

A. Proposal

Inclusion of all subspecies of *Ovis vignei* (not yet listed by CITES) in Appendix I of CITES

B. Proponent

The Federal Republic of Germany

C. Supporting Statement

For reasons of comparison this proposal includes not only data on the subspecies not yet listed by CITES, but also on *O. vignei vignei*, already listed in Appendix I. The proposal includes as well the subspecies *severtzovi* even though recent research results indicate that *severtzovi* may in fact belong to *Ovis ammon* (see under C. 5.1 Additional taxonomic remarks).

1. Taxonomy

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| 1. 1 Class | Mammalia |
| 1. 2 Order | Artiodactyla |
| 1. 3 Family | Bovidae |
| 1. 4 Species | <i>Ovis vignei</i> BLYTH, 1841 |

There are six generally-recognized subspecies of Urial, *Ovis vignei*, although scientists are not in universal agreement on the number of subspecies or their distribution:

Transcaspian urial, *O. v. arkal*
 Bukhara urial, *O. v. boharensis*
 Afghan urial, *O. v. cycloceros*
 Punjab or Salt Range urial, *O. v. punjabiensis*
 Severtzov's urial, *O. v. severtzovi*
 Ladakh urial, *O. v. vignei*

O. v. cycloceros has been grouped with *O. v. arkal* by some authorities. Likewise, *O. v. boharensis* has been considered as *O. v. vignei*. Some authorities recognize the subspecies *blanfordi*, others consider these specimens to be included in *cycloceros*. The subspecies *severtzovi* is considered an urial by some authorities and an argali by others.

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| 1. 5 Scientific synonyms | <i>Ovis orientalis vignei</i> , <i>O. orientalis arkal</i> , <i>O. orientalis boharensis</i> , <i>O. orientalis cycloceros</i> , <i>O. orientalis punjabiensis</i> , <i>O. orientalis severtzovi</i> , <i>O. orientalis blanfordi</i> , also including <i>arabica</i> , <i>dolgopolovi</i> and <i>varentsowi</i> . |
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| 1. 6 Common names | English: Urial (incl. Transcaspian urial, Arkal or Ustyurt sheep; Bukhara or Turkestan urial or Tajik sheep; Afghan, Afghanistan, Iranian or Turkmen urial; Punjab urial; Kizil-Kum or Severtzov's urial; Ladakh urial and Baluchistan or Blandford's urial) |
| | French: Urial |
| | German: Urial (incl. Arkal, Kreishornschaft, Pandschab-Urial, Nura-Tau-Wildschaf, Steppenschaf, Belutschistan-Wildschaf) |
| | Astor: Urin |
| | Baluchi: Kar |
| | Brahui: Kar |

Iranian: Ghuch-e-Uyreal
 Ladakhi: sha, shapo, shapu,
 Pashto: Zahra hii Gada
 Punjabi: urial
 Tamil: airppiyak kattuātu
 Turkish: Yaban koyunu, Dag koyunu
 Urdu: Jangli Dumba, Gud, Gad

2. Biological Parameters

2.1 Distribution

The following distributions are based on information presented in the publication "Status Survey and Conservation Action Plan for Caprinae", prepared by the IUCN/SSC Caprinae Specialist Group (SHACKLETON 1997), except as otherwise noted.

General overview:

<u><i>O. v. arkal</i>:</u>	Iran, Kazakhstan, Turkmenistan and Uzbekistan.
<u><i>O. v. bocharensis</i>:</u>	Tadjikistan, Turkmenistan and Uzbekistan
<u><i>O. v. cycloceros</i> (incl. <i>blanfordi</i>):</u>	Afghanistan, Pakistan, Turkmenistan
<u><i>O. v. punjabiensis</i>:</u>	Pakistan
<u><i>O. v. severtzovi</i>:</u>	Uzbekistan
<u><i>O. v. vignei</i>:</u>	India, Pakistan

In detail:

O. v. arkal – This subspecies occurs in northeastern Iran, southwestern Kazakhstan (between the Caspian and Aral Seas), northwestern Turkmenistan, and western Uzbekistan. Populations in southern Turkmenistan, along the border with Iran and Afghanistan, are assigned by Russian authorities to the subspecies *cycloceros*. However, Iranian authorities consider populations on the Iranian side of the border to be *arkal*. In reality, it is likely that the two subspecies intergrade to some degree in this region, with *arkal* occurring more to the west (i.e., in southern Turkmenistan (for example, in Kopet Dag Mountains) and northeastern Iran), and *cycloceros* occurring more to the east (i.e., in southeastern Turkmenistan (for example, Badkhyz Nature Reserve) and Afghanistan). Such a distinction is noted by VALDEZ (1982, 1995), who conducted surveys in these areas with Russian biologists.

In this paper the taxonomy of subspecies follows the "Status Survey and Conservation Action Plan for Caprinae", prepared by the IUCN/SSC Caprinae Specialist Group (SHACKLETON 1997).

O. v. bocharensis – This subspecies occurs in Tajikistan, a very small portion of eastern Turkmenistan, and Uzbekistan.

O. v. cycloceros – This subspecies occurs in Afghanistan, western Pakistan, and southern Turkmenistan. Populations in southern Turkmenistan, along the border with Iran and Afghanistan, are assigned by Russian authorities to the subspecies. However, Iranian authorities consider populations on the Iranian side of the border to be *arkal*. In reality, it is likely that the two subspecies intergrade to some degree in this region, with *arkal* occurring more to the west (i.e., in southern Turkmenistan and northeastern Iran), and *cycloceros* occurring more to the east (i.e., in southeastern Turkmenistan and Afghanistan). In this paper the taxonomy of subspecies follows the "Status Survey and Conservation Action Plan for Caprinae", prepared by the IUCN/SSC Caprinae Specialist Group (SHACKLETON 1997).

The distribution of this subspecies in eastern Iran is poorly documented.

O. v. punjabiensis – This subspecies occurs only in Punjab province of Pakistan.

O. v. severtzovi – This subspecies is currently limited to the mountains of Nuratau, north of Samarkand (Uzbekistan). Previously, *O. v. severtzovi* was distributed over a wide area of Uzbekistan where it occupied the mountains of Beltau, Aktau, Tamdytau, and other low ranges in the high desert regions. (WEINBERG et al. 1997).

O. v. vignei – This subspecies occurs only in Ladakh (Jammu and Kashmir) in India and in the northern part of Pakistan.

2.2 Habitat availability

Urial inhabit hilly terrain and rugged canyons in low elevation, open areas that are often close to human settlements and thus heavily used by livestock, and readily accessible to hunters.

The species inhabit ecosystems that are classified as "rangelands". Typically their habitat is arid and of low primary productivity, so urial densities are often apparently naturally low ($< 1/\text{km}^2$). With increasing human populations, areas previously considered of little or no agricultural value are now being converted to food production. The grazing pressure from domestic livestock is increasing significantly. Because of their generally low productivity and the need to involve an intermediate consumer to convert primary production for human use, relatively extensive areas of rangeland are necessary to support even a single human. In addition, the mountain habitats to which the urials are so well adapted, are shrinking due to other forms of habitat destruction. Again the major cause is directly related to increasing human numbers, in this case their rising energy demands for fossil fuels, hydroelectric power, and fuelwood.

(SHACKLETON 1997)

2.3 Population status

According to the latest IUCN Red List of Threatened Mammals (IUCN 1996) the status of *O. v. bocharensis*, *O. v. punjabiensis*, *O. v. severtzovi* and *O. v. vignei* is Endangered. *O. v. cycloceros* and *O. v. arkal* are classified as Vulnerable.

O. v. bocharensis and *O. v. severtzovi* are listed under Category I (= species threatened with extinction unless specific measures taken) and *O. v. arkal* and *O. v. cycloceros* under Category II (= species whose population is still large but that are suffering catastrophic reductions which in the near future will place them under the threat of extinction) in the Red Data Book of the former USSR (WEINBERG et al. 1997, after BORODIN 1984).

O. v. arkal and *O. v. bocharensis* are included in the Red Data List of Uzbekistan as Vulnerable (category II) and *O. v. severtzovi* as category IV - subspecies with stable and restoring number. In the Red Data Book of Kazakhstan *O. v. arkal* is listed in the category III - subspecies with limiting number and distribution. (KREUZBERG-MUKHINA 1998, in litt.).

Subspecies at particular risk are Bukhara (*Ovis v. bocharensis*), Ladakh (*O. v. vignei*), Punjab (*O. v. punjabiensis*) and Severtzov's (*O. v. severtzovi*) urial. Without prompt and effective conservation actions, these four urial will continue declining and their status will quickly deteriorate to Critical. (SHACKLETON 1997).

Estimate of total population numbers of the subspecies of *Ovis vignei*:

<i>O. v. arkal</i> :	< 11,000
<i>O. v. bocharensis</i> :	< 1,200
<i>O. v. cycloceros (incl. blanfordi)</i> :	> 12,000
<i>O. v. punjabiensis</i> :	< 2,000
<i>O. v. severtzovi</i> :	> 2,000
<i>O. v. vignei</i> :	< 2,100

(FOX & JOHNSINGH; HABIBI; HESS et al.; WEINBERG et al.; ZIAE; all 1997)(pers. comm. with US Scientific Authority) (FEDOSENKO 1998a; FEDOSENKO 1998b, in litt.)

