

PRESENT STATUS OF ARGALI SHEEP POPULATION IN THE U.S.S.R.

A.K. Fedosenko, Central Research Laboratory, Hunting Management of the R.S.F.S.R., Moscow, U.S.S.R.

ABSTRACT

Recent taxonomic revisions suggest that three subspecies of Argali (Ovis ammon) inhabit the Territory of the U.S.S.R., namely Ovis ammon polii, O. a. nigrimontana and O. a. ammon. Based on recent literature and personal investigation the present status of these three subspecies of Argali is assessed, and wherever possible comparisons are drawn to previous status reports to document trends. It is estimated that 33,000 to 34,000 Argali are presently inhabiting the U.S.S.R., with the subspecies Ovis ammon polii being the most numerous one. Population densities vary greatly with habitat quality and other factors with extremes ranging from 25 sheep per 1,000 ha in the cold deserts of the northern parts of the Kokshaaltou mountain ridge (Andreenkov, 1983) to as low as 1.2 to 1.6 sheep per 1,000 ha on the northern extremity of Tarbagatai, where subsequently a further reduction in population size occurred (Fedosenko and Kapitonov, 1983). Population declines are reported for a number of areas, with competition by domestic livestock and accompanying range deterioration being considered as the most important causative agents. In certain areas hunting also may have negative impacts on sheep, because proper controlling is difficult. On the other hand, predators are not considered important in the regulation of Argali population size. Severe weather conditions as well as parasites have had influence in certain years in specific areas. More reserves are needed for the conservation of Argali and their habitat.

RESULTS AND DISCUSSION

In the U.S.S.R. Argali (Ovis ammon) inhabit the Pamirs, Alai and Zaalai mountain ridges, the Tien Shan and Giungar Alatau, South and North Sub-Balkhash, Central Kazakhstan (Kazakh upland), Tarbagatai, Saur, the Kalbin Altai, the Altai and the Safany (Tuva).

According to Sokolov (1959) five subspecies of Argali inhabit the U.S.S.R., but if we analyze the most recent information (Sopin, 1982), it is more likely that only three subspecies occur here: Ovis ammon polii, O. a. nigrimontana and O. a. ammon.

Ovis ammon polii inhabit the central and eastern parts of the Alai and Zaalaï Mountain ridges. The western boundary of their distribution on the Pamirs is in the area of Sarez Lake, Bazardara, the northern portion of the Alíchur Mountain ridge, and the areas surrounding Jashilkol Lake. From there their area extends southward to Lengar (Sapozhnikov, 1976).

Before World War II Argali were so numerous in certain areas of the Pamirs, that they exerted a negative impact on their range. In many alpine collective farms watchmen had to be sent out at night in order to scare Argali away to preserve the pasture for domestic stock (Egorov, 1955). Meklenburtcev (1948) estimated the Argali density at that time in the Bashgumbez valley and in the upper part of the Aluchur valley (East Pamirs) at 10 animals per 1,000 ha, but the author considers these rates too low.

Argali were rather numerous along the frontier and especially in the Kyzyl-Giaik and Shaad-Put nature areas and also in the vicinity of Rangul Lake and Karakol Lake up to the middle of the 1960's. According to Sapozhnikov (1976) the population density in these areas ranged from 36.5 to 80.2 individuals per 1,000 ha during the early 1960's, and the total population size of Argalis in the Pamirs was estimated at 70,000 to 80,000. But it appears that these assessments were too high even for those years. If we apply the transect method used by this author, we obtain a density of about 19 to 37 animals per 1,000 ha for the whole area occupied by Argali in the Pamirs and a total population of about 33,000 sheep.

In our opinion Sokov (1975, 1977a, b) gives reliable data on Argali during the first half of the 1970's for this region. He cites a population density of about 7.7 to 30 animals per 1,000 ha for the northeastern parts of the Pamirs, and one of 2 to 28 animals per 1,000 ha in the southwestern part. He determined a total Argali population of 20,000 for those years.

