CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Eighteenth meeting of the Conference of the Parties
Colombo (Sri Lanka), 23 May – 3 June 2019

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Tajikistan proposes the transfer of its population of Heptner's or Bukhara markhor, *Capra falconeri heptneri*, from Appendix I to Appendix II in accordance with a precautionary measure specified in Annex 4 of Resolution Conf. 9.24 (Rev. CoP16).

Specification of the criteria in Annex 2, Resolution Conf. 9.24 (Rev. CoP16) that are satisfied

Criterion B of Annex 2a applies, namely "It is known, or can be inferred or projected, that regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences".

The applicability of this criterion is further substantiated in Section C below.

Furthermore, criteria A and B of Annex 2b apply, namely:

1. "The specimens of the species in the form in which they are traded resemble specimens of a species included in Appendix II so that enforcement officers who encounter specimens of CITES-listed species are unlikely to be able to distinguish between them"; and
2. "There are compelling reasons other than those given in criterion A above to ensure that effective control of trade in currently listed species is achieved."

As further detailed in Section C, point 9 below, there may be difficulty in distinguishing between products of Heptner's markhor (e.g. mounted trophies) and those of other Markhor subspecies which are listed in Appendix I. While this may be a consideration, it is not seen to be the most important reason for transferring Heptner's markhor to Appendix II.

The additional compelling reasons for allowing trade, subject to effective controls are:

1. Stakeholder consultation in Tajikistan showed broad consensus that opportunities for international trade in Heptner's markhor will increase the economic value of the subspecies, which in turn will increase the size and range of the species within the species historical range.

2. Such trade, however, will need to be carefully controlled and monitored to ensure that it is sustainable and does not have any unanticipated, deleterious consequences.

These points are further substantiated in Section C.

Specification of the criteria in Annex 1, Resolution Conf. 9.24 (Rev. CoP16) that are no longer satisfied

The Heptner's markhor population is not currently considered to be threatened with extinction and it meets none of the criteria listed in Annex 1. All subspecies of markhor were downlisted from "endangered" to "near threatened" by the 2015 revisions to the IUCN *Red List*. (Michel, S. & Rosen Michel, T. 2015)

Although the wild population is still comparatively small (there were no less than 1,901 individuals in February 2017), at the end of the 1990s there were probably less than 350 Bukharan or Heptner's markhor in Tajikistan; a survey in 2012 revealed that numbers were much higher, with more than 1,000 (1018) markhor directly counted by the observers (Michel et 2014). In 2014 (Alidodov et al. 2014) in a similar survey, 1,300 animals were observed, and during a partial survey in 2016 (Academy of Sciences of the Republic of Tajikistan. 2016) in key areas alone, close to 1,450 markhor were counted. In February and March 2017, another survey was carried out and directly observed 1,901 markhor in an area of 525 km^2 representing about 50% of the presumed species range in the country (about 1177 km^2) (IUCN SSC/CSG 2017). From 1st to 23rd March 2018 another survey was carried out in the same area of the 2017 survey by biologists of different institutions of the Government of Tajikistan and directly observed 2,648 Markhor (Muratov 2018 unpub.) There are no records of major population declines since the 2000s.

Specification of the measure in Annex 4, Resolution Conf. 9.24 (Rev. CoP16) that is proposed for implementation

The measure proposed for implementation is A. 2. a) iii) of Annex 4, namely: "an integral part of the amendment proposal is an export quota or other special measure approved by the Conference of the Parties, based on management measures described in the supporting statement of the amendment proposal, provided that effective enforcement controls are in place". Thus, conditional to the transfer of Heptner's markhor from Appendix I to Appendix II, Tajikistan will implement a combination of active adaptive harvest management and management strategy evaluation to set a hunting quota for Heptner's markhor, subject to the provisions of paragraph B of Annex 4.

As elaborated further in Section C, national legislation is in place to provide for effective enforcement controls and enable adequate monitoring of the impacts of the hunting quota.

B. Proponent

Tajikistan*:

C. Supporting statement

1. Taxonomy

1.1 Class: Mammalia

1.2 Order: Cetartiodactyla

1.3 Family: Bovidae

1.4 Genus, species or subspecies, including author and year: *Capra falconeri heptneri* (Zalkin, 1945)

Three subspecies are recognized (Grubb 2005): *C. f. falconeri (*Wagner, 1839), *C. f. heptneri* (Zalkin, 1945), and *C. f. megaceros* (Hutton, 1842).

Other sources have recognized *C. f. jerdoni* (Hume, 1875) and *C. f. cashmiriensis* (Lydekker, 1898). Schaller and Khan (1975) considered the former Astor Markhor (*C. f. falconeri*) and Kashmir Markhor (*C. f cashmiriensis*) to be one subspecies, the Flare-horned Markhor (*C. f. falconeri*) and Kabul Markhor (*C. f. megaceros*) and Sulaiman Markhor (*C. f. jerdoni*) to be one subspecies, the Straight-horned Markhor (*C. f. megaceros*).