Population in captivity:

Population in zoos, bird and wildlife parks and research colonies:

<i>O. v. arkal</i> :	1996: St. Louis USA 1,3; San Diego USA 3,7; San Diego WAP USA 5,8 Total: 9,18 in 3 collections, all are presumed captive bred
	1997: San Diego USA 5,7; San Diego WAP USA 10,13

Total: 15,20 in 2 collections, all are presumed captive bred

- O. v. cycloceros*: 1996: Berlin TP Germany 3,6; Dresden Germany 2,1; Tallin Estonia 2,2
Total: 7,9 + in 3 collections, most are presumed captive bred
 1997: Berlin TP Germany 1,6; Dresden Germany 1,1;
Total: 2,7 + in 2 collections, all are presumed captive bred
- O. v. bocharensis*: 1996: Alma-Ata Kazakhstan 0,2 ; Ekaterinburg Russia 1,0; Kaliningrad Russia 3,2;
 Karaganda Kazakhstan 0,1; Kharkov Ukraine 1,1; St Petersburg Russia 1,3
Total: 6,9 in 6 collections, all are presumed captive bred
 1997: Alma-Ata Kazakhstan 1,2 ; Ekaterinburg Russia 1,1; Kaliningrad Russia 1,3;
 Kharkov Ukraine 1,1; St Petersburg Russia 1,5
Total: 5,12 in 5 collections, all are presumed captive bred
- O. v. vignei*: 1994: Bahrain 9,9; San Diego USA 4,5
Total: 13,14 in 2 collections, all are presumed captive bred
 1995: San Diego USA: no data

(OLNEY et al., Int. Zoo Yearbook Vol. 34, 35 and 36, 1995, 1997 and 1998)

2.4 Population trends

The population trend in all subspecies is decreasing.

2.4.1 *O. v. arkal*

Iran

In Iran the population was estimated to be at least 20,000 animals in the mid-1970's (ZIAE 1997, after VALDEZ & DEFORGE 1985), about 15,000 of them inhabited Golestan National Park (FEDOSENKO 1998a, after VALDEZ & DEFORGE 1985 and KLABI 1978).

According to FIROUZ (1999, in litt.) in addition a population of 10,000 urial occurred in the Khoshyeilagh Wildlife refuge.

After the Islam revolution of 1978, cattle grazing and poaching became more extensive within many protected territories. As a result the urials' number declined abruptly. In the early 1990s, 3,500 urials were censused in Golestan National Park. (FEDOSENKO 1998a, after ZIAE 1997).

According to ZIAE (1999, in litt.) the population of *O. v. arkal* is decreasing in many parts of Iran and the last statistical report indicates that the population in Golestan National Park has reached fewer than 1500 animals.

One former high-ranking government official from Iran (pers. comm. with US Scientific Authority) believes that urial populations in Iran have declined 80 to 90 percent from their levels in the 1970s. He suggests that there may be no more than 4,000 urial in the country today.

Kazakhstan, Turkmenistan and Uzbekistan

In Kazakhstan, Turkmenistan and Uzbekistan its numbers had previously declined significantly, but for a short time in the latter half of the 1980's, numbers appeared to respond positively to protection measures. Since the early 1990's the population (estimated to be 6,000 - 7,000 animals) appears to have once more declined (WEINBERG et al. 1997, FEDOSENKO 1999, in litt.).

The population of Karagiye Hollow in western Kazakhstan is small and isolated and has seemingly decreased since the beginning of 1990s, and the population structure is far from good. The urial of North Aktau Mountains in western Kazakhstan are in much better conditions. The population counts about 1000 animals and has slightly increased since 1990. (WEINBERG 1998, in litt.).

According to WEINBERG (1998, in litt.) the overall status of the Transcaspien urial has hardly worsened since 1990. Official data from Kazakhstan estimate a present population size of 5,500 - 5,600 animals and no dangerous population trend (KEREMKULOV 1999, in litt.).

According to FEDOSENKO (1998b, in litt.) there are 5,000 - 6,000 animals in Kazakhstan and 1,000 in north-west Turkmenistan. By latest data from April 1997 (FEDOSENKO & WEINBERG 1999):

- the population in Karagiye Depression counts a total of 130 urial, having declined because of its proximity to the city of Aktau and intensive livestock grazing.
- the population in the table mountains of North Aktau (central and northern parts of the Mangyshlak Peninsula) counts 869, slightly increased since 1990. The total number of urial in the North Aktau mountains is estimated at ca. 1,000 animals with a probably population density around 2,5

animals/km² .

In Uzbekistan this subspecies is extremely rare, close to extinct in the Ustyurt Plateau (KREUZBERG-MUKHINA 1998, in litt.). About 300 animals were thought to inhabit Uzbekistan in 1983 but have since declined (WEINBERG et al 1997, after TSARUK 1994, in litt.). By FEDOSENKO (1998a) the Uzbek part of the subspecies range houses about 100 animals. In the early 1990s the total number was 6,500-7,000 individuals.

2.4.2 *O. v. bocharensis*

The population numbers of *O. v. bocharensis* have fluctuated slightly since the 1970's and by the late 1980's there might have been up to some 1,200 animals (WEINBERG et al. 1997, after FROLOV & GOLUB 1983, LUZHEVSKY 1977, PRISYAZHNIUK 1990 and SOKOV 1989). Numbers are believed to be decreasing now, and in some areas populations are very small.

Uzbekistan

In Uzbekistan it is very rare and near the risk of extinction. Its number has sharply declined and is evaluated to be approximately 200-300 individuals. (KREUZBERG-MUKHINA 1998, in litt.; ESIPOV & BIKOVA in KREUZBERG-MUKHINA 1999, in litt.).

On the eastern slopes of the Kugitangtau on the Turkmen-Uzbek border there may be as few as 100 animals (WEINBERG et al. 1997, after B. DYAKIN, Dep. of Hunting Management, Uzbekistan, pers comm. to E. MUKHINA). In the Surkhan Nature Reserve in Uzbekistan, for example, 14 animals were reported in 1991, but only 5 in 1993 (WEINBERG et al. 1997, after MENGLIEV 1995, pers comm. to E. MUKHINA)(ESIPOV & BIKOVA, after CHERNOGAEV et al. 1996, in KREUZBERG-MUKHINA 1999, in litt.).

Turkmenistan

In 1995, Valdez, Fedosenko and Weinberg (VALDEZ 1995) surveyed urials in the Kugitang Nature Reserve in eastern Turkmenistan bordering Uzbekistan. They counted only 32 urials. VALDEZ (1995) estimated that there were less than 100 urials in the Kugitang Reserve. More recently (1996), the Government of Turkmenistan estimated that 500 urials occurred in Kugitang Nature Reserve (P. KURBANOV 1996, in litt.), although the method used to derive this population estimate was not explained in the letter.

According to FEDOSENKO (1998b, in litt.) the population of *O. v. bocharensis* in Turkmenistan, on the western slopes of Kugitang, is about 100 animals.

Tadjikistan

The Red Data Book of Tadjikistan (1988) lists 3 populations: in the ridge of Surkh-khuk (70-270 in 1970), in Khazratyshokh ridge and Kush-variston massiv (500-600) and in Karatau ridge (680-250) (KREUZBERG-MUKHINA 1998, in litt.).

According to the Government of Tadjikistan the herd currently consists of 1600 individuals and several isolated populations in Southern Tadjikistan. The best preserved of them are in the mountains of Pyandjskiy Karatau (650 individuals), in Dashtijum Reserve (500 individuals) and its surrounding area (Khazratishokh Ridge) and on the Surkhkukh Ridge (250 individuals). A small number of urials inhabit the Aktau, Tuyuntau and Aruktau Ridges. During and after the civil war (1992 - 1994) the population declined somewhat due to poaching and cattle pasturing in their habitats. Nowadays the situation has stabilized. (LATIFI 1999, in litt.)

2.4.3 *O. v. cycloceros*

Turkmenistan

The estimate for the total population of *O. v. cycloceros* in Turkmenistan in the late 1980's and early 1990's was between 10,500 and 11,000 urial (WEINBERG et al. 1997). Numbers had increased slightly from the estimate of 7,000 to 9,000 made in the 1970's (WEINBERG et al. 1997, after BABAEV et al. 1978).

According to FEDOSENKO (1998b, in litt.) the population size in Turkmenistan has substantially worsened now, due to poaching and competition with cattle. Specialists from Turkmenistan estimated 5,000 - 6,000 animals left (FEDOSENKO 1998b, in litt.).

Although about half the total numbers probably still occur within protected areas, *O. v. cycloceros* exist mainly in relatively low densities outside. In the 1970s estimated 2,000 animals occurred in the Kopet Dag Reserve and 1,500 in the Badkhyz Reserve. (WEINBERG et al. 1997, after GORELOV 1978).