As far as the Tien Shan is concerned the distribution and density of Argali have undergone more drastic changes than on the Pamirs. According to Severtcov (1873) Argali were numerous during the middle of the last century on most ranges, especially in the central and interior Tien Shan. Recently Andreenkov (1983) stated that argali are presently only found in the interior Tien Shan on a range about 270,000 ha in size, and their number here is estimated at 3,500 head. The largest number and highest population density of Argali (about 2,000 sheep or 25 animals per 1,000 ha) are found in the cold deserts of the northern part of the Kokshaaltau Mountain ridge, where there is no pasture for domestic stock. Argali are not very numerous on the western part of this mountain ridge, in the Arpa and Aksai River basins, nor in other areas of the interior Tien Shan. Only small numbers of Argali are found on the eastern part of the Susamyr mountain ridge, on the central part of the Giumgol Mountain ridge and in the headwaters of the Naryn River (Andreenkov, 1983). Population declines have also been reported for central Tien Shan. For the end of the 1970's Vyrpaev (1980) recorded 360 to 380 Argali, amounting to a density of 3.6 to 3.8 sheep per 1,000 ha. Argali numbered about 400 head in the eastern part of the Terskei Alatau at the beginning of the 1970's. According to our data the population density amounted to 1.7 sheep per 1,000 ha in the valley at the Baiankol River in 1977. Presently about 1,500 Argali inhabit the central Tien Shan.

Within the west Tien Shan Argali are found only in Karzhantau on the right bank of the Badam River and in the western part of the Talass Alatau, but they are not very numerous, amounting to not more than 350 to 400 sheep. The largest number of these animals are found in the Aksu-Diabagly Reservation, where their population density is about 14 individuals per 1,000 ha (Grachov, 1981).

Few Argali inhabit the northern Tien Shan, and they have disappeared from certain areas. Kapitonov and Lobachov (1977) encountered these sheep only on the western part of the Kirgiz Mountain ridge. They are very rare now everywhere. Prior to the 1950's they were usually found on the Chu-Illinsk Mountains, where one could meet 200 sheep en route during one day. Now they are very rare and have completely disappeared from certain places. Even in the 1860's Argali only inhabited the west and in the east the Zaili Alatau mountain ridge. Now there are about 150-170 animals in this area. There are no Argali on the northern extremes of the Kungei Alatau mountain ridge, nor did they inhabit this area before, except for individuals during years of extreme drought (Sokolov, 1939). During the 1940's Argali were numerous on the low hills of Karatau, Elchinbiiriuk and Zhabyr, located between Terskei Alatau and Ketmen Mountain ridges (Mikulin and Jsaeva, 1945). Presently they are very rare there, as well as on the western part of the Ketmen Mountain ridge. They are more commonly encountered on the eastern boundary area of this mountain ridge. In total, there are not more than 400 to 500 Argali inhabiting the northern Tien Shan.

During the years immediately following World War II Argali were numerous on the southwest spurs of Giungar Alatau (Antipin, 1947). Rather rapid population declines began at the end of the 1950's and at the beginning of the 1960's. Argali disappeared from the Kapchagai nature area (the right bank of the Ili River) early in the 1960's (Fedosenko, 1977). Not more than 20 to 30 sheep were left in Chulak and 80 to 100 on the 10,000 ha Kalkan nature area. Small numbers of Argali remained on the arid dry hills, such as Kaktutau, Aktau and Dulantau.

Argali are also very rare on the south and west portions of the main mountain ridge. They are more frequently encountered east of Giungar Alatau, as in the Aksai, Terekta, Sarybukhter, Tastau and Altybai nature areas. Grachov and Savinov (1975) determined the number of argali in this area to be 600 head near the end of the 1960's, and this number was reduced to 400 at the end of the 1970's.

Argali are also inhabiting the low desert hills of southeast sub-Balkhash on the right bank of the Lepsa River, and on the left bank of the Aiaguz River in the Kyskash, Arkharly and Arganaty Mountains. We observed 22 sheep in an area of 5,000 ha or a density of 4.4 animals per 1,000 ha on the Arkharly Mountains in December 1981. According to the regional hunting inspector's data, there are presently about 70 sheep in the Arganaty Mountains.