1.5 Scientific synonyms: Aegoceros falconeri (Wagner, 1839)

1.6 Common names: English: Heptner's or Bukhara (Bokhara) or Tajik markhor
French: Markhor de Bokhara
Spanish: Marjor de Bujara

* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

1.7 Code numbers:

2. Overview

All subspecies and populations of *Capra falconeri* were transferred from Appendix II to Appendix I of CITES at the 8th meeting of the Conference of the Parties (Kyoto 1992). The proposal (CITES CoP 8, 1992) was presented by a Non-Range Country, the United Kingdom of Great Britain and Northern Ireland, and was based on scarce and sparse information. No comprehensive survey was available. At that time CITES had not yet approved specific criteria for the inclusion of species in Appendix I and II of Resolution Conf. 9.24. At the 10th meeting of the Conference of Parties to CITES (Harare, 1997) a resolution (Conf. 10.15) was adopted allowing for an annual export quota of six Markhor sport-hunted trophies from Pakistan's community-based hunting management areas, in recognition of the fact that the population was increasing due to the benefits that some rural communities were accruing from sport tourism hunting. This annual export quota was increased to 12 specimens at the 14th meeting of the Conference of the Parties (Bangkok 2002) to further encourage community-based conservation (Resolution Conf. 10.15 (Rev. CoP 14)).

Accounts on how the recovery of the markhor in Tajikistan begun are given by Michel S.et al. (2015) Michel, S. & Rosen Michel, T. (2015). Michel, S. (2017) : *"Building on the Pakistan's experience, around 2004, several traditional local hunters, concerned that the Markhor population would go extinct due to widespread poaching, established small enterprises dedicated to Markhor conservation and future sustainable use. Tajikistan initiated in 2008 a project "The Mountain Ungulate project" a joint initiative of 6 community-based conservancies. Main international partners were: GIZ Regional Programme Sustainable Use of Nature Resources in Central Asia (Germany), Zoological Society for the Conservation of Species and Populations ZGAP (Germany), Panthera (USA) and the Tajik NGO Nature Protection Team. Former poachers were involved in a conservation project in the vague hope that future legal hunting opportunities would lead to income from hunting and nature tourism. These people agreed not to poach, to protect wildlife, and to rehabilitate the game population. Tajikistan's government agencies in charge of wildlife assigned to these groups their traditional hunting grounds as game management areas. With the project's help and encouragement, several groups emerged and registered as legal entities, usually as non-commercial non-government organizations (NGOs).*

The founders of these small businesses and their staffs were mostly informal hunters in the past. One of them once admitted that he had killed "hundreds" of markhor and never came back from the mountains empty-handed. These people know exactly how poachers access the areas and kill markhor, and they know how to prevent it. They also have a strong connection to "their" animals and they are excellent game scouts.

Regular wildlife surveys in the newly established community-based game management areas soon began to show increases in and stabilization of the populations of mountain ungulates–Asiatic ibex, Marco Polo sheep, and markhor. Now these areas host more than 2,000 ibex, 500 Marco Polo sheep, and about 2,000 Heptner's markhor"

In the 2013-14 season, the government by special decree issued the first hunting quota of Heptner's markhor in Tajikistan. Since then, the government, by annual decrees, has issued quotas of six or seven markhor per season.

In 2014 during the 12th meeting of the Conference of the Parties to the Convention on Biological Diversity (Pyeongchang, Republic of Korea*)* the Tajikistan Mountain Ungulate Project was awarded the prestigious Markhor Award by the International Council for Game and Wildlife Conservation (CIC) in recognition of its outstanding conservation performance that link the conservation of biodiversity and human livelihoods through the application of the Addis Abeba Principles on Sustainable Use, in particular hunting, as part of wildlife and ecosystem management.(CIC Magazine 2014/3)

In 2015, the global status of *Capra falconeri* was assessed by IUCN (Michel, S. & Rosen Michel, T. 2015) downgrading it from Endangered to Near Threatened with the following justification:" *This species is assessed as Near Threatened: it nearly qualifies as Vulnerable under criterion C2a(i) as there are less than 10,000 mature individuals (estimated 5,808, based on our analysis of data from 2011-2013) and each subpopulation, except one, has less than 1,000 mature individuals. The largest subpopulation had an estimated 1,697 mature individuals in 2011. There is no observed, estimated, projected or inferred continuing decline of the total population. However, stable and increasing subpopulations are restricted to areas with sustainable hunting management and protected areas. Were these conservation activities to cease in the future, poaching would likely increase, possibly changing positive trajectories in these areas downward, and the species would then qualify as Vulnerable.*

The previous (2008) assessment of Endangered appears erroneous. The data available would have qualified the taxon for the category Vulnerable based on criterion C with <10,000 mature individuals, because the most recent estimates cited by Valdez (2008) ranged from 5,080 to 5,630 (mean 5,355) individuals, of which 60% or 3,213 would have been mature animals. Further, there had been an inferred continuous decline (C1), and in the largest subpopulation in the Torghar Hills there were an estimated 1,600 individuals, of which 960 (60%) would be assumed to be mature, just meeting the threshold of criterion C2a(i) for the category Vulnerable.

The reason for the change from category Vulnerable (the corrected 2008 assessment) to Near Threatened is Genuine (recent, since assessments 1994, 1996 and 2008). Available data show that the earlier population decline had ceased for more than five years due to effective conservation measures. This has led to the stabilization of key subpopulations and increase in parts of the species range. Since 2002, the largest subpopulation has been estimated at >1,000 mature individuals for a number of years. Thus, criteria C1 and C2a(i) for Vulnerable have not been met for five or more years. (The IUCN Red List of Threatened Species: Capra falconeri – published in 2015. 1 http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T3787A82028427.en)

Since the publication of the IUCN Red List assessment the population of Heptner's markhor in Tajikistan has continued to increase as reported under point A above and under point 4.2 below.

