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

Seventeenth meeting of the Conference of the Parties
Johannesburg (South Africa), 24 September – 5 October 2016

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Transfer of *Macaca sylvanus* from Appendix II (the order Primates spp. is already listed in the Appendices) to Appendix I, in accordance with the provisions of Resolution 24 of the ninth meeting of the Conference of the Parties (Resolution Conf. 9.24) (Rev. CoP16), Annex 1, paragraph C i): a marked decline in the population size in the wild which has been observed as ongoing or as having occurred in the past (but with a potential to resume).

B. Proponent

The European Union and Morocco*:

C. Supporting statement

1. Taxonomy

1.1 Class: Mammalia

1.2 Order: Primates

1.3 Family: Cercopithecidae

1.4 Genus, species or subspecies, including author and year: *Macaca sylvanus* (Linnaeus, 1758)

1.5 Scientific synonyms: *Macaca ecaudatus* (E. Geoffroy, 1812); *M. inuus* (Linnaeus, 1766); *M. pithecus* (Schreber, 1799); *M. pygmaeus* (Reichenback, 1863) (Butynski *et al.*, 2013; Wilson and Reeder, 2005).

1.6 Common names:
French: Macaque de Gibraltar, Magot, Magot commun
English: Barbary Ape, Barbary Macaque
Spanish: Mono de Gibraltar, Mono de Berbería
Arabic: Qerd, Qird, Zaatout
Algerian dialect: Chadi
Berber: Ahaloum Iddew, Ivki, Abaghouss

1.7 Code numbers:

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

2. Overview

Macaca sylvanus is endemic to the very north of Africa, where it occurs in isolated populations that are restricted to fragmented areas of the Rif and the Middle and High Atlas mountains in Morocco and the Grande and Petite Kabylie mountain region of Algeria; a small semi-wild population occurs on the Upper Rock of Gibraltar (van Lavieren, 2012). The main threats to the species are considered to be habitat destruction (Majolo *et al.*, 2013; Butynski *et al.*, 2013; Mittermeier *et al.*, 2013) and illegal trade of live individuals (Butynski *et al.*, 2008; Majolo *et al.*, 2013; García, 2015). Authors differ in their opinion of the relative importance of these threats. In an assessment conducted in 2008, *M. sylvanus* was classified as Endangered in the IUCN Red List of Threatened Species, based on an estimated rate of population decline exceeding 50% over the 24-year period preceding 2008; this decline was expected to continue in the future (Butynski *et al.*, 2008). The species therefore qualifies for listing in Appendix I by satisfying Criterion C i) in Annex 1 of Resolution Conf. 9.24 (Rev. CoP16): a marked decline in the population size in the wild which has been observed as ongoing or as having occurred in the past (but with a potential to resume).

3. Species characteristics

3.1 Distribution

Macaca sylvanus is the only species of the genus *Macaca* that occurs in Africa (Fooden, 2007; Butynski *et al*., 2008; Mittermeier *et al*., 2013) and the only non-human primate that occurs north of the Sahara (Camperio Ciani *et al*., 2005; Butynski *et al*., 2008; Mittermeier *et al*., 2013).

M. sylvanus is endemic to the very north of Africa (Butynski *et al*., 2013), where it occurs in Morocco and Algeria; in addition, a semi-wild introduced population is present in Gibraltar, an overseas territory of the United Kingdom of Great Britain and Northern Ireland (Wilson and Reeder, 2005; Butynski *et al*., 2008, 2013; Mittermeier *et al*., 2013). The species has been reported to be confined to inaccessible areas due to conflicts with humans and competition from agriculture and livestock farming (Camperio Ciani *et al*., 2005; van Lavieren, 2006 in Butynski *et al*., 2008). Mittermeier *et al.* (2013) reported the conservation status of *M. sylvanus* as precarious, with the main populations fragmented and distant from each other.

In Morocco, the Middle Atlas contains the largest populations of *M. sylvanus*, which are limited to the cedar forests of Sidi M'Guild, Ifrane and Michlifen, the holm oak forests of Ain Leuh and El Hammam between Azrou and Ain Leuh and the forests of the south of Ouiouane. Populations of this species are also found in the mixed cedar and oak forests of Tamjilt and Taffert in the eastern Middle Atlas. The species can also be found in some areas of the northern side of the Central High Atlas, especially in the regions of Azilal and Oued-el-abid, the valleys of Ahansel and Akhacham, the Ouzoud waterfalls and Ourika valley, which is part of Toubkal National Park. In the Rif mountain range, the species can be found at Jbel Moussa, Jbel Bouhachem, Jbel Tissouka, Lakâa, Talassemtane and Jbel Tizèrène.