The northern limit of Argali distribution on the Kazakh uplands is found in the Koitas Mountains, but farther south they are more common in the Ermentau Mountains. They are found in the vicinity of Uzunbulak Village as well as on the following mountains: Sholakkain, Edyge and Solan. They also inhabit the northeastern part of the Kazakh uplands (Kapitonov and Makhmudov, 1977).

The Argali were retained on the Zhuantobe and the Shonkal Mountain masses. They are rather often encountered farther south on the Keregetas Mountains not only in summer, but in winter as well.

Argali were rather rare but did occur fairly recently in the southern and western parts of the Baianaul Mountains. To the southeast these sheep are still fairly common the Kyzyltau, Arkalyk, Murzhik and Edrei Hills. They inhabit primarily the central part of the upland, their range extending to the Ulutau Mountains in the west, and to the southwest part of the upland to the following mountains: Aktau, Kyzyltau, Kyzyltas, Kyzylhar, Uzuntau, Bolshoi Alabas, Karamatak and Shunak. Argali are common farther south on the Bektauata massif. In 1970 the total population size of Argali on the Kazakh upland was estimated at 7,000 head, and the density at 0.3 to 20.0 individuals per 1,000 ha (Savinov, 1974). Up to 1981 the argali population in this region declined. Later assessments put the population densities in some areas at 0.5 to 6 animals per 1,000 ha, with an average of 1.8 per 1,000 ha (Fedosenko and Kapitonov, 1983). Presently, the total number of argali on the Kazakh upland does not exceed 5,000 head.

At the beginning of the 1960's Argali were common on the northern extremity of Tarbagatai and were also encountered farther south, but less frequently. The total population was assessed at 800 to 900 head with a population density of 1.2 to 1.6 animals per 1,000 ha (Fedosenko and Kapitonov 1983). Apparently, now this number has been reduced to 50%. Argali are still found on the Monrak Mountain ridge between the Kusty and Kyzylkain Rivers, where about 50 sheep inhabit the area of the Stchorbas Mountains (Stcherbakov and Kochnev, 1982).

Argali were encountered in Saur within the Kenderlyk River basin during the middle of the 1960's, where they were more common during winter. We have no recent information on the present status.

During the middle of the 1970's Argali were still observed between Tarbagatai and the Kalbin Altai, - a vast territory of small hills and low mountains (Kapitonov, 1978), but already starting with the beginning of the 1970's these sheep began to disappear.

In the middle of the 1960's very small numbers of Argali permanently inhabited the Kalbin Altai. They were found on the Koktau Mountains as well as farther south in the Daubai, Kyzylbastau, Karaotkel, Tastau nature areas and the Ktarazhal Mountains. Argali are still retained in Kalba. The regional hunting inspector observed small groups of 6 to 13 individuals in the vicinity of Tochka village, in the nature areas of Koktau and Taldy at the end of February 1979 as well as in spring and fall of 1980 and spring of 1981. Every year hunters see one or two Argali in the mountains of Three Monasteries (Stcherbakov and Kochnev, 1982).

Ovis ammon nigrimontana inhabit the western part of the Karatau mountain ridge (Syrdar'inskiy), extending far to the northwest from its boundary with the west Tien Shan. The numbers of these sheep was high before World War II as well as 10 to 15 years afterward. Now not more than 250 animals remain (Grachov, 1982). We observed 10 sheep (2 animals per 1,000 ha) during a week in the southwestern part of Karatau (Kumysta nature area) on October 1979.

Ovis ammon ammon inhabit the southern and southeastern Altai as far east as Tuvinskaya ASSR. Argali were common in the southern Altai in the headwaters of the Bukhtarma River, on the Naryn and Kurchum Mountain ridges during the last century. Small numbers of Argali were observed on the southern portion of the Tarbagatai Mountain ridge, the headwaters of the Karakaba River, at the end of the 1950's. They were retained in the headwaters of the Bukhtarma River and on the southern spurs of the Kurchum mountain ridge. About 30 animals were met on the Kolmachikka (the right tributary of the Bukhtarma River) in the springs of 1979 and 1981. Argali dwell also along the Archata River. At the beginning of the 1970's Argali were documented for the southeastern Altai on the Ukok Plateau, the Sailugem Mountain ridge, in Talduair, on the Chikhachev Mountain ridge, the southern part of the Shapshal Mountain ridge, the southeast Chui ridge, and on the Kurai Mountain ridge (Sopin, 1975). There were about 600 sheep in this region in the middle of the 1970's, and the population density on the Chikhachev Mountain ridge and in Talduair was estimated at 8.5 individuals per 1,000 ha. Subsequently, the Argali population declined sharply with only about 100 animals remaining there in 1980 (Bondarev, 1982). Apparently, up to the present time Argali populations are declining on the Kurai and South-Chui Mountain ridges and on the Ukok plateau.

