

passengers at Navy Pier to request permission before leaving or entering the security zones. The Captain of the Port Chicago will notify these vessels via Broadcast Notice to Mariners if they must notify the Coast Guard before transiting the security zone. As such, vessels who regularly operate within this zone are responsible for monitoring Broadcasts Notice to Mariners for the Chicago area. These broadcasts will be made by U.S. Coast Group Milwaukee.

(3) *Dresden Nuclear Power Plant*. All waters of the Illinois River in the vicinity of Dresden Nuclear Power Plant encompassed by a line starting on the shoreline at 41° 23' 45" N, 88° 16' 18" W; then east to the shoreline at 41° 23' 39" N, 88° 16' 09" W; then following along the shoreline back to the beginning.

(4) *Donald C. Cook Nuclear Power Plant*. All waters of Lake Michigan around the Donald C. Cook Nuclear Power Plant encompassed by a line starting on the shoreline at 41° 58.656' N, 86° 33.972' W; then northwest to 41° 58.769' N, 86° 34.525' W; then southwest to 41° 58.589' N, 86° 34.591' W; then southeast to the shoreline at 41° 58.476' N, 86° 34.038' W; and following along the shoreline back to the beginning.

(5) *Palisades Nuclear Power Plant*. All waters of Lake Michigan around the Palisades Nuclear Power Plant within a line starting on the shoreline at 42° 19' 02" N, 86° 19' 05" W; then northwest to 42° 19' 43" N, 86° 19' 52" W; then north to 42° 20' 10" N, 86° 20' 01" W; then southeast back to the shoreline at 42° 19' 26" N, 86° 18' 55" W; then following along the shoreline back to the beginning.

(6) *Byron Nuclear Power Plant*. All waters of the Rock River encompassed by the arc of a circle with a 100-yard radius with its center in approximate position 42° 05' 01" N, 89° 19' 27" W.

(7) *Zion Nuclear Power Plant*. All waters of Lake Michigan encompassed by a line starting on the shoreline at 42° 26' 36" N, 87° 48' 03" W; then southeast to 42° 26' 20" N, 87° 47' 35" W; then northeast to 42° 26' 53" N, 87° 47' 22" W; then northwest to the shoreline at 42° 27' 06" N, 87° 48' 00" W; then following along the shoreline back to the beginning.

(8) *68th Street Water Intake Crib*. All waters of Lake Michigan within the arc of a circle with a 100-yard radius of the 68th Street Crib with its center in approximate position 41° 47' 10" N, 87° 31' 51" W.

(9) *Dever Water Intake Crib*. All waters of Lake Michigan within the arc of a circle with a 100-yard radius of the Dever Crib with its center in

approximate position 41° 54' 55" N, 87° 33' 20" W.

(10) *79th Street Water Intake Crib*. All waters of Lake Michigan within the arc of a circle with a 100-yard radius of the 79th Street Water Filtration Plant with its center in the approximate position 41° 45' 30" N, 87° 32' 32" W.

(b) *Regulations*.

(1) Under § 165.33, entry into this zone is prohibited unless authorized by the Coast Guard Captain of the Port Chicago. Section 165.33 also contains other general requirements.

(2) All persons and vessels shall comply with the instruction of the Captain of the Port Chicago or the designated on-scene U.S. Coast Guard patrol personnel. On-scene patrol personnel include commissioned, warrant, and petty officers of the U.S. Coast Guard on board Coast Guard, Coast Guard Auxiliary, local, state, and federal law enforcement vessels. Emergency response vessels are authorized to move within the zone but must abide by the restrictions imposed by the Captain of the Port.

(3) Persons who would like to transit through a security zone in this section must contact the Captain of the Port at telephone number (630) 986-2175 or on VHF channel 16 (121.5 MHz) to seek permission to transit the area. If permission is granted, all persons and vessels shall comply with the instructions of the Captain of the Port or his or her designated representative.

(c) *Authority*. In addition to 33 U.S.C. 1231 and 50 U.S.C. 191, the authority for this section includes 33 U.S.C. 1226.

Dated: May 13, 2002.

R.E. Seebald,

Captain, U.S. Coast Guard, Captain of the Port, Chicago.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-A102

Endangered and Threatened Wildlife and Plants; Retention of Threatened Status for Argali in Kyrgyzstan, Mongolia, and Tajikistan

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Withdrawal of proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), retain threatened status for the argali (*Ovis*

ammon), the largest species of wild sheep, in Kyrgyzstan, Mongolia, and Tajikistan under the Endangered Species Act of 1973 (the Act), as amended. The special rule allowing importation of sport-hunted trophies from those countries also is retained. We will not proceed with reclassifying the argali as endangered in these three countries, as proposed on April 27, 1993. That proposal is hereby withdrawn. The withdrawal is based on two factors. First, the two lawsuits challenging the original listing and special rule were defeated or dismissed, thereby eliminating our strong concern over the adequacy of existing regulatory mechanisms related to import of sport-hunted trophies from Kyrgyzstan, Mongolia, and Tajikistan. Second, a review of information compiled over the past eight years (i.e., since the proposed rule was published) in relation to the five listing factors under the Act, indicates that the argali is properly classified as threatened in Kyrgyzstan, Mongolia, and Tajikistan.

ADDRESSES: The complete file for this action is available for public inspection, by appointment, from 8 a.m. to 4 p.m., Monday through Friday, in room 750, 4401 North Fairfax Drive, Arlington, Virginia 22203.

FOR FURTHER INFORMATION CONTACT:

Robert R. Gabel, Chief, Division of Scientific Authority; Mail Stop: Arlington Square, Room 750; U.S. Fish and Wildlife Service; Washington, DC 20240 (phone 703-358-1708; fax number 703-358-2276).

SUPPLEMENTARY INFORMATION:

Background

The argali (*Ovis ammon*) is the largest species of wild sheep. Its historic range includes Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, southern Siberia in the Russian Federation, Mongolia, north-central and western China, Bhutan, Nepal, and the Himalayan portions of Afghanistan, Pakistan, and India. In a final rule published pursuant to the Endangered Species Act of 1973 (Act) in the **Federal Register** of June 23, 1992 (57 FR 28014), and becoming effective on January 1, 1993, the Service classified the argali as endangered throughout its range, except in Kyrgyzstan, Mongolia, and Tajikistan, where it was designated as threatened. A special rule, promulgated under Section 4(d) of the Act, provided for issuance of permits pursuant to section 17.32 of title 50 of the CFR for certain activities for argali from Kyrgyzstan, Mongolia, and Tajikistan. This rule also provided for importation of sport-hunted argali trophies without

a threatened species permit once we had received from the governments of these same countries properly documented and verifiable information that: (1) Argali populations are sufficiently large to sustain sport hunting; (2) regulating authorities have the capability to obtain sound data on these populations; (3) regulating authorities recognize these populations as a valuable resource and have the legal and practical means to manage them as such; (4) the habitat of these populations is secure; (5) regulating authorities can ensure that the involved trophies have in fact been legally taken from the specified populations; and (6) funds derived from the involved sport hunting are applied primarily to argali conservation. (For threatened species, Section 4(d) of the Act authorizes the Secretary to promulgate "such regulations as he deems necessary and advisable to provide for the conservation of such species'.)

In connection with the final rule of June 23, 1992, we noted that, with the exception of the subspecies *O. a. hodgsoni*, the argali was listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and thus, until the effective date of the regulation, could be imported into the U.S. upon presentation of a proper CITES export permit from the country of origin in accordance with Section 9(c)(2) of the Act (which provides that the otherwise lawful, noncommercial importation of wildlife that is not an endangered species, but that is on Appendix II of CITES and meets CITES requirements, shall be presumed to be in compliance with provisions of the Act and implementing regulations). There had previously been some question as to whether Section 9(c)(2) of the Act might automatically require us to allow the importation of a species that is both listed as threatened and on Appendix II, and preclude the issuance of more restrictive special rules covering importation. However, in a detailed discussion in the background to the final rule, we concluded that such special rules may be issued to provide for the conservation of the involved species. We emphasized that this interpretation of Section 9(c)(2) was one of the key factors in assigning threatened status to the argali in Kyrgyzstan, Mongolia, and Tajikistan. Had we been unable to issue a special rule restricting importation of trophies from those countries, importation could have proceeded without assurances of adequate population status and

management in those countries. Such a situation may have been sufficient to warrant endangered classification of the involved populations under listing factor "D" of Section 4(a)(1) of the Act, "inadequacy of existing regulatory mechanisms."

In promulgating the final rule and special rule, we recognized that there was a reasonable argument for the proposition that controlled sport hunting may provide economic incentives contributing to the conservation of certain wildlife populations. During the periods of review and comment prior to publication of the final rule, various interested groups and individuals had argued that sport hunting programs, with consequent exportation of trophies, might encourage and provide necessary funds for conservation of the argali. Consideration of such interests, and allowance for their development and submission of information supporting their position, was a factor in the unusual length of the argali rulemaking process (almost 3 years). Throughout this process we emphasized that the importation of sport-hunted argali trophies was feasible, provided that substantive data showed that such activity was beneficial to the conservation of the species.

Despite the above considerations, the final rule was challenged in two separate lawsuits on January 4, 1993. The plaintiffs included a number of hunting organizations and businesses. They contended, among other things, that we failed to give adequate notification of the argali rulemaking process, and that Section 9(c)(2) of the Act requires that argali trophies be allowed to enter the United States simply upon presentation of a CITES export permit from the country of origin. Although we believed that our interpretation of Section 9(c)(2) was valid, we were also concerned that this interpretation and the special rule could be set aside in the course of legal proceedings. We might then be placed in the situation for which we had expressed concern in the final rule—not being able to adequately regulate argali importation. The strong potential for such a situation and its implications vis-a-vis listing factor "D" of Section 4(a)(1) of the Act ("the inadequacy of existing regulatory mechanisms"), together with the hunting community's unwillingness to accept the intent of the new argali regulations, and the other problems we perceived with the status of the species, as described in the final rule of June 23, 1992, were deemed sufficient to warrant a proposal to reclassify the argali in Kyrgyzstan, Mongolia, and Tajikistan

from threatened to endangered. A proposed rule to such effect was published in the **Federal Register** of April 27, 1993 (58 FR 25595).

In August 1993, the U.S. District Court for the Western District of Texas, ruling on the suit brought by Safari Club International and several supporting plaintiffs, upheld all substantive aspects of the regulations, including our interpretation of Section 9(c)(2) of the Act. Later that same month, the U.S. District Court for the District of Columbia dismissed a suit brought primarily by a group known as Putting People First. The Service's successful defense in the two lawsuits moderated the immediate concern that led to the proposed rule of April 27, 1993, and was the principal factor in the Service's decision to withdraw the proposed reclassification. A notice of withdrawal, which addressed the lawsuits and assessed the threats confronting the argali populations of Kyrgyzstan, Mongolia, and Tajikistan as described in the 1993 proposed rule was prepared in 1995 for **Federal Register** publication, but not finalized. The court decisions had diminished the management concerns for the species, and, with the special rule in place, priorities other than argali emerged and redirected the Service's focus.