In Algeria, the species' area of distribution is only partially known and populations are restricted to degraded habitats according to the Algerian government. *M. sylvanus* has been reported to be limited to relict habitats in the Grande and Petite Kabylie mountain region (Butynski *et al.*, 2008; Mittermeier *et al*., 2008). An isolated population has also been reported in Chréa National Park (northern Algeria) (Butynski *et al.*, 2008). Scheffrahn *et al.* (1993) reported that the species was confined to seven isolated populations in the following locations: Chiffa, Djurdjura National Park, Akfadou, Pic des Singes, Kherrata, Babors and Guerrouch. In a later study, Butynski *et al.* (2008) reported specific details of the species' occurrence in these locations: Chiffa gorges (Chréa National Park), Djurdjura forests and rocky cliffs (Djurdjura National Park, Grande Kabylie), Akfadou forests (Grande and Petite Kabylie), Cap Carbon, Aiguades and Pic des Singes (Gouraya National Park; Béjaïa, Petite Kabylie), Chaabet-el-Akhra gorges (Kherrata; Béjaïa, Petite Kabylie); 'Massif des Babors' forests (Sétif and Béjaïa, Petite Kabylie), Guerrouch forest (Taza National Park; Jijel, Petite Kabylie). It was also considered that a population of the species might still occur in Djebel Bouzegza (Boumerdes, Grande Kabylie) (Butynski *et al.*, 2008).

The species was found by Benrabah (2015) to have persisted in all the geographical locations that were surveyed in 1977 including Kherrata, Béjaïa, Babor, Draguina, Pic des Singes, Gouraya, Guerrouch, Taza (in the Petite Kabylie region), Djurdjura, Azazga, Toujda Akfadou, Tikjda and Yakouren (in the Grande Kabylie region) and Oued Chiffa, Tamzguida, Houchem and Msino (in the Chiffa gorges), which indicates that the geographical distribution of the species in Algeria has not

changed significantly between 1977 and 2014. The species' absence was confirmed in the national parks and forests of Belezema, Tlemcen, Djelfa and Kala (Benrabah, 2015).

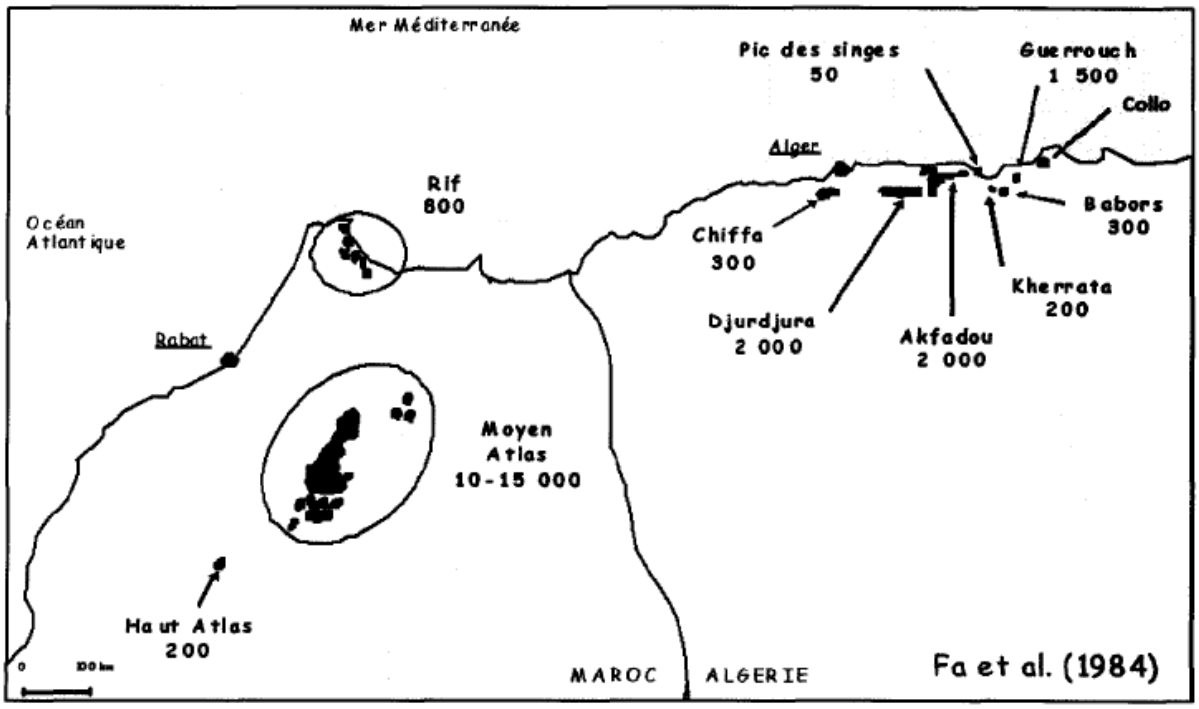

Figure 1: Distribution of the species per region in Algeria and Morocco, adapted from Fa *et al*. 1984 (Algerian government, *in litt*. to the European Union).