During most recent years Argali populations increased in several places. We encountered 130 animals (including lambs) in an area of 10,000 ha on the Chagan-Burgaz, between the Saryzhdumaty and the Bainn-Chagan Rivers (Sailugem) during June and July of 1984. We also have some information about Argali appearance in other nature areas and also in Talduair. Apparently, there are now more than 300 sheep inhabiting this part of the Altai.

Argali inhabit the Tcagan-Shibetu mountains (the headwaters of the Tolailyg River and the right bank of the Bariyk River) within Tuvinskaya ASSR, the Mongun-Taiga Mountain mass to the west and the eastern part of the Tannu-Ola on the Sangilen upland. But they were always very rare. According to Nikiforov (1977) some 250 to 300 sheep inhabit Tuva.

SUMMARY AND CONCLUSION

In summary the largest number of Argali in the USSR inhabit the Pamirs (20,000), fewer are found in the Tien Shan and Giungar Alatau (7,000) and on the Kazakh upland (5,000). About 1,000 sheep occur in Tarbagatai, Saur and the Kalbin Altai, and 600 animals inhabit southern Siberia. Therefore, the total number of argali presently inhabiting the USSR is estimated at 33,000 to 34,000.

If we analyse this information on the basis of subspecific status, Ovis ammon polii is the most common Argali sheep, followed by Ovis ammon nigrimontana and Ovis ammon ammon.

The main reason for the declines in Argali populations and their complete disappearance from certain habitats has been severe competition with livestock. Argali are being driven back to more inferior ranges, where they are faced with more severe environmental conditions. Because of deep snow in the upper parts of the Pamirs in winter sheep have to descend to the intermountain valleys, where these winter ranges have deteriorated. They are forced back to the upper

