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Altai argali (*Ovis ammon ammon*) Surveys in Siilkhemiin Nuruu National Park of Mongolia

Ryan L. Maroney* D. Davkharbayar**

**International Resource Management Program, School of Forestry & Conservation, The University of Montana, Missoula, Montana, USA e-mail: ryanmaroney@fastmail.fm*
***Wildlife Biologist, Mongol Altai Nuruu Special Protected Areas Administration, Olgii, Bayan-Olgii, Mongolia*

Abstract

A preliminary survey of argali distribution and population structure in Siilkhemiin Nuruu National Park from November 22-25, 2001, documented 238 argali in 12 distinct groups over four observation days. Of the 225 argali characterized, 29 adult males, 138 adult females, and 58 lambs were recorded. Mean group size was 20.0 (range 1-119, s.d. 34.0), with a lamb to female ratio of 42:100, and male to female ratio of 21:100. Additionally, important winter forage areas were delineated for planning future argali management efforts within the park. Increased cooperation between Mongolian and Russian governments and protected area administrations is necessary for the creation of more detailed monitoring and management programs for the transboundary argali populations of the Sailugem and Chikhacheva mountains.

Key words: argali, conservation, management, Mongolia, Altai-Sayan

Introduction

Siilkhemiin Nuruu (Sailugem Range) National Park (SNNP) is located in Mongolia's westernmost province of Bayan-Olgii (Figure 1). SNNP was created in 2000 primarily for the protection of Altai argali (*Ovis ammon ammon*) and is divided into two sections, which cover a combined area of 140,080 ha (Myagmarsuren, 2000). Spanning portions of Ulaankhus and Nogoon Nuur provincial counties, SNNP and is one of four protected areas under the management the Mongol Altai Nuruu Special Protected Areas Administration (MANSPAA) in Bayan-Olgii province. As with many protected areas in the region, MANSPAA and its three rangers in SNNP have had little involvement in the area due to limited resources.

The Sailugem mountains form part of the Mongolian-Russian border and intersect the Chikhacheva range at the borders of the Altai and Tuva republics of Russia. This alpine and mountain steppe environment is composed of high plateaus, broad valleys, and undulating hills ranging in elevation from 2473 m at the Bor Borgusen river to 4029 m at Ikh Turgen peak. Weather in this region is characterized by a strong continental climate with severe winters, a short growing season, and approximately 300-400 mm of annual precipitation (Hilbig, 1995). The Sailugem and Chikhacheva ranges were once considered some of the best wild sheep hunting grounds in Central Asia as reflected in Demidoff 's (1900) and Carruthers' (1913) accounts of hunting trips to the region.

Argali in SNNP make seasonal, transboundary migrations and are known to winter in Mongolia predominately on relatively sheltered southern slopes (Davarkhbayar, *et al*., 2000). Habitat disturbance and overgrazing by local herders and their livestock have displaced many argali to marginal pasture in SNNP. In addition to local herders, several Mongolian National Border Posts are located along the length of SNNP with many inhabited year round by soldiers, their families, and livestock herds.

Adjacent to SNNP, the Sailugem or Khosh Agach Refuge (241,300 ha) is located on the Russian side of the Sailugem range and was created in 1973 for protection of argali (Figure 1) (Paltsyn and Spitsyn, 2002). Poaching by both local residents and visiting Russian hunters is commonly reported for this area (Maroney and Paltsyn, 2003); however, lower stocking rates create significantly less grazing competition between argali and domestic livestock than found in SNNP (Paltsyn & Spitsyn, 2002; Abaturov *et al*., in press).

Figure 1. Siilkhemiin Nuruu National Park (SNNP) is divided into A and B zones. SNNP-A zone is adjacent to Russia's Sailugem Refuge. Identified argali winter forage areas (Shar Yamaat=left, Shar Nokhoi=center, Ulaanchuluu=right) are illustrated.

Cooperation between the governments of Mongolia and Russia for management of these protected areas currently does not occur.

Population data for argali in the Sailugem and Chikhacheva ranges are limited with many surveys conducted in a sporadic manner often in the summer or early fall when argali are either not in the area or are widely disbursed and difficult to locate. Davarkhbayar *et al*. (2000) estimated that 540-650 argali inhabit the Sailugem and Chikhacheva ranges. From the Russian side, local biologists (Paltsyn & Spitsyn, 2002; Abaturov *et al*., in press) estimated 550-600 argali inhabiting this same region. A standardized system to obtain baseline population data for monitoring trends has not been established for SNNP, and past surveys have not been coordinated between Mongolian and Russian biologists.

