

RANCHING AND BREEDING OF HORSFIELD TORTOISES IN UZBEKISTAN

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Introduction

TRAFFIC Europe compiled the following information in order to gain a better understanding of the management and conservation status of Horsfield tortoises (*Testudo horsfieldii*) in Uzbekistan, and in particular of the captive breeding / ranching activities¹ currently undertaken in the country. The information should assist relevant authorities in the exporting and importing countries of *T. horsfieldii* in taking measures to ensure that the use and trade in Horsfield tortoises will be ecological sustainable and will not harm the conservation status of this species in the wild.

Background

The Horsfield Tortoise (*Testudo horsfieldii*) is a medium-sized tortoise (15-25 cm carapace length) that inhabits arid habitats such as rocky deserts and sandy steppes, often at elevations of 1,500 m or higher. Its range extends from southeastern Russia southward through Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), eastern Iran, northwest Pakistan, Afghanistan and western China.

The species has been in international trade for several decades and this trade mostly concerns live animals for the international pet markets. Since 1975, the Horsfield tortoise has been listed in CITES Appendix II, and in 1997 it was included in Annex B of Council Regulation (EC) No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein. In 1991, the Horsfield tortoise was subject under the Significant Trade Review Process of CITES².

In recent years, concerns have been expressed over the large numbers of specimens of this species appearing in international trade (Inskipp, 1999). The countries of Central Asia, in particular Kazakhstan, Uzbekistan and Tajikistan, and the Russian Federation are the main suppliers of Horsfield tortoises in international trade, and the USA and the European Union are the main importers.

1.1 Biology and Conservation Status of the Species

The Horsfield tortoise differs from the other members in the genus *Testudo* in that it possesses four digits rather than five on its forelimbs³. Like other species in this genus the reproductive level of this tortoise is rather low, and it does not become sexually mature until it is about 11-12 years old.

In the wild, the species has a short period of peak activity lasting about three months in total (animals aestivate in June and July). The tortoises emerge from their burrows (following hibernation) in early spring (March-April) and immediately begin seeking mates (Bonin, Devaux & Dupre, 1996). In May the female lays an average of six eggs, and may lay two (possibly three) additional clutches during the same season. The eggs incubate for 80 to 110 days in the wild, and hatchlings usually emerge in August. Hatchlings normally have a carapace length (CL) of 3.2-3.4 cm at birth and a CL of approximately 5-6 cm at an age of two years. Horsfield tortoises are considered full-grown at 20 to 30 years of age, with the first breeding at 11-14 years (which corresponds to a CL of approximately 11-14 cm) (Brusko and Kubykin, 1982; Anderson-Cohen, 1994).

¹ for definitions of the terms 'captive bred', 'ranching' etc. please see definitions in Annex 1

² Recommended Action was that the relevant authorities of the range states should inform the Animals Committee of details of its management plan for this species, taking into account harvest for domestic and international trade.

³ for that reasons some authors assign this species to the genus *Agrionemyx* rather than *Testudo* (Khozatsky and Mlynarski, 1996).

IUCN, in its 2000 IUCN Red List of Threatened Species, categorized the Horsfield Tortoise as 'Vulnerable' (Hilton-Taylor, 2000). The combined effects of heavy collection for the pet trade and habitat loss through cultivation of deserts and semi-deserts, are considered the principal causes of the marked decline of this species (Stubbs, 1989). Field studies on the species in Kazakhstan have shown that collection can lead to the complete removal of tortoises from large areas (Brusko and Kubykin, 1982). In China, the population collapsed and local population densities have fallen to less than 1% of the densities recorded three decades ago (Luxmoore, Groombridge and Broad, 1988; van Dijk, *in litt.* to TRAFFIC Europe, June 2000). Due to the restricted movement and slow dispersal of the tortoise, re-colonization of such areas may take a long time or may not take place at all.

1.2 International trade

Between 1980 and 1985, 25,000 to 100,000 live animals were traded internationally each year (Luxmoore, Groombridge and Broad, 1988). Since 1995, annual trade volumes have varied from 15,000-37,000 live animals (see Table 1). The countries of the European Union (EU), together with the USA and Japan, are reportedly the main destinations for this species. According to CITES trade statistics, the USA, Japan and the Member States of the EU imported a total of 132,821 live *T. horsfieldii* between 1995 and 1999. 99.9% of the 132,821 live tortoises are of wild origin and only 172 are declared as source C (=captive bred) or source F (=captive born).

Table 1: Net Imports of live *T. horsfieldii* by the most important countries of import as reported by the country of import for the years 1995 to 1999.

	1995	1996	1997	1998	1999	Total	%
EU Member States							
Austria			2	100		102	0.1%
Belgium				1100		1100	0.8%
Germany				1401	4701	6102	4.6%
Denmark				1		1	0.0%
Spain				1900	500	2400	1.8%
Finland			295			295	0.2%
France				3400		3400	2.6%
United Kingdom			100	3408	2302	5810	4.4%
Greece						0	
Ireland						0	
Italy						0	
Luxembourg						0	
Netherlands						0	
Portugal						0	
Sweden						0	
Subtotal EU			397	11310	7503	19210	14.5%
USA	9467	2710	7868	5800	20255*	46100	34.7%
Japan	9964	12797	15200	19900*	9350*	67211	50.7%
Total	19431	15507	23465	37010	37108	132821	100%

* Trade as reported by the countries of export; annual reports of the countries of import not yet available (Source: UNEP-WCMC, 2000)

Japan has become together with the USA the largest importer of Horsfield tortoises, importing a total of more than 67,000 live animals for the period 1995 to 1999. The import volumes of Japan have almost doubled in this five year period and increased from almost 10,000 live animals in 1995 to 19,900 live animals in 1998. The 1999 figures are incomplete at the time of writing (October 2000), but suggest a decrease in the number imported into Japan.

The USA is the second main importer of *T. horsfieldii*, importing between 2,710 animals in and 20,255 in 1999. The Member States of the EU imported from 1995 to 1999 a total of 19,210 live *T. horsfieldii*. Germany and the United Kingdom are the most important destinations for this species, importing in the same period about 6,100 and 5,800 specimens respectively.

The vast majority of these tortoises originate from the Central Asian countries Kazakhstan, Uzbekistan, and Tajikistan, and from the Russian Federation (see Table 2). Between 1995 and 1998, more than 160,000 live tortoises have been exported by these four countries. Uzbekistan exported exporting more than two thirds (65%) of all Horsfield tortoises exported from these countries in that period.

Table 2: Net exports by country of origin of live wild *T. horsfieldii* between 1995 and 1999 as reported by CITES Parties. (KZ=Kazakhstan, UZ=Uzbekistan, TJ= Tajikistan, UA= Ukraine).

	1995	1996	1997	1998	1999	Total
Russian Federation (RU)	4555	3700*	4957	2302	2*	15516
as re-export from KZ	17634	2370	4000			24004
as re-export from UZ	9006	9477	22226			40709
as re-export from TJ		2000		13816	1700	17516
as re-export from UA			5000			5000
subtotal re-exports and exports from the RU	31195	17547	36183	16118	1702	102745
Kazakhstan ¹						
Tajikistan ²				3846		3846
Uzbekistan ³				20515	35600	56115
Total	31195	17547	36183	40479	37302	162706

(Source: UNEP-WCMC, 2000)

1 = Kazakhstan joined CITES in April 2000

2 = Tajikistan is not yet party to CITES

3 = Uzbekistan joined CITES in October 1997

* = annual report of the Russian Federation not yet available

Table 3 gives an overview of the CITES export quotas that were established by Uzbekistan, Kazakhstan and the Russian Federation. According to the CITES Management Authority of Kazakhstan (*in litt.* to TRAFFIC Europe-Russia, Sept. 2000), the harvest of *T. horsfieldii* was prohibited in 1997 and 1998, and therefore no export took place in these years (no imports from Kazakhstan were reported by importing countries). In 2000, the quota for harvest and export was set at 39,000 live specimens, but only 25,000 were harvested and of these only 10,000 were exported. The remaining 15,000 animals were reintroduced into the wild.

Table 3: Export quotas as reported to the CITES Secretariat by three main exporters of *T. horsfieldii*)

	1997	1998	1999	2000
Russian Federation				
as re-export from KZ			20,000	
as re-export from UZ	20,000	25,000		
as re-export from TJ			15,000	
subtotal RU	20,000	25,000	35,000	-
Kazakhstan ¹				39,000
Uzbekistan ²		25,000	35,000	35,000
TOTAL	20,000	50,000	70,000	74,000

(Source: CITES Notif. No. 994, 1998/36, 1998/07, 1999/47, 2000/053)

1 = Kazakhstan joined CITES in April 2000

2 = Uzbekistan joined CITES in October 1997

1.3 EU Trade Regulations for *T. horsfieldii*

Since December 1999, the European Union has prohibited the importation of live specimens of *T. horsfieldii* of wild origin. This measure was taken in accordance with Article 4.6(c) of EU Regulation 338/97 following a negative opinion of the EC's Scientific Review Group (SRG). This opinion was established following concerns about high mortality rates of this species upon importation into the EU and concerns that live specimens of *T. horsfieldii* of wild origin are unlikely to survive in captivity for a considerable proportion of their potential lifespan⁴.

In 2000, the CITES Scientific Authority of Uzbekistan informed the EU about the availability of more than 3,000 captive bred (source "F") and 2,000 'ranch' (source "R") specimens of *T. horsfieldii* and requested the EU to permit the importation of these specimens (Prof. D.A. Azimov, CITES Scientific Authority of Uzbekistan, *in litt.* to C. Bail, 1 May 2000). According to the Uzbek Authorities, all of these specimens were born at a captive breeding operation named "UzZookomplex" located in Tashkent between 1997 and 1999.

However, the SRG decided at its 17th meeting held in July 2000 to take a negative opinion on the importation of *T. horsfieldii* with source "F" and "R" originating from Uzbekistan. This decision was established in accordance with Article 4.2(e) of Regulation (EC) 338/97 following concerns 'that there may be other factors relating to the conservation of the species which mitigate against issuance of the import permit'. Unless additional scientific information is made available this decision will restrict the import of captive bred or ranch' specimens of *T. horsfieldii* from Uzbekistan.

⁴ The EU currently also bans the importation of wild specimens of *T. horsfieldii* originating from China and Pakistan. This measure was taken in accordance with Article 4.6(b) of EU Regulation 338/97.

2. Management and Breeding of *T. horsfieldii* in Uzbekistan

The following section is primarily based on information obtained by TRAFFIC Europe during a field trip to Uzbekistan in October 2000 (see also photographs in Annex 3). The field trip was undertaken by Andrei Zatoka, Consultant to TRAFFIC Europe, who as a herpetologist has more than 15 years of experience with *T. horsfieldii* in Central Asia.

2.1 National Regulations Concerning the Harvest and Trade of *T. horsfieldii* in Uzbekistan

The Republic of Uzbekistan joined CITES in October 1997. The Management Authority is the *State Inspection for Protection of Flora, Fauna and Reserves under the State Committee for Nature Protection* located in Tashkent, and the Scientific Authority is the *Institute of Zoology* (for animal species) and the *Institute of Botany of the Academy of Natural Science of the Republic of Uzbekistan* (for plant species).

T. horsfieldii is not protected in Uzbekistan. However, the harvest, possession and trade in this species is regulated under the general provisions outlined in different laws, e.g. the Law of Republic of Uzbekistan No. 545-I: *On Protection and Use of Animal World of 26 December 1997*, and in more detail in the national legislation regulating commercial and sport hunting.

The harvest of *T. horsfieldii* for export requires the issuance of harvest licenses and export permits (Article 15 of Law No. 545-I). The harvest and export quotas are established by the Institute of Zoology, Academy of Sciences of Uzbekistan (=CITES Scientific Authority of Uzbekistan), while harvest licenses and export permits are issued by the State Committee of Nature Protection (=CITES Management Authority of Uzbekistan). The quotas established by the State Committee of Nature Protection do not indicate the sex or age of the tortoises and are not issued for a specific district or area.

Since 1998, Uzbekistan reports annual export quotas for specimens of *T. horsfieldii* to the CITES Secretariat. In 1998, the export quota for *T. horsfieldii* was 25,000 specimens. In 1999 it increased to 35,000 specimens and in 2000 it was set at 35,000 (live) specimens. The Russian Federation re-exported *T. horsfieldii* originating from Uzbekistan in 1997 and 1998. The export quotas for the re-export of this species from Russia were set at 20,000 in 1997 and 25,000 in 1998.

2.2. Conservation Status of *T. horsfieldii* in Uzbekistan

T. horsfieldii lives in most parts of country in very diverse habitats, ranging from arid sand deserts (e.g. Kyzil-Kum desert in Central Uzbekistan) to mountainous pastures and gardens (see map in Annex 2).