In Gibraltar, a small semi-wild population is present on the Upper Rock (van Lavieren, 2012).

3.2 Habitat

M. sylvanus inhabits Atlas cedar (*Cedrus*) forests, which are considered its optimal habitat (Butynski *et al*., 2008), fir (*Abies*) and oak (*Quercus*) forests (Butynski *et al*., 2013, 2008), rocky ridges (Butynski *et al*., 2008, 2013; Mittermeier *et al*., 2013) without vegetation and gorges with scrub (Butynski *et al*., 2008). *M. sylvanus* is reported to occur at altitudes between 400 and 2,300 m above sea level (Butynski *et al*., 2008), with more than half of all altitudinal records reported at or above 1,800 m above sea level (Fa *et al*., 1984; Fooden, 2007 in Butynski *et al*., 1984). The preferred habitat of the species is mature forests with large trees, a rich and diverse herbaceous layer and the presence of water, but the species has colonized a variety of habitats, including deciduous oak forests, mixed forests of cedar and oak, and rocky mountain ridges without vegetation (CITES Management Authority of Algeria, *in litt*. to the European Commission, 2016).

3.3 Biological characteristics

M. sylvanus has a seasonal reproduction cycle; females reach sexual maturity at 4-6 years of age and usually produce one infant per year, born in April-June, after a gestation period of around 165 days (Mittermeier *et al*., 2013). Allomaternal care is provided by group members; in captivity, infants have been recorded to spend 20% of the day with group members other than their mothers (Mittermeier *et al*., 2013). Longevity in captivity has been recorded to reach 30 years in females and 25 years in males (Mittermeier *et al*., 2013).

3.4 Morphological characteristics

M. sylvanus is a medium-sized monkey with a head-and-body length of 56-63 cm and a vestigial tail. It weighs 10-14.5 kg, with males larger than females (Mittermeier *et al*., 2013). Sexes are alike in colour (Butynski *et al*., 2013); however, pelage colour varies with age from dark brown to golden yellow (Mittermeier *et al*., 2013).

3.5 Role of the species in its ecosystem

M. sylvanus is omnivorous (Butynski *et al*., 2013; Mittermeier *et al*., 2013); its diet is primarily comprised of cedar and oak but also includes fruits, leaves and other plant parts (Butynski *et al*., 2008). *M. sylvanus* is considered to be an important biological indicator of habitat quality in the Moroccan Middle Atlas (Camperio Ciani *et al*., 2003). The species also plays a major role in seed dispersal (Alami and Chait, 2014).

In the north of Morocco and the Middle Atlas, *M. sylvanus* is known to raid agricultural crops (Mehlman, 1988 in Butynski *et al*., 2013) and fruit trees; the species has also been blamed for the destruction of cedar forests through its bark stripping behaviour (Mittermeier *et al.*, 2013).

4. Status and trends

4.1 Habitat trends

It has been reported that the available habitat for *M. sylvanus* has rapidly declined in recent decades and that human activities exert a growing pressure on all areas occupied by the species (Camperio Ciani *et al*., 2005; van Lavieren, 2006 in Butynski *et al*., 2005). According to van Lavieren (2012), the main threat to *M. sylvanus* is habitat loss, which has resulted in severe fragmentation of forested areas, particularly in the Middle Atlas.

4.2 Population size

The most recent published estimates suggest an overall population size of 5,000-6,000 individuals (van Lavieren and Wich, 2010), with the species having undergone substantial declines (as outlined in section 4.4). More recent studies and unpublished accounts suggest that the population may be larger; van Lavieren estimated the overall population to be 6,500-9,100 individuals (pers. comm. to UNEP-WCMC, June 2015).

In Morocco, Ménard *et al*. (2014) estimated the population of the Middle Atlas (the largest global population) to be ~5,000 individuals. The total population size for Morocco has been estimated at 5,000-6,000 individuals (Els van Lavieren, pers. comm. to UNEP-WCMC, June 2015). A higher population estimate of ~8,000-9,000 individuals was provided by Siân Waters (pers. comm. to UNEP-WCMC, June 2015). The higher estimate was based by adding to the population of the Middle Atlas as estimated by Ménard *et al*. (2014) (5,000 individuals) the population of the High Atlas (~1,000 individuals) and the northern population (2,000 individuals) based on recent and incomplete surveys (Waters *et al.,* unpublished data). However, van Lavieren (pers. comm. to UNEP-WCMC, June 2015) considers the population of the Rif mountains to be fewer than 2,000 individuals.

