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*Featuring*

# FOREST NEWS

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## TIGERPAPER



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Front cover: Argali-Nov98-Ik Nartin Mongolia (Photo: Michael Frisina)

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Argali herd-Nov98-Ik Nartin Mongolia (Photo: Michael Frisina)

## MONGOLIAN ARGALI POPULATION, SPRING 2009

by Michael R. Frisina and Baigalmaa Purevsuren

Argali (*Ovis ammon*) wild sheep occur throughout central Asia, including Mongolia's steppe, undulating desert, and rugged mountainous landscapes (Valdez, 1982, Geist, 1991, Mitchell and Frisina, 2007). Although their ranges are not well defined and some overlap may occur, Shackleton and Lovari (1997) are among those who recognize two subspecies of argali as occurring in Mongolia: the Altai argali (*O. a. ammon*) of western Mongolia and the Gobi argali (*O. a. darwini*) of the Gobi Desert in southern Mongolia. Both are listed as rare by the Mongolian Government (MNEM, 1997) and are included in the United States Fish and Wildlife Service list of endangered and threatened wildlife and plants (USFWS, 1997). In addition, they are listed as vulnerable and endangered by IUCN (2000) and are in Appendix II of CITES (USFWS, 2001).

Mongolia, a central Asian landlocked country, encompasses about 1,656,000 km<sup>2</sup>, of which approximately 25% is potential argali habitat (ASM, 1990). Limited international sport hunting has been permitted since 1968. The current Mongolian hunting law, established in 1995 and administered by the Mongolian Ministry for Nature and the Environment, regulates the commercial use of wildlife. Hunting fees are an important source of foreign currency in a badly depressed economy (MNEM, 1995, Wingard and Purevdolgor, 2001).

Argali populations are believed to have declined in Mongolia and throughout central Asia during the last century (Harper, 1945; Mallon, 1985; Heptner *et al.*, 1989; Mallon *et al.*, 1997; Reading *et al.*, 1997). Specific and comparable country-wide population

status and trend information for this species, a fundamental requirement for conservation (Wegge, 1997), is lacking. The most recent monitoring of Mongolian argali populations was conducted in 2002 and a population estimate of 20,226 was reported (Frisina *et al.*, 2007). About 7 years have passed since the last reported surveys were conducted, so checks for production and population status at 8 locations were made during April 2009. These data were collected as a precursor to a range-wide survey to be conducted during late fall 2009.

### Methods

Methods used for locating, surveying, and classifying argali follow protocols described by Frisina *et al.* (2007). From April 24 through April 28, we collected argali observations at 8 locations (Table 1, Figure 1). We originally intended to include sampling sites in the West Zone (Figure 1), but difficult weather conditions made observing argali in the Altai impossible during the allotted field time. The West Zone will be surveyed during the 2009 fall survey. Most recent taxonomies by scientists classify argali at locations covered by this report as *Ovis ammon darwini*. Some trophy hunting records consider those sheep in locations 1, 4, 5, 6, 7, and 8 as the Hangai trophy type (Mitchell and Frisina, 2007).

### Conclusions

During the April 2009 survey, 5 days were spent observing argali (4/23, 4/24, 4/25, 4/27, 4/28). A total of 1,159 argali were observed (Table 1), which amounts to about 232 argali observed per observation day. While this information does not establish a trend, it does indicate that argali were abundant at the 8 areas surveyed. The average number of argali observed per observation site for the 8 sites surveyed was 145 (range 42-286, SD = 93.6). The range-wide survey planned for fall 2009 will be directly comparable to the survey reported by Frisina *et al.* (2007) and will be used to establish trends between 2002 and 2009. Argali are more observable during the November rutting season than in April, when ewes are preparing to give birth and are therefore more secretive and scattered. Thus, data from this survey is not

directly comparable with information reported by Frisina *et al.* (2007).

A total of 608 adult ewes and 285 lambs were observed yielding an observed ratio of 47 lambs per 100 ewes. It is important to keep in mind that the lambs reported here were born in May of 2008; the ratio represents the portion of recruitment that survived the 2008-2009 winter. These lambs will be classified as yearlings once the 2009 lambing season is completed in early June. With that consideration, this ratio of 47 lambs per 100 ewes represents not only good reproduction, but also good overwinter survival of lambs. Frisina *et al.* (2007) reported an observed ratio of 29 lambs per 100 ewes for November 2002 (prior to any winter mortality). The data reported here indicates a significant improvement in lamb production and survival compared to 2002. In a synthesis of information Frisina *et al.* (2002) reported a range of 10 to 63 lambs per 100 ewes observed for earlier surveys, all of which were measured prior to any winter mortality occurring.

A total of 1,150 argali were classified; of these 96 or 8.4% were Class 4 or trophy rams (Table 1.) Of the total 257 rams observed, 187 or 73% were  $\geq 5$  years of age (Class 3 and Class 4), amounting to an observed ratio of about 31 breeding age rams per 100 adult ewes (1 breeding age ram per 3 ewes). These data indicate that adequate numbers of breeding age rams are being maintained in the population for natural reproductive processes to be maintained. The relatively high proportion of trophy males (37% of males observed) and relatively high proportion of Class 3 rams (35% of observed males) indicates a significant portion of rams are surviving into the older age classes. The data also indicates that there are significant numbers of Class 3 rams available to replace Class 4 males as they die of natural causes or are removed from the population through legal harvest. These data indicate that the trophy harvest has not been excessive and that poaching has not significantly inhibited maintenance of adequate numbers of mature rams for breeding or harvest.

It will not be possible to make a definitive judgment on population trends between 2002 and 2009 until we complete the range-wide survey scheduled for this fall. However, the data collected during this

April survey for the North Zone and South & East Zone indicates that things may have improved for the argali since 2002.

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**Table 1. Argali observations from ground surveys conducted from April 23 through April 28, 2009.**

Location <sup>1</sup>	Rams								
	Total	Female	Lamb	Rams	Uncl.	Class 1	Class 2	Class 3	Class 4
1	216	125	64	18	9	3	7	1	7
2	230	154	56	20	0	1	8	11	0
3	42	26	5	11	0	0	2	2	7
4	95	53	18	24	0	0	0	5	19
5	72	19	13	40	0	5	6	27	2
6	286	132	89	65	0	0	5	19	41
7	173	85	32	56	0	8	10	20	18
8	45	14	8	23	0	8	7	6	2
<b>Totals</b>	1,159	608	285	257	9	25	45	91	96

<sup>1</sup>For locations see Figure 1.

**Figure 1. Locations of argali survey sites visited from April 24 through April 28, 2009. The three zones are from Frisina et al. (2007).**