3. Species characteristics

3.1 Distribution

The geographic range of *Capra falconeri* includes Tajikistan, northeastern Afghanistan, southwestern Turkmenistan, northern India, northern and central Pakistan and southern Uzbekistan (Grubb 2005).

In Tajikistan the Heptner's markhor (*Capra falconeri heptneri*) is found in three different population (a fourth one is possibly extinct) as shown in Map 1.

The species primarily inhabits an area of approximately 118,000 hectares in southern Tajikistan, from the Kushvariston range in the south-west through the eastern slope of the Hazratishoh range and the eastern slope of the southwestern edge of the Darvaz range. This area is bordered by the Pyanj River, which marks Tajikistan's boundary with Afghanistan. The elevation ranges up to 4,500 meters (2.8 miles) (Alidodov et al. 2012; Michel et al. 2015; Damn & Franco, 2014, Michel, S. & Rosen Michel, T. 2015). All the surveys since the second half of the 2000's were carried out in portions of this area.

This markhor's range in southern Tajikistan includes the Dashtijum Strict Reserve (of approximately 20,000 ha) and Dashtijum Reserve (of approximately 53,000 ha). Under Tajik law, all uses of natural resources are prohibited in the Strict Reserve, but regulated uses are allowed in the Reserve. (Michel et al. 2014; Maskaev 2014 and 2015.) These protected areas are managed by Government agencies. (Maskaev 2014.)

Private conservancies surround the reserves and expand the protected habitat available for the markhor and other species. A growing network of conservancies is increasing genetic exchange between sub-populations of game species, and migration corridors are increasingly secured." For instance, in the markhor areas the conservancy 'Muhofiz' together with neighboring areas formally assigned or informally managed by other local groups and families and the strict nature reserve now form a contiguous area, including almost the entire range of markhor in Tajikistan. A conservancy is a non-governmental organization overseeing conservation and protection of wildlife and its habitat in a specific area. (Michel et al. 2015.)

The markhor is legally protected as listed in Tajikistan's Red Book. Hunting markhor without a license is punishable by five years' imprisonment or a fine, and compensation in the amount of 160,000 somoni. However, the Government may allow hunting of protected wildlife by decree. (Maskaev 2014 and 2015; Michel et al. 2015.)

3.2 Habitat

Capra falconeri is adapted to mountainous terrain with steep cliffs, between 600 and 3,600 m elevation. The species is typically found in areas with open woodlands, scrublands and light forests. In Pakistan and India these are made up primarily of oaks (e.g. *Quercus ilex*), pines (e.g. *Pinus gerardiana*),

junipers (e.g. *Juniperus macropoda*) and Deodar Cedar (*Cedrus deodora*) as well as spruce (*Picea smithiana)* and fir (*Abies spectabilis, A. pindrow*) in certain areas. In Tajikistan the vegetation in the lower parts consists of open woodland and shrub communities with Pistachio (*Pistacia vera*), Redbud (*Cercis griffithii*) and Almond (Amygdalus bucharica); with increasing elevation juniper trees (*Juniperus seravschanica*), (*J. semiglobosa*), mixed with shrubs of maple (*Acer regelii, A. turkestanicum*), rose (Rosa kokanica), honeysuckle (*Lonicera nummulariifolia*) and Cotoneaster spp.

3.3 Biological characteristics

Markhor rarely use the high mountain zone above the tree line. Markhor are diurnal, but most active in the early morning and late afternoon. They alternate seasonally between grazing (summer) and browsing (winter), eating grasses and leaves. Females gestate for 135-170 days and give birth typically to 1-2 kids. The animals are sexually mature at 18-30 months, and live up to 12-13 years. Markhor are a potential prey of the snow leopard (Panthera uncia), leopard (Panthera pardus) lynx (Lynx lynx isabellinus), brown bear (Ursus arctos isabellinus), wolf (Canis lupus), jackal (Canis aureus) and golden eagle (Aquila chrysaetos).

3.4 Morphological characteristics

Markhor are sturdy, sexually dimorphic animals with relatively short and thick legs, and broad hooves. Depending on the subspecies, male markhor weigh between 70 and 110 kg (155 and 242 lbs.), and females between 32 and 50 kg (70 and 110 lbs.). The races from the south and west usually tip the scale at the lighter end, with those from the northeastern ranges being the heaviest. The considerable clinal variation in body size, between the northern Himalayan population and those inhabiting hotter and drier mountain ranges to the south and west, was highlighted by Schaller (1977). Mass, length and height measurements are approximate, since a series of measurements based on agreed protocols are lacking. Male “Heptner’s” markhor have a reddish-grey coat with a dark brown or grey dorsal stripe. They have a short mane and full dark beard. Females are much smaller than males, weighing 90-100 pounds on average. Their colouring is more even than the males’. They do not have manes and their beards and horns are short. Both males and females have whitish hair on their bellies and legs below the fetlocks, and black tails. (Damn & Franco, 2014)

3.5 Role of the species in its ecosystem

In undisturbed habitat, markhor are largely diurnal, and most active in the early morning and late afternoon hours. In winter they feed intermittently throughout the day (Roberts 1977). Food preferences change with season and availability; they browse as well as graze. When the ground is covered with snow markhor eat leaves, twigs, and shrubs, but in summer they feed primarily on forbs and grasses (Aleem 1976; Schaller 1977). Occasionally they climb trees like oak (*Quercus spp.),* pine (*Pinus ssp.)* and juniper (*Juniperus ssp.)* to browse (Schaller 1977). An Appendix II listing with the proposed hunting quota will not affect this role.