Methods

A team of three experienced observers conducted surveys to determine argali population distribution and group composition along the length of SNNP A-Zone (≅220 km) during the rut from November 22-25, 2001. We conducted field work from 0800–1700 and observed argali groups from vantage points reached by vehicle or on foot using binoculars and spotting scopes. Sex and age characteristics (adult or lamb) were recorded when possible with adults defined as containing an unknown proportion of reproductive yearlings. Duplicate counts were identified and discounted when similarities between group compositions in relation to location appeared questionable. We determined the location of observation points using GPS equipment and plotted the approximate position of argali groups on a 1:100,000 scale topographical map, based on recorded azimuth and estimated distance to the group.

Results

We documented 238 argali in 12 distinct groups over four observation days in the eastern and central portions of SNNP A-Zone. Of the 225 argali characterized, 29 adult males, 138 adult females, and 58 lambs were recorded. We observed 3 groups in the eastern section of Shar Yamaat and 9 groups in the central, Shar Nokhoi area. Mean group size was 20.0 (range 1-119, s.d. 34.0), with a lamb to female ratio of 42:100, and male to female ratio of 21:100.

Discussion

Previous argali surveys (n=5) summarized by Reading et al. (1997) for other areas of the Mongolian Altai document an average mean group size of 16.5 (range 5.8-39.2), average lamb to female ratio of 22.8:100 (range 11:100-48:100), and average male to female ratio of 76:100 (range 52.6:100-92.5:100). Direct comparison between the findings of past surveys with the results of this study is problematic, however. Strong bias exists

in some surveys that were conducted during times of day when argali are bedded down and difficult to locate, outside of the rut when animals are dispersed over large areas and in areas with highly variable degrees of difficult or inaccessible terrain (Schuerholz, 2001).

The low proportion of male argali observed in SNNP could be due to oversight error or misclassification of young males as females, but could also document selective poaching for rams in this population. Poaching in SNNP is a known problem, and while conducting surveys our field team came across and ultimately prevented a hunter from poaching an argali ram.

Seasonal migration patterns and pathways of SNNP's argali are poorly understood. Three locations within SNNP, however, appear to be particularly important winter forage areas for argali (Figure 1). Further identification of consistently used seasonal argali habitat within the park will be an important step toward the development of appropriate land management plans to ensure adequate forage for wildlife.

Border soldiers prevented access to several research sites because of recent incidents of cross-border livestock theft. Future cooperation with the military is necessary to ensure access to argali habitat for further surveys. Border soldiers could also be involved in monitoring activities and anti-poaching programs. Toward this end, MANSPAA has already made working agreements with regional military directors to involve soldiers in conservation efforts.

Conclusion

Increased cooperation between Mongolian and Russian governments and protected area administrations is necessary for the creation of more detailed monitoring and management programs for the transboundary argali populations of the Sailugem and Chikhacheva mountains. Within SNNP, additional research is needed to more accurately determine argali population size and structure, as well as to identify important habitat upon which to focus future management efforts. Implementing annual, standardized group composition counts would allow park managers to establish data for monitoring population trends and could be conducted at minimal expense involving local herders, military personnel, and soum and bag government members. Local involvement will likely prove essential not only in creating a useful and sustainable argali monitoring program, but also in the development of realistic grazingland management plans to address known threats to argali in SNNP including forage competition with livestock, disturbance associated with people and livestock, and habitat loss resulting from range deterioration.

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Хураангуй

Аргалийн тархалт популяцийн бүтцийн судалгааг 2001 оны 11-р сарын 22-25-ны хооронд Сийлхэмийн Нурууны Байгалийн Цогцолбор газарт явуулж нийт 12 сүрэг 238 аргалийн бодгалийг тэмдэглэв. 225 бодгалийг тодорхойлсоны 29 нь бие гүйцсэн угалз, 138 нь бие гүйцсэн хомь, 58 нь хурга байлаа. Сүргийн дундаж хэмжээ 20.0 (сүргийн хэмжээ 1-119, стандарт хазайлт 34.0), хурга хомийн харьцаа 42:100, угалз хомийн харьцаа 21:100 байлаа. Аргалийн өвлийн бэлчээр нутгийг байгалийн цогцолбор газрын аргалийн менежментийн төлөвлөгөөнд онцлон оруулав. Сайлгэм, Чикачэва уулын хил дамнан нутагладаг аргалийн популяцийн удаан хугацааны мониторинг, менежментийн төлөвлөгөөг Монгол Улс болон Оросын Холбооны Улсын засгийн газар, тусгай хамгаалалттай газрын захиргаад нарийвчлан гаргах зайлшгүй шаардлагатай боллоо.