In 1995, FEDOSENKO and WEINBERG (VALDEZ 1995) surveyed urials in two areas in the Kopet Dag (Chash Depe and Kalinin Reserve). They counted 398 urials in the Chash Depe area, and 192 urials in the Kalinin Reserve. VALDEZ (1995) stated that the high yearling:ewe ratio at Chash Depe was indicative of a healthy population. More recently (1996), the Government of Turkmenistan estimated that 3,000 urials occurred

in two nature reserves in the Kopet Dag (KURBANOV 1996, in litt.) No explanation was given of the method used to determine this population estimate.

In 1995, Valdez, Fedosenko and Weinberg (VALDEZ 1995) surveyed urials in the Badkhyz Reserve and counted 575 individuals. VALDEZ (1995) stated that the high yearling:ewe ratio at Badkhyz Nature Reserve was indicative of a healthy population. More recently (1996), the Government of Turkmenistan estimated that 3,000 urials occurred in Badkhyz Nature Reserve (KURBANOV 1996, in litt.) although the method used to derive this population estimate was not explained.

Pakistan

In Pakistan, the Afghan urial is found in Baluchistan, North West Frontier (NWFP), and Sindh Provinces. No total population census based on surveys is available.

Perhaps 2,500 - 3,000 animals lived in Baluchistan (HESS et al. 1997, after ROBERTS 1985). According to ROBERTS (1997), the population in Baluchistan Province is comprised of small, isolated populations on a number of mountain ranges. The Torgar Hills area in the Toba Kakar Range north of Quetta, Baluchistan appears to be a stronghold. Afghan urial were surveyed in the 950 km² Torgar Conservation Project (TCP) area in 1994 and 1997. In 1994, JOHNSON (1997b) counted 189 urial in five survey blocks within the TCP area. In 1997, FRISINA et al. (1998) counted 47 urial in three of the same blocks counted in 1994. Extrapolating from these survey areas, JOHNSON (1997b) estimated a total population of 1,173 urial in the 950 km² TCP area, while FRISINA et al. (1998) estimated a total population of 1,543 urial for the same area three years later. However, these results are not expected to be typical of other mountain ranges in Baluchistan because poaching of urial has been effectively controlled in the TCP area whereas it has not been effectively controlled in other areas. Elsewhere in Baluchistan Province, urial still exist in the Takhatu Hills, in the Gishk hills of northeastern Kalat, in the Zambaza Range south of Fort Sandeman, in the Daman Ghar range north of Muslim Bagh, and around Turbat and Ormara in the Mekran coast hills (ROBERTS 1997).

According to MITCHELL (1988) 1,000 individuals (0,2/km²) inhabited the Torgar hills of Toba Kakar range (District Zhob). About 150 animals inhabit the Takatu hills near Quetta (AHMAD, unpubl. data), and the situation in the Dureji hills (District Zhob) may be a little better (VIRK 1991). MALIK (1987) estimated a total of 310 - 340 Afghan urial for the whole of the North West Frontier Province (NWFP), whereas the NWFP Forest Department (1992) reported a more recent total of only 80 urial, suggesting a severe decline over 5 years. For Sind Province, a census carried out by MIRZA & ASGHAR (1980) estimated a population of 430 urial for Kirthar NP. Based on a census in the Mari-Lusar-Manghtar range and in the Karchat mountains in 1987, BOLLMANN (1998) estimated between 800 and 1,000 urial (0,26 - 0,32/km²) for the whole of Kirthar NP. According to EDGE & OLSON-EDGE (1987) about 150 to 200 animals live in the Mari-Lusar-Manghtar range, and 100 to 150 in the Karchat mountains (1,7 - 2,5/km²). The overall density of Afghan urial in Pakistan is probably much lower than this.

(HESS et al. 1997, after AHMAD unpubl. data, EDGE & OLSON-EDGE 1987, MALIK 1987, MIRZA & ASGHAR 1980, Mitchell 1988, NWFP 1992, ROBERTS 1985 and VIRK 1991), (BOLLMANN 1998).

According to SARDAR ZULFIQAR ALI BHOOTANI (TAREN 1999, in litt. after pers. comm. to S. Z. A. BHOOTANI), tribal chief and manager of conservation programs at Dureji, the approximate population in Dureji is more than 1,300 animals.

Afghanistan

The actual population size of *O. v. cycloceros* in Afghanistan is unknown as not a single scientific survey has been carried out since the early 1970's. Some populations may survive in remote parts of their range. (HABIBI 1998, in litt.).

2.4.4 *O. v. punjabiensis*

A complete census made in 1976-1977 by MIRZA et al. (1979) estimated the total world population of Punjab urial (*O. v. punjabiensis*) as 2,157 animals. According to SCHALLER (1977) the population was < 2,000. Estimates by CHAUDHRY (unpubl. data, in 1992) give a minimum total population of 1,550 throughout its whole range. For Punjab, CHAUDHRY et al. (1988) reported a significant decline in urial numbers over only 1 year from 733 in 1986 to 528 in 1987. (HESS et al. 1997, after CHAUDHRY et al. 1988, CHAUDHRY 1992, unpubl. data, MIRZA et al. 1979 and SCHALLER 1977).

The private Game Reserve of the Nawab of Kalabagh, about 175 kilometers southwest of Islamabad in Punjab province, possesses the largest population of *O. v. punjabiensis* estimated to be over 800-850 animals. The total population in the province is estimated to be less than 2,000 animals scattered in four

or five small groups. (TAREN 1999, in litt. after pers. comm. to A. A. CHAUDHRY, Director of Punjab Wildlife Department).

According to GARSTANG (1999) only four other sub-populations with a total population size estimated at a maximum of 200-250 urial were located outside the Kalabagh Region (Kala Bagh Sanctuary of the Jabbah Valley, District Mianwali).

2.4.5 *O. v. severtzovi*

The population of *O. v. severtzovi* previously declined in numbers due to poaching, and to competition and disturbance from domestic livestock. The current survival of this urial depends entirely on the Nuratau Nature Reserve. However, there is strong pressure from locals to use the area. Poaching is still a significant problem outside the reserve, and almost all urial leaving it are shot. (WEINBERG et al. 1997).

The most recent estimates of about more than 2,000 individuals of *O. v. severtzovi* are based on density estimates extrapolated from census transects made in 1994. Compared to estimates of 1,500 in 1983 this indicates a slight possible increase. (WEINBERG et al. 1997, after CHERNAGAEV et al. 1994 and E. CHERNAGAEV 1995, pers. comm. to E. MUKHINA). According to KREUZBERG-MUKHINA (1998, in litt.) its number in the main habitats of Nuratau nature reserve is about 2,500 individuals. The number in other parts of range is unknown.

2.4.6 *O. v. vignei*

India

The total Indian population of *O. v. vignei* was currently estimated at between 1,000 and 1,500 animals and has declined dramatically in the last 60 years, especially during the military conflicts between 1947 - 1962 (FOX & JOHNSINGH 1997, after FOX et al. 1991 and MALLON 1983 and 1991). According to FOX (1998, in litt.) in India's Ladakh, both numbers and the herd sizes are increasing in several areas as the illegal hunting seems to have decreased along the Indus corridor.

Pakistan

Around 1900 the Ladakh urial used to be a common animal of northern Pakistan. According to SCHALLER (1976) < 1,000 animals were left in Pakistan. HESS (1997 and 1999, in litt.) estimated only 200 - 400 individuals for 1983 -1988. In 1992 a total of 57 urial was estimated by NWFP Forest Department. The total estimated for the Northern Areas for 1993 was 400 - 500 urial (G.TAHIR, Wildlife Wing, Northern Areas Forest Dept., in litt. to G. RASOOL). There are probably < 600 Ladakh urial in total in Pakistan. (HESS et al. 1997, after NWFP 1992, SCHALLER 1976 and G. TAHIR in litt. to G. RASOOL). According to Rasool (1999, in litt.) the previous estimated population has now dropped down to 200 - 300 urial in the whole of the Northern Areas of Pakistan.

2.5 Geographic trends

The populations of *O. v. bocharensis*, *O. v. cycloceros* (incl. *blanfordi*), *O. v. punjabiensis* and *O. v. vignei* are small, fragmented and of very low density (< 1 animal/km²). The Severtzov's urial (*O. v. severtzovi*) lives in populations of very low densities (< 1 animal/km²). In addition the subpopulations of *O. v. bocharensis*, *O. v. punjabiensis* and *O. v. vignei* are very small (< 100 animals).

Whether the population of the Transcaspian urial (*O. v. arka*) is fragmented and of very low density is insufficiently known. (FOX & JOHNSINGH; HABIBI; HESS et al.; WEINBERG et al.; ZIAE; all 1997). Modern range of the sheep in the Turkmen range of the subspecies consists there of six isolated areas (FEDOSENKO 1998a).

The Bukhara urial (*O. v. bocharensis*) occurs in four isolated areas in the mountains just north of the Amu Darya (WEINBERG et al. 1997). In Uzbekistan there are two isolated populations occurring on the Kugitang and Baisuntau ranges and on Babatag range in the southern spurs of Gissar ridge of Pamiro-Alay (ESIPOV & BIKOVA in KREUZBERG-MUKHINA 1999, in litt.).