Based on population surveys conducted between 1991 and 1999 in the Kyzil-Kum desert in Central Uzbekistan, the population of *T. horsfieldii* in Uzbekistan is estimated at about 15-20 million specimens (Mitropolski and Kashkarov, 2000; Bozhansky and Polinova, 2000; both documents are included in Annex 3 and 4). The population density varies in the different habitat types from 3.1 – 40.3 animals / 10 ha and has an average of 11.4 animals / 10 ha. According to these surveys the local population of *T. horsfieldii* in the Central Kyzil-Kum desert declined sharply in recent years,

which is believed to be a direct consequence of large-scale collection of the species in these areas. In addition, tortoises are also affected by the loss of suitable habitats due to agricultural developments, and by droughts (Mitropolski and Kashkarov, 2000). Bozhansky and Polinova (2000) noted that in northwest Nuratau, where commercial collection of *T. horsfieldii* has taken place since 1996, the average population density decreased from 40 animals / ha in 1998 to 30.6 animals in 1999.

2.3 'Captive breeding / ranching' Activities of *T. horsfieldii* at the UzZookomplex Center

The UzZookomplex is located in Tashkent, the capital of the Republic of Uzbekistan. The center is one of a small number of captive breeding / ranching facilities in Uzbekistan. UzZookomplex is not only involved in captive breeding activities of Horsfield tortoises, but also in running captive breeding and / or ranching programs for certain raptor species (buzzards, falcons) and reptiles (certain lizards and snake species).

The UzZookomplex started its 'ranching and 'breeding' of *T. horsfieldii* in 1997. Since then, the center has obtained several thousand adult wild *T. horsfieldii* per year. These tortoises are collected by local harvesters who are directly employed by the UzZookomplex. The center issued specific harvest licenses to its harvesters indicating a certain district or region where the animals should be collected. Most animals that are harvested are estimated to be adults and older than 12 years. Harvest of eggs or juveniles from the wild does not take place because they are more likely to die after the harvest, and are extremely difficult to find in the wild. The harvest usually takes place from March to June, coinciding with the activity cycle of the species.

The harvested animals are brought to the center where they are kept in outside enclosures awaiting export, which usually takes place at the end of the harvesting season in August and September. Thus, depending on the time of harvest, the animals remain at the center for a period of up to three months before they are exported. Such animals are considered as 'animals in transit'. During that period the animals may start mating and in May / July females lay their eggs at the center (it is estimated that 40% of the harvested animals are actively mating at the center). These eggs are then taken to an indoor incubator (28 Degrees) and hatching usually takes place in August / September.

The juveniles obtained from these wild taken animals that mated at the center are considered F1-specimens (source "F" = 'born in captivity) by the UzZookomplex center. However, some females were already pregnant when brought to the center and the eggs laid by these females are considered as 'ranching' (source "R") by the UzZookomplex center.

At the end of summer, the majority of the wild collected animals are exported. However, a small number of animals remain at the center where they hibernate. These animals are considered the 'permanent breeding stock' by the UzZookomplex.

Table 4 shows the numbers of wild collected animals that are kept at the UzZookomplex either as 'permanent breeding stock' or as animals 'in transit'. Table 4 indicates that since 1997, more than 26,000 adult tortoises were temporarily kept at this center ('in transit'). Of these, 671 adult females

and 283 adult males remained and hibernated at the center ("the permanent breeding stock") while the rest were exported.

Since 1997, the wild collected animals that were kept at the center either 'in transit' or as 'permanent breeding stock' laid a total of 10,722 eggs. Of these, 6933 hatched (65%) and 5,801 juveniles were still alive after their first hibernation (i.e. in spring following the year of hatching). Since 1997, 700 juvenile tortoises born at the center have been released into the wild.

According to the Director of the center, all juveniles born at the center are destined for export or for restocking of the wild populations. Currently, the center does not intend to rear these F1-juveniles to an reproductive age, i.e. 10-13 years, and therefore has no intention of obtaining F2 animals.

The mortality rate of the wild harvested adult animals reared at the center is estimated to range from 1-3%. The mortality rate of the F1 animals born at the center varies from 5-12%. Of the 10,722 eggs laid at the center 6,933 hatched as F1- Generation. Of these new hatchlings 10-15 % died within the first year / or did not re-emerge after their first hibernation.

Table 4: Overview of the number of specimens of *Testudo horsfieldii* collected, hatched and released since the establishment of the UzZookomplex Center, 1997-2000.

	Adults collected from the wild*			Eggs laid	Juveniles				
	'permanent breeding stock'		'in transit'		hatched	not hatched	available in spring (after hibernation) alive	mortality rate#	Released in the wild
	female	males							
1997	65	10	+/- 12000	243	123	120			
subtotal	65	10	+/- 12000	243	123	120			
1998	418	82	+/- 8000	3029	2016	1013			
				1709 (R)	918 (R)	791 (R)			
subtotal	483	92	+/- 20000	4981	3057	1924			
1999	188	191		3115	3716	1071	2762	~10%	
			+/- 6500	1672 (R)					
subtotal	671	283	+/- 26500	9768	6773	2995	295		
2000	?	?	?	160	101	59	5801	~15%	700
TOTAL	671	283	+/- 26500	9928	6874	3054	5101	972	700

Source: Adapted from information provided Dr. B.B. Abdunazarov, CITES SA of Uzbekistan and E.A. Peregontsov, Deputy Director of the UzZookomplex, *in litt.*, 8. Sept. 2000; Andrei Zatoka, TRAFFIC Europe, Oct. 2000.

*= this includes approximately 1000 specimens that were obtained from a confiscated source = not legally collected

#= % of death from previous year

2.4 Trade and Export by the UzZookomplex

The vast majority of the animals harvested and kept by the UzZookomplex are destined for export, while a small number of approximately 1,000 adult tortoises are sold at the national market in Uzbekistan every year. According to figures provided by Mr. Sorochinsky, Director of the UzZookomplex (see Annex 6), the center exported between 1997 and 2000 more than 100,000 live *T. horsfieldii* of wild origin (see Table 5.).

All tortoises are exported live to be kept in captivity. According to Mr. Sorochinsky, Chinese traders have requested tortoises from Uzbekistan with the aim to market them as food for restaurants, but this request was refused ('because of the "principles" of the UzZookomplex). However, as Mr. Sorochinsky claims that *T. horsfieldii* are exported from Kazakhstan to China to supply demand by restaurants.

Table 5: Annual exports of live wild *T. horsfieldii* from the UzZookomplex, 1997-2000.

Importer	1997	1998	1999	2000	Total
CITES Export Quota	-	25000	35000	35000	
CZ		5000	0		~5000
DE		2500	2000		~4500
FR		2000	0		~2000
GB		2500	4000		~6500
JP		7500	9350		~16850
MX			500		~500
USA		5500	19750		~25250
Total	19000	25000	35600	24500	104100

Source: UzZookomplex, October 2000, included in Annex 6; TRAFFIC Europe; for 1997 and 2000; no information on the importer available.

2.5 Transport, Marketing and Illegal Trade

The UzZookomplex only exports specimens with a carapace length of 5 to 11.5 cm. This size limit was set because tortoises smaller than 5 cm are less likely to survive the transport, and because specimens larger than 11.5 cm are too large and heavy (and hence more expensive) to ship.

Some importing countries have imposed size limitations for the importation of live specimens for a range of tortoise species, including *T. horsfieldii*. For example, the USA, Canada and the United Kingdom have restricted the trade in tortoises under 10 cm carapace length (the so-called "four-inch-rule") with the purpose of reducing the risk of humans contracting salmonellosis from tortoises carrying *Salmonella bacteria* (in the USA), or as an animal welfare measure to curb the trade in 'toy tortoises' (in the UK) (Craig Hoover *in litt.* to TRAFFIC Europe, Oct. 2000; Asian Turtle Trade Working Group, 2000)⁵. According to Mr. Sorochinsky, all tortoises are transported according to the IATA Rules for the Transportation of Animals.

There is no price difference between females, males, juveniles or adult specimens. One specimen of *T. horsfieldii* costs about 100-120 UZS (=0.15-0.18 EUR; 1 UZS=0.0015 EUR, October 2000; price paid to harvesters). The export price slightly increased recently and is now 360 UZS per animal (=0.54 EUR); in 1997 one specimen cost about 300 UZS (=0.45 EUR).

⁵ Experts of the Asian Turtle Trade Working Group have recently warned of the negative indirect impact of these regulations on the conservation of turtle populations in the wild, as they may undermine captive breeding activities (as the import of hatchlings or juveniles under 10 cm is no longer legal) and thus increase the pressure on the large and reproductive animals taken from the wild.

According to Mr. Sorochinsky, illegal harvest and trade in *T. horsfieldii* is rather common in Uzbekistan. The agencies responsible for the control and enforcement (Customs and Biological State Control Agencies) estimate the volumes of annual illegal export to be 7,000 tortoises from Uzbekistan, 25,000 from Kazakhstan and 40,000 in total from Central Asian countries (it is not clear how this information was obtained). In 2000, the Uzbek Customs and the Biological State Control agency confiscated a total of 1,000 tortoises. All animals were handed over to the UzZookomplex.

Mitropolski and Kashkarov (2000) report that 'mass poaching' has taken place in recent years in the regions of Bukhara and Samarkand (see map in Annex 2). According to the authors, particularly the large adult tortoises (>17 cm) are specifically targeted by the poachers.

3. *T. horsfieldii* as a Pet - Considerations for Improving its Survival Rate in Captivity

The following information is based on comments provided (*in litt.* to TRAFFIC EUROPE) by Peter-Paul van Dijk (PPD; Member of the IUCN Tortoise & Freshwater Turtles Specialist Group, the Asian Turtle Trade Working Group, Senior Program Officer of TRAFFIC Southeast Asia), Craig Hoover (CH; Senior Program Officer of TRAFFIC North America) and Thomas Vinke (TV; Chair of the Chelonian Working Group of the DGHT (Deutsche Gesellschaft für Herpetologie und Terrarienkunde = German Association of Herpetology and Terraria). *in litt.* to TRAFFIC Europe in October 2000.

3.1 Is *T. horsfieldii* a species that is difficult to keep in captivity?

According to TV and pet care sheets available on the internet (e.g. Highfield, 2000), *T. horsfieldii* does not differ greatly from other *Testudo* species in terms of the intensity of care required and its potential breeding success in captivity. However, this does not mean that *T. horsfieldii* is a species that is easy to keep in captivity as it requires experienced care, specifically when it comes to food, housing, temperature regulation and ensuring and monitoring the hibernation of the animal (the species has a high mortality rate if hibernation is not ensured). *T. horsfieldii* differs from other *Testudo* species in that it has a rather low tolerance to moist climate and rain; extreme temperatures are less problematic for this species as long as the animal is kept dry. Concerns over high mortality rates of captive *T. horsfieldii* in northern Europe are often interpreted as being the result of incorrect or unsuitable husbandry practices for this species.

Unlike other *Testudo* species, *T. horsfieldii* can not be kept as a 'garden tortoise' due to its low tolerance to rain and moisture. Consequently keeping *T. horsfieldii* successfully in captivity over a considerable period of their potential lifespan requires not only a certain level of know-how and expertise but also suitable housing facilities (including temperature regulation, monitoring hibernation, etc.).

3.2 Does *T. horsfieldii* survive in captivity for a considerable period of their lifespan?

According to TV, *Testudo horsfieldii* - given that suitable care is provided - can survive in captivity for a considerable proportion of their potential lifespan. There have been successful attempts to breed *Testudo horsfieldii* in captivity, and these have increased in recent years. F1 specimens bred in captivity in Europe proved to be unproblematic to keep.

According to TV and others (e.g. Highfield, 2000), the high mortality rates of *T. horsfieldii* in captivity in northern Europe, as observed in recent years, are mostly related to the poor health conditions of the specimens that were shipped to the EU. These health problems are seen as resulting from:

- 1.) poor transport conditions, shortage of food and water supplies during transport, violations of IATA regulations;
- 2.) harvest and storage practices prior to the export;
- 3.) lengthy transport with several stops and transit in other countries stresses the animals and increases the likelihood of the spread of contagious diseases, (e.g. TV reports that specimens of *T. horsfieldii* recently imported from Central Asia and Russia via Eastern European countries into the EU were infected with a Herpes virus. As this shipment involved specimens originating from different countries of origin, it is likely that the animals got infected with the virus during the transport and transit.
- 4.) poor veterinary controls before and during transport / transit;
- 5.) imported animals arrive generally in autumn (September/October) in the EU, hence at a time when the animals usually would start hibernation (animals imported in autumn may have difficulties in adapting to the new environment, may be stressed or underweight and thus not strong enough for hibernation).