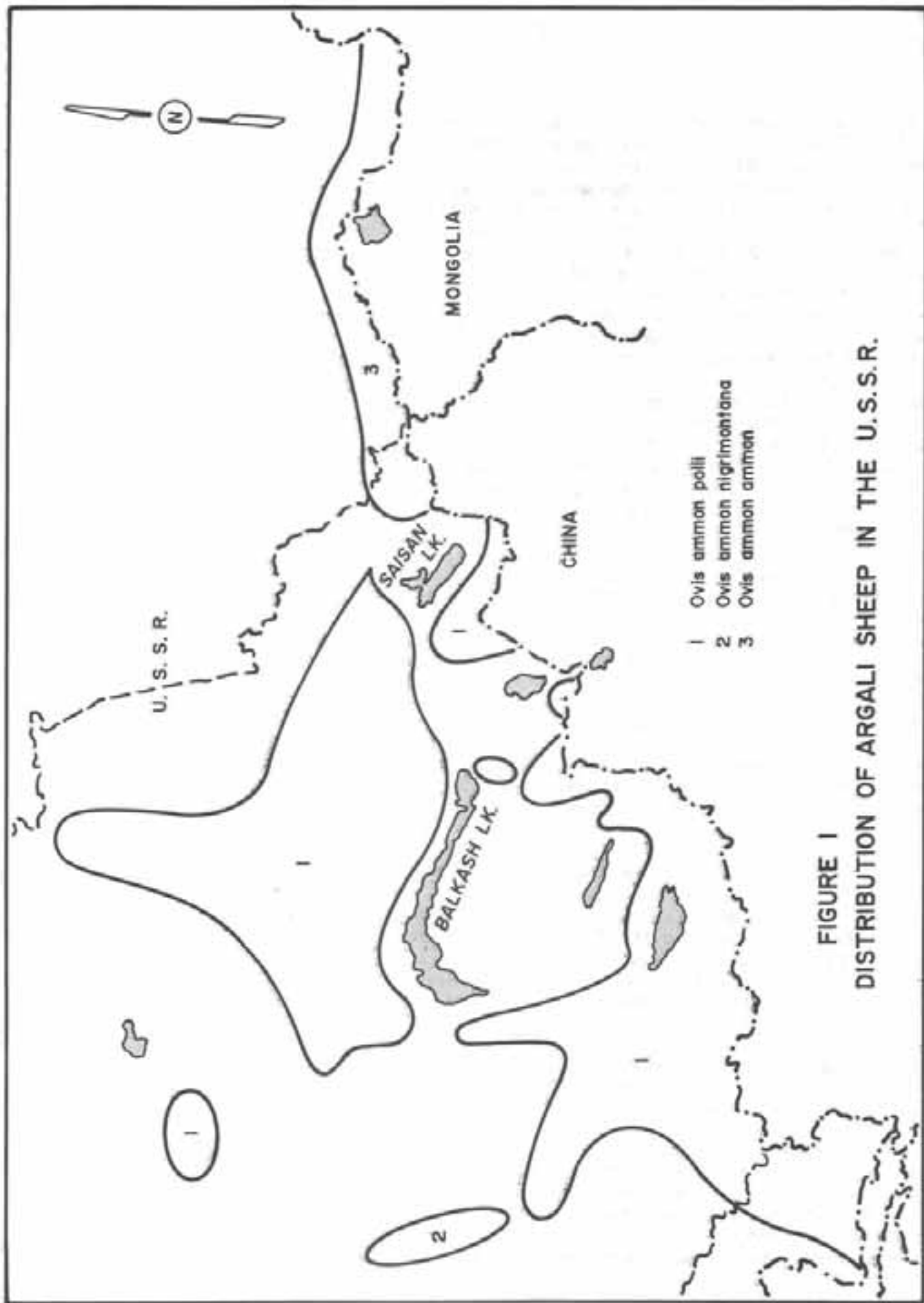


FIGURE 1
 DISTRIBUTION OF ARGALI SHEEP IN THE U.S.S.R.



Young female Argali sheep
Photo: A. Fedosenko (1977)



Male Argali sheep on Mount
Kalkany (Kazachstan)
Photo: A. Fedosenko (April 1976)



In the background is shown Mount Kalkany (Kazachstan), habitat of Argali sheep.

Photo: A. Fedosenko



Female group of Argali sheep in Sailjugem area, Altai.

Photo: A. Fedosenko (October, 1984)

parts of the mountains with less suitable habitat even for summer use (Andreenkov, 1983).

The great majority of habitats, presently or previously used by Argali, are now occupied by domestic sheep or other domestic animals. The most severe competition is for winter ranges.

During winter Argali are forced to feed in areas above the domestic sheep herds, where the snow is very deep and pastures are spoiled even in summer. This is one of the reasons for the high mortality of lambs and the low recruitment rate in Argali populations. Hunting, poorly controlled in some areas, also exerts negative influence on the numbers of argali, affects the sex ratio and age composition of the populations, which in turn have an influence on productivity of given herds. Many sheep falling victims to hunters are rams older than 5 years.

Predators have little impact on the numbers of argali, and their influence is not very important. Populations have been reduced in certain drought years with deep snow in winter, for instance, in the winters of 1965-1966 and 1968-1969, but on the whole we have not been able to document great reductions in Argali population sizes because of climatic parameters during the last 20 years. There have been several structural changes of Argali herds in the western Tien Shan because of scabies epizootic, affecting not only argali but Siberian Ibex populations as well during the years 1968 to 1970.

In the U.S.S.R. there are only two wildlife reservations where Argali occur. They inhabit an area of about 17,000 ha in the Aksu-Diabagly reservation and the Kapchagai hunting reserve (Kalkany nature area), with an area of 10,000 ha. There are 350 sheep in these reservations. We also need reservations for Argali in the Pamirs, Syrdar'an Karatau, central Kazakhstan, Altai and Tuvinskaia ASSR.

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