

Siberian Ibex (*Capra sibirica*) Home Ranges in Ikh Nart Nature Reserve, Mongolia: Preliminary Findings

Richard P. Reading^{1*}, Sukh Amgalanbaatar², David Kenny¹, Anthony DeNicola³ and Enkhtsetseg Tuguldur⁴

¹Denver Zoological Foundation, 2300 Steele Street, Denver, CO 80205 USA, e-mail: rreading@denverzoo.org, +1 (303) 376-4945; FAX: +1 (303) 376-4806

²Mongolian Academy of Sciences, Institute of Biology, Ulaanbaatar – 51, Mongolia

³White Buffalo, Inc., 26 Davison Street, Moodus, CT 06469 USA

⁴Mongolian Pedagogical University, Department of Biology, Ulaanbaatar, Mongolia

Abstract

Siberian ibex (*Capra sibirica*) remain poorly understood, as little is known about their ecology. We began studying ibex in Ikh Nart Nature Reserve, Dornogobi Aimag, Mongolia to better understand the species' ecological needs and threats. In this paper we report on home range and core range sizes. We captured 27 ibex and fit them with radio telemetry collars using drive nets for adults and juveniles ($n = 22$) and hand captures for neonatal kids ($n = 5$). We collected 1,029 locations from September 2003 to February 2007. Throughout the study, 9 ibex with 40+ fixes used mean, annual home range sizes of $3,115.5 \pm 504.2$ ha using the Minimum Convex Polygon method. Home ranges calculated using the fixed kernel method were smaller: 475.9 ± 14.7 ha for 50% kernel and $1,808.0 \pm 88.1$ ha for 95% kernel. Ibex from different demographic groups (males vs. females and juveniles vs. adults) used remarkably similar home and core ranges; we found no significant differences among any demographic groups. Although not quantified, ibex mostly restricted their activities to areas with steep cliffs and rocky outcrops and home ranges overlapped extensively.

Key words: *Capra sibirica*, core range, home range, Mongolia, Siberian ibex.

Introduction

Siberian ibex (*Capra sibirica*) remain relatively poorly studied (Mallon *et al.*, 1997; Shackleton 1997). Few ecological studies of Siberian ibex outside of Russia (see Fedosenko and Blank 2001 for a review of the Russian literature) have been conducted even though they are relatively common in the mountain ranges they inhabit (but see Fox *et al.*, 1992). Despite descriptions of ibex habitat, to our knowledge, no study has examined home range size for Siberian ibex. Grignolio *et al.* (2004) briefly discuss several factors that could influence spatial behavior and home range size and use in ibex and other ungulates, including habitat features (e.g., distribution of habitats, climate, human activities), population considerations (e.g., population density, social structure), and individual traits (e.g., gender, age, body condition, reproductive status).

Siberian ibex are sexually dimorphic in size and morphology, with males typically reaching about 90 kg and growing large, scimitar shaped

horns that can extend to 140 cm (Schaller 1977; Fedosenko and Blank 2001). Females are approximately 50% as large as males, with smaller, dagger shaped horns (Schaller 1977; Fedosenko and Blank 2001). Such dimorphism could influence ibex ecology. Research on other large, sexually dimorphic ungulates (including other species of ibex) suggests that males and females should segregate themselves sexually, with females utilizing smaller home ranges than males (Main *et al.*, 1996; Villaret *et al.*, 1997; Ruckstuhl and Neuhaus 2000; Grignolio *et al.*, 2004). Theories to explain sexual segregation include the predation risk or reproductive strategy hypothesis, forage selection or sexual dimorphism-body size hypothesis, scramble-competition hypothesis, weather sensitivity hypothesis, social factor, social preference or behavioral incompatibility hypothesis, and activity budget hypothesis (for details, see reviews in Main *et al.*, 1996; Ruckhaus and Heuhaus 2000; and Bon *et al.*, 2001).

We began specifically studying ibex in Ikh Nart Nature Reserve, Dornogobi Aimag in 2005,