In Algeria, populations of *M. sylvanus* are fragmented and vary in size. They are restricted to remote or inaccessible areas that support only small populations. According to data compiled from various sources, the highest densities have been found at Djebel Babors, Djebel Guerrouche and the Chiffa and Akhfadou gorges.

There is some variation in population estimates for Algeria. Benrabah (2015) surveyed sites in the Chiffa gorges and in Grande and Petite Kabylie, including Djurdjura National Park, and estimated the population to be 1,500-3,100 individuals, with densities of approximately 2.33 individuals/km^2. These figures were based on transect surveys and home-range assessments carried out in over 22 sites (Benrabah, 2015). A total of 1,012 individuals were observed, allowing for calculation of total population size using the 95% upper and lower confidence figures of species density, multiplied by the total available area in each study site (Benrabah, 2015).

The population in the Chiffa gorges has been reported by Benrabah (2015) to be the most isolated in Algeria, with approximately 200 individuals. The populations in the sites of Djurdjura, Akhfadou, Tikjda and Yakouren (Grande Kabylie) are considered to be disjunct and fragmented but to contain the highest number of individuals of *M. sylvanus* in Algeria (Benrabah, 2015). An estimated 1,300-2,800 individuals have been reported to occur in Grande and Petite Kabylie, within disjunct patches (Benrabah, 2015). According to the Algerian government, a population survey conducted in 2013 in Djurdjura National Park found approximately 4,800 individuals, which was considered to be the result of a systematic counting methodology rather than an actual increase in population size since earlier

counts. The Algerian government considers that the current population size of the species is unknown but is likely to be less than the estimated 5,500 individuals 30 years ago.

In Gibraltar, the population is reported to have remained stable at around 200 individuals (Hodges and Cortes, 2006 in Butynski *et al*., 2008).

Population densities of *M. sylvanus* are reported to be highest in undisturbed oak forest and mixed cedar and oak forest habitats (Butynski *et al*., 2013; van Lavieren and Wich, 2010), but are much lower in degraded habitats (Mehlman, 1989 in Butynski *et al*., 2013).

4.3 Population structure

M. sylvanus is a diurnal and semi-terrestrial species (Butynski *et al*., 2013); the animals have been reported to spend most of the day on the ground, separately foraging for food, before congregating in the evening to spend the night in trees, on rocks or in caves (Mittermeier *et al*., 2013). *M. sylvanus* is reported to live in social groups of around 27 individuals (up to 88) with frequently overlapping group home ranges, whose average size is 7.5-8 km^2 in the Moroccan Rif and 2.8-3.8 km^2 in Algeria (Butynski *et al*., 2013; Mittermeier *et al*., 2013).

In 2009-2010, a survey of *M. sylvanus* groups in the mixed oak forest of Bouhchem (a Site of Biological and Ecological Interest) in the Tangiers-Tétouan region of northern Morocco found group sizes to range between 52 and 72 individuals, with a mean group size of 62 (Waters *et al*., 2015).

Ménard *et al*. (2013) consider that the low dispersal ability of *M. sylvanus* predisposes the species to local extinctions because “fragmented populations are likely to be entirely isolated”.

4.4 Population trends

In 2008, *M. sylvanus* was categorized as Endangered by the IUCN based on an estimated population decline exceeding 50% over the preceding 24 years; this decline was expected to continue (Butynski *et al*., 2008). Previous assessments in the 1980s and 1990s had classified the species as Vulnerable (Butynski *et al.*, 2008).

In the early 1980s, the global population was estimated at 14,000-23,000 individuals (9,000-17,000 in Morocco and 5,000-6,000 in Algeria) (Fa *et al*., 1984 in Butynski *et al*., 2013); in the 1990s, it was estimated at 10,000-16,000 individuals (Lilly et Mehlman, 1993 in Butynski *et al*., 2013; Von Segesser *et al*., 1999 in Alami *et al*., 2013), with a further population decline to 10,000 individuals reported in 2005 (Modolo *et al*., 2005) and a more recent estimate of ~5,000-6,000 individuals (van Lavieren et Wich, 2010; Siân Waters, pers. comm. to Majolo *et al*., 2013). However, given the current estimated population in Morocco, the global population is likely to be higher.

Based on estimates of *M. sylvanus* population size and densities since 1975, van Lavieren and Wich (2010) consider that the species has experienced an overall population decline. In Morocco, *M. sylvanus* is reported to have declined from ~17,000 individuals in 1977 (Taub, 1977) to ~5,000 in 2006 (A. Camperio Ciani, pers. comm. to van Lavieren and Wich, 2010) and ~3,000 in 2008 (van Lavieren and Wich, 2010; A. Camperio Ciani, pers. comm. to Butynski *et al*., 2013). However, van Lavieren (2014, pers. comm. to García, 2015) estimates the total population in Morocco at 5,000-7,000 individuals, with 5,000 occurring in Ifrane National Park, 1,000 in the Rif and “a few hundreds in the High Atlas”. Combined with the northern population of at least 2,000 individuals, the current population has been estimated at ~8,000-9,000 individuals (Siân Waters, pers. comm. to UNEP-WCMC, June 2015).