3.3 Are captive bred or ranched tortoises more likely to survive in captivity than wild specimens?

Tortoises originating from captive breeding or ranching facilities may be more likely to survive in captivity than wild specimens for the following reasons and under the following preconditions (based on comments provided by TV):

- they are less likely to be contaminated with viral diseases or infections, and carry less endoparasites (provided that hygienic standards and veterinary care at the breeding facility are good);
- health conditions of the animals destined for export can be better monitored;
- captive bred or ranched tortoises are less stressed because they can be directly exported from the breeding facility (no translocation; no need to be stored in 'collecting stations' until enough individuals have been collected for the shipment).

3.4 Are juvenile *T. horsfieldii* more likely to survive in captivity than adults?

According to TV and PPD, juveniles are more likely to survive in captivity for a considerable period of their potential lifespan and "make better pets" for the following reasons:

- juveniles generally adapt better and faster to captive conditions; they are less accustomed to their home range, and therefore removing them from the wild and 'transplanting' is less traumatic;
- juveniles carry fewer parasites;
- juveniles are more resistant to stress from transport and re-housing;
- 'food rejection' after importation is less likely and food acceptance is higher because juveniles are less adapted to certain food;
- instinctual drive to return to the hatching site is less apparent in captive bred specimens, hence reproduction and egg laying is more successful.

However, both TV and PPD pointed out that hatchlings and juveniles younger than two years may be more delicate to transport and are less likely to survive in captivity than specimens of two to three years.

Conclusions

Populations and Conservation Status of *T. horsfieldii*

- The species is widely distributed and it occurs in ten countries (Afghanistan, China, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan).
- Stubbs, in 1989, considered the global status of the species to be secure for the foreseeable future. In 2000, IUCN considers the Horsfield tortoise as a 'Vulnerable' species (Hilton-Taylor, 2000). The combined effects of over-exploitation for the pet trade and habitat loss are the main threats to the survival of this species (Stubbs, 1989).
- The population of *T. horsfieldii* in Central Uzbekistan is estimated at 15 to 20 -million animals ((Mitropolski and Kashkarov, 2000; Bozhansky and Polinova, 2000).
- The high levels of off-take have led in some areas to population declines (e.g. in Uzbekistan), population collapses (e.g. in China) or have resulted in local extinctions (e.g. in Kazakhstan) (Luxmoore, Groombridge and Broad, 1988; Brusko and Kubykin, 1982).

International Trade in *T. horsfieldii*

- *T. horsfieldii* has been in international trade for several decades. The majority of this trade is in live wild taken animals for the pet market (approx. 99.9% of all specimens traded from 1995 to 1999). However, some trade takes place for the food markets in Asia.
- The main exporters of *T. horsfieldii* are Uzbekistan, Kazakhstan, Tajikistan and the Russian Federation. Between 1995 and 1999 these countries exported more than 160,000.
- The main importers of *T. horsfieldii* are Japan, the USA and the Member States of the European Union. More than 130,000 live wild collected specimens have been imported by these countries between 1995 and 1999.
- The imports of Japan of live wild *T. horsfieldii* have increased steadily since 1995 and have almost doubled from 9,964 specimens in 1995 to 19,900 specimens in 1998.
- China allegedly has recently started to import *T. horsfieldii* from Kazakhstan to supply the demand of the food markets in this country and has requested to import *T. horsfieldii* from Uzbekistan.

Trade, Breeding and Ranching of *T. horsfieldii* in Uzbekistan

- Since 1997, Uzbekistan has legally exported more than 104,100 live wild collected *T. horsfieldii*. The annual export volume has increased from 19,000 in 1997 to 35,600 live specimens in 1999; during January to September 2000, 24,500 tortoises were exported.
- The majority of the tortoises exported between 1997 and September 2000 were exported to the USA (25,250 specimens = 24%), Japan. (16,850 specimens = 16%) and the EU (13,000 specimens = 13%).
- In 1997, Uzbekistan started to undertake captive breeding and ranching of *T. horsfieldii*. The animals bred and ranched at the UzZookomplex in Uzbekistan are destined to be exported to supply international pet markets.

- All animals that were involved in breeding and ranching activities at the UzZookomplex since 1997 were harvested from the wild populations in Uzbekistan. No eggs or juveniles were harvested from the wild; most animals harvested are older than 12 years (i.e. have reached sexual maturity).
- Since 1997, more than 9,928 eggs were laid by wild collected tortoises at the UzZookomplex. Of these, 6,874 eggs hatched (65%) and 5,801 juveniles survived until summer 2000.
- The mortality rate of the wild harvested animals kept at the UzZookomplex ranges from 1-3%. The mortality rate of the F1-generation born in captivity varies between 5-12%.
- Most of the animals 'born in captivity' or 'ranching' (=eggs laid from wild collected gravid females) at the UzZookomplex are destined for export. A small number of tortoises is released, in the wild (700 animals in 2000).
- Illegal harvest is said to be common in Uzbekistan and it is estimated that 7,000 adult wild taken specimens are illegally exported each year.

***T. horsfieldii* in captivity**

- *T. horsfieldii* is a tortoise species with certain care requirements with regard to temperature and climate (low tolerance to moist climates), food and hibernation. Therefore it should only be kept by experienced keepers and / or breeders.
- High mortality rates of *T. horsfieldii* kept in captivity in the EU may be due to:
 - unsuitable care provided by inexperienced keepers (kept as a 'garden tortoise' in northern Europe);
 - poor transport conditions and state of health of the animals when entering the EU;
 - time of the year when the animals enter the EU market: the animals are usually imported in September, which means that the animals do not have enough time to adapt to the new environment and are too weak to successfully hibernate.
- Tortoises originating from captive breeding and / or ranching facilities may be more likely to survive in captivity than wild collected tortoises.
- Juvenile tortoises with an age of 2-3 years may be more likely to survive in captivity than adults or animals younger than that age.

Recommendations

In order to assist with conservation of *T. horsfieldii* in the wild, and improve management of the harvest and trade in *T. horsfieldii* in both countries of origin and countries of import, the following actions are recommended:

Directed at the relevant authorities in Uzbekistan and other Range States of *T. horsfieldii*:

- Restrict the harvest to specimens not larger than 12 cm. This will help to sustain the portion of the wild population that is mature and reproducing, and will reduce the negative impact of harvest.
- Conduct surveys on the population size and status of *T. horsfieldii* in different habitat types on a regular basis, assess potential threats, and monitor the impact of the harvest on local populations.

- Establish harvest quotas on the basis of regional population surveys and issue harvest permits for certain areas only. Ensure rotation of harvest sites at intervals of several years, in order to prevent local population declines.
- Improve enforcement of the existing legislation that regulates the harvest and trade in *T. horsfieldii* and ensure that the provisions of CITES, specifically those of Article IV, are fully implemented.
- Provide guidance to captive breeding and ranching operations in the country as necessary, and ensure that they operate in accordance with all relevant legislation and regulations pertaining to: the conservation and utilization of wild animals; hygienic and veterinary requirements; and transport as specified by IATA.
- Where legislation is lacking, consider developing appropriate regulatory measures relating to the conservation and utilization of wild animals, hygienic and veterinary requirements, and transport guidelines as specified by IATA.

Directed at the authorities of importing countries of *Testudo horsfieldii*

To the authorities of the EU (and others where such measures can be taken):

Restrict the trade in *Testudo horsfieldii* from Uzbekistan to live specimens with a carapace length of 5-8 cm (specimens of 5-6 cm are two years old, and specimens under 8 cm are juveniles that have not reached reproductive age) that are either born in captivity 'F', or ranched 'R'. This restriction will:

- reduce the potential import of wild collected live specimens that are falsely declared as source C, F, or R, because hatchlings or juveniles are rarely found or collected in the wild. Even if wild collected hatchlings and juveniles were to be imported, the size limitation would still ensure that no off-take of mature reproductive adults takes place. Keeping adult animals out of the trade is seen as one of the most effective conservation measures (Asian Turtle Trade Working Group, 2000)⁶.
- help to limit the number of live specimens of *T. horsfieldii* marketed in the EU which can help keep the price for this species relatively high (currently at approximately 150-200 € for a two year old specimen, retail price in Germany). These higher prices can dissuade inexperienced persons from making spontaneous purchases, and will help ensure that *T. horsfieldii* are kept by interested and experienced keepers.
- ensure that hatchlings and juveniles (CL = < 5 cm) that are more delicate to transport and hence have a higher mortality in captivity, are not imported.
- support and facilitate the management of captive breeding and ranching activities for this species in Uzbekistan, that have been established with the aim of ensuring long-term conservation of the species in the wild.

⁶ A similar measure was recently taken under CITES with the aim to better regulate the trade in Pancake Tortoises *Malacochersus tornieri* (CITES Appendix II and Annex B) originating from Tanzania, whereby only specimens with a carapace length of 8 cm or less can be exported from Tanzania (CITES Notifications 1999/20 and 2000/053).

To authorities of countries which imposed size limitations ('four-inch rule') for the import of *T. horsfieldii*:

- Revise existing size limitations for tortoises and turtles in trade ('four-inch rule', e.g. in USA and Canada) and assess its potential impact on the conservation and sustainable utilization of wild tortoises imported into these countries.

To authorities of all importing countries of *T. horsfieldii*

- Evaluate and monitor trade levels, trends and developments for live *T. horsfieldii*;
- Assist exporting countries in evaluating the conservation impact of the current trade levels on populations in the wild.
- Ensure that the provisions of Article IV of CITES are fully implemented and enforced (in particular with regard to the high export figures of Kazakhstan and Uzbekistan).
- Assist exporting countries in monitoring the impact of trade restrictions and other measures that were or may be taken to regulate the trade in tortoise species.

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ANNEX

Annex 1

Definitions used in this report

Annex 2

Map of the Uzbekistan

Annex 3

Photographs taken by TRAFFIC Europe during a visit at the UzZookomplex in October 2000.

Annex 4

Information on size of population of commercial and hunting species of land vertebral animals in the arid region of Uzbekistan. Dr. O.V. Mitropolski and Dr. R.D. Kashkarov, Uzbek National Anti-Plaque Station

Annex 5

Results of quantitative counting of Steppe Tortoises in the Places of industrial and potential catching in Uzbekistan in 1999. The Society for the Protection of Amphibians and Reptiles.

Annex 6

Imports and Exports of the UzZookomplex in 1998 and 1999.

Annex 1 – Definitions used in this report

F = animals born in captivity (F1 or subsequent) that do not fulfil the definition of 'bred in captivity' in Article 24 of EU Reg. 939/97

C = animals born and bred in captivity in accordance with Article 24 of EU Reg. 939/97

ranching = according to Res. Conf. 11.16 of CITES means ranching 'the rearing in a controlled environment of specimens taken from the wild'

breeding stock = all animals in a breeding operation that are used for reproduction

Controlled environment = an environment that is manipulated for the purposes of producing animals of a particular species, that has 1.) boundaries designed to prevent animals, eggs or gametes of the species from entering or leaving the controlled environment, and 2.) the general characteristics of which may include but are not limited to: artificial housing, waste removal, health care, protection from predators and artificial supply of food

Characteristics of a captive breeding operation: boundaries designed to prevent animals, eggs or gametes from entering or leaving the operation and other general characteristics e.g. artificial housing, waste removal, health care, protection from predators artificial supply of food etc.

