

Autonomous Region, and Qinghai Province) and small portions of India (Ladakh) and western Nepal (although there is no evidence that they still occur in Nepal). The Tibetan antelope is also known by its Tibetan name "chiru." These two common names will be used interchangeably in this document.

Adult males are characterized by long, slender, antelope-like black horns. Although the Tibetan antelope has been placed in the subfamily Antilopinae, recent morphological and molecular research indicates that it is most closely allied to the goats and other members of the subfamily Caprinae (Gentry 1992, Gatesy *et al.* 1992, both cited in Ginsberg *et al.* 1999). The species is uniquely adapted to the high elevation and cold, dry climate of the Tibetan Plateau (Schaller 1998). The sexes segregate almost completely during the spring and early summer (May and June), when adult females and their female young migrate north to certain calving grounds and return south by late July or early August, covering distances as far as 300 kilometers (km) each way (Schaller 1998). Seasonal migrations constitute a critical aspect of the chiru's ecology and help define the ecosystem as a whole.

#### Previous Federal Action

On October 6, 1999, the Service received a petition from the Wildlife Conservation Society (Joshua R. Ginsberg, Ph.D., Director, Asia Program, and George B. Schaller, Ph.D., Director of Science) and the Tibetan Plateau Project of Earth Island Institute (Mr. Justin Lowe, Director) requesting that the Tibetan antelope (*Pantholops hodgsonii*) be listed as endangered throughout its entire range. The petition was actually dated October 7, 1999, but was received via e-mail the previous day.

On April 14, 2000, the Service made a positive 90-day finding on the Wildlife Conservation Society/Tibetan Plateau Project petition (*i.e.*, the Service found that the petition presented substantial information indicating that the requested action may be warranted). That finding was published in the **Federal Register** on April 25, 2000 (65 FR 24171), thereby initiating a public comment period and status review for the species. The public comment period remained open until June 26, 2000. We received 272 comments during the public comment period, including 1 from a range country government (People's Republic of China), 4 from non-governmental conservation organizations, 41 (letters) from individuals, 86 (postcards) from individuals, and 1 letter-petition signed

by 140 individuals. All comments fully supported an endangered listing for the Tibetan antelope, although only five comments provided any new information on the status of or threats to the species. Particularly important among these was the letter from Mr. Zhen Rende, Director General of the CITES Management Authority of China, in which he expressed strong support for an endangered listing for the Tibetan antelope under the ESA.

In our 90-day finding, we stated that we had used all relevant literature and information available at that time (April 2000) on current status of and threats to the Tibetan antelope. Since then, a limited amount of relevant new information has become available as a result of the status review and public comment period. That information has been incorporated, as appropriate, in this 12-month finding.

#### Summary of Factors Affecting the Species

Section 4(a)(1) of the Act (16 U.S.C. 1531 *et seq.*) and regulations promulgated to implement the listing provisions of the Act (50 CFR part 424) set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species on the basis of one or more of the five factors described in section 4(a)(1). These factors and their application to the Tibetan antelope are as follows:

##### *A. Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range*

Tibetan antelope are endemic to the high Tibetan Plateau. Most of their range lies above 4,000 meters (m) in elevation, but they occur at elevations as low as 3,250 m in parts of Xinjiang (Schaller 1998). They prefer flat to rolling topography and alpine steppe or similar semiarid plant associations (Schaller 1998). They occasionally occur in alpine desert steppe habitats, at least on a seasonal basis, but are not known to have occurred in Qinghai's Qaidam Basin (Schaller 1998). They do not occur in alpine meadow areas receiving greater than 400 millimeters (mm) annual precipitation (Schaller 1998).

Although the current east-west distribution of chiru appears much as it was described a century ago by Bower (1894, cited in Schaller 1998), that distribution is now fragmented where previously it was continuous. Schaller (1998) determined that chiru no longer occur, or occur in low numbers, in several areas where early explorers noted them to be abundant. The current range is divided into two areas: A

northern one of about 490,000 square kilometers (km<sup>2</sup>) and a central one of about 115,000 km<sup>2</sup>. Distribution between the two areas was continuous until recent decades, and there may still be rare contact near the western end. However, current chiru populations in the central Chang Tang of the Tibet Autonomous Region are highly fragmented and occur in small, scattered herds. The range has also contracted in eastern Qinghai Province (Schaller 1998).

Changes in Chinese government policy have led to increasing human development and activity on the Tibetan Plateau, including transportation development (roads and railways), resource extraction activities (minerals, oil, and gas), permanent settlement of traditionally nomadic or semi-nomadic pastoralists, and rangeland use for domestic livestock grazing (Ginsberg *et al.* 1999). These activities have already adversely modified or destroyed Tibetan antelope habitat in some areas and threaten to modify or destroy habitat over a large area in the near future.

Nomadic and semi-nomadic pastoralists have grazed a mix of domestic livestock (primarily sheep, goats, yaks, and some horses) on the Tibetan Plateau for millennia in relative harmony with the environment (Miller 2000, 2002). These livestock can directly and indirectly compete with Tibetan antelope for available vegetation resources, both within and outside established protected areas (Schaller 1998, Ginsberg *et al.* 1999). In recent decades, as a result of government policy changes, excessive livestock grazing has degraded or destroyed chiru habitat in some areas, and could eventually lead to the destruction of some portion of the species' range through physical displacement and/or overgrazing, which may contribute to desertification (Ginsberg *et al.* 1999, Miller 2001). Recent changes in Chinese Government policy have resulted in an attempt to permanently settle many Tibetan pastoralists, with a resultant proliferation of rangeland fencing on portions of the Plateau (Miller 2000, Los Angeles Times 2002). Livestock frequently graze year-round in antelope habitat, and increasingly, nomads are fencing for winter-spring grazing and fodder production, thereby excluding chiru from the fenced grassland resources. Tibetan antelope need open range to survive (Miller and Schaller 1997). Enclosure and conversion of grasslands disrupt antelope habitat, posing a particular threat in the spring, when weakened chiru are attempting to rebuild their energy reserves, and in the