In Pakistan in the Districts of Dera Ismail Khan, Bannu, Kohat Abbottabad and lower Swat populations of Afghan urial (*O. v. cycloceros*) are extremely scattered and at low densities. In the Tribal lands the densities are believed to be slightly higher. (HESS et al. 1997, after MALIK 1987).

The Punjab urial (*O. v. punjabiensis*) is found in small scattered populations in the Kala Chitta and in the Salt range, and in the Districts of Attock, Chakwal, Jhelum, Mianwali, and Khushab. At present the two, and perhaps only, major populations inhabit the Kala Chitta hills (District Attock) and the Kala Bagh Sanctuary of the Jabbah Valley (District Mianwali). (HESS et al. 1997).

Previously the Severtzov's urial (*O. v. severtzovi*) was distributed over a wide area of Uzbekistan where it occupied the mountains of Beltau, Aktau Tamdytau and other low ranges in the high desert regions. Today, it is mostly restricted to the higher, widespread mountains of Nuratau, north of Samarkand, to 2 small areas west and south of Aydarkul Lake. The current survival of this urial depends entirely on the Nuratau Nature Reserve. But there is strong pressure from locals to use the area. Currently the reserve protects ca. 98 % of the total population, so it is essential to maintain the reserve's effectiveness. (WEINBERG et al. 1997).

In India the Ladakh urial (*O. v. vignei*) occurs only within a restricted range (about 1,500 km²) in the low arid hills along the Shyok, Nubra and Indus rivers in central Ladakh (Jammu and Kashmir). Here they occupy the low relatively accessible areas along the major valley corridors, all of which have, or soon will have, roads. Due to increasing development activities in the major valleys of Ladakh the future status of this urial remains questionable. In Pakistan Ladakh urial is still distributed, but only in very small isolated populations. (FOX & JOHNSINGH 1997).

2.6 Threats

Urial are especially threatened for several reasons. Threats all derive from an increasing human population with concomitant demands for food and other natural resources.

2.6.1 Habitat destruction

The consequences of human encroachment into Caprinae habitats are obvious. The wild animals face ever increasing numbers of domestic competitors for the limited, low productive plant resources available. At the same time, their habitat is degraded or lost as forage, or fuelwood is gathered by cutting trees and shrubs which helped stabilise soils and even affect climate.

Because of their arid and low productive habitat urial densities are often apparently naturally low (< 1/km²). But due to the increasing habitat loss the mostly small populations of the subspecies are becoming more and more fragmented into very small, totally isolated populations. The dispersion and degree of this isolation of the populations can be critical. According to SHACKLETON (1997) this may be the most important criterion for the overall decline of the urial population.

(SHACKLETON 1997)

2.6.2 Poaching

The proximity to human settlements also makes them especially vulnerable to being hunted or poached. Urial populations near major urban centres have declined significantly due to indiscriminate hunting pressure. (SHACKLETON 1997).

Poaching remains a major threat and is one cause of the latest decline in population numbers of *O. v. arkal* in Kazakhstan, Turkmenistan and Uzbekistan. It is carried out by locals using both firearms and snares, especially around the limited waterholes used by the urial (WEINBERG et al. 1997, after FEDOSENKO 1986 and GORBUNOV 1986). According to FEDOSENKO (1998a) the role of poaching in fluctuations of the urials' number is still significant, particularly due to new generation of prosperous people, who are equipped with the modern rifles, pay no attention to existing hunting regulations and ignore any bans.

For *O. v. severtzovi* as well poaching is still a significant problem outside the reserve, and almost all urial that leave the reserve are shot (WEINBERG et al. 1997, after E. MUKHINA in litt. 1994).

Mountain ranges frequently serve as international boundaries, so the ranges of many urial populations extend over more than one country. This creates obvious conservation problems because many borders have been or still are sites of armed dispute or are otherwise politically sensitive areas. Urial often become targets for bored army personnel stationed along the borders. (SHACKLETON 1997).

During and after the 1979 civil war in Afghanistan the proliferation of arms among the people and lack of control of unregulated hunting in rural areas, culminated in destruction of wildlife in the early 1980s, as the

government lost control over the established protected areas (HABIBI 1997). According to HABIBI (1997) a general lawlessness and food shortages further intensified illegal hunting by both government forces and local inhabitants.

Immediately following the 1978 Islamic Revolution, most protected areas in Iran, were heavily utilised by domestic livestock and poaching was considerable. Overall, *Caprinae* numbers have declined drastically throughout the country, both in and outside protected areas. During recent years, conservation management has begun to be practised again, but poaching is still common. (ZIAE 1997).

According to TAREEN the biggest threat to Urial populations in Pakistan is from poaching which is usually done by the locals of the area as well as influential people such as government officials and military personnel. Poaching is done indiscriminately throughout the year killing the females, males and the young without consideration of breeding season or the impact on the populations. Provincial wildlife authorities often have little ability to control poaching due to lack of manpower, equipment, training and other resources. Official foreign guests from the Gulf states are given total freedom to hunt anytime and any place without acknowledgement of existing laws or regulations. (TAREEN 1999, in litt.).

2.6.3 Trophy hunting

For trophy hunting the most desired *Caprinae* are argali, urial and markhor. They are highly prized by trophy hunters, so there is pressure for governments to open or expand hunts to obtain significant economic gains. Currently, almost all *Caprinae* are subjected to trophy hunting for hard currency. (SHACKLETON 1997). The IUCN/SSC *Caprinae* Specialist Group has provided guidelines for *Caprinae* trophy hunting programs (WEGGE 1997), but few existing programs appear to meet the basic requirements.

The urial (*O. v. arka*) population of North Aktau Mountains (Mangyshlak, Kazakhstan) contains about 1000 animals and has possibly slightly increased since 1990. However, trophy hunting for this urial goes on since that year. In the mountains of North Aktau a total of 47 rams have been taken, 30 in 1992 and 1993. A total of 37 hunters visited the country in 1992-1993 and 1996. Most of them came from the USA, 3 from Canada, 3 from France, 2 from Mexico, 1 from Spain, 1 from Portugal, and 1 from Germany. According to FEDOSENKO & WEINBERG (1999) the urial populations of North Aktau sometimes suffer from excessive trophy hunting and no more than 10 rams can be taken annually from this population without it causing detrimental effects. The quality of trophies has declined during recent years, probably due to overharvesting and severe winters. (Fedosenko 1998a; WEINBERG 1998; FEDOSENKO & WEINBERG 1999).

Not only did the quality of the trophies decline, but also the amount of time required to harvest a trophy increased noticeably. This indicates the abrupt decline in numbers of adult males in places where trophy hunting is occurring. According to FEDOSENKO (1998a) additional negative consequences of the improper trophy hunting, such as low proportion of males in population and low productivity of females, are also noticeable. (FEDOSENKO 1998a).

WEINBERG (1998, in litt.) stated that trophy hunts were sometimes carried out within nature reserves (e.g. in Turkmenistan).

According to FEDOSENKO trophy hunting on urials began in Turkmenistan in 1993 and about 10 individuals are harvested annually. In the first years, the animals were shot outside especially protected territories (zapovedniks or zakazniks) but a decline in the numbers of urial outside such areas was followed by the transfer of hunts to zapovedniks and their vicinities. (FEDOSENKO 1998a).

Urials (*O. v. arka*) were shot in the mountain part of Aktau-Buzachinskiy zakaznik in Kazakhstan since 1990. FEDOSENKO stated that more thorough observations of the urial populations inhabiting this zakaznik are necessary and trophy hunting should be stopped or transferred to other places that can sustain hunting until the normal sex and age structure of the population is restored. (FEDOSENKO 1998a).

In Pakistan a small experiment was instigated by the local communities in 1984 in a 1,000 km² -sized area in the tribally-controlled mountainous area of Baluchistan called Torghar. The focus was to protect the Sulaiman or Straighthorned markhor and Afghan urial as well as their habitat. Trophy hunting has been used as the incentive to raise funds for the protection and management. One or two animals (markhor or urial) were taken for trophy hunting per year. The populations of both began growing steadily. Noting the success of the Torghar program, other community-based trophy hunting programs have been instigated in various parts of the country with varying

degrees of success. (JOHNSON 1997a; JOHNSON 1997b; TAREEN 1999, in litt.).

The species meets the following biological criteria for Appendix I in accordance with the „Criteria for Admendment of Appendices I and II, Annex 1“, as set out in Res. Conf. 9.24 :

<u><i>O. v. arkal</i>:</u>		B i) iv)	C i) ii)
<u><i>O. v. bocharensis</i>:</u>	A i) ii)	B i) iv)	C i) ii)
<u><i>O. v. cycloceros</i> (incl. <i>blanfordi</i>):</u>		B i) iv)	C i) ii)
<u><i>O. v. punjabiensis</i>:</u>	A i) ii)	B i) iv)	C i) ii)
<u><i>O. v. severtzovi</i>:</u>	A i) iii)	B i) iv)	C i) ii)
<u><i>O. v. vignei</i>:</u>	A i) ii)	B i) iv)	C i) ii)

3. Utilization and Trade

3.1 National utilization

The Uzbekistan State Committee for Nature Protection planned to allow 2 specimens of the Transcaspian urial (*O. v. arkal*) and 2 specimens of the Bukhara urial (*O. v. bocharensis*) to be taken by foreign hunters in 1995, and Tadjikistan planned to allow hunts for the Bukhara urial (WEINBERG et al. 1997, after ANON. 1995b).