According to **EU Regulation 939/97, Article 24** a specimen **born and bred in captivity** is considered born and bred in captivity only when the Scientific Authority of the EU Member State concerned is satisfied that the following four conditions are fulfilled :

1. the specimen comes from offspring born in a controlled environment from parents that mated in a controlled environment
2. the parental breeding stock was established in accordance with legal provisions and in a manner not detrimental to the species in the wild
3. the parental breeding stock is maintained without augmentation from the wild , except for the occasional addition of animals eggs or gametes from the wild to prevent deleterious inbreeding
4. the parental stock is maintained in a manner designed to maintain the breeding stock indefinitely, e.g. in a manner that is reliable of producing F2 offspring

Annex 3 - Photographs taken by TRAFFIC Europe during a visit at the UzZooKomplex in October 2000

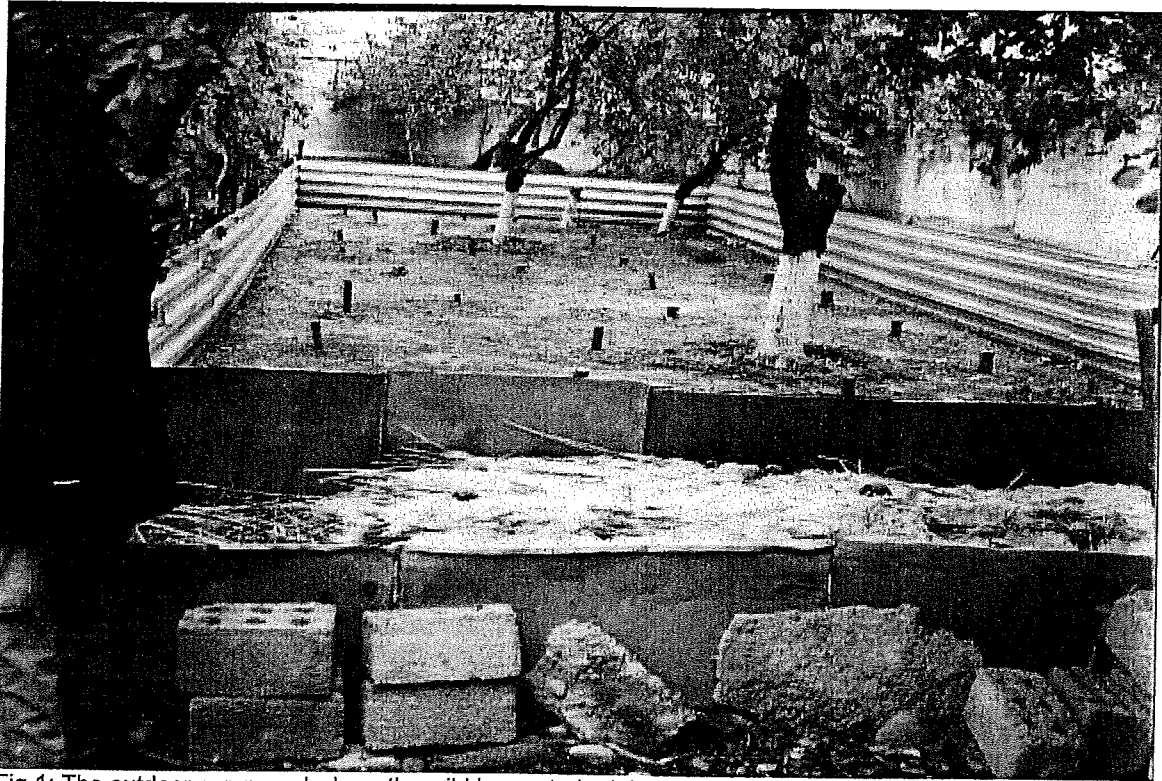


Fig.1: The outdoor compound where the wild harvested adult tortoises destined for export are kept during the summer (Picture: TRAFFIC Europe/Andrei Zatoka)

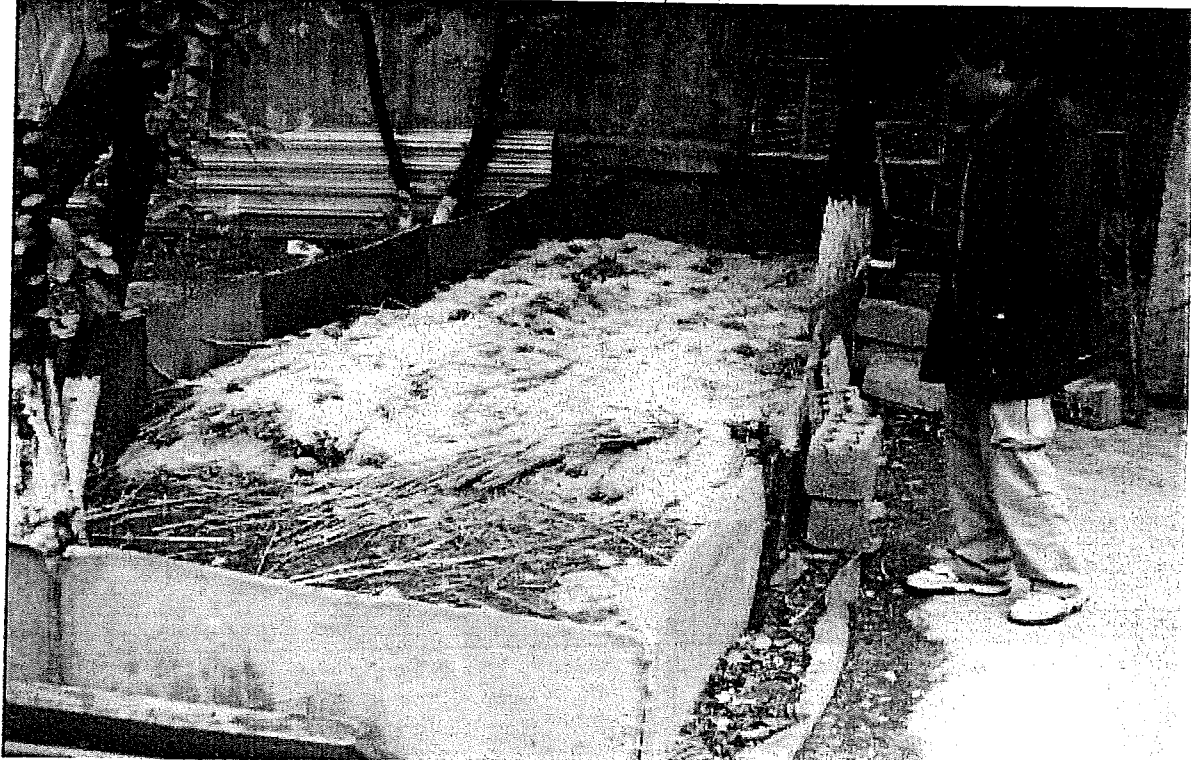


Fig.2: The outdoor compound where some of the adult tortoises that remain in the centre hibernate during winter (Picture: TRAFFIC Europe/Andrei Zatoka)

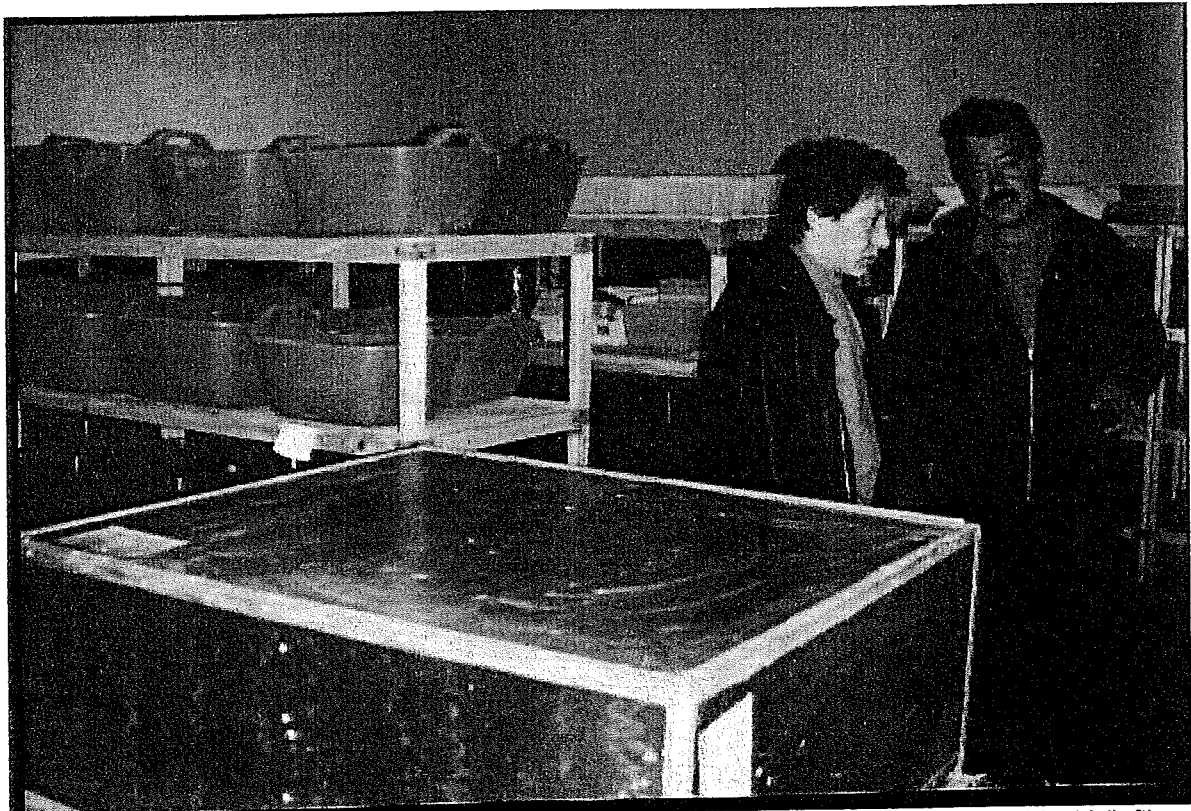


Fig.3: Inside the 'incubator room' with the Director of the UzZookomplex, Dr. G. Sorochinski (left). (Picture: TRAFFIC Europe/Andrei Zatoka)



Fig.4 : The new F1-hatchlings are kept in boxes in the incubator room. (Picture: TRAFFIC Europe/Andrei Zatoka)

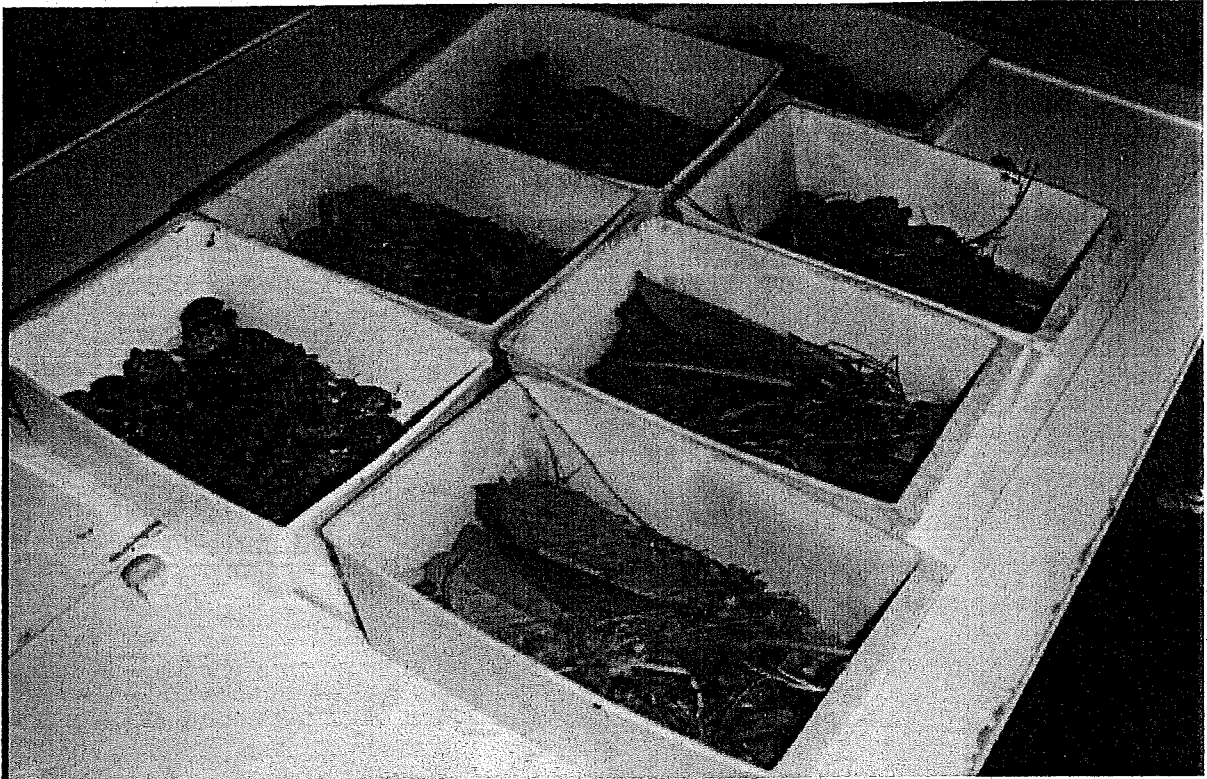


Fig.5: The new F1-Generation usually hatches after an incubation period of 70-80 days in August / September. (Picture: TRAFFIC Europe/Andrei Zatoka)