4. Status and trends

4.1 Habitat trends

The area of available habitat has increased as a result of the increase in the number of privately-owned and community-based subpopulations.

4.2 Population size, structure and trends

Population surveys by the Government of Tajikistan, together with rangers of game management areas as well as independent scientists and NGOs, revealed that during the last few years markhor numbers have reached historic heights. At the end of the 1990s there were probably less than 350 Bukharan or Heptner’s markhor in Tajikistan; a survey in 2012 revealed that numbers were much higher, with more than 1,000 (1018) markhor directly counted by the observers (Michel et 2014). In 2014 (Alidodov et al. 2014) in a similar survey, 1,300 animals were observed, and during a partial survey in 2016 (Academy of Sciences of the Republic of Tajikistan. 2016) in key areas alone, close to 1,450 markhor were counted. In February and March 2017, another survey was carried out by the Department on State Control for Protection of Fauna and Flora Fauna of the Committee for Environmental Protection under the Government of Tajikistan, the Institute of Zoology and Parasitology of the Academy of Sciences, the Pamir Biological Institute of the Academy of Sciences, the Forest Agency under the Government of

the Republic of Tajikistan, the Institute of Forestry. Experts from the IUCN SSC Caprinae Specialist Group), the Wild Sheep Foundation and Panthera, participated as international, independent observers (IUCN SSC/CSG 2017). The survey covered those areas of the markhor range in the country known to harbor most of the wild goats (Figure 1). The surveyors, after assessing and removing all possible repeated observations of the same animals, directly observed 1,901 markhor in an area of 525 km^2 representing about 50% of the known species range in the country (about 1177 km^2). Among the recorded markhor, 332 were adult males above 3 years of age and 81 of them were old males eight or more years of age that would qualify as huntable (Table 1). In 2017 a total 275 markhor herds have been registered in the survey area. Hence, the average markhor group size was 6.9 (SD: ± 6.1). See figure 2 from IUCN SSC/CSG 2017.

From 1st to 23rd March 2018 another survey was carried out in the same area of the 2017 survey by biologists of different institutions of the Government of Tajikistan and directly observed 2,648 Markhor (Muratov 2018 unpub.) The survey was carried out following the "Guidelines for monitoring the state of wild ungulate population in Tajikistan", approved by technical-scientific council committee for Environmental Protection. Excluding possible double counting 2648 markhor were directly observed in a 552 km^2 area with the following gender/age composition: 816 youngs, 384 yearlings, 662 females, 230 subadult males (2-3 years old), 278 adult males (older than 3 years), 195 old males (older than 8 years) and 83 unidentified animals (Muratov 2018 unpublished).

It has to be considered that all the counts register the number of animals directly observed, thus the population is likely to be larger.

Therefore, the population is much better known and in much larger numbers than at the time that the proposal for transferring the species to Appendix I was approved in 1992. That proposal relied almost exclusively on the data included in Borodin, A.M. 1985. Red Data Book of the USSR.

4.3 Geographic trends

Populations in Southern Tajikistan are believed to have expanded or maybe recolonized areas of former occupancy.

5. Threats

Threats include illegal hunting, habitat degradation, competition with livestock and disease transmission. (Michel, S. & Rosen Michel, T. 2015)

In the past, prolonged uncontrolled hunting decimated the population that is recovering thanks to community-based conservation programs supported by funds generated through sustainable tourism hunting.

Due to civil unrest in neighboring Afghanistan, intruders from this country are reported to conduct poaching activities in border areas. (IUCN SSC/CSG 2017)

In some areas, habitat quality is affected by intensive livestock grazing, with goats being the predominant species, combined with intensive harvest of shrubs, including the important forage species redbud (*Cercis griffithii*). Pasturing and domestic livestock can negatively influence markhor populations. (IUCN SSC/CSG 2017)

Share of the same habitat by markhor and domestic livestock increases the ability of disease transmission. 64 markhor died in 2010 because of Mycoplasma-pneumonia outbreak. Ostrowski et al. (2011) conclude that in all probability, domestic goats were the source of the infection. The infectious agent can be present in domestic goat herds without clinical symptoms and no effective vaccination exists for preventing this latent presence and transmission risk. The small enterprise managing the markhor conservancy implemented monitoring and preventive activities in the Siyorish area in 2010, financed by GIZ, and in 2011, financed by the Los Angeles Zoological Society. No further mass mortality was recorded and during a survey in February/March 2012 a total of 236 markhor were observed in the area. Minimizing the risk of disease transmission is a big challenge for Tajik agriculture authorities and veterinarians as well as conservancy managers. (IUCN SSC/CSG 2017)

6. Utilization and trade

6.1 National utilization

Tajikistan has a legal framework in place and the enforcement measures to manage trophy hunting of *Capra falconeri heptneri* and ensure that potential illegal activities are prevented. The markhor is listed in the Red Book of Tajikistan and thus legally protected.