The Turkmenistan Government planned hunts for 2 specimens of the Afghan urial (*O. v. cycloceros*) in 1995. According to informations of THE HUNTING CONSORTIUM LTD (1995) Turkmenistan allows 4 specimens of the Afghan urial and some (number unknown) Transcaspian urial to be hunted annually.

In Kazakhstan also there is a limited number of hunting permits for the Transcaspian urial available (THE HUNTING CONSORTIUM LTD, 1995).

The Government of the Republic of Kazakhstan has admitted an annual quota for 10 specimens of *O. v. arkal* till 2002. In 1991 - 1993 there were annual quotas of 3 to 20 urials, in 1996 - 1997 only quotas of 5 specimens. (KEREMKULOV 1999, in litt.).

Since 1994, 2 Severtzov's urial have been allowed to be hunted in the Nuratau Nature Reserve in Uzbekistan each year (WEINBERG et al. 1997). According to THE HUNTING CONSORTIUM LTD (1995) there has been a very limited number of permits for Severtzov's urial available each year in Uzbekistan, for three years.

The annual hunting limit for urial in the Tadjikistan Republic is established by the Ministry of Nature Protection as 10 head annually, but is not used up in its entirety. In 1998 there were 5 licences issued, but only 4 males of *O. v. bocharensis* taken. The export of trophies can occur only when a shooting licence has been issued by the Ministry of Nature Protection of the Tadjikistan Republic. (LATIFI 1999, in litt.).

According to ZIAE (1999, in litt.) many permits for hunting of *O. v. arkal* in Iran have been issued lately.

Caprinae are hunted and prized for their meat, furs and body parts for alleged medicinal properties (SHACKLETON 1997).

3.2 Legal international trade

Im- and Exports of *Ovis vignei* in 1991 - 1997:

Tab. 1: Trophies, horns, skeletons, skins (im- and export in 1993 and 1995 only)

Number	importer	exporter	origin	Remarks
2	USA	Russian Federation	Turkmenistan	trophies
2	USA	Islam. Rep. of Iran	---	trophies, pre-Conv.
2	USA	Russian Federation	---	trophies
1	USA	(no information available)	---	trophies
1	Canada	Russian Federation	Turkmenistan	trophies
4	Canada	USA	---	trophies

3	Estonia	Russian Federation	Turkmenistan	trophies
1	Austria	Russian Federation	Turkmenistan	trophies
1	Austria	Russian Federation	Kazakhstan	trophies
1	Germany	Russian Federation	Turkmenistan	trophies
12	United Kingdom	Bahrain	---	skeletons, capt. bred
8	Canada	USA	---	horns, capt. bred
4	Canada	USA	---	skins, capt. bred

(Source: WCMC CITES Trade Database, Cambridge, UK 1999)

Tab. 2: Live animals (im- and export in 1997 only)

Number	importer	exporter	origin	Remarks
8	Estonia	Russian Federation	---	captive bred

(Source: WCMC CITES Trade Database, Cambridge, UK 1999)

Tab. 3: Imports of *Ovis vignei* sport-hunted trophies to the United States, 1996-99:

Fiscal Year	Genus	Species	Subspecies	Origin	Total Quantity	Wildlife Descript.
1996	OVIS	VIGNEI	CYCLOCEROS	TM	1	TROP
1996	OVIS	VIGNEI	ARKAL	TM	1	TROP
1997	OVIS	VIGNEI	ARKAL	TM	7	TROP
1997	OVIS	VIGNEI	ARKAL	KZ	1	TROP
1997	OVIS	VIGNEI	CYCLOCEROS	TM	1	TROP
1997	OVIS	VIGNEI	CYCLOCEROS	TJ	1	TROP
1998	OVIS	VIGNEI	ARKAL	TM	9	TROP
1998	OVIS	VIGNEI	CYCLOCEROS	TM	1	TRO
1999	OVIS	VIGNEI	ARKAL	TM	9	TRO
1999	OVIS	VIGNEI	BOCHARIENSIS	TJ	1	TRO
1999	OVIS	VIGNEI	CYCLOCEROS	TM	1	TRO
1999	OVIS	VIGNEI		TM	2	TRO

(Source: US CITES Authorities)

European Community Imports 1998-1999):

In 1998-1999 there were no imports of *Ovis vignei* into the European Community (EC CITES Authorities).

Tab. 4: Hunt of *O. v. severtzovi* in Uzbekistan from 1992 - 1998:

(Official dates of main board of hunting, reserve, national parks of Ministry on forestry of Uzbekistan.) (The animals were taken only in Nuratau range; in brackets age of specimens hunted)

1992	5 animals	1 Danmark (8 years), 2 USA (5 and 6 years), 1 Spain (7 years), 1 Mexico (6 years)
1993	2 animals	1 Switzerland(?) (10 years), 1 Austria (8 years)
1994	3 animals	2 USA (5 years), 1 Austria (5 years)
1995	2 animals	2 USA

1996	3 animals	2 USA, 1 Mexico
1997	1 animal	1 France
1998	1 animal	1 France
<u>Total:</u>	17 animals	8 USA, 2 Austria, 2 France, 2 Mexico, 1 Danmark, 1 Spain, 1 Switzerland(?)

(MUSAEV 1999, in NAZAROV, in litt.)

The SPORTSMEN'S HUNTING EXPEDITIONS (1999, Internet) offers trophy hunting of *O. v. arkal* and *O. v. cycloceros* in Asia.

Trophy hunting of *O. v. arkal* in Turkmenistan and Kazakhstan or *O. v. cycloceros* in Turkmenistan was offered in Germany for \$ 14,900 each by THE HUNTING CONSORTIUM LTD (1995). When contacted the agency claimed this offer was an error.

THE HUNTING CONSULTANTS (1999, Internet) offer hunting of Transcaspian urial (*O. v. arkal*) in Kazakhstan or Turkmenistan for \$ 13,400 (incl. trophy fees) and Afghan urial (*O. v. cycloceros*) in Turkmenistan for \$ 13,900 (incl. trophy fees). The price for trophy hunting of Severtzov urial (*O. v. severtzovi*) is a little higher (\$ 16,900, incl. trophy fees), because licences are very limited in Uzbekistan and temporarily not available.

The TROPHY HUNTING CONNECTION (1999, Internet) offers trophy hunting of *O. v. arkal* in Kazakhstan and Turkmenistan for \$ 12,500 (incl. trophy fees) and *O. v. cycloceros* in Turkmenistan for \$ 13,5000 (incl. trophy fees).

The WORLDHUNT INC. (1999, Internet) offers trophy hunting of *O. v. arkal* in Kazakhstan for \$ 13,500 (incl. trophy fees), in Iran for \$ 7,900 - 11,950 (incl. trophy fees) and in Turkmenistan.

According to HOFER (1999, in litt.) of Traffic Europe, there are numerous offers of *O. vignei* hunting in America as Americans are enthusiastic sheep hunters. In Europe, the demand for sheep is much less:

Some examples of trophy hunting advertisements:

Mistral Jagdreisen (Austria) 1998: *O. v. arkal*, Kazakstan \$ 12,000, Uzbekistan \$13,800.

Jagd International Artemis (Austria) 1998: *O. v. arkal*, Kazakstan \$ 11,000.

Hubertus Jagdreisen (Germany) 1999 (Internet): *O. v. severtzovi*, Uzbekistan \$ 18,000.

Dr. Lechner (Germany) 1999: offers all wild sheep of Kirgistan, Kazakhstan,

Many offers of American agencies for *O. v. arkal*, *O. v. cycloceros*, *O. v. severtzovi* in Kazakhstan, Turkmenistan, Uzbekistan, prices around \$ 15,000

Most of the big agencies will make nearly any hunt possible, that can be interpreted as legal, if there is serious interest. (HOFER 1999, in litt.).

For the first time in 1999 Export Quotas have been established for *O. vignei* (*O.v. bochariensis*: 10 hunting trophies as re-exports from Tajikistan; *O. v. cycloceros*: 25 hunting trophies as re-exports from Turkmenistan)(Notif.- No. 1999/21 and 1999/34).

In Pakistan (NANA 1998, in litt.) hunters are waiting for a „No Objection Certificate“ for export of sport hunted trophies of *O. v. cycloceros* and *O. v. punjabiensis*.

After almost 20 years Iran is once again offering trophy hunting of wild sheep, among them Transcaspian urial (*O. v. arkal*). (HOFER 1999, in litt.).

As urial are one of the most desired and highly prized Caprinae in trophy hunting it is likely that there exists much more trade in trophies than is officially documented.