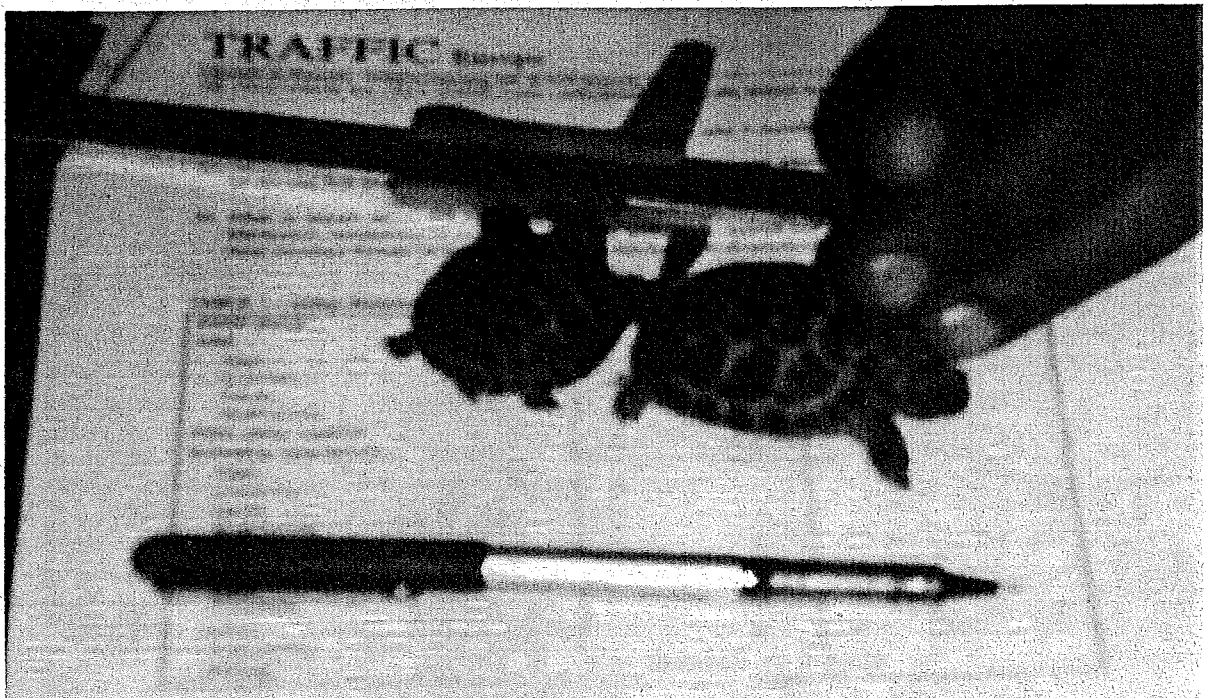


Fig.6: The newly hatched tortoises reach a carapace lengths of approx. 32-35mm. (Picture: TRAFFIC Europe/Andrei Zatoka)

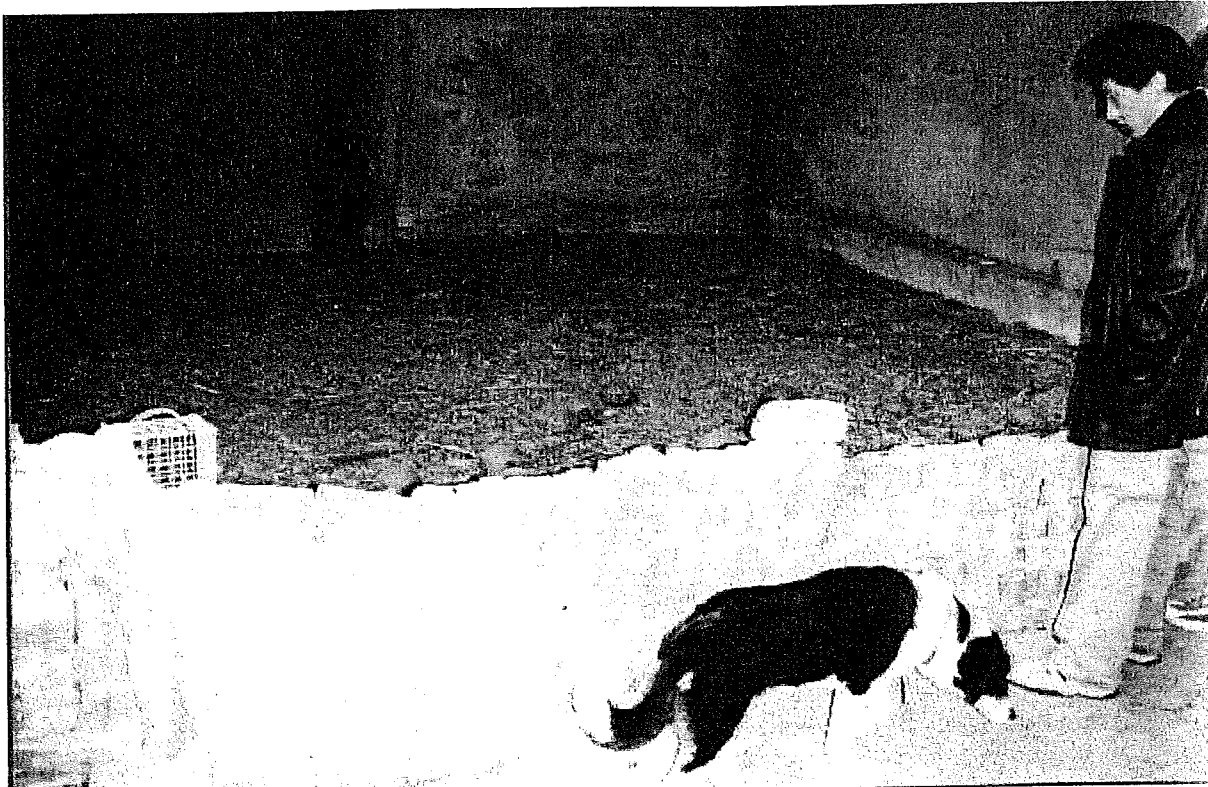


Fig.7: Some of the adult tortoises hibernate in an inside compound. (Picture: TRAFFIC Europe / Andrei Zatoka)

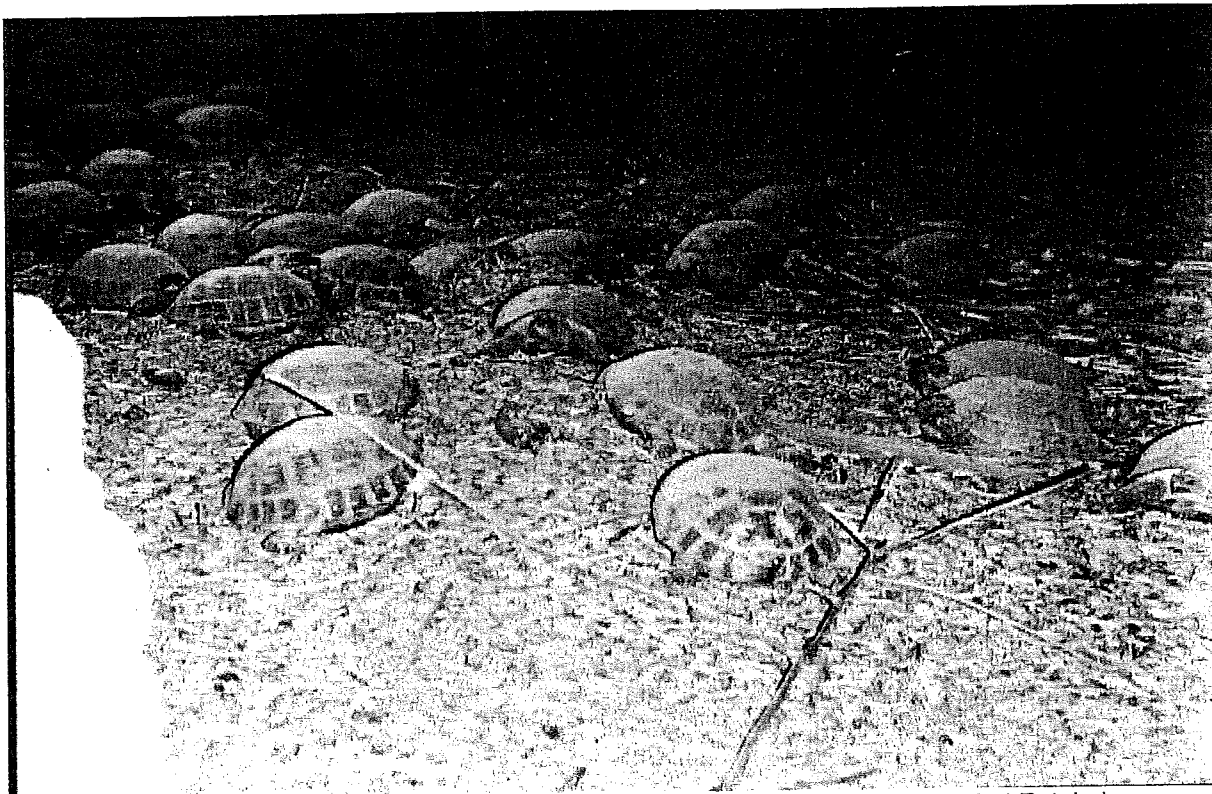


Fig.8: Adult tortoises (15-20cm) inside the building. (Picture:TRAFFIC Europe/Andrei Zatoka)



Fig.9: In mild winters some tortoises are sometimes active. (Picture: TRAFFIC Europe/Andrei Zatoka)

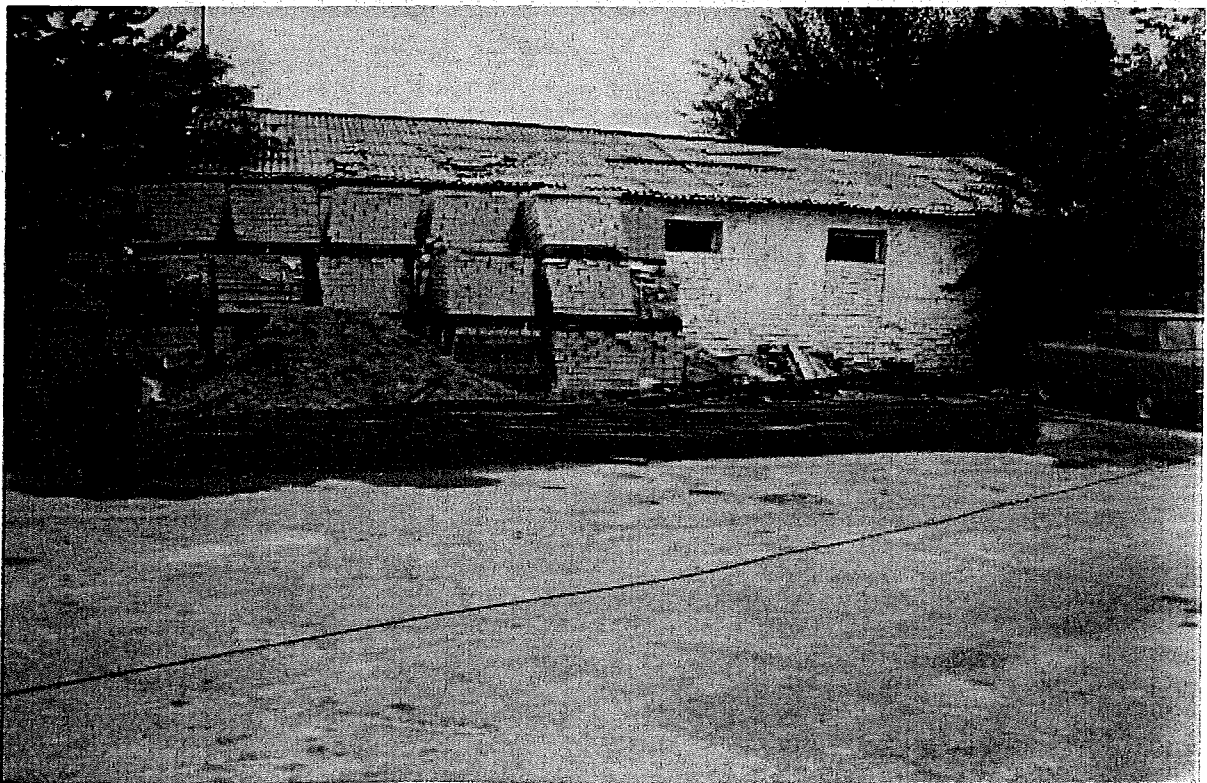


Fig.10: The centre plans to expand – new material for new houses is stored at the back of the building (Picture: TRAFFIC Europe/Andrei Zatoka)

Annex 4

Approved and confirmed
by the CITES Management Authority
and Scientific Authority of Uzbekistan

INFORMATION ON SIZE OF THE POPULATION OF COMMERCIAL AND HUNTING SPECIES OF LAND VERTEBRAL ANIMALS IN THE ARID REGION OF UZBEKISTAN.

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The intensive development of agro and industrial complexes in the Republic in recent decades has been bringing significant changes into natural complexes. Increasing of human presence in the arid zones, different demographic changes do not pass without leaving a trace as well. At the same time, in connection with the development of the market of alive animals and hunting tourism has considerably increased the load on some commercial and hunting species.