The offtake from sport-hunted animals is reported in the following table:

Year (season)	Allocated licenses	Used licenses
2014-2015	6	6
2015-2016	7	6
2016-2017	7	7
2017-2018	12	12
2018-2019	12	11

6.2 Legal trade

In the CITES Trade database the following trade in hunting trophies was reported by the importing countries:

Year	App.	Taxon	Importer	Exporter	Imp reported quantity	Term	Purpose	Source
2014	I	Capra falconeri	MX	TJ	1	trophies	H	W
2015	I	Capra falconeri	DE	TJ	2	trophies	H	W
2016	I	Capra falconeri	AT	TJ	1	trophies	H	W
2016	I	Capra falconeri	DE	TJ	1	trophies	H	W
2016	I	Capra falconeri	US	TJ	3	trophies	H	W
2017	I	Capra falconeri	DE	TJ	2	trophies	H	W

6.3 Parts and derivatives in trade

The skull, horns and skin are normally forming a trophy.

6.4 Illegal trade

Rangers from community conservancies are instrumental in combatting poaching. The challenges these communities face to conserve the markhor are still quite daunting. Such challenges include navigating a terrain that in some areas is still littered with land mines and negotiating encounters with armed intruders from Afghanistan, who may be mining gold or smuggling drugs while poaching the wildlife.

And yet rangers from these communities risk their lives to protect these animals because they know that if they can sustain healthy populations of markhor, they can eventually see the rewards through some limited sustainable use of the species. And we are not just talking about financial rewards, but also about the deserved recognition that these local communities would like to achieve for conserving species that the world cares about. In a country like Tajikistan, one of the poorest in the world and dependent on development funding, local people stand out and show that they can take care of their wildlife. (Rosen, T. 2014)

6.5 Actual or potential trade impacts

Regulated trophy hunting on markhor in Tajikistan since 2014 has not have had any direct negative impact on the markhor population size. (Michel, S. & Rosen Michel, T. 2015, and IUCN SSC/CSG 2017) Current numbers and population structure show that in the areas for which the Academy of Sciences had recommended the allocation of quotas since 2014, numbers and population structure, including the recorded presence of trophy age males, indicate that the hunts not only did not have any detrimental

influence on the conservation of the species, but actually were highly supportive to the active conservation management.

This concerns the conservancies of LLC M-Sayod, LLC Saidi Tagnob and LLC Morkhur. Talks with rangers of these entities and with local community members as well as observations in the respective villages suggest that these entities invest substantial shares of the income earned from the hunts into conservation activities, like anti-poaching, continuous surveillance of their areas and the wildlife, and into community development and support, for instance the construction of pipes and tanks for clean drinking water, the expansion of streets, scholarships for students and materials for farming.

7. Legal instruments

7.1 National

Tajikistan has a legal framework in place and the enforcement measures to manage trophy hunting of *Capra falconeri heptneri* and ensure that potential illegal activities are prevented. The markhor is listed in the Red Book of Tajikistan and thus legally protected. According to the law of the Republic of Tajikistan "On the animal world" the Government of the Republic of Tajikistan can allow in exceptional cases the use of a limited number of protected animals for scientific and other purposes. The quotas are set yearly through a Decree by the Government of the Republic of Tajikistan based on a proposal by the Committee for Environmental Protection under the Government of the Republic of Tajikistan and in consultation with the Academy of Sciences of the Republic of Tajikistan.

7.2 International

Apart from CITES-listing there are no international instruments in place.

8. Species management

8.1 Management measures

Tajikistan manages tourism hunting of markhor through a quota system. The allocation of quotas is done by the Scientific Authority, the Academy of Sciences of Tajikistan based on the following methodology

1. If in an assigned conservancy during two consecutive surveys at least 100 markhor with a minimum of 5 trophy age males have been recorded permits could be issued;

2. The number of permits should not exceed 1% of the population number and 20% of the number of males of at least 8 years age recorded during the most recent survey;

The size and age of animals taken as well as hunting effort and success rate would have to be recorded and if the trend shows a decline in age, trophy size and/or hunting success the criteria would have to be adapted.

This quota is specific for a given season and any decision on hunting quota for future seasons will be made on the basis of available scientific information about population numbers, trends and existing threats. Thus, Tajikistan implements an adaptive management approach on the definition of quota for the legal harvest of markhor and other wildlife. The quotas for tourism sport hunting on Capra falconeri heptneri were allocated as follows: 2014-2015=6 old males, 2015-2016=7 old males, 2016-2017=7 old males, 2017-2018=12 old males.

8.2 Population monitoring

Regular surveys are conducted on a yearly basis since 2008 by national and international professional biologists, including collaborators from the Academy of Sciences of Tajikistan, Forestry Agency, University, IUCN, WWF and Panthera.

8.3 Control measures

8.3.1 International

Capra falconeri is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Apart from CITES-listing no additional measures are required at present.

8.3.2 Domestic

See section 7.1

8.4 Captive breeding and artificial propagation

Markhor specimen are kept in captivity in several zoos although readily accessible data on the total population in captivity is not easy to obtain.

8.5 Habitat conservation

Income generated from hunting is driving conservation actions aimed also at implementing habitat conservation through for example the reduction or improved husbandry of domestic livestock.

8.6 Safeguards

The most significant reduction of illegal activities, in particular poaching and fuel wood cutting, were achieved by local community members, patrolling the areas, building informant networks and actively protecting markhor and their habitats. Many of the wardens of the conservancies were previously involved in traditional illegal markhor hunting, refrain now from this activity and prevent poaching by others. Transboundary collaboration between conservancies in Tajikistan and local people in neighbouring villages in Afghanistan has started and is a promising tool for reducing incidents of cross-border poaching. These approaches remain the most effective, as legal protection alone is insufficient to preserve the species. Increasing numbers of markhor and reduced escape distances as well as increasing presence of snow leopard in suitable parts of the markhor range (the highest snow leopard densities have been recorded in one of the markhor conservancies) are indicators of successful protection work in the conservancies.