An analysis of information on argali in Kyrgyzstan, Mongolia, and Tajikistan generated over the last eight years, including two reports prepared under contract to the Service (Luschekina and Fedosenko 1994 and Fedosenko 1999), has lead us to conclude that the Kyrgyzstan, Mongolia, and Tajikistan distinct population segments of argali are properly classified as threatened, and that the special rule for argali (50 CFR 17.40(j)) is adequate to provide for the conservation of the species. In addition, the Service is continuing its ongoing efforts to encourage range countries to develop and submit the information necessary to "certify" the country under the special rule, thereby eliminating the need for issuance of threatened species permits for sport-hunted trophies. Our analysis of the Act's five listing factors is summarized in the "Summary of Factors Affecting the Species" below. As part of our analysis, we have taken into account efforts made by foreign governments to protect the species (as required by section 4(b)(1) of the Act).

Summary of Comments

In the proposed rule of April 27, 1993, and in associated notifications and the subsequent reopening of the comment period, all interested parties were requested to submit information that

might contribute to development of a final rule. Cables were sent to United States embassies in the involved countries, requesting any new data the embassies could provide and asking them to obtain official comments from the governments of those countries. Twenty-eight (28) parties commented on the proposal, some of them several times. Of these, 5 provided information but did not specifically state an opinion on the proposal, 3 expressed support, and the remainder did not support the proposal (most of these expressed a point of view of hunting interests).

A common theme in statements by opponents of the proposed rule was that the argali was not of conservation concern and should be completely removed from the List of Endangered and Threatened Wildlife. Such an action was not under consideration in the proposed rule, and was at odds with the available information and listing status at that time. The Service still believes that the argali is appropriately listed under the Endangered Species Act.

Likewise, many of the negative comments claimed that the special rule for argali was unworkable and should be eliminated or revised to make importation easier. Although the proposed rule did state that modifications to the special rule were under consideration, there is no scientific or commercial data that support eliminating or substantively moderating the restrictiveness of the special rule. The only supportable options were to keep the existing threatened classification and special rule, finalize the proposed endangered status with elimination of the special rule, or keep the threatened classification, at least in part, and add more restrictions to the special rule. The Service has chosen, based on the best available scientific and commercial information, to retain the existing threatened classification and special rule.

A number of comments dealt with the question of whether the criteria of the special rule may have been met, thereby allowing importation of sport-hunted trophies without a threatened species permit. This question is associated with some of the matters involved in the argali proposed rule. Indeed, the proposed rule stated that receipt of data demonstrating that the criteria had been met could be a reason for withdrawal of the proposal. And the reason for reopening the comment period on March 21, 1994, was receipt of a report of the Service's own survey to gather information that might have helped meet the criteria. We do not believe, based on information currently available

to us, that any of the three countries has fully satisfied the criteria of the special rule. That is why threatened species permits continue to be issued on a country-by-country and year-by-year basis.

Remaining major issues brought out by commentors are discussed below.

Issue 1.— Based on numbers, distribution, regulation, and other listing factors, the argali is or is not endangered in Kyrgyzstan, Mongolia, and/or Tajikistan.

Service response.— Different commentors argued either for or against endangered status, based on various listing factors. The relevant question is whether new information or assessment indicates that the status of the argali in the three involved countries is substantively worse or better than at the time of the original final rule, when the threatened classification was assigned. This issue is at the core of the analysis in the following section "Summary of Factors Affecting the Species." Basically, available scientific evidence indicates that habitat conditions and population status has remained stable or improved over the past eight years, and that regulatory mechanisms are at least as adequate as determined at the time of the original final rule. Thus, retention of threatened status is warranted.

Issue 2.— The Service has not demonstrated that sport hunting is a detrimental factor to the argali.

Service response.— The various published notices on the argali have repeatedly recognized the principle that carefully managed sport hunting programs are not necessarily detrimental to overall wildlife populations, and even have the potential to provide benefits under certain conditions. We do not find legal sport hunting to be a factor that currently threatens argali populations in Kyrgyzstan, Mongolia, or Tajikistan; we believe it provides benefits.

Issue 3.— The Service did not consult with appropriate officials in the involved countries.

Service response.— The Service followed all standard procedures, by which the State Department is requested to send telegrams to appropriate U.S. embassies, which in turn are asked to contact government officials and other knowledgeable authorities.

Issue 4.— The lawsuits on the argali were not a proper basis for the proposal, and, in any case, the defeat of the lawsuits should have resulted in withdrawal of the proposal.

Service response.— As explained in detail in the proposal and in the above "Background," the lawsuits posed a threat to the Service's ability to

appropriately regulate importation of argali and therefore brought into play factor "D" of Section 4(a)(1) of the Act, "Inadequacy of existing regulatory mechanisms." This problem has been resolved by the legal decisions.

Issue 5.— The issuance of permits for importation of argali trophies is a violation of the special rule of June 23, 1992, or, in any case, shows that current regulation is inadequate.

Service response.— Issuance of threatened species permits is consistent with section 17.40(j)(1) of the special rule. We do not find legal sport hunting to be a factor that currently threatens argali populations in Kyrgyzstan, Mongolia, or Tajikistan; we believe it provides benefits. Therefore, issuance of permits does not show that current regulation is inadequate.

Summary of Factors Affecting the Species

A. Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Kyrgyzstan

Range and Distribution

The argali in Kyrgyzstan occurs in two populations comprising two subspecies, the Marco Polo argali (*O. a. polii*) and the Tien Shan argali (*O. a. karelini*). A third subspecies, *O. a. severtzovi*, is not considered to occur in Kyrgyzstan. The Tien Shan argali is distributed across approximately the northern half of Kyrgyzstan in the Tien Shan Range west of Lake Issyk-Kul, whereas the Marco Polo argali (also called the Pamir argali) is distributed across the Pamir Plateau of southeastern Kyrgyzstan, along the border with China (see map on page 190 of Weinberg et al. 1997). The ranges of the two subspecies apparently overlap—or are not clearly delineated—in the Uzengikush River basin in the north-eastern portion of the Kokshalatau Range, between the city of Kara Say and the Chinese border.

Only very general information is available regarding the historical and current habitat area actually occupied by the Tien Shan argali in Kyrgyzstan. Weinberg et al. (1997) discuss the taxon's general distribution in Kyrgyzstan, but do not give any figures for the total habitat area occupied, either historically or currently. They state that in many places this argali has "disappeared completely," although no details are given.

Few data are available on the habitat area occupied by Pamir argali in Kyrgyzstan prior to the 1970s. Much of the older information is summarized in a report entitled "The Status of Argali

in Kirgizstan, Tadjikistan and Mongolia,” completed in January 1994 by Dr. Anna Luscekina of the Russian Academy of Sciences and Dr. A. K. Fedosenko under contract to the Service (Luscekina and Fedosenko 1994). The report is a compilation of information derived from direct field observations, interviews, existing literature, and hunting data and other data from government archives. According to the report, Andrienkov (1983) reported that, in the 1940s, the Pamir argali occupied an area of 3 million hectares (ha). Argali lived in the valleys of such rivers as Aksai and Arpa (Luscekina and Fedosenko 1994). Luscekina and Fedosenko (1994), after examining data collected in the late 1970s by Andrienkov (1983), in the early 1990s by the Kyrgyz Institute of Biology, and 1993 by themselves, concluded that the Kyrgyz population of Pamir argali had “undergone considerable changes” over that period of time. In most locations subject to substantial human influence (grazing, poaching, etc.), numbers had “notably declined”, while at the same time high numbers persisted in remote locations with difficult access, areas with limited livestock grazing, and areas with rigid border controls (Luscekina and Fedosenko 1994).

Protected Areas

Small numbers of argali are found in the Naryn (24,200 ha) and Besh-Aralsk (45,000 ha) Nature Reserves in Kyrgyzstan, according to Weinberg et al. (1997).

Although few argali occur in designated protected areas in Kyrgyzstan, a large percentage of the Kyrgyz population has been protected, at least until recently, in a “de facto” protected area beyond the line of “engineering works” along the border with China (Luscekina and Fedosenko 1994). These “engineering works,” essentially a continuous barrier consisting of razor wire fences, were erected along the border with China during the late 1980s. The “border zone” (i.e., the area between the fences and the border) varies in width from approximately 1 kilometer (km) to several km, and extends the entire length of the Kyrgyz border with China (a distance of 858 km according to the CIA World Factbook 2000). We do not know the total land area within the border zone. However, if we make some conservative assumptions about this zone, we can calculate an approximate area. If we assume that the average width of the zone is 1 km, and the actual length of the fence is 650 km (meaning that various bends and curves in the border have been “straightened”

by the fence), then the zone encompasses about 650,000 ha. We understand that the border barriers have not been well maintained in recent years, and may be broken down in places. It is believed that these border areas, which have become more accessible in recent times, may now be subject to greater human pressures including poaching, although Luscekina and Fedosenko (1994) also indicated that the mobility of local peoples is hampered by the expense and scarcity of fuel for vehicles.

Livestock Competition

According to Luscekina and Fedosenko (1994), collective and state farms in Kyrgyzstan had over 8 million sheep and goats in the mid-1960s. Intensive grazing of mountain rangelands led to a reduction in the number of argali, since argali use the same ranges as domestic livestock. Particularly intensely utilized by livestock grazers were the Altai and Aksay valleys and the upper reaches of the Saryjaz; these areas experienced severe declines in argali numbers and in some locations argali disappeared (Luscekina and Fedosenko 1994). However, with the change of government in Kyrgyzstan, many collective and state farms were eliminated and livestock turned over to individual herdsmen. Many of these herders did not have the resources necessary to utilize distant or hard-to-access ranges; livestock use of those areas decreased sharply and some ranges (e.g., Kurumduku) were abandoned altogether by domestic grazers (Luscekina and Fedosenko 1994). Presumably argali populations began to recover in those areas.

Mongolia

Range and Distribution

Two subspecies of argali occur in Mongolia: Altai argali (*O. a. ammon*) and Gobi argali (*O. a. darwini*) (see map on page 199 of Mallon et al. 1997). Altai argali inhabit the high Altai Mountain region of western and southwestern Mongolia; along the main ridge of the Hangai Mountains in central Mongolia; and in the mountains of north and northwest Mongolia (Mallon et al. 1997). Gobi argali occur in the hills, rocky outcrops, and mountains across the whole of the Transaltai Gobi (the desert and semi-desert zones south of the Altai Range), portions of the Gobi Altai Mountains east almost to 112°E longitude, and also in several isolated ranges of hills in the steppe zone of central Mongolia (Mallon et al. 1997). According to Mallon et al. (1997), the

division between ranges of the two subspecies of argali in Mongolia is poorly known.

Protected Areas

The existence of reserves and hunting restrictions in the modern Mongolian People's Republic can be traced to the 1920s. Sokolov et al. (1991) documented at least 14 protected areas and 20 hunting preserves situated throughout the country. In 1994, Mongolia adopted a “Law on Special Protected Areas” that designated four categories of protected areas: (1) Strictly Protected Area (SPA), National Conservation Park (NP), Nature Reserve (NR), and Monument (M). Mallon et al. (1997) listed 12 protected areas with Caprinae in Mongolia, as of late 1995. As of July 2000, Mongolia had established 48 “State Special Protected Areas” covering 20.1 million hectares or almost 13 percent of Mongolia's territory, according to S. Banzragch, Director General of Mongolia's Environmental Protection Agency (*in litt.* to Teiko Saito, DMA, August 1, 2000). According to the protected area law, strictly protected areas are divided into three zones: pristine zone, conservation zone, and limited use zone. In 1997, Mongolian Parliament passed a “Law on Buffer Zones of Special Protected Areas” which created a buffer zone council for each special protected area responsible for coordinating activities that could be carried out in the area's buffer zone. As of May 2001, argali occurred in 11 protected areas, according to A. Bolat, Vice Minister of the Mongolian Ministry of Nature and Environment (MNE) (*in litt.* to Tim Van Norman, Branch of Permits, DMA, May 9, 2001).