The materials and counting data suggested to “UzZooComplex” have been collected and systematized by specialists-zoologists during the period from 1990 till 1999 years in different regions of Uzbekistan. They reflect the real picture of size, stocks and reproduction potential of the population of the exported species. Here are also given recommendation on possible amounts of withdrawal which do not influence the state of the size.

REPTILES

1. Steppe tortoise – *Agrionemys (Testudo) horsfieldi* Gray.

According to the results of the accounts conducted the size of steppe tortoise in the desert areas of Bukhara and Navoi regions in 1990-1991 was determined to be 15.4 – 16.0 mln heads. The largest densities of this species were observed in the Central part of Kizil-Kum and coincided with the Tamdinsky district of the Navoi region – 10.8 – 12.1 mln heads. The second cycle of the counting work (1995-1999 years) was conducted in 63 points of the Navoi region. The total length of the route accounts was 340 km. At the present time the reserve of the species on the given territory is determined by us to be no less than 20 mln heads. As before, the largest density of steppe tortoise due to the landscape peculiarities is in the Central part of Kizil-Kum – Tamdinsky, Kanimekhsy, Nuratinsky regions, on the soils of submountain plains, stagnant hollows, on the edges of sand massives – no less than 12.2 mln heads/

In the process of conducting the second cycle of counting work were discovered unknown before vast areas with increased size of species: in the north-west part – urochishte (ravine, gorge, canyon) Dairabai, on the west sand area – to the south of the farm Serkesh, on the east – sand area neighbouring the the farms Begojan and Preke. As was said by us earlier (report on research work according to the program of state account and state Cadastre of Animal World, 1990), the sharp decrease of size of the species in Central Kizil-Kum resulted from the increased gathering of tortoises by the European part of population of the towns Uchkuduk, Zarafshan, Muruntau and some other settlements. With increasing scope of sheep-breeding great cattle-slaughtering made vast territories of sub-mountains plains unsuitable for tortoise habitat. In the recent years the transport problems, deficit of fuel and sharp decrease of cattle-breeding intensity significantly weakened the negative influence and resulted in restoration and, in certain places, increase of size on the mentioned territories. It is necessary to note, that in spring 1999 on the limited areas of Central part of Kizil-Kum, in particular, on the submountain plain Kazakhtau, in Karakatinskaya hollow was observed severe drought. The counting data show that about 30% of

Table 1. Size of Steppe tortoise in Central Kizil-Kums (1990-1999 years).

Area	Year	Counting	L (km)	Tortoises per 10 ha	Average density / 10 ha	Estimated size on the area (mln heads)
North-east sandy	1990	11	67	4,6	8,7	1,3
	1991	4	19	17,1		
	1995	2	10	-		
	1998	2	10	13,0		
North-west sandy	1990	25	144	6,2	12,6	2,0
	1991	23	107	10,5		
	1995	10	50	6,4		
	1996	1	5	20,0		
	1998	2	10	13,5		
	1999	3	15	19,0		
West sandy	1990	15	81	5,9	8,3	2,2
	1991	13	83	3,1		
	1995	3	15	10,3		
	1996	4	30	18,6		
	1997	1	5	14,0		
	1998	3	15	5,6		
Central	1990	36	260	9,6	17,7	14,5
	1991	21	102	14,7		
	1995	2	10	15,0		
	1996	15	75	13,0		
	1997	1	5	24,0		
	1998	4	25	7,4		
	1999	3	15	40,3		
Eastern sandy	1990	10	62	5,5	8,0	1,3
	1991	5	32	10,5		
	1995	5	25	18,5		
	1996	1	5	8,0		
	1998	1	5	8,0		
TOTAL		226	1297		11,4	19,9

grown-up tortoises on these areas could not accumulate fat enough for hibernation due to scanty food base because of the drought. Hibernation of such tortoises here was observed to be 10 days earlier than usual. Successful survival the winter for such exhausted animals is scarcely probable.

Here is some information concerning the natural reproduction of the species. The correlation of males and females in the populations well as previous years, is approximately 2:3. The earliest coupling by the time in the Central part of Kizil-Kum was observed on 27th March, 1999, in the mass it was observed since 29-30 March. Some coupling were observed up to the beginning of May.

In Central Kizil-Kums most females finish their egg-laying by 20th May. However, in unfavourable climatic conditions (in particular, the drought 1999) this process is finishing in the first decade of May.

The results of autopsy show that in the period of reproduction the number of eggs varies from 4 to 13, in the average – 6.4 per one adult female, single females are less than 1% from the total adults. The most fertile are females with the greatest size of the shell 180 mm and more. As the autopsy shows, the highest potential of reproduction is in tortoises at the sandy stations, e.g. in the sands of Jamankul. It is quite possible that these ecological populations are “the centres of conserving” of the species in the most unfavorable years.

The females with the greatest size of the shell do not take part in reproduction.

According to our data, during the first decade of August from 60% eggs appear young tortoises. About 40% eggs are lost from mechanical damage or are eaten by different animals.

In the third decade of April tortoises born in August of the last year come out to the surface. According to our data, the natural mortality of such youngsters by the end of summer is approximately 45.5% from the total number. It is caused both by food problems and the press of different beasts of prey.

In general, for many years the size of steppe tortoise in Uzbekistan part of the Central Kizil-Kum is stable, and the reproduction potential is rather high.

Barring the mentioned aries exposed to the drought, it is reasonable to stock-up tortoise in Navoi region in 2000 at the amounts similar 1999 year – i.e. 15-20 thousand heads which is no more than 0.1% of the total reserve of the species on the territory.

As mentioned above, in the period of mass egg-laying the large number of eggs is on the surface. As 100% of these eggs “is doomed” to be lost we consider reasonable their gathering followed by incubation. This allows us to significantly increase the stocking-up of tortoise in the Republic without additional withdrawal from nature.

Also it reasonable the stocking-up of tortoise of fixed sizes (optimal – no larger 120 mm). It allows us first of all to conserve adults total number of tortoise.

In the last years in a number of regions (Bukhara, Samarkand) is observed mass poaching from the side of the local population. Moreover, it is large tortoise (more than 170 mm) constituting the adults total number and reproduction potential of any population is subjected to intensive catching. Without taking resolute measures by the authorities of State inspection to stop the situation, the similar practice will result in inconvertible consequences.

2. Skink gecko – *Teratoscincus scincus* (Shlegel).

The inspected territory is sandy mass area, submountain plains of low mountains and plateau area of Central and southern parts of Kizil-Kum from town Uchkuduk on the north to town Gazli on the south.

To determine the size of *Teratoscincus scincus* we used automobile method of counting with additional headlight usually utilized for nocturnal mammals. All the specimens in the stretch of 30 m were observed. While recounting for the total length autocounts were received the data on the number of specimens for the unit of area (ha).

The counting work was conducted for 5 years (1992-1995, 1999) in July – in the period of the highest activity of the species. Inspected were two large areas – plain – plateau in the south part of Kizil-Kum (Gazli and lake Denghizkul) and the sands Jamankum with adjoining from south-east submountain plains. The total length of the counting route was 820 km.

The distribution on the territory is quite uneven. The optimal places of habitat *T. Scincus* are rolling sandy plains or semi-fixed hillock sands with small bushes. The soils are sandy or sandy-loam with clay parts and even elements of takir. The packed substrate is necessary for preserving many years holes. Near ground waters have negative influence on the wintering of the species. From the above mentioned, the sands Jamankum according to their hydrography and soil structure are in Central Kyzyl-Kum the most suitable for *T. Scincus* habitat.

The species readily occupies the area adjoining to unmetalled roads, highways and railroads. It is accounted for by increased concentration of different invertebrates here. By the same reason are very attractive for *T. Scincus* the places of cattle slaughters around the shepherd camp, where the density of the species population is markedly higher.

The size of *T. scincus*.

Data on the size are given in the table 2. On the average for the whole territory inspected it is 0.5 specimens per ha.

However, as mentioned above, the distribution of densities is extremely uneven and varies from 0.07 to 0.8 per ha.

In small localities, in particular on Jamankum sands neighboring the lake Denghizkul the size reaches up to 2.6 – 5.0 specimens per ha. The total area of such spots in Central Kizil-Kum is according to our data approximately 300 sq. Km or 30 thousand ha.

The reclamation of Central Kizil-Kum facilitates in a certain extent to increased size of the species. Particularly it refers to stock-breeding farms, protecting forest belts near railway road-bed, highway and unmetalled roads.

Limiting factors.

Moving in search of food directly along hard – surface and cart – track roads, *T. Scincus* often die under cars wheels. But it doesn't influence the state of size as a whole.

The main limiting factor is to our mind abundant precipitation. After much snow winter and rainy spring sharp decrease of the size of the species was observed.

The total size of the species and recommendation to use it.

The area of suitable for *T. Scincus* places of habitat in Navoi and Bukhara regions is more than 60 thousand sq. Km or 6 mln ha. Base on this, the total size of the species here can be estimated as 3.5-4.0 mln specimens.

Table 2. The size of *Teratoscincus scincus* in Navoi and Bukhara regions (1992-1995, 1999 years.

Area of counting	Length of the route, km	Counted animals	The number of animals per 1 ha
Gazli plateau	130	27	0,07
South Kizil-Kum sandy plain	140	481	1,10
Jamankum Sands	110	263	0,80
Submountain plain of Tamditau	40	41	0,30
Plateau settlement Mullali	100	131	0,40
Submountain plain Kazakhtau	130	130	0,33
Total	820	1418	0,5

Taking into account the low density of population as a whole on the territory, it is reasonable and paying to conduct the catching only in the parts with increased size. As follows from the section "The size ...", on 30 thousand ha of such revealed by us parts the size reaches 100 thousand specimens. The amount of every year withdrawal here can reach 2000 which does not affect the state of the size.

We recommended to conduct catching by one time (during the season) going through the territory. Since 7-9% of adult specimens have broken or reduced tails, they having no market condition as well as young ones (25.2%) do not subject to withdrawal. So, even on such narrow strips is preserved the necessary total number for the following reproduction.

3. *Ophisaurus apodus* Pallas.

The territory taken by the counting is the belt of adirs (500-950 m above the sea level) on the south of Kashkadarya region which is represented on the west by the landscape of Nishanskaya steppe, on the east by south-eastern low mountain Ghissar region.

The counting work was conducted in March 1993, in April 1992-1993, and in May-June 1995. During this period were inspected 5 large mountain valleys, the total length of the routes on foot was 576.2 km.

To determine the size of *Ophisaurus apodus* we used the route method similar to that developed by us for tortoise counting. The counting was carried out only during the periods of the largest diurnal activity of the animals. As for *O. Apodus* this technique was used for the first time, to check the validity of counting were laid several grounds on which was conducted experimental withdrawal of the upmost number of specimens. Analysis and comparison of the data obtained from the grounds made it possible to correct the coefficients in the route countings and make them more valid.

Table 3. The size of *O. apodus* in different mountain valleys on the south of Kashkadarya region (1992-1995)

Mountain valley and station	Length of the route, km	Counted animals	The number of animals per 1 ha
Kengsai, low adirs	94.5	129	0,7
North-west Tagama, low adirs	125.2	161	0,4
East Tagama, high adirs	59.9	77	0,6
Jankara, high adirs	55.4	70	0,6
South-west Kiz-chi, high adirs	57.2	91	0,8
Total	452.2		0,6 +- 0,05

In the periods with apparently different degree of activity the data on the size proved to be quite comparable and monotypic – 0.6 +0.05 specimens per ha.

It allowed in the first decade of April 1993 in low adirs NW of settlements Tagama on the territory of 1000 ha were conducted absolute countings – 0.63 +0.05 specimens per ha completely confirm the validity of route countings us to group them into 5 main mountain valleys irrespective of the date of concluding the counting. As seen from the table, in different mountain valleys the size varies from 0.4 to 0.8 specimens per ha and averages on the territory 0.6 +- 0.05 per ha.

It is necessary to note that the results of counting can be extrapolated only at the area of characteristic places of habitat – sloping mountainsides with sedge grass vegetation in the zone of high and low undeveloped adirs.

One of the most serious limiting factor is the agricultural cultivation of adirs. So, during the time of haymaking under moving machines are damaged and die hundreds of animals. Ploughing up of adirs for sowing grain-crops makes the territory absolutely unfittable for habitat as well. Negative effect, to our mind, has the treatment of crops and adjoining area by insecticides such as “Sumi-alf”. So, while dispersing this anti-locust preparation in the places of mass destruction of the insects was observed the ruin of *Ophisaurus apodus*. Probably, poisoning occurred when eating grasshoppers treated by poison.

