams (gm) of fiber. In the winter of 1992, an estimated 2,000 kilograms (kg) of wool reached India, and consignments of 600 kg were seized (and released) in India during 1993 and 1994 (Bagla 1995, cited in Ginsberg *et al.* 1999). This amount alone represents 17,000 chiru. In October 1998, 14 poachers in the Tibet Autonomous Region were convicted of collectively killing 500 chiru and purchasing 212 hides, and were sentenced to 3 to 13 years imprisonment (Xinhua 1998, cited in Ginsberg *et al.* 1999). The largest enforcement action to date within China, involving several jurisdictions and dubbed the "Hoh Xil Number One Action" by Chinese authorities, resulted in the arrest of 66 poachers and the confiscation of 1,658 chiru hides in April and May 1999 (Liu 1999, cited in Ginsberg *et al.* 1999). The IFAW/WTI (2001) report lists 77 known seizures of chiru hides, raw shahtoosh, and finished shahtoosh scarves. Recent documented seizures have been of 39 kg of raw fiber in March 2001 along the Tibet-Nepal border (IFAW/WTI 2001) and 80 shahtoosh shawls in New Delhi in March 2002 [Wildlife Protection Society of India (WPSI) News 2002]. Most recently, a consignment of 211 kg of raw shahtoosh was seized by wildlife officials in Delhi in early April 2003 (A. Kumar, WTI, *pers. comm.* with K. Johnson, Division of Scientific Authority, April 6, 2003). This quantity of raw wool represents the killing of almost 1,800 chiru.

Shahtoosh is smuggled out of China by truck or animal caravan, through Nepal or India, and into the State of Jammu and Kashmir in India. This is in violation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as well as domestic laws of the countries involved. The shahtoosh industry in the Srinagar region of Jammu and Kashmir is controlled by a wealthy, influential group of 12 to 20 families (Wright and Kumar 1997). There are about 100 to 120 family-run manufacturing operations that employ upwards of 20,000 people who prepare, weave, and finish the raw shahtoosh

into scarves and shawls (IFAW/WTI 2001). The scarves are sold throughout India and smuggled abroad in violation of Indian law, CITES, and domestic legislation in many of the importing countries (Wright and Kumar 1997). Shahtoosh products have been made in Jammu and Kashmir for centuries, but the current high levels of poaching are a result of consumer demand in the West, including the United States.

Chiru are also killed for their horns (used in traditional medicinal practices), hides, and meat (Ginsberg *et al.* 1999), although these uses are secondary to the use of fiber.

C. Disease or Predation

Schaller (1998) documented Tibetan antelope mortality caused by disease and predators such as the wolf (*Canis lupus*), snow leopard (*Uncia uncia*), lynx (*Lynx lynx*), brown bear (*Ursus arctos*), and domestic dog (*Canis familiaris*). He suggested that wolf predation may at one time have been a substantial mortality factor for chiru, particularly on the calving grounds. At the present time, neither disease nor predation is considered to threaten or endanger the species in any portion of its range. However, one or both of these factors may become more significant as populations decline and become increasingly fragmented because of other mortality factors.

D. Inadequacy of Existing Regulatory Mechanisms

The Tibetan antelope was listed in Appendix II of CITES in 1975; it was transferred to Appendix I in 1979. All three countries that comprise the species' natural geographic range—China, Nepal, and India—are CITES Parties. The only reservation ever held on the species was taken by Switzerland in 1979 and withdrawn in October 1998. The Tibetan antelope is protected at a national level by China, Nepal, and India.

In China, the chiru is a Class 1 protected species under the Law of the People's Republic of China on the Protection of Wildlife (1989), which prohibits all killing except by special permit from the central government. Although China has expended considerable effort and resources in an attempt to control poaching, it has been unable to do so (SFA 1998) because of the magnitude of the poaching, the extensive geographic areas involved, and the high value of shahtoosh, which gives poachers great incentive to continue their illegal activities. On several occasions, China has appealed to other governments and organizations to eliminate the demand for and