Livestock Competition

According to Luscekina and Fedosenko (1994), large-scale privatization of domestic livestock in 1991–1994 led to extensive, uncontrolled use of rangelands in Mongolia, resulting in competitive displacement of argali to poorer quality habitats, and increased poaching of argali by herdsmen. Argali populations were thought to have declined as a result. Reading et al. (1997) cited a number of recent references (e.g., Shagdarsuren et al. 1987) indicating widespread degradation of argali habitats by domestic livestock.

Tajikistan

Range and Distribution

The argali in Tajikistan consists of only one subspecies, the Marco Polo argali (also known as Pamir argali or Pamir arkar) (*O. a. polii*), which occurs in the eastern Pamir Plateau, along the

border with China (see map on page 190 of Mallon *et al.* 1997). This subspecies also occurs on the Pamir Plateau of Kyrgyzstan, the eastern portion of the Wakhan Corridor of Afghanistan, northernmost Pakistan, and the Pamir region of China.

Protected Areas

According to a recent report "Current Population Status of the Pamir Arhar in Tajikistan," completed in 1999 by Dr. A. K. Fedosenko of the Department of Conservation and Rational Use of Game Resources of the Russian Federation, under contract to the Service (Fedosenko 1999), there were three protected areas under administration of the Regional Department of Forestry within the range of argali in the Pamir: Pamirskii zakaznik (50,000 ha), Muzkol'skii zakaznik (66,900 ha), and Zorkul'skii zakaznik (16,500 ha). In 1992, the Pamir National Park was declared, based on the Pamirskii zakaznik, but lack of funding precluded its functioning as a legitimate protected area. Likewise, according to Fedosenko (1999), the other two zakazniks also do not function as real protected areas. More recently (1999), the Tajik National Park was declared in place of the Pamir National Park, and staff have been appointed (Fedosenko 1999).

As in Kyrgyzstan, a large portion of the Tajik argali population has been protected, at least until recently, in a "de facto" protected area beyond the line of "engineering works" along the border with China. These "engineering works," were constructed along the 414-km border with China during the late 1980s. The "border zone" in Tajikistan encompasses about 300,000 ha (assuming the average width is 1 km and the length is 300 km). As in Kyrgyzstan, the border barriers have not been well maintained in recent years, and may have broken down in places.

Livestock Competition

Fedosenko (1999) surveyed argali in several parts of the Eastern Pamir in 1999, and compared his results with data from the mid-1990s. He concluded that the abundance of argali in the central and northern parts of the Eastern Pamir had not changed or had decreased to some extent in recent years, while in the southeastern and especially the southern part of the Pamir, argali abundance had increased by more than three times. Dr. Fedosenko attributed argali population growth in the south to the removal of large numbers of domestic livestock from local pastures during the last several years; he also attributed the lack of population growth or slight decline in the central and

northern parts of the Eastern Pamirs to the concentration of domestic livestock in those areas (Fedosenko 1999).

Findings for Factor A

Habitat conditions for argali in Kyrgyzstan appear to have improved over the last decade, largely as a consequence of the change of government. Livestock numbers have increased in some areas (with, presumably, a concomitant decrease in habitat quality for argali as a result of overgrazing), but have been substantially reduced in other, more extensive areas (with, presumably, a concomitant increase in habitat quality for argali as a result of decreased grazing pressure). The "de facto" protected area in the border zone with China has probably improved habitat conditions. While habitat loss and degradation does not endanger the argali throughout all or a significant part of Kyrgyzstan, it remains a factor that threatens certain argali populations in a significant portion of the country.

In Mongolia, argali habitats appear to have degraded over a wide area since the early 1990s as a result of overgrazing by domestic livestock. This may have been offset by the designation of a substantial number of "State Special Protected Areas" covering almost 13 percent of Mongolia's territory, and a new law on buffer zone management in special protected areas. We do not believe that habitat loss and degradation is of sufficient magnitude and extent to endanger the argali throughout all or a significant part of Mongolia, however, habitat degradation and loss continues to threaten certain argali populations in a significant portion of Mongolia.

In Tajikistan, as in Kyrgyzstan, argali habitats have improved in many areas due to removal of large numbers of domestic livestock, but have degraded in other, less extensive areas, due to concentration of domestic livestock there. The "de facto" protected area in the border zone with China has probably improved habitat conditions. As with Kyrgyzstan, it appears that overall habitat conditions for argali have improved in Tajikistan. Thus, while habitat loss and degradation does not endanger the argali throughout all or a significant part of Tajikistan, it remains a factor that threatens certain argali populations in a significant portion of the country.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Kyrgyzstan

Population Status

On the basis of their own field surveys in the Kokshalatau Range in 1993 and surveys conducted by the Kyrgyz Institute of Biology in 1991, Lushekina and Fedosenko (1994) estimated a minimum population of 7,800 Marco Polo (or Pamir) argali for Kyrgyzstan in 1994, distributed as follows: 2,500–3,100 in the Aksai River basin (right-hand tributaries); 500–900 in the Myurduryum area; 1,300 in the Uzengikush area; 700 in the Akshiriyak area; 1,000 in the Sarydzhaz basin; and 1,800 in the Arpa valley. We note that this does not appear to cover the entire range of Marco Polo argali within Kyrgyzstan.

In response to our annual request for information, Mr. C. Omurakunov of the Kyrgyz Central Administrative Board of Hunting and Hunting Supervision (*in litt.* to Michael Carpenter, DMA, June 30, 1998) told us that, in 1997, the total argali population of Kyrgyzstan was estimated to be 20,000–21,000 animals, based on aerial and ground surveys. Of that total, more than 13,000 were estimated to be Marco Polo argali, the subspecies targeted for sport hunting in Kyrgyzstan. Mr. Omurakunov provided some details about survey methods used and results obtained. Ground and aerial surveys were used to cover extensive areas, with helicopters being used in areas that are remote and difficult to access. Population estimates for specific areas with high concentrations of argali were as follows: 6,600 in right-hand tributaries of the Aksai River; 2,400 in the Arpa Valley; 2,900 in Jety-Oguz. These estimates are substantially higher than those made in earlier years (i.e., 1991–1993), and we suspect that the survey methods used may have resulted in slight overestimation, particularly in the Aksai River area. Although some error in counting and/or differences in survey methods may partially account for differences between earlier population estimates and the 1997 estimate, Mr. Omurakunov asserted that the number of argali in Kyrgyzstan had actually increased between years, which he linked directly to sport hunting (although other factors may also be involved).

In a 1999 fax to us, Mr. Omurakunov (*in litt.* to the Service, January 26, 1999) repeated the previous population estimates—a total argali population of 20,000–21,000 and a Marco Polo argali population of 13,000. In 2000, Mr. T.

Alykulov, Minister of Environmental Protection of Kyrgyzstan (*in litt.* to Teiko Saito, Chief, DMA, July 7, 2000) told us that the total population estimate for the country in 1999 was 16,600, and 14,000 “live in areas where hunting is conducted,” implying that these were Marco Polo argali, because only Marco Polo argali are hunted. These recent survey data suggest that argali numbers in Kyrgyzstan have remained relatively stable in the past few years, with some fluctuation, although a comprehensive survey does not appear to have been undertaken since 1997.

Sport Hunting

Sport hunting of argali by international trophy hunters has been taking place in Kyrgyzstan since at least 1990 (Luschekina and Fedosenko 1994).

Hunting Companies. The number of hunting organizations (companies) leading “hunting tours” for Marco Polo argali in Kyrgyzstan has grown in recent years. The hunting industry was formerly run by one organization—Glavokhota. However, in 2000, six or seven organizations were involved in hunting (including the Society for Hunting and Fishing of the Kyrgyz Republic, the State Enterprise “Kyrgyz Too”, and others).

Hunting Locations. In previous years we believe that the entire hunting quota was assigned to the Naryn region, which appears to contain one of the largest concentrations of Marco Polo argali in Kyrgyzstan, and which also does not appear to include any of the Tien Shan argali (DSA 1995). Luschekina and Fedosenko (1994) indicated that there were two hunting camps, one named Atabash, which is in the Aksai River Valley, and one named Przhevalsk, which is in the basin of the Uzengikush River. Subsequently, we received information about a hunting area in what appears to be the Alai Valley in the Osh region. The Alai Valley is an area that contained a concentration of argali estimated at 1,890 animals in the 1996 surveys, and therefore should be able to sustain some offtake of trophy animals. During the 1999–2000 hunting season, hunting areas were in the Narynskaya Oblast and in the mountains systems from the southern portion of Issyk-Kul'skaya Oblast to Borkoldoi-Too and Boz-Dzhalpaka, according to T. Alykulov, Minister of Environmental Protection for Kyrgyzstan (*in litt.* to Teiko Saito, Chief, DMA July 7, 2000).

Harvest Quotas. Harvest quotas for sport-hunted trophies of Marco Polo argali have steadily increased in Kyrgyzstan. The 1995 quota for Marco

Polo argali was 15 according to Mr. C. Omurakunov of the Kyrgyz Committee of Nature Protection (*in litt.* to Safari Club International, January 24, 1995). The 1996 quota was 20 (Mr. T. Kulumbaev, Kyrgyz Committee of Nature Conservation *in litt.* to the Service, February 21, 1996), the 1997 quota was 24 (Mr. Omurakunov *in litt.* to DMA, 1997), and the 1998 quota was 25. For 1999, Mr. Omurakunov (*in litt.* to Michael Carpenter, DMA, June 30, 1998) stated that the quota was increased to 40, which, he said, was based on an increasing population trend and expansion of the range of the species within Kyrgyzstan in recent years (although the population appears to have remained relatively stable during that time frame). For 2000, Mr. Alykulov stated that the quota was set at 60.

Based on information provided by the Kyrgyz Government, harvest quotas in previous years appear to have been adhered to, and may not have been met in some years. Only 18 argali were hunted under a quota of 20 in 1996. Mr. Omurakunov stated in his 1998 letter that, based on several years' data, only 70–80% of the annual quota was being used on average.

Biological Impact of Harvest. Luschekina and Fedosenko (1994) stated “we believe that the size of the argali populations is adequate in both Kyrgyzstan and Tajikistan to sustain the pressure of sporting (trophy) hunting within the limits it is currently conducted.” At that time, the Marco Polo population of Kyrgyzstan was estimated at 7,800 animals, while the hunting quota was 18.