The total size of the species and recommendation to use it.

According to our estimates, the total area of *O. Apodus* places of habitat on the south of Kashkadarya region is 30-40 thousand ha. Thus, we estimate the size of the species on this territory as 20-25 thousand specimens. The amount of every year withdrawal which would not affect the state of the population, can be determined as 1500-2000 specimens.

To make the catching even we recommend one time catching of every area. When the diurnal activity is extended such methodique allows one to withdraw only 30% of specimens habitating there. Besides, young most hidden living specimens with damaged tails and having no market value, are not subjected to catching. The latter constitute up to 20% of adults. So, after carrying out every year stocking up measures more than 70% of the population will be preserved. This will facilitate the successful reproduction and does not affect the state of size.

Catching *O. Apodus* is recommended to conduct in April after finishing the coupling and before starting hot. unfavorable for this species, weather.

4. Grey monitor – *Varanus griseus* (Daubin)

Taking into account the peculiarities of the biology of this species, the countings were specially conducted in the periods of maximum diurnal and seasonal activity and under concrete weather conditions. This allowed us to estimate the size of the species most objectively.

In 1995 on the south of Kashkadarya region in the adir zone were conducted 8 route countings, and in 1998-1999 in the Central Kizil-Kum – 11. The total length of the routes was on the south of Kashkadarya – 124 km, in Central Kizil-Kum – 66 km.

Table 4. The size of *V. griseus* in the south of Kashkadarya region and in Central Kizil-Kum(1995, 1998-1999)

Area of the work	Length of the route, km	Counted <i>V. griseus</i>	The size per 10 km
South of Kashkadarya region	124	9	1,3
Central Kizil-Kum	66	13	1,9

In all causes monitors were observed to be hunting small reptiles, tortoises, rodents. At the end of April and in the middle of May in Central Kizil-Kum were observed Young specimens (max length – 40 cm).

As a whole, in the Central Kizil-Kum, Gray monitor is quite usual. In sope places, e.g. in the eastern part of the sands and to the north of settlement Baimurat one can say it is of great size.

Not having any natural enemies or in general aggression from the local population (people), near busy highways monitors are often becoming intentional victims of local drivers.

In spite of the status of specially protected, we consider that in favourable years (at high size of rodents – the main food base) is possible every year withdrawal in the desert area of Navoi region about 100-150 specimens of this species.

BIRDS.

5. Common quail – *Coturnix coturnix* L.

The countings were conducted in 1998-99 in April-May in the Central part of Kizil-Kum. All the birds met on the routes along wormwood plains to the north of settlement Ayakkuduk were marked.

The table data definitely show that the most intensive flying through the Central Kizil-Kum was observed in the III decade of April – I decade of May. At the period on the wormwood submountain plain we marked up to two birds per each km of the route. By the end of the first decade of May the intensity of flying is sharply decreasing and are observed only single lagged behind or weakened birds.

Table 5. The size of *C. Coturnix* in Central Kizil-Kum (1998-1999)

Terms	The total length of the routes, km	The number of birds met during 10 km of counting
April III decade	137	1,53
May I decade	258	1,66
II decade	128	0,08
III decade	56	0,18

6. Houbara bustard – *Chlamydotis undulata* Jacquin

The countings were conducted in April-May 1998-1999 on the submountain clay and sandy loam wormwood plains and plateau areas to the east of the ruined mountains Aristantau. The results are given in the table 6.

Table 6. Counting of *C. Undulata* in Kizil-Kum (1998-1999)

The number of countings and terms	From them with birds	Counted			
		Females	males	couples	broods
29 (332 km) 04 – 05 1999	13	2	11	4	1
15 (257 km) 04 – 05 1999	6	1	1	4	

According to the data of 1998 year the relative size of Houbara bustard here was 0,65 specimens per 10 km of the route, and in 1999 it was 0,42, which on the average for the territory can be taken equal to 0,54 specimens per 10 km of the route.

According to our many years observations, catching of tortoises conducted here since 1992 did not have any negative effects as a factor of anxiety on the state of the size and did not lower the reproductive potential. The disturbed birds quick enough returned to the nest or hidden nestlings.

7. Rock partridge – *Alectoris chukar* Grey

As a whole in the Central Kizil-Kum to estimate unequivocally the size of the species is rather difficult, as it is distributed sporadically, closer definition of the details are necessary. As said above (Kashkarov, 1994) *A. Chukar* occupies steadily all desert low mountains, where its size sometimes is rather high. According to the counting data in spring 1998, the occurrences of *A. Chukar* in canyons of Boukantau and Alimtau ranges is from 2 till 6, on the average 4.3 specimens for 10 km of the route. In the ruined mountains Mourntau this index in spring of the current year was 5.0. In favorable for the species

years here the bird can be interest as the object of sport hunting. Shooting by the accepted quota is quite successfully compensated at the expense of the flow of specimens from the neighboring sandy massives where birds regularly migrate in spring and autumn.

The most perspective for hunting tourism are the comparatively recently formed settlements along the north coastline of the lake Aidarkul. In August 1998 in cellular-bed sands along the coastline (wide neighborhood of the farm Baimourat) were regularly met flocks of 25-30 birds. single meetings and cris were marked practically at every kilometer of the counting route.

MAMMALS.

8. Hare-tolai – *Lepus tolai* Pallas

It is one of the most widely distributed objects of sport hunting. With the regularity of 7-10 years the size of tolai in different parts of Central Kizil-Kum reaches very high indices/ So, in 1984-1987 in the eastern part (Baimen, Baimourat) it was in some places 20 and more specimens per 10 km of the route.

As a rule, such rises are very local territorially and effectively utilize this resource, possibly, even organize the catching constant monitoring the size of animal is necessary. It allows one to make the forecast and plan certain hunting measures.

Analysis of the countings 1998-1999 years presented below gives the notion of the size and its possible changes in different parts of the Central Kizil-Kum.

At the end of April in north-west of Uzbekistan Kizil-Kum were conducted 7 countings on foot (total 39 km) and 1 night counting by car (15 km). The indices of the relative size varies significantly in some places from 1.0 to 10 specimens per 10 km of the route. It is the highest in large-uneven sands of the mountain valleys Jalpaktau and ridge-cellular sands to the south of the settlement Akbogheth. On the average along the given territory this index was 3.6 in the spring and is estimated by us as not high. However in comparison with 1998 year the rise of the size is certain. It is confirmed by the fact that first of all, there are no "empty" countings which were observed a year ago. In the 3rd decade of April was observed a young hare (10 days) in the neighborhood of the well Jalpaktau and in ridge-cellular sands to the south of the settlement Akbougheth at the same period were observed many times marriage games and couplings of animals. Similar reproductive activity not observed by us before (in 1998) gives evidence about the tendency of rising the size of species in the north-west part of the desert.

On the mountain plains and plateau areas of the Central part of Kizil-Kum in 1999 several types of countings were conducted by us. In March on the north-west submountain plain Aristantau were carried out the countings of the absolute size of the species on the territory of 2295 ha. According to these data, the size of tolai was 0.2 specimens per square km and was estimated by us as extremely low. On the northern submountain plain Kazakhtau the size of tolai was estimated in May. 7 route countings on foot with the total length 140 km were conducted. Tolai was observed only in 3 countings. So, the indices of relative size here are 0.3 per 10 km. By the route. While conducting night countings by car with the additional head light (total 40 km) this index was 1.75 specimens per 10 km of the route. To our point of view the most valid is the average index of the size, i.e. 1 specimen per 10 km of the route.

To the north of the ruined low mountains Kazakhtau along the edge of sands and immediately in the sand massifs during 3 routes on foot with the total length of 12 km were

counted 2 tolay – 1.6 specimen per 10 km of the route. For 110 km of night countings by car with additional head light were observed 3, i.e. 0.3 specimen per 10 km. Here the average index 0.95 specimen per 10 km of the route is also to our mind the most real to estimate the relative size of the species.

Analysing the reproduction data available one can notice, that in May of the current years was observed the second, and among some part of specimens, possibly the third cycle of reproduction of tolai. This is testified by the presence in the first decade of May both independent and still blind (6 days) little hares, and also second pregnant females. Such intensivity of reproduction is characteristic of the stge of the size restoration.

In the sands of Jamankum the size of the hare-tolai is conserved at the same level as on the moutain plains. According to the data for 3 night countings by car with additional head lights (140 km) the average index is 0.6 specimens per 10 km of the route.

As in the last year, the highest size of tolai is in the sandy loam – broken stone area of the wormwood desert between the settlements of the state farm Yanghigazkan and Mashikuduk – on the average 1.2 specimen per 10 km of the route.

by

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Annex 5

Approved and confirmed
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RESULTS OF QUANTITATIVE COUNTINGS OF STEPPE TORTOISE IN THE PLACES OF INDUSTRIAL AND POTENTIAL CATCHING IN UZBEKISTAN IN 1999.

by the SOCIETY FOR PROTECTION OF AMPHIBIANS AND REPTILES
MOSCOW-121096, PO.Box 532, RUSSIA FEDERATION
February 2000

By the request of Uzzoocomplex Republic of Uzbekistan, Society for Protection of Amphibians and Reptiles (Russian Federation, Moscow) took part in the estimation of resources of steppe tortoise – *Agrionemys (Testudo) horsfieldii*. By Ph. D. of biology Bondarenko Dmitry Anatolievich and Bozhansky Anatoly Timofeevich were conducted quantitative countings of tortoise in different regions of Central and Southern Uzbekistan. The desert territory in the places of industrial catching where the counting was carried out earlier (in 1998), as well as the places potentially fittable for industrial catching were inspected.

The route method of counting with the registration of perpendicular distances from every specimen to the line of the route was used. On the basis of the data obtained the mean distance of discovering and effective width of the counting zone were calculated. The calculation of the population density (D) was done by using the formula:

$$D=N/2BL; B=1.57Y,$$

Where N – is the number of specimens, L – is the length of the route, B – is the effective width of discovering. Y – is the mean distance of discovering.

The inspection of places of habitat of steppe tortoise was conducted in April on the submountain plain by the western edge of the range Nuratau and Aktau, in the Central and Southern Kizilkums. on the submountain plain Karnabchul to the south of Zirabulak mountains. Altogether in 12 points of counting were covered 100 km.

On the submountain plain of the north-west edge of the range Nuratau, where the catching of steppe tortoise was conducted since 1996 the population density was 30.6 specimens per ha (in different parts from 43.8 till 17.5 specimens per ha). In 1998 at the same area were registered more than 40.0 specimens per ha. On the southern slopes the population density was 14.6 specimens per ha. Everywhere the number of females in the selection exceeds that of males in the proportion 1:1.2-1: 1.5. The given indices show rather high potential of population group inhabiting the sloping submountain plain on the west of the massif Nuratau. According to the preliminary estimation the size of the population on the territory of about 200 sq. Km is no less than 400 thousand specimens. These observations confirm our conclusions made in 1998. Catching tortoise with annual shift of industrial loads along the submountain plain allows one for several years to maintain the exploitation of the population on the western spurs of Nuratau without serious damaging it.

In most points of the tortoise population is not of industrial importance, since the population density of the species usually did not exceed 5 specimens per ha. Often it was even lower than this index. However, the areas with rather high size of the species were observed. On the submountain plain to the east of Tamditau (10 km to the south of the settlement Kynyr) the density of tortoise was about 10 specimens per ha. The highest indices available in the southern Kizilkums region (17.6 specimens per ha) were discovered on the weak rolling sandy loam – loamy Sardgal. In separate areas of Karnabchul steppe there are also territories with increased density of tortoise population – 10.3 – 12.6 specimens per ha. However, from the point of view of the industrial exploitation they are less perspective than submountain clay soil plains of the Nuratau range.

In order to carry out the monitoring of the size of the total number of steppe tortoise in the places of catching, it is reasonable to continue reconnoitering work for finding out the territorial distribution of tortoise and estimating the possibility of limited exploitation of populations in Karshi, Samarkand and Navoi regions of the Republic.

The materials obtained are the property of the “Society for Protection of Amphibians and Reptiles” and without reference to the authors and can’t be published in the open press.