In 2005, van Lavieren and Wich (2010) surveyed the Central Middle Atlas region of Morocco using line transects to estimate population size and reported densities of 12.1-28.2 individuals/km^2, which were lower than earlier estimates of 43-70 individuals/km^2. The authors concluded that the population in the Middle Atlas was declining. These conclusions are in line with those of a study by Camperio Ciani *et al*. (2005), which indicated lower densities than those previously reported in the Middle Atlas. In 2007-2008, Ménard *et al*. (2014) studied the population in the Middle Atlas using line transect sampling methods and complete group counts, and estimated the mean density of the species at 9 individuals/km^2 and population size at about 5,000 individuals. In 2013, the population of *M. sylvanus* in Toubkal National Park in the High Atlas was estimated at 89 individuals, representing a

27% decline from 2009, when the population had been estimated at 122 individuals (Namous *et al*., in press).

In Algeria, there have been limited population surveys (Benrabah, 2015) and the conservation status of the species has not been assessed. The Algerian government notes that the species has experienced a severe decline in Algeria since the 1930s. In the 1970s, the population was estimated at 5,500 individuals (Taub, 1977; Fa *et al*., 1984); the species was found in seven restricted and disjunct localities in the mountains of Grande and Petite Kabylie. Taub (1977) noted that the species' area of distribution had been larger at the beginning of the century and that the species had disappeared from certain areas within the past 15 years. In addition, Taub (1977) considered the total population size and density of the species to be low, with the exception of two sites: Guerrouch and Akfadou. A study by Fa *et al*. (1984 in Benrabah, 2015) provided an estimate of population size in each of the surveyed regions, although the Algerian government (Algerian government, *in litt*. to the EU, 2016) noted that the survey by Fa *et al*. (1984) was not exhaustive and that the population of the species was higher than that estimated in the earlier study (Table 1). In 2015, the population was estimated at 1,500-3,100 individuals[1] (Benrabah, 2015), representing a decline of aproximately 44-73%. Benrabah (2015), however, reported high genetic variability in the Algerian populations of *M. sylvanus*.

Table 1. Distribution of the population of *M. sylvanus* in Algeria (based on Fa *et al*. 1984 and data from the *Direction Générale des Forêts* of the Algerian government, *in litt*. to the EU, 2016)

Localities	Area (km^2)	Altitude (m)	Number of individuals in 1984 (Fa, 1984)	Density (individuals/km^2)
Chiffa gorges	20	1530	300	15
Gouraya	7	600	50	7
Djurdjura	156	1750-2300	**1750**	11
Akfadou	175	800 – 1200	**2100**	12
Chabet el Akra	20	1500	200	10
Djebel Babors	17	2000	300	18
Djebel Guerrouch Massif de Collo	100	800-1200	**1500**	15
Total			6200	12.6

In Gibraltar, since the species was first introduced in the 18th century (Fooden, 2007), the population is reported to have remained stable at about 200 individuals (Hodges and Cortes, 2006 in Butynski *et al.*, 2008).

4.5 Geographic trends

Holocene extinction records indicate that the species' former range encompassed a larger area of Morocco and northern Algeria and extended into Tunisia (Fooden, 2007; Butynski *et al*., 2013). *M. sylvanus* used to be present in certain parts of Europe and throughout northern Africa, from Egypt to Morocco (Delson, 1980; Camperio Ciani, 1986; van Lavieren, 2012).

5. Threats

Butynski *et al.* (2013) consider habitat loss and degradation to be the main threat to the species. Habitat loss is reportedly due to logging, fire, land clearing for agriculture and habitat degradation due to overgrazing by livestock (Butynski *et al.*, 2008, 2013). However, illegal trade in live individuals is also considered to pose a significant threat to *M. sylvanus*, with most individuals in trade taken from the wild as live animals for the international pet trade (Butynski *et al.*, 2008). García (2015), considers illegal trade to pose a greater threat to the species than habitat loss. Illegal capture and trade is considered to be the main cause of population decline in Ifrane National Park in Morocco (Ménard *et al.*, 2013; Els van Lavieren, pers. comm. to UNEP-WCMC, June 2015).