3.3 Illegal trade

In 1995 trophy hunting of *Ovis vignei* was offered in Germany by one travel agency (THE HUNTING CONSORTIUM LTD, 1995) although the import into the European Community was prohibited at that time. However, it shows, that although prohibited in 1995 there was an interest for this species in Germany and it can not be excluded, that there may have been some illegal imports into the European Community.

3.4 Actual or potential trade impacts

Currently, almost all *Caprinae* are subject to trophy hunting for hard currency (SHACKLETON 1997). The most desired *Caprinae* are argali, urial and markhor. Trophy hunting and trade in trophies already threatens the urial populations. If trophy hunting in urial goes on and becomes more excessive due to growing numbers of trophy hunting advertisements threats for urial populations will increase.

3.5 Captive Breeding for commercial purposes (outside country of origin)

There is only some breeding in zoos, wildlife parks and research colonies known. The following tabulation lists the numbers of specimens bred in captivity:

<i>O. v. arkal:</i>	1995: San Diego USA 2,4(1,0), multiple generation birth; San Diego WAP USA 1,3(0,1), multiple generation birth 1996: St. Louis USA 1,0, multiple generation birth; San Diego USA 3,4(0,1), San Diego WAP USA 8,7,1(3,2,1)
<i>O. v. cycloceros:</i>	1995: Berlin TP Germany (3,5), multiple generation birth, Dresden Germany (1,0), multiple generation birth, Tallin Estonia 1,1(0,1) 1996: Berlin TP Germany 2,5(2,2), multiple generation birth, Dresden Germany (1,1), multiple generation birth, Tallin Estonia 1,1
<i>O. v. bochariensis:</i>	1995: Kaliningrad Russia 2,0 1996: Kaliningrad Russia 1,1(1,0); St Petersburg Russia 0,4(0,1)
<i>O. v. vignei:</i>	1993: San Diego USA 2,2 (1,0), multiple generation birth 1994: San Diego USA 3,5

(OLNEY et al., Int. Zoo Yearbook Vol. 34, 35 and 36, 1995, 1997 and 1998)

4. Conservation and Management

4.1 Legal status

4.1.1 National

O. v. arkal: In Iran hunting in National Parks, Wildlife Refuges and protected areas is prohibited and domestic animals are under control. Hunting under license is allowed from September to February outside these areas. (ZIAE 1997).

O. v. bochariensis is under protection in Surkhan nature reserve (Kugitang ridge) (ESIPOV & BIKOVA in KREUZBERG-MUKHINA 1999, in litt.).

At present the urial is under the protection of the state in Tadjikistan. A Law "On Protection and Utilization of the Animal Kingdom" has been passed and the penalties for illegal shooting of an urial equal 2000 times the minimum monthly wage. (LATIFI 1999, in litt.).

O. v. cycloceros (incl. *blanfordi*): In Pakistan the subspecies is completely protected in the capital territory of Islamabad by the Third Schedule of the Islamabad Wildlife (Protection, Preservation, Conservation, and Management) Ordinance, 1979 under *O. vignei* all subspecies. Only females are completely protected in the North-West Frontier Province by the Third Schedule of the North-West Frontier Province Wildlife (Protection,

Preservation, Conservation, and Management) Act, 1975; and in the Baluchistan Province by the Third Schedule of the Baluchistan Wildlife Protection Act, 1974 under *O. vignei* all subspecies. (GASKI et al., Wildlife Trade Laws of Asia and Oceania, 1991).

O. v. punjabiensis is completely protected in the capital territory of Islamabad by the Third Schedule of the Islamabad Wildlife (Protection, Preservation, Conservation, and Management) Ordinance, 1979, and in the North-West Frontier Province by the Third Schedule of the North-West Frontier Province Wildlife (Protection, Preservation, Conservation, and Management) Act, 1975. In the Baluchistan Province only females of all subspecies of *Ovis vignei* are protected under the Third Schedule of the Baluchistan Wildlife Protection Act, 1974. (GASKI et al., Wildlife Trade Laws of Asia and Oceania, 1991).

According to HESS et al. (1997) the Punjab urial is legally protected in the Punjab.

O. v. vignei: In India except Jammu and Kashmir the Ladakh urial is fully protected in Schedule I of the Indian Wildlife (Protection) Act No. 53, 1972 (GASKI et al., Wildlife Trade Laws of Asia and Oceania, 1991). In its range in Ladakh in Jammu and Kashmir it is fully protected in Schedule I of the Jammu and Kashmir's Wildlife (Protection) Act of 1978 (FOX & JOHNSINGH 1997, after GANHAR 1979). Some illegal hunting probably still takes place, although hunting has been relatively strictly controlled recently (especially in the Indus valley) (FOX & JOHNSINGH 1997).

In Pakistan the Ladakh urial is completely protected in the capital territory of Islamabad by the Third Schedule of the Islamabad Wildlife (Protection, Preservation, Conservation, and Management) Ordinance, 1979 under *O. vignei* all subspecies. Only females are completely protected in the North-West Frontier Province by the Third Schedule of the North-West Frontier Province Wildlife (Protection, Preservation, Conservation, and Management) Act, 1975, under *O. vignei* all subspecies. (GASKI et al., Wildlife Trade Laws of Asia and Oceania, 1991).

4.1.2 International

Ovis vignei vignei is listed in Appendix I of CITES (proposed by India in 1973 as *O. vignei*).

4.2 Species management

4.2.1 Population monitoring

It is necessary to obtain more recent population and distribution data by thorough surveys based on scientific basis for all the urial, especially for urial in Iran and Afghanistan. A lack of biological information, especially of population dynamics and habitat requirements severely restricts conservation actions.

There are plans for a census of the entire Punjab urial population (GARSTANG 1999).

4.2.2 Habitat conservation

Number of protected areas according to subspecies:

O. v. arkal: 10, but most protected areas contain very few urial and it is uncertain if number and/or size is adequate for protection of this subspecies.

O. v. boharensis: 3, but number and/or size is probably inadequate.

O. v. cycloceros (incl. blanfordi): 25, but number and/or size is probably inadequate.

O. v. punjabiensis: 11, but number and/or size is probably inadequate.

O. v. severtzovi: 1, but is uncertain if number and/or size is adequate for protection of this subspecies.

O. v. vignei: 4, but number and/or size is probably inadequate.

(FOX & JOHNSINGH; HABIBI; HESS et al.; WEINBERG et al.; ZIAE; all 1997)

The Hemis National Park (Jammu and Kashmir) contains the only population of *O. v. vignei* currently found in a protected area in India. (FOX & JOHNSINGH 1997).

To conserve the main habitats of *O. v. boharensis* in Tadjikistan two specialized refuges were established (LATIFI 1999, in litt.).

Around 19 protected areas in Pakistan are reported to contain mostly very small numbers of Afghan urial (*O. v. cycloceros*). Urial are well protected within the approximately 1,000 sq. km Torghar Conservation Project (TCP) area in the Torghar Hills of Balochistan Province (JOHNSON 1994, 1997a). Although domestic livestock, primarily sheep, have had some impact on urial habitats at lower elevations and in less-rugged terrain (FRISINA et al. 1998), poaching has been eliminated and the urial population of Torghar is thriving. However, except for TCP, Kirthar NP, Hingol NP, Dhrun NP and Dureji WS, the protection measures for most sanctuaries and reserves may not be effective at the present time. Provisions have been made for the possible reintroduction of Afghan urial that might have occurred once in Hazarganji-Chiltan National Park (GARSTANG 1999). The Kopet Dagh Nature Reserve in Turkmenistan was established primarily for preservation of the Afghan urial. (HESS et al., WEINBERG et al., both 1997).

The current survival of the Severtzov's urial (*O.v. severtzovi*) depends entirely on the Nuratau Nature Reserve, where approximately 700 animals used to exist. But there is strong pressure from locals to use the area. A few years ago, 4,386 ha of the Reserve's 22,130 ha were given over to forestry management and the area is now degraded by livestock grazing. Most recently, local pastoralists have requested that the Reserve be turned over to them in this period of financial crisis. WEINBERG et al. (1997) stated that the Reserve currently protects ca. 98 % of the total population and that it is essential to maintain the reserve's effectiveness. (WEINBERG et al. 1997).

According to FOX & JOHNSINGH (1997), HESS et al. (1997), and WEINBERG et al. (1997), most of the protected areas are probably inadequate or it is uncertain if the number and/or size are adequate for protection. As effective conservation of the urial depends on habitat protection and on the designation and maintenance of protected areas (according to the new categories adopted by IUCN), the range of a protected area should be truly representative of the urial's genetic and geographic diversity.

4.2.3 Management measures

The resulting effects of increased hunting and eventual human settlement associated with irrigation projects and increased livestock numbers, will require effective conservation and management actions if the urial is to survive (especially the Ladakh urial in the valleys of Ladakh) (FOX & JOHNSINGH 1997, after FOX et al. 1994).

Unless conservation measures are taken quickly, the Afghan urial (*O. v. cycloceros*) will be lost throughout more and more of its range in Pakistan. One of the main reasons is that populations are very small and widely scattered in relatively accessible terrain, and thus can easily be wiped out with no chance for areas to be naturally re-populated through dispersal. (HESS et al. 1997).

