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Argali Ecology in Ikh Nartyn Chuluu Nature Reserve: Preliminary Findings

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Abstract

Little is known about the ecology of argali (*Ovis ammon*), a species listed as threatened in Mongolia and internationally. We initiated research to better understand the species' ecology and develop a conservation plan for the species. Here we report on preliminary finding from a radio telemetry study of argali ecology. We captured and radio collared 22 argali, using drive nets, lamb captures, and darting from 2000-2003. Eight collared animals have died: 2 due to capture techniques, 4 from predation, 1 from starvation and exposure, and 1 of unknown (not predation) causes. We collected 633 locations on the 22 argali through September 2003, but acquired sufficient data for analyses for only 12 animals thus far. Animals primarily restricted their movements to the northern portion of Ikh Nartyn Chuluu Nature Reserve, and have not exhibited seasonal movement patterns. Mean home ranges were 47.46 ±4.21 km^2 (Range = 29.96 – 75.00 km^2) using the 100% minimum convex polygon method, with smaller areas of predicted occurrence (62.03 ±4.84 km^2 for 95% kernel, 23.76 ±3.96 km^2 for 75% kernel and 9.36 ±1.61 km^2 for 50% kernel home ranges). Predation by domestic dogs, previously unrecorded was an important early finding of our work.

Key words: Argali, conservation, Gobi, home range, Mongolia, *Ovis ammon*

Introduction

Argali sheep (*Ovis ammon*) are the largest mountain sheep in the world, with some males in Mongolia weighing over 200 kg and sporting impressive, spiraling horns that reach over 165 cm long (Schaller, 1977, 1998; Valdez, 1982; Mallon *et al.,* 1997). Little is known about the ecology of the species, although argali are declining throughout their range and the species is listed as threatened in Mongolia and internationally (Shiirevdamba *et al.,* 1997; Amgalanbaatar & Reading, 2000; Hilton-Taylor, 2000; Johnson, 2002). We initiated an interdisciplinary research project in an attempt to better understand the species' taxonomy, ecology, and population dynamics. The results of this work will hopefully enable us to better conserve these magnificent animals. In this paper we report on some of the ecological results we have obtained from one aspect of our work; a radio telemetry study.

Argali inhabit the cold, arid grasslands of mountains, steppe-covered valleys, and areas with rocky outcrops in Central Asia, including portions of Mongolia (Shackleton, 1997). Currently, their populations are patchily distributed in the northwestern and western Altai Mountains, the central Khangai Mountains, the Trans-Altai Mountains and the mountain massifs and rocky outcrops of the Gobi Desert in southern Mongolia (Reading *et al.,* 1998; Schaller, 1998). A few argali survive in the mountains near Lake Khovsgol in the north.

Although argali appear to be declining, accurate population estimates are difficult. Most biologists agree that the species is experiencing marked population declines and fragmentation (Mallon *et al.,* 1997; Amgalanbaatar *et al.,* In press). As such, argali are listed as Threatened in the Mongolian Red Book and as "Rare" by the country's newly enacted Law on Fauna (Shiirevdamba *et al.,* 1997; Wingard & Odgerel, 2001). Argali population