9. Information on similar species

Horn twist and flare have been considered as the main distinguishing feature and principal means to describe the markhor subspecies, notwithstanding that horn shape variations with different degrees of twist and flare have been observed within the described types (Damn & Franco 2014)

Schaller and Khan (1975) combined Kashmir (C. f. cashmiriensis) and Astore (C. f. falconeri) markhor phenotypes as flare-horned markhor (C. f. falconeri) and Kabul (C. f. megaceros) and Suleiman (C. f. jerdoni) as straight-horned markhor (C. f. megaceros). Wilson and Reeder (2005) recognize the flare- horned markhor (C. f. falconeri, incl. cashmiriensis), the straight-horned markhor (C. f. megaceros incl. jerdoni) and the Heptner's, Bukharan or Tajik Markhor (C. f. heptneri, incl. ognevi).

Schaller & Khan (1975) and Schaller (1977) argued that a good argument could be advanced for reducing these t subspecies to one monotypic species and even include C. f. heptneri since all markhor types apparently represent a cline. The smallest animals with the shortest ruffs and straightest and most twisted horns are in the south, and the largest types sporting the longest ruffs and most flaring and open-spiraling horns occur farthest north. Schaller noted that it is not surprising that intermediate forms exist, since the distribution ranges probably touched historically. However, even then some local markhor populations were often isolated, and it is therefore surprising, not that variation exists, but that there is so little of it (Schaller 1977).

10. Consultations

This proposal refers exclusively to the Tajikistan population of the Heptner's markhor Capra falconeri heptneri. In any case, on 21 December 2018 the CITES Management Authorities of other Range states of the subspecies, namely Afghanistan and Uzbekistan were consulted. The CITES Management Authorities of India and Pakistan, Range States of other Capra falconeri subspecies were also consulted on 21 December 2018.

Nevertheless, Range States will have the opportunity to react and comment on this proposal after its submission and its communication to all CITES Parties by the Secretariat.

11. Additional remarks

Management of markhor is implemented by local organizations, established as family-based small enterprises of local people and non-governmental organizations established by the local communities. These organizations are in charge of assigned areas in which they implement protection and other activities as described in their respective bylaws and contracts. Furthermore, a part of the markhor habitat is located in the Strict Nature Reserve Dashtijum and thus protected. In this area no economic activities and no hunting is allowed. Further parts of this area are protected as a reserve with regulated nature resource use, managed jointly by the Forest Enterprise Dashtijum and the mentioned local organizations. The wildlife management areas are managed by local people and the strict reserve and the forest enterprise employ local people.as rangers and other staff. All organizations, including the Strict Nature Reserve Dashtijwn and the Forest Enterprise Dashtijum annually report on the state of the environment nature in the areas they are in charge of; the nature protection activities; and the violation of laws and regulations and other incidents. The local organizations as well as the strict reserve and the forest enterprise have rangers effectively engaging in anti-poaching activities. During the last years effective protection has helped to increase the markhor population as reflected in the surveys since 2012. The permit fee for markhor is approximately 41,000 USD. The permit fees for international hunting are used in accordance with Articles 19 and 20 of the law of the Republic of Tajikistan "On environmental protection" for natural protection and measures for improving the environment. These funds are distributed to the Local Nature Protection Fund at the district level (60%), to the Regional Nature Protection Fund at regional level (20%) and to the Republican Nature Protection Fund (20%). The funds of the Local Nature Protection Funds are used in particular for the improvement of the living conditions in the villages close to the habitats of the animals that are hunted. Beyond the funds spent from the permit fees at local level, the local wildlife management organizations have committed themselves to spend 30% of their revenues from the markhor hunts for the financing of activities for the development of the social-economic conditions in the villages where the hunts take place. These activities are implemented in close cooperation with the local administration and the representative bodies at the village level, to make sure that priority needs are met and activities are carried out according to established standards. (Baldus & Michel 2011, Fischer et al 2014, Michel et al, 2015.)