WWF-Pakistan has recently initiated a participatory management program in the Shirani tribal area, which includes protection for Afghan urial (HESS et al. 1997).

Urial are protected in the Torghar Hills of Balochistan Province, Pakistan through a private conservation initiative, the Torghar Conservation Project (TCP), which employs 56 local Pathan tribesmen as game guards. This has virtually eliminated poaching in the TCP area (JOHNSON 1994, 1997a).

In Afghanistan plans were considered in the 1970's to locate a viable Afghan urial population and develop a limited hunting reserve involving local participation (HABIBI 1997). According to SHACKLETON (1999b, in litt.) no action was taken there on these proposals.

With regard to the strong pressure of hunting trophy animals, coupled with heavy livestock competition and declining numbers of most subspecies, not only for the urial but also for the markhor and argali, the IUCN/SSC Caprinae Specialist Group recommended immediate action. While it is necessary to obtain more reliable population and distribution data (especially for mouflon and urial in Iran), even without these data, action is also needed to deal with current levels of use. Action may be most effective if the various parties involved in hunting, hunting management and conservation, meet to discuss common problems and solutions. If this does not occur, many of these animals will very probably be lost in the near future. (SHACKLETON 1997).

In the IUCN Survey and Action Plan for Wild Caprinae the IUCN/SSC Caprinae Specialist group (1997) gives the following recommendations for actions and implementation for urial as well as markhor and argali:

"1) Trophy Hunting Working Group.

Establish a working group under the IUCN/SSC Caprinae Specialist Group, to develop an interim approach to hunting these trophy animals. The Working Group's first task should be to organise a workshop. This would be relatively small meeting with discussion papers prepared in advance. In addition key Caprinae biologists from the countries of these 3 species, other professional biologists and representatives of hunting organisations (e.g., Conseil International de la Chasse et de la Conservation du Gibier [CIC], Safari Club International [SCI], Safari Outfitters, Glavbiocontrol) should also be members of the working group.....

2) Surveys.

Survey the distributions and numbers of all taxa within these 3 groups of wild sheep throughout their ranges. Initially it may be possible to survey only sample areas for each taxon. These should be randomly chosen to represent the taxon's recent historic range, thus allowing a broad estimate of its general status."

In addition, guidelines for subsistence and trophy hunting programs for Caprinae were given in this Action Plan (WEGGE 1997).

In full accord with the IUCN/SSC Caprinae Specialist Group's recommendations, the Working Group on *Ovis vignei* of the CITES Animal Committee agreed in 1996 that in addition to the listing on Appendix I of CITES a resolution is needed to clarify Parties' responsibilities in relation to the conservation of this taxon (including all subspecies). Effective conservation of this species depends, in part, on incentive systems that promote local management, including sustainable use, as well as mechanisms to emphasize the importance of local involvement in the conservation/management of urial populations.

According to the *Ovis vignei* Working Group of the CITES Animals Committee local involvement in the conservation, management and use of discrete populations of this species should be provided under government license, where local management takes account of:

- i. The status of the discrete population that is being used,
- ii. Monitoring the status of the population being used,
- iii. Use levels, and
- iv. How benefits obtained from the use of the population will be applied to the conservation and management of the population and its habitat.

(See Minutes of the Meeting of the CITES Animals Committee Working Group on *Ovis vignei*, April 1996).

4.3 Control measures with regard to international trade

CITES identification sheets about protected Caprinae should be worked out to aid law enforcement officials in their task of controlling the illegal trade.

5. Other comments

5.1 Additional taxonomic remarks

There has been considerable confusion about the contents of the taxon *Ovis vignei* as listed on Appendix I of CITES. Some parties doubt that all subspecies included now in *Ovis vignei* according to the official CITES nomenclature reference for mammals (WILSON & REEDER 1993) were already included in the taxon at the moment of listing in 1973. The *Ovis vignei* working group of the CITES Animals Committee could not solve this problem either at the occasion of a special *Ovis vignei* workshop in April 1996. In September 1996 the CITES Nomenclature Committee met at the occasion of the CITES Animals Committee Meeting in Pruhonice/Czech Republic and decided that the present CITES listing included all subspecies following WILSON & REEDER (1993), the official CITES reference for taxonomic nomenclature of mammal species. However, in June 1997 at the occasion of COP 10 the Nomenclature Committee revised its former conclusion saying that the present listing of *Ovis vignei* only concerns the subspecies *Ovis vignei vignei* and the CITES appendices have been changed according to this decision listing now *Ovis vignei vignei* only.

The listing of the whole species on Appendix I of CITES only applies to international trade of the species not to uses taking place within a country, e.g. subsistence hunting for meat by local people. The only significant international trade in this species is in trophies. The money paid by foreign hunters is very high by local standards but often does not reach the local people who are in conflict with the species either for their own

subsistence hunting or by need for grazing areas for their domestic animals. If the species is listed on Appendix I of CITES some trade in trophies may take place, but only with an export permit of the country of origin and an import permit issued by the importing country. If the status of the species is endangered or even critically endangered the permits can be refused if the hunting is not carried out in a way that is clearly beneficial for the species survival (i.e. the hunting program must be sustainable). In this way clear incentives can be established for trophy hunting programmes to be developed so that they fulfill certain criteria as recommended by the Caprinae Specialist Group (WEGGE 1997), for example sustainability of hunting, conservation benefits, integration of and benefits to local people. In this way Appendix I listing may contribute to the conservation of the species.

The taxonomic status of urial subspecies especially in Baluchistan and southwestern Sind (Pakistan) is disputed and differently divided. Some authors refer them to Baluchistan urial (*O. v. blanfordi*), others to Afghan urial (*O. v. cycloceros*) or differentiate between the Afghan urial distributed in Baluchistan north of Quetta, and the Baluchistan urial distributed in Baluchistan south of Quetta and in Sind west of the Indus. As there is no description of any difference in appearance of both populations, nor are there any geomorphological or habitat barriers and as no genetic and/or morphological study has been done yet the IUCN/SSC Caprinae Specialist Group refers the population in Baluchistan and southwestern Sind to *O. v. cycloceros*. In this paper the taxonomy of subspecies follows this point of view (incl. *blanfordi*).

According to the latest findings of the karyotype number of Severtzov's urial (*O. v. severtzovi*) ($2n = 56$) it is required to be an argali. Sheep with $2n = 54$ are considered to be urial and those with $2n = 56$ argali. (LYAPUNOVA et al. 1997, BUNCH et al. 1998). However, in this paper the taxonomy follows the official CITES reference list of WILSON & REEDER (1993).

According to some references (VALDEZ & DEFORGE 1985), 2 hybrid populations are considered to exist between subspecies of *Ovis vignei* and *Ovis aries* in Iran: Alborz red sheep (*O. aries gmelinii* x *O. vignei arkal*) and Kerman mouflon (*O. aries laristanica* x *O. vignei cycloceros* incl. *blanfordi*). An estimate or numbers for the hybrid population is not available.

5.2 Comments by the countries of origin

Until the end of October 1999 answers had been received by the governments of Kazakhstan (KEREMKULOV 1999) and Turkmenistan as well as a preliminary answer of the Russian Federation (see copies of all these comments attached).

Kazakhstan sees no reason to transfer *Ovis vignei* arkal from Appendix II to Appendix I. Turkmenistan considers as well that the urial needs not be transferred to Appendix I. The translation of the letter of Turkmenistan to the US Scientific Authority was only received in the beginning of November. At this time it was not possible any more to incorporate the additional data presented by the Turkmenistan government directly into the text of this document. For information please see the attachments. The Russian Federation wrote in their preliminary answer that according to their opinion it may not be reasonable to list all subspecies on Appendix I and that it should be considered to list some of them on Appendix II only.

The US Scientific Authority received a comment by the government of Tajikistan as well (LATIFI 1999). However, does not include a direct evaluation of the presented proposal.

6. References

- BOLLMANN, K. (1998): Status and Conservation of wild ungulates in the Kirthar National Park, Pakistan. Proc. 2nd World Conf. Mt. Ungulates: 23-30.
- BUNCH, T. D., VORONSOV, N. N., LYAPUNOVA, E. A. & HOFFMANN, R. S. (1998): Chromosome number of Severtzov's sheep (*Ovis ammon severtzovi*): G-banded karyotype comparisons within *Ovis*. Journal of Heredity 89, 266-268.
- CITES Animals Committee: Results of the Working Group on *Ovis vignei*, April 1996.
- ESIPOV, A. & BIKOVA, E. in KREUZBERG-MUKHINA, E. (1999) in litt. to U. Grimm, 2.07.1999.
- FEDOSENKO, A. K. (1998a): Status of the arkal and urial populations in CIS countries and the effect of trophy hunting. Traffic Europe Report, unpublished.
- FEDOSENKO, A. K. (1998b) in litt. to U. Grimm, 9.12.1998.

FEDOSSENKO, A. K. & WEINBERG, P. J. (1999): The status of some wild sheep populations in the CIS (former USSR) and the impact of trophy hunting. *Caprinae*, Newsletter of the IUCN/SSC Caprinae Specialist Group, May 1999, 1-4.