The main populations of *M. sylvanus* are reported to be fragmented and distant from each other (Mittermeier *et al*., 2013) as a result of habitat restriction and isolation (Butynski *et al.*, 2013). The populations of Morocco and Algeria are considered to be disjunct and highly fragmented, with considerable distances between them (of up to 700 km) (Majolo *et al*., 2013). In Ifrane National Park, for example, migration between groups is reported to be prevented by the fragmentation of forested areas, posing a threat to the survival of the population (Majolo *et al*., 2013).

Other threats reported include persecution, predation by feral dogs, inappropriate artificial feeding at tourist sites and on roads (particularly highlighted as a threat by the Algerian government) and pollution of watercourses associated with forests (E. van Lavieren, pers. comm., 2006, and F. Belbachir, pers. comm., 2007 to Butynski *et al*., 2013) and exclusion from water sources (Butynski *et al*., 2013). Climate change is also considered to pose a threat to the natural environment of the species.

Butynski *et al.* (2008) reported that the importance of the different threats varies in different parts of the species' range[1]. In the Middle Atlas, reported declines in the largest remaining *M. sylvanus* population have been attributed to habitat loss (mainly of cedar forest), impacts from overgrazing by livestock (Camperio Ciani *et al*., 2005) and illegal capture of individuals (Alami *et al*., 2013).

According to Benrabah (2015), the lack of population surveys in Algeria between the 1970s and 2014 is an additional source of uncertainty about the causes of population decline. The population in the Chiffa gorges is reported to be the most isolated within Algeria, and subject to human influences and habitat fragmentation (Benrabah, 2015). Threats to populations in the Grande and Petite Kabylie region are reported to include hunting and habitat loss and fragmentation. Benrabah (2015) considers that stricter laws against deforestation and poaching may help alleviate immediate pressures on the population, and that introduction of protected corridors between local populations may facilitate natural gene flow.

6. Utilization and trade

6.1 National utilization

Local use of *M. sylvanus* in Morocco is considered low compared to use for international trade, although the species is reported to be kept fairly frequently as a pet (van Lavieren, 2004 in Butynski *et al.*, 2008) and local commercial utilization has been reported in Algeria (F. Belbachir, pers. comm. 2007 to Butynski *et al*., 2008). It is estimated that this species is rarely used for food, although older records suggest that it used to be consumed as food in Algeria (Deag, 1977 in Butynski *et al.*, 2008).

6.2 Legal trade

According to the CITES Trade Database, two live wild-sourced specimens were exported from Algeria for the purposes of circuses or travelling exhibitions in 2008 (although only one captive-bred individual was reported by the importer). In addition, two live captive-bred individuals were reported as exported for zoological purposes (Table 2). Morocco and Gibraltar also reported the export of wild-sourced specimens for scientific purposes. No commercial trade in this species was reported between 2005 and 2014.

Table 2. Direct exports of *Macaca sylvanus* from Algeria, Gibraltar and Morocco, 2005-2014

Exporter	Importer	Term	Unit	Source	Purpose	Reported by exporter	Reported by importer
Algeria	Italy	live	-	C	Q		1
				W	Q	2	
	Serbia	live	-	C	Z	2	2
Gibraltar	USA	specimens	kg	W	S	2.5	
			-	W	S	0.286	0.286
				W	S		30

Source: CITES Trade Database, UNEP-WCMC, Cambridge, UK, downloaded on 25 February 2016.

6.3 Parts and derivatives in trade

The species is primarily traded as live animals or scientific samples. Illegal trade predominantly involves live animals.

[1] *The population estimate was made using transect surveys and a home-range assessment across 22 sites in Algeria (Benrabah, 2015). Field study sites were selected based on the previous population survey conducted by Taub (1977) and Fa* et al*. (1984).*

6.4 Illegal trade

According to the seizures reported through the EU-TWIX database (data reported by the enforcement bodies of the EU Member States during the period 1997-2013), *M. sylvanus* is illegally imported into Europe as live individuals.

6.5 Actual or potential trade impacts

Van Lavieren (2004, 2008) considers that the level of offtake in the Middle Atlas (the largest remaining global population) is much higher than the estimated reproductive output of the population. As a result, García (2015) considers that illegal trade could have "a catastrophic impact on the population" and regards it to be a greater threat to the species than habitat modification. According to van Lavieren (2014, pers. comm. to García, 2015), *"considering the current rate of (legal and illegal) habitat loss, the pressures on the population and the overharvesting of infants, I predict that this [Middle Atlas] population will have disappeared within 15-20 years".*

The loss of individual members, particularly infants, can disrupt social groups of *M. sylvanus*; in addition, the loss of a large number of individuals can have an even wider impact on the ecosystem due to the reduction of seed dispersal (van Lavieren, 2004; García, 2015) and can lead to a deficit of immature individuals (Ménard *et al*., 2014).