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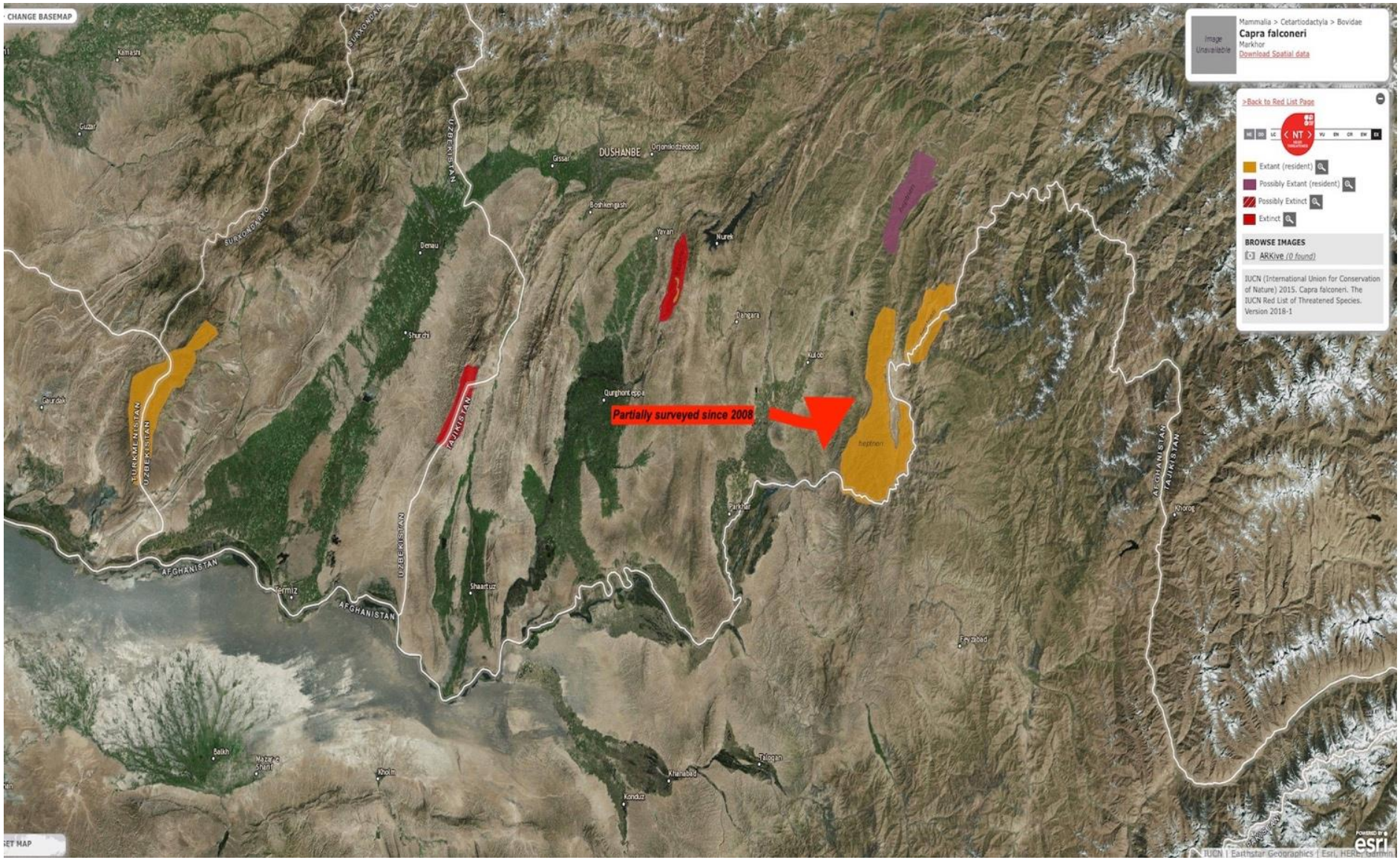
Annex 1 Maps, Tables and Figures.



Map 1 Distribution of Capra falconeri heptneri in Tajikistan (source Michel, S. & Rosen Michel, T. 2015)