A.T. Bozhansky, Chair of the Society
and
G.V. Polinova, Secretary of the Society

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Annex 6

Tab. A: Imports and Exports of the UzZookomplex in 1998 and 1999. Total list of permits issued (provided by UzZookomplex to TRAFFIC Europe, Oct. 2000) (App. = CITES Appendix, P = Purpose, S = Source)

App	Species	Descrip.	Quantity	Country of (Re-)Export	Number of export permit or re-export certificate	Country of origin of re-export	P	S	Remarks
Imports in 1998									
BIRDS									
I	<i>Falco peregrinus</i>	Liv ?/?	3	AE	02259	AE	H	C	Transit to KZ (returned to AE)
II	<i>Falco cherrug</i>	Liv ?/?	11	AE	02259/000033	AE	H	C	2 specimens transit to KZ (9 specimens returned to AE)
II	<i>Falco cherrug</i>	Liv ?/?	6	AE	02284/000035	AE	H	C	Temporary import
II	<i>Falco rusticolus</i>	Liv ?/?	8	AE	02284/000035	AE	H	C	Temporary import
II	<i>F. cherrug</i> x <i>F. rusticolus</i>	Liv ?/?	8	AE	02284/000035	AE	H	C	Temporary import
II	<i>F. peregrinus</i> x <i>F. rusticolus</i>	Liv ?/?	8	AE	02284/000035	AE	H	C	Temporary import
II	<i>Falco peregrinus</i>	Liv ?/?	2	AE	02294/000036	AE	H	C	Temporary import
II	<i>Falco cherrug</i>	Liv ?/?	5	AE	02294/000036	AE	H	C	Temporary import
II	<i>Falco peregrinus</i>	Liv ?/?	10	AE	02300/000036	AE	H	C	Temporary import
II	<i>Falco cherrug</i>	Liv ?/?	25	AE	02300/000036	AE	H	C	Temporary import
Imports in 1999									
BIRDS									
I	<i>Lophura eduardi</i>	Live 1/1	2	EE	/000084	EE	Z	C	Not realized
I	<i>Siymaticus ellioti</i>	Live 0/2	2	EE	/000084	EE	Z	C	Not realized
I	<i>Lophophorus</i> sp.	Live 0/2	2	EE	/000084	EE	Z	C	Not realized
I	<i>Vultur gryphus</i>	Live 1/0	1	RU	/000097	RU	Z	C	Not realized
II	<i>Falco cherrug</i>	Live ?/?	35	AE	/000107	AE	H	C	
II	<i>Falco cherrug</i>	Live ?/?	36	AE	03011/000108	AE	H	C	
II	<i>Falco cherrug</i>	Live ?/?	10	AE	/000109	AE	H	C	
MAMMALIA									
III	<i>Hypopotamus hypopotamus</i>	Live ?/?	1	UA	/000094	UA	Z	U	Annulled
III	<i>Hypopotamus hypopotamus</i>	Live ?/?	1	UA	/000095	UA	Z	U	Not realized

App	Species	Descrip.	Quantity	Country of (Re-)Export	Number of export permit or re-export certificate	Country of origin of re-export	P	S	Remarks
Export / Re-export in 1998									
MAMMALS									
I	<i>Gazella subgutturosa</i>	Skull 1/OAD	1	US	000034/98	UZ	H	C	
I	<i>Pantera tigris</i>	Liv ???	1	KZ	000025/98	UZ	Q	U	Temporary re-export
II	<i>Ursus arctos</i>	Liv	2	KZ	000025/98	UZ	Q	U	Temporary re-export
II	<i>Canis Lupus</i>	Liv	2	KZ	000025/98	UZ	Q	U	Temporary re-export
I	<i>Pantera tigris</i>	Liv	7	MY	000037/98	UZ	Q	U	Not realized
II	<i>Ursus arctos</i>	Liv	4	MY	000037/98	UZ	Q	U	Not realized
I	<i>Pantera tigris</i>	Liv	8	MY	000049/98	UZ	Q	U	Instead No. 000037 temporary re-export
II	<i>Ursus arctos</i>	Liv	4	MY	000049/98	UZ	Q	U	Instead No. 000037 temporary re-export
I	<i>Pantera leo</i>	Liv	1	MY	000049/98	UZ	Q	U	Instead No. 000037 temporary re-export
II	<i>Macaca puscata</i>	Liv	1	MY	000050/98	UZ	Q	U	Instead No. 000037 temporary re-export
II	<i>Macaca mulatta</i>	Liv	1	MY	000050/98	UZ	Q	U	Instead No. 000037 temporary re-export
II	<i>Papio cynocephalos</i>	Liv	1	MY	000050/98	UZ	Q	U	Instead No. 000037 temporary re-export
BIRDS									
II	<i>Falco cherrug</i>	Liv ???	2	KZ	02259/000033	AE	H	C	Transit to KZ
II	<i>Falco cherrug</i>	Liv ???	6	AE	02284/000035	AE	H	C	Reexport
II	<i>Falco rusticolus</i>	Liv ???	8	AE	02284/000035	AE	H	C	Reexport
II	<i>F. cherrug x F. rusticolus</i>	Liv ???	8	AE	02284/000035	AE	H	C	Reexport
II	<i>F. peregrinus x F. rusticolus</i>	Liv ???	8	AE	02284/000035	AE	H	C	Reexport
II	<i>Falco peregrinus</i>	Liv ???	2	AE	02294/000036	AE	H	C	
II	<i>Falco cherrug</i>	Liv ???	5	AE	02294/000036	AE	H	C	Reexport
II	<i>Falco peregrinus</i>	Liv ???	10	AE	02300/000036	AE	H	C	Reexport
II	<i>Falco cherrug</i>	Liv ???	25	AE	02300/000036	AE	H	C	Reexport

App	Species	Descrip.	Quantity	Country of (Re-)Export	Number of export permit or re-export certificate	Country of origin of re-export	P	S	Remarks
Export / Re-export in 1998 (continued)									
REPTILES									
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000011	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000012	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000013	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000014	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000015	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000016	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000017	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	JP	000018	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	JP	000019	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	FR	000021	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	FR	000022	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	2000	CZ	000023	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	CZ	000024	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1500	FR	000026	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	2000	FR	000027	UZ	T	W	Not realized, instead No. 000015 and 000016
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	2000	CZ	000028	UZ	T	W	Instead No. 000017 and 000018
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1500	FR	000029	UZ	T	W	Not realized, instead No. 000004 and 000014
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1500	ES	000030	UZ	T	W	Not realized, instead No. 000029
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	2000	ES	000031	UZ	T	W	Not realized, instead No. 000027
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1500	ES	000032	UZ	T	W	Not realized, instead No. 000026
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	JP	000038	UZ	T	W	Additional quota
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	JP	000039	UZ	T	W	Additional quota
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1500	GB	000040	UZ	T	W	Additional quota
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1000	GB	000041	UZ	T	W	Additional quota
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	DK	000042	UZ	T	W	Not realized, additional quota
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	DE	000043	UZ	T	W	Additional quota
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	DE	000044	UZ	T	W	Additional quota
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	DE	000045	UZ	T	W	Instead No. 000032
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	1500	BE	000046	UZ	T	W	Non realized. Instead No. 000030
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	DE	000047	UZ	T	W	Instead No. 000032
II	<i>Testudo (Agrionemys) horsfieldi</i>	Liv	500	DE	000048	UZ	T	W	Instead No. 000032

Ranching and Breeding of Russian tortoises (*Testudo horsfieldii*) in Uzbekistan, TRAFFIC Europe, October 2000

App	Species	Descrip.	Quantity	Country of (Re-)Export	Number of export permit or re-export certificate	Country of origin of re-export	P	S	Remarks
Export / Re-export in 1999									
MAMMALS									
I	<i>Pantera tigris</i>	Live ???	1	UA	000105	UZ	Q	U	
II	<i>Pantera leo</i>	Live ???	1	UA	000105	UZ	Q	U	
II	<i>Ursus arctos</i>	Live ???	4	UA	000105	UZ	Q	U	
II	<i>Ovis ammon nigrimontana</i>	Skull 1/0ad	1	US	131116/000078	KZ	H	C	
II	<i>O. ammon orientalis sewerfsovi</i>	Skull 1/0ad	1	FR	000114	UZ	H	W	Not valid, Not realized
II	<i>O. ammon orientalis sewerfsovi</i>	Skull 1/0ad	1	FR	000118	UZ	H	W	
II	<i>Macaca resus</i>	Live ???	1	MY	000099	UZ	Q	U	
II	<i>Macaca resus</i>	Live ???	1	UA	000104	UZ	Q	U	
II	<i>Macaca javanicus</i>	Live ???	1	UA	000104	UZ	Q	U	
BIRDS									
II	<i>Neophron percnopterus</i>	live 1/1	2	EE	000083	UZ	Z	U	
II	<i>Aegipius monachus</i>	Live 0/3	3	EE	000083	UZ	Z	U	
II	<i>Neophron percnopterus</i>	Live ???	2	UA	000085	UZ	Z	U	
II	<i>Neophron percnopterus</i>	Live ???	2	EE	000091	UZ	Z	U	Not realized
II	<i>Neophron percnopterus</i>	Live ???	2	EE	000092	UZ	Z	U	
II	<i>Aegipius monachus</i>	Live ???	3	EE	000092	UZ	Z	U	
II	<i>Psittacus erithacus</i>	Live ???	1	US	000096	UZ	T	U	
II	<i>Neophron percnopterus</i>	Live ???	2	UA	000101	UZ	Z	U	
II	<i>Aegipius monachus</i>	Live ???	2	UA	000101	UZ	Z	U	
II	<i>Falco cherrug</i>	Live ???	35	AE	000107	AE	H	C	
II	<i>Falco cherrug</i>	Live ???	36	AE	000108	AE	H	C	
II	<i>Falco cherrug</i>	Live ???	10	AE	000109	AE	H	C	
III	<i>Mergus merganser</i>	Trophy	1	IL	000079	UZ	H	W	
III	<i>Alectoris chukar</i>	trophy	1	IL	000079	UZ	H	W	
III	<i>Ancer ancer</i>	trophy	1	IL	000079	UZ	H	W	
III	<i>Scolopax rusticola</i>	trophy	1	IL	000079	UZ	H	W	
III	<i>Anas querquedula</i>	trophy	1	IL	000080	UZ	H	W	
III	<i>Phasianus colchicus</i>	trophy	2	IL	000080	UZ	H	W	
III	<i>Netta sp.</i>	trophy	1	IL	000080	UZ	H	W	
III	<i>Circus aeruginosus</i>	trophy	1	IL	000082	UZ	H	W	
III	<i>Haliaeetus albicilla</i>	trophy	1	IL	000082	UZ	H	W	
III	<i>Milvus milvus</i>	trophy	1	IL	000082	UZ	H	W	

App	Species	Descrip.	Quantity	Country of (Re-)Export	Number of export permit or re-export certificate	Country of origin of re-export	P	S	Remarks
Export / Re-export in 1999 (continued)									
REPTILES									
I	<i>Python molurus</i>	Live ?/?	1	UA	000104	UZ	Q	U	
I	<i>Python molurus</i>	Live ?/?	2	UA	000106	UZ	Q	U	
I	<i>Varanus griseus</i>	Live ?/?	3	RU	000117	UZ	Z	W	
II	<i>Naja oxiana</i>	Live ?/?	1	RU	000117	UZ	Z	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	GB	000051	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	GB	000052	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000053	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000054	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000055	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000056	UZ	T	W	Not realised
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000057	UZ	T	W	Not realised (instd 51)
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000058	UZ	T	W	Not realised (instd 52)
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000059	UZ	T	W	Not realised (instd 52)
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	DE	000060	UZ	T	W	Not realised (instd 52)
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	2000	US	000061	UZ	T	W	(instd 46)
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	2000	US	000062	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000063	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	700	JP	000064	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	700	JP	000065	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	700	JP	000066	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	JP	000067	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	JP	000068	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	JP	000069	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	JP	000070	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	750	JP	000071	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000072	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000073	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000074	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	MX	000075 *	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	MX	000076	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	JP	000077	UZ	T	W	
II	<i>Eryx tataricus</i>	Live ?/?	50	US	000081	UZ	T	W	
II	<i>Eryx tataricus</i>	Live ?/?	50	US	000090	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	US	000086	UZ	T	W	

Ranching and Breeding of Russian tortoises (*Testudo horsfieldi*) in Uzbekistan, TRAFFIC Europe, October 2000

App	Species	Descrip	Quantity	Country of (Re-)Export	Number of export permit or re-export certificate	Country of origin of re-export	P	S	Remarks
Export / Re-export in 1999 (continued)									
REPTILES									
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000087	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	GB	000088	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	GB	000089	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	2500	US	000093	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	750	US	000098	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000100	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	CZ	000102	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	CZ	000103	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	700	JP	000110	UZ	T	W	Instead 000065
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	JP	000111	UZ	T	W	Instead 000068
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	US	000112	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	JP	000113	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	JP	000115	UZ	T	W	Not realized
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	CH	000116	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	JP	000119	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	US	000120	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	US	000121	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	JP	000122	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	500	JP	000123	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000124	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000125	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000126	UZ	T	W	
II	<i>Testudo (Agrionemys) horsfieldi</i>	Live ?/?	1000	US	000127	UZ	T	W	