In Ifrane National Park in the Middle Atlas, Ménard *et al.* (2013) found that tourism pressure was related to a dramatic deficit in infants; in groups around tourist sites it was estimated that 46% of infants had been removed by poachers, resulting in lower group sizes and affecting the age structure of the Middle Atlas population and its spatial heterogeneity. It is thought that infants used to seeing tourists may be easy poaching targets and thus preferentially selected by poachers (Ménard *et al.,* 2013). Ménard *et al.* (2013) predict that poaching will "eventually lead to a spectacular collapse of groups and populations".

Between 2001 and 2015, AAP (a rescue centre for *M. sylvanus* in Europe) reported receiving 590 requests to rescue individuals. The animals were successfully rescued in 271 of these cases. Of the animals concerned, 42% originated from confiscations (García, 2015).

7. Legal instruments

7.1 National

In Morocco, *M. sylvanus* is classified as a protected species under the Moroccan decree issued in 1962 by the Ministry of Agriculture, which prohibits capture, hunting, possession, sale and hawking. In addition, Moroccan Act No. 29-05 on the protection of species of wild fauna and flora and their trade links the level of protection of a species to its CITES Appendix listing. Transfer of the species to Appendix I would allow for penalties to be applied in cases of poaching or illegal trade under Act No. 29-05. Listed species are protected from importation, capture, sale, offer for sale or killing without a specific license, with fines of EUR 2,000-5,000 for illegal trade in *M. sylvanus*. It has been noted that fines would be much higher under a CITES Appendix I listing (EUR 3,000-10,000) (García, 2015) (Nijman *et al.*, 2015). The decree implementing Act No. 29-05 was published in June 2015.

In Algeria, *M. sylvanus* is protected under Executive Decree No. 12-235 of 2012 (which establishes the list of protected non-domesticated animal species). Article 2 of Executive Decree No. 12-235 defines the conditions for the recovery of protected species and the restoration of their habitat. The law protects against organized searches and capture, or poisoning of the species.

The species is not listed in Ordinance No. 06-05 of 2006, which provides the highest level of protection and prohibits, in all cases, the hunting, capture, possession, transport and trade of protected animals and their parts (García, 2015).

7.2 International

M. sylvanus has been listed in CITES Appendix II since 1 July 1975 and is listed in Annex B of European Union Council Regulation (EC) No. 338/97. The import of this species into the European Union from Algeria and Morocco is suspended under Article 4, paragraph 6 (b), of Council Regulation (EC) No. 338/97; this was first imposed on 22 December 1997 and was last confirmed on

4 September 2014.

8. Species management

8.1 Management measures

In Morocco, measures taken to improve the conservation status of *M. sylvanus* and address its threats include:

i. The creation in 2004 of Ifrane National Park and the elaboration of a development plan, which strives for the maintenance of balanced ecosystems and the protection of species, including *M. sylvanus*, and their natural habitats;

ii. Enhanced surveillance in the fight against poaching and illegal trade;

iii. Organizing awareness-raising campaigns in partnership with national and international NGOs;

iv. Implementation, in cooperation with international partners, of a project aimed at rehabilitating favourable conditions for *M. sylvanus* and combating poaching and illegal trade.

An action plan for the conservation of *M. sylvanus* in Morocco was prepared in 2012 by the Moroccan High Commissioner for Water, Forests and Desertification Control (HCEFLCD) and the Moroccan Primate Conservation Foundation (MPC). It sets out a timeframe and the actions needed to achieve its three objectives over the next 20 years: restoration of suitable/optimal macaque habitat, decrease in human pressure, and control of poaching and illegal trade (Moroccan Primate Conservation Foundation, 2012).

Activities to increase public awareness and reduce illegal trade in *M. sylvanus* are also reported to have been undertaken (Butynski *et al.*, 2008), including a training course organized by the Moroccan Forestry Department in 2009 to increase the capacity of customs officers to detect and stop illegal wildlife trade (Network, 2009).

In Algeria, according to Benrabah (2015), short-term conservation efforts have been made in the Chiffa gorges region, where an isolated population exists, but long-term measures must be considered and implemented to ensure the long-term viability of the population, including consideration of artificial translocation in order to enable gene flow and prevent negative effects of long-term genetic isolation.

Awareness-raising campaigns for the conservation of *M. sylvanus* were carried out among local populations, tourists and national institutions in the province (department) of Béjaïa in 2006 and 2007 by the Algerian environmental association Amazer-N'-Kefrida, in collaboration with the National Gendarmerie, Algerian Customs, the Ecology and Environment Laboratory of the University of Béjaïa, and the General Directorate of Forestry and Gouraya National Park. The campaigns were extended a few years later in Béjaïa, and also occasionally included Taza National Park (F. Belbachir, pers. comm. to the Algerian government). Awareness-raising activities are also carried out within national parks by forest protection officers. Permanent billboards requesting motorists not to feed the monkeys have been erected in areas where individuals of the species congregate.