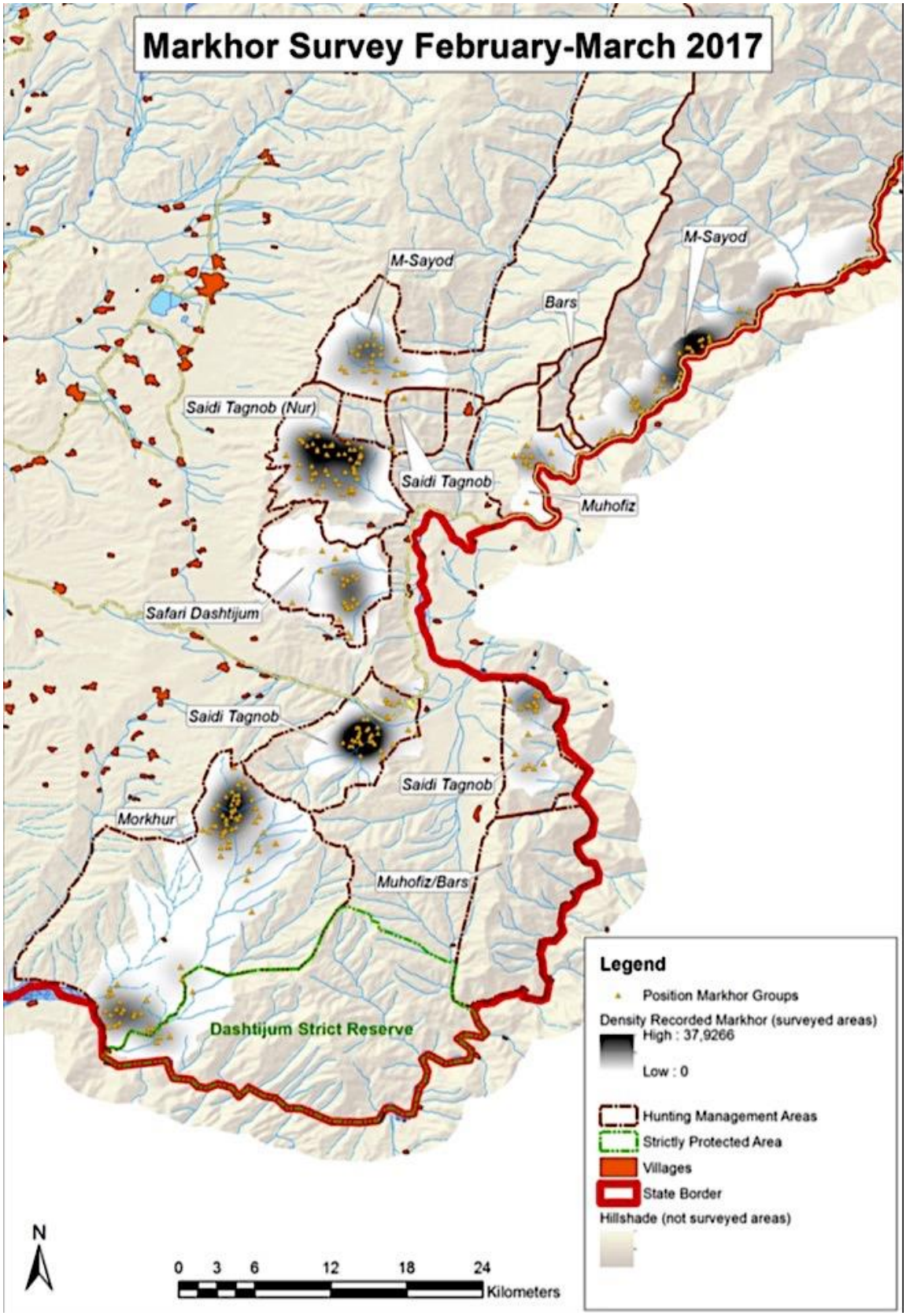


Figure 1: Density map of Heptner's markhor in the 2017 surveyed areas (Source: IUCN/SSC Caprinae Specialist Group)

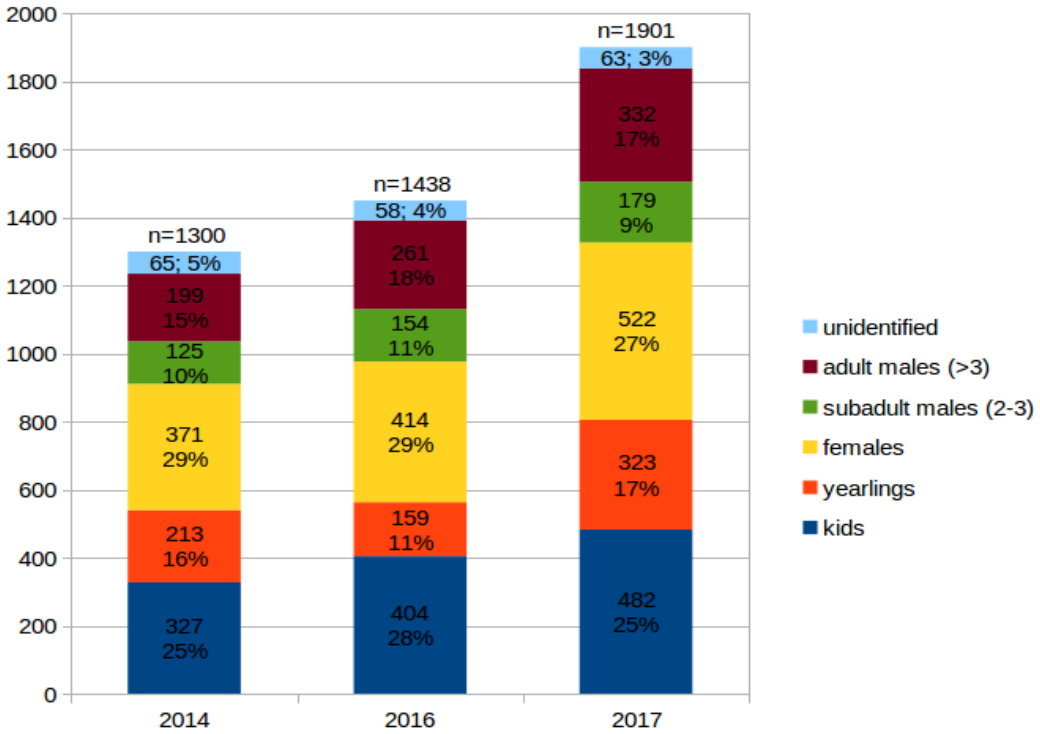


Table 1: Estimates, trends population structure of Heptner's markhor in Tajikistan 2014-2017 (Source: IUCN/SSC Caprinae Specialist Group)

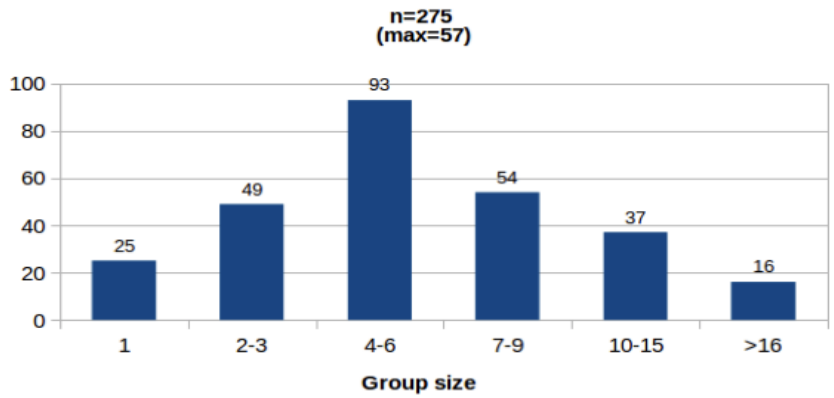


Figure 2: Distribution of group sizes for all markhor herds in the 2017 surveyed areas (Source: IUCN/SSC Caprinae Specialist Group).