In our 2000 biological opinion on argali sport hunting in Kyrgyzstan we assessed the biological impact of the harvest quotas for that year (DSA 2001a). We based our assessment on the harvest recommendations of Wegge (1997) and Harris (1993). Wegge (1997) considers that harvesting males within a limit of 10 to 20 percent of the replacement rate for the trophy-sized segment of the population is a safe, conservative level for stable or increasing wild sheep and goat populations. In most cases this is equivalent to less than 4 percent of the total pre-hunting season population (Wegge 1997). Harris (1993) states that a healthy population should be able to sustain an annual “trophy harvest of males, in numbers equivalent to 1–2 percent of the total population size,” without negative consequences to the population. For 2000, the harvest quota of 60 argali represented 0.46% of the estimated total Marco Polo argali population of 13,000. Comparing this

figure to the harvest recommendations of Wegge (1997) and Harris (1993), and noting that the Marco Polo argali population in Kyrgyzstan appears to be stable or increasing based on recent survey results, we concluded that the total harvest quota of 60 was conservative and sustainable. We further note that as long as Marco Polo argali population estimates for Kyrgyzstan were correct within $\pm 50\%$ (i.e., the population is at least 6,000), this quota is below 1 percent of the population.

Poaching

Local harvest of argali for sport and/or consumption is prohibited. In previous years illegal hunting was acknowledged to be a persistent problem, especially in remote areas where enforcement is difficult. However, efforts were being made to control poaching, which resulted in poachers being detained and fined. We have been told that the head of the local game management unit accompanies foreign hunters; thus we presume that trophy specimens are legally taken and exported. Some argali populations may suffer locally in areas of military activity or “expeditions,” although these seem to be intermittent and isolated events. In previous years we also noted that the Government of Kyrgyzstan had agreed to strengthen and augment reserve areas. Indeed, Mr. Omurakunov indicated in his May 1997 letter that new reserves had been established. Levels of poaching described by Mr. Omurakunov in 1998 appeared to be relatively low. The level of illegal offtake (poaching) appears to be low enough that total harvest mortality (i.e., illegal harvest and legal sport-hunting harvest) has not exceeded sustainable levels and has not caused the Marco Polo argali population to decline.

Mongolia

Population Status

Luschekina and Fedosenko (1994) estimated there to be “no more than 20,000” argali of both subspecies in all of Mongolia, although they also stated that “there are no systematic data on the argali population in Mongolia.” Mallon *et al.* (1997) concurred that reliable, country-wide population estimates for each subspecies were not available, although both Mallon *et al.* (1997) and Reading *et al.* (1997) felt that Altai argali were less abundant than Gobi argali.

No comprehensive, rangewide population surveys of Altai argali have been undertaken in Mongolia. Mallon *et al.* (1997) felt that Altai argali were less abundant than Gobi argali, and that

populations were fragmented and disjunct. Amgalanbaatar and his colleagues surveyed several sites in western Mongolia in 1991–1992 and estimated a total population of 3,000 Altai argali for the four westernmost aimags (provinces) (Amgalanbaatar 1993, Amgalanbaatar *et al.* 1993 cited in Reading 1996). In 1995, Amgalanbaatar and Reading revisited several of the earlier survey sites. They did not observe argali in several of the areas and counted a total of only 52 argali (Amgalanbaatar 1995 cited in Reading 1996). However, according to Mallon *et al.* (1997), these recent surveys have not been comprehensive enough to permit estimation of the total population of Altai argali.

Additional surveys have been conducted since the studies cited in Mallon *et al.* (1997) and Reading (1996). Michael Frisina, Wildlife Biologist-Range Coordinator for the Montana Department of Fish, Wildlife & Parks, and his Mongolian colleagues, surveyed argali in Mongolia during 1997, 1998, and 1999 under the auspices of a cooperative project between Argali Conservation International and the Mongolian Ministry for Nature and the Environment (MNE) (Frisina and Boldbaatar 1998, Frisina and Ulziimaa 1999, 2000). Survey areas have included the western Altai Mountains in Bayan Olgii and Hovd Aimags (Provinces) and the eastern Hangay Mountains (at Oshgog Mountain in Ovorkhangay Aimag—an area where government-regulated trophy hunting has occurred for several years (Frisina and Boldbaatar 1998). The eastern Hangay Mountains appear to be a zone where the two subspecies in Mongolia come together; thus, it is uncertain which subspecies occurs at Oshgog Mountain.

Frisina and colleagues conducted surveys for Altai argali in the western Altai Mountains in 1997 and 1999. In August 1997, Frisina and Boldbaatar conducted ground surveys in three areas in the western Altai Mountains (in Bayan Olgii and Hovd Provinces) (Frisina and Boldbaatar 1998). They counted 244 argali, 234 of which were rams. This skewed sex ratio reflects the fact that their survey areas were remote alpine valleys, habitats dominated by rams in August. Older rams (Class III and IV) comprised 49% of the rams counted. In July 1999, Frisina and Ulziimaa conducted a less-intense reconnaissance survey of the sites in Bayan Olgii and Hovd Provinces that had been surveyed in 1997 (Frisina and Ulziimaa 2000). They counted only 65 argali—15 ewes, 5 lambs, 35 rams, and 10 unclassified animals. They suggested that this decrease may have been due to

the shorter period of observation in 1999, or the hot and dry daytime conditions in 1999, which may have made the sheep less visible because they were bedded down or in shady areas.

Frisina and colleagues conducted more intensive argali surveys at Oshgog Mountain in the Hangay Mountains (in Ovorkhangay Aimag) in 1997, 1998, and 1999. In August 1997, Frisina and Boldbaatar counted 305 argali at Oshgog, 135 of which were rams, 120 of which were ewes, and 50 of which were lambs (Frisina and Boldbaatar 1998). The observed lamb-to-ewe ratio was 41.7 lambs per 100 ewes. In addition, 63.7% of classified rams were in older age classes (Class III or IV). The relatively high proportion of older rams was interpreted as indicating that “natural mortality is not excessive and poaching of rams is limited.” The authors concluded that “argali populations in the areas surveyed are healthy and productive” (Frisina and Boldbaatar 1998).

In October 1998, Frisina and Ulziimaa conducted a second ground survey of the Oshgog Mountain area, and counted 862 argali, including 252 ewes, 159 lambs, 241 rams, and 210 unclassified animals (Frisina and Ulziimaa 1999). They estimated the total argali population for Oshgog Mountain (an area 91,500 ha) to be 901, and considered that to be a conservative estimate. They reported a good lamb-to-ewe ratio (63 lambs per 100 ewes) and high percentages of older age-class males (75.9% of classified rams were Class III or IV), and concluded that trophy hunting of argali at Oshgog Mountain was within sustainable limits (Frisina and Ulziimaa 1999).

In July 1999, Frisina and Ulziimaa conducted a third ground survey of the Oshgog Mountain area (Frisina and Ulziimaa 2000). They counted 339 argali, including 161 ewes, 77 lambs, 69 rams, and 32 unclassified animals. The lamb-to-ewe ratio was 47.8 lambs per 100 ewes, but there was a lower percentage of older age-class males than in previous years (39.1% of classified rams were Class III or IV). Rams made up a smaller percentage of the observed population in 1999 than in either 1997 or 1998, and the percentage of old rams (Class IV) was lower in 1999 than in 1997 or 1998. The authors implied that data comparisons among years should be made cautiously because 1998 data were collected during the rut, when older males would be expected to be more visible, whereas 1999 data were collected during extremely hot and dry conditions, and older males were difficult to see as most were bedded

down in shady areas to avoid the heat (Frisina and Ulziimaa 2000).

No comprehensive, rangewide population surveys of Gobi argali have been undertaken in Mongolia. Mallon *et al.* (1997) felt that argali in the Gobi region, particularly in South Gobi Province, are apparently relatively abundant although the distribution is highly fragmented and local populations are often quite small. Recent surveys have been conducted by Frisina and colleagues, and by Reading and colleagues.

Valdez and Frisina (1993) conducted ground surveys for Gobi argali at Ih Nartiin in Dornogobi Aimag (East Gobi) in 1993, while Frisina and Ulziimaa (1999) conducted a second ground survey of Ih Nartiin in 1998. In 1993, 162 argali were counted in the 60,700-ha survey area (Frisina and Ulziimaa 1999). The observed lamb-to-ewe ratio was 44 lambs per 100 ewes, and the percentage of older males in the population was high (61.5% of classified rams were Class III or IV). In 1998, 131 argali were counted in the survey area (Frisina and Ulziimaa 1999). They estimated the total argali population for Ih Nartiin (60,700 ha) to be 632, and considered that to be a conservative estimate. The observed lamb-to-ewe ratio was 40 lambs per 100 ewes, and the percentage of older males in the population was high (60.6% of classified rams were Class III or IV). Frisina and Ulziimaa (1999) concluded that the argali population at Ih Nartiin had remained stable from 1993 through 1998.

Schaller (1994 cited in Mallon *et al.* 1997) surveyed Gobi argali in a 15 million-ha area in the eastern part of South Gobi and the western part of East Gobi in 1994. He estimated that 3,500 to 4,000 Gobi argali occurred in small, fragmented populations throughout the survey area (Mallon *et al.* 1997).

Reading *et al.* (1997) conducted ground and aerial surveys of Gobi argali in a 20.9 million-ha region in Dundgobi, Omnogobi, and Dornogobi aimags in the South Gobi region in 1994 (the same general region that Schaller surveyed). They estimated the overall population size to be 3,900 ± a standard error of 1,130, resulting in a 95% confidence interval of 2,190 to 6,960 animals (Reading *et al.* 1997). Populations were small and fragmented.

Reading *et al.* (1999) surveyed argali populations in Three Beauties of the Gobi National Conservation Park, an area of 21,700 sq. km., in 1995 (ground survey), 1996 (ground survey), and 1997 (aerial survey). They observed 265 argali in 38 groups in Fall 1995, 233 argali in 46 groups in Spring 1996, and 113 argali

in 20 groups in Winter 1997. Extrapolating results of the ground surveys, they derived populations estimates of 2,977 argali in Fall 1995, and 3,333 argali (including young) in Spring 1996. Extrapolating aerial survey results, they derived a population estimate of $3,257 \pm 1,071$ argali in the aerial survey area (the eastern half of the park).

Sport Hunting

Sport hunting of argali by international trophy hunters has been taking place in Mongolia since at least 1967 (Luschekina and Fedosenko 1994).

Hunting Companies. In 1994, only 3 companies were authorized by the Government of Mongolia to conduct sport hunts with foreign clients—Juulchin, Mongol An, and Sondor. In 1998, 6 companies were authorized by the Mongolian Government to conduct sport hunts with foreign clients. In 1999, the number of authorized companies jumped to 17 (Juulchin, Mongol Safari, Mongol Tour and Genesis, Mat Outdoor Safaris, Adiya & Altai, Mongol Altai Travel, Mongolyn Zug, Jim Trade, Zereglee, Tsagaan Shonmkhor, Derentsnat, Badan, Power Energy-Environment, Tovshin Tour, New Tour International, Karakorum) according to S. Banzragch, Director General of Mongolia's Environmental Protection Agency (*in litt.* to T. Van Norman, DMA, June 28, 1999). For the 2000 hunting season, 18 companies were authorized to conduct sport hunts with foreign clients; most were the same companies authorized in 1999, but a few new companies appeared and a few old ones disappeared (S. Banzragch, Director General, Environmental Protection Agency, Mongolia *in litt.* to Teiko Saito, August 1, 2000).

Hunting Locations. Since 1971, hunting concessions (otogs) operated by the tourism/hunting companies have been established in various areas for hunting of argali by foreign hunters. Luschekina and Fedosenko (1994) listed these as: Yamaatyn am (Bukhmuren somon of UvsNuur Aimag), Myangan-Ugalzat (Must somon of Kobdo Aimag), Khukh Serkh (Khovd somon of Kobdo Aimag), Akhuunt (Dellum somon of Bayan Ulgi Aimag), Mogoin gol (Tonkhil somon of Gobi-Altai Aimag), Biger (Biger somon of Gobi Altai Aimag), Gobi Altai-Zhinst (Zhinst somon of Bayan-Khongor Aimag), and Ikh-Baga Nomgon (Nomgon somon of Southern Gobi Aimag). Information received in support of permit applications in subsequent years indicated that these general locations remained unchanged (e.g., DSA 1995). The Government of Mongolia previously informed us that,

for 3 years beginning in 1998, there was to be a complete ban on hunting in certain areas of Hovd aimag, which lies in the range of the Altai argali in western Mongolia. According to information contained in one hunter report submitted in 1999, these areas may include White Rock Mountain, Mountain of 1,000 Rams, and Bluger Mountain, although we have no corroboration of these locations. This closure was reiterated in the information received from the Government of Mongolia prior to the 1999 hunting season (Director General, Environmental Protection Agency, Mongolia *in litt.* to T. Van Norman, June 28, 1999). We do not know if these closures remain in effect.

According to information in Frisina and Ulziimaa (2000), there has been considerable hunting of argali in the Oshgog Mountain area (in the Hangay Mountains of Ovorkhangay Aimag) in recent years. This area was not previously highlighted as a principal argali hunting area. Since 1994, the trophy ram harvest at Oshgog Mountain has ranged from approximately 1 to 18 (pers. comm. with Jantzen and Luya of Mongol Tours, cited in Frisina and Ulziimaa 2000). In 1998, about 18 trophies were harvested by foreign hunters from three different hunting camps at Oshgog. In 1999, 14 rams were harvested.

Harvest Quotas. The Council of Ministers of Mongolia establishes a quota for argali to be sport-hunted by foreign hunters. Before 1992, annual quotas of up to 100 argali were issued. The 1994 quota for argali was 15, of which 10 were designated for the High Altai and 5 for the Gobi region. The quota was increased to 20 for 1995 and 1996, and to 30 for 1997. For 1998, the quota was increased to 35 animals, with two-thirds of the quota being in the Gobi region and one-third in the Altai region. For 1999, the quota was again increased to 45; approximately two-thirds of the quota is assigned to the Gobi area and one-third in the Altai (Director General, Environmental Protection Agency, Mongolia *in litt.* to T. Van Norman, June 28, 1999). For 2000, the quota was decreased to 40; no mention was made of the distribution of permits between the two subspecies (Director General, Environmental Protection Agency, Mongolia *in litt.* to Teiko Saito, August 1, 2000).

Biological Impacts of Harvest. According to Juulchin, a tourist hunting company, 1,630 argali were taken by sport hunters in Mongolia from 1967–1989, an average of 71 per year (Luschekina and Fedosenko 1994). Over 200 argali were harvested in Kobdo

Aimag from 1978 through 1992 (Luschekina and Fedosenko 1994).

In our 1999 and 2000 biological opinions on argali sport hunting in Mongolia we assessed the biological impacts of the harvest quotas for those years (DSA 1999, DSA 2000). As in our analysis for Kyrgyzstan, we based our assessment on the harvest recommendations of Wegge (1997) and Harris (1993). The total sport-hunting quota of 45 represented about 0.45% of the estimated total population of 10,000. The quota of 30 Gobi argali represented about 0.5% of that subspecies' estimated total population, while the quota of 15 Altai argali represented 0.375% of that subspecies' estimated total population. Comparing these figure to the harvest recommendations of Wegge (1997) and Harris (1993), we concluded that the total harvest quota of 45 and the subspecies quotas of 30 and 15, were conservative and sustainable. We further note that as long as Marco Polo argali population estimates for Mongolia were correct within $\pm 50\%$ (i.e., the population is at least 5,000), this quota is at 1 percent of the population. Giving further consideration to the "trophy" segment of the population (i.e. mature, older males), we believe that recent sport-hunting data indicate that the *number* of animals in older age-classes are not being adversely affected by sport hunting.

Poaching

There is little quantitative information on former or current levels of argali poaching in Mongolia. Mallon *et al.* (1997) states that poaching is a major threat but cites little recent literature other than Luschekina and Fedosenko (1994), although these authors only provide anecdotal information. In a recent communication with us, Mr. A. Bolat, the Vice-Minister of MNE (*in litt.* to Tim Van Norman, DMA, May 9, 2001) indicated that "there is a vague estimate that at least 70–80 argalis are hunted each year by Mongolian citizens illegally for food and medical purposes . . . therefore, measures have been taken to prevent illegal hunting of argali." This could have a substantial impact on argali in Mongolia, especially if poaching is concentrated in certain areas.

Tajikistan

Population Status

Luschekina and Fedosenko (1994) state that the Marco Polo argali population in Tajikistan has undergone considerable changes in recent years. In areas subject to substantial anthropogenic effects (grazing,

poaching, harassment), numbers have declined, and in some areas the species has disappeared altogether. The authors also stated that an estimated 72% of the Tajik argali population were inhabiting protected areas in the Sarykol Mountains along the Chinese border, and especially dense populations occurred within the border barrier zone (Luschekina and Fedosenko 1994).

During the 1960s, argali were considered abundant in Tajikistan, with estimates as high as 70,000–80,000 sheep in the Eastern Pamirs, although such figures are considered an overestimate by some investigators (Luschekina and Fedosenko 1994). Based on estimates of population densities, the northeastern Pamirs were estimated by Sokov to contain about 20,000 argali in the mid-1970s, and this number was further revised by Sokov and Odinashoyev to 10,000–12,000 by the late 1980s (Luschekina and Fedosenko 1994). A decline in the population was attributed to increased access to areas inhabited by argali due to development of roads as well as the increase in domestic stock competing for pasture. Available habitat became fragmented and argali numbers declined (Luschekina and Fedosenko 1994).

In 1991, various governmental, quasi-governmental, and private organizations, including scientists from the Institute of Zoology and Parasitology of the Tajik Academy of Sciences, cooperated in aerial surveys of argali in Tajikistan (Luschekina and Fedosenko 1994). The surveys encompassed 90–95% of suitable argali habitat, and 9,415 animals were counted. The total population was estimated to be 9,900–10,300 animals (Luschekina and Fedosenko 1994).

The report “The Pamirs Argali in Tadjikistan Population State,” completed in 1996 by Dr. A.K. Fedosenko (Fedosenko 1996), includes much of the same information as the report by Luschekina and Fedosenko (1994) (i.e., population estimates for the 1960s through 1991). However, Dr. Fedosenko included specific information on field studies of argali conducted by himself in the hunting concession area of MAK, one of the Tajik hunting firms, described as located in the area of the Akbura ridge and the area between the Saluistyk and Aksu Rivers in eastern Tajikistan (Fedosenko 1996). Dr. Fedosenko confirmed that, at the time of his report, about 60% of the argali in Gorno-Badakhshan Province existed in the border zone (i.e., between the barrier fences and the international boundary with China), where densities were about four times higher than “outside” the

barriers on the Tajik side. Outside the barriers, argali numbers were highest in the Saluistyk-Aksu interfluvium and Akbura mountains (MAK hunting areas), the Yushno-Alichursky ridge (Tadjik-international hunting area), the Sever-Alichursky ridge, and the Bilyand-Kiik area (part of the area, along with areas around western Lake Karakul, controlled by Badakhshan hunting firm) (Fedosenko 1996).

In response to our annual request for information, Dr. N. Safarov, First Deputy Minister of the Tajik Ministry of Nature Protection (*in litt.* to the Service, October 26, 1998) told us that surveys conducted in February-March 1998 showed a continued increase in the numbers of argali. On six survey plots totaling 2.72 million acres, 6,560 argali were counted. For the entire country, the population was estimated at 10,000–13,000, mostly concentrated in the Murgab Region. Dr. Safarov stated that the population increase may have been due to political instability, civil unrest, and a reduction in the human population (emigration) in the Murgab Region due to the shortage of food and fuel, apparently because of disruption of supplies. According to Dr. Safarov, as the human population decreased, threats to argali (primarily livestock grazing and poaching) also decreased. However, during meetings with Service representatives held October 28–31, 1998, A. Luschekina and A. Fedosenko of the Russian Academy of Science indicated that they thought that the argali population of Tajikistan was in decline, although they still believed there were about 10,000 animals.

In mid-1999, Dr. A. Latifi, First Deputy Minister, Ministry of Nature Protection/ Conservation (in a written summary titled “Information on Marco Polo’s Sheep Hunting Conducted with Participation of Foreign Tourists During the Hunting Season of 1998–1999”), told us that the Marco Polo argali population in the Pamirs in 1999 was estimated at 10,000–13,000 animals (the same as in the previous year). Dr. Latifi stated that ground counting conducted by hunting firms during the hunting season supported these estimates. The summary document he provided includes a table with wildlife population figures for 10 “hunting entities” for 1999, but the table also has a caveat that the data are considered to be approximate “because the task of counting them accurately has never been undertaken.”

More recently, Fedosenko (1999) surveyed a number of areas in the Eastern Pamir and counted 5,990 argali. Although Fedosenko did not extrapolate these results to a total population

estimate for the country, he did state that “Taking into account significant underestimation of arhar (argali) population in the central and in the northern parts of the Eastern Pamirs, we must conclude that the total number of these animals has increased in comparison with mid-90s (1990s). While in the central and northern parts of the Eastern Pamir the abundance of arhars has not changed or has decreased to some extent, in the southeastern and especially the southern part it has increased by more than three times.” Dr. Fedosenko attributed argali population growth in the south to the removal of large numbers of domestic livestock from local pastures during the last several years; however, argali numbers remained steady or declined slightly in the central and northern parts of the Eastern Pamirs, because domestic livestock numbers did not decline significantly in those areas (Fedosenko 1999).

Sport Hunting

Luschekina et al. (1994) and Fedosenko (1999) state that, until the mid-1980s, about 100–120 permits were issued annually to local people for shooting argali. Actual legal hunting of argali was terminated in 1987 (Fedosenko 1999). Information received from the Ministry of Nature Conservation and from Safari Outfitters indicates that the hunting of argali is now primarily limited to trophy hunting by foreign nationals only, about 70% of whom are American.

Hunting Companies. In earlier years, we understood that trophy hunting was conducted by three hunting firms in Gorno-Badakhshan: MAK, Tadjikinternational, and Badakhshan (DSA 1998). According to Fedosenko (1996), the area controlled by Tadjikinternational was estimated to contain about 640–760 specimens based on 1992–1993 data, with several males taken annually. The hunting lands of Badakhshan were estimated to contain about 554 argali in 1991 (actual aerial counts), and although 43 males were taken during 1987–1990, Fedosenko indicated that they are now limited to taking five to seven animals annually. The MAK hunting lands were estimated to contain 1,500 argali, which had remained stable from 1990 to 1995. In the years 1992–1995, the number of argali taken each year on MAK lands was 15, 4, 6, and 6. It has been our understanding that none of the hunting concessions includes areas within the border barriers, so the majority of argali in Tajikistan (about 65%) is not subject to sport-hunting pressure, but this also means that sport-hunting pressure is

concentrated on a smaller portion of the population.

The number of hunting enterprises apparently increased dramatically in 1998–1999, to around 40. However, by mid-1999, the number apparently dropped back to around 10 hunting companies functioning in the Pamir. According to information provided by Dr. Latifi (*in litt.* to the Service, October 18, 2000), 8 hunting companies had been registered, but only 7 of them hosted sport hunters. Dr. Fedosenko's 1999 report corroborates this number (Fedosenko 1999). He stated that, at present, 8 firms organizing or willing to organize hunting are registered in Eastern Pamir. They are "MAK" ("Asia-Span"), "Obi-Safed", "Badakhshan", "Pamir-Eco", "Pamir", "Mergen", "Turvest" (former "Tajik International"), "Issyk-Bullak". In addition, the forestry-game farm of the Ministry of Forestry was organized in 1998 with the purpose of conducting trophy hunts in its area.

Hunting Locations. Dr. Fedosenko described the hunting areas allocated to each of the 8 firms, but stated that hunting lands and their boundaries are known only to the staffs of the hunting companies and the registering organization, and local people are not well aware of the locations (Fedosenko 1999; pages 20–21).

Harvest Quotas. When Lushekina and Fedosenko prepared their report in 1993, hunting firms were annually allocated 20–25 licenses to shoot argali (Lushekina and Fedosenko 1994). According to Dr. Safarov (*in litt.* to the Service, October 26, 1998), the 1998–1999 quota was 40 argali per season, with two seasons per year: September 1 to December 31 and February 15 to April 1. However, any part of the quota not used during the September–December season could be added to the quota for the February–April season. According to Dr. Latifi's mid-1999 communication with us, the Fall 1999/Spring 2000 quota was set at 70 (no breakdown was given for the individual seasons). In 2000, Dr. Latifi told us that the Fall 2000/Spring 2001 quota has been set at 70, with no breakdown given for the individual seasons. Based on recent hunting information, it appears that the quota has not been reached in recent years, but the number of re-exports (from the Russian Federation) of argali taken in Tajikistan has increased from 10 in 1995 to 63 in 1997.

Biological Impacts of Harvest.

Lushekina and Fedosenko (1994) stated "we believe that the size of the argali populations is adequate in both Kirgizia and Tajikistan to sustain the pressure of sporting (trophy) hunting within the

limits it is currently conducted." At that time, the Marco Polo population of Tajikistan was estimated at 9,900–10,300 animals, while the hunting quota was 20–25.

In our biological opinion on sport-hunted argali trophies taken in the Fall 2000/Spring 2001 season in Tajikistan (DSA 2001b), we assessed the biological impacts of the harvest quota for that season. We based our assessment on the published recommendations of Wegge (1997) and Harris (1993) (see background discussion of these papers under Kyrgyzstan). The total sport-hunting quota of 70 represented about 0.70% of the total estimated population of 10,000, and about 1.55% of the "hunnable" population (that portion of the total population on the Tajik side of the border barriers and therefore subject to sport hunting). Comparing these figure to the harvest recommendations of Wegge (1997) and Harris (1993), we concluded that the quota is conservative and sustainable when compared to the total population of 10,000, but that it is close to the upper limit of 2% mentioned by Harris (1993) when compared to the "hunnable" population. This is still conservative, since the border barriers are not absolute and some movement of animals does occur.

Poaching

Lushekina and Fedosenko (1994) and Fedosenko (1999) state that, until the mid-1980s, about 100–120 permits were issued annually to local people for shooting argali. Legal hunting of argali by local people was terminated in 1987 (Fedosenko 1999). According to Lushekina and Fedosenko (1994) and Fedosenko (1999), herdsman, various expeditions, and military personnel shot upwards of 1,000 argali per year until the late 1980s. Illegal harvest increased in the early 1990s as a result of civil unrest and human population relocation into the Gorno-Badakhshan region, but then began to subside because of a reduction in the number of military personnel, increasing fuel costs, and a local government effort to confiscate weapons (Lushekina and Fedosenko 1994, Fedosenko 1996). More recently, Fedosenko (1999) has implied that poaching continues and may be on the increase. The majority of argali remains (89%) he found were shot by poachers, and many argali skulls were found near herders camps (Fedosenko 1999).

According to N. Safarov, Deputy Minister of the Tajik Ministry of Nature Conservation, and A. Lailibekov, Deputy Chairman of the Nature Conservation Committee of Gorno-Badakhshan (*in litt.* to the Service, February 16, 1996) sport

hunting of argali by foreign hunters prevents poaching of argali due to the contribution of sport hunting to the local economy and the value that the local population then places on argali. In addition to providing a disincentive to poaching, the income generated from sport hunting of argali reduces reliance of local people on domestic livestock, especially sheep, so there are fewer sheep to compete with argali for pasture and water. These arguments were restated in Mr. Safarov's letter to the Service of October 26, 1998.

Findings for Factor B

Argali populations in Kyrgyzstan appear to have remained stable or increased slightly in recent years, although the lack of a comprehensive population survey since 1991 limits interpretation of population trend. Legal sport hunting has not had a detrimental impact on Kyrgyz argali populations in recent years, but poaching is acknowledged to have been a persistent problem until recently. Although overutilization is not a factor that endangers the argali throughout all or a significant portion of its range in Kyrgyzstan, the lingering impact of past poaching continues to be a factor that threatens argali populations in certain parts of Kyrgyzstan.

Argali populations in Mongolia appear to be much reduced from previous years, but the lack of a recent, countrywide population survey inhibits interpretation of population trends. In addition, there is little quantitative information on former or current levels of poaching. Legal sport hunting has impacted argali populations in some areas, resulting in their closure. Because of these factors, overutilization continues to be a factor that threaten argali populations in Mongolia. However, the overutilization is not of sufficient magnitude or extent to endanger the argali throughout all or a significant portion of its range in Mongolia.

Recent population surveys in Tajikistan indicate that the argali population in the Eastern Pamirs has increased since the early 1990s. Legal sport hunting has not had a detrimental impact on Tajik argali populations in recent years, but local experts indicate that poaching has been and continues to be a problem. Thus, we conclude that former and current overutilization in the form of poaching threatens argali population in Tajikistan, but, as with Mongolia, the magnitude and extent of overutilization is not at a level that endangers the argali in all or a significant portion of its range in Tajikistan.

C. Disease or Predation

Kyrgyzstan

Luschekina and Fedosenko (1994) report that the wolf (*Canis lupus*) is a major predator of Pamir argali in Kyrgyzstan. Predation appears to be more substantial in fall and winter, the time of year when the principal prey—the Altai marmot—is hibernating.

In recent years' communication with officials of the Kyrgyz government, we have received information indicating that Kyrgyzstan has embarked on an apparently widespread program of wolf control in an attempt to reduce predation on argali (see, for example, the letter from T. Alykulov, Minister of Environmental Protection of Kyrgyzstan to Teiko Saito, Chief, DMA, July 7, 2000). While selective predator control might help with survival of juvenile and yearling argali in some areas, the Service does not endorse widespread predator control as an acceptable management method for argali.

Diseases transmitted from domestic sheep can be a significant mortality factor for wild sheep, and as long as argali occur in proximity to domestic sheep, there is the possibility of disease transmission. However, we do not consider that this threat is of sufficient magnitude to threaten or endanger argali populations throughout all or a significant portion of the species' range in Kyrgyzstan.

Mongolia

Wolves do not appear to be a major predator of argali in Mongolia (Luschekina and Fedosenko 1994).

We do not consider that the threat of disease is of sufficient magnitude to threaten or endanger argali populations throughout all or a significant portion of the species' range in Mongolia.

Tajikistan

Fedosenko (1999) indicated that wolf predation is a major mortality factor for argali in Tajikistan. We understand that the Tajik Government has embarked on wolf control, but, in his most recent communication, A. Latifi (*in litt.* to Teiko Saito, DMA, October 18, 2000) expressed the opinion that the situation with predators is not alarming. As previously stated for Kyrgyzstan, the Service does not endorse widespread predator control as an acceptable management method for argali.

We do not consider that the threat of disease is of sufficient magnitude to threaten or endanger argali populations throughout all or a significant portion of the species' range in Tajikistan.

Findings for Factor C

Although wolf predation appears to impact argali populations in Kyrgyzstan and Tajikistan, we do not consider predation to be a factor that threatens or endangers argali throughout all or a significant portion of the species' range in Kyrgyzstan, Mongolia, or Tajikistan. Diseases transmitted from domestic sheep can be a significant mortality factor for wild sheep, and as long as argali occur in proximity to domestic sheep, there is the possibility of disease transmission. However, we do not consider that this threat is of sufficient magnitude to threaten or endanger argali populations throughout all or a significant portion of the species' range in Kyrgyzstan, Mongolia, or Tajikistan.

D. Inadequacy of Existing Regulatory Mechanisms

Kyrgyzstan

Legal Protection

The Tien Shan argali is listed in the Kyrgyz Red Data Book as endangered, however we do not know if this status carries any legal authority under Kyrgyz law. In 1999, the Parliament of Kyrgyzstan adopted laws "On Environmental Protection" and "On Wildlife" that regulate resource protection and use (T. Alykulov, Minister of Environmental Protection of Kyrgyzstan *in litt.* to Teiko Saito, Chief, DMA, July 7, 2000).

Trophy Fees and Their Distribution

In previous years' communications to the Service, Mr. C. Omurakunov of the Kyrgyz Central Administrative Board of Hunting and Hunting Supervision stated that implementation of an argali management program depended on revenues generated by sport hunting, and he provided a rough accounting of the total amount of revenue generated by sport hunting and amounts devoted to wildlife conservation and management (which includes activities for argali), for the years 1994–1997. Based on Mr. Omurakunov's comments, we concluded that population monitoring (surveys) and other activities would continue on an annual basis, largely as a result of funding derived from sport hunting. In 1999, Mr. Omurakunov (*in litt.* to the Service, January 26, 1999) indicated again that about 60% of hunting revenues are used for "hunting management, conservation and reproduction of wild animals," but provided no detail. In 2000, Mr. Alykulov (*in litt.* to the Service, July 7, 2000) stated that: "According to hunting guides conducting tours for foreign hunters, the greatest part of the funds received from hunters in 1999 was spent

on protection of hunting areas, biotechnical and propagation activities, and development of the hunting industry; 25% of the revenue from trophies is earmarked for a general fund of protection of nature and is spent on nature preservation measures and financial help for local residents; 10% of the revenue is transferred to organs of the Ministry of Environmental Protection of the Kyrgyz Republic to organize and carry out work on scientific/economic topics, selective censusing, and protection and reproduction of wild animals in the territory of the Kyrgyz Republic."

Argali Conservation Activities

Until recently, we had little information on specific information on specific uses of argali hunting fees for argali conservation activities in Kyrgyzstan. According to T. Alykulov, Minister of Environmental Protection of Kyrgyzstan (*in litt.* to Teiko Saito, Chief, DMA, July 7, 2000), ongoing management activities include: (1) year-round protection of Marco Polo argali habitat; (2) anti-poaching (ranger stations are equipped with radios and vehicles); and (3) wolf control.

Export Control

The exports of sport-hunted argali trophies from Kyrgyzstan are subject to multiple controls. Hunting licenses are issued, consistent with the quota, by the central government. Because Kyrgyzstan has not yet acceded to CITES, the CITES Management Authority of the Russian Federation serves as its Management Authority. This system has been verified with the CITES Secretariat as the currently accepted procedure for CITES-listed species originating from the former Soviet Republics that have not yet acceded to CITES on their own. A CITES re-export certificate is issued by the Russian CITES authorities. U.S. hunters must obtain an endangered species import permit, and must declare their trophy to wildlife inspectors upon entry to the United States. U.S. hunters are required to submit a report with details of their hunting experience, including location where the argali was hunted and length of horns, to the U.S. CITES Management Authority.

Mongolia

Legal Protection

The argali has been "state-protected" in Mongolia since 1953, and hunting has been banned since 1975, except for the hunting of a certain number of species "according to social need," which requires the approval of both the Ministry of Nature and Environment (MNE) and adopting of a government

resolution by the Council of Ministers (A. Bolat, Vice-Minister, MNE *in litt.* to Tim Van Norman, DMA, May 9, 2001). In recent years, the "Law of Hunting" of 1995 served as the basis for argali sheep conservation and hunting in Mongolia. The hunting law was amended in 2000 (A. Bolat, Vice-Minister, MNE *in litt.* to Tim Van Norman, DMA, May 9, 2001). Paragraph 3 of Article 8 of the hunting law authorizes the Government to establish the number of animals that may be hunted for "special purposes" based on proposals from the State Administrative Central Organizations. The law specifies various penalties for violating its provisions. A new "Law of Fauna" was also adopted in 2000. The Fauna Law lists argali as a "rare species" (however, we do not know the definition of "rare species" in the law).

Since 1971, hunting concessions operated by the tourism/hunting companies have been established in various areas for hunting of argali by foreign hunters. It appears the argali in government-sanctioned hunting areas are afforded greater protection than argali in other areas. For example, we understand that hunting concessionaires are responsible for enforcing the ban on hunting by locals. Also, the MNE informed us that, for 3 years beginning in 1998, there was to be a complete ban on hunting in certain areas of Hovd aimag, which lies in the range of the Altai argali in western Mongolia. This closure was reiterated in information received from the Government of Mongolia prior to the 1999 hunting season (Director General, Environmental Protection Agency, Mongolia *in litt.* to T. Van Norman, June 28, 1999), and in information received in May 2001 (A. Bolat, Vice-Minister, MNE *in litt.* to Tim Van Norman, DMA, May 9, 2001). In 1997, the MNE banned the export of "picked-up" horns (i.e., salvaged horns from sheep that died of causes other than sport hunting).

Trophy Fees and Their Distribution

In response to previous years' requests for information, the Mongolian Government has told us that revenues generated by sport hunting of argali are divided among the Government of Mongolia (70%), the province where the hunt occurs (20%), and the hunting organization (10%) (Director General, Environmental Protection Agency, Mongolia *in litt.* to T. Van Norman, DMA, June 28, 1999). The Government of Mongolia reportedly invests most of its funds into conservation and research programs for argali and other wildlife, however, until recently, the Government has not provided us with a detailed breakdown of how sport-hunting funds

are used specifically for argali conservation. In May 2001, Mr. A. Bolat, Vice-Minister, MNE (*in litt.* to Tim Van Norman, DMA, May 9, 2001) provided a table with some detail on how argali hunting fees have been used since 1993 (see following section).

Argali Conservation Activities

Until recently, we had little information on specific uses of argali hunting fees for argali conservation activities in Mongolia. We were aware that a portion of the revenue generated from one previous permit was specifically earmarked for a Gobi waterhole project for the benefit of argali (Frisina and Ulziima 1998), but other activities were mentioned in generalities. In May 2001, Mr. A. Bolat, Vice-Minister, MNE (*in litt.* to Tim Van Norman, DMA) provided a table indicating generally how argali hunting fees have been used since 1993 (see following section). Six activity categories are mentioned in the table: (1) Argali habitat and resource surveys; (2) survey of other rare animals; (3) anti-poaching and environmental protection activities; (4) argali habitat management activities (fire prevention, anti-desertification measures, fodder provision, etc.); (5) establishment, management, and protection of strictly protected areas; and (6) administration of the hunting program. By far the greatest percentage of funds went to establishment of the protected areas, followed by anti-poaching activities. According to Mr. A. Bolat, Vice-Minister, MNE (*in litt.* to Tim Van Norman, DMA, May 9, 2001), at present Mongolia has 607 state inspectors, 454 rangers, and 752 volunteer rangers for the purpose of stopping argali poaching.

Export Control

Exports of sport-hunted argali trophies from Mongolia are subject to multiple controls. The Council of Ministers of Mongolia establishes a quota for argali to be sport-hunted by foreign hunters. Hunting licenses are issued, consistent with the quota, by the Mongolian government, and hunting is limited to specific seasons. Mongolia acceded to CITES in 1996. To export a sport-hunted argali trophy from Mongolia, the hunter must obtain a CITES export permit. U.S. hunters must obtain an endangered species import permit, and must declare their trophy to wildlife inspectors upon entry to the United States. U.S. hunters are required to submit a report with details of their hunting experience, including location where the argali was hunted and length of horns, to the U.S. CITES Management Authority.

Tajikistan

Legal Protection

In mid-1999, Dr. A. Latifi, First Deputy Minister, Ministry of Nature Protection/ Conservation (in a written summary titled "Information on Marco Polo's Sheep Hunting Conducted with Participation of Foreign Tourists During the Hunting Season of 1998-1999"), told us that his Ministry is responsible for wildlife protection and use through the national law entitled "On Preservation of Wildlife" (Decree of the Supreme Soviet of the Republic of Tajikistan # 905a of December 27, 1993), the national law entitled "On Protection and Utilization of Wildlife" (Decree of the Supreme Soviet of the Republic of Tajikistan # 990 of July 20, 1994), and "Regulation of Hunting and Hunting Management in the Territory of the Republic of Tajikistan" (Decree of the Government of the Republic of Tajikistan #324 of July 16, 1997).

Trophy Fees and Their Distribution

Regarding trophy fees and their distribution within Tajikistan, Lushekina et al. (1994) stated that foreign hunters spent about US\$25,000 for an argali hunt in Tajikistan: \$16,000 for the hunting license, \$4,000 to firms in Moscow, Russia, who apparently assist in arranging the hunts, and \$5,000 to the local hunting outfitters. Of the \$16,000 license fee, 70% was allocated to the Executive Committee of the Murgab District Council and 30% to the local hunting firm, supposedly to be used for conducting surveys and for activities directly benefitting argali, such as supplemental feeding, maintenance of salt licks, predator control, and other measures. A portion of the Executive Committee funds (15%) went to the "local nature conservation committee in Khorog" (this appears to refer to the Regional Committee for Nature Protection under the Ministry of Nature Conservation).

In an undated letter (probably 1996), Dr. N. Safarov of the Ministry of Nature Conservation stated that agreements between the hunting firms and local authorities specify that 50-70% of hunting proceeds are allocated to the local budget, which is then distributed according to Decision #220-2s (December 26, 1992) of the Executive Committee of Gorno-Badakhshan. This Decision states that hunting fees should be distributed as follows: 50% to be used for game conservation activities, which would include anti-poaching efforts and other activities directed toward argali; 10% to be placed in a nature conservation fund; 15% to be allocated to the general treasury of

Tajikistan; and 25% to be used for "social development needs," which have been described as providing essential commodities such as coal, kerosene, and wheat flour.

In his October 26, 1998, letter to us, Dr. Safarov described the distribution of funds as follows: 50–70% of hunting proceeds are allocated to the local budget, of which 10% goes to the Fund of Nature Protection of the Republic, 40% is used for social development of the region, and 50% of the money is spent on patrolling the territory of hunting, salaries for inspectors, repair and purchase of vehicles, communication, fuel, inventory work, and wolf predator control. In his mid-1999 communication with us, Dr. A. Latifi repeated Safarov's description of funds distribution: 50–70% of the hunting proceeds are given to local authorities by the hunting firms, and those funds are distributed as follows: 10% to the "Republican Fund of Wildlife Preservation"; 40% for the social development of the region; and 50% spent exclusively for the protection of the territory of the entity (presumably meaning the hunting concession).

Argali Conservation Activities

Regarding argali conservation activities, both Lushekina et al. (1994) and Fedosenko (1996) stated that argali conservation activities were largely the responsibility of the hunting firms, since funding and other support (e.g., transportation) were lacking to support a government game management staff. Prior to 1995, under the supervision of the local Nature Conservation Committee, annual land leases to hunting firms required that the firms provide supplemental feedings to argali, conduct surveys, and control predators and poaching, but inspections revealed that these obligations were not met. However, in 1995, supervision of the hunting firms was transferred to the Regional Nature Conservation Committee (RNCC) by the Gorno-Badakhshan Regional Executive Committee, and there may be stricter control over the hunting firms to conclude their lease obligations, including the transfer of hunting proceeds to the Committee.

In his mid-1999 communication with us, Dr. A. Latifi stated that local authorities enter into agreements (contracts) with hunting firms, to which are allocated certain sectors where international hunting is conducted. The hunting firm is responsible for conducting various activities including conducting an annual accounting of the game population, fighting poaching, and conducting management activities. No

details were provided on specific conservation activities undertaken by the hunting firms, or how their compliance is monitored. In this same communication Dr. Latifi stated that a portion of funds allocated for regional social development is used primarily to support the functioning of "important objects," thus ensuring the interest of the local population and administration in the preservation of Marco Polo's sheep. Dr. Latifi further stated that funds spent on "protection of the territory" are used for salaries of inspection personnel, purchase and repair of vehicles, communications equipment, and predator control. Dr. Latifi also stated that in recent years, due to the difficult economic situation, no budget funds have been allocated for conducting wildlife protection activities; the money received from foreign hunters is the only source of financing wildlife protection in the Murgab region.

In his 1999 report, Dr. Fedosenko said that, according to unofficial sources, a foreign hunter spends about \$23,000 on an argali trophy hunt in Tajikistan: \$5,000 goes to a company in Moscow for arranging the reception in Moscow, providing transportation to the hunting area, and providing an interpreter, while \$18,000 is spent in Tajikistan. Of that \$18,000, \$10,000 goes to local authorities (referred to as the Regional Committee on Nature Conservation) and \$8,000 to the firm that organizes the hunting. From the \$10,000 given to local authorities, 10% goes to the republican budget, 30% to the regional budget, and 60% to the district budget (that is, directly to the local administration of the Murgab district where most of the hunting takes place). Fedosenko claimed that none of this money actually goes to argali conservation, except to pay the salaries of the Chairman of the Committee and his one employee (Fedosenko 1999; page 21).

As for illegal take (poaching), the Ministry of Nature Protection/Conservation has provided information on prohibitions and fines for illegal take, which for argali has now been increased to 4,000 times the minimum monthly wage (about US\$2.00). Based on previous documentation, we understand that fines increase (double or triple) if animals are taken in protected areas, and are even higher (tenfold) if protected species are illegally taken for commercial purposes. At least within the hunting concession lands, the hunting firms are responsible for enforcement of anti-poaching laws. According to Fedosenko (1996), MAK admitted that they did not impose fines because the poachers lacked the means

to pay, but they would confiscate a poacher's firearm. More recently, Fedosenko (1999) stated that, although firms are responsible for protecting their lands and carrying out surveys, in practice the lands for most of the firms are protected only during the period of trophy hunting, while workers only occasionally visit the areas during the rest of the year.

Civil Unrest

One of our concerns about the management and effective control of sport hunting and exports of argali trophies was related to the civil unrest in Tajikistan following the dissolution of the Soviet Union. Lushekina and Fedosenko (1994) indicated that, in 1993–1994, when their report was being written, opportunities for sport hunting by foreign hunters in Tajikistan were tenuous due to an unstable political environment and the threat of military activity in the Gorno-Badakhshan region. They also indicated that, at the time (and up until 1995), the bulk of hunting fees were directed to purchase of transportation, weapons, and equipment, with little directed to conservation activities in support of argali.

While reports of conflict between the central Tajik government and Muslim insurgents in Gorno-Badakhshan continued through 1996 (at least until the time we issued our Section 7 consultation on September 23, 1996), a United Nations-sponsored cease-fire was in effect. In early 1996, N. Safarov, Deputy Minister of the Tajik Ministry of Nature Conservation, and A. Lailibekov, Deputy Chairman of the Nature Conservation Committee of Gorno-Badakhshan (*in litt.* to the Service, February 16, 1996), reported to the Service that "the situation in Tajikistan has stabilized," but that it was "impossible to finance the conservation agencies and protect the wildlife without international hunting." Dr. Safarov (*in litt.* to the Service, October 26, 1998), stated that sport hunting continues to be a major source of funds for nature conservation in Tajikistan and again acknowledged the difficulties caused by the civil war in that country.

Despite these earlier events, U.S. and other hunters have continued to visit Tajikistan for argali sport hunting. The export of argali trophies has always remained under the control of the central government in Dushanbe and, ultimately, the Russian CITES Management Authority, since the argali is listed in Appendix II of CITES and Tajikistan is not yet a CITES Party with its own Management Authority.

Export Control

The exports of sport-hunted argali trophies from Tajikistan are subject to multiple controls. Hunting licenses are issued, consistent with the quota, by the central government in Dushanbe based on recommendations of the local nature conservation authorities. Hunting is limited to specific seasons, based on recommendations of the Tajik Academy of Sciences. To export a sport-hunted argali trophy from Tajikistan, the hunter must have his license marked by local authorities to verify that a trophy was legally taken. This validated license must then be submitted to the Tajik Ministry of Nature Conservation for the issuance of an export license and a Certificate of Authenticity, which is then submitted to the Russian CITES Management Authority in Moscow for a re-export certificate. Because Tajikistan has not yet acceded to CITES, the CITES Management Authority of the Russian Federation serves as its Management Authority. This system has been verified with the CITES Secretariat as the currently accepted procedure for CITES-listed species originating from the former Soviet Republics that have not yet acceded to CITES on their own. A CITES re-export certificate is issued by the Russian CITES authorities. U.S. hunters must obtain an endangered species import permit, and must declare their trophy to wildlife inspectors upon entry to the United States. U.S. hunters are required to submit a report with details of their hunting experience, including location where the argali was hunted and length of horns, to the U.S. CITES Management Authority.

Findings for Factor D

Existing regulatory mechanisms in Kyrgyzstan, Mongolia, and Tajikistan are adequate to ensure that illegally-hunted trophies cannot be readily exported to other countries, while existing regulatory mechanisms in the United States are adequate to ensure that illegally-hunted trophies cannot be readily imported. We do not consider this factor to threaten or endanger argali populations throughout all or a significant portion of the species' range in Kyrgyzstan, Mongolia, or Tajikistan.

E. Other Natural or Manmade Factors

Kyrgyzstan

Winter Weather

Luschekina and Fedosenko (1994) noted that a harsh winter (1992–1993) and cold Spring (1993) likely affected the survival of newborn argali lambs in their Kurumduk valley study area.

Border Barriers

We previously mentioned this issue under Factor A. Although the border barriers may have been beneficial to argali in the “border zone” (i.e., between the fences and the border), the barriers also may have had detrimental effects on argali populations by cutting off long-established seasonal migration routes and access to winter or summer pastures, and by affecting genetic exchange among local sub-populations. These effects may no longer be occurring in places where the border barriers have broken down.

Mongolia

Winter Weather

Harsh winter weather periodically takes a severe toll on argali populations in Mongolia. For example, according to Luschekina and Fedosenko (1994), a heavy snowfall killed most of the argali at a place called Khentei in 1831–1832. Hundreds of argali died in the winter of 1983–1984 in Kobdo Aimag, while another disastrous snowfall occurred in the Mongolian Altai in the winter of 1992–1993 (Luschekina and Fedosenko 1994).

Tajikistan

Winter Weather

Especially snowy and cold winters in 1985–1986 and 1987–1988 resulted in high mortality among argali in certain portions of Tajikistan (Fedosenko 1999).

Border Barriers

As in Kyrgyzstan, the border barriers may have had detrimental effects on argali populations of Tajikistan by cutting off long-established seasonal migration routes and access to winter or summer pastures, and by affecting genetic exchange among local sub-populations. These effects may no longer be occurring in places where the border barriers have broken down.

Findings for Factor E

Although severe weather can be a significant mortality factor for argali, we do not believe that this factor threatens or endangers argali populations throughout all or a significant portion of the species' range in Kyrgyzstan, Mongolia, or Tajikistan. We do not consider the border barriers to be a factor that threatens or endangers argali populations in those two countries.

Distinct Vertebrate Population Segment

The definition of “species” in section 3(15) of the Act includes “. . . any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.”

Distinct vertebrate population segments for purposes of listing under the Act are defined in the Service's February 7, 1996, Policy Regarding the Recognition of Distinct Vertebrate Population Segments (61 FR 4722). For a population to be listed under the Act as a distinct vertebrate population segment (DPS), three elements are considered: (1) The discreteness of the population segment in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs; and (3) the population segment's conservation status in relation to the Act's standards for listing (i.e., is the population segment, when treated as if it were a species, endangered or threatened?).

In accordance with the DPS Policy, a population segment may be considered discrete if it satisfies one of the following conditions: (1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors; (2) it is delimited by international boundaries within which differences in the control of exploitation, management of habitat, conservation status, or regulatory mechanisms are significant. In accordance with the DPS Policy, a population segment may be considered significant if, among other possibilities: (1) It is important to the persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; (2) there is evidence that loss of the discrete population segment would result in a significant gap in the range of a taxon; (3) there is evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or (4) there is evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

All three countries, Kyrgyzstan, Mongolia, and Tajikistan, satisfy the discreteness criterion because they are sovereign nations with defined international boundaries that have implemented national laws to control exploitation and conserve habitats. (Although the genetic distinctiveness of the several argali subspecies remains to be fully elucidated, the existing scientific literature generally recognizes morphological and geographic differences that define approximately eight subspecies. However, because the exact geographic boundaries of the subspecies cannot be delineated precisely, these boundaries are not

useful for defining distinct population segments.)

Kyrgyzstan has adopted laws "On Environmental Protection" and "On Wildlife" that regulate resource protection and use. In Mongolia, the argali has been "state-protected" since 1953, and hunting has been banned since 1975, except for the hunting of a certain number of species "according to social need," which requires the approval of both the Ministry of Nature and Environment and adoption of a government resolution by the Council of Ministers. In recent years, the "Law of Hunting" of 1995 served as the basis for argali sheep conservation and hunting in Mongolia; the hunting law was amended in 2000. A new "Law of Fauna" was also adopted in 2000. In Tajikistan, the Ministry of Nature Protection/Conservation is responsible for wildlife protection and use through the national law entitled "On Preservation of Wildlife" (Decree of the Supreme Soviet of the Republic of Tajikistan #905a of December 27, 1993), the national law entitled "On Protection and Utilization of Wildlife" (Decree of the Supreme Soviet of the Republic of Tajikistan #990 of July 20, 1994), and "Regulation of Hunting and Hunting Management in the Territory of the Republic of Tajikistan" (Decree of the Government of the Republic of Tajikistan #324 of July 16, 1997). Thus, all three countries have significant regulatory mechanisms that differ from each other, and from other countries within the range of the argali.

All three countries, Kyrgyzstan, Mongolia, and Tajikistan, also satisfy the significance criterion because there is evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon. Kyrgyzstan is generally recognized to have two argali subspecies, the Marco Polo argali (*O. a. polii*) and the Tien Shan argali (*O. a. karelini*). The Tien Shan argali is distributed across approximately the northern half of Kyrgyzstan in the Tien Shan Range west of Lake Issyk-Kul, whereas the Marco Polo argali is distributed across the Pamir Plateau of southeastern Kyrgyzstan. Loss of Kyrgyzstan's argali population would create a significant gap in the distribution of both subspecies, but especially the Tien Shan argali, which has the greatest portion of its geographic range within Kyrgyzstan.

Mongolia is also generally recognized to have two subspecies: Altai argali (*O. a. ammon*) and Gobi argali (*O. a. darwini*). Altai argali inhabit the high Altai Mountain region of western and southwestern Mongolia; along the main ridge of the Hangai Mountains in central

Mongolia; and in the mountains of north and northwest Mongolia. Gobi argali occur in the hills, rocky outcrops, and mountains across the whole of the Transaltai Gobi (the desert and semi-desert zones south of the Altai Range), portions of the Gobi Altai Mountains east almost to 112° E longitude, and also in several isolated ranges of hills in the steppe zone of central Mongolia. Loss of Mongolia's argali population would create a significant gap in the distribution of both subspecies, both of which have a significant portion of their range in Mongolia.

The argali in Tajikistan consists of only one subspecies, the Marco Polo argali, which occurs in the eastern Pamir Plateau, along the border with China. Although this subspecies also occurs on the Pamir Plateau of Kyrgyzstan, the eastern portion of the Wakhan Corridor of Afghanistan, northernmost Pakistan, and the Pamir region of China, its most significant populations are in Tajikistan, and loss of that country's argali population would create a significant gap in the distribution of the subspecies.

Because all three countries satisfy both the discreteness and significance criteria as defined above, we recognize the argali populations of Kyrgyzstan, Mongolia, and Tajikistan as three distinct vertebrate population segments for purposes of listing under the ESA. Accordingly, in previous sections, we have evaluated the conservation status of each country's argali population in relation to the Act's standards for listing (*i.e.*, is the population segment, when treated as if it were a species, endangered or threatened?). Our conclusion is that all three of these distinct population segments are properly listed as threatened.

Summary of Findings

In developing this notice, we carefully assessed the best available scientific and commercial information regarding the past, present, and future threats faced by argali in Kyrgyzstan, Mongolia, and Tajikistan. After reviewing the argali populations of Kyrgyzstan, Mongolia, and Tajikistan in terms of the Service's February 7, 1996, Policy Regarding the Recognition of Distinct Vertebrate Population Segments, we have concluded that all three populations are distinct vertebrate population segments for purposes of listing under the ESA. Criteria for reclassification of a threatened or endangered species are found in 50 CFR 424.11(c). Available information indicates that the argali is not endangered under any of the five listing factors throughout all or a significant portion of its range in

Kyrgyzstan, Mongolia, or Tajikistan. Available information further indicates that the argali remains threatened in all three countries by Factor A, The present or threatened destruction, modification, or curtailment of its habitat or range and Factor B, Previous or current overutilization. Based upon the findings documented in this notice, we are hereby withdrawing the proposed rule published on April 27, 1993, at 58 FR 25595, that proposed to reclassify the argali in Kyrgyzstan, Mongolia, and Tajikistan from threatened to endangered.

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