In Gibraltar, the population of *M. sylvanus* is managed by the Gibraltar Ornithological and Natural History Society (GONHS), which controls population size by implanting contraceptives and, more recently, by exporting surplus individuals (JNCC, 2013; BBC, 2014). As part of the Natura 2000 network of Special Areas of Conservation / Special Protection Areas, research on the population of *M. sylvanus* is undertaken on a regular and continuous basis in Gibraltar (JNCC, 2013).

8.2 Population monitoring

In Morocco, surveys of the Moroccan Middle Atlas population have been carried out since 2006-2008 to provide information on population demographics and density (Butynski *et al.*, 2008). The national action plan for *M. sylvanus* in Morocco established in 2012 recommended the development of a monitoring protocol and training on how to carry out a monitoring programme (Moroccan Primate

Conservation Foundation, 2012).

In Algeria, no recent data are reported to have been published on the status of the population (Alami *et al.*, 2013).

In Gibraltar, the population is managed by the GONHS and a census is conducted once a year to collect demographic data and monitor reproductive rate (GONHS, n.d.).

8.3 Control measures

8.3.1 International

The species is listed in CITES Appendix II since 1975.

Morocco has been a Party to CITES since 1976 but its national legislation is classified in Category 2 according to the CITES National Legislation Project (Category 2: legislation that is believed generally not to meet all the requirements for the implementation of CITES) (SC65 Doc. 22, Annex p.8). Moroccan Act No. 29-05 has strengthened the legislation relating to the protection of species of wild flora and fauna, and the Secretariat has been invited to review Morocco's status under the National Legislation Project.

Algeria has been a Party to CITES since 1984 and its national legislation is also classified in Category 2 (SC65 Doc. 22, Annex p. 5).

Since 1997, the import of *M. sylvanus* from Algeria and Morocco into the EU has been suspended under Article 4, paragraph 6 (b) of EC Regulation No. 338/97.

8.3.2 Domestic

The species is protected in Algeria and Morocco under national law.

8.4 Captive breeding and artificial propagation

Butynski *et al.* (2008) consider *M. sylvanus* to breed well in captivity and recommend further study of the possibility of reintroducing *M. sylvanus* in northern Tunisia, where the species became extinct in the 1900s.

Sanctuaries and zoos in Europe are reported to have become overstocked with *M. sylvanus* juveniles offered to them by authorities and ex-owners, with most juveniles reported to be wild-sourced (van Lavieren, 2004).

Since 2009, captive breeding of *M. sylvanus* has been managed by the ESB (European StudBook) programme (EAZA, 2011). A captive population in EAZA zoos of around 460 animals has been reported by Siân S. Waters (pers. comm. to UNEP-WCMC, 2015), who noted that there are many more individuals in rescue centres across Europe and elsewhere.

8.5 Habitat conservation

In Algeria, Butynski *et al.* (2008) reported that most habitats that supported populations of *M. sylvanus* had national park status, but that this was not the case in Morocco.

In Morocco, the creation in 2004 of Ifrane National Park, which is home to the largest populations of *M. sylvanus*, and the implementation of its management plan have enabled the conservation of balanced ecosystems and protection of natural habitats for *M. sylvanus*. The species can also be found in some areas of the northern side of the Central High Atlas, around the protected area of the Haut Atlas Oriental and in Ourika valley, which is part of Toubkal National Park. In the Rif, the species can be found in Talassemtane National Park and at the Sites of Biological and Ecological Interest of Jbel Moussa and Bou Hachem. The action plan for the conservation of *M. sylvanus* makes it possible to designate distribution zones in protected areas in order to enhance the protection of the habitat of the species, for example in the Rif, in areas which are not part of Talassemtane National Park.

The species has also been reported to occur in Djurdjura, Taza, Chréa and Gouraya national parks in Algeria (Butynski *et al.*, 2008).

Butynski *et al.* (2008) reported, however, that "*parks in Algeria and Morocco suffer from significant human impact, and all these areas require much stricter protection than is currently in place*".

Van Lavieren and Wich (2010) report that conservation measures such as restricted access for grazing, zoning, forest guarding and education on sustainable use of the forest have "*been proposed and partly implemented, but these measures have not yet mitigated the threats to* M. sylvanus *and the species continues to decline*".

8.6 Safeguards

9. Information on similar species

10. Consultations

A consultation was launched by the European Union and its Member States to all range States and Tunisia (as a former range State). Morocco and Algeria expressed the will to be co-proponents. Tunisia indicated that it would support a proposal to transfer *M. sylvanus* to Appendix I.

11. Additional remarks

12. References

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