FIROUZ, E. (1999) in litt. to U. Grimm, 8.08.1999.

FOX, J.L. (1998) in litt. to U. Grimm, 3.12.1998.

FOX, J.L. & JOHNSINGH, A.J.T. (1997): India. - In: SHACKLETON, D.M. (ed.) and the IUCN/SSC Caprinae Specialist Group: Wild Sheep and Goats and their Relatives. Status Survey and Conservation Action Plan for Caprinae. Chapter 8.3. IUCN, Gland, Switzerland and Cambridge, UK.

FRISINA, M. R., WOODS, C., & WOODFORD, M. (1998): Population trend of Suleiman markhor (*Capra falconeri jerdoni*) and Afghan urial (*Ovis orientalis cycloceros*) with reference to habitat conditions, Torgar Hills, Baluchistan Province, Pakistan. A report to the United States Fish and Wildlife Service, Office of International Affairs and Society for Torgar Environmental Protection (STEP). 13 pp.

GARSTANG, R. (1999): Pakistan. *Caprinae*, Newsletter of the IUCN/SSC Caprinae Specialist Group, May 1999, 5-6.

GASKI, A.L. et al. (1991): Wildlife Trade Laws of Asia and Oceania. Traffic USA, WWF.

HABIBI, K. (1997): Afghanistan. - In: SHACKLETON, D.M. (ed.) and the IUCN/SSC Caprinae Specialist Group: Wild Sheep and Goats and their Relatives. Status Survey and Conservation Action Plan for Caprinae. Chapter 8.1. IUCN, Gland, Switzerland and Cambridge, UK.

HABIBI, K. (1998) in litt. to U. Grimm, 4.12.1998.

HESS, R. (1999) in litt. to U. Grimm, 13.01.1999.

HESS, R., BOLLMANN, K., RASOOL, G., CHAUDHRY, A.A., VIRK, A.T. & AHMAD, A. (1997): Pakistan. - In: SHACKLETON, D.M. (ed.) and the IUCN/SSC Caprinae Specialist Group: Wild Sheep and Goats and their Relatives. Status Survey and Conservation Action Plan for Caprinae. Chapter 8.5. IUCN, Gland, Switzerland and Cambridge, UK.

HOFER, D. (1999), Traffic Europe, in litt. to U. Grimm, 19.01.1999.

IUCN (1994): New Red List Categories. IUCN, Gland, Switzerland.

IUCN (1996): 1996 IUCN Red List of Threatened Animals. IUCN, Gland, Switzerland.

JOHNSON, K. A. (1994): Torgar Conservation Project, Baluchistan Province, Pakistan. Unpubl. tech. report to WWF-International, Gland, Switzerland. 52 pp. + appendices.

JOHNSON, K. A. (1997a): Trophy hunting as a conservation tool for Caprinae in Pakistan. - In: FREESE, C. H. (ed): Harvesting wild species: Implications for biodiversity conservation. Pages 393-423. The Johns Hopkins University Press, Baltimore, Maryland.

JOHNSON, K. A. (1997b): Status of Suleiman markhor and Afghan urial populations in the Torgar Hills, Balochistan province, Pakistan. - In: MUFTI, S. A., WOODS, C. A. & HASAN, S. A. (eds.): Biodiversity of Pakistan. Pages 469-483. Pakistan Museum of Natural History, Islamabad and Florida Museum of Natural History, Gainesville.

KEREMKULOV, V. (1999), Director of the Department of State Ecological Expertise and Environmental Monitoring, Government of Kazakhstan, undated electronic mail received by the US Scientific Authority to CITES on June 17, 1999.

KREUZBERG-MUKHINA, E. (1998) in litt. to U. Grimm, 2.12.1998.

KURBANOV, P. (1996): Minister of Nature Use and Environmental Protection of Turkmenistan, in litt. to I. Topkov, CITES Secretariat, 18.09.1996.

LATIFI, A. (1999), Government of the Republic of Tajikistan, undated letter received by the US Scientific Authority to CITES on September 21, 1999.

LYAPUNOVA, E. A., BUNCH, T. B., VORONSOV, N.N. & HOFFMANN, R. S. (1997): Chromosome sets and the taxonomy of Severtsov's wild sheep (*Ovis ammon severtzovi*). Russian Journal of Zoology 1, 387-396.

MISTRAL-JAGDREISEN (1998): Jagen Weltweit Nr. 4/98, S. 75.

MUSAEV, D. A. (1999), government official from Uzbekistan, in Nazarov, O. P. in litt. to U. Grimm, 15.07.1999.

NANA, R. (1998) in litt. to D. M. Shackleton, 28.12.1998.

OLNEY, P.J.S. & F.A. FISKEN (1995): International Zoo Yearbook, Volume 34. Zoological Society of London.

OLNEY, P.J.S. & F.A. FISKEN (1997): International Zoo Yearbook, Volume 35. Zoological Society of London.

OLNEY, P.J.S. & F.A. FISKEN (1998): International Zoo Yearbook, Volume 36. Zoological Society of London.

RASOOL, G. (1999) in litt. to U. Grimm, 6.09.1999.

ROBERTS, T. J. (1997): The Mammals of Pakistan. Second Edition. Oxford University Press. Karachi. 525 pp.

SHACKLETON, D.M. (1997): Why Caprinae? Conservation Priorities and Options. General Conservation Actions and Implementation.- In: SHACKLETON, D.M. (ed.) and the IUCN/SSC Caprinae Specialist Group: Wild Sheep and Goats and their Relatives. Status Survey and Conservation Action Plan for Caprinae. Chapter 2, 11 & 12. IUCN, Gland, Switzerland and Cambridge, UK.

SHACKLETON, D. M. (1999a) in litt. to A. Rosser, 27.1.1999.

SHACKLETON, D. M. (1999b) in litt. to U. Grimm, July 1999.

SPORTSMEN'S HUNTING EXPEDITIONS (USA) 1999: Supply of the 26.08.1999. Internet, <http://biz.onramp.net/OutdoorVisions/superstore/sportsmen.html>.

TAREEN, S. N. (1999), IUCN Central Asia Sustainable Use Specialist Group, in litt. to U. Grimm, 8.09.1999

THE HUNTING CONSORTIUM LTD (1995): Hunting programmes in Russland and GUS. Boyce, Virginia, USA and Rednitzhembach/Germany.

THE HUNTING CONSULTANTS (1999): Supply of the 12.09.1999. Internet, <http://www.cheta.net/sunbelt/safari.htm>.

THE TROPHY HUNTING CONNECTION (1999): Supply of the 12.09.1999. Internet, <http://www.thetrophyconnection.com>

TRENSE, W. (1989): The Big Game of the World. Parey, Hamburg and Berlin.

VALDEZ, R. (1982): The wild sheep of the world. Wild Sheep and Goat International, Mesilla, New Mexico.

VALDEZ, R. (1995): Wild sheep and markhor surveys in Turkmenistan. Unpublished report submitted to the U.S. Fish and Wildlife Service. 6 pp.

VALDEZ, R. & DEFORGE, J. (1985): Status of Moufloniform (urial) sheep in Asia. - In: HOEFS, M. (ed): Wild sheep: distribution, abundance, management and conservation of the sheep of the world and closely related mountain ungulates. Pp. 145-150. Northern Wild Sheep & Goat Council, Whitehorse, Yukon.

WCMC (1999): CITES Trade Database, World Conservation Monitoring Centre, Cambridge, United Kingdom.

WEGGE, P. (1997): Preliminary guidelines for sustainable use of wild caprins. - In: SHACKLETON, D.M. (ed.) and the IUCN/SSC Caprinae Specialist Group: Wild Sheep and Goats and their Relatives. Status Survey and Conservation Action Plan for Caprinae. Appendix 1. IUCN, Gland, Switzerland and Cambridge, UK.

WEINBERG, P.I. (1998) in litt. to U. Grimm, 10.12.1998.

WEINBERG, P.I., FEDOSENKO, A.K., ARABULI, A.B., MYSLENKOV, A., ROMASHIN, A.V., VOLOSHINA, I. & ZHELEZNOV, N. (1997): The Commonwealth of Independent States (former USSR). - In: SHACKLETON, D.M. (ed.) and the IUCN/SSC Caprinae Specialist Group: Wild Sheep and Goats and their Relatives. Status Survey and Conservation Action Plan for Caprinae. Chapter 7.2. IUCN, Gland, Switzerland and Cambridge, UK.

WILSON, D. E. & REEDER, D.A.M. (1993): Mammal Species of the World, 2nd edition. A taxonomic and geographic reference. Smithsonian Institution Press, Washington, London.

WORLDHUNT INC. (1999): Supply of the 12.09.1999. Internet, http://www.worldhunt.com/Iran_hunts.html.

ZIAE, H. (1997): Iran. - In: SHACKLETON, D.M. (ed.) and the IUCN/SSC Caprinae Specialist Group: Wild Sheep and Goats and their Relatives. Status Survey and Conservation Action Plan for Caprinae. Chapter 5.1. IUCN, Gland, Switzerland and Cambridge, UK.

ZIAE, H. (1999) in litt. to U. Grimm